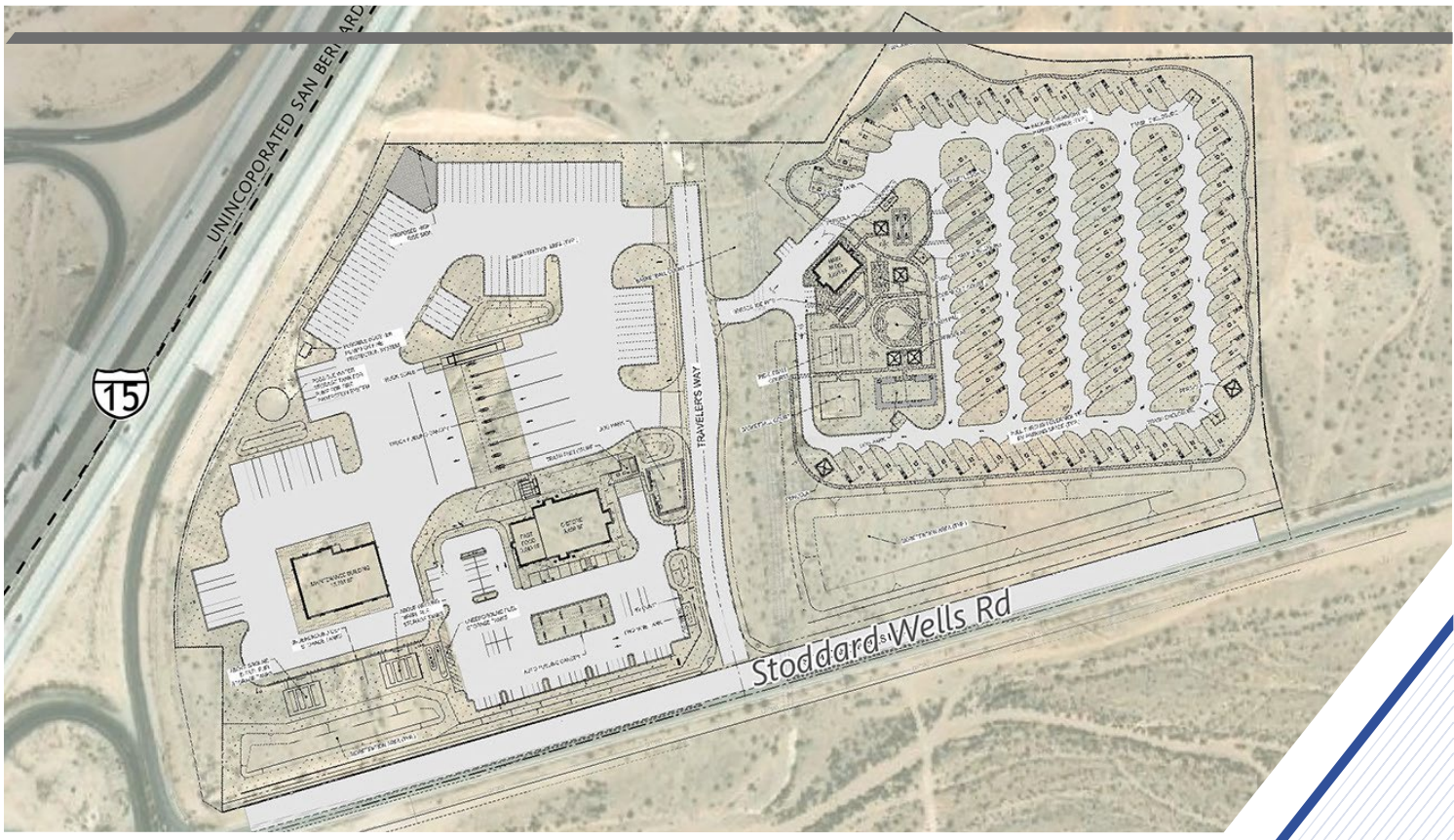


DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE

Apple Valley I-15 Travel Center

State Clearinghouse No. 2021120062

Prepared for:

Town of Apple Valley
14955 Dale Evans Parkway
Apple Valley, CA 92307

February 2023

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February 2023

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LIST OF ABBREVIATIONS

°C	degrees Celsius
AB	Assembly Bill
ACF	Advanced Clean Fleet
ACT	Advanced Clean Trucks
ADA	Americans with Disabilities Act
AFY	acre-feet per year
AMSL	above mean sea level
APN	Assessor's Parcel Number
AVCE	Apple Valley Choice Energy
AVCO	AVCO Disposal, Inc./Burrtec Company
AVFPD	Apple Valley Fire Protection District
AVPD	Apple Valley Police Department
AVUSD	Apple Valley Unified School District
BACT	best available control technology
Bargas	Bargas Environmental Consulting
basin plan	water quality control plans
bgs	below ground surface
BMP	best management practice
BSA	Biological Study Area
C&D	construction and demolition
CA SDWA	California Safe Drinking Water Act
CAA	Clean Air Act
CAAQS	California ambient air quality standards
CAFE	Corporate Average Fuel Economy
Cal/OSHA	California Occupational Safety and Health Administration
CalEEMod	California Emissions Estimator Model
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CA-MUTCD	California Manual on Uniform Traffic Control Devices
CAP	climate action plans
CAP	criteria air pollutants
CARB	California Air Resources Board

CBC	California Building Code
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CGS	California Geological Survey
CHP	California Highway Patrol
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
Connect SoCal	2020-2045 RTP/SCS: Connect SoCal
County	San Bernardino County
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
dB	decibels
diesel PM	exhaust from diesel engines
Draft EIR	draft environmental impact report
DTSC	California Department of Toxic Substances Control
DWR	California Department of Water Resources
EAP	Energy Action Plan
EIR	environmental impact report
EO	Executive Order
EPA	U.S. Environmental Protection Agency
EPA	US Environmental Protection Agency's
EPAct	Energy Policy Act of 1992
EPCRA	Emergency Planning and Community Right-to-Know Act of 1986
ESA	federal Endangered Species Act
ESA	*Phase I Environmental Site Assessment*
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration

FICAN	Federal Interagency Committee on Aviation Noise
FIRM	Flood Insurance Rate Map
FTA	Federal Transit Administration
FTIP	Federal Transportation Improvement Program
FUDS	Formerly Used Defense Site
g/L	grams per liter
GHG	greenhouse gas
GMA	Groundwater Management Act
gpd	gallons per day
GS	groundwater sustainability plans
GSA	groundwater sustainability agencies
GSP	groundwater sustainability plan
HAP	hazardous air pollutants
HMBEP	hazardous materials business emergency/contingency plan
HMD	Hazardous Materials Division
HRI	heat rate improvement
Hz	hertz
I-15	Interstate 15
IEPR	Integrated Energy Policy Report
IWMP	Integrated Waste Management Plan
JPA	Joint Powers Authority
kV	kilovolts
Lahontan Basin Plan	Water Quality Control Plan for the Lahontan Region
LCFS	Low Carbon Fuel Standard
L_{dn}	day-night average sound level
LED	light-emitting diode
L_{eq}	Equivalent Continuous Sound Level
L_{max}	Maximum Sound Level
LOS	level of service
MBTA	Migratory Bird Treaty Act
MCL	maximum contaminant levels
MDAB	Mojave Desert Air Basin
MDAQMD	Mojave Desert Air Quality Management District
MGD	million gallons per day
MMBTU	Metric Million British Thermal Unit

$MMTCO_2e$	metric tons of carbon dioxide equivalent
mPa	micro-Pascals
MPO	metropolitan planning organizations
MRWG	Mojave River Watershed Group
MRZ	Mineral Resource Zone
MSHCP/NCCP	Multi Species Habitat Conservation Plan/Natural Community Conservation Plan
Multi Hazard Plan	Multi Hazard Functional Planning Guidance Document
MWA	Mojave Water Agency
MWELO	Model Water Efficient Landscape Ordinance
NAAQS	national ambient air quality standards
NAHC	Native American Heritage Commission
NCCP	natural community conservation plans
ND	New Development
NEHRP	National Earthquake Hazards Reduction Program
NFIP	National Flood Insurance Program
NHTSA	National Highway Traffic Safety Administration
NO	nitric oxide
NO_2	Nitrogen dioxide
NOI	Notice of Intent
NOP	Notice of Preparation
NPDES	National Pollution Discharge Elimination System
NRHP	National Register of Historic Places
NSR	New Source Review
OAL	Office of Administrative Law
OEP	Office of Emergency Preparedness
OPR	Governor's Office of Planning and Research
OSHA	federal Occupational Safety and Health Administration
ozone	photochemical smog
PBR	Precision Bombing Range
PCC	Public Contract Code
PM	particulate matter
PM_{10}	particulate matter with aerodynamic diameter of 10 micrometers or less
$PM_{2.5}$	particulate matter with aerodynamic diameter of 2.5 micrometers or less
Porter-Cologne Act	Porter-Cologne Water Quality Control Act of 1970
ppm	parts per million

PRC	Public Resources Code
project site	northwest portion of the Town of Apple Valley
project	Apple Valley I-15 Travel Center
PV	photovoltaic
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Conditions
RHNA	Regional Housing Needs Assessment
ROW	right-of-way
RTP	regional transportation plans
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
RV	recreational vehicle
RWQCB	regional water quality control board
SAF Plan	State Alternative Fuels Plan
SAFE	Safer Affordable Fuel-Efficient
SARA Title III	Superfund Amendments and Reauthorization Act of 1986
SB	Senate Bill
SBCTA	San Bernardino County Transportation Authority
SBTAM	San Bernardino County Transportation Analysis Model
SCAG	Southern California Association of Governments
SCE	Southern California Edison
SCS	Sustainable Communities Strategy
SENL	single-event noise level
SF	square foot
SGMA	Sustainable Groundwater Management Act
SIP	State implementation plan
SMBMI	San Manuel Band of Mission Indians
SO_2	sulfur dioxide
SPCC	Spill Prevention, Control, and Countermeasure
SPL	sound pressure level
SSMP	Sewer System Management Plan
SSO	Sanitary Sewer Overflows
State Water Board	State Water Resources Control Board
SWMP	Stormwater Management Program
SWP	State Water Project
SWPPP	Storm Water Pollution Prevention Plan

SWRCB	State Water Resources Control Board
SWRCB-DDW	State Water Resources Control Board Division of Drinking Water
TAC	Toxic air contaminants
TIS	Transportation Impact Study
TISG	Transportation Impact Study Guide
TMDL	total maximum daily load
TTC	temporary traffic control
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USDOT	U.S. Department of Transportation
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	underground storage tank
UWMP	Urban Water Management Plan
UWMPA	Urban Water Management Planning Act
VdB	vibration decibels
VHFHSZ	Very High Fire Hazard Severity Zone
VMT	vehicle miles traveled
VOC	Volatile Organic Compounds
VVTA	Victor Valley Transit Authority
VVWRA	Victor Valley Wastewater Reclamation Authority
WQO	water quality objective
WRCC	Western Regional Climate Center
ZEV	zero-emission vehicle

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EXECUTIVE SUMMARY

ES.1 INTRODUCTION

This summary is provided in accordance with California Environmental Quality Act Guidelines (State CEQA Guidelines) Section 15123. As stated in Section 15123(a), "an EIR [environmental impact report] shall contain a brief summary of the proposed action and its consequences. The language of the summary should be as clear and simple as reasonably practical." As required by the guidelines, this chapter includes (1) a summary description of the proposed Apple Valley I-15 Travel Center (project), (2) a synopsis of environmental impacts and recommended mitigation measures (Table ES-1), (3) identification of the alternatives evaluated and of the environmentally superior alternative, and (4) a discussion of the areas of controversy associated with the project.

ES.2 SUMMARY DESCRIPTION OF THE PROJECT

The applicant is proposing to construct and operate a full-service travel center and recreational vehicle (RV) park on approximately 33.52 acres of vacant land in the northwest portion of the Town of Apple Valley (project site). On the western portion of the project site, the travel center would provide professional truck drivers and motorists with 24-hour access to purchase gasoline, diesel fuel, propane, electronics, snacks, travel items, and fast-food restaurant offerings. A truck maintenance building, dog park, RV dump station, stormwater basins, truck and automobile parking areas and landscaping/lighting are also proposed. The eastern portion of the project site would include an RV park, which would consist of a convenience store, automobile and overnight RV parking with utility hookups, propane fueling area, recreational amenities, and landscaping/lighting. The project would include construction of Traveler's Way, a new roadway that would bisect the travel center in the western portion of the project site and the RV park in the eastern portion of the project site. Project visitors/customers would include "over-the-road" trucks (i.e., professional long-haul drivers who are on the road for consecutive days or weeks at a time), local residents, and traveling motorists.

ES.2.1 Project Location

The project site consists of a 33.52-acre parcel (Assessor's Parcel Number 0472-222-10-0000), located northeast of the interchange between Interstate 15 (I-15) and Stoddard Wells Road. The project site is bounded to the north and east by vacant land, to the west by I-15, and to the south by Stoddard Wells Road.

ES.2.2 Background and Need for the Project

The project site has been the subject of previous entitlement actions by San Bernardino County prior to the incorporation of the Town of Apple Valley in 1988 and has been mass graded. The previously approved project constructed underground infrastructure utility improvement and was abandoned and never completed. The completed grading created a mega-pad that slopes at a two percent grade from north to south.

The purpose of the project is to develop a regional travel center and related commercial land uses on Regional Commercial (C-R)-designated land within the Town of Apple Valley that is consistent with Town General Plan policies and zoning.

ES.2.3 Project Objectives

The following objectives for the project are:

- Create a high-quality travel center commercial development along I-15, a major interstate transportation corridor.

- Develop a property of sufficient size to create a regional travel center that would accommodate a truck and auto fuel dispensing area, convenience store, fast-food restaurant, truck parking and maintenance services, RV park, and recreational amenities.
- Construct a travel center facility near a major freeway onramp/offramp to minimize truck and automobile movements, Vehicle Miles Traveled (VMT), and associated air pollutant and greenhouse gas emissions and traffic noise on local streets.
- Assist the Town of Apple Valley with meeting its economic development goals, as set forth in its General Plan.
- Maximize tax revenue to the Town of Apple Valley.
- Provide employment opportunities for residents of Apple Valley and surrounding areas.
- Construct a facility with proximal access to adequate existing or anticipated utility infrastructure to support planned operations.
- Provide minimal stay, full-service RV accommodations for the public traveling to and from destinations along Interstate 15 and Stoddard Wells Road.

ES.2.4 Characteristics of the Project

The project includes a full-service travel center and RV park. The travel center on the western portion of the project site would include the following characteristics and design features:

- an 8-position passenger vehicle fueling station;
- a 10-position truck fueling station;
- an electric vehicle charging station;
- a 9,659 square-foot (SF) convenience store;
- a 3,043 fast food restaurant;
- a 13,786 SF truck maintenance building with 80-kilowatt direct current rooftop solar system;
- up to two transformers (approximately 150 to 300 kilo-volt-amperes);
- a dog park;
- a truck scale;
- an RV dump station;
- a 1,000-gallon propane tank;
- eight 12,000-gallon above-ground and below ground diesel storage tanks, including fuel delivery parking;
- one 30,000-gallon below ground gasoline storage tank, including fuel delivery parking;
- one two-compartment combined high octane gasoline/diesel tank;
- one 20,000-gallon diesel exhaust fluid storage tank;
- truck (102 spaces) and automobile (81 spaces) parking – 183 total parking spaces;
- onsite lighting, consisting of high-mast LED fixtures and LED canopy lighting;
- high-rise freeway oriented signage, street signage, and other directional signage;
- landscaping, hardscaping, pavement, and fencing;
- a 200,000-gallon fire water supply storage tank; and
- five stormwater quality basins/features

The RV park on the eastern portion of the project site would include the following characteristics and design features:

- a 3,250 SF main building with a convenience store, laundry room, bathrooms, and showers;
- automobile (8 spaces) and overnight RV (80 spaces) parking with utility hookups – 88 total parking spaces;
- a 1,000-gallon propane tank;
- an 80,000 SF bioretention area;
- recreational amenities, including pergolas/gazebos, cornhole courts, pickleball courts, splash pad, horseshoe courts, shuffleboard courts, basketball court, dog park, picnic tables, fire pits, and walking paths;
- onsite lighting, consisting of high-mast LED fixtures and LED canopy lighting; and
- landscaping, hardscaping, pavement, and fencing.

It is anticipated that cut and fill for finish grading would be balanced onsite. Retaining walls may be constructed as part of the project. The project applicant is proposing to lease various portions of the project site to future tenants on a long-term basis, once entitled.

The project would include a variety of offsite improvements, including street improvements and transitions, drainage facility connections, utility connections, and landscaping. An approximately 19,460-linear-foot water main line extension from 3.5 miles northeast of the project site would also be required to serve the project's water needs.

ES.3 ENVIRONMENTAL IMPACTS AND RECOMMENDED MITIGATION MEASURES

ES.3.1 Project-Specific Impacts

This EIR has been prepared pursuant to the CEQA (Public Resources Code [PRC] Section 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations, Title 14, Chapter 3, Section 1500, et seq.) to evaluate the physical environmental effects of the project. The Town of Apple Valley (Town) is the lead agency for the project. The Town Planning Commission has the principal responsibility for approving and carrying out the project and for ensuring that the requirements of CEQA have been met. After the Final EIR is prepared and the EIR public-review process is complete, the Town Planning Commission is the responsible party for certifying that the EIR adequately evaluates the impacts of the project.

Table ES-1, presented at the end of this chapter, provides a summary of the environmental impacts for the project. The table provides the level of significance of the impact before mitigation, recommended mitigation measures, and the level of significance of the impact after implementation of the mitigation measures.

The State CEQA Guidelines (Section 15128) allow an EIR to briefly describe the reasons why some environmental effects were determined not to be significant and then to dismiss these effects from detailed review in the EIR. As discussed further in Section 3.1.1, "Effects Found Not to Be Significant," the proposed project would not result in impacts related to agriculture and forestry resources or wildfire; therefore, these issue areas are not evaluated further in this EIR. Other issues not discussed further because they would result in no impact are described in Sections 3.1 through 3.15 of this EIR.

ES.3.2 Significant-and-Unavoidable Impacts and Cumulative Impacts

As summarized in Table ES-1, most of the impacts associated with the proposed project would be less than significant or reduced to a less-than-significant level after implementation of the recommended mitigation measures. The following impacts are considered significant and unavoidable; that is, no feasible mitigation is available to reduce the project's impact to a less-than-significant level:

- Impact 3.11-1: Short-term construction-generated noise levels
- Impact 3.15-1: Relocation or Construction of New or Expanded Facilities

Additionally, the project could result in a cumulatively considerable contribution to a significant cumulative impact with respect to construction noise and the environmental effects of constructing a new offsite water main line.

ES.4 ALTERNATIVES TO THE PROJECT

The following provides brief descriptions of the alternatives evaluated in this Draft EIR. Table ES-2 presents a comparison of the environmental impacts between the project and alternatives.

- Alternative 1: No Project – No Development Alternative assumes no demolition or new construction occurs on the project. The site would remain in its current condition.
- Alternative 2: No RV Park Alternative assumes no construction of a new RV park. The project would only consist of a new travel center.
- Alternative 3: Reduced RV Park Alternative assumes construction of a new travel center and RV park; however, the RV park would provide 40 fewer RV parking spaces than what was evaluated under the project.

ES.4.1 Environmentally-Superior Alternative

Alternative 1, the No Project-No Development Alternative would avoid the adverse impacts generated by the construction and operation of the project. Therefore, it is considered the environmentally superior alternative. However, the No Project–No Development Alternative would not meet the project objectives.

When the environmentally superior alternative is the No Project Alternative, the State CEQA Guidelines (Section 15126[d][2]) requires selection of an environmentally superior alternative other than the No Project Alternative from among the other alternatives evaluated.

As illustrated in Table ES-2, below, the No RV Park Alternative would be the environmentally superior action alternative because it would require less ground disturbance with potential to affect sensitive resources (e.g., biological, cultural, and water resources) or exacerbate hazards during construction, when compared to the other alternatives. During operations, the no RV Park Alternative would have a smaller building footprint and would generate fewer vehicle trips, which would contribute to less traffic, noise, air pollutant and greenhouse gas emissions, energy consumption, and demand on public services and utilities than the other alternatives.

ES.5 AREAS OF CONTROVERSY AND ISSUES TO BE RESOLVED

CEQA Guidelines section 15123(b)(2) requires that the summary chapter of an EIR identify "[a]reas of controversy known to the Lead Agency including issues raised by agencies and the public." A notice of preparation (NOP) was distributed for the project on December 3 2021, to responsible agencies, interested parties, and organizations, as well as private organizations and individuals that may have an interest in the project. The purpose of the NOP was to provide notification that an EIR for was being prepared for the project and to solicit input on the scope and content of the environmental document.

The Town received one comment letter in response to the NOP from the Native American Heritage Commission (NAHC). The letter provides a summary of tribal consultation requirements pursuant to Assembly Bill 52 and Senate Bill 18 and NAHC's recommendations for conducting cultural resources assessments. The NOP and comment letter from NAHC are included in Appendix A of this Draft EIR. No areas of controversy related to the project were identified during the scoping process. If areas of controversy emerge through comments on this Draft EIR, this section will be amended and updated to include those areas of controversy.

Table ES-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
LTS = Less than significant PS = Potentially significant S = Significant SU = Significant and unavoidable			
Aesthetics			
Impact 3.1-1: Have a substantial adverse effect on a scenic vista The project site is visible from a scenic vista. However, the project would not be prominent in the scenic vista because it is relatively small in comparison to the viewshed, distant from the viewpoint, and would be compatible with nearby rural development. Impacts to scenic vistas would be less than significant.	LTS	No mitigation required.	LTS
Impact 3.1-2: Substantially degrade the existing visual character or quality of the site on its surroundings The project would add non-natural encroaching elements to existing viewpoints. However, the project design would be consistent with the development standards in the Town of Apple Valley Code of Ordinances. The project would result in a less than significant impact on visual character and quality.	LTS	No mitigation required.	LTS
Impact 3.1-3: Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area Project construction and operation would introduce new sources of light and glare to an area that is sparsely developed with limited sources of existing light and glare. However, the project would comply with all Town of Apple Valley regulations pertaining to light and glare, including requirements related to light intensity and height, shielding and directionality, and building setbacks. Impacts would be less than significant.	LTS	No mitigation required.	LTS
Air Quality			
Impact 3.2-1: Conflict with or Obstruct Implementation of the Applicable Air Quality Plan Implementation of the project would be consistent with the land use designation and zoning in the Town's General Plan. Because the General Plan was used to inform the projected growth in the applicable air quality plans, the project would be consistent with the applicable air quality plans. The project is consistent with the applicable air quality plans and this impact would be less than significant.	LTS	No mitigation required.	LTS

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
LTS = Less than significant PS = Potentially significant S = Significant SU = Significant and unavoidable			
Impact 3.2-2: Construction Emissions of Criteria Air Pollutants and Ozone Precursors MDAQMD has established significance thresholds to ensure that new projects do not (1) cause or contribute to any new violation of any air quality standard; (2) increase the frequency or severity of any existing violation of any air quality standard; or (3) delay timely attainment of any air quality standard or any required interim emission reductions or other milestones of any federal attainment plan. Construction-related activities would result in project-generated emissions of ROG, NOx, CO, SOx, PM_{10}, and $PM_{2.5}$ from site preparation (e.g., excavation, clearing), off-road equipment, material and equipment delivery trips, and worker commute trips, water main extension, and other miscellaneous activities (e.g., building construction, asphalt paving, application of architectural coatings). However, construction activities would not result in mass emissions of ROG, NOx, CO, SOx, PM_{10}, and $PM_{2.5}$ that would exceed MDAQMD's significance thresholds. Therefore, construction-generated emissions of criteria air pollutants and ozone precursors would not affect the nonattainment status of the MDAQMD. This impact would be less than significant.	LTS	No mitigation required.	LTS
Impact 3.2-3: Operational Emissions of Criteria Air Pollutants and Ozone Precursors Implementation of the project would not result in long-term operational emissions of ROG, NOx, CO, SOx, PM_{10}, and $PM_{2.5}$ that exceed MDAQMD mass emissions criteria. Therefore, operation-generated emissions would not conflict with air quality planning efforts and would not affect the attainment status of the MDAB with respect to the CAAQS and NAAQS for these criteria pollutants. This impact would be less than significant.	LTS	No mitigation required.	LTS
Impact 3.2-4: Expose Sensitive Receptors to Substantial Pollutant Concentrations Construction-related emissions of TACs associated with proposed project would be spread over the project area, not affecting any one receptor for extended periods of time, and therefore, would not result in exposure of existing receptors to substantial TAC concentrations. The project would not result in exposure of sensitive receptors to excessive TAC emissions from operational emissions. This impact would be less than significant.	LTS	No mitigation required.	LTS

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
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Impact 3.3-5: Exposure of sensitive receptors to other emissions (including odors) The project would introduce new odor sources into the area (e.g., temporary diesel exhaust emissions during construction and delivery trucks associated with the fuel station and restaurants). However, these odor sources would be temporary, intermittent, and dissipate rapidly from the source. Further, the project would not locate land uses near any existing odor sources. Operation of the project would not result in odor sources and the nearest sensitive receptors would be over one mile from the project area. Thus, this impact would be less than significant.	LTS	No mitigation required.	LTS
Archaeological, Historical, and Tribal Cultural Resources			
Impact 3.3-1: Cause a Substantial Adverse Change in the Significance of Unique Archaeological Resources The results of the records search and pedestrian survey indicate the Project site has a low sensitivity archaeological resources. Further, review of the Town's General Plan shows that the proposed Project does not fall within any areas of elevated archaeological sensitivity that have been defined by prior research. However, work (water line) along Johnson Road will occur immediately adjacent to an area that is considered to have elevated sensitivity for the presence of prehistoric archaeological sites. As such, project-related ground-disturbing activities could result in the discovery or damage of yet undiscovered archaeological resources as defined in State CEQA Guidelines Section 15064.5. This would be a potentially significant impact.	PS	**Mitigation Measure 3.3-1a: Town Planning Division Review of Project Specific Cultural Resources Study** Prior to the issuance of any ground disturbing permit, the Town Planning Division shall review and approve the cultural resource study or studies prepared for the project. The recommendations of the study or studies shall be made conditions of approval of the ground disturbing permits. **Mitigation Measure 3.3-1b: Procedures to Follow in the Event of Unanticipated Cultural Resources Discoveries** In the event that any prehistoric or historic-period subsurface archaeological resources, including features, artifacts, and locally darkened soil ("midden"), that could conceal cultural deposits are discovered during construction, all ground-disturbing activity within 100 feet of the resources shall be halted and a qualified professional archaeologist who meets Secretary of Interior standards for archaeology, shall be retained to assess the significance of the find. Work on the other portions of the project outside of the 100-foot buffer area may continue during this assessment period. If the qualified archaeologist determines the archaeological material to be Native American in nature, the Town of Apple Valley shall contact the appropriate affiliated Native American tribe for their input with regard to the significance and the preferred treatment of the find. If the find is determined to be significant by the archaeologist (i.e., because it is determined to constitute a unique archaeological resource or an historical resource of an archaeological nature) or if the find is Native American in origin and determined to be culturally significant by the affiliated Native American representative, the archaeologist shall develop, and the Town of Apple Valley shall implement, a Monitoring and Treatment Plan. The	LTS

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
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		Monitoring and Treatment Plan shall include appropriate procedures to protect the integrity of the resource and ensure that no additional resources are affected. Development of the Monitoring and Treatment Plan will also be done in consultation with the affiliated Native American tribe if the find is of Native American in origin and determined to be culturally significant to the tribe. Protection procedures identified in the Monitoring and Treatment Plan could include, but would not necessarily be limited to, preservation in place (which shall be the preferred manner of mitigating impacts to significant archaeological sites and Tribal cultural resources), archival research, subsurface testing, or contiguous block unit excavation and data recovery pursuant to a data recovery plan. Avoidance and/or preservation in place shall be preferred primary option except where it would preclude the construction of important structures or infrastructure or require exorbitant expenditures. This Monitoring and Treatment Plan shall allow for a monitor to be present that represents the affiliated Native American tribe for the remainder of the project, should the tribe elect to place a monitor on-site. The Town shall supply all cultural documents created as a part of the project (e.g., isolate records, site records, survey reports, and testing reports) to the affiliated Native American Tribe and consult with tribe throughout the life of the project.	
Impact 3.3-2: Cause a Substantial Adverse Change in the Significance of a Tribal Cultural Resource No known resources within the project area were identified as tribal cultural resources as defined in PRC section 21074. However, there is the potential that ground disturbing work during construction could encounter previously undiscovered or unrecorded tribal cultural resources. This would be a potentially significant impact.	PS	**Mitigation Measure 3.3-2: Procedures to Follow in the Event of Unanticipated Tribal Cultural Resources Discoveries** Implement Mitigation Measure 3.3-1b.	LTS
Impact 3.3-3: Disturb Human Remains Based on documentary research, no evidence suggests that any prehistoric or historic-period marked or un-marked human interments are present within or in the immediate vicinity of the project site. However, ground-disturbing construction activities could uncover previously unknown human remains. Compliance with California Health and Safety Code Section 7050.5 and California Public Resources Code Section 5097 would make this impact less than significant.	LTS	No mitigation required.	LTS

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
LTS = Less than significant PS = Potentially significant S = Significant SU = Significant and unavoidable			
Biological Resources			
Impact 3.4-1: Disturbance and Loss of State or Federally Protected Wetlands and Waters Construction and operation of the project, including the offsite water main line, would result in the disturbance or fill of several mapped seasonal streams. Disturbance or loss of state and federally protected wetlands and other waters would be a significant impact.	S	**Mitigation Measure 3.4-1: State and Federally Protected Wetlands and other Waters** ▶ Prior to any construction activities that would disturb a potential water of the United States or state, the project proponent shall commission an aquatic resources delineation conducted according to USACE methodology, state wetland procedures (California Water Boards 2020), and *Mapping Episodic Stream Activity* (Brady and Vyverberg 2013) and submit a wetland delineation report, to USACE and RWQCB and request a preliminary jurisdictional determination or verification. Based on the jurisdictional determination/verification, the project proponent shall determine the exact acreage of waters or the United States and/or waters of the state that would be filled or degraded as a result of project implementation. ▶ If it is determined that fill of waters of the United States would result from project implementation, authorization for such fill will be secured from USACE through the Section 404 permitting process. Any waters of the United States that would be affected by the project will be replaced or restored on a no-net-loss basis in accordance with USACE mitigation guidelines (or the applicable USACE guidelines in place at the time of construction permitting). In association with the Section 404 permit (if applicable) and prior to the issuance of any grading permit, Section 401 Water Quality Certification from the RWQCB will be obtained. ▶ If it is determined that disturbance or fill of state protected wetlands, streams, or any other waters of the state that are disclaimed by USACE cannot be avoided, the implementing party will notify the RWQCB before commencing any activity within a state wetland or other water of the state. ▶ The applicant will apply for a permit from the Lahontan RWQCB for any activity that may result in discharges of dredged or fill material to waters of the State. The application will be completed in accordance with State procedures (California Water Boards 2020). ▶ Prior to implementing activities that could divert or obstruct the natural flow of, or substantially change or use material, including vegetation, from the bed, bank, or channel of any stream, including desert washes, the implementing party will notify CDFW pursuant to California Fish and Game Code Section 1602. If project activities trigger the need for a Lake and Streambed Alteration	LTS

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
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		Agreement, the proponent will obtain an agreement from CDFW before the activity commences. The applicant will conduct construction activities in accordance with the conditions of the agreement, including implementing reasonable measures in the agreement necessary to protect fish and wildlife resources when working within the bed or bank of waterways that function as a fish or wildlife resource. ▶ The project proponent shall replace on a "no net loss" basis (minimum 1:1 ratio) (in accordance with USACE, RWQCB, and CDFW requirements) the acreage and function of all wetlands and other waters that would be removed, lost, or degraded as a result of project implementation. Waters of the United States and state will be replaced at an acreage and location agreeable to USACE and the RWQCB and as determined during the Section 401 and Section 404 permitting processes or through the application for waste discharge requirements from RWQCB, and pursuant to the conditions of the Lake and Streambed Alteration Agreement.	
Impact 3.4-2: Have a Substantial Adverse Effect, Either Directly or Through Habitat Modifications, on Special-Status Plants Construction and operation of the project would result in development of new facilities, and construction of a 19,460-linear-foot water main along the right-of-way of Stoddard Wells Road and Johnson Road. Depending on the final alignment of the water main line, construction may occur in creosote bush scrub, allscale scrub, desert washes, and disturbed habitat that may provide marginally suitable habitat for special-status plants. Removal of these habitats, therefore, would result in loss of special-status plants if they are present. Loss of special-status plants would be a potentially significant impact.	PS	**Mitigation Measure 3.4-2: Special-Status Plants** The project proponent shall implement the following measures to reduce potential impacts on special-status plants: ▶ Prior to the issuance of a grading permit or construction related permits, the project applicant shall retain a qualified botanist to conduct protocol-level surveys for special-status plants during the blooming period for the special-status plant species with potential to occur in the project site, in areas where potentially suitable habitat would be removed or disturbed by project activities and following the CDFW rare plant survey protocols (CDFW 2018) or the most recent CDFW rare plant survey protocols. A qualified botanist will conduct the field surveys and will identify and map plant species occurrences according to the protocols. ▶ If no special-status plants are found, the botanist will document the findings in a letter report to the Town of Apple Valley and no further mitigation will be required. ▶ If special-status plant species are found that cannot be avoided during construction, the qualified botanist, in consultation with the Town of Apple Valley, shall prepare mitigation measures for direct and indirect impacts that could occur as a result of project construction and operation, and will implement the agreed-upon mitigation measures to offset the loss of occupied habitat or	LTS

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
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		individuals. Mitigation measures may include preserving and enhancing existing populations, creation of offsite populations on project mitigation sites through seed collection or transplantation, and/or restoring or creating suitable habitat in sufficient quantities to achieve a performance standard of "no net loss of occupied habitat and/or individuals." If any of the identified plant species have been listed under CESA as threatened or endangered, or rare under the NPPA, the project proponent shall consult with CDFW pursuant to CESA or notify CDFW pursuant to NPPA. A Plant Protection Plan will be developed describing how impacts will be mitigated, restoration and/or avoided areas monitored and how unavoidable losses of special-status plants will be compensated. ▶ If relocation efforts are part of the Plant Protection Plan, the plan will include details on the methods to be used, including collection, storage, propagation, receptor site preparation, installation, long-term protection and management, monitoring and reporting requirements, success criteria, and remedial action responsibilities should the initial effort fail to meet long-term monitoring requirements. ▶ Success criteria for preserved and compensatory populations will include: ▶ The extent of occupied area and plant density (number of plants per unit area) in compensatory populations will be equal to or greater than the affected occupied habitat. ▶ Compensatory and preserved populations will be self-producing. Populations will be considered self-producing when: ▶ plants reestablish annually for a minimum of five years with no human intervention such as supplemental seeding; and ▶ reestablished and preserved habitats contain an occupied area and flower density comparable to existing occupied habitat areas in similar habitat types in the project vicinity. ▶ If offsite mitigation includes dedication of conservation easements, purchase of mitigation credits, or other offsite conservation measures, the details of these measures will be included in the Plant Protection Plan, including information on responsible parties for long-term management, conservation easement holders, long-term management requirements, success criteria such as those listed above and other details, as appropriate to target the preservation of long-term viable populations.	

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
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Impact 3.4-3: Have a Substantial Adverse Effect, Either Directly or Through Habitat Modifications, on Special-Status Reptiles Construction and operation of the project could disturb desert tortoise and coast (=Blainville's) horned lizard due to ground disturbing activities potentially resulting in mortality of eggs, hatchlings, and adults. This would be a potentially significant impact.	PS	**Mitigation Measure 3.4-3a: Desert Tortoise** ▶ A pre-project survey shall be conducted in accordance with the USFWS desert tortoise protocol (USFWS 2019). Based on the USFWS protocol, the proposed travel center and RV park would fall under the small project survey protocol and the proposed water main line would fall under the linear project survey protocol. The surveys would determine whether desert tortoises are likely to be present based primarily on sign; therefore, a pre-project survey can be conducted during any time of the year prior to the issuance of construction related permits. ▶ If the surveys are negative, no additional mitigation is required. Because this is a mobile species, a biological monitor shall be present during initial grading and a worker environmental awareness training shall be conducted with construction personnel to educate them on desert tortoise, their protective status (threatened under ESA and CESA), and avoidance measures to be implemented by all personnel, including looking under vehicles and equipment prior to moving. The training shall include steps to be taken should desert tortoise be observed on the construction site, including ceasing construction activities and coordination with the resource agencies. ▶ If the survey is positive, a biological opinion and an incidental take permit (ITP) must be obtained from USFWS and CDFW, respectively, prior to initiation of construction activities. Loss of occupied habitat shall be mitigated at a minimum 1:1 ratio, or as specified in the biological opinion and ITP. Avoidance and minimization measures shall be implemented in accordance with provisions of the biological opinion and ITP and shall include, at a minimum: ▪ Presence of a qualified biological monitor during initial grading activities, and as needed throughout construction, to document compliance with the conditions of the biological opinion/ITP. The biological monitor will have the authority to stop work as needed to avoid direct impacts to desert tortoise. ▪ Should a desert tortoise be found during construction activities, activities shall cease until either the tortoise moves out of harm's way, or a qualified biologist authorized under the project's ITP ("authorized biologist") relocates the tortoise.	LTS

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
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		Mitigation Measure 3.4-3b: Coast (=Blainville's) Horned Lizard ▶ A pre-project survey shall be conducted within 48 hours of planned ground disturbance and can be conducted concurrent with the desert tortoise pre-project survey if within the required 48 hours. A report summarizing the results of the survey shall be prepared and submitted to the Town of Apple Valley. ▶ If the surveys are negative, no additional mitigation is required. Because this is a mobile species, a biological monitor shall be present during initial grading and a worker environmental awareness training shall be conducted with construction personnel to educate them on coast (=Blainville's) horned lizard, their protective status (species of special concern), and avoidance measures to be implemented by all personnel, including looking under vehicles and equipment prior to moving. The training shall include steps to be taken should coast (=Blainville's) horned lizard be observed on the construction site, including allowing the individual to leave the project site on its own accord. ▶ If the survey is positive, a qualified biological monitor with a coast (=Blainville's) horned lizard Scientific Collecting Permit authorization, shall be retained to be present during initial grading to monitor activities. The biological monitor shall be authorized to move individual coast (=Blainville's) horned lizards out of harm's way if the individual lizards do not move on their own. **Mitigation Measure 3.4-3c: Light Spillage** ▶ During the Development Permit process, the project proponent shall ensure that lighting would only be used for the functional requirements of safety, security and that all project lighting complies with the lighting requirements included in Chapter 9.70.020(H) of the Town of Apple Valley Code of Ordinances. **Mitigation Measure 3.4-3d: Reduce the Habitat Suitability for Ravens.** ▶ During the Development Permit process, the project design shall incorporate the use of raven-proof garbage dumpsters and garbage receptacles on the outside of the travel center and RV park use self-closing trash bins to reduce the availability of organic waste that could attract ravens to the area. ▶ During the Development Permit process, the project design shall incorporate anti-perching devices on the project's light posts, periphery buildings or structures that could be used for perching by ravens which could increase predation of desert tortoise and coast (=Blainville's) horned lizard.	

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
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		Maintenance of the facility shall include replacing anti-perching devices that are known to have fallen at least quarterly.	
Impact 3.4-4: Have a Substantial Adverse Effect, Either Directly or Through Habitat Modifications, on Special-Status Birds Implementation of the project could result in direct and indirect impacts to nesting birds, including the loss of nests, eggs, and young, from ground disturbing activities, such as vegetation removal, grading, or construction and operation in close proximity to active nests. This would be a potentially significant impact.	PS	**Mitigation Measure 3.4-4a: Burrowing Owl** The project proponent shall retain a qualified biologist to conduct focused breeding and nonbreeding season surveys for burrowing owls in areas of suitable habitat on and within 1,500 feet of the project site where access is permitted. Surveys will be conducted prior to the start of construction activities and in accordance with Appendix D of CDFW's Staff Report on Burrowing Owl Mitigation (2012). If no occupied burrows are found, a letter report documenting the survey methods and results will be submitted to the Town of Apple Valley and no further mitigation will be required. If an active burrow is identified near a proposed work area and work cannot be conducted outside of the nesting season (February 1 to August 31), a qualified biologist will establish a no-activity zone that extends between 150 to 1,500 feet around the burrow, depending on nesting stage and level of disturbance. If burrowing owls are present at the site during the non-breeding season (September 1 through January 31), a qualified biologist will establish a no-activity zone that extends a minimum of 150 feet around the burrow. The size of the buffer will depend on the time of year and level of disturbance, as outlined in the CDFW Staff Report (2012, pg 9). If the designated no-activity zone for breeding or non-breeding burrowing owls cannot be established because an active burrow is located within the project work area, a wildlife biologist experienced in burrowing owl behavior will evaluate site-specific conditions and, in consultation with CDFW, recommend a smaller buffer (if possible) that still minimizes the potential to disturb the owls (and is deemed to still allow reproductive success during the breeding season). The site-specific buffer will consider the type and extent of the proposed activity occurring near the occupied burrow, the duration and timing of the activity, the sensitivity and habituation of the owls, and the dissimilarity of the proposed activity to background activities. Additional measures may be identified by the designated biologist including regular monitoring of the owls by a qualified biologist, modified construction activity schedule in proximity to the owls, or establishment of a barrier between construction and the occupied burrow.	LTS

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
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		If burrowing owls are present within the construction area and cannot be avoided during the non-breeding season (generally September 1 through January 31), owls will be relocated to suitable habitat outside of the project site using passive or active methodologies developed in consultation with CDFW. No burrowing owls will be excluded from occupied burrows until a burrowing owl exclusion and relocation plan is developed for the project and approved by CDFW. Typically, owls maintain multiple burrows and refuge areas within their foraging area during the nonbreeding season. Passive or active relocation also may be used during the breeding season (February 1 through August 30) if a qualified biologist, in consultation with CDFW, determines through site surveillance that the burrow is no longer occupied by burrowing owl adults, young, or eggs. Once the fledglings are capable of independent survival, the owls will be relocated to suitable habitat outside the project site in accordance with a burrowing owl exclusion and relocation plan developed in consultation with CDFW, and the burrow will be destroyed to prevent owls from reoccupying it. No burrowing owls will be excluded from occupied burrows until a burrowing owl exclusion and relocation plan is approved by CDFW. Passive relocation will be accomplished by installing one-way doors (e.g., modified dryer vents or other CDFW-approved method). The one-way doors will be left in place for a minimum of 3 days and will be monitored daily to verify that the one-way door stays in place and that at the end of the 3 days, the owls have left the burrow. The burrow will be excavated using hand tools, and a section of flexible plastic pipe (at least 3 inches in diameter) will be inserted into the burrow tunnel to maintain an escape route for any animals that may be inside the burrow. Following owl exclusion and burrow demolition, the site shall be monitored by a qualified biologist to ensure burrowing owls do not recolonize the site prior to construction. If active burrowing owl burrows are found on the site and are destroyed by project implementation, the project proponent shall mitigate the loss of occupied habitat in accordance with guidance provided in the CDFW 2012 Staff Report, which states that permanent impacts on nesting, occupied, and satellite burrows and on burrowing owl habitat shall be mitigated such that the habitat acreage, number of burrows, and active burrows affected are replaced through permanent conservation of comparable or better habitat with similar vegetation communities and burrowing mammals (e.g., ground squirrels) present to provide for nesting, foraging, wintering, and dispersal. The project proponent shall retain a qualified biologist to develop a burrowing owl	

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
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		mitigation and management plan to be provided to the Town of Apple Valley that incorporates the following goals and standards: ▶ Mitigation lands shall be selected based on comparison of the habitat lost to the compensatory habitat, including type and structure of habitat; disturbance levels; potential for conflicts with humans, pets, and other wildlife; density of burrowing owls; and relative importance of the habitat to the species rangewide. ▶ Mitigation lands shall be provided adjacent to or near the project site so that displaced owls can relocate with reduced risk of take. The feasibility of providing mitigation adjacent to or otherwise near the project site depends on the availability of sufficient suitable habitat to support displaced owls that may be preserved in perpetuity. ▶ If suitable habitat is not available for conservation adjacent to or otherwise near the project site, mitigation lands shall be focused on consolidating and enlarging conservation areas outside of urban and planned growth areas and within foraging distance of other conservation lands. Mitigation may be accomplished through purchase of mitigation credits at a CDFW-approved mitigation bank, if available. If mitigation credits are not available from an approved bank and mitigation lands are not available adjacent to other conservation lands, alternative mitigation sites and acreage shall be determined in consultation with CDFW. ▶ If mitigation is not available through an approved mitigation bank and will be completed through permittee-responsible conservation lands, the mitigation plan shall include mitigation objectives, site selection factors, site management roles and responsibilities, vegetation management goals, financial assurances and funding mechanisms, performance standards and success criteria, monitoring and reporting protocols, and adaptive management measures. Success shall be based on the number of adult burrowing owls and pairs using the site and whether the numbers are maintained over time. Measures of success, as suggested in the 2012 Staff Report, shall include site tenacity, the number of adult owls present and reproducing, colonization by burrowing owls from elsewhere, changes in distribution, and trends in stressors.	

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		Where this measure requires consultation with CDFW, the qualified biologist charged with such consultation shall satisfy the consultation requirements of this measure either where CDFW timely responds to such requests for consultation or where the qualified biologist has attempted to consult with CDFW but CDFW has failed to respond to such requests within 90 days of the placement of such requests. **Mitigation Measure 3.4-4b: Loggerhead Shrike, Bendire's thrasher, and other Nesting Birds** If ground disturbing activities are proposed during the general nesting bird season (February 1 through August 31), a pre-construction nesting bird survey shall be conducted by a qualified biologist within the project site and a 500-foot buffer around the project site. Surveys shall be conducted within 3 days prior to initiation of activities (or a new segment (i.e. outside of the 500-foot initial survey area) of the water main is to be started) and shall be conducted between dawn and noon. If construction activities lapse for more than two weeks during the breeding season, a follow up nesting bird survey shall be required. Follow-up surveys would only be required if there is a lapse of construction that lasts longer than two weeks or if construction is required along a new segment of the water main line that is outside of the 500-foot initial survey area. If no active nests are found, no further mitigation is required. If an active nest is detected during the nesting bird survey, avoidance buffers shall be implemented as determined by a qualified biologist. The buffer shall be of a distance to ensure avoidance of adverse effects to the nesting bird by accounting for topography, ambient conditions, species, nest location, and activity type. Monitoring of the nest by a qualified biologist during construction activities shall be required if the activity has the potential to adversely affect the nest. If construction activities cause the nesting bird to vocalize, make defensive flights at intruders, get up from a brooding position, or fly off the nest, then the no-disturbance buffer shall be increased until the agitated behavior ceases. The exclusionary buffer will remain in place until the chicks have fledged or as otherwise determined by a qualified biologist. **Mitigation Measure 3.4-4c: Light Spillage** Implement Mitigation Measure 3.4-3c.	

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
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Impact 3.4-5: Interfere with Wildlife Movement or Migration or Impede the Use of Nursery Sites While implementation of the project includes construction of new buildings and light sources, these features would occur within a previously disturbed site and immediately adjacent to Interstate 15. The project would also install an underground water main line, but it would not interfere with local wildlife movement in the area. This would be a less than significant impact.	LTS	No mitigation required.	LTS
Impact 3.4-6: Substantially Reduce the Habitat of a Fish or Wildlife Species, cause a Fish or Wildlife Population to Drop Below Self-Sustaining Levels, Threaten to Eliminate a Plant or Animal Community, Substantially Reduce the Number or Restrict the Range of a Rare or Endangered Plant or Animal While implementation of the project includes construction of new buildings and light sources, these features would occur within a previously disturbed site and immediately adjacent to Interstate 15. The project would also install an underground water main line, but it would not substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal. This would be a less than significant impact.	LTS	No mitigation required.	LTS
Energy			
Impact 3.5-1: Wasteful, Inefficient, or Unnecessary Consumption of Energy, During Project Construction or Operation Construction and operation of buildings and facilities associated with the project would result in consumption of fuel (gasoline and diesel), electricity, and natural gas. Energy consumption associated with construction would be temporary and would not require additional capacity or increased peak or base period demands for electricity or other forms of energy. Through adherence to and exceedance of current building code requirements, energy consumption associated with operation of the buildings and facilities would not result in wasteful, inefficient, or unnecessary consumption of energy. This impact would be less than significant.	LTS	No mitigation required.	LTS
Impact 3.5-2: Conflict with or obstruct renewable energy or energy efficiency plans Constructing and operating project buildings in compliance with the 2022 (or as updated) California Energy Code would improve energy efficiency compared to	PS	Refer to Mitigation Measure 3.7-1 under "Greenhouse Gas Emissions and Climate Change," and Mitigation Measure 3.14-1 under "Transportation."	LTS

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
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buildings built to earlier iterations of the code. Therefore, construction and operation of the project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency. This impact would be less than significant with mitigation.			
Geology and Soils			
Impact 3.6-1: Soil Erosion and Loss of Topsoil Project construction would involve clearing, hauling, and grading in areas where new structures would be built, and trenching and excavation for placement of the offsite water main line, utility connections, and underground storage tanks. These activities would temporarily expose soils to the effects of wind and water erosion. All demolition and construction activities would be required to comply with the CBC, which regulates grading and excavation. In addition, construction activities would be subject to the provisions of the General Construction Storm Water Permit, which includes the requirements for developing a SWPPP with erosion control measures. The potential for erosion of topsoil would be less than significant.	LTS	No mitigation required.	LTS
Greenhouse Gas Emissions and Climate Change			
Impact 3.7-1: Generate Greenhouse Gas Emissions, Either Directly or Indirectly, That May Have a Significant Impact on the Environment The project would result in GHG emissions from construction activities and operational activities including vehicle trips, area sources, electricity and natural gas consumption, water use and waste generation. However, combined construction and operational emissions would be far below the MDAQMD-recommended threshold. Therefore, the project would not have a significant impact on the environment, and this impact would be less than significant.	LTS	No mitigation required.	LTS
Impact 3.7-2: Conflict with an Applicable Plan, Policy or Regulation Adopted for the Purpose of Reducing the Emissions of Greenhouse Gases The project would be generally consistent with the Town of Apple Valley General Plan, the 2017 and 2022 Scoping Plan, and the Connect SoCal RTP/SCS. However, the project would be inconsistent with the Town of Apple Valley CAP because it would not implement relevant measures in the CAP. The implementation of Mitigation Measure 3.7-1 and 3.14-1 would ensure that sustainability measures and Class II bicycle facilities along the project's frontage to Stoddard Wells Road are	S	**Mitigation Measure 3.7-1: Include Sustainability Measures in Project Design** The project applicant shall implement the following measures during construction and project operations, subject to verification by the Town before construction permits are issued. ▶ Construction contractors shall use zero emission, near-zero emission, or alternative fueled equipment in lieu of traditional diesel-powered equipment, if such equipment is commercially available within 100 miles of the project site.	LTS

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
LTS = Less than significant PS = Potentially significant S = Significant SU = Significant and unavoidable			
included in the project design. With implementation of these mitigation measures, implementation of the project would be consistent with and not conflict with applicable plans, policies, or regulations, including the 2017 and 2022 Scoping Plan, the Town of Apple Valley General Plan, Town of Apple Valley CAP, and the Connect SoCal RTP/SCS. This impact would be less than significant with mitigation incorporated.		▶ Enroll in the Apple Valley Choice Energy (AVCE) Program, and "opt-up" to increased renewable content, or install on-site solar panels/photovoltaic systems sufficient to provide electric power and heat water within the project. ▶ Ensure that common areas, such as near retail entrances and in the fueling area, as well as throughout the RV park, include adequate bins for recycling of paper, cardboard, glass, plastics, and food waste. ▶ Implement onsite recycling.	
Hazards and Hazardous Materials			
Impact 3.8-1: Routine Transport, Use, or Disposal of Hazardous Materials The project would involve the routine transport, use, and disposal of hazardous materials during construction, as well as during fueling activities, vehicle maintenance, and landscaping and site maintenance. However, the project would include standard safety and spill prevention requirements for USTs and fuel storage areas; comply with applicable regulations related to the use, transport, storage, and sale of hazardous materials; and implement an HMBEP. Therefore, impacts associated the routine transport, use, and disposal of hazardous materials would be less than significant.	LTS	No mitigation required.	LTS
Impact 3.8-2: Accidental Release of Hazardous Materials Construction of the project would involve grading, excavation, and other ground-disturbing activities which could result in the accidental release of hazardous materials. No RECs were found on or near the project site during site observations or through the records search. However, it is possible that the project area could be affected by undocumented contamination that has not been characterized or remediated. Therefore, impacts would be potentially significant.	PS	**Mitigation Measure 3.8-2: Prepare and implement a hazardous materials management plan for onsite and offsite construction** Prior to issuance of grading permits, a construction hazardous materials management plan shall be prepared by the project proponent or the project proponent's contractor or construction manager. The plan shall be reviewed and approved by the Town of Apple Valley prior to any onsite or offsite project construction. The management plan shall include measures to reduce potential hazards to workers, the public, and the environment associated with use of hazardous materials and exposure to potentially contaminated soil during onsite and offsite project construction. The management plan shall include provisions for halting work, agency notification, managing impacted materials, sampling and analytical requirements and disposal procedures. Specifically, the construction hazardous materials management plan shall: ▶ describe the necessary actions to be taken if evidence of contaminated soil or groundwater is encountered during construction;	LTS

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
LTS = Less than significant PS = Potentially significant S = Significant SU = Significant and unavoidable			
		▶ describe the types of evidence that could indicate potential hazardous materials contamination, such as soil discoloration, petroleum or chemical odors, or buried building materials; ▶ include measures to protect worker safety if signs of contamination are encountered; ▶ identify sampling and analysis protocols for various substances that might be encountered; ▶ list required regulatory agency contacts if contamination is found; ▶ include recommendations on soil management in the event that aerially deposited lead is discovered in existing road right-of-way; ▶ identify legal and regulatory processes and thresholds for cleanup of contamination. ▶ include provisions for delineation, removal, and disposal of any contaminants identified as exceeding human health risk levels. ▶ require that the project contractor follow all procedural direction given by County Environmental Health Services Department to ensure that suspect soils are isolated, protected from runoff, and disposed of in accordance with the requirements of the licensed receiving facility.	
Impact 3.8-3: List of Hazardous Materials Sites The alignment of the offsite water main line is in proximity to a former firing range that is listed as a hazardous waste and substances site on the DTSC EnviroStor Database. Based on a Site Inspection Report completed for the property, no explosives or metals with concentrations that exceed human health screening criteria were detected in soil samples; however, the DTSC concluded that additional sampling is warranted. Although the water main line would be installed within the City's ROW in areas that have been previously disturbed, the potential for undocumented contamination to be present cannot be ruled out. Therefore, construction of the project would have potential to create a significant hazard to the public or the environment if undocumented contamination is encountered during ground-disturbing activities for the water main line. This impact would be potentially significant.	PS	**Mitigation Measure 3.8-3: Conduct a Phase I Environmental Site Assessment of the Water Main Line Alignment** Prior to construction of the water main line, the applicant shall retain a licensed Environmental Professional to conduct a Phase I Environmental Site Assessment (ESA) of the alignment along Stoddard Wells Road and Johnson Road in accordance with ASTM standards. The water service provider responsible for constructing the water main line shall be responsible for implementing the recommendations in the Phase I ESA, which may include completion of Phase II subsurface investigations or remedial actions if warranted. If recommended in the Phase I ESA, the applicant shall retain a licensed Ordnance Munitions and Explosives Professional to conduct a geophysical survey for military munitions and explosives of concern along the segment of the water main line alignment on Johnson Road between Dale Evans Parkway and Navajo Road. The survey shall be completed to professional ordnance hazard standards to the satisfaction of the Town of Apple Valley. If contamination is identified in connection with the former Victorville Precision Bombing Range (PBR) N-1 Formerly Used	LTS

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
LTS = Less than significant PS = Potentially significant S = Significant SU = Significant and unavoidable			
		Defense Site (FUDS), the water service provider shall be responsible for coordination with the Department of Toxic Substances Control (DTSC). The U.S. Army Corps of Engineers shall be responsible for conducting the appropriate response actions in to the requirements and satisfaction of DTSC. The response actions shall comply with the requirements of all legal authorities, which may include the Comprehensive Environmental Response, Compensation, and Liability Act; Defense Environmental Restoration Program; National Oil and Hazardous Substances Pollution Contingency Plan; and the Resources Conservation and Recovery Act.	
Impact 3.8-4: Emergency Response or Evacuation Plans Project construction activities could cause temporary lane closures on Stoddard Wells Road, which provides access to I-15, a potential evacuation route. Construction activities would comply with the provisions set forth in the California Fire Code. Additionally, the project proponent would be required to obtain an encroachment permit from the Town, which would require preparation and implementation of a traffic control plan for work performed within the public right-of-way. Compliance with these requirements would ensure that adequate emergency access is maintained throughout the construction period. Additionally, the project would be designed and maintained in accordance with applicable standards associated with vehicular access, such that interference with existing emergency response or evacuation plans would not occur during project operations. Therefore, the project would not impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan. This impact would be less than significant.	LTS	No mitigation required.	LTS
Hydrology and Water Quality			
Impact 3.9-1: Violation of Water Quality Standards or Waste Discharge Requirements or Degradation of Water Quality During Construction Construction of the project would require ground disturbance and the use of hazardous materials. These activities have the potential to degrade water quality through facilitating erosion or resulting in accidental spills of hazardous materials. However, project construction would include best management practices to ensure compliance with all applicable permit conditions and regulations governing the protection of water quality. Therefore, potential construction-related impacts on water quality would be less than significant.	LTS	No mitigation required.	LTS

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
LTS = Less than significant PS = Potentially significant S = Significant SU = Significant and unavoidable			
Impact 3.9-2: Violation of Water Quality Standards or Waste Discharge Requirements or Degradation of Water Quality During Operation The project would include storage and disposal of fuel and would generate oils, lubricants, heavy metals, and other water quality contaminants, which would be carried in stormwater runoff and could reach surface or groundwaters. Additionally, a fuel storage tank leak could result in the contamination of groundwater. However, the project incorporates water quality BMPs to reduce the potential for discharge and would comply with California underground storage tank regulations. Although these measures cannot eliminate the potential for adverse effects to water quality, they would reduce impacts to a less-than-significant level.	LTS	No mitigation required.	LTS
Impact 3.9-3: Decrease Groundwater Supplies or Interfere with Groundwater Recharge Liberty Utilities would have adequate groundwater supplies to meet the water demands of the project. The project would create new impervious surfaces, which could reduce the amount of precipitation that is able to infiltrate the soil and recharge groundwater reserves. However, the project's stormwater bioretention basins would preserve groundwater recharge on the site. Therefore, the project would have a less-than-significant impact on groundwater supplies and groundwater recharge.	LTS	No mitigation required.	LTS
Impact 3.9-4: Alter Existing Drainage Patterns The project would comply with the NPDES Construction General Permit, which would reduce potential for erosion, siltation, and polluted runoff during construction activities. Once operational, the project site would include landscaping and hardscaping to prevent long-term erosion and bioretention basins to collect and filter polluted runoff. Although the project would create new impervious surfaces, the project is designed to decrease the volume of storm water runoff and peak discharge from the existing pre-development condition. Therefore, the project would not result in flooding or exceed the capacity of stormwater drainage systems. Therefore, the project would have a less-than-significant impact related to the alteration of drainage patterns.	LTS	No mitigation required.	LTS

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
LTS = Less than significant PS = Potentially significant S = Significant SU = Significant and unavoidable			
Impact 3.9-5: Conflict with or Obstruct Implementation of Water Quality Control or Sustainable Groundwater Management Plans The project would comply with applicable permits and regulations governing water quality; therefore, construction and operational activities would not result in exceedances of any water quality objectives established for protecting the beneficial uses of receiving water bodies (i.e., Mojave River and Mojave groundwater basin), as established in the Basin Plan for the Lahontan Region. Although a sustainable groundwater management plan has not been adopted for the Upper Mojave Valley Groundwater Basin, the project includes stormwater bioretention basins to facilitate groundwater recharge. In addition, Liberty Utilities would have adequate groundwater supplies to meet the needs of the project. Therefore, the project would have a less-than-significant impact related to conflicting with or obstructing implementation of a water quality control plan or sustainable groundwater management plan.	LTS	No mitigation required.	LTS
Land Use and Planning			
Impact 3.10-1: Conflict with Applicable Land Use Plans, Policies, or Regulations Adopted for the Purpose of Avoiding or Mitigating an Environmental Effect The Town has determined that the project is consistent with the general plan and zoning land use designations. The applicant would obtain the necessary Town approvals and permits to ensure compatibility with the General Plan and zoning designations for the project site. Additionally, the project would be consistent with the goals and policies in the various elements of the Town's General Plan, which are intended to avoid or mitigate environmental effects. Therefore, this impact would be less than significant.	LTS	No mitigation required.	LTS
Noise and Vibration			
Impact 3.11-1: Short-Term Construction-Generated Noise Levels Short-term construction-generated noise levels associated with the project would not expose nearby noise-sensitive receptors to levels that exceed applicable local standards. Additionally, construction activity would occur Monday through Friday, during daytime hours during less noise-sensitive daytime hours. The change in noise from on- and off-site construction at the nearest sensitive receptor would be 1.1 dB and 14.1 dB, respectively. Therefore, the increase in noise levels during off-	S	**Mitigation Measure 3.11-1: Implement Measures to Reduce Exposure to Construction Noise During Off-Site Construction Activities** For all off-site outdoor construction activity that is to take place within 635 feet of the nearest noise sensitive receptor, and/or is anticipated to generate exterior noise levels above 53.6 dB L_{eq} (i.e., greater than a 5 dB increase above ambient noise levels), the construction contractor shall comply with the following measures: ▶ All construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in	SU

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
LTS = Less than significant PS = Potentially significant S = Significant SU = Significant and unavoidable			
site construction would exceed 5 dB at the nearest sensitive receptor. Therefore, this impact would be significant.		accordance with manufacturers' recommendations. Equipment engine shrouds shall be closed during equipment operation. ▶ Construction equipment with back-up alarms shall be equipped with either audible self-adjusting backup alarms or alarms that only sound when an object is detected. Self-adjusting backup alarms shall automatically adjust to 5 dBA over the surrounding background levels. All non-self-adjusting backup alarms shall be set to the lowest setting required to be audible above the surrounding noise levels. ▶ Locate any trailers and materials used during off-site construction capable of breaking the line of sight between the noise-sensitive receptors and construction-noise generating equipment such that they would serve as noise barriers in order to protect noise-sensitive receptors from noise generated by off-site construction activity. ▶ Install temporary noise curtains as close as possible to the noise-generating activity such that the curtains obstruct the direct line of sight between the noise-generating construction activity and the nearby sensitive receptors. Temporary noise curtains shall consist of durable, flexible composite material featuring a noise barrier layer bounded to sound-absorptive material on one side. The noise barrier layer shall consist of rugged, impervious, material with a surface weight of at least one pound per square foot. ▶ Noise-reducing enclosures and techniques shall be used around stationary noise-generating equipment (e.g., concrete mixers, generators, compressors). ▶ Operate heavy-duty construction equipment at the lowest operating power possible.	
Impact 3.11-2: Expose Sensitive Receptors to Substantial Traffic-Noise Increases The project would increase traffic on the surrounding roadway network; however, the increase in traffic noise would not surpass the applicable FTA incremental increase threshold at any nearby noise sensitive receptor. Additionally, implementation of the project would not result in an exceedance of the California Building Code Title 24 interior noise standard (i.e., 45 Ldn) at any nearby noise sensitive receptor. Therefore, the project would not expose sensitive receptors to substantial traffic noise increases. This impact would be less than significant.	LTS	No mitigation required.	LTS

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
LTS = Less than significant PS = Potentially significant S = Significant SU = Significant and unavoidable			
Impact 3.11-3: Intermittent Single-Event Noise Levels from Trucks Intermittent single-event noise levels (SENL) from project-generated truck trips at off-site sensitive receptors during the more noise-sensitive hours would not exceed 65 SENL. Therefore, the percentage of people expected to be awakened when inside the affected homes would not exceed 5 percent. This impact would be a less than significant.	LTS	No mitigation required.	LTS
Impact 3.11-4: Expose Noise-Sensitive Land Uses to Operational Stationary and On-Site Noise That Exceeds Applicable Standards Activity related to heavy vehicle operation on-site and the parking area would increase ambient noise levels in the vicinity of the project site. The exterior noise level at the nearest sensitive receptor would not exceed the Town's most stringent noise standard of 40 dB L_{eq} during nighttime hours. Additionally, noise levels at the nearest sensitive receptor would increase by no more than .5 dB due to activity associated with the parking area and RV park. Thus, this impact would be less than significant.	LTS	No mitigation required.	LTS
Population and Housing			
Impact 3.12-1: Induce Substantial Unplanned Population Growth Because the project would not introduce new homes and would create employment opportunities that would be sourced from the local workforce, the project is not expected to induce substantial unplanned population growth. This impact would be less than significant.	LTS	No mitigation required.	LTS
Public Services and Recreation			
Impact 3.13-1: Result in Substantial Adverse Impacts from the Expansion or Construction of New Fire Protection Facilities Because the project would adhere to all applicable standards and fire codes and would not adversely impact existing fire response and performance, implementation of the project would not necessitate the construction of new or expanded fire service facilities within the Town of Apple Valley. This impact is therefore considered less than significant.	LTS	No mitigation required.	LTS

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
LTS = Less than significant PS = Potentially significant S = Significant SU = Significant and unavoidable			
Impact 3.13-2: Result in Substantial Adverse Impacts from the Expansion or Construction of New Police Protection Facilities The project would not result in an increased need for police protection services or facilities, the construction or expansion of which could have physical effects on the environment. Therefore, this impact is considered less than significant.	LTS	No mitigation required.	LTS
Transportation			
Impact 3.14-1: Conflict with a Program, Plan, Ordinance or Policy Addressing the Circulation System, Including Transit, Roadway, Bicycle and Pedestrian Facilities The project would not alter or conflict with any existing or planned transit facilities or conflict with the general plan policy or program as there are no existing, planned, or programmed transit services or facilities in the immediate vicinity of the project site. The project would include internal pathways and circulation for pedestrians navigating the project site. However, the General Plan and County Non-Motorized Transportation Plan include proposed Class II bicycle facilities along Stoddard Wells Road and the project, as currently designed, does not include the implementation of any such bicycle facilities along its frontage. The implementation of Mitigation Measure 4.12-1 would ensure that Class II bicycle facilities along the project's frontage to Stoddard Wells Road are provided as established in local plans. Therefore, the impact would be less than significant with mitigation incorporated.	S	**Mitigation Measure 3.14-1: Include Class II bicycle facilities along Stoddard Wells Road** The project applicant shall construct Class II bicycle facilities along the project site's southern frontage along Stoddard Wells Road as identified in the General Plan and San Bernardino County Non-Motorized Transportation Plan. The Class II bicycle facilities shall be incorporated into project site plan and subsequent engineering plans and designed in accordance with Town standards. The Class II bicycle facilities along the project frontage shall be painted green for high visibility due to its close proximity to the freeway. The bicycle improvements shall be subject to review by Town staff to ensure all requirements are met related to design and safety during construction and operations.	LTS
Impact 3.14-2: Conflict or be Inconsistent with CEQA Guidelines Section 15064.3, Subdivision (b) Regarding Vehicle Miles Traveled The project is not anticipated to substantially increase VMT under construction and operational scenarios. Construction personnel do not generate new trips. Rather, they are redistributed throughout the region and construction activity is short-term and temporary. Additionally, the land uses proposed on the project site would result in trips primarily consisting of diverted trips only traveling 0.5 mile. Thus, the overall VMT per service population would be much closer to 0.5 than to the Town of Apple Valley General Plan Buildout VMT per service population. For these reasons, the project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3, and the impact would be less than significant.	LTS	No mitigation required.	LTS

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
LTS = Less than significant PS = Potentially significant S = Significant SU = Significant and unavoidable			
Impact 3.14-3: Substantially Increase Hazards due to a Design Feature or Incompatible Uses The project would be required to comply with Town safety standards during construction of on- and off-site improvements. Additionally, the project is subject to review by Town staff to ensure appropriate traffic handling during construction, and that design standards are met to minimize any potential hazards related to the transportation circulation network. For these reasons, the project would not substantially increase hazards due to a design feature or incompatible uses, and the impact would be less than significant.	LTS	No mitigation required.	LTS
Impact 3.14-4: Result in Inadequate Emergency Access The project would be required to meet the Town's design standards, which include width requirements to allow for emergency vehicles to access and navigate the project site via driveways, internal circulation, and turnaround points. The project is subject to Town staff and applicable emergency service agency review to ensure all relevant standards are met during construction and operation. Additionally, provisions set forth in the California Fire Code must be followed, which include allowing for continuous emergency access during construction and requiring that particular design standards are followed to guarantee the project would remain in compliance in case of an event where emergency personnel would need to respond. For these reasons, the project would not result in inadequate emergency access, and the impact would be less than significant.	LTS	No mitigation required.	LTS
Utilities and Service Systems			
Impact 3.15-1: Relocation or Construction of New or Expanded Facilities The project would require the construction of a new offsite water main line, stormwater drainage features, transformers, and connections to existing utility facilities and infrastructure to serve the new development. Impacts associated with the proposed utility infrastructure are evaluated and disclosed in Sections 3.1 through 3.16 of this EIR. Most impacts associated with constructing the proposed utility infrastructure would be less than significant or reduced to less-than-significant levels with mitigation; however, construction noise levels at the nearest-noise sensitive receptor would exceed 5 decibels. Therefore, this impact would be significant.	S	Refer to Mitigation Measure 3.11-1 under "Noise."	SU

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
LTS = Less than significant PS = Potentially significant S = Significant SU = Significant and unavoidable			
Impact 3.15-2: Sufficient Water Supplies The project would result in increased water demand of approximately 30 acre-feet per year. The project site would be served by Liberty Utilities, which would be able to obtain water rights for the project upon payment of a supplemental water acquisition fee and supply facility fee. Therefore, Liberty Utilities would have sufficient water supplies to accommodate the project's water demand. Impacts would be less than significant.	LTS	No mitigation required.	LTS
Impact 3.15-3: Adequate Capacity of the Wastewater Treatment Provider The project would result in increased wastewater flows of approximately 22,609 gpd. The project site would be served by the Victor Valley Regional Wastewater Treatment Plant, which has sufficient capacity to accommodate up to 7.3 mgd of additional wastewater. Therefore, the facility would have adequate capacity to accommodate the project's wastewater demand. Impacts would be less than significant.	LTS	No mitigation required.	LTS
Impact 3.15-4: Impacts on Solid Waste Implementation of the project would incrementally increase solid waste generation at the project site. However, adequate waste services and landfill capacity would be available to accommodate solid waste generated by the project. Impacts would be less than significant.	LTS	No mitigation required.	LTS

Table ES-2 Summary of Environmental Impacts of the Alternatives Relative to the Project

Impacts	Project	Alternative 1: No Project – No Development Alternative	Alternative 2: No RV Park Alternative	Alternative 3: Reduced RV Park Alternative
Aesthetics				
Impact 3.1-1: Have a substantial adverse effect on a scenic vista	Less than Significant	Less	Less	Less
Impact 3.1-2: Substantially degrade the existing visual character or quality of the site on its surroundings	Less than Significant	Less	Less	Less
Impact 3.1-3: Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area	Less than Significant	Less	Less	Less
Air Quality				
Impact 3.2-1: Conflict with or Obstruct Implementation of the Applicable Air Quality Plan	Less than Significant	Less	Less	Less
Impact 3.2-2: Construction Emissions of Criteria Air Pollutants and Ozone Precursors	Less than Significant	Less	Less	Less
Impact 3.2-3: Operational Emissions of Criteria Air Pollutants and Ozone Precursors	Less than Significant	Less	Less	Less
Impact 3.2-4: Expose Sensitive Receptors to Substantial Pollutant Concentrations	Less than Significant	Less	Less	Less
Impact 3.3-5: Exposure of sensitive receptors to other emissions (including odors)	Less than Significant	Less	Less	Less
Archaeological, Historical, and Tribal Cultural Resources				
Impact 3.3-1: Cause a Substantial Adverse Change in the Significance of Unique Archaeological Resources	Less than Significant with Mitigation	Less	Similar	Similar
Impact 3.3-2: Cause a Substantial Adverse Change in the Significance of a Tribal Cultural Resource	Less than Significant with Mitigation	Less	Similar	Similar
Impact 3.3-3: Disturb Human Remains	Less than Significant	Less	Similar	Similar
Biological Resources				
Impact 3.4-1: Disturbance and Loss of State or Federally Protected Wetlands and Waters	Less than Significant with Mitigation	Less	Less	Similar

Impacts	Project	Alternative 1: No Project – No Development Alternative	Alternative 2: No RV Park Alternative	Alternative 3: Reduced RV Park Alternative
Impact 3.4-2: Have a Substantial Adverse Effect, Either Directly or Through Habitat Modifications, on Special-Status Plants	Less than Significant with Mitigation	Less	Less	Similar
Impact 3.5-3: Have a Substantial Adverse Effect, Either Directly or Through Habitat Modifications, on Special-Status Reptiles	Less than Significant with Mitigation	Less	Less	Similar
Impact 3.5-4: Have a Substantial Adverse Effect, Either Directly or Through Habitat Modifications, on Special-Status Birds	Less than Significant with Mitigation	Less	Less	Similar
Impact 3.5-5: Interfere with Wildlife Movement or Migration or Impede the Use of Nursery Sites	Less than Significant	Less	Similar	Similar
Impact 3.5-6: Substantially Reduce the Habitat of a Fish or Wildlife Species, cause a Fish or Wildlife Population to Drop Below Self-Sustaining Levels, Threaten to Eliminate a Plant or Animal Community, Substantially Reduce the Number or Restrict the Range of a Rare or Endangered Plant or Animal	Less than Significant	Less	Similar	Similar
Energy				
Impact 3.5-1: Wasteful, Inefficient, or Unnecessary Consumption of Energy, During Project Construction or Operation	Less than Significant	Less	Less	Less
Impact 3.5-2: Conflict with or obstruct renewable energy or energy efficiency plans	Less than Significant with Mitigation	Less	Similar	Similar
Geology and Soils				
Impact 3.7-1: Soil erosion and loss of topsoil	Less than Significant	Less	Less	Less
Greenhouse Gas Emissions and Climate Change				
Impact 3.7-1: Generate Greenhouse Gas Emissions, Either Directly or Indirectly, That May Have a Significant Impact on the Environment	Less than Significant	Less	Less	Less
Impact 3.7-2: Conflict with an Applicable Plan, Policy or Regulation Adopted for the Purpose of Reducing the Emissions of Greenhouse Gases	Less than Significant with Mitigation	Less	Similar	Similar
Hazards and Hazardous Materials				
Impact 3.8-1: Routine transport, use, or disposal of hazardous materials	Less than Significant	Less	Similar	Similar

Impacts	Project	Alternative 1: No Project – No Development Alternative	Alternative 2: No RV Park Alternative	Alternative 3: Reduced RV Park Alternative
Impact 3.8-2: Accidental release of hazardous materials	Less than Significant with Mitigation	Less	Similar	Similar
Impact 3.8-3: List of Hazardous Materials Sites	Less than Significant with Mitigation	Less	Similar	Similar
Impact 3.8-4: Emergency response or evacuation plans	Less than Significant	Less	Similar	Similar
Hydrology and Water Quality				
Impact 3.9-1: Violation of Water Quality Standards or Waste Discharge Requirements or Degradation of Water Quality During Construction	Less than Significant	Less	Less	Less
Impact 3.9-2: Violation of Water Quality Standards or Waste Discharge Requirements or Degradation of Water Quality During Operation	Less than Significant	Less	Less	Less
Impact 3.9-3: Decrease Groundwater Supplies or Interfere with Groundwater Recharge	Less than Significant	Less	Less	Less
Impact 3.9-4: Alter Existing Drainage Patterns	Less than Significant	Less	Less	Less
Impact 3.9-5: Conflict with or Obstruct Implementation of Water Quality Control or Sustainable Groundwater Management Plans	Less than Significant	Less	Less	Less
Land Use and Planning				
Impact 3.10-1: Conflict with applicable land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect	Less than Significant	Less	Similar	Similar
Noise and Vibration				
Impact 3.11-1: Short-term construction-generated noise levels	Significant and Unavoidable	Less	Similar	Similar
Impact 3.11-2: Expose sensitive receptors to substantial traffic-noise increases	Less than Significant	Less	Less	Less
Impact 3.11-3: Intermittent single-event noise levels from trucks	Less than Significant	Less	Less	Less
Impact 3.11-4: Long-term operational stationary and on-site noise	Less than Significant	Less	Less	Less

Impacts	Project	Alternative 1: No Project – No Development Alternative	Alternative 2: No RV Park Alternative	Alternative 3: Reduced RV Park Alternative
Population and Housing				
Impact 3.12-1: Induce substantial unplanned population growth	Less than Significant	Less	Similar	Similar
Public Services and Recreation				
Impact 3.13-1: Result in substantial adverse impacts from the expansion or construction of new fire protection facilities	Less than Significant	Less	Similar	Similar
Impact 3.13-2: Result in substantial adverse impacts from the expansion or construction of new police protection facilities	Less than Significant	Less	Similar	Similar
Transportation				
Impact 3.14-1: Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities	Less than Significant with Mitigation	Less	Similar	Similar
Impact 3.14-2: Conflict or be Inconsistent with CEQA Guidelines Section 15064.3, Subdivision (b) Regarding Vehicle Miles Traveled	Less than Significant	Less	Less	Less
Impact 3.14-3: Substantially Increase Hazards due to a Design Feature or Incompatible Uses	Less than Significant	Less	Similar	Similar
Impact 3.14-4: Result in inadequate emergency access	Less than Significant	Less	Similar	Similar
Utilities and Service Systems				
Impact 3.15-1: Relocation or Construction of New or Expanded Facilities	Significant and Unavoidable	Less	Similar	Similar
Impact 3.15-2: Sufficient Water Supplies	Less than Significant	Less	Less	Less
Impact 3.15-3: Adequate Capacity of the Wastewater Treatment Provider	Less than Significant	Less	Less	Less
Impact 3.15-4: Impacts on Solid Waste	Less than Significant	Less	Less	Less

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1 INTRODUCTION

This draft environmental impact report (Draft EIR) evaluates the environmental impacts of the proposed Apple Valley I-15 Travel Center. This Draft EIR has been prepared under the direction of the Town of Apple Valley (Town) in accordance with the requirements of the California Environmental Quality Act (CEQA) (Public Resources Code [PRC] Section 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations, Title 14, Section 15000 et seq.). This chapter of the Draft EIR provides information on the following:

- project requiring environmental analysis (synopsis);
- type, purpose, and intended uses of the Draft EIR;
- scope of the Draft EIR;
- agency roles and responsibilities; and
- standard terminology.

1.1 PROJECT REQUIRING ENVIRONMENTAL ANALYSIS

The following is a synopsis of the project characteristics. For further information on the proposed project, see Chapter 3, "Project Description." The applicant is proposing to construct and operate a full-service travel center and recreational vehicle (RV) park (project) on approximately 33.52 acres of vacant land in the northwest portion of the Town of Apple Valley (project site). On the western portion of the project site, the travel center would provide professional truck drivers and motorists with 24-hour access to purchase gasoline, diesel fuel, propane, electronics, snacks, travel items, and fast-food restaurant offerings. A truck maintenance building, dog park, RV dump station, stormwater basins, truck and automobile parking areas and landscaping/lighting are also proposed. The eastern portion of the project site would include an RV park, which would consist of a convenience store, automobile and overnight RV parking with utility hookups, recreational amenities, and landscaping/lighting. Project visitors/customers would include "over-the-road" trucks (i.e., professional long-haul drivers who are on the road for consecutive days or weeks at a time), local residents, and traveling motorists.

1.2 PURPOSE AND INTENDED USES OF THIS DRAFT EIR

According to CEQA, preparation of an EIR is required whenever it can be fairly argued, based on substantial evidence, that a proposed project may result in one or more significant environmental impacts. An EIR is an informational document used to inform public agency decision makers and the general public of the significant environmental impacts of a project, identify possible ways to minimize the significant impacts, and describe reasonable alternatives to the project that could feasibly attain most of the basic objectives of the project while substantially lessening or avoiding any of the significant environmental impacts. Public agency decision makers are required to consider the information presented in the EIR when determining whether to approve a project. This Draft EIR has been prepared to meet the requirements of a project EIR as defined by Section 15161 of the State CEQA Guidelines. A project EIR focuses on the changes in the physical environment that would result from the implementation of a project, including its planning, construction, and operation. Unlike a program EIR, which would typically focus on "broad policy alternatives and programwide mitigation measures" at an early stage of the planning process, with the expectation that more refined environmental documents might follow for future, more concrete development proposals (see State CEQA Guidelines Section 15168), a project EIR is intended to fully and completely address the environmental impacts of a specific proposed development project, so that no further environmental analysis would be required for additional regulatory approvals following approval of the project, absent conditions requiring a subsequent EIR, a supplement to the EIR, or an addendum. (See State CEQA Guidelines Sections 15162–15164.)

1.3 SCOPE OF THIS DRAFT EIR

This Draft EIR includes an evaluation of the following 15 environmental issue areas as well as other CEQA-mandated issues (e.g., cumulative impacts, growth-inducing impacts, significant unavoidable impacts, alternatives):

- Aesthetics,
- Air Quality,
- Archaeological, Historical, and Tribal Cultural Resources,
- Biological Resources,
- Energy,
- Geology, Soils, and Mineral Resources,
- Greenhouse Gas Emissions and Climate Change,
- Hazards and Hazardous Materials,
- Hydrology and Water Quality,
- Land Use and Planning,
- Noise and Vibration,
- Population and Housing,
- Public Services and Recreation,
- Transportation, and
- Utilities and Service Systems.

Under the CEQA statutes and the State CEQA Guidelines, a lead agency may limit an EIR's discussion of environmental effects when such effects are not considered potentially significant (PRC Section 21002.1[e]; State CEQA Guidelines Sections 15128, 15143). Information used to determine which impacts would be potentially significant was derived from review of the project; review of applicable planning documents and CEQA documentation; field work; feedback from public and agency consultation; and comments received on the Notice of Preparation (NOP) (see Appendix A of this Draft EIR).

As explained in the NOP, impacts related to Agriculture and Forestry Resources and Wildfire are not anticipated and were therefore excluded from discussion in the EIR for the following reasons.

- *Agriculture and Forestry Resources*: The project site is zoned Regional Commercial and is currently vacant. There are no agricultural lands (including lands classified by the California Natural Resources Agency as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance) or forest lands within or in proximity the project site (California Department of Conservation 2016). Therefore, no impacts on agriculture and forestry resources are anticipated, and this topic will not be discussed further in the EIR.
- *Wildfire*: The project site and vicinity are within a local responsibility area that is classified as a Non-Very High Fire Hazard Severity Zone (VHFHSZ) by the California Department of Forestry and Fire Protection (CAL FIRE 2008). There are no lands within the Town that are classified as state responsibility areas or VHFHSZs. Therefore, no impacts related to wildfire are anticipated, and this topic will not be discussed further in the EIR.

The NOP was distributed on December 3, 2021, to responsible agencies, interested parties, and organizations, as well as private organizations and individuals that may have an interest in the project. The purpose of the NOP was to provide notification that an EIR for the project was being prepared and to solicit input on the scope and content of the environmental document. As a result of the review of existing information and the scoping process, it was determined that each of the issue areas listed above should be evaluated fully in this Draft EIR. Further information on the NOP and scoping process is provided below in Section 1.5, "Public Review Process."

1.4 AGENCY ROLES AND RESPONSIBILITIES

1.4.1 Lead Agency

The Town is the lead agency responsible for approving and carrying out the project and for ensuring that the requirements of CEQA have been met. After the EIR public-review process is complete, the Town Planning Commission will determine whether to certify the EIR (see State CEQA Guidelines Section 15090) and approve the project.

1.4.2 Trustee and Responsible Agencies

A trustee agency is a State agency that has jurisdiction by law over natural resources that are held in trust for the people of the State of California. The only trustee agency that has jurisdiction over resources potentially affected by the project is the California Department of Fish and Wildlife (CDFW).

Responsible agencies are public agencies, other than the lead agency, that have discretionary approval responsibility for reviewing, carrying out, or approving elements of a project. Responsible agencies should participate in the lead agency's CEQA process, review the lead agency's CEQA document, and use the document when making a decision on project elements. Agencies that may have responsibility for, or jurisdiction over, the implementation of elements of the project include the following:

STATE AGENCIES

- California Department of Transportation – Issuance of an Encroachment Permit

REGIONAL AND LOCAL AGENCIES

- Lahontan Regional Water Quality Control Board (Region 6) – Issuance of a National Pollutant Discharge Elimination System construction stormwater permit
- Mojave Desert Air Quality Management District – Issuance of Permit to Construct/Operate

1.4.3 Required Permits and Approvals

Table 1-1 includes a summary of the permits and approvals that would be required for the proposed project. Based on the outcome of biological surveys, additional permits and approvals may be required. These permits and approvals may include incidental take permits from the CDFW (if State-listed plant species are identified and avoidance is infeasible), ministerial permits from the Town of Apple Valley, and other related authorizations.

Table 1-1 Required Project Permits and Approvals

Agency	Permit/Approval	Description	Project Component		
			Travel Center	RV Park	Offsite Water Main Line
Lahontan Regional Water Quality Control Board (Region 6)	National Pollutant Discharge Elimination System construction stormwater permit (Notice of Intent to proceed under General Construction Permit)	Permit for construction and demolition activities (e.g., clearing, grubbing, or excavation) that result in the disturbance of one or more acres of land. The project would involve disturbance of 33.52 acres to construct the travel center and RV park. Additional ground disturbance would be required for the offsite water main line along the 19,460-foot alignment.	X	X	X
Town of Apple Valley	Final EIR certification	Required for discretionary projects proposed to be carried out or approved by public agencies.	X	X	X
	Tentative Parcel Map	Map that confers a subdivision right to proceed with development. This subdivision map would be required to allow the development of the travel center and RV park.	X	X	
	Conditional Use Permit	Permit that allows development under a certain set of conditions. Permit that allows a parcel of land or property to be used in a manner that deviates from existing zoning regulations and ordinances in an area. This permit would be required to construct the drive-through restaurant, fuel dispensing stations, and the truck maintenance facility in the travel center.	X		
	Development Permit	Permit authorizing a development. This permit would be required to allow the development of the travel center and RV park.	X	X	X
	Reimbursement Agreement	Agreement to expedite reimbursed expenses incurred by the project applicant for construction of the offsite water main line with project sales tax proceeds.			X
Mojave Desert Air Quality Management District	Permit to Construct/Operate	Permit for activities that involve operating or using equipment.	X	X	X

1.5 PUBLIC REVIEW PROCESS

As identified above in Section 1.3, "Scope of this Draft EIR," in accordance with CEQA regulations, an NOP was distributed on December 3, 2021, to responsible agencies, interested parties and organizations, and private organizations and individuals that could have interest in the project. The NOP was available at the San Bernardino County Library at 14901 Dale Evans Parkway and at Apple Valley Town Hall at 14955 Dale Evans Parkway, and online at the following website: https://www.applevalley.org/services/planning-division/environmental.

The purpose of the NOP was to provide notification that an EIR for the project was being prepared and to solicit input on the scope and content of the document. The NOP is included in Appendix A of this Draft EIR.

This Draft EIR is being circulated for public review and comment for a period of 45 days. During this period, comments from the general public as well as organizations and agencies on environmental issues may be submitted to the lead agency.

Upon completion of the public review and comment period, a Final EIR will be prepared. It will include written comments on the Draft EIR received during the public-review period, any transcribed oral comments received at the public meeting on the Draft EIR, responses to significant environmental issues raised in those comments, and any revisions to the Draft EIR made in response to public comments. The Draft EIR and Final EIR will comprise the EIR for the project.

Before approving the project, the Town's decision-making body will be required to certify that the EIR has been completed in compliance with CEQA, that the decision-making body reviewed and considered the information in the EIR, and that the EIR reflects the Town's independent judgment.

1.6 DRAFT EIR ORGANIZATION

This Draft EIR is organized into chapters, as identified and briefly described below. Chapters are further divided into sections (e.g., Chapter 3, "Environmental Impacts and Mitigation Measures" and Section 3.5, "Energy"):

The "Executive Summary": This chapter introduces the project; provides a summary of the environmental review process, effects found not to be significant, and key environmental issues; and lists significant impacts and mitigation measures to reduce significant impacts to less-than-significant levels.

Chapter 1, "Introduction": This chapter provides a description of the lead and responsible agencies, the legal authority and purpose for the document, and the public review process.

Chapter 2, "Project Description": This chapter describes the location, background, and goals and objectives for the project, and describes the project elements in detail.

Chapter 3, "Environmental Impacts and Mitigation Measures": The sections within this chapter evaluate the expected environmental impacts generated by the project, arranged by subject area (e.g., Land Use, Hydrology and Water Quality). Within each subsection of Chapter 3, the regulatory background, existing conditions, analysis methodology, and thresholds of significance are described. The anticipated changes to the existing conditions after development of the project are then evaluated for each subject area. For any significant or potentially significant impact that would result from project implementation, mitigation measures are presented and the level of impact significance after mitigation is identified. Environmental impacts are numbered sequentially within each section (e.g., Impact 3.2-1, Impact 3.2-2, etc.). Any required mitigation measures are numbered to correspond to the impact numbering; therefore, the mitigation measure for Impact 3.2-2 would be Mitigation Measure 3.2-2.

Chapter 4, "Cumulative Impacts": This chapter provides information required by CEQA regarding cumulative impacts that would result from implementation of the project together with other past, present, and probable future projects.

Chapter 5, "Alternatives": This chapter evaluates alternatives to the project, including alternatives considered but eliminated from further consideration, the No Project Alternative, and two alternative development options. The environmentally superior alternative is identified.

Chapter 6, "Other CEQA Sections": This chapter evaluates growth-inducing impacts and irreversible and irretrievable commitment of resources, and discloses any significant and unavoidable adverse impacts.

Chapter 7, "Report Preparers": This chapter identifies the preparers of the document.

Chapter 8, "References": This chapter identifies the organizations and persons consulted during preparation of this Draft EIR and the documents and individuals used as sources for the analysis.

1.7 STANDARD TERMINOLOGY

This Draft EIR uses the following standard terminology:

"No impact" means no change from existing conditions (no mitigation is needed).

"Less-than-significant impact" means no substantial adverse change in the physical environment (no mitigation is needed).

"Potentially significant impact" means an impact that might cause a substantial adverse change in the environment (mitigation is recommended because potentially significant impacts are treated as significant). For example, with respect to cultural resources, a project impact may be potentially significant if ground disturbance is not certain to, but has the potential to result in the unanticipated discovery of buried archaeological resources.

"Significant impact" means an impact that would cause a substantial adverse change in the physical environment (mitigation is recommended). For example, with respect to noise, a project impact would be significant if construction activities are anticipated to generate a substantial increase in noise levels at a sensitive noise receptor.

"Significant and unavoidable impact" means an impact that would cause a substantial adverse change in the physical environment and that cannot be avoided, even with the implementation of all feasible mitigation.

2 PROJECT DESCRIPTION

2.1 PROJECT OVERVIEW, BACKGROUND, AND NEED

The applicant is proposing to construct and operate a full-service travel center and recreational vehicle (RV) park (project) on approximately 33.52 acres of vacant land in the northwest portion of the Town of Apple Valley (project site) (Figure 2-1). The project site encompasses Assessor's Parcel Number (APN) 0472-222-10-0000, located immediately east of Interstate 15 (I-15) and north of Stoddard Wells Road (Figure 2-2). Existing and future truck and vehicular traffic on I-15 (a major north-south interstate highway connecting southern California to Las Vegas, Nevada) is anticipated to generate substantial demand for the proposed travel center facilities and services.

The project would include construction of Traveler's Way, a new roadway that would bisect the project site. The western portion of the project site would consist of the travel center, which would provide professional truck drivers and motorists with 24-hour access to purchase gasoline, diesel fuel, propane, truck and automobile parking, electronics, snacks, travel items, and fast-food restaurant offerings. A truck maintenance building, dog park, RV dump station, stormwater basins, truck parking areas, and landscaping/lighting are also proposed. The eastern portion of the project site would consist of an RV park, which would provide overnight parking and hookups for RVs. The RV park would also include recreational amenities and a main building with a convenience store, laundry room, bathrooms, and showers. An approximately 19,460-linear-foot water main line extension from 3.5 miles northeast of the project site may be required to serve the project's water needs.

Project visitors/customers would include "over-the-road" trucks (i.e., professional long-haul drivers who are on the road for consecutive days or weeks at a time), local residents, and traveling motorists. Primary access to the project site would be provided from the I-15 freeway ramps at Stoddard Wells Road and a proposed roadway (Traveler's Way) connecting to Stoddard Wells Road.

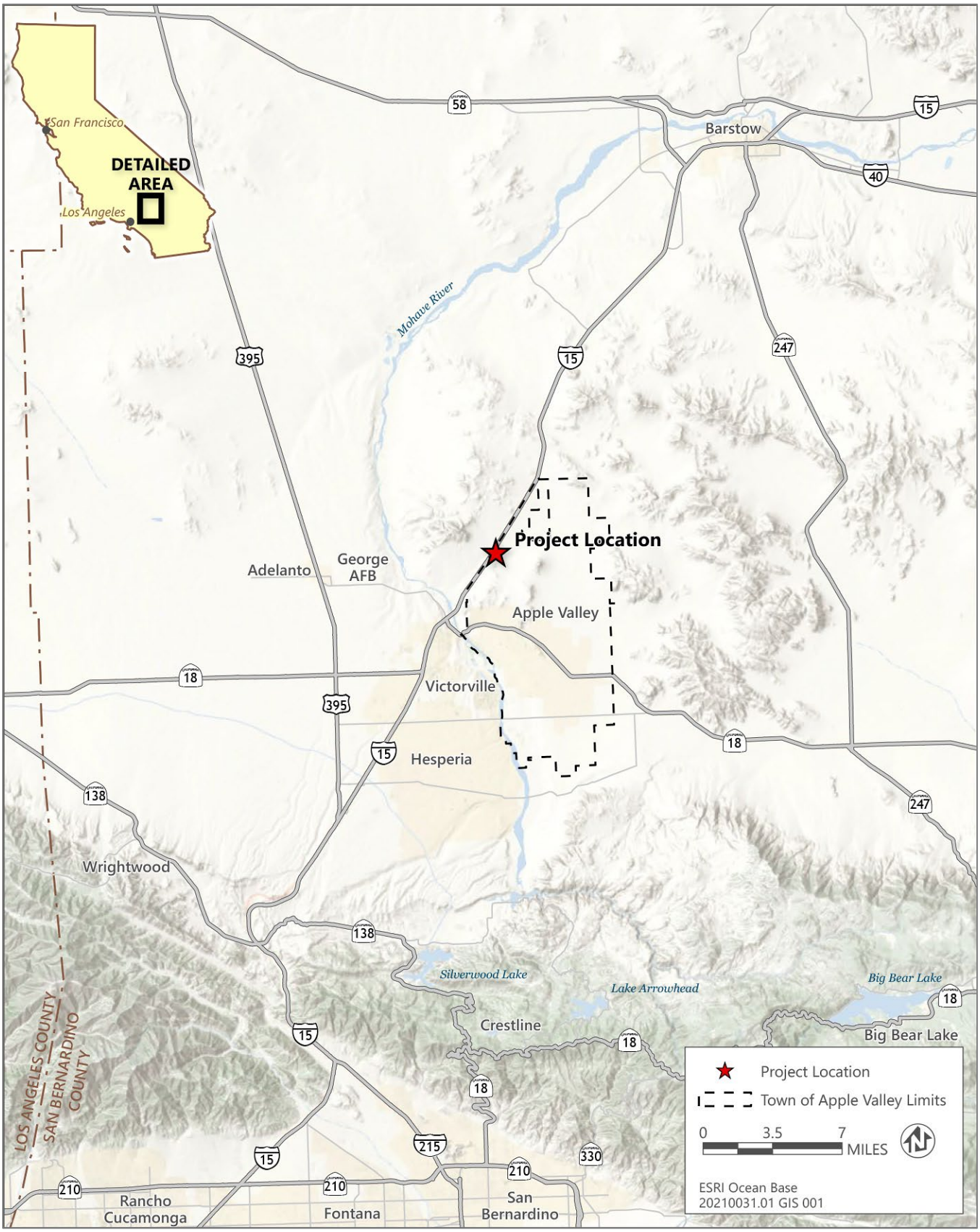
The proposed project would discharge stormwater to proposed stormwater basins and an existing drainage wash. Proposed project grading would also implement stormwater control/drainage and water quality features to prevent drainage and water quality impacts, which include temporary earthen diversion channels, detention/retention and water quality basins, and standard best management practices.

2.2 PROJECT LOCATION AND EXISTING SITE CONDITIONS

The Town of Apple Valley is located in western San Bernardino County, north of city of Hesperia and east of the city of Victorville. The project site is surrounded by primarily vacant land, with the Victorville Landfill located approximately 0.5 mile west of the project site across from I-15 and along Stoddard Wells Road. Other proximal land uses include the Walmart and Big Lots! logistics/distribution centers approximately 2.8 miles east of the project site, and the Apple Valley airport located approximately 3.8 miles southeast of the project site.

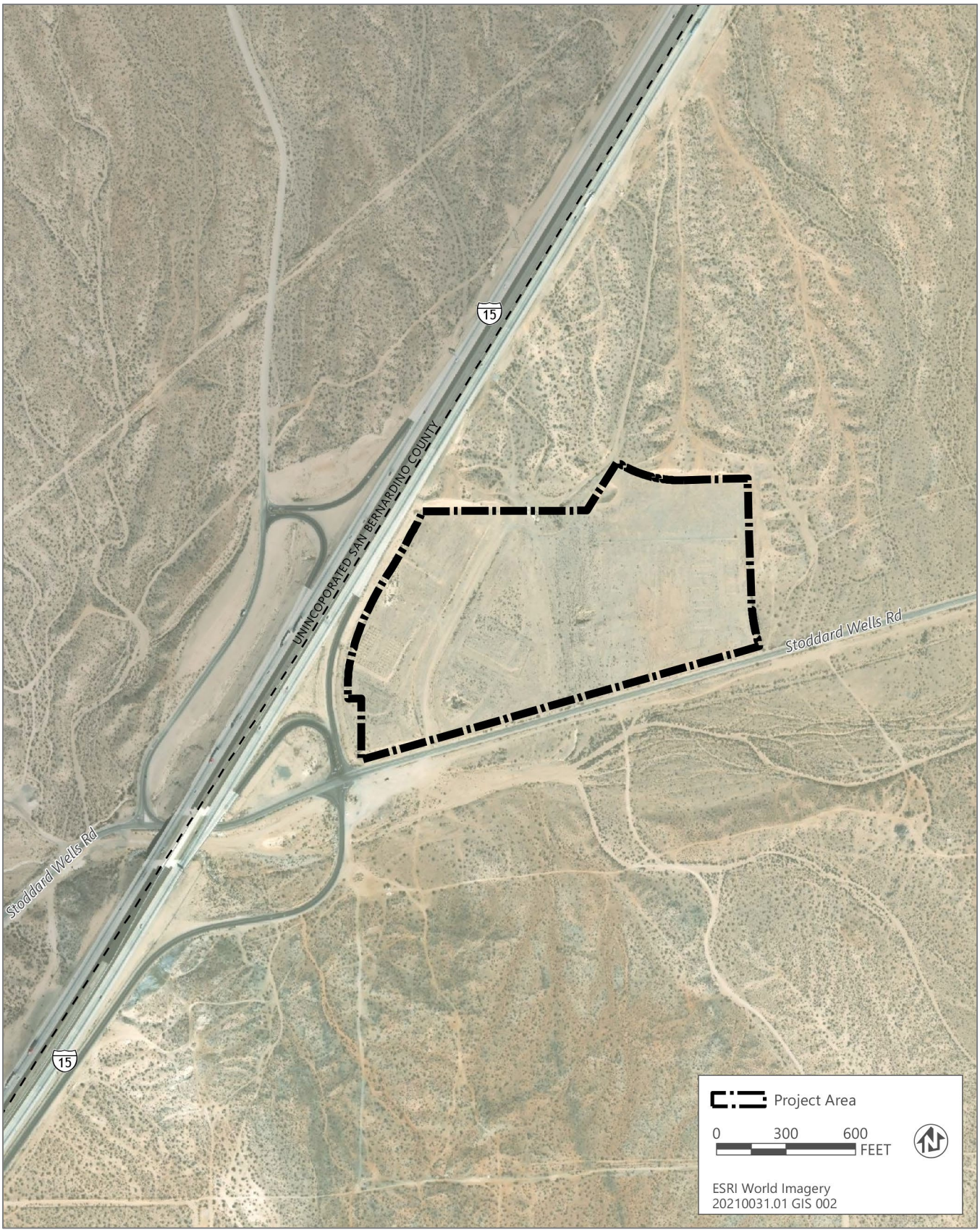
The project site is encumbered by Parcel Map 114/78-80 and consists of highly disturbed, generally flat land that has been previously affected by mass grading operations and off highway vehicle use. Before the incorporation of the Town of Apple Valley in 1988, the project site had been the subject of previous entitlement actions by San Bernardino County. The previously approved project resulted in the construction of underground infrastructure utility improvements, including stormwater pipes and fire hydrant risers, which were abandoned and never completed. The completed grading created a mega-pad that slopes at a two percent grade from north to south. Site elevations range from 2,900 feet above mean sea level (AMSL) to 2,925 feet AMSL. The project site drains in a southerly direction to Bell Mountain Wash, which ultimately drains southwest to the Mojave River. An existing 64-foot storm drain easement with three 60-inch storm drains bisect the project site. The project site consists of scattered low-lying shrubs and ruderal vegetation and contains no natural or native vegetation communities.

The alignment for the proposed water main line would be within roadway right-of-way of Stoddard Wells Road and Johnson Road (Figure 2-3). The segments of these roadways consist of an approximately 22-foot-wide two-lane paved roadway with approximately 5 to 6 inches of conventional asphalt with unimproved dirt shoulders.



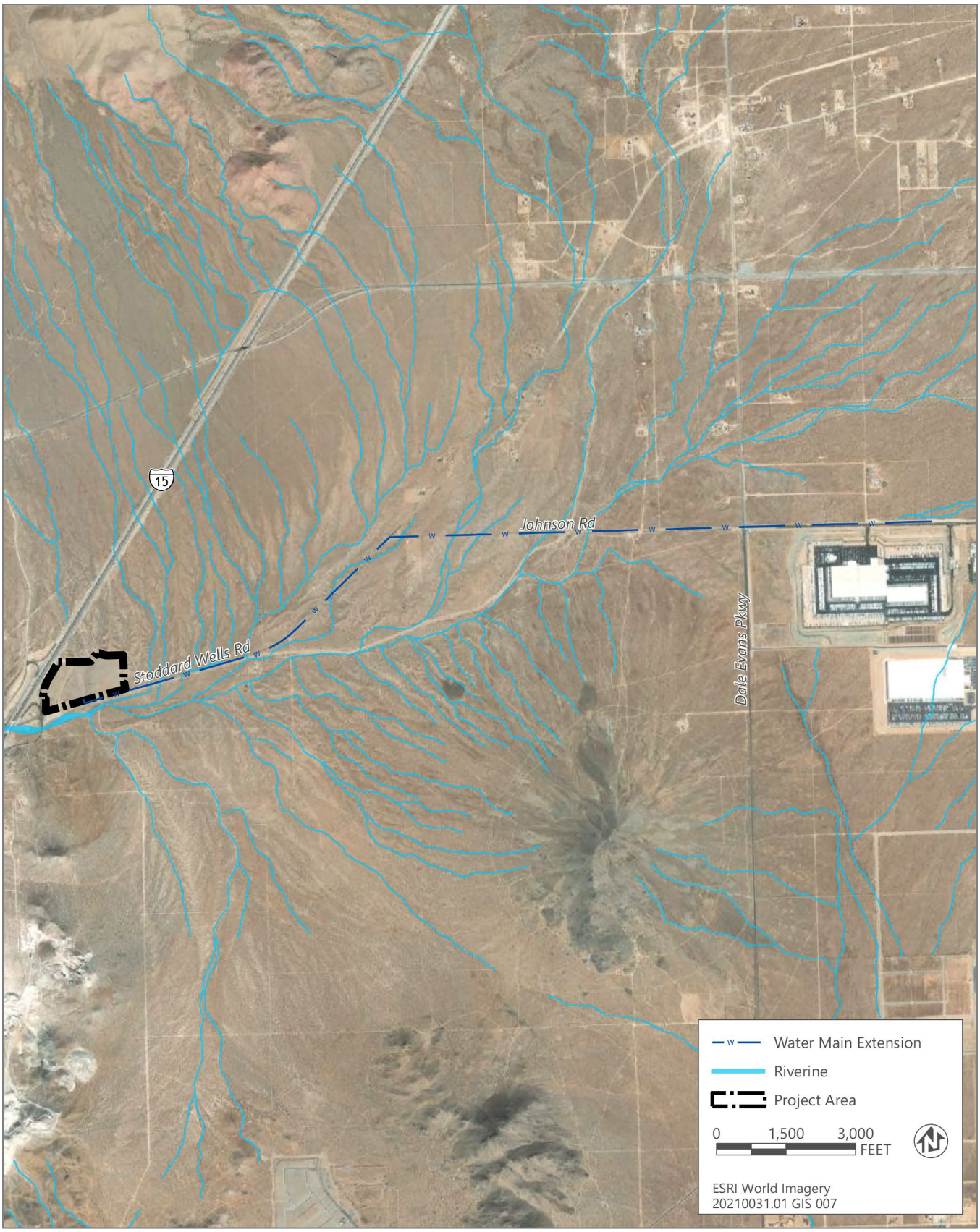
Source: Data downloaded from ESRI in 2021 and adapted by Ascent Environmental in 2021.

Figure 2-1 Regional Location Map



Source: Data downloaded from ESRI in 2021 and adapted by Ascent Environmental in 2021.

Figure 2-2 Vicinity Map



Sources: Data downloaded from NWI in 2020 and adapted by Ascent Environmental in 2021.

Figure 2-3 Water Main Extension

2.3 PROJECT OBJECTIVES

Consistent with CEQA Guidelines Section 15124(b), a clear statement of the objectives and underlying purpose of the project shall be disclosed in the Draft EIR. The underlying purpose of the project is to develop a regional travel center and related commercial land uses on Regional Commercial (C-R)-designated land within the Town of Apple Valley that is consistent with Town General Plan policies and zoning. A subdivision map is proposed to create the 33.52-acre project parcel. This underlying purpose, in turn, gives rise to the following project objectives:

- Create a high-quality travel center commercial development along I-15, a major interstate transportation corridor.
- Develop a property of sufficient size to create a regional travel center that would accommodate a truck and auto fuel dispensing area, convenience store, fast-food restaurant, truck parking and maintenance services, RV park, and recreational amenities.
- Construct a travel center facility near a major freeway onramp/offramp to minimize truck and automobile movements, vehicle miles traveled, and associated air pollutant and greenhouse gas emissions and traffic noise on local streets.
- Assist the Town of Apple Valley with meeting its economic development goals, as set forth in its General Plan.
- Maximize tax revenue to the Town of Apple Valley.
- Provide employment opportunities for residents of Apple Valley and surrounding areas.
- Construct a facility with proximal access to adequate existing or anticipated utility infrastructure to support planned operations.
- Provide minimal stay, full-service RV accommodations for the public traveling to and from destinations along Interstate 15 and Stoddard Wells Road.

2.4 PROJECT CHARACTERISTICS

The proposed project includes a full-service travel center and RV park that would provide professional truck drivers and motorists with 24-hour access to purchase gasoline, diesel and hydrogen fuel, propane, truck/automobile/RV parking, electronics, snacks, travel items, and fast-food restaurant offerings. It is anticipated that cut and fill for finish grading would be balanced onsite. Retaining walls may be constructed as part of the proposed project. The project applicant is proposing to lease various portions of the project site to future tenants on a long-term basis, once entitled. A Tentative Parcel Map (7955) is proposed to create individual legal lots for the travel center and the RV park. The complete project site is shown in Figure 2-2.

Project characteristics and design features associated with the travel center on the western portion of the project site are listed below and summarized in the following sections:

- an 8-position passenger vehicle fueling station;
- a 10-position truck fueling station;
- an electric vehicle charging station;
- a 9,659 square-foot (SF) convenience store;
- a 3,043 fast food restaurant;
- a 13,786 SF truck maintenance building with 80-kilowatt direct current rooftop solar system;
- up to two transformers (approximately 150 to 300 kilo-volt-amperes);
- a dog park;
- a truck scale;
- one 30,000-gallon below ground gasoline storage tank, including fuel delivery parking;
- one two-compartment combined high octane gasoline/diesel tank;
- one 20,000-gallon diesel exhaust fluid storage tank;
- truck (102 spaces) and automobile (81 spaces) parking – 183 total parking spaces;
- onsite lighting, consisting of high-mast LED fixtures and LED canopy lighting;
- high-rise freeway oriented signage, street signage, and other directional signage;
- landscaping, hardscaping, pavement, and fencing;

- an RV dump station;
- a 1,000-gallon propane tank;
- eight 12,000-gallon above-ground and below ground diesel storage tanks, including fuel delivery parking;
- a 200,000-gallon fire water supply storage tank; and
- five stormwater quality basins/features

Project characteristics and design features associated with the RV park on the eastern portion of the project site are listed below and summarized in the following sections:

- a 3,250 SF main building with a convenience store, laundry room, bathrooms, and showers;
- automobile (8 spaces) and overnight RV (80 spaces) parking with utility hookups – 88 total parking spaces;
- a 1,000-gallon propane tank;
- an 80,000 SF bioretention area;
- recreational amenities, including pergolas/gazebos, cornhole courts, pickleball courts, splash pad, horseshoe courts, shuffleboard courts, basketball court, dog park, picnic tables, fire pits, and walking paths;
- onsite lighting, consisting of high-mast LED fixtures and LED canopy lighting; and
- landscaping, hardscaping, pavement, and fencing.

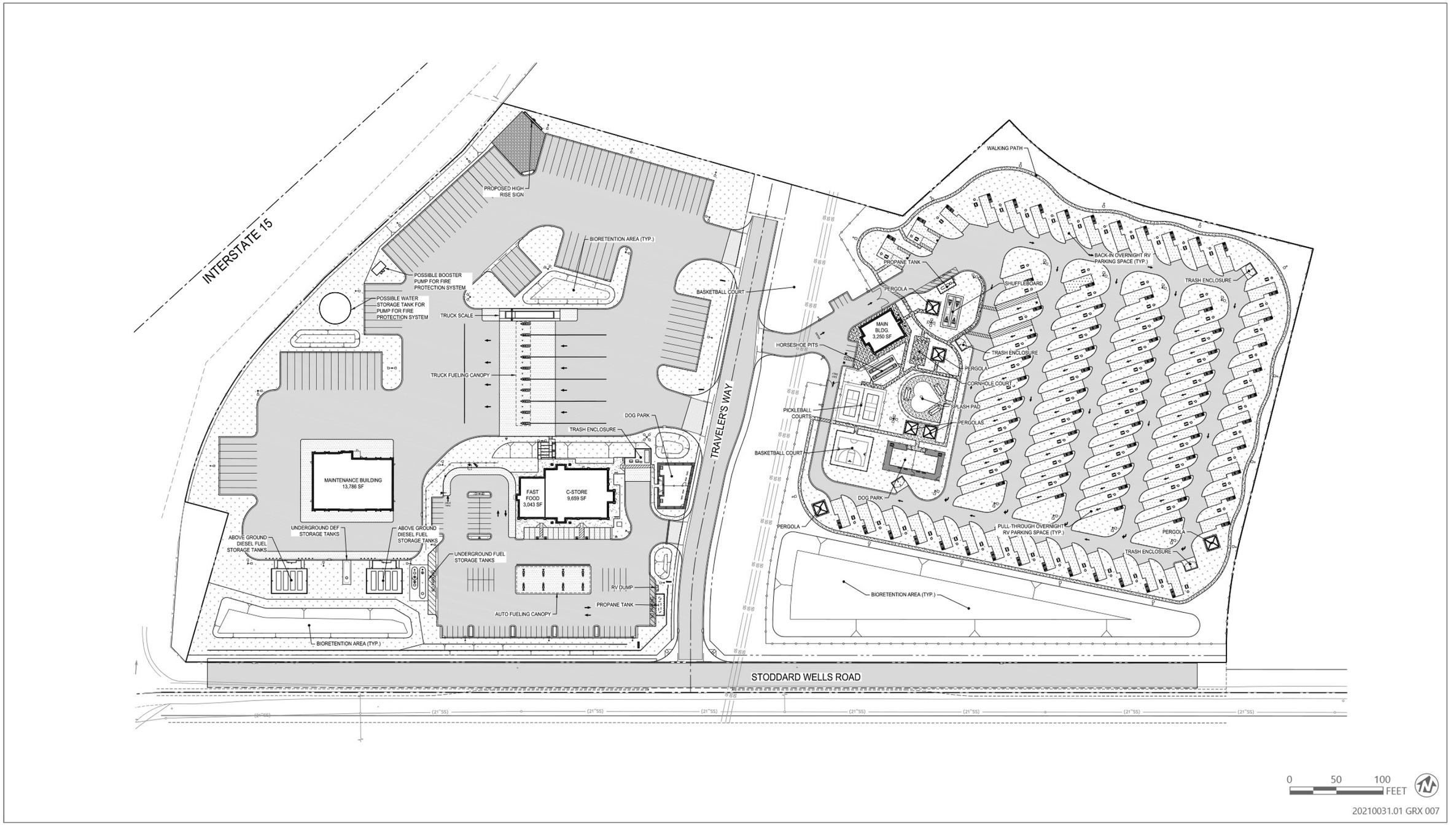
The overall site plan is shown on Figure 2-4, with a close-up of the travel center on Figure 2-5 and a close-up of the RV park on Figure 2-6. Building elevations for the travel center are shown on Figure 2-7. The floor plan for the truck maintenance building is shown on Figure 2-8 and the building elevations are shown on Figure 2-9. The floor plan for the main building in the RV park is shown on Figure 2-10 and the exterior design of the building is shown on Figure 2-11.

Table 2-1 provides a summary of the proposed uses.

Table 2-1 Summary of Proposed Land Uses

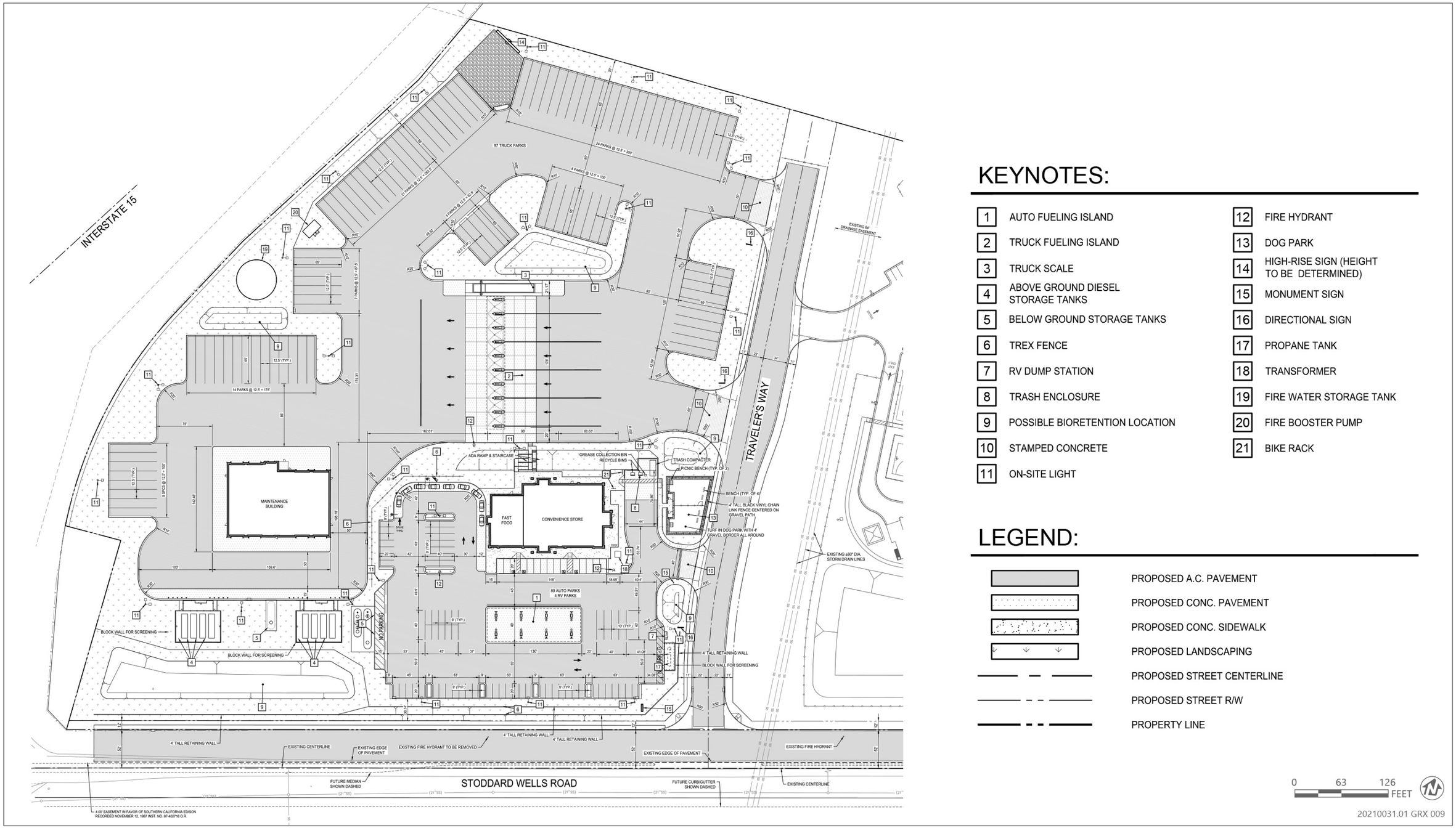
	Floor Area/Square Feet	Parking		
		Auto	Truck	Overnight RV
Travel Center				
Convenience Store	9,659	42	58	--
Fast-Food Restaurant (w/drive-through)	3,043	39	32	--
Truck Maintenance/Tire Building	13,786	--	12	--
Pavement/Parking	350,000	--	--	--
RV Park				
Main Building	3,250	8	--	--
Pavement/Parking	786,000	--	--	80
Total	**1,165,738**	**89**	**102**	**80**

Source: Information provided by project applicant and compiled by Ascent Environmental in 2021.



Source: Image produced by Lane Engineers, Inc. in 2021, adapted by Ascent Environmental in 2021.

Figure 2-4 Overall Site Plan



KEYNOTES:

1	AUTO FUELING ISLAND	12	FIRE HYDRANT
2	TRUCK FUELING ISLAND	13	DOG PARK
3	TRUCK SCALE	14	HIGH-RISE SIGN (HEIGHT TO BE DETERMINED)
4	ABOVE GROUND DIESEL STORAGE TANKS	15	MONUMENT SIGN
5	BELOW GROUND STORAGE TANKS	16	DIRECTIONAL SIGN
6	TREX FENCE	17	PROPANE TANK
7	RV DUMP STATION	18	TRANSFORMER
8	TRASH ENCLOSURE	19	FIRE WATER STORAGE TANK
9	POSSIBLE BIORETENTION LOCATION	20	FIRE BOOSTER PUMP
10	STAMPED CONCRETE	21	BIKE RACK
11	ON-SITE LIGHT		

LEGEND:

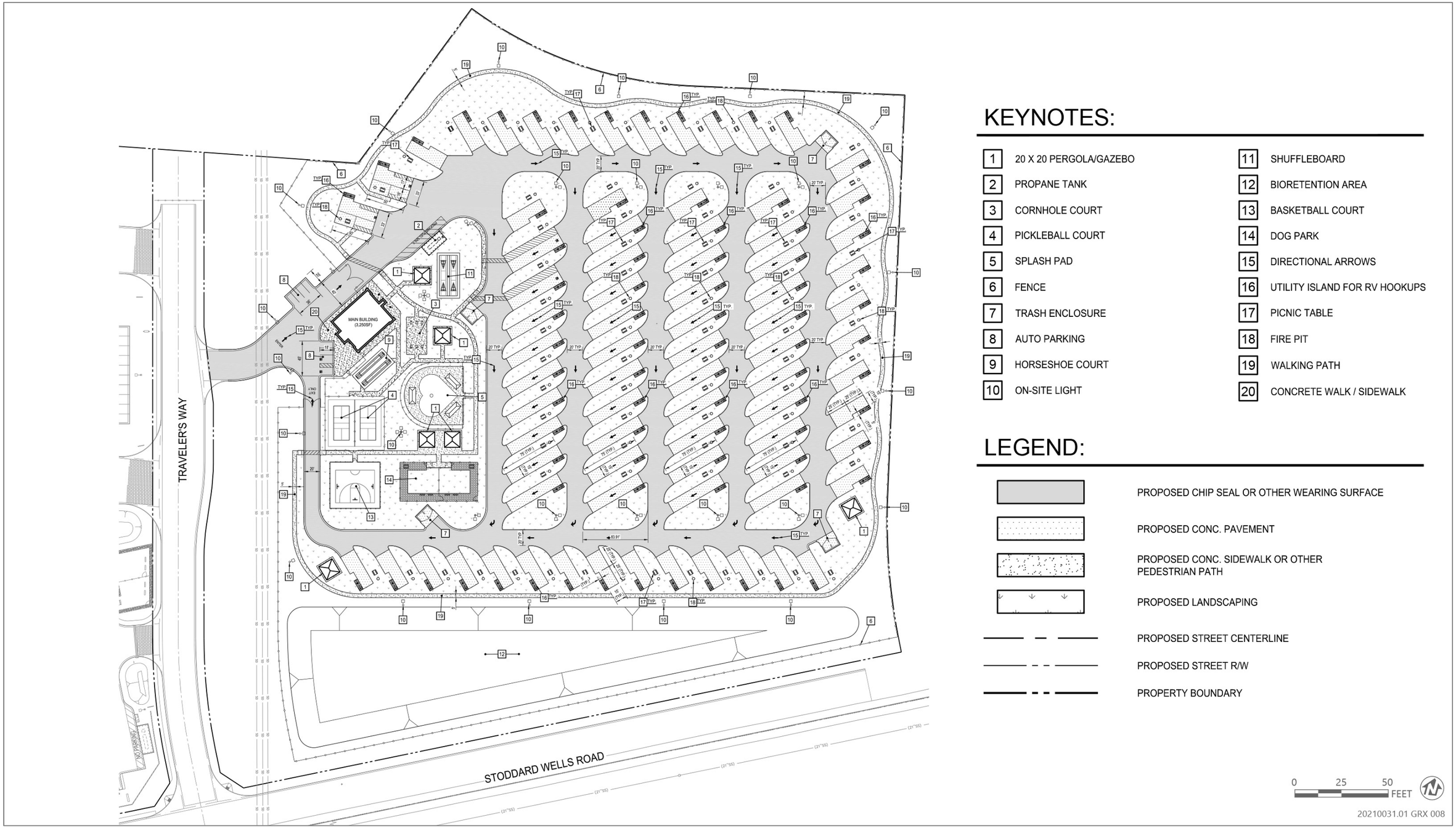
- PROPOSED A.C. PAVEMENT
- PROPOSED CONC. PAVEMENT
- PROPOSED CONC. SIDEWALK
- PROPOSED LANDSCAPING
- PROPOSED STREET CENTERLINE
- PROPOSED STREET R/W
- PROPERTY LINE

0 63 126 FEET

20210031.01 GRX 009

Source: Image produced by Lane Engineers, Inc. in 2021, adapted by Ascent Environmental in 2021.

Figure 2-5 Travel Center Site Plan



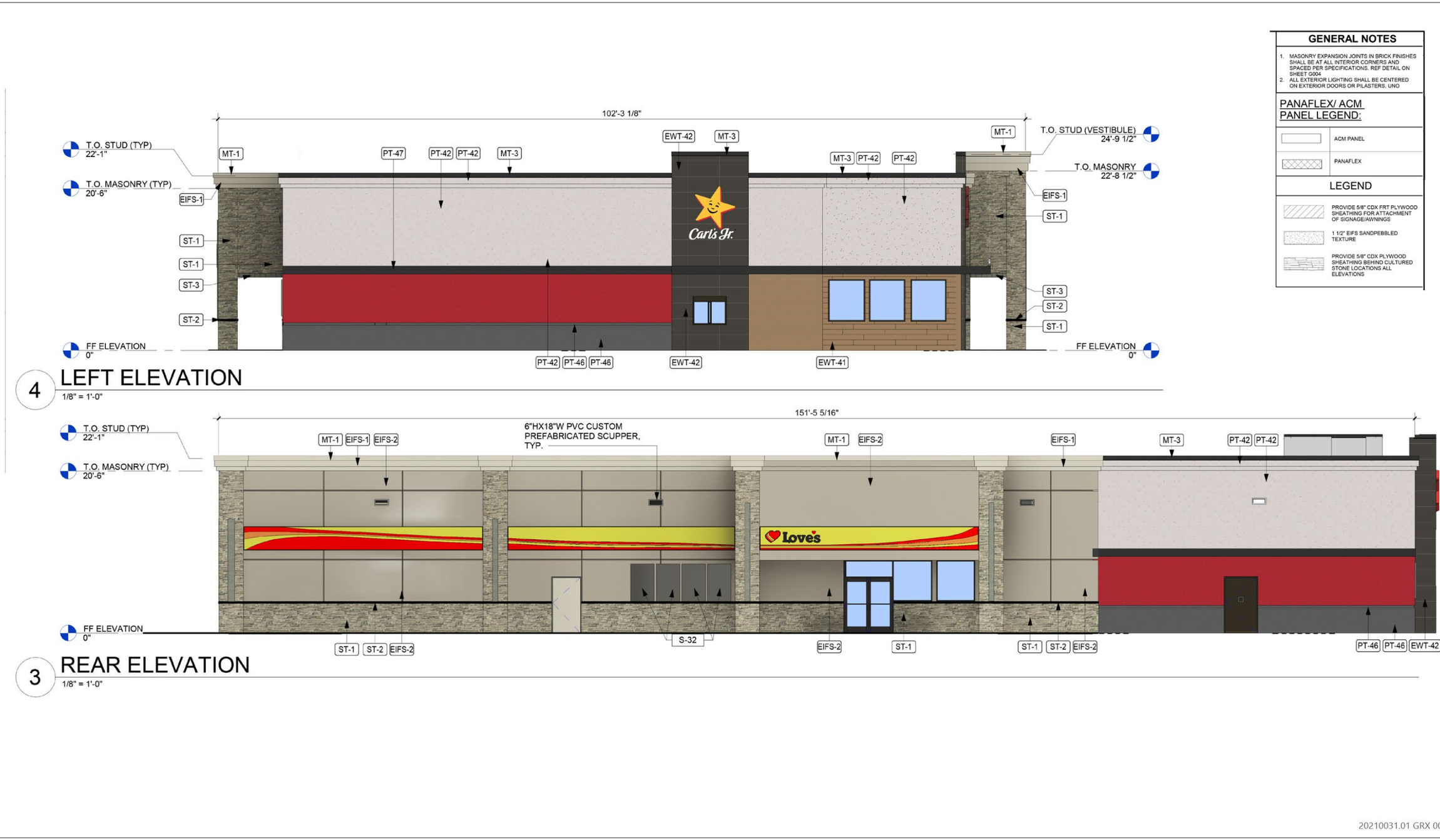
Source: Image produced by Lane Engineers, Inc. in 2021, adapted by Ascent Environmental in 2021.

Figure 2-6 RV Park Site Plan



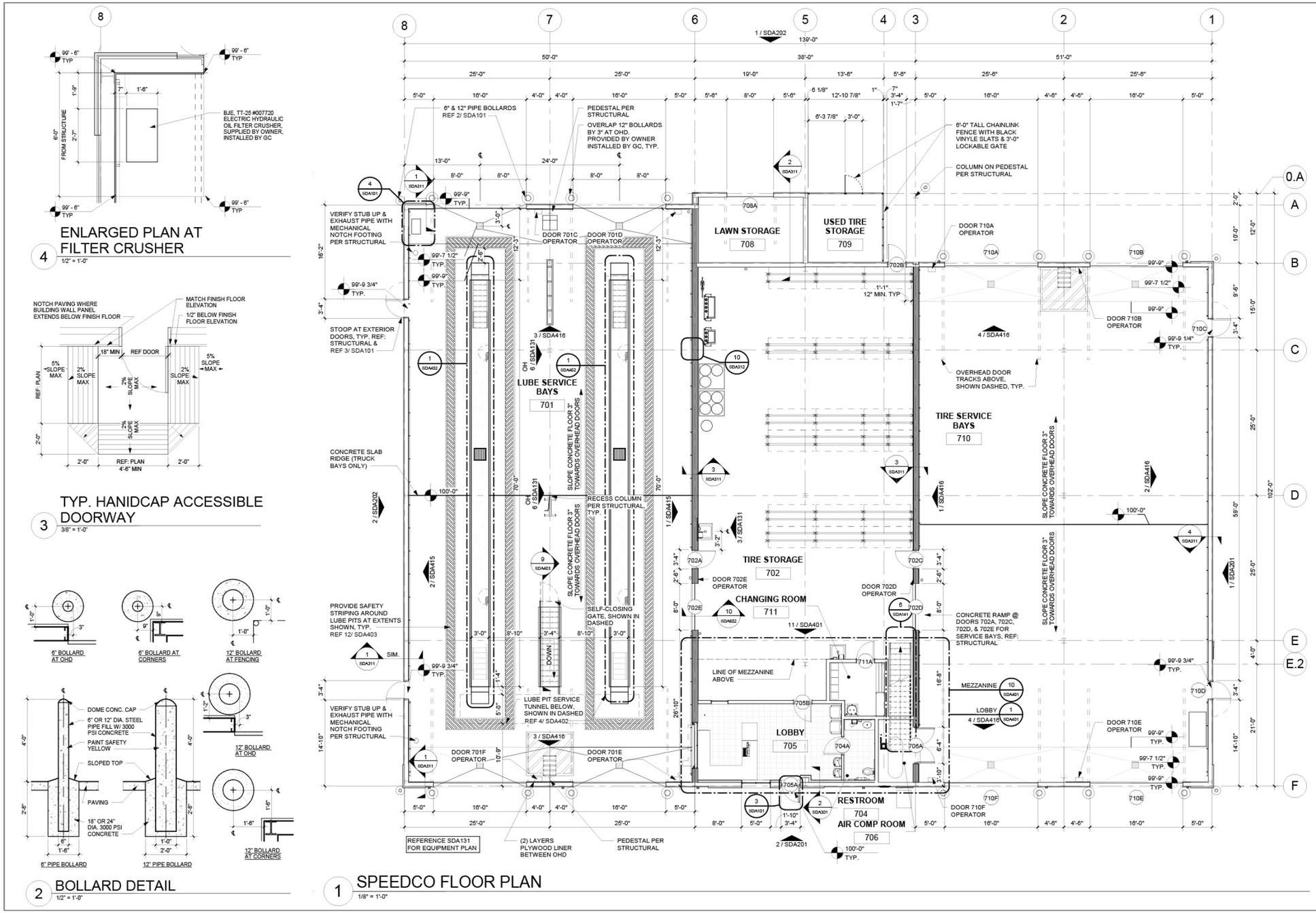
Source: Image produced by Harrison French & Associates, LTD. in 2020 adapted by Ascent Environmental in 2021.

Figure 2-7a Travel Center Building Elevations



Source: Image produced by Harrison French & Associates, LTD. in 2021, adapted by Ascent Environmental in 2021.

Figure 2-7b Travel Center Building Elevations



GENERAL NOTES

1. METAL BUILDING SUPPLIER TO PROVIDE A CONTINUOUS WALL GIRT LOCATED 54" AFF AT ALL WALLS.
2. METAL BUILDING SUPPLIER TO PROVIDE ALL NICHIHA PRE-FINISHED METAL TRIM.
3. ALL METAL BUILDING PRE-FINISHED METAL TRIM, GUTTERS, AND DOWNSPOUTS TO BE GALLERY BLUE.
4. ALL OUTSIDE METAL WALL PANELS TO BE REVERSED METAL WALL PANELS. REF 5/ SDA312
5. METAL BUILDING SUPPLIER TO PROVIDE CONTINUOUS ANGLES @ BASE OF WALLS FOR EXTERIOR WALL PANELS & INTERIOR (PLYWOOD) PANELS.
6. METAL BUILDING SUPPLIER TO PROVIDE ALL BATT INSULATION. REF 1/ SDA311
   A. BATT INSULATION AT INTERIOR PARTITIONS AND BELOW MEZZANINE BY GC
7. GC SHALL PAINT ALL BOLLARDS TO BE SAFETY YELLOW. PMS 2-1-7-C
8. METAL BUILDING SUPPLIER TO PROVIDE VERTICAL RED STEEL FRAMING ALONG ALL DOOR JAMBS & HORIZONTAL RED STEEL FRAMING ALONG ALL DOOR HEADS.
9. PRE-ENGINEERED METAL BUILDING PROVIDED BY OWNER.
10. AUTOMATIC FIRE VENTS PROVIDED BY METAL BUILDING SUPPLIER. VELUX - CSOS CURB MOUNT 6696 (63"X93" - 375 LBS) MODIFIED CURB WITH BASE FLANGES TO FIT METAL BUILDING ROOF PANELS. STANDARD MELT OUT VENT. VENT CURB MAY OVERLAP ROOF PURLINS.
11. IT RACK LOCATION, REF 10/ SDA401
12. CONCRETE SLAB FINISH: ALL AREAS TO RECEIVE SMOOTH TROWEL FINISH SEALED WITH 1 COAT OF SEALER RETRO PLATE/ RETRO GUARD AND 1 COAT HARDENER ASHFORD FORMULA.
13. EDGE OF BOLLARD TO BE HELD 3" AWAY FROM FACE OF FOOTING. TYPICAL
14. ALL PLYWOOD SHALL BE FIRE-RETARDANT TREATED.
15. BUILDING COMMUNICATION EQUIPMENT. REF 1/ SDA111

Source: Image produced by Harrison French & Associates, LTD in 2021, adapted by Ascent Environmental in 2021.

Figure 2-8 Maintenance Building Floor Plan



RIGHT ELEVATION



LEFT ELEVATION



REAR ELEVATION



45 FRONT ELEVATION

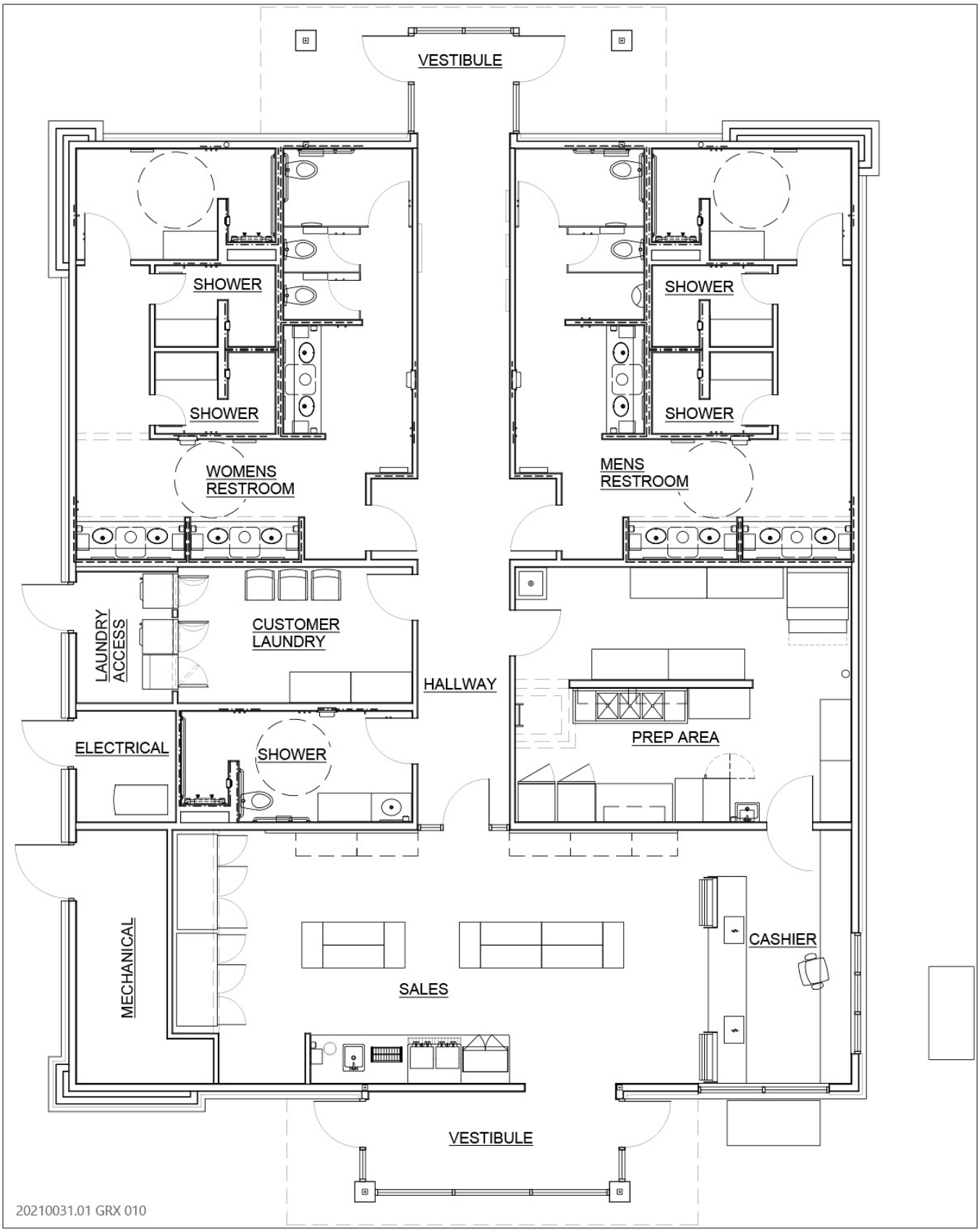


FRONT ELEVATION

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Source: Image produced by Lane Engineers, Inc. in 2021, adapted by Ascent Environmental in 2021.

Figure 2-9 Maintenance Building Elevations



Source: Image produced by Lane Engineers, Inc. in 2021, adapted by Ascent Environmental in 2021.

Figure 2-10 RV Park Main Building Floor Plan



A RV BUILDING EXTERIOR FINISHES
SCALE: NOT TO SCALE

	EXTERIOR FINISH SCHEDULE			
	NO.	TYPE	DESCRIPTION	REMARKS
BRICK	BR-1	MODULAR	GLEN-GERY SIOUX CITY BRICK- VINTAGE BLACK, SMOOTH	STANDARD GREY MORTAR
HARDIE BOARD	CB-1	LAP SIDING	HARDIEPLANK CEDARMILL FINISH - SW 9088 UTAUPEIA	WITH MATCHING 4X4 RUSTIC GRAIN HARDIETRIM
	CB-2	BOARD & BATTON	HARDIEPANEL SMOOTH FINISH - SW 7569 STUCCO	
	CB-3	VERTICAL PANEL	HARDIEPANEL SMOOTH FINISH - SW 7062 ROCK BOTTOM	
METAL COPING	MC-1		METAL COPING - PAC-CLAD - CHARCOAL	
	MC-2		METAL COPING - PAC-CLAD - SIERRA TAN	
METAL PANEL	MP-1		PAC-CLAD 7/8" CORRUGATED EXPOSED FASTENER PANEL - CHARCOAL	

20210031.01 GRX 011

Source: Image produced by Pascal Aughtry & Associates in 2021, adapted by Ascent Environmental in 2021.

Figure 2-11 RV Park Main Building Exterior Design

2.4.1 Travel Center

The travel center would be located west of the proposed Traveler's Way and would encompass approximately 15.33 acres of the overall 33.52-acre project site. The travel center would include a 9,659-SF convenience store and a 3,043-SF fast-food restaurant with an external drive-through window. The convenience store and fast-food restaurant would occupy the same building, which would be located between the automobile and truck fueling stations. The building would include public restrooms.

The truck maintenance building would be up to approximately 13,786 SF in size and provide four truck maintenance bays for light maintenance activities, which may include tire repair and replacement, air filter change, wiper blade maintenance, and oil and other fluid changes. The truck maintenance facility would also include a lobby, restroom, changing room, air compressor room, tire storage areas. An 80-kilowatt direct current solar system would be installed on the roof of the truck maintenance building.

The proposed convenience store and fast-food restaurant building, trash enclosure, auto fueling bays, truck fueling bays, truck scales, and truck maintenance building would be in the central portion of the travel center; the western and northern portions of the travel center would consist of parking spaces for trucks, with automobile parking located in the southern portion of the site. The auto fueling bays and diesel fueling bays would be accessible by separate entry points and physically separated by the building housing the fast-food restaurant and convenience store.

Underground gasoline storage tanks would be located in the southwest corner of the travel center and would consist of a 30,000-gallon tank for unleaded fuel, a 12,000-gallon split tank for high octane unleaded gasoline and a 20,000-gallon diesel exhaust fluid tank for diesel exhaust fluid. Above-ground diesel storage tanks would be located in the western portion of the site and consist of eight 12,000-gallon tanks to hold diesel and biodiesel. A 1,000-gallon propane tank would be located in the southeastern portion of the travel center. A 200,000-gallon fire water storage tank and fire booster pump would be located in the western portion of the travel center adjacent to I-15. Up to two on-site transformers (approximately 150 to 300 kilo-volt-amperes) would be required to supply electricity to the travel center. One transformer is proposed along the east side of the convenience store, and a second transformer may be located along the north side of the truck maintenance building.

Truck and automobile fueling bays would be covered by a canopy and would have a hydrologically isolated drainage system that discharges to an oil/water separator. The truck maintenance facility would also be enclosed and would include a similar drainage system with an oil/water separator. The eight above-ground storage tanks would include a concrete containment curb that would catch and retain fuel in the event of a fuel spill.

Landscaping would cover approximately 208,000 SF (31 percent) of the 15.33-acre travel center. Landscaping would include low water use trees and shrubs, consistent with the Water Conservation/Landscaping Regulations included in Chapter 9.75 of the Town of Apple Valley Code of Ordinances. The landscape plan for the travel center is shown in Figure 2-12. The proposed five stormwater bioretention basins would collect surface runoff from the travel center (see Figure 2-3 and Figure 2-5). Bioretention systems are designed to function in a similar manner as the physical, chemical, and biological processes in the natural environment. The systems capture runoff, promote infiltration and evapotranspiration, recharge groundwater, and remove nutrients, sediment, and heavy metals carried in stormwater.

The project would also include a high-rise freeway-oriented pylon sign visible from I-15, a smaller pylon sign along Stoddard Wells Road, directional signage, and exterior building signs. Signs would be illuminated. The signage would be designed in accordance with Chapter 9.74 of the Town Code of Ordinances, which includes dimension and height requirements for signs and advertising displays, to ensure compatibility with the region's desert character. Additionally, the project would include onsite lighting, consisting of high-mast light-emitting diode (LED) fixtures and LED canopy lighting around the perimeter of the travel center, along on-site roadways and pedestrian paths, and in parking areas. A 4-foot retaining wall and composite fencing would be constructed at the southern boundary of the travel center along Stoddard Wells Road.

The travel center would provide 81 automobile parking spaces and 102 truck parking spaces; four of the automobile spaces would be accessible per the requirements of the Americans with Disabilities Act (ADA). Overnight truck parking would be available; however, idling of trucks would be limited to no more than five minutes, consistent with

California Air Resources Board and Mojave Desert Air Quality Management District requirements. The travel center would also include parking for four RVs and an RV dump station. Bike racks would also be provided to meet the mandatory bike parking requirements of the California Green Building Standards Code.

2.4.2 RV Park

The RV park would be located east of the proposed Traveler's Way and would encompass approximately 16.37 acres of the overall 33.52-acre project site. The RV park would include a 3,250-SF single-story main building, which would include a convenience store, laundry room, bathrooms, and showers. The main building would be located in the western portion of the RV park, adjacent to the entrance driveway off of Traveler's Way. A 1,000-gallon propane tank would be located onsite, northeast of the main building.

The RV park would provide eight automobile parking spaces and 80 overnight RV parking spaces. Of the 80 RV parking spaces, 41 back-in parking spaces would be located around the perimeter of the RV park and four rows of 39 pull-through spaces would be located in the center of the RV park. Each of the overnight RV parking spaces would be equipped with utility hookups, fire pits, and picnic tables. Six of the parking spaces, including two automobile and four RV spaces, would be ADA-accessible.

The RV park would include a variety of recreational amenities intended to be used by the visitors/customers of the RV park. The recreational amenities would be clustered in the western portion of the RV park, and would include five pergolas/gazebos, six cornhole courts, two pickleball courts, one splash pad, two horseshoe courts, two shuffleboard courts, one basketball court, and one dog park. A network of walking paths would connect the various recreational amenities and travel along the perimeter of the RV park.

An 80,000-SF bioretention basin would be located along Stoddard Wells Road, just south of the parking area, and would collect surface runoff from the project site. Landscaping would cover approximately 200,000 SF (28 percent) of the 16.37-acre RV park. Landscaping would include low water use trees and shrubs, consistent with the Water Conservation/Landscaping Regulations included in Chapter 9.75 of the Town of Apple Valley Code of Ordinances. A tree buffer would be installed along existing and proposed roadways and throughout the RV park. The landscape plan for the RV park is shown on Figure 2-13. Onsite lighting, consisting of high-mast LED fixtures and LED canopy lighting, would be installed throughout the RV park.

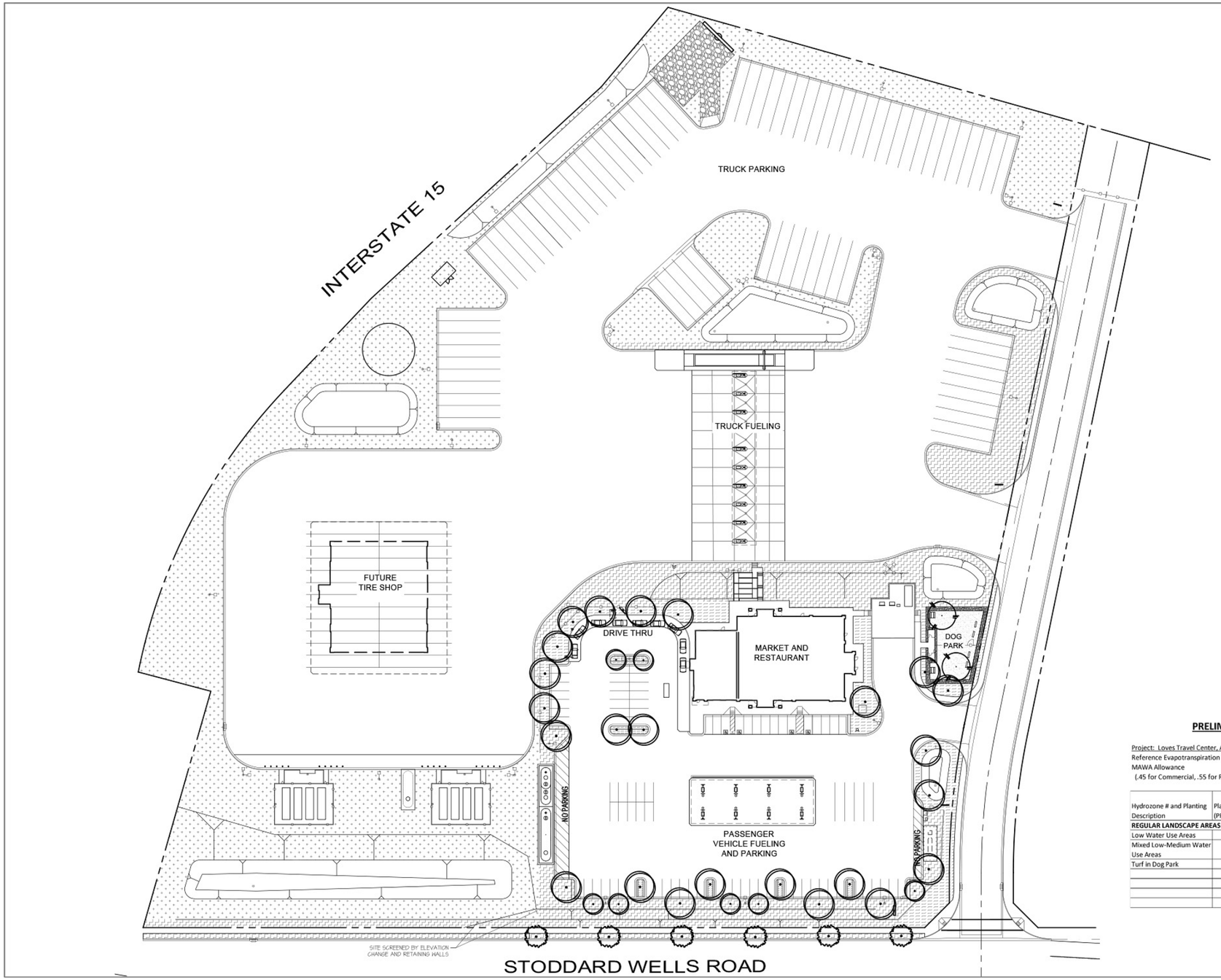
2.4.3 Offsite Improvements

The project would include a variety of offsite improvements, including street improvements and transitions, drainage facility connections, utility connections, and landscaping. An approximately 19,460-linear-foot water main line extension from 3.5 miles northeast of the project site may be required to serve the project's water needs, as described in Section 2.3.5, Utilities. The applicant would pay its fair share contribution to improvements at the intersection of the I-15 northbound ramps/Outer Highway 15 and Stoddard Wells Road.

2.4.4 Project Operations

The anticipated opening year for the project is 2023. The proposed travel center and RV park would be open 24 hours per day, seven days per week. The travel center is designed to accommodate parking of up to 102 trucks and 81 cars onsite at any given time and the RV park is anticipated to accommodate parking of up to 8 cars and 80 RVs onsite at any given time. The maximum permitted length of stay at the RV park is 28 days.

In terms of employment, approximately 39 employees would be located at the project site, spread over three daily shifts. It is anticipated that up to 12 employees would be located at the travel center and 3 employees would be located at the RV park at one time. The travel center would receive up to six (6) fuel deliveries per day. Up to three (3) small deliveries, such as those delivered by UPS or FedEx, are also expected to occur each day. While the restaurant would likely receive one delivery truck per week, a total of one delivery per day would be the maximum. As described previously, diesel fuel, gasoline, and diesel exhaust fluid would be stored onsite in above-ground storage tanks. Total annual fuel throughput for the travel center is planned to be 14,000,000 gallons (diesel fuel and gasoline).



KEY TO SYMBOLS AND HATCHES

PARKING LOT, GENERALLY 20' TO 35' DIA
IN PASSENGER VEHICLE AREAS TO CONTRIBUTE TO SHADE CALCULATION. A MIX OF EVERGREEN AND DECIDUOUS MATERIALS WITH LOW LITTER AND DEEP ROOTS. EXAMPLES INCLUDE PISTACHE, GOLDEN RAINTREE AND ZELKOVA, 15 GAL MINIMUM.

LOW WATER USE SITE TREES, GENERALLY 35' DIA AND 25' DIA
MIXED EVERGREEN AND DECIDUOUS CANOPY TREES FOR ADDITIONAL SHADE AND TO BEAUTIFY SITE. EXAMPLES INCLUDE OAKS, CELTIS, PINES AND SIMILAR SPECIES SUITABLE TO THIS ZONE 15 GAL MINIMUM.

STREET TREES
CITY-APPROVED STREET TREES SUITABLE FOR A PARKWAY SITUATION WITH DEEP ROOTS, LOW WATER USING AND CLEAN. EXAMPLES INCLUDE PISTACHE, ZELKOVA AND GRECIAN LAUREL. 15 GAL MINIMUM.

AREAS OF UNIRRIGATED NATIVE EROSION CONTROL GRASS OR UNIRRIGATED MINERAL OR ORGANIC MULCH (COBBLE, GRAVEL, DG)
APPROX 120,600 SF

AREAS OF LOW WATER USE SPARSE PLANTING
PRIMARILY AROUND THE PERIMETER OF THE SITE FOR SCREENING
APPROX 50,400 SF

AREAS OF MIXED MEDIUM AND LOW WATER USE SHRUBS AND GROUND COVERS
WATER-EFFICIENT PLANTINGS OF SHRUBS AND GROUND COVERS TO PROVIDE VISUAL RELIEF AND TO SCREEN VIEWS OF THE TRUCK PARKING AND FUELING AREAS. DENSER PLANTING AND MORE ORNAMENTAL NEAR BUILDINGS AND PASSENGER FUELING AREAS. APPROX 12,600 SF

TURF
IN DOG PARK ONLY. WARM-SEASON BERMUDA GRASS WITH OVERHEAD ROTATOR IRRIGATION. APPROX 3,200 SF

PLANNING CALCULATIONS

PARKING LOT LANDSCAPING

TOTAL PARKING LOT AREA = 78,410 SF
SHADE PROVIDED:

LARGE TREES @ 100%	6	5,712 SF
LARGE TREES @ 50%	18	8,658 SF
MED TREES @ 100%	2	1,414 SF
MED TREES @ 50%	5	1,7612 SF
TOTAL SHADE		17,612 SF
% SHADE		22.4%

NUMBER OF PARKING SPACES: 81 CARS, 4 TRAILER
NUMBER OF REQUIRED TREES AT 1/7 SPACES: 13
NUMBER OF TREES PROVIDED: 31

BASIS OF DESIGN

SIGHT LINES
NO PLANTS OR OTHER OBSTRUCTIONS BETWEEN 30" AND 96" ON THE ROAD SIDE OF SIGHT LINES.

TRUCK PARKING
TRUCKS REQUIRE 20' CLEAR BEHIND EACH PARKING SPACE FOR OVERHANG. NO TREES OR TALL SHRUBS IN THIS AREA.

WATER CONSERVATION
IT IS THE INTENT OF THIS PLAN TO EXCEED WELO REQUIREMENTS. SEE PRELIMINARY WELO CALCULATIONS, THIS SHEET.

IRRIGATION WILL BE PROVIDED TO ALL PLANTING AREAS BY THE USE OF LOW-FLOW BUBBLER HEADS ON RIGID PVC PIPE. THE SYSTEM WILL BE FULLY AUTOMATIC AND MEET WELO CRITERIA. AREAS WITH ONLY MULCH WILL NOT BE IRRIGATED.

PRELIMINARY WATER EFFICIENT LANDSCAPE WORKSHEET

Project: Loves Travel Center, Apple Valle, CA — Date: 1.21.21

Reference Evapotranspiration	66.2	Victorville
MAWA Allowance	0.45	
(.45 for Commercial, .55 for Residential, .65 DSA)		

Hydrozone # and Planting Description	Plant Factor (PF)	Irrigation Method	Irrigation Efficiency*	ETAF (PF/IE)	Landscape Area (sf)	ETAF x Area	Estimated Total Water Use (ETWU)
REGULAR LANDSCAPE AREAS							
Low Water Use Areas	0.3	bubbler	0.81	0.37	50,400	18666.67	766154.67
Mixed Low-Medium Water Use Areas	0.5	bubbler	0.81	0.62	12,600	7777.78	319231.11
Turf in Dog Park	0.6	MP Rotator	0.75	0.80	3,200	2560.00	105072.64
			1.00	0.00		0.00	0.00
				Totals	66200	29004.44	
						ETWU Total	1190458.42
						Maximum Allowed Water Allowance (MAWA)	1222700.76

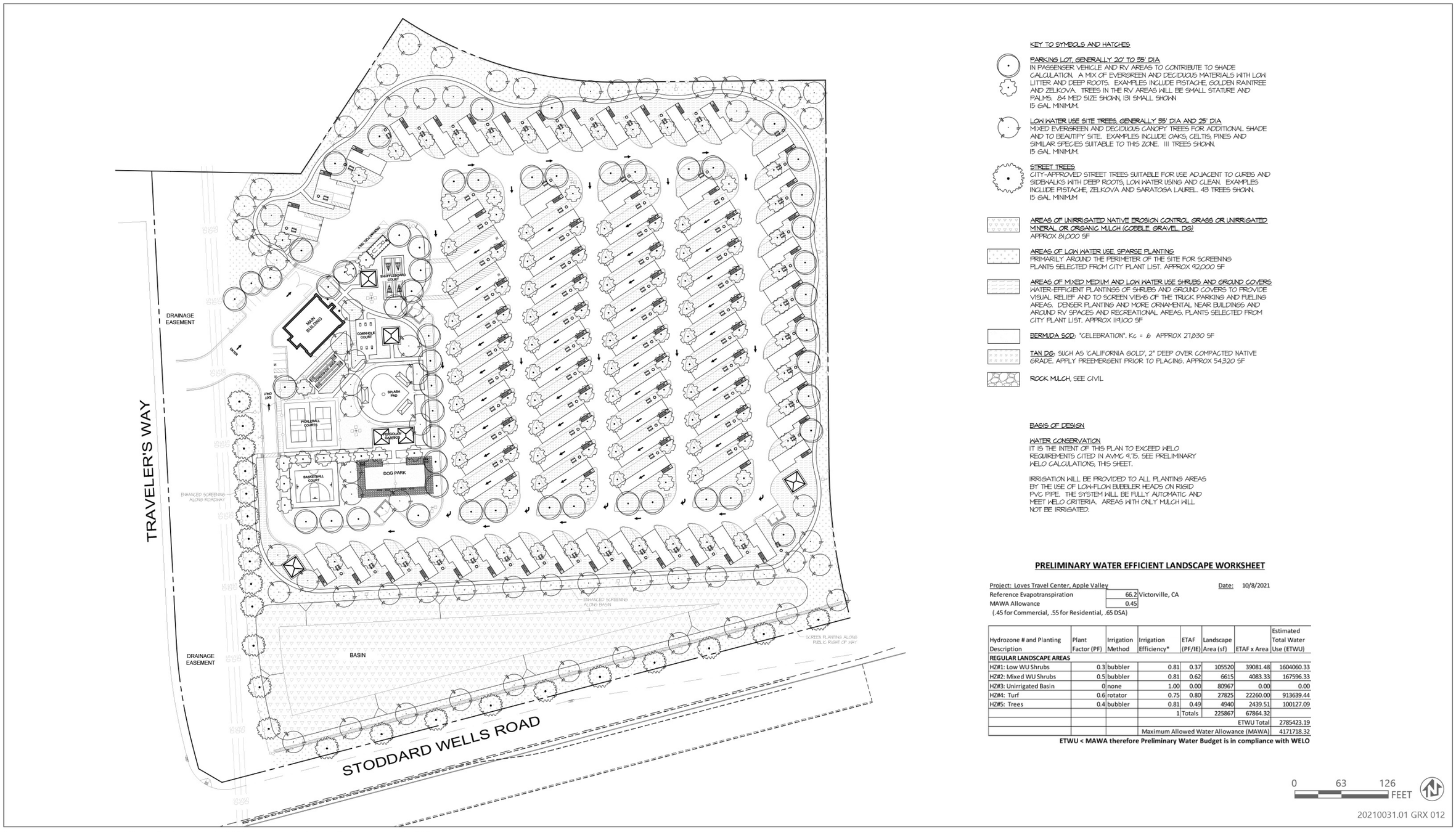
ETWU < MAWA therefore preliminary plan complies with WELO
Unirrigated erosion control areas not included in calculations

0 57 114 FEET

20210031.01 GRX 004

Source: Image produced by Sierra Designs, Inc. in 2021, adapted by Ascent Environmental in 2021.

Figure 2-12 Landscape Plan



PRELIMINARY WATER EFFICIENT LANDSCAPE WORKSHEET

Project: Loves Travel Center, Apple Valley — Date: 10/8/2021

Reference Evapotranspiration	66.2	Victorville, CA
MAWA Allowance	0.45	
(.45 for Commercial, .55 for Residential, .65 DSA)		

Hydrozone # and Planting Description	Plant Factor (PF)	Irrigation Method	Irrigation Efficiency*	ETAF (PF/IE)	Landscape Area (sf)	ETAF x Area	Estimated Total Water Use (ETWU)
REGULAR LANDSCAPE AREAS							
HZ#1: Low WU Shrubs	0.3	bubbler	0.81	0.37	105520	39081.48	1604060.33
HZ#2: Mixed WU Shrubs	0.5	bubbler	0.81	0.62	6615	4083.33	167596.33
HZ#3: Unirrigated Basin	0	none	1.00	0.00	80967	0.00	0.00
HZ#4: Turf	0.6	rotator	0.75	0.80	27825	22260.00	913639.44
HZ#5: Trees	0.4	bubbler	0.81	0.49	4940	2439.51	100127.09
				1 Totals	225867	67864.32	
						ETWU Total	2785423.19
						Maximum Allowed Water Allowance (MAWA)	4171718.32

ETWU < MAWA therefore Preliminary Water Budget is in compliance with WELO

Source: Image produced by Sierra Designs, Inc. in 2021, adapted by Ascent Environmental in 2021.

Figure 2-13 RV Park Landscape Plan

Access to the travel center would be via three ingress/egress drives along the proposed Traveler's Way. The southern driveway (40 feet wide) along Traveler's Way would be dedicated for the exclusive use of automobiles while the two northern driveways (60 feet wide) would be dedicated for trucks only. The southern ingress/egress drive from Traveler's Way would provide access to auto fueling islands, the convenience store, and the fast-food restaurant; the northern ingress/egress drive would provide access to truck fueling stations, scales, parking areas, and the maintenance building. Onsite truck travel lanes within the travel center are proposed to be 85 feet wide and vehicular travel lanes are proposed to be 30 feet wide. Access to the RV park would be provided via one ingress/egress drive (40 feet wide) along the proposed Traveler's Way. Onsite RV and automobile travel lanes within the RV park are proposed to be 20 feet wide. Site access points and circulation are depicted on Figure 2-4 though Figure 2-6.

2.4.5 Utilities

Liberty Utilities currently provides water services to the Town of Apple Valley; however, the Town of Apple Valley began working towards acquisition of the water system in 2015. The San Bernardino County Superior Court issued a tentative decision on May 7, 2021 against the Town's proposed acquisition of the water system. Therefore, it is likely that Liberty Utilities would continue to be the Town's water service provider and would provide water services to the project site upon project operation.

During operation, the project would have an overall estimated water demand of approximately 26,000 gallons per day (gpd), or approximately 30 acre-feet per year. The estimated water demand for the travel center in the western portion of the project site would be approximately 12,000 gpd, of which 3,000 gpd of water would be used for landscaping. The estimated water demand for the RV park in the eastern portion of the project site would be approximately 14,000 gpd, of which 11,000 gpd of water would be used for landscaping. There are no existing offsite water mains on Stoddard Wells Road fronting the proposed project site. The nearest existing water main connection is approximately 3.5 miles northeast of the project site along Johnson Road, approximately 4,100 feet east of Dale Evans Parkway, fronting the Walmart Distribution Center. The project may require extension of the existing 16-inch diameter pipeline for approximately 19,460 linear feet within existing disturbed areas, such as within the north shoulders or pavement of Johnson Road and Stoddard Wells Road (see Figure 2-13). The proposed pipeline alignment would cross several existing washes. Therefore, it is anticipated that a jack and bore (i.e., horizontal drilling) would be used to install the pipeline under any washes where there are culverts. The cost for the water main extension may be reimbursed by Liberty Utilities or the Town of Apple Valley, depending on which provider serves as the water purveyor at the time of project operation.

The proposed water main line and appurtenances would be installed in accordance with Liberty Utilities or Town of Apple Valley standards and specifications. In addition, a fire service line would be developed in accordance with Apple Valley Fire Protection District requirements. All water facilities would be installed within dedicated public right-of-way (ROW) and public utility easements to all unobstructed access for the maintenance, repair, connection, and operation of water facilities. Domestic service lines would be installed from the existing water main line to the street ROW line that fronts the development.

Sewer services are provided by the Town of Apple Valley Wastewater Division. Stormwater from the travel center would be drained toward the five onsite bioretention facilities shown in Figure 2-3 and Figure 2-5. From the onsite retention basins, stormwater would flow through a new underground stormwater pipe that would discharge to existing drainage south of the project site. Stormwater from the RV park would be drained toward a bioretention basin along Stoddard Wells Road, just south of the parking area (see Figure 2-6).

Southern California Edison provides electric services and Southwest Gas Corporation provides natural gas services to the Town of Apple Valley. Existing overhead electrical lines are located along Stoddard Wells Road. Up to two on-site transformers (approximately 150 to 300 kilo-volt-amperes) would be required to supply electricity to the travel center.

2.4.6 Town of Apple Valley General Plan Designation and Zoning

As discussed earlier in this chapter, the project site includes one parcel, which is within the Regional Commercial (C-R) General Plan land use and zoning designations (C-R) (Figure 2-14 and Figure 2-15). The proposed project is consistent with the existing General Plan land use and zoning designations.

2.4.7 Construction

Construction equipment anticipated to be used throughout the various phases of construction includes:

- air compressors,
- backhoes,
- compacters,
- concrete/industrial saws,
- excavators,
- paving equipment,
- forklifts,
- graders,
- rollers,
- scrapers, and
- water trucks.

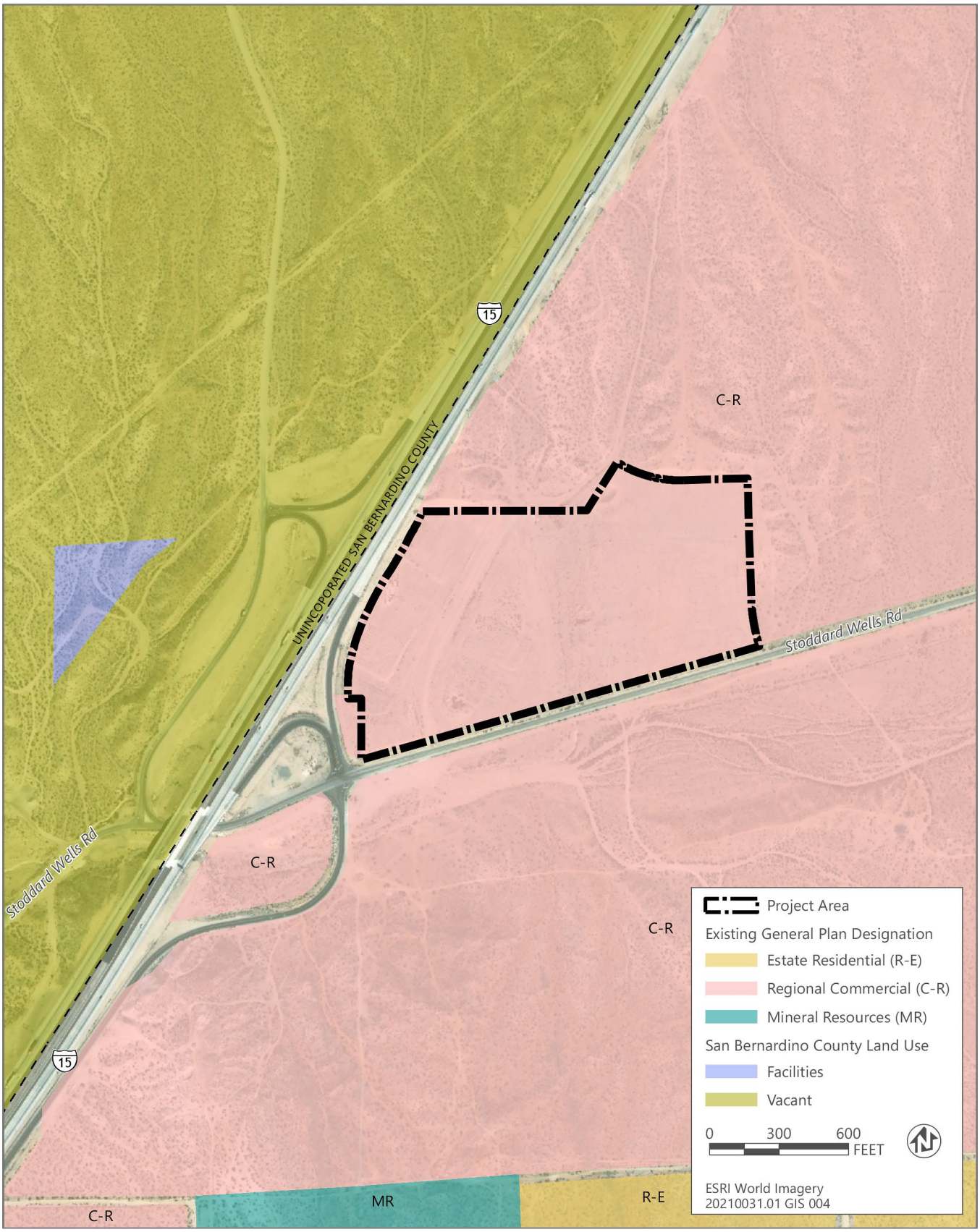
Construction of the travel center and RV park would occur concurrently. Construction is anticipated to begin as early as mid-2023 and last approximately 9 months. Construction activities would occur Monday through Friday, during daytime hours (typically 7a.m.–7p.m.). Table 2-2 provides an overview of the phases of construction that would occur. A short demolition phase would be required to remove existing underground utility lines that were abandoned by the previous developer. Excavation would occur to an approximate depth of 7 feet below the ground surface (bgs) for mass grading, 10 feet bgs for installing onsite utilities, and 6 feet bgs for trenching needed to install the offsite water main line.

Table 2-2 Anticipated Construction Phasing

Sub-Phase Number	Sub-Phase Name	Approximate length of Sub-Phase
1	Demolition	1 month
2	Site Prep	1 month
3	Finish Grading	1 month
4	Underground	2 months
5	Building Construction	6 months
7	Paving	1 month
8	Architectural Coating	1 month

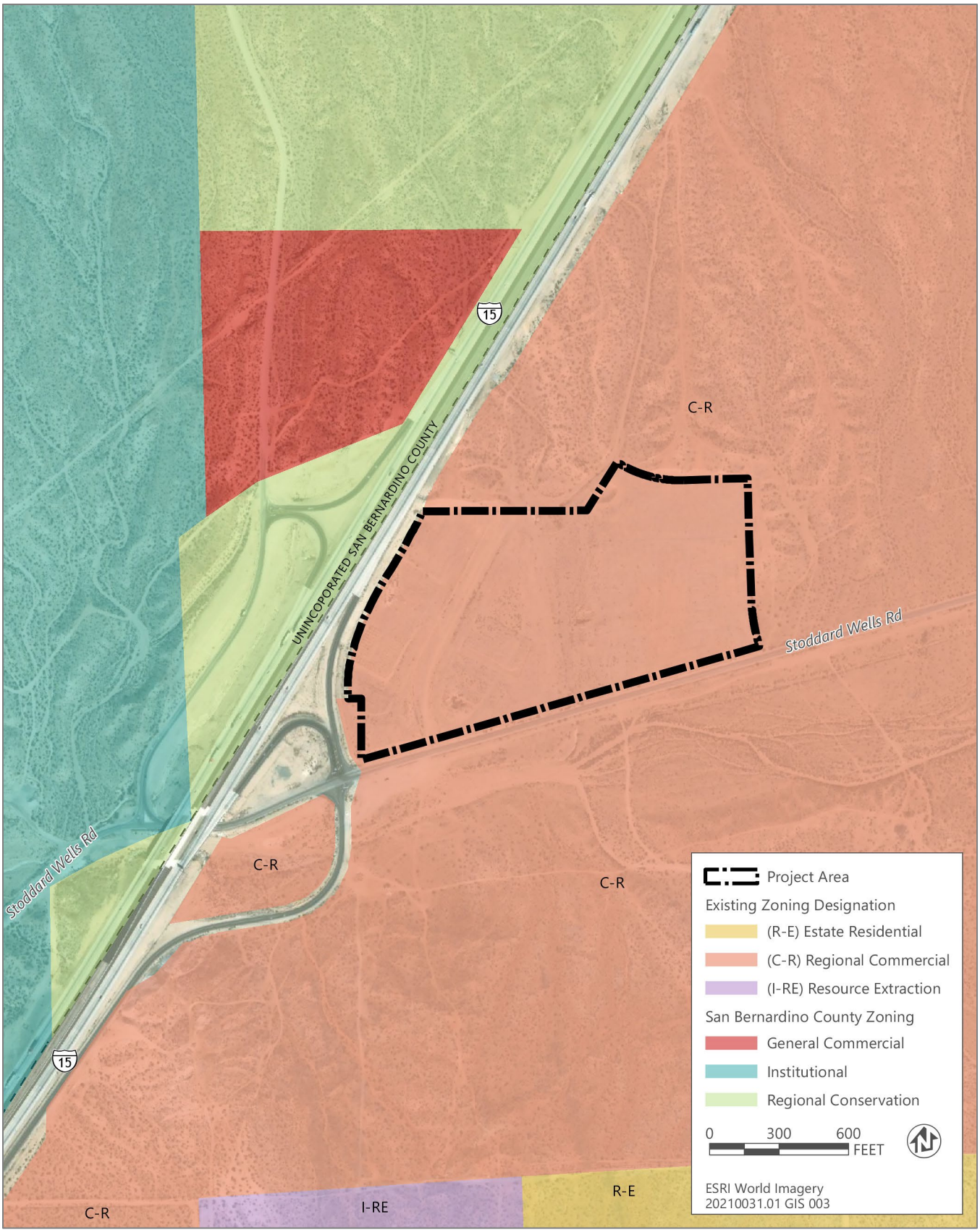
Source: Information provided by project applicant and compiled by Ascent Environmental in 2021

During construction, the project site would be fenced and screened, and access would be controlled to deter theft, vandalism, and other crimes. In addition, security lighting would be used to discourage trespassing.



Sources: Data downloaded from Town of Apple Valley and San Bernardino County in 2021 and adapted by Ascent Environmental in 2021.

Figure 2-14 Existing General Plan



Sources: Data downloaded from Town of Apple Valley and San Bernardino County in 2021 and adapted by Ascent Environmental in 2021.

Figure 2-15 Existing Zoning

2.5 REQUIRED DISCRETIONARY ACTIONS AND PERMITS

Table 2-3 includes a summary of the discretionary actions and permits that are anticipated to be required for the project. Based on the outcome of biological surveys, additional permits and approvals may be required. These permits and approvals may include incidental take permits from the CDFW (if State-listed plant species are identified and avoidance is infeasible), ministerial permits from the Town of Apple Valley, and other related authorizations.

Table 2-3 Required Project Permits and Approvals

Agency	Permit/Approval	Description	Project Component		
			Travel Center	RV Park	Offsite Water Main Line
Lahontan Regional Water Quality Control Board (Region 6)	National Pollutant Discharge Elimination System construction stormwater permit (Notice of Intent to proceed under General Construction Permit)	Permit for construction and demolition activities (e.g., clearing, grubbing, or excavation) that result in the disturbance of one or more acres of land. The project would involve disturbance of 33.52 acres to construct the travel center and RV park. Additional ground disturbance would be required for the offsite water main line along the 19,460-foot alignment.	X	X	X
Town of Apple Valley	Final EIR certification	Required for discretionary projects proposed to be carried out or approved by public agencies.	X	X	X
	Tentative Parcel Map	Map that confers a subdivision right to proceed with development. This subdivision map would be required to allow the development of the travel center and RV park.	X	X	
	Conditional Use Permit	Permit that allows development under a certain set of conditions. Permit that allows a parcel of land or property to be used in a manner that deviates from existing zoning regulations and ordinances in an area. This permit would be required to construct the drive-through restaurant, fuel dispensing stations, and the truck maintenance facility in the travel center.	X		
	Development Permit	Permit authorizing a development. This permit would be required to allow the development of the travel center and RV park.	X	X	X
	Reimbursement Agreement	Agreement to expedite reimbursed expenses incurred by the project applicant for construction of the offsite water main line with project sales tax proceeds.			X
Mojave Desert Air Quality Management District	Permit to Construct/Operate	Permit for activities that involve operating or using equipment.	X	X	X

3 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

APPROACH TO THE ENVIRONMENTAL ANALYSIS

This draft environmental impact report (Draft EIR) evaluates and discloses the environmental impacts associated with the Apple Valley I-15 Travel Center (project), in accordance with the California Environmental Quality Act (CEQA) (Public Resources Code [PRC] Section 21000, et seq.) and the State CEQA Guidelines (California Code of Regulation, Title 14, Chapter 3, Section 15000, et seq.). Issues evaluated in Sections 3.1 through 3.15 of this Draft EIR consist of the environmental topics identified for review in the Notice of Preparation (NOP) prepared for the project (see Appendix A of this Draft EIR).

Sections 3.1 through 3.15 of this Draft EIR each include the following components.

- Regulatory Background: This subsection presents information on the laws, regulations, plans, and policies that relate to the issue area being discussed. Regulations originating from the federal, state, and local levels are each discussed as appropriate.
- Existing Conditions: This subsection presents the existing environmental conditions on the project site and in the surrounding area as appropriate, in accordance with State CEQA Guidelines Section 15125. The discussions of the environmental setting focus on information relevant to the issue under evaluation. The extent of the environmental setting area evaluated (the project study area) differs among resources, depending on the locations where impacts would be expected. For example, air quality impacts are assessed for the air basin and the site vicinity, while aesthetic impacts are assessed for the project site vicinity only.
- Environmental Impacts and Mitigation Measures: This subsection presents thresholds of significance and discusses potentially significant effects of the project on the existing environment, including the environment beyond the project boundaries, in accordance with State CEQA Guidelines Section 15126.2. The methodology for impact analysis is described, including technical studies upon which the analyses rely. The thresholds of significance are defined and thresholds for which the project would have no impact are disclosed and dismissed from further evaluation. Project impacts and mitigation measures are numbered sequentially in each subsection (Impact 3.2-1, Impact 3.2-2, Impact 3.2-3, etc.). A summary impact statement precedes a more detailed discussion of the environmental impact. The discussion includes the analysis, rationale, and substantial evidence upon which conclusions are drawn. The determination of level of significance of the impact is defined in bold text. A "less-than-significant" impact is one that would not result in a substantial adverse change in the physical environment. A "potentially significant" impact or "significant" impact is one that would result in a substantial adverse change in the physical environment; both are treated the same under CEQA in terms of procedural requirements and the need to identify feasible mitigation. Potentially feasible mitigation measures are identified to avoid, minimize, rectify, reduce, or compensate for significant or potentially significant impacts, in accordance with the State CEQA Guidelines Section 15126.4. Unless otherwise noted, the mitigation measures presented are recommended in the EIR for consideration by the Town Planning Commission to adopt as conditions of approval or other enforceable measures.

  Where an existing law, regulation, or permit specifies mandatory and prescriptive actions about how to fulfill the regulatory requirement as part of the project definition, leaving little discretion in its implementation, and would avoid an impact or maintain it at a less-than-significant level, the environmental protection afforded by the regulation is considered before determining impact significance. Where existing laws or regulations specify a mandatory permit process for future projects, performance standards without prescriptive actions to accomplish them, or other requirements that allow substantial discretion in how they are accomplished, or have a substantial compensatory component, the level of significance is determined before applying the influence of the regulatory requirements. In this circumstance, the impact would be potentially significant or significant, and the regulatory requirements would be included as a mitigation measure.

This subsection also describes whether mitigation measures would reduce project impacts to less- than-significant levels. Significant-and-unavoidable impacts are identified as appropriate in accordance with State CEQA Guidelines Section 15126.2(b). Significant-and-unavoidable impacts are also summarized in Chapter 6, "Other CEQA Sections."

The full references associated with the parenthetical references found throughout Sections 3.1 through 3.15 can be found in Chapter 8, "References," organized by section number.

EFFECTS FOUND NOT TO BE SIGNIFICANT

The State CEQA Guidelines (Section 15128) allow an EIR to briefly describe the reasons why some environmental effects were determined not to be significant and then to dismiss these effects from detailed review in the EIR. Implementing the proposed project would not result in significant effects related to the issue areas described below. These issue areas are dismissed from detailed review in this EIR. They are organized below based on the order of topics in the State CEQA Guidelines Appendix G Environmental Checklist Form:

- Agriculture and Forestry Resources: The project site is zoned Regional Commercial and is currently vacant. There are no agricultural lands (including lands classified by the California Resources Agency as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance) or forest lands within or in proximity the project site. Therefore, no impacts on agriculture and forestry resources are anticipated, and this topic is not discussed further.
- Wildfire: The project site and vicinity are within a local responsibility area that is classified as a Non-Very High Fire Hazard Severity Zone (VHFHSZ) by the California Department of Forestry and Fire Protection. There are no lands within the Town that are classified as state responsibility areas or VHFHSZs. Therefore, no impacts related to wildfire are anticipated, and this topic is not discussed further.

3.1 AESTHETICS

This section provides a description of existing visual conditions, meaning the physical features that make up the visible landscape, near the project site for the Apple Valley I-15 Travel Center (project) and an assessment of changes to those conditions that would occur from project implementation. The effects of the project on the visual environment are generally defined in terms of the project's physical characteristics and potential visibility, the extent to which the project's presence would change the perceived visual character and quality of the environment, and the expected level of sensitivity that the viewing public may have where the project would alter existing views. The "Analysis Methodology" discussion below provides further detail on the approach used in this evaluation. No public comments related to aesthetics were received during the scoping period.

3.1.1 Regulatory Setting

FEDERAL

National Scenic Byways Program

The National Scenic Byways Program (23. U.S.C. 162) provides that the Transportation Secretary can designate a road as a National Scenic Byway, All-American Road, or as one of America's Byways if it meets specific criteria defined by the Secretary. Six intrinsic qualities evaluated to determine whether a road or highway qualifies under the National Scenic Byways program are scenic quality, natural quality, historic quality, cultural quality, archaeological quality, and recreational quality. To be designated as an All-American Road, the road or highway must meet the criteria for at least two intrinsic qualities and be considered a destination unto itself.

STATE

California Scenic Highway Program

The California Scenic Highway Program, maintained by the California Department of Transportation (Caltrans), protects California State Highway corridors from changes that would diminish the aesthetic value of lands adjacent to the highways, and works to enhance their natural scenic beauty. The Scenic Highway Program includes a list of highways that are either officially designated or eligible for designation as scenic highways. The status of a proposed state scenic highway changes from eligible to officially designated when the local governing body applies to Caltrans for scenic highway approval, adopts a Corridor Protection Program, and receives notification that the highway has been officially designated a Scenic Highway. Development near a scenic highway does not render a roadway ineligible, nor is development or lane widening prohibited in officially designated scenic highways.

LOCAL

Town of Apple Valley 2009 General Plan

The Apple Valley Town Council adopted the 2009 General Plan on August 11, 2009. The General Plan includes goals, policies, and programs intended to guide land use decisions within the Town's planning area. The Open Space and Conservation Element is intended to provide for the long-term preservation and conservation of valuable natural resources and open space lands within the Town's planning area. One of the major objectives of the Open Space and Conservation Element of the Town 2009 General Plan is protecting lands to maintain the aesthetic value of the community. Specifically, the Open Space and Conservation Element states that "the protection of local scenic resources is necessary for the overall livability of the community and to maintain the aesthetic qualities of the Town and vicinity." The Mojave River, surrounding knolls, hillsides, mountains, and the natural desert environment are identified as important natural resources that should be preserved as Open Space.

In addition, the Land Use Element includes goals, policies, and programs to ensure that new development within the Town protects and enhances existing neighborhoods. Applicable goals, policies, and programs related to aesthetics include the following:

GOAL 1: The Town shall respect its desert environment.

- Policy 1.B: New development shall be designed to minimize grading, and avoid mass grading to the greatest extent possible.
- Policy 1.D: Areas of biological or aesthetic significance shall be protected from development.
- Policy 2.C: The Town shall require quality design in all development and redevelopment proposals and shall encourage the enhancement of existing development.
- Program 2.C.1: The Development Code shall include design standards and guidelines for all land use types that clearly enumerate the Town's minimum requirements.
- Program 3.A.1: The Development Code shall include standards for increased setbacks, walls, berms, landscaping, incremental lot sizes, buffering guidelines and recommendations for projects adjoining different or less intense land use designations.
- Program 3.A.2: The Development Code will include incentives for creative design, including but not limited to varied setbacks, lot patterns, building massing and non-motorized transportation paths and trails.
- Program 6.B.1: The Development Code will maintain development standards and guidelines which encourage creative, high quality design of commercial projects.
- Program 9.A.1: Review development proposals adjacent to designated open space lands and assure that land uses are compatible, and buffers and/or linkages are provided when necessary to maintain natural resource values.

Town of Apple Valley Code of Ordinances

Chapter 9.37 – Commercial and Office Districts Design Standards

Chapter 9.37 of the Town Code of Ordinances includes standards for commercial and office districts to assist developers in understanding the Town's goals and objectives for high quality commercial development. This chapter includes requirements for site planning, grading, access and circulation, landscaping, buffering and screening, walls and fences, architecture, and lighting. This chapter also describes design incentives for commercial and industrial development that incorporates innovated design, sustainable practices, and energy-conservation measures.

Chapter 9.74 – Signs and Advertising Displays (Amended in its entirety by Ordinance No. 456)

Chapter 9.74 of the Town Code of Ordinances includes requirements for signs and advertising displays. The chapter is intended to regulate all advertising displays in a manner that protects property values; visual aesthetics; and the public health, safety, and general welfare, while providing opportunities for businesses to operate successfully and effectively. Issuance of a sign permit by the Planning Division is required prior to the display of exterior signs. Section 9.74.110 includes general design criteria and standards, which specify requirements for sign dimensions and architectural compatibility and context to ensure that signs are consistent with the region's desert character. Section 9.74.130 specifies requirements for signs in commercial and office districts, including sign dimensions and height requirements for various uses (i.e., gasoline and vehicular fuel stations, fast food menu boards, and service facilities).

Chapter 9.70 – Performance Standards

Chapter 9.70 of the Town Code of Ordinances includes performance standards intended to "protect properties in all districts and the health and safety of all persons from environmental nuisances and hazards to provide a pleasing environment in keeping with the intended character of a particular zoning district." Chapter 9.70.020(H) establishes development performance standards for light and glare. Light fixtures are required to be of a design compatible with the architecture of on-site buildings. In addition, light intensity shall not exceed 75 foot-lamberts from a source of reflected light at the boundary of any multi-family, commercial, or industrial zoning district. Security and safety-

related lighting shall be directed away from streets and adjoining properties. Furthermore, parking lot lighting and/or security lighting, when affixed to individual poles or affixed to any structure on site, shall not exceed a height of 20 feet above the parking area surface.

3.1.2 Environmental Setting

METHODOLOGY AND TERMINOLOGY

The methodology for describing the environmental setting related to aesthetics was adapted from the Federal Highway Administration's (FHWA) *Guidelines for the Visual Impact Assessment of Highway Projects* (2015).

Identifying the project area's visual resources, character, and quality involves the following process:

- objectively identifying visual features and resources of the landscape,
- assessing the character and quality of the resources relative to overall regional visual character, and
- determining importance to people (or sensitivity) of views of visual resources in the landscape.

Visual character is described through the elements of form, line, color, and texture of the landscape features. The appearance of a landscape can be described in terms of the dominance of each of these components. Visual quality is assessed through determining the degree of vividness, unity, and intactness of the view:

- **Vividness:** the visual power or memorability of landscape components as they combine in striking or distinctive visual patterns.
- **Intactness:** the visual integrity of the natural and human-built landscape and its freedom from encroaching elements; this factor can be present in well-kept urban and rural landscapes, as well as in natural settings.
- **Unity:** the visual coherence and compositional harmony of the landscape considered as a whole; it frequently attests to the careful design of individual components in the landscape.

Viewer groups include (1) travelers, such as those that are commuting, touring, or transporting goods on roadways, and (2) neighbors, such as those occupying residential, institutional, retail, commercial, industrial, or agricultural land use. Viewer sensitivity is affected by proximity (i.e., the distance from the viewer to the scene), extent (i.e., number of viewers observing the scene), and duration (i.e., how long viewers spend looking at the scene).

REGIONAL SETTING

The Town of Apple Valley is situated in the southwestern portion of the Mojave Desert, between the community of Hesperia to the southwest and the City of Victorville and community of Lucerne Valley to the southeast. The topography in the Town of Apple Valley is generally flat, which allows for unobstructed, distant views in all directions and a prevailing sense of openness and spaciousness. Existing views in the Town of Apple Valley include uninterrupted expanses of "wide skies" and panoramic vistas of distant mountains. Although the areas concentrated around State Route 18 have been developed with rural residential, commercial, and industrial land uses, many acres of undeveloped desert lands remain (Town of Apple Valley 2009a). The Town General Plan identifies the Mojave River, surrounding knolls, hillsides, mountains, and the natural desert environment as important scenic resources (Town of Apple Valley 2009b).

LOCAL SETTING

Visual Character and Quality

Based on mapping by the U.S. Census Bureau, the project site and the offsite water main line alignment is classified as a rural area (U.S. Census Bureau n.d.). The project site consists of highly disturbed, generally flat land that has been previously affected by mass grading operations and off highway vehicle use. Additionally, the alignment for the

offsite water main line is paved with existing roadways, and the shoulders have been previously disturbed. Views from the project site and the offsite water main line alignment generally consist of vast open space, with visual elements that include Bell Mountain to the east, the Victorville Landfill to the west, and distant mountains in all directions, including the San Bernardino mountains in the distance to the south.

Three viewpoints to the project site were chosen to represent views where the project would be most visible to the public and most appropriate for the analysis of impacts. The visual character and quality of the views from the three viewpoints are described below.

Viewpoint 1 (I-15 Off- and On-Ramps at Stoddard Wells Road, Looking Northwest)

Viewpoint 1 is on Stoddard Wells Road at the off- and on-ramps to I-15, looking northwest toward the project site (Figure 3.1-1). The existing view from Viewpoint 1 is shown on Figure 3.1-2. The visual character from Viewpoint 1 is that of a rural desert landscape. The viewpoint consists of a vast expanse of sky and undeveloped land that is dominated by bare ground and contains scattered low-lying shrubs and ruderal vegetation. The foreground is dominated by linear horizontal elements, including Stoddard Wells Road, an embankment created from previous grading activities, and short wire fencing around the perimeter of the parcel. Linear vertical elements from this viewpoint include fence and sign posts. The dominant hues are muted, including the faded gray asphalt of the roadway and various tan, brown, and grayish green shades of the vegetation and landforms. There are distant views of mountains in the background. However, the view from the roadway is partially obstructed by the intervening embankment, which sits at a higher elevation and is a prominent feature in the viewshed.

Vividness is low because the landscape within Viewpoint 1 is uniform with the surroundings and is not characterized by prominent or striking features. Intactness is moderately low because although the surrounding landscape is generally rural and undeveloped, Viewpoint 1 shows evidence of human disturbance form past grading activities and encroaching man-made infrastructure. Although the roadway is an encroaching element, unity is moderate because its lines are in harmony with the natural lines of the landscape. Overall, the visual quality at Viewpoint 1 is moderately low.

Viewpoint 2 (Northbound I-15, Looking East)

Viewpoint 2 is on northbound I-15, looking east toward the project site (Figure 3.1-1). The existing view from Viewpoint 2 is shown on Figure 3.1-3. Similar to Viewpoint 1 described above, the visual character from Viewpoint 2 is that of a rural desert landscape. This viewpoint also consists of a vast expanse of sky and undeveloped land that is dominated by bare ground and contains scattered low-lying shrubs and ruderal vegetation. The foreground is dominated by linear horizontal elements, including the I-15 on-ramp from Stoddard Wells Road, the unpaved gore area between the I-15 mainline and on-ramp, and short wire fencing surrounding the project site parcel. Linear vertical elements are limited to inconspicuous fence and sign posts. The dominant hues are muted, including the faded gray asphalt of the roadway and various tan, brown, and grayish green shades of the vegetation and landforms. There are views of mountains in the background, including the landmark Bell Mountain, which stand out in contrast to the flat landscape in the foreground and midground.

Vividness is moderately low because the landscape within Viewpoint 2 is relatively uniform with the surroundings, but offers views of Bell Mountain, which is a notable landmark in the region. Intactness is moderate because the surrounding landscape is generally rural and undeveloped, with some evidence of human disturbance form past grading activities and encroaching man-made infrastructure. Although the roadway is an encroaching element, unity is moderate because its lines are in harmony with the natural lines of the landscape. Overall, the visual quality at Viewpoint 2 is moderate.



Source: Data downloaded from ESRI in 2021 and adapted by Ascent Environmental in 2021

Figure 3.1-1 Viewpoints



Source: Google Street View Imagery from May 2019.

Figure 3.1-2 Existing View from Viewpoint 1



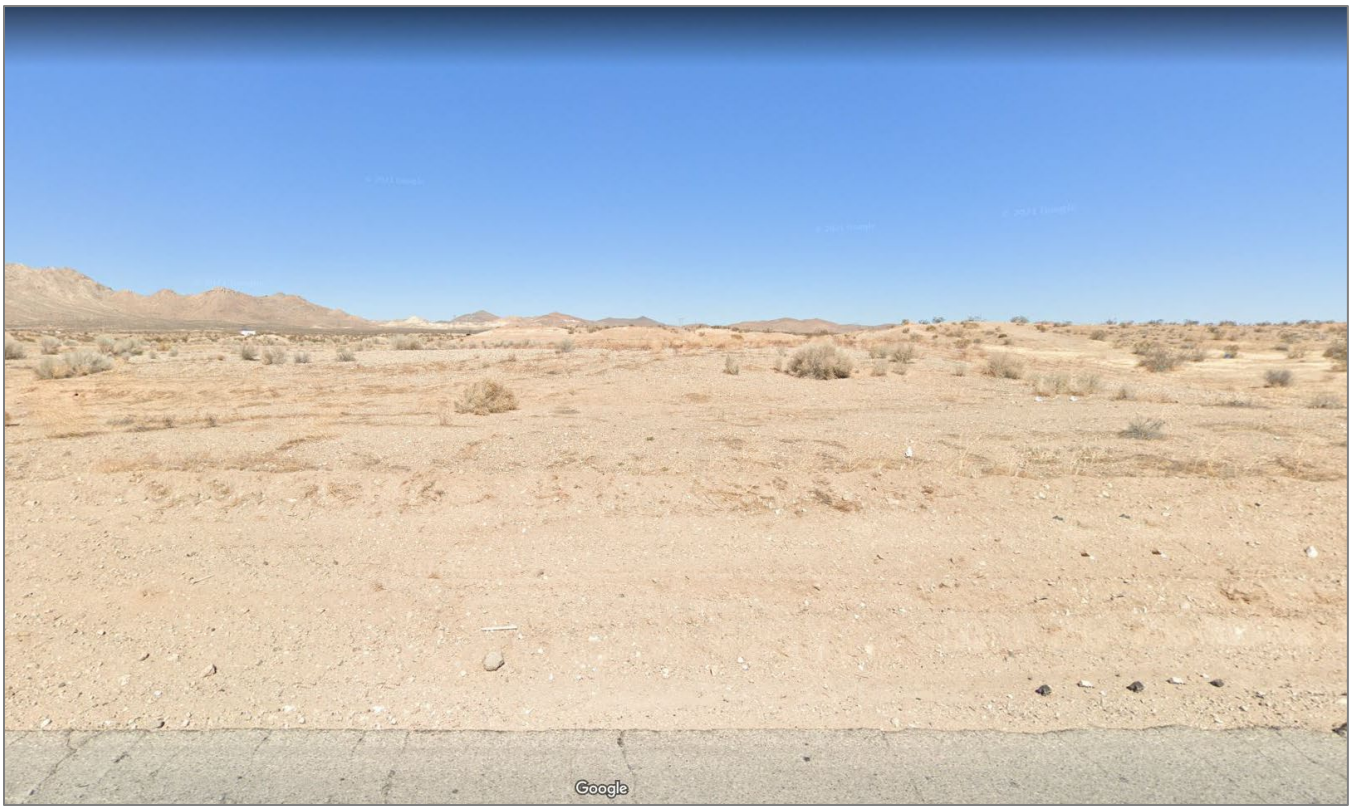
Source: Google Street View Imagery from May 2019.

Figure 3.1-2 Existing View from Viewpoint 2

Viewpoint 3 (Stoddard Wells Road, Looking North)

Viewpoint 3 is on Stoddard Wells Road, looking north toward the project site (Figure 3.1-1). The existing view from Viewpoint 3 is shown on Figure 3.1-4. Similar to Viewpoints 1 and 2 described above, the visual character from Viewpoint 3 is that of a rural desert landscape. This viewpoint also consists of a vast expanse of sky and undeveloped land that is dominated by bare ground and contains scattered low-lying shrubs and ruderal vegetation. The foreground is dominated by linear horizontal elements, including Stoddard Wells Road and the horizon line. There are no prevalent linear vertical elements. The dominant hues are muted, including the faded gray asphalt of the roadway and various tan, brown, and grayish green shades of the vegetation and landforms. There are views of mountains in the background, which stand out in contrast to the flat landscape in the foreground and midground.

Vividness is low because the landscape within Viewpoint 3 is uniform with the surroundings and is not characterized by prominent or striking features. Intactness is moderately low because although the surrounding landscape is generally rural and undeveloped, Viewpoint 3 shows evidence of human disturbance form past grading activities. Although the roadway is an encroaching element, unity is moderate because its lines are in harmony with the natural lines of the landscape. Overall, the visual quality at Viewpoint 3 is moderately low.



Source: Google Street View Imagery from February 2021.

Figure 3.1-4 Existing View from Viewpoint 3

Viewer Sensitivity

The project site, including the offsite water main line alignment, is primarily surrounded by vacant land. The project site is adjacent to Interstate 15 (I-15), which is a major north-south interstate highway that connects southern California to Las Vegas, Nevada. Nearby land uses include the Victorville Landfill, located approximately 0.5 mile west of the project site across from I-15 and along Stoddard Wells Road. Other proximal land uses include the Walmart and Big Lots! logistics/distribution centers approximately 2.8 miles east of the project site, and the Apple Valley airport located approximately 3.8 miles southeast of the project site. There are no residential land uses in proximity to the project site.

Viewer groups of the project site would primarily consist of thru-motorists (e.g., commercial truck drivers, commuters, and tourists) traveling on I-15 and Stoddard Wells Road. The overall visual sensitivity of motorists is low because they would generally be focused on the roadway. In addition, because motorists would be passing through, the duration and frequency of exposure to the project site for this viewer group would be minimal.

Workers at nearby job centers would also be considered a viewer group because they may travel along I-15 and Stoddard Wells Road to reach job centers, such as the Victorville Landfill, Walmart and Big Lots! logistics/distribution centers, and Apple Valley airport. Because workers are focused on their commute while driving, their visual sensitivity is low.

LIGHT AND GLARE CONDITIONS

The project site is currently vacant and there are no existing light or glare sources within the parcel boundaries. Light and glare sources in the project vicinity are minimal and are concentrated along the western boundary of the project site. Existing light sources consist of street lights on I-15, including the on- and off-ramps to Stoddard Wells Road, and headlights of vehicles traveling on these roadways. No street lights are present along the offsite water main line alignment on Stoddard Wells Road and Johnson Road. Existing glare sources are predominately limited to reflective surfaces from vehicles.

The nearest commercial buildings are approximately 0.6 mile southwest of the project site. The closest residences are approximately 2.6 miles south of the project site. As such, the potential for spillover lighting or glare to reach commercial buildings and residences would be none to minimal due to their distance from the project site.

SCENIC BYWAYS AND HIGHWAYS

There are no designated National Scenic Byways or state scenic highways near the project site, including the offsite water main line alignment. The nearest designated National Scenic Byway is Rim of the World Scenic Byway, located over 20 miles south of the project site (Scenic America 2021). The nearest officially designated state scenic highway is Route 2, from just north of Route 210 in La Canada to the San Bernardino County Line, located approximately 26 miles southwest of the project site (Caltrans 2019). The nearest eligible state scenic highway is Route 247, from Route 62 in Yucca Valley to Route 15 near Barstow, approximately 15 miles east of the project site (Caltrans 2019).

SCENIC VISTAS

There are no scenic vistas within or in proximity the project site, including the offsite water main line alignment; however, Bell Mountain is visible looking east from the project site. In addition, the project site could be visible within scenic viewsheds from the top of Bell Mountain. However, the project site is distant (2.1 miles northwest) from Bell Mountain and relatively small (33.52 acres) in comparison to the expansive viewshed. In addition, the project site is in proximity to the Victorville Landfill; rural development; and roadway infrastructure, including I-15 and Stoddard Wells Road. Therefore, the project site does not dominate the scenic viewshed from Bell Mountain.

3.1.3 Environmental Impacts and Mitigation Measures

METHODOLOGY

The methodology for evaluating impacts related to aesthetics was adapted from FHWA Guidelines for the Visual Impact Assessment of Highway Projects (2015). Visual impacts are evaluated based on the changes to the environment (measured by the compatibility of the impact) or to viewers (measured by sensitivity to the impacts). Together, the compatibility of the impact and the sensitivity of the impact yield the degree of the impact to visual quality.

- Compatibility of the Impact: Defined as the ability of environment to absorb the proposed project as a result of the project and the environment having compatible visual characters. The proposed project can be considered compatible or incompatible.
- Sensitivity to the Impact: Defined by the ability of viewers to see and care about a project's impacts. The sensitivity to impact is based on viewer sensitivity to changes in the visual character of visual resources. Viewers are either sensitive or insensitive to impacts.
- Degree of the Impact: Defined as either a beneficial, adverse, or neutral change to visual quality. A proposed project may benefit visual quality by either enhancing visual resources or by creating better views of those resources and improving the experience of visual quality by viewers. Similarly, it may adversely affect visual quality by degrading visual resources or obstructing or altering desired views.

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, an impact on aesthetics is considered significant if implementation of the project would do any of the following:

- have a substantial adverse effect on a scenic vista;
- substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- in non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point); and/or
- create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

ISSUES NOT DISCUSSED FURTHER

State Scenic Highways

As described in Section 3.1.2 above, the project site is over 20 miles north of the nearest National Scenic Byway, 26 miles northeast of the nearest officially designated state scenic highway, and 15 miles west of the nearest eligible state scenic highway (Scenic America 2021; Caltrans 2019). Therefore, the project site is not visible from a scenic highway. In addition, the project would not have potential to damage scenic resources scenic highway because construction activities would be limited to the privately-owned parcel and disturbed areas within or adjacent to Stoddard Wells Road and Johnson Road within Town of Apple Valley right of way. The project would not require the removal of any scenic resources, including trees, rock outcroppings, or historic buildings. This issue is not discussed further.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 3.1-1: Have a Substantial Adverse Effect on a Scenic Vista

The project site is visible from a scenic vista. However, the project would not be prominent in the scenic vista because it is relatively small in comparison to the viewshed, distant from the viewpoint, and would be compatible with nearby rural development. Impacts to scenic vistas would be **less than significant**.

Construction

There are no designated scenic vistas or areas designated for open space conservation within or in proximity to the project site, including the offsite water main line alignment. However, Viewpoints 1, 2, and 3 offer views of the natural desert environment and distant mountains, including Bell Mountain. Project construction would temporarily introduce vertical elements to the project site and offsite water main line alignment, including various types of construction

equipment (e.g., backhoes, forklifts, graders, and pavers). This equipment would be present for a period of approximately 9 months and would not be tall enough to block scenic views. In addition, scenic views from Viewpoints 1, 2, and 3 and along the offsite water main line alignment would be relatively short in duration as motorists drive past the construction areas. Effects to scenic views from project construction would be short-term, temporary, and minimal.

Operation

Following construction, the proposed structures would be approximately 25 feet in height (refer to the building elevations shown in Figures 2-6, 2-8, and 2-10 in Section 2, "Project Description"). The proposed structures would be of similar height and massing to other rural commercial development in the region. The structures would not be sizeable enough to substantially disrupt views of the desert environment and would not be tall enough to block views of surrounding mountains, including Bell Mountain. Furthermore, views of the new structures would be predominately limited to motorists traveling at high speeds on I-15 and moderate speeds on Stoddard Wells Road; therefore, the duration of views would be relatively short and viewer sensitivity would be low.

The project would also include a high-rise freeway-oriented pylon sign, a smaller pylon sign along Stoddard Wells Road, directional signage, and exterior building signs. The signage would be designed in accordance with Chapter 9.74 of the Town Code of Ordinances, which includes dimension and height requirements for signs and advertising displays, to ensure compatibility with the region's desert character. The project would also include an offsite water main line, which would be buried within roadway rights-of-way and would not be visible.

Although the project site is in a scenic desert environment, it is not a central or important part of any scenic vista. The project site could be visible from the top of Bell Mountain, which offers panoramic views of the desert region. However, the project site is distant from Bell Mountain (2.1 miles to the northwest) and relatively small (33.52 acres) in comparison to the expansive viewshed. In addition, the project site is immediately adjacent to I-15 and in an area designated for freeway-oriented commercial uses. Furthermore, the project site is in proximity to rural development, including the Victorville Landfill, which detracts from the otherwise more pristine surrounding areas. Therefore, the temporary presence of construction equipment and the permanent introduction of new structures would not dominate or detract from the scenic viewshed from Bell Mountain. Project construction and operation would be barely noticeable, if noticeable at all, from Bell Mountain.

Based on the above discussion, the project would not have a substantial adverse effect on a scenic vista. Impacts would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

Impact 3.1-2: Substantially Degrade the Existing Visual Character or Quality of Public Views of the Site or its Surroundings

The project would add non-natural encroaching elements to existing viewpoints. However, the project design would be consistent with the development standards in the Town of Apple Valley Code of Ordinances. The project would result in a **less-than-significant** impact on visual character and quality.

Construction

The project site has been the subject of previous entitlement actions. Consequently, the project site consists of highly disturbed, generally flat land that has been previously affected by mass grading operations and off highway vehicle use. Additionally, the alignment for the offsite water main line is paved with existing roadways, and the shoulders have been previously disturbed. As discussed under Impact 3.1-1 above, construction equipment and activities would be visible from Viewpoints 1, 2, and 3, and along the offsite water main line alignment. Construction activities would be short-term and temporary, lasting approximately 9 months. In addition, views of construction activities from

Viewpoints 1, 2, and 3 and along the offsite water main line alignment would be relatively short in duration as motorists drive past the construction areas. Therefore, impacts would be **less than significant**.

Operation

Viewpoint 1 (I-15 Off- and On-Ramps at Stoddard Wells Road, Looking Northwest)

Existing vegetation would be removed, the project site would be graded, and new buildings, landscaping, and hardscaping would be installed. From Viewpoint 1, a 4-foot retaining wall and composite fence along Stoddard Wells Road and landscaping would be visible in the foreground. The proposed truck maintenance building, fast food restaurant, and convenience store, as well as a fueling area, would be visible in the midground. These buildings would generally obscure views of the additional truck fueling and parking areas in the northernmost portion of the project site.

The project would introduce new commercial structures within the rural desert landscape, which would change the existing visual character of the project site. New horizontal elements would include roof lines, signs, retaining walls, fences, and internal roadways. New vertical elements would include medium to large trees, light poles, sign posts, fuel pumps, and building edges. The building facades would primarily consist of muted shades of gray, tan, and brown, which would be similar in character to the hues of existing landforms. However, commercial signage would introduce more vibrant colors (e.g., red, yellow, blue, and orange) within the viewpoint.

The vividness at Viewpoint 1 would increase from low to moderate because the project would introduce new prominent features to the largely undeveloped landscape. The intactness at Viewpoint 1 would decrease from moderately low to low because the project would add encroaching human-built elements with new textures and colors not present in the existing landscape. Although the proposed structures would be noticeable amid the flat desert landscape, their architecture and design would conform with Town of Apple Valley Development Code requirements. The proposed structures would receive architectural treatments that would create unity within the development and would be harmonious with the Town's desert setting. Overall, the visual quality at Viewpoint 1 would remain moderately low. Furthermore, views of the project site from Viewpoint 1 would be relatively short in duration as motorists drive past the project site.

Although the project would change the visual character of the project site, visual quality at Viewpoint 1 would remain moderately low and viewer sensitivity would be low. Therefore, the project would not substantially degrade the existing visual character or quality of the site or its surroundings. Impacts at Viewpoint 1 would be **less than significant**.

Viewpoint 2 (Northbound I-15, Looking East)

As with Viewpoint 1, existing vegetation would be removed, the project site would be graded, and new buildings, landscaping, and hardscaping would be installed. Landscaping, such as grass or mulch, the proposed truck maintenance building, fueling area, and truck parking areas would be visible in the foreground from Viewpoint 2. Truck fueling areas and the fast food restaurant and convenience store would be visible in the midground. These structures would generally obscure views of the RV parking areas in the easternmost portion of the project site.

As with Viewpoint 1, the project would introduce new commercial structures within the rural desert landscape, which would change the existing visual character of the project site. New horizontal elements would include roof lines, signs, and internal roadways. New vertical elements would include light poles, sign posts, fuel pumps, and building edges. The building facades would primarily consist of muted shades of gray, tan, and brown, which would be similar in character to the hues of existing landforms. However, commercial signage would introduce more vibrant colors (e.g., red, yellow, blue, and orange) within the viewpoint.

The vividness at Viewpoint 2 would increase from moderately low to moderate because the project would introduce new prominent features to the largely undeveloped landscape. The proposed structures would not be tall enough to block views of Bell Mountain and other topographical features in the distant background. The intactness at Viewpoint 2 would decrease from moderate to moderately low because the project would add encroaching human-built elements with new textures and colors not present in the existing landscape. Although the proposed structures would be noticeable amid the flat desert landscape, their architecture and design would conform with Town of Apple Valley Development Code requirements. The proposed structures would receive architectural treatments that would create

unity within the development and would be harmonious with the Town's desert setting. Overall, the visual quality at Viewpoint 2 would remain moderate. Furthermore, views of the project site from Viewpoint 2 would be relatively short in duration as motorists drive past the project site.

Although the project would change the visual character of the project site, visual quality at Viewpoint 2 would remain moderate low and viewer sensitivity would be low. Therefore, the project would not substantially degrade the existing visual character or quality of the site or its surroundings. Impacts at Viewpoint 2 would be **less than significant**.

Viewpoint 3 (Stoddard Wells Road, Looking North)

As with Viewpoints 1 and 2, existing vegetation would be removed, the project site would be graded, and new buildings, landscaping, and hardscaping would be installed. From Viewpoint 3, a sedimentation basin would be visible in the foreground. The proposed RV park would be visible in the midground, including the main building, RV parking stalls, and recreational amenities. These features would be obscured by a tree buffer.

The project would introduce new commercial structures within the rural desert landscape, which would change the existing visual character of the project site. New horizontal elements would include roof lines, signs, retaining walls, fences, and internal roadways. New vertical elements would include medium to large trees, light poles, sign posts, fuel pumps, and building edges. The building facades would primarily consist of muted shades of gray, tan, and brown, which would be similar in character to the hues of existing landforms. However, commercial signage would introduce more vibrant colors (e.g., red and yellow) within the viewpoint.

The vividness at Viewpoint 3 would increase from low to moderate because the project would introduce new prominent features to the largely undeveloped landscape. The intactness at Viewpoint 3 would decrease from moderately low to low because the project would add encroaching human-built elements with new textures and colors not present in the existing landscape. Although the proposed structures would be noticeable amid the flat desert landscape, their architecture and design would conform with Town of Apple Valley Development Code requirements. The proposed structures would receive architectural treatments that would create unity within the development and would be harmonious with the Town's desert setting. Overall, the visual quality at Viewpoint 3 would remain moderately low. Furthermore, views of the project site from Viewpoint 3 would be relatively short in duration as motorists drive past the project site.

Although the project would change the visual character of the project site, visual quality at Viewpoint 3 would remain moderately low and viewer sensitivity would be low. Therefore, the project would not substantially degrade the existing visual character or quality of the site or its surroundings. Impacts at Viewpoint 3 would be **less than significant**.

Offsite Improvements

The offsite water main line would be buried within roadway rights-of-way and would not be visible. Therefore, the offsite water main line would not affect the existing visual character or quality of the site or its surroundings and there would be **no impact**.

Mitigation Measures

No mitigation is required for this impact.

Impact 3.1-3: Create a New Source of Substantial Light or Glare That Would Adversely Affect Day or Nighttime Views in the Area

Project construction and operation would introduce new sources of light and glare to an area that is sparsely developed with limited sources of existing light and glare. However, the project would comply with all Town of Apple Valley regulations pertaining to light and glare, including requirements related to light intensity and height, shielding and directionality, and building setbacks. Impacts would be **less than significant**.

Light

As described in Section 3.1.2, there are no residential land uses in proximity to the project site that would be sensitive to nighttime lighting. However, lighting at the project site would be visible to motorists traveling on adjacent roadways, including I-15 and Stoddard Wells Road.

Construction activities would be short-term and temporary and would occur during daytime hours. However, security lighting would be used onsite at night and would represent a new source of temporary lighting on the east side of I-15 at its crossing with Stoddard Wells Road. Security lighting would be shielded and projected downward to minimize spillover effects on adjacent roadways.

Once operational, the project would include onsite lighting, consisting of high-mast light-emitting diode (LED) fixtures and LED canopy lighting. In addition, signs for the travel center facility, convenience store, fast food restaurant, and truck maintenance building would be illuminated. Interior lighting would also be noticeable at nighttime through building windows. The offsite water main line would be buried underground and would not introduce new sources of lighting along its alignment.

The project would introduce new lighting in a sparsely developed, natural desert environment with limited sources of existing lighting. However, the proposed lighting would be introduced to an area designated for freeway-oriented commercial uses and is not within an area designated for dark sky protection. The project would comply with the lighting requirements included in Chapter 9.70.020(H) of the Town of Apple Valley Code of Ordinances. Specifically, the intensity of light would not exceed 75 foot lamberts at the project site boundary and parking lot lighting would not exceed a height of 20 feet. In addition, lighting would only be used for the functional requirements of safety, security, and identification in order to preserve night sky views. Furthermore, proposed lighting would be shielded and projected downward and proposed structures would be sited to meet Town setback requirements, which would minimize spillover effects on adjacent roadways and properties. Impacts would be **less than significant**.

Glare

Construction equipment and vehicles would be temporarily present within the project site. Glare from these surfaces would be minor and would not adversely affect daytime views. Once operational, the project would not include building materials or surfaces that would create substantial sources of glare. The roof-mounted solar system on the proposed truck maintenance building would not be visible from surrounding uses, and glare off these panels would not be visible to nearby receptors. Additionally, the offsite water main line would be buried underground and would not introduce new sources of glare along its alignment. Vehicles within the project site would reflect small amounts of sunlight, introducing marginal sources of spillover glare. Therefore, glare sources from project operation would be minor and would not adversely affect daytime views of the area. Impacts would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

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3.2 AIR QUALITY

This section includes a discussion of existing air quality conditions, a summary of applicable regulations, and an analysis of potential construction and operational air quality impacts caused by proposed development of the Apple Valley I-15 Travel Center (referred to as "project"). All impacts are less than significant and no mitigation is required.

3.2.1 Regulatory Setting

Air quality in the project area is regulated through the efforts of various federal, State, regional, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, planning, policy-making, education, and a variety of programs. The agencies responsible for improving the air quality within the air basins are discussed below.

FEDERAL

U.S. Environmental Protection Agency

The U.S. Environmental Protection Agency (EPA) has been charged with implementing national air quality programs. EPA's air quality mandates draw primarily from the federal Clean Air Act (CAA), which was enacted in 1970. The most recent major amendments made by Congress in 1990. EPA's air quality efforts address both criteria air pollutants (CAPs) and hazardous air pollutants (HAPs). EPA regulations concerning CAPs and HAPs are presented in greater detail below.

Criteria Air Pollutants

The CAA required EPA to establish national ambient air quality standards (NAAQS) for six common air pollutants found all over the U.S. referred to as criteria air pollutants (CAPs). EPA has established primary and secondary NAAQS for the following criteria air pollutants: ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), respirable particulate matter with aerodynamic diameter of 10 micrometers or less (PM_{10}) and fine particulate matter with aerodynamic diameter of 2.5 micrometers or less ($PM_{2.5}$), and lead. The NAAQS are shown in Table 3.2-1. The primary standards protect public health and the secondary standards protect public welfare. The CAA also required each state to prepare a State implementation plan (SIP) for attaining and maintaining the NAAQS. The federal Clean Air Act Amendments of 1990 (CAAA) added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. California's SIP is modified periodically to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. EPA is responsible for reviewing all SIPs to determine whether they conform to the mandates of the CAA and its amendments, and whether implementation will achieve air quality goals. If EPA determines a SIP to be inadequate, EPA may prepare a federal implementation plan that imposes additional control measures. If an approvable SIP is not submitted or implemented within the mandated time frame, sanctions may be applied to transportation funding and stationary air pollution sources in the air basin.

Table 3.2-1 National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California (CAAQS)[a,b]	National (NAAQS)[c]	
			Primary[b,d]	Secondary[b,e]
Ozone	1-hour	0.09 ppm (180 µg/m^3)	–[e]	Same as primary standard
	8-hour	0.070 ppm (137 µg/m^3)	0.070 ppm (147 µg/m^3)	
Carbon monoxide (CO)	1-hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	Same as primary standard
	8-hour	9 ppm[f] (10 mg/m^3)	9 ppm (10 mg/m^3)	
Nitrogen dioxide (NO_2)	Annual arithmetic mean	0.030 ppm (57 µg/m^3)	53 ppb (100 µg/m^3)	Same as primary standard
	1-hour	0.18 ppm (339 µg/m^3)	100 ppb (188 µg/m^3)	—
Sulfur dioxide (SO_2)	24-hour	0.04 ppm (105 µg/m^3)	—	—
	3-hour	—	—	0.5 ppm (1300 µg/m^3)
	1-hour	0.25 ppm (655 µg/m^3)	75 ppb (196 µg/m^3)	—
Respirable particulate matter (PM_{10})	Annual arithmetic mean	20 µg/m^3	—	Same as primary standard
	24-hour	50 µg/m^3	150 µg/m^3	
Fine particulate matter ($PM_{2.5}$)	Annual arithmetic mean	12 µg/m^3	12.0 µg/m^3	15.0 µg/m^3
	24-hour	—	35 µg/m^3	Same as primary standard
Lead [f]	Calendar quarter	—	1.5 µg/m^3	Same as primary standard
	30-Day average	1.5 µg/m^3	—	—
	Rolling 3-Month Average	–	0.15 µg/m^3	Same as primary standard
Hydrogen sulfide	1-hour	0.03 ppm (42 µg/m^3)	No national standards	
Sulfates	24-hour	25 µg/m^3		
Vinyl chloride [f]	24-hour	0.01 ppm (26 µg/m^3)		
Visibility-reducing particulate matter	8-hour	Extinction of 0.23 per km		

Notes: µg/m^3 = micrograms per cubic meter; km = kilometers; ppb = parts per billion; ppm = parts per million.

a California standards for ozone, carbon monoxide, SO_2 (1- and 24-hour), NO_2, particulate matter, and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

b Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based on a reference temperature of 25 degrees Celsius (°C) and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

c National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic means) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over three years, is equal to or less than the standard. The PM_{10} 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. The $PM_{2.5}$ 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. Environmental Protection Agency for further clarification and current federal policies.

d National primary standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

e National secondary standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

f The California Air Resources Board has identified lead and vinyl chloride as toxic air contaminants with no threshold of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

Source: CARB 2016

Hazardous Air Pollutants and Toxic Air Contaminants

Toxic air contaminants (TACs), or in federal parlance, hazardous air pollutants (HAPs), are a defined set of airborne pollutants that may pose a present or potential hazard to human health. A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations.

A wide range of sources, from industrial plants to motor vehicles, emit TACs. The health effects associated with TACs are quite diverse and generally are assessed locally, rather than regionally. TACs can cause long-term health effects such as cancer, birth defects, neurological damage, asthma, bronchitis, or genetic damage; or short-term acute affects such as eye watering, respiratory irritation (a cough), running nose, throat pain, and headaches.

For evaluation purposes, TACs are separated into carcinogens and non-carcinogens based on the nature of the physiological effects associated with exposure to the pollutant. Carcinogens are assumed to have no safe threshold below which health impacts would not occur. This contrasts with criteria air pollutants for which acceptable levels of exposure can be determined and for which the ambient standards have been established (Table 3.2-1). Cancer risk from TACs is expressed as excess cancer cases per one million exposed individuals, typically over a lifetime of exposure.

EPA regulates HAPs through its National Emission Standards for Hazardous Air Pollutants. The standards for a particular source category require the maximum degree of emission reduction that the EPA determines to be achievable, which is known as the Maximum Achievable Control Technology—MACT standards. These standards are authorized by Section 112 of the 1970 Clean Air Act and the regulations are published in 40 CFR Parts 61 and 63.

STATE

CARB is the agency responsible for coordination and oversight of State and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA). The CCAA, which was adopted in 1988, required CARB to establish California ambient air quality standards (CAAQS) (Table 3.2-1).

Criteria Air Pollutants

CARB has established CAAQS for sulfates, hydrogen sulfide, vinyl chloride, visibility-reducing particulate matter, and the above-mentioned criteria air pollutants. In most cases the CAAQS are more stringent than the NAAQS. Differences in the standards are generally explained by the health effects studies considered during the standard-setting process and the interpretation of the studies. In addition, the CAAQS incorporate a margin of safety to protect sensitive individuals.

The CCAA requires that all local air districts in the state endeavor to attain and maintain the CAAQS by the earliest date practical. The CCAA specifies that local air districts should focus particular attention on reducing the emissions from transportation and area-wide emission sources. The CCCA also provides air districts with the authority to regulate indirect sources.

Toxic Air Contaminants

TACs in California are regulated primarily through the Tanner Air Toxics Act (Assembly Bill [AB] 1807, Chapter 1047, Statutes of 1983) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588, Chapter 1252, Statutes of 1987). AB 1807 sets forth a formal procedure for CARB to designate substances as TACs. Research, public participation, and scientific peer review are required before CARB can designate a substance as a TAC. To date, CARB has identified more than 21 TACs and adopted EPA's list of HAPs as TACs. Most recently, particulate matter (PM) exhaust from diesel engines (diesel PM) was added to CARB's list of TACs.

After a TAC is identified, CARB then adopts an airborne toxics control measure for sources that emit that particular TAC. If a safe threshold exists for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold. If no safe threshold exists, the measure must incorporate best available control technology for toxics to minimize emissions.

The Hot Spots Act requires that existing facilities that emit toxic substances above a specified level prepare an inventory of toxic emissions, prepare a risk assessment if emissions are significant, notify the public of significant risk levels, and prepare and implement risk reduction measures.

AB 617 of 2017 aims to help protect air quality and public health in communities around industries subject to the state's cap-and-trade program for GHG emissions. AB 617 imposes a new state-mandated local program to address non-vehicular sources (e.g., refineries, manufacturing facilities) of criteria air pollutants and TACs. The legislation requires CARB to identify high-pollution areas and directs air districts to focus air quality improvement efforts through adoption of community emission reduction programs within these identified areas. Currently, air districts review individual sources and impose emissions limits on emitters based on best available control technology, pollutant type, and proximity to nearby existing land uses. The legislation addresses the cumulative and additive nature of air pollutant health effects by requiring community-wide air quality assessment and emission reduction planning.

CARB has adopted diesel exhaust control measures and more stringent emissions standards for various transportation-related mobile sources of emissions, including transit buses, and off-road diesel equipment (e.g., tractors, generators). Over time, the replacement of older vehicles will result in a vehicle fleet that produces substantially lower levels of TACs than under current conditions. Mobile-source emissions of TACs (e.g., benzene, 1-3-butadiene, diesel PM) have been reduced significantly over the last decade and will be reduced further in California through a progression of regulatory measures (e.g., Low Emission Vehicle/Clean Fuels and Phase II reformulated gasoline regulations) and control technologies. With implementation of CARB's Risk Reduction Plan, it is expected that diesel PM concentrations will be 85 percent less in 2020 in comparison to year 2000 (CARB 2000). Adopted regulations are also expected to continue to reduce formaldehyde emissions emitted by cars and light-duty trucks. As emissions are reduced, it is expected that risks associated with exposure to the emissions will also be reduced.

Truck and Bus Regulation

As part of CARB' s Sustainable Freight Strategy, CARB adopted the Truck and Bus Regulation. The latest amendments to the Truck and Bus Regulation became effective on December 31, 2014. The amended regulation requires diesel trucks and buses that operate in California to be upgraded to reduce emissions. Newer heavier trucks and buses had to meet PM filter requirements as of January 1, 2012. Lighter and older heavier trucks had to be replaced starting January 1, 2015. By January 1, 2023, nearly all trucks and buses will need to have 2010 model year engines or equivalent.

This regulation applies to nearly all privately and federally owned diesel-fueled trucks and buses and to privately and publicly owned school buses with a gross vehicle weight rating greater than 14,000 pounds. The regulation provides a variety of flexibility options tailored to fleets operating low use vehicles, fleets operating in selected vocations like agricultural and construction, and small fleets of three or fewer trucks (CARB 2019).

Advanced Clean Trucks Rule

To further advance the State' s Sustainable Freight Strategy, CARB adopted the Advanced Clean Trucks (ACT) Rule in July 2020, which requires manufacturers of vehicle class 2b through vehicle class 8 trucks to begin meeting escalating in-State ZEV sales from 2024 through 2035. By 2035, the ACT Rule will require 55 percent of trucks class 2b through class 3 to be ZEVs, 75 percent of trucks class 4 through class 8 to be ZEVs, and 40 percent of truck tractors to be ZEVs (CARB 2021). Complementary to the ACT Rule, and as discussed further below, Executive Order N-79-20 set a goal of 100 percent of all in-State drayage truck sales to be ZEVs by 2035 and 100 percent of all in-State heavy- duty vehicle sales to be ZEVs by 2045. CARB is also in process of developing an Advanced Clean Fleet (ACF) Rule to accelerate the ACT Rule by requiring 100 percent of all in-State sales to be ZEVs in 2040 for class 2b through class 3 trucks, class 4 through class 8 vocational trucks, and class 7 through class 8 tractor trucks. The ACF Rule would also provide a clear timeline for requirements for phasing in in-State ZEV sales targets through 2040 (CARB 2022a). Board recommendation on the ACF is expected by October 2022.

LOCAL

Mojave Desert Air Quality Management District

MDAQMD manages the air quality for the San Bernardino County's High Desert and Riverside County and regulates the stationary sources of air pollution located in those jurisdictional boundaries. MDAQMD is also responsible for implementing the programs for the attainment of the NAAQS and CAAQS, adoption and enforcement of rules and regulations and educates businesses and residents about their role in protecting air quality and the risks of air pollution. MDAQMD is authorized to perform the listed duties under the California Health and Safety Code, Division 26, Part 3, Chapter 13, Article 4, Section 41230-41233.

Projects located in the MDAQMD are subject to MDAQMD's rules and regulations (MDAQMD 2022). Specific rules applicable to the project include:

- Regulation 4, Rule 401, Visible Emissions. This rule prohibits the discharge of air contaminants darker in shade as that designated as No. 1 on the Ringelmann Chart or of such opacity as to obscure an observer's view to a degree equal to or greater than 20% opacity for a period or periods aggregating more than three minutes in any one hour.
- Regulation 4, Rule 402, Nuisance. This rule prohibits the discharge of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.
- Regulation 4, Rule 403, Fugitive Dust Control. This rule reduces the amount of PM10 entrained in the ambient air from anthropogenic Fugitive Dust sources. The rule prohibits emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area to be visible beyond the emission source's property line. This rule requires projects subject to this rule (such as the proposed project) to obtain and maintain a District-approved Dust Control Plan. The Dust Control Plan specifies dust control methods (specific water application equipment, dust suppressant, speed limits) and must be approved by the air district prior to the start of construction activities.
- Regulation 4, Rule 461, Gasoline Transfer and Dispensing. This rule limits the release of Volatile Organic Compounds (VOC) and toxic compounds from the transfer and dispensing of gasoline.
- Regulation 11, Rule 1113, Architectural Coatings. This rule limits the quantity of VOCs in architectural coatings. Architectural content is limited to 100 grams per liter (g/L) or less for exterior coatings and 50 g/L or less for interior coatings. This rule is applicable to any person who supplies, sells, offers for sale, manufactures, blends or repackages any architectural coating for use within the MDAQMD.
- Regulation 13, Rule 1320, New Source Review for Toxic Air Contaminants. Requires the use of best available control technology (BACT) and best available control technology for toxics (T-BACT) at certain projects and the preparation of a Health Risk Assessment (HRA).
- Regulation 15, Rule 1520, Control of Toxic Air Contaminants from Existing Sources. This rule reduces the health risk from TACs from new and existing facilities as required pursuant to Part 6 of Division 26 of the California Health and Safety Code.

The proposed project would be required to comply with the relevant MDAQMD rules listed above. Specifically, because the project is a non-residential construction/demolition project with a disturbed area of at least five (5) acres, the project would be required to obtain a dust control plan per Rule 403. Additionally, because the project would use architectural coatings within MDAQMD, it is subject to the VOC limits in Rule 1113.

The current ozone air quality management plan for the MDAQMD is the Mojave Desert Federal 75 ppb Ozone Nonattainment Plan for the Western Mojave Desert Nonattainment Plan (2017 Ozone Attainment Plan). The 2017 Attainment Plan provides a strategy to attain the federal ozone standards by 2027.

City of Apple Valley General Plan

The City's General Plan was adopted in 2009 and contains the following policies related to air quality that are applicable to the project.

Land Use Element

- **Policy 1.B**: New development shall be designed to minimize grading, and avoid mass grading to the greatest extent possible.

Air Quality Element

- **Policy 1.D**: All proposals for development activities within the Town shall be reviewed for their potential to adversely impact local and regional air quality and shall be required to mitigate any significant impacts.
- **Policy 1.E**: The use of clean and/or renewable alternative energy sources for transportation, heating and cooling, and construction shall be encouraged by the Town.
- **Policy 1.F**: The Town shall support, encourage, and facilitate the development of projects that enhance the use of alternative modes of transportation, including pedestrian-oriented retail and activity centers, dedicated bicycle paths and lanes, and community-wide multi-use trails.
- **Policy 1.G**: Future residential, commercial, and industrial development and remodeling projects, shall strive to exceed Title 24 standards by 15% and/or achieve LEED certification or similar performance standards for buildings.
- **Policy 1.H**: Residential, commercial, and industrial projects that reduce vehicle miles traveled (VMTs) by providing alternative transportation options, home office and live/work spaces, and/or promote employees living close to work are preferred.
- **Policy 1.I**: The Town shall continue to reduce waste generation, enhance recycling or reuse programs, and expand grey water systems for landscape irrigation
- **Policy 1.J**: The Town shall promote the use of solar and alternative energies and give priority to projects that include the use of solar cells and other alternative energy sources in their designs.

Energy and Mineral Resources Element

- **Policy 1.A**: The community and all economic sectors shall be urged to conserve energy, with particular focus on the inclusion of energy saving measures in transport systems, and in the planning and construction of urban uses.
- **Policy 1.B**: Promote building design and construction that integrates alternative energy systems, including but not limited to solar, thermal, photovoltaics and other clean energy systems.
- **Policy 1.D**: The Town will encourage and facilitate the exploitation of local renewable resources by supporting public and private initiatives to develop and operate alternative systems of electricity generation, using wind, solar and other renewable energies.

3.2.2 Environmental Setting

The project site is located in the Mojave Desert Air Basin (MDAB) within the Unincorporated County of San Bernardino. The MDAB includes the desert portions of Kern, Los Angeles, Riverside and San Bernardino counties. The ambient concentrations of air pollutant emissions are determined by the amount of emissions released by the sources of air pollutants and the atmosphere's ability to transport and dilute such emissions. Natural factors that affect transport and dilution include terrain, wind, atmospheric stability, and sunlight. Existing air quality conditions in the area are determined by such natural factors as topography, meteorology, and climate, in addition to the amount of emissions released by existing air pollutant sources, as discussed separately below.

CLIMATE, METEOROLOGY, AND TOPOGRAPHY

Atmospheric conditions such as wind speed, wind direction, and air temperature gradients interact with the physical features of the landscape to determine the movement and dispersal of air pollutants. The MDAB contains an assortment of mountain ranges scattered with long valleys with dry lakes. Prevailing winds in the MDAB are out of the west and southwest. These prevailing winds are due to the proximity of the MDAB to coastal and central regions and the blocking nature of the Sierra Nevada mountains to the north; air masses pushed onshore in southern California by differential heating are channeled through the MDAB. The summer climate of the MDAB is determined largely by a Pacific Subtropical High cell that sits off the coast, preventing cloud formation and encouraging daytime solar heating. The cold air masses from Canada and Alaska rarely impact the region, as they diffuse once they reach the deserts. Most desert moisture arrives from infrequent warm, moist and unstable air masses from the south.

The local meteorology of the project site and surrounding area is represented by measurements recorded at the Western Regional Climate Center (WRCC) Victorville Pump Pt. station. The normal annual precipitation is approximately 5.52 inches. January temperatures range from a normal minimum of 29.8°F to a normal maximum of 58.8°F. July temperatures range from a normal minimum of 60.8°F to a normal maximum of 98.1°F (WRCC 2016). Wind direction in the Town of Apple Valley varies throughout the year, but is most often from the west from February to November and from the north from November to February (Weather Spark 2020).

CRITERIA AIR POLLUTANTS

Concentrations of criteria air pollutants are used to indicate the quality of the ambient air. A brief description of key criteria air pollutants in the MDAB is provided below. Emission source types and health effects are summarized in Table 3.2-2. San Bernardino County's attainment status for the CAAQS and the NAAQS are shown in Table 3.2-3. Monitoring data applicable to the project site is provided in Table 3.2-4.

Ozone

Ozone is a photochemical oxidant (a substance whose oxygen combines chemically with another substance in the presence of sunlight) and the primary component of smog. Ozone is not directly emitted into the air but is formed through complex chemical reactions between precursor emissions of ROG and NO_X in the presence of sunlight. ROG are volatile organic compounds that are photochemically reactive. ROG emissions result primarily from incomplete combustion and the evaporation of chemical solvents and fuels. NO_X are a group of gaseous compounds of nitrogen and oxygen that result from the combustion of fuels.

Emissions of the ozone precursors ROG and NO_X have decreased over the past several years because of more stringent motor vehicle standards and cleaner burning fuels. Emissions of ROG and NO_X decreased from 2000 to 2010 and are projected to continue decreasing from 2010 to 2035 (CARB 2013a).

Nitrogen Dioxide

NO_2 is a brownish, highly reactive gas that is present in all urban environments. The major human-made sources of NO_2 are combustion devices, such as boilers, gas turbines, and mobile and stationary reciprocating internal combustion engines. Combustion devices emit primarily nitric oxide (NO), which reacts through oxidation in the atmosphere to form NO_2. The combined emissions of NO and NO_2 are referred to as NO_X and are reported as equivalent NO_2. Because NO_2 is formed and depleted by reactions associated with photochemical smog (ozone), the NO_2 concentration in a particular geographical area may not be representative of the local sources of NO_X emissions (EPA 2012).

Particulate Matter

Respirable particulate matter with an aerodynamic diameter of 10 micrometers or less is referred to as PM_{10}. PM_{10} consists of particulate matter emitted directly into the air, such as fugitive dust, soot, and smoke from mobile and stationary sources, construction operations, fires and natural windblown dust, and particulate matter formed in the atmosphere by reaction of gaseous precursors (CARB 2013a). Fine particulate matter ($PM_{2.5}$) includes a subgroup of smaller particles that have an aerodynamic diameter of 2.5 micrometers or less. PM_{10} emissions in the MDAB are

dominated by emissions from area sources, primarily fugitive dust from vehicle travel on unpaved and paved roads, farming operations, construction and demolition, and particles from residential fuel combustion. Direct emissions of PM_{10} are projected to remain relatively constant through 2035. Direct emissions of $PM_{2.5}$ have steadily declined in the MDAB between 2000 and 2010 and then are projected to increase very slightly through 2035. Emissions of $PM_{2.5}$ in the MDAB are dominated by the same sources as emissions of PM_{10} (CARB 2013a).

Table 3.2-2 Sources and Health Effects of Criteria Air Pollutants

Pollutant	Sources	Acute[1] Health Effects	Chronic[2] Health Effects
Ozone	Secondary pollutant resulting from reaction of ROG and NO_X in presence of sunlight. ROG emissions result from incomplete combustion and evaporation of chemical solvents and fuels; NO_X results from the combustion of fuels	increased respiration and pulmonary resistance; cough, pain, shortness of breath, lung inflammation	permeability of respiratory epithelia, possibility of permanent lung impairment
Carbon monoxide (CO)	Incomplete combustion of fuels; motor vehicle exhaust	headache, dizziness, fatigue, nausea, vomiting, death	permanent heart and brain damage
Nitrogen dioxide (NO_2)	combustion devices; e.g., boilers, gas turbines, and mobile and stationary reciprocating internal combustion engines	coughing, difficulty breathing, vomiting, headache, eye irritation, chemical pneumonitis or pulmonary edema; breathing abnormalities, cough, cyanosis, chest pain, rapid heartbeat, death	chronic bronchitis, decreased lung function
Sulfur dioxide (SO_2)	coal and oil combustion, steel mills, refineries, and pulp and paper mills	Irritation of upper respiratory tract, increased asthma symptoms	Insufficient evidence linking SO_2 exposure to chronic health impacts
Respirable particulate matter (PM_{10}), Fine particulate matter ($PM_{2.5}$)	fugitive dust, soot, smoke, mobile and stationary sources, construction, fires and natural windblown dust, and formation in the atmosphere by condensation and/or transformation of SO_2 and ROG	breathing and respiratory symptoms, aggravation of existing respiratory and cardiovascular diseases, premature death	alterations to the immune system, carcinogenesis
Lead	metal processing	reproductive/ developmental effects (fetuses and children)	numerous effects including neurological, endocrine, and cardiovascular effects

Notes: NO_X = oxides of nitrogen; ROG = reactive organic gases.

[1] "Acute" refers to effects of short-term exposures to criteria air pollutants, usually at fairly high concentrations.

[2] "Chronic" refers to effects of long-term exposures to criteria air pollutants, usually at lower, ambient concentrations.

Sources: EPA 2022a

Table 3.2-3 Attainment Status Designations for Mojave Desert Air Basin portion of San Bernardino County

Pollutant	NAAQS	CAAQS
Ozone	Nonattainment (1-hour)[1]	Nonattainment (1-hour)
	Nonattainment (8-hour) [1]	Nonattainment (8-hour)
Respirable particulate matter (PM_{10})	Nonattainment (24-hour)[3]	Nonattainment (24-hour)
		Nonattainment (Annual)
Fine particulate matter ($PM_{2.5}$)	Unclassified/Attainment (24-hour)	(No State Standard for 24-Hour)
	Unclassified/Attainment (Annual)	Unclassified/Attainment (Annual)
Carbon monoxide (CO)	Unclassified/Attainment (1-hour)	Attainment (1-hour)
	Unclassified/Attainment (8-hour)	Attainment (8-hour)
Nitrogen dioxide (NO_2)	Unclassified/Attainment (1-hour)	Attainment (1-hour)
	Unclassified/Attainment (Annual)	Attainment (Annual)

Pollutant	NAAQS	CAAQS
Sulfur dioxide (SO_2)[4]	Unclassified/Attainment (Annual)	(No State Standard for Annual)
	Unclassified/Attainment (24-hour)	Attainment (24-hour)
	Unclassified/Attainment (3-hour)	Attainment (3-hour)
	Unclassified/Attainment (1-hour)	Attainment (1-hour)
Lead (Particulate)	(No State Standard for 30-day Average)	Attainment (30-day Average)
	Unclassified/Attainment (Calendar Quarter)	(No State Standard for Calendar Quarter)
	Unclassified/Attainment (Rolling 3-month Average)	(No State Standard for Rolling 3-month Average)
Hydrogen Sulfide	No Federal Standard	Nonattainment (1-hour)[2]
Sulfates		Attainment (24-hour)
Visibly Reducing Particles		Unclassified (8-hour)
Vinyl Chloride		Unclassified (24-hour)

Notes: NAAQS = national ambient air quality standards; CAAQS = California ambient air quality standards

[1] Southwest corner of desert portion of San Bernardino County only

[2] Searles Valley (northwest corner of San Bernardino County) only

[3] San Bernardino County portion only

Source: MDAQMD 2017, EPA 2022b, and CARB 2020

MONITORING STATION DATA AND ATTAINMENT DESIGNATIONS

Criteria air pollutant concentrations are measured at several monitoring stations in the MDAB. The Victorville-14306 Park Avenue station is the closest and most representative station to the project area with recent data for ozone, $PM_{2.5}$, and PM_{10}. Table 3.2-4 summarizes the air quality data from the last 3 years data is available (2018-2020).

Both CARB and EPA use this type of monitoring data to designate areas according to their attainment status for criteria air pollutants (attainment designations are summarized above in Table 3.2-3).

Table 3.2-4 Summary of Annual Data on Ambient Air Quality (2018-2020)[1]

	2018	2019	2020
Ozone			
Maximum concentration (1-hr/8-hr avg, ppm)	0.107/0.097	0.104/0.082	0.112/0.095
Number of days state standard exceeded (1-hr/8-hr)	5/56	3/34	4/38
Number of days national standard exceeded (8-hr)	55	29	35
Fine Particulate Matter ($PM_{2.5}$)			
Maximum concentration (24-hour µg/m^3)	33.2	20.0	48.7
Number of days national standard exceeded (24-hour measured)	0	0	4
Respirable Particulate Matter (PM_{10})			
Maximum concentration (24-hour µg/m^3)	165.2	170.0	261.4
Number of days state standard exceeded	NA	NA	NA
Number of days national standard exceeded (estimated)	1.0	1.9	1.9

Notes: µg/m^3 = micrograms per cubic meter; ppm = parts per million; NA = data not available.

[1] Measurements from the Victorville 14306 Park Avenue station.

Source: CARB 2022d

TOXIC AIR CONTAMINANTS

According to the *California Almanac of Emissions and Air Quality* (CARB 2013a), the majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being diesel PM. Diesel PM differs from other TACs in that it is not a single substance, but rather a complex mixture of hundreds of substances. Although diesel PM is emitted by diesel-fueled internal combustion engines, the composition of the emissions varies depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emissions control system is being used. Unlike the other TACs, no ambient monitoring data are available for diesel PM because no routine measurement method currently exists. However, CARB has made preliminary concentration estimates based on a PM exposure method. This method uses the CARB emissions inventory's PM_{10} database, ambient PM_{10} monitoring data, and the results from several studies to estimate concentrations of diesel PM. In addition to diesel PM, the TACs for which data are available that pose the greatest existing ambient risk in California are benzene, 1,3-butadiene, acetaldehyde, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, and perchloroethylene.

Diesel PM poses the greatest health risk among these 10 TACs mentioned. Overall, levels of most TACs, except para-dichlorobenzene and formaldehyde, have decreased since 1990 (CARB 2013a).

ODORS

Odors are generally regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals can smell very minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; an odor that is offensive to one person may be perfectly acceptable to another (e.g., fast food restaurant). It is important to also note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity. Odor sources of concern include Agriculture (farming and livestock), wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding (SCAQMD 1993). None of these odorous land uses are within proximity to the project site.

SENSITIVE RECEPTORS

Sensitive receptors are generally considered to include those land uses where exposure to pollutants could result in health-related risks to sensitive individuals, such as children or the elderly. Residential dwellings, schools, hospitals, playgrounds, and similar facilities are of primary concern because of the presence of individuals particularly sensitive to pollutants and/or the potential for increased and prolonged exposure of individuals to pollutants.

3.2.3 Environmental Impacts and Mitigation Measures

METHODOLOGY

Regional and local criteria air pollutant emissions and associated impacts, as well as impacts from TACs, CO concentrations, and odors were assessed in accordance with MDAQMD-recommended methodologies. The project's emissions are compared to MDAQMD-recommended thresholds.

Emissions of criteria air pollutants and precursors from the construction and operation of the project site were calculated using the California Emissions Estimator Model (CalEEMod) Version 2020.4.0 computer program, as recommended by MDAQMD.

Construction is anticipated to start in 2023 and last 9 months. Project construction was modeled in CalEEMod using a combination of model defaults and project-specific information. The proposed water main extension is assumed to be 19,460 feet (ft) long and require a trenching width of three feet and depth of six feet. Based on the pipeline drawing, it is assumed that some trenching would occur on existing roadways and would require pavement replacement. For purposes of estimating a maximum day, it was assumed the following phases would occur concurrently and would overlap on a worst-case day: demolition (to remove existing underground utilities), site preparation, and site grading; building construction and underground water main trenching, utility work, and pipe work; and paving and architectural coatings. Model defaults were used for construction fleet, hours of use per day for each piece, worker and vendor trip numbers, and worker and vendor trip length. It was assumed all cut and fill materials would be balanced on-site.

Operational emissions of criteria air pollutants and precursors were estimated using project-specific information, where available, and default values in CalEEMod based on the project's location and land use. Mobile-source emissions were modeled in CalEEMod Version 2020.4.0 using trip generation and vehicle miles traveled data from the transportation analysis, provided in Appendix H. Indirect emissions associated with the use of consumer products and landscape maintenance activities were estimated using the applicable modules of CalEEMod using default consumption values. There would be no natural gas connections at the project site. Thus, it was assumed that there would be zero natural gas combustion, and all energy needs would be provided by electricity.

ROG emissions associated with the transfer, storage, and vehicle refueling were estimated based on CARB methods (CARB 2013b) and anticipated fuel throughput.

Operational emissions from all sources were estimated for full buildout of the project which would become fully operational in 2023. Detailed model assumptions and inputs for these calculations can be found in Appendix B.

The level of health risk from exposure to construction- and operation-related TAC and CO emissions was assessed qualitatively. This assessment was based on the proximity of TAC-generating activity to off-site sensitive receptors, the number and types of diesel-powered construction equipment being used, the duration of potential TAC exposure, and set back distances recommended by CARB (CARB 2005:4), and the minor trip generation associated with project operation.

Impacts related to odors were also assessed qualitatively, based on proposed construction activities, equipment types and duration of use, overall construction schedule, and distance to nearby sensitive receptors. To evaluate an odor impact, MDAQMD recommends the lead agency provide the buffer distance and a description of the land features and topography in the buffer zone that separates nearby sensitive receptors and the odor source. Project does not include any uses that would generate odors different from typical existing urban development in the area.

THRESHOLDS OF SIGNIFICANCE

CEQA Guidelines Appendix G is a sample Initial Study checklist that includes a number of factual inquiries related to the subject of air quality, as it does on a whole series of additional environmental topics. It is a common practice for lead agencies to take the language from the inquiries set forth in Appendix G of the State CEQA Guidelines and to use that language in fashioning thresholds.

The Town has not adopted numerical thresholds for evaluating air quality impacts in CEQA documents. Appendix G of the State CEQA Guidelines states, where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. MDAQMD is the applicable air quality management district or air pollution control district, and has developed air quality significance thresholds that are applicable to CEQA projects within its jurisdiction (MDAQMD 2020). There are separate thresholds for daily and annual activities. MDAQMD recommends use of the daily thresholds for typical CEQA analyses.

Per Appendix G of the CEQA Guidelines and MDAQMD recommendations, a project's impact to air quality is considered significant if it would do any of the following:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard;
  - Result in a net increase in short-term construction criteria air pollutant or precursor emissions to exceed the MDAQMD-recommended thresholds of 137 lb/day for VOC, NO_X and SOx, 82 lb/day for PM_{10}, and 65 lb/day;
  - Result in a net increase in long-term operational criteria air pollutant or precursor emissions to exceed the MDAQMD-recommended thresholds of 137 lb/day for VOC, NO_X and SOx, 82 lb/day for PM_{10}, and 65 lb/day;
- Expose sensitive receptors to substantial pollutant concentrations;
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

As stated in Appendix G of the State CEQA Guidelines, the significance criteria established by the applicable air district may be relied on to make the above determinations. MDAQMD thresholds for new projects are presented in its 2020 CEQA guidebook. These guidelines are intended to assist in the preparation of environmental analyses to ensure that projects do not: (1) cause or contribute to any new violation of any air quality standard; (2) increase the frequency or severity of any existing violation of any air quality standard; or (3) delay timely attainment of any air quality standard or any required interim emission reductions or other milestones of any federal attainment plan. Among other guidance (MDAQMD 2020), MDAQMD presents numerical thresholds at both the daily and annual time scale for evaluating a project's emissions. The thresholds are derived from the New Source Review (NSR) offset threshold amounts for nonattainment air pollutants and their precursors for stationary sources in Rule 1303, New Source Review Requirements (MDAQMD 2021). The NSR program is a permitting program established by Congress as part of the CAA Amendments of 1990 to ensure that air quality is not significantly degraded by new or modified sources of emissions. By permitting large stationary sources, the NSR program ensures that new emissions would not slow regional progress toward attaining the NAAQS. The NSR offset threshold amounts for nonattainment air pollutants and their precursors for stationary sources in Rule 1303 consider the region's nonattainment status. MDAQMD recommends use of the daily threshold values for projects with separate construction and operational phases (MDAQMD 2020).

In the Guidance document, MDAQMD states that any project that results in total emissions – taken as the sum of direct (those that result directly from the project, including construction to build the project, and vehicles that visit the project site) and indirect (associated with changes that would not occur without the project, such as roads to support a subdivision) – above these significant thresholds would be significant. Any project resulting in emissions above these thresholds levels would potentially conflict with the region's efforts to achieve or maintain attainment designations with respect to the NAAQS and CAAQS, while any project resulting in emissions below these levels will not conflict with the region's efforts to achieve or maintain attainment designations with respect to the NAAQS and CAAQS. These thresholds may thus be used to determine the extent to which a project's emissions of criteria air pollutants and precursors would contribute to the regional degradation of ambient air quality. Comparison of the project's emissions during both the construction and operational phases to these numerical thresholds is intended to define a cumulatively considerable net increase in criteria pollutants.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 3.2-1: Conflict with or Obstruct Implementation of the Applicable Air Quality Plan

Implementation of the project would be consistent with the land use designation and zoning in the Town's General Plan. Because the General Plan was used to inform the projected growth in the applicable air quality plans, the project would be consistent with the applicable air quality plans. The project is consistent with the applicable air quality plans and this impact would be **less than significant**.

MDAB is currently designated as nonattainment for federal and state ozone, PM_{10}, and $PM_{2.5}$. MDAQMD has adopted a variety of attainment plans for attainment of these pollutant standards. The most recent air quality attainment plan is the 2017 Ozone Attainment Plan, adopted by CARB and submitted to the EPA in 2017, which presents comprehensive strategies to reduce ozone precursor emissions from stationary or area, mobile, and indirect sources to achieve attainment status with respect to the NAAQS. The emission inventory used to develop the 2017 Ozone Attainment Plan is based primarily on projected population and employment growth and associated VMT in the region. This growth is estimated for the region, based in part, on the planned growth identified in regional and local land use plans such as general plans or community plans. Therefore, projects that would result in increases in population or employment growth beyond that projected in regional or local plans could result in increases in VMT above that forecasted in the attainment plans, further resulting in mobile source emissions that could conflict with or obstruct implementation of the 2017 Ozone Attainment Plan. Increases in VMT beyond that projected in the Town of Apple Valley's General Plan City's General Plan, San Bernardino County Transportation Authority (SBCTA) regional VMT modeling, and MDAQMD attainment plans generally would be considered to have a significant adverse incremental effect on the MDAB's ability to attain CAAQS and NAAQS for all criteria air pollutants.

The project site is currently zoned as Regional Commercial (C-R) in the General Plan land use and zoning designations (C-R). The proposed project is consistent with the existing General Plan land use and zoning designations. The C-R land use category allows retail uses that serve the residents and businesses within the Town of Apple Valley, as well as the surrounding region. Permitted uses in this designation include auto malls, regional malls, business parks, factory stores and outlets, entertainment, hotels and motels, restaurants, institutional uses, and public uses. As noted in Section 3.10, "Land Use and Planning," the Town of Apple Valley has determined that the proposed project fits within the definition of allowable Regional Commercial (C-R) land uses. The proposed project is a travel stop commercial development along a major interstate transportation corridor, which is consistent with these zoned uses. As discussed in Section 3.14, "Transportation and Circulation," trip generation and VMT is anticipated to be low for the proposed project since the majority of trips will be short, diverted trips from the freeway.

Thus, because the project is consistent with the land uses of the Town of Apple Valley's General Plan, the project would not conflict with the implementation of the MDAQMD attainment plan and would not facilitate further growth. This impact would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

Impact 3.2-2: Construction Emissions of Criteria Air Pollutants and Ozone Precursors

MDAQMD has established significance thresholds to ensure that new projects do not (1) cause or contribute to any new violation of any air quality standard; (2) increase the frequency or severity of any existing violation of any air quality standard; or (3) delay timely attainment of any air quality standard or any required interim emission reductions or other milestones of any federal attainment plan. Construction-related activities would result in project-generated emissions of ROG, NOx, CO, SOx, PM_{10}, and $PM_{2.5}$ from site preparation (e.g., excavation, clearing), off-road equipment, material and equipment delivery trips, and worker commute trips, water main extension, and other miscellaneous activities (e.g., building construction, asphalt paving, application of architectural coatings). However, construction activities would not result in mass emissions of ROG, NOx, CO, SOx, PM_{10}, and $PM_{2.5}$ that would exceed MDAQMD's significance thresholds. Therefore, construction-generated emissions of criteria air pollutants and ozone precursors would not affect the nonattainment status of the MDAQMD. This impact would be **less than significant.**

Project construction-related activities would result in emissions of ROG, NOx, CO, SOx, PM_{10}, and $PM_{2.5}$ from site preparation (e.g., excavation, clearing), off-road equipment, material delivery, worker commute trips, and other miscellaneous activities (e.g., building construction, asphalt paving, application of architectural coatings). Fugitive dust emissions of PM_{10} and $PM_{2.5}$ are associated primarily with site preparation and vary as a function of soil silt content, soil moisture, wind speed, acreage of disturbance, and vehicle miles traveled on and off the site. Emissions of ozone precursors, ROG and NO_x, are associated primarily with construction equipment and on-road mobile exhaust. Paving

and the application of architectural coatings result in off-gas emissions of ROG. PM_{10} and $PM_{2.5}$ are also contained in vehicle exhaust.

Typical construction activities would require forklifts, cranes, dozers, compressors, loaders, backhoes, excavators, dozers, scrapers, pavement compactors, welders, concrete pumps, concrete trucks, compressors, and other diesel-fueled equipment as necessary.

Table 3.2-5 summarizes the modeled maximum daily emissions from the construction activities during the build out period. As shown in 3.2-5, maximum daily emissions of all pollutants of concern would not exceed the respective daily thresholds during either construction year. Therefore, considering the discussion above (in Section 3.2.3), because MDAQMD numerical thresholds are used to define a cumulatively considerable net increase in criteria pollutants, construction emissions would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard. This impact would be **less than significant**.

Table 3.2-5 Summary of Maximum Daily Emissions of Criteria Air Pollutants and Precursors Associated with Project Construction

Construction Activity	Emissions (pounds/day)					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Maximum Daily Year 1	10	98	71	<1	34	18
Maximum Daily Year 2	26	54	58	<1	7	3
Threshold of Significance	137	137	548	137	82	65
Exceed Significance Threshold?	No	No	No	No	No	No

Notes: CO = carbon monoxide; NO_X = oxides of nitrogen; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; ROG = reactive organic gases lb/day = pounds per day; totals may not equal the sum of the numbers because of independent rounding.

See Appendix B for detailed input parameters and modeling results.

Source: Modeling performed by Ascent Environmental in 2022

Mitigation Measures

No mitigation is required for this impact.

Impact 3.2-3: Operational Emissions of Criteria Air Pollutants and Ozone Precursors

Implementation of the project would not result in long-term operational emissions of ROG, NOx, CO, SOx, PM_{10}, and $PM_{2.5}$ that exceed MDAQMD mass emissions criteria. Therefore, operation-generated emissions would not conflict with air quality planning efforts and would not affect the attainment status of the MDAB with respect to the CAAQS and NAAQS for these criteria pollutants. This impact would be **less than significant**.

Project operations would result in the generation of long-term operational emissions of ROG, NOx, CO, SOx, PM_{10}, and $PM_{2.5}$ generated by mobile and area-wide sources. Mobile-source emissions of criteria air pollutants and precursors would result from vehicle trips to and from the gas station and fast food restaurants, truck trips associated with fueling and use of the service station, employee commute trips, and other associated vehicle trips for fuel deliveries and supplies. Area-wide sources would include the use of landscaping equipment or other small equipment, and the periodic application of architectural coatings. There would be no natural gas combustion for space and water heating because there would be natural gas service at the project site. In addition, ROG emissions associated with the fuel storage and vehicle refueling losses were quantified consistent with CARB's methodology and emission factors. It was conservatively assumed that the entire annual fuel throughput estimate of 14,000,000 gallons (as discussed in Section 2.4.4 of "Project Description") would be gasoline.

Table 3.2-6 summarizes the daily operational-related emissions of criteria air pollutants and ozone precursors at full buildout.

Table 3.2-6 Summary of Maximum Daily Emissions of Criteria Air Pollutants and Precursors Associated with Project Operations

Operational Element	Emissions (lb/day)					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Area	3	<1	7	<1	<1	<1
Energy	-	-	-	-	-	-
Mobile	11	15	62	<1	10	3
Fueling	32	-	-	-	-	-
Total	47	15	69	<1	10	3
Threshold of Significance	137	137	548	137	82	55
Exceed Significance Threshold?	No	No	No	No	No	No

Notes: CO = carbon monoxide; NO_X = oxides of nitrogen; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; ROG = reactive organic gases lb/day = pounds per day; totals may not equal the sum of the numbers because of independent rounding.

See Appendix B for detailed input parameters and modeling results.

Source: Modeling performed by Ascent Environmental in 2022

As shown in Table 3.2-6, the project's operational emissions would not exceed MDAQMD mass emissions thresholds. Therefore, because MDAQMD numerical thresholds are used to define a cumulatively considerable net increase in criteria pollutants, the project's operational emissions would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard. This impact would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

Impact 3.2-4: Expose Sensitive Receptors to Substantial Pollutant Concentrations

Construction-related emissions of TACs associated with proposed project would be spread over the project area, not affecting any one receptor for extended periods of time, and therefore, would not result in exposure of existing receptors to substantial TAC concentrations. The project would not result in exposure of sensitive receptors to excessive TAC emissions from operational emissions. This impact would be **less than significant**.

Exposure of sensitive receptors to TACs emitted during project construction and operation sources are discussed separately below. Construction and operation may expose nearby sensitive receptors to diesel PM during construction as well as diesel PM and other TACs during operations. Moreover, construction and operation may create congestion at nearby roadways, resulting in elevated levels of CO that may result in CO Hotspots. Each of these topics are discussed below.

Construction TACs

MDAQMD considers a project to be significant if it exposes sensitive receptors to a substantial incremental increase in TAC emissions greater than or equal to 10 in one million for carcinogenic risk (i.e., the risk of contracting cancer) and/or greater than or equal to 1.0 for a noncarcinogenic hazard index.

The project site is surrounded by primarily vacant land. The nearest sensitive receptor is a rural, single-family residence located south of Stoddard Wells Road, approximately 2,800 feet (850 meters) east of the nearest (easternmost) project site boundary, 3,750 feet (1,143 meters) feet east of the fueling areas (which are on the western portion of the project site), and approximately 340 feet (100 meters) from the north side of Stoddard Wells Road, where the water main line would be constructed. Additional rural, single-family residences are located north of Johnson Road, and all are over 1.5 miles away from the project site and 860 feet (260 meters) or further from where

the water main line would be constructed. The nearest residences south of the project site within the more developed portion of Apple Valley are over two miles away from the project site.

Construction-related activities would result in temporary, intermittent emissions of diesel PM from the exhaust of off-road, heavy-duty diesel equipment used for site preparation (e.g., demolition, clearing, grading); paving; on-road truck travel; and other miscellaneous activities. On-road diesel-powered haul trucks traveling to and from the construction site to deliver materials and equipment are less of a concern because they would not stay on the site for long periods of time.

With regards to exposure of diesel PM, the dose to which receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher level of health risk for nay exposed receptor. Thus, the risks estimated for an exposed individual are higher if a fixed exposure occurs over a longer period. Additionally, receptor exposure to pollution decreases with distance. For instance, CARB notes that exposure to freeway emissions and associated health risk drop substantially within the first 300 feet from the edge of the roadway and an 80 percent decrease at 1,000 feet from a distribution center (warehouse). As such, CARB typically recommends a 1,000 foot or less buffer between major pollution sources and sensitive land uses (CARB 2005).

Residential receptors are generally of primary concern when discussing TAC exposure, as they would generally be exposed to project generated TACs for extended periods of time. As noted, most studies indicate a substantial drop in pollutant concentrations with distance. Provided that the nearest residences are located approximately 2,800 feet from the easternmost edge of the project site, TAC exposure from construction activities would not be considered substantial at these receptors. Thus, given the temporary and intermittent nature of construction activities within the project area, the low level of emission, and the short duration of construction, the dose of diesel PM of any one receptor would be limited. This impact would be less than significant.

Operation TACs

MDAQMD considers a project to be significant if it exposes sensitive receptors to a substantial incremental increase in TAC emissions greater than or equal to 10 in one million for carcinogenic risk (i.e., the risk of contracting cancer) and/or greater than or equal to 1.0 for a noncarcinogenic hazard index. The proposed project is a full-service travel center and RV park that will provide roadside services for trucks and motorists. Operation of the project would result in new sources of emissions from commercial and fuel delivery trucks, trucks and vehicles accessing and idling the travel center, and from vehicles refueling.

The majority of the mobile source emissions shown in Table 3.2-6 would occur away from the project site, as commercial, fuel delivery, trucks, and vehicles travel to and from the project site. TAC emissions from vehicle idling, queuing, and traveling within the travel center would be minimal and limited to the time it takes vehicles to arrive and depart the fueling stations and parking areas. There would be no permanent sources of diesel PM. As noted above, there are no residential, school, or other sensitive uses in immediate vicinity of the project site, with the closest residence approximately 2,800 feet from the easternmost edge of the project site and approximately 3,750 feet (1,143 meters) feet from the fueling areas. Exposure would be limited to patrons or workers at the project site, and associated exposure would be limited. Thus, risk from vehicles is expected to be minimal.

There are also TACs associated with vehicles refueling. Gas station emissions can be a large contributor to community air pollution and may lead to adverse health impacts for people living or working near gas stations. In terms of potential TAC sources, fuel dispensing facilities, specifically those with gasoline dispensing, are a known TAC emitter. TACs associated with gasoline dispensing include benzene, toluene, ethyl-benzene, xylenes, naphthalene, propylene, and n-Hexane. Per CARB, benzene is the TAC of primary concern (CARB 2022a, CARB 2022b, CARB 2022c). CARB has developed Technical Guidance and modeling tools to evaluate the risk from exposure to gasoline dispensing facilities, focusing primarily on facilities within 1,000 meters of residential uses. With respect to the proposed project, the closest sensitive uses is the single residence located 3,750 feet (1,143 meters) from the fueling areas (fuel pumps). At this distance, risk is assumed to be minimal and well below thresholds. Additionally, future temporary project users staying at the RV park or truck drivers staying overnight will be in close proximity to the refueling areas. However,

exposure would be limited to their stay (i.e., a matter of days or weeks, rather than the 30-year exposure assumed in typical carcinogenic risk assessments), and short- and long-term carcinogenic and noncarcinogenic risk would be well below well below thresholds. Therefore, health risk from the project site is expected to be minimal. This impact would be less than significant.

CARB notes that a well-maintained vapor recovery system at a gasoline fueling station can decrease benzene emissions by more than 90 percent compared to an uncontrolled facility (CARB 2005:31). Per MDAQMD Rule 461, the project would be required to comply with California Code of Regulations, Section 93101, by reducing airborne benzene emissions from retail service stations through the use of a CARB-certified vapor recovery system.

CO Hotspots

Local mobile-source CO emissions near roadway intersections are a direct function of traffic volume, vehicle speed, and traffic delay. A CO hotspot is an area of localized CO pollution that is caused by severe vehicle congestion on major roadways, typically near intersections. MDAQMD has not adopted a numerical threshold for evaluating CO Hotspots. Typically, a CO Hotspot occurs when project-related CO emissions (typically from motor vehicles at congested roadways and intersections) violate or contribute substantially to concentrations that exceed the 1-hour CAAQS of 20 parts per million (ppm), the 1-hour NAAQS of 35 ppm, or the 8-hour CAAQS or NAAQS of 9 ppm.

The San Bernardino County portion of the MDAB is in attainment for federal and state CO standards. Buildout of the General Plan update would not result in the increase in traffic volume required to generate a CO hotspot. This is because none of the intersections in the Town would experience traffic volumes in excess of the values from the analysis by the South Coast Air Quality Management District that demonstrated no violation of CO standards at the busiest intersection in Los Angeles, which had a daily traffic volume of approximately 100,000 vehicles per day with level of service (LOS) E in the morning peak hour and LOS F in the evening peak hour (SCAQMD 2003). The traffic volumes at roadway segments and intersections in the project area would be much lower than 100,000 vehicles per day, as demonstrated in the *Transportation Impact Study* for the project. In the project's opening year (2023), average daily traffic volumes in the project area are estimated to be 9,956 vehicles per day at the busiest roadway segment on Stoddard Wells Road east of I-15 northbound ramps and Outer Highway 15. In 2040, average daily traffic volumes for this segment are estimated to be 17,826 vehicles per day (CR Associates 2022; Appendix H). Moreover, while MDAQMD does not have screening criteria, guidance from the Bay Area Air Quality Management District, which is currently the only major air district with screening guidance for CO hotspots, states that a project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour to generate a significant CO impact (BAAQMD 2017). The proposed project land uses are anticipated to generate 5,542 daily trips, with 285 trips during the AM peak hour and 325 trips during the PM peak hour (See Section, 3.14, "Transportation and Circulation," and Appendix H).

Given that the Basin is in attainment for CO and is not projected to exceed CAAQS or NAAQS, it is not anticipated that the proposed project would result in localized CO impacts. Additionally, federal and State vehicle emissions standards are anticipated to result in a decrease in CO concentrations over time. For these reasons, local mobile-source CO emissions generated by future development that could be accommodated by the proposed project would not result in or substantially contribute to concentrations of CO that exceed the 1-hour (20 ppm and 35 ppm) or 8-hour (9 ppm) CAAQS and NAAQS. This impact would be less than significant.

Summary

Considering the relatively short duration in which diesel PM-emitting construction activity would occur, the distance to the nearest off-site sensitive receptors, and the highly dispersive properties of diesel PM, construction-related TAC emissions would not expose nearby sensitive receptors to incremental increases in cancer, chronic, and acute risk that exceed 10 in one million carcinogenic risk threshold or the 1.0 noncarcinogenic hazard index. Operational activities would not site new sensitive receptors, the nearest existing receptors would be over one mile from the project site, and airborne benzene emissions would be reduced through implementation of MDAQMD Rule 461. Thus, new sources of TAC emissions associated with commercial and fuel delivery trucks, and benzene emissions from vehicles refueling would not expose existing sensitive receptors to increased TAC emissions that would exceed the 10 in one million carcinogenic risk threshold or the 1 noncarcinogenic hazard index. Lastly, operational activities would not

result in traffic congestion that could result in concentrations of CO that exceed the 1-hour (20 ppm and 35 ppm) or 8-hour (9 ppm) CAAQS and NAAQS. This impact would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

Impact 3.3-5: Exposure of sensitive receptors to other emissions (including odors)

The project would introduce new odor sources into the area (e.g., temporary diesel exhaust emissions during construction and delivery trucks associated with the fuel station and restaurants). However, these odor sources would be temporary, intermittent, and dissipate rapidly from the source. Further, the project would not locate land uses near any existing odor sources. Operation of the project would not result in odor sources and the nearest sensitive receptors would be over one mile from the project area. Thus, this impact would be **less than significant**.

The occurrence and severity of odor impacts depends on numerous factors, including: the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of the affected receptors. While offensive odors rarely cause any physical harm, they still can be very unpleasant, leading to considerable distress among the public and often generate citizen complaints to local governments and regulatory agencies. Projects with the potential to frequently expose a substantial number of people to objectionable odors would be deemed to have a significant impact.

The occurrence and severity of odor impacts depends on numerous factors, including: the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of the affected receptors. While offensive odors rarely cause any physical harm, they still can be very unpleasant, leading to considerable distress among the public and often generate citizen complaints to local governments and regulatory agencies. Projects with the potential to frequently expose a substantial number of people to objectionable odors would be deemed to have a significant impact.

Construction

Minor odors from the use of heavy-duty diesel equipment, and the laying of asphalt during project-related construction activities would be intermittent and temporary and would dissipate rapidly from the source with an increase in distance. There are no existing off-site receptors within one mile of the project area. Given the temporary nature of construction activities and the distance of the sensitive receptors from the project site, project construction is not anticipated to result in an odor-related impact during the construction phase of the project.

Long-Term Operation

Operation of the project would result in new commercial land uses that would result in odors from the operation of diesel-fueled delivery trucks and refueling by both passenger vehicles and trucks. These types of odor sources are no different from those that currently exist on I-15, adjacent to the project site. Moreover, the project would be subject to MDAQMD Rule 402, "Nuisance" regarding the control of nuisances, including odors. MDAQMD Rule 402 prohibits any discharges of air contaminants or other materials in quantities that cause injury, detriment, nuisance, or annoyance to the public; endanger comfort, repose, health, or safety of the public; or cause injury or damage to businesses or properties. As discussed above, odors would dissipate rapidly from the source with an increase in distance. Because off-site receptors are located greater than one mile from the project area, project operation is not anticipated to result in an odor-related impact to the public.

Summary

No major existing sources of odors have been identified in the project vicinity. Both project construction and operation are not anticipated to result in the frequent exposure to nearby sensitive receptors to substantial objectionable odors. Thus, this impact would be **less than significant.**

Mitigation Measures

No mitigation is required.

3.3 ARCHAEOLOGICAL, HISTORICAL, AND TRIBAL CULTURAL RESOURCES

This section analyzes and evaluates the potential impacts of the project on known and unknown cultural resources. Cultural resources include districts, sites, buildings, structures, or objects generally older than 50 years and considered to be important to a culture, subculture, or community for scientific, traditional, religious, or other reasons. They include pre-historic resources, historic-period resources, and "tribal cultural resources" (the latter as defined by Assembly Bill (AB) 52, Statutes of 2014, in Public Resources Code [PRC] Section 21074).

Archaeological resources are locations where human activity has measurably altered the earth or left deposits of prehistoric or historic-period physical remains (e.g., stone tools, bottles, former roads, house foundations). Historical (or built-environment) resources include standing buildings (e.g., houses, barns, outbuildings, cabins) and intact structures (e.g., dams, bridges, roads, districts), or landscapes. A cultural landscape is defined as a geographic area (including both cultural and natural resources and the wildlife therein), associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values. Tribal cultural resources are sites, features, places, cultural landscapes, sacred places and objects, with cultural value to a tribe.

One comment letter regarding cultural resources was received in response to the Notice of Preparation (see Appendix A). This letter was from the Native American Heritage Commission (NAHC), which did not offer any comments or suggestions specific to the project or project site, but rather reiterated in detail many of the legal requirements of various laws relating to cultural resources, including AB 52 and SB 18. As discussed below, the Town has complied with AB 52. SB 18 does not apply to the project because there is no General Plan amendment associated with the project (which is the trigger for SB 18 compliance), and is not a CEQA requirement in any event.

3.3.1 Regulatory Setting

FEDERAL

National Register of Historic Places

The National Register of Historic Places (NRHP) is the nation's master inventory of known historic properties. It is administered by the National Park Service and includes listings of buildings, structures, sites, objects, and districts that possess historic, architectural, engineering, archaeological, or cultural significance at the national, state, or local level.

The formal criteria (36 CFR 60.4) for determining NRHP eligibility are as follows:

1. The property is at least 50 years old (however, properties under 50 years of age that are of exceptional importance or are contributors to a district can also be included in the NRHP);
2. It retains integrity of location, design, setting, materials, workmanship, feeling, and associations; and
3. It possesses at least one of the following characteristics:

   Criterion A Is associated with events that have made a significant contribution to the broad patterns of history (events).

   Criterion B Is associated with the lives of persons significant in the past (persons).

   Criterion C Embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values, or represents a significant, distinguishable entity whose components may lack individual distinction (architecture).

   Criterion D Has yielded, or may be likely to yield, information important in prehistory or history (information potential).

For a property to retain and convey historic integrity, it must possess most of the seven aspects of integrity: location, design, setting, materials, workmanship, feeling, and association. Location is the place where the historic property was constructed or the place where a historic event occurred. Integrity of location refers to whether the property has been moved since its construction. Design is the combination of elements that create the form, plan, space, structure, and style of a property. Setting is the physical environment of a historic property that illustrates the character of the place. Materials are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property. Workmanship is the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory. Feeling is a property's expression of the aesthetic or historic sense of a particular period of time. This is an intangible quality evoked by physical features that reflect a sense of a past time and place. Association is the direct link between the important historic event or person and a historic property. Continuation of historic use and occupation help maintain integrity of association.

Listing in the NRHP does not entail specific protection or assistance for a property but it does guarantee consideration in planning for federal or federally-assisted projects, eligibility for federal tax benefits, and qualification for federal historic preservation assistance. Additionally, project effects on properties listed in the NRHP must be evaluated under CEQA.

The National Register Bulletin series was developed to assist evaluators in the application of NRHP criteria. For example, National Register Bulletin #36 provides guidance in the evaluation of archaeological site significance. If a property cannot be placed within a particular theme or time period, and thereby lacks "focus," it will be unlikely to possess characteristics which would make it eligible for listing in the NRHP. Evaluation standards for linear features (such as roads, trails, fence lines, railroads, ditches, and flumes) are considered in terms of four related criteria that account for specific elements that define engineering and construction methods of linear features: (1) size and length, (2) presence of distinctive engineering features and associated properties, (3) structural integrity, and (4) setting. The highest probability for NRHP eligibility exists in the intact, longer segments, where multiple criteria coincide.

STATE

California Register of Historical Resources

All properties in California that are listed in or formally determined eligible for listing in the NRHP are also listed in the California Register of Historical Resources (CRHR). The CRHR is a listing of State of California resources that are significant in the context of California's history. It is a Statewide program with a scope and with criteria for inclusion similar to those used for the NRHP. In addition, properties designated under municipal or county ordinances are also eligible for listing in the CRHR.

A historical resource must be significant at the local, state, or national level under one or more of the criteria defined in the California Code of Regulations Title 15, Chapter 11.5, Section 4850 to be included in the CRHR. The CRHR criteria are tied to CEQA because any resource that meets the criteria below is considered an historical resource under CEQA, and is entitled to certain limited protections, as discussed below. As noted above, all resources listed in or formally determined eligible for listing in the NRHP are automatically listed in the CRHR.

The CRHR uses four evaluation criteria:

Criterion 1. Is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States.

Criterion 2. Is associated with the lives of persons important to local, California, or national history.

Criterion 3. Embodies the distinctive characteristics of a type, period, region, or method of construction; represents the work of a master; or possesses high artistic values.

Criterion 4. Has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California or the nation.

Similar to the NRHP, a historical resource must meet one of the above criteria and retain integrity to be listed in the CRHR. The CRHR uses the same seven aspects of integrity used by the NRHP.

California Environmental Quality Act

CEQA requires public agencies to consider the effects of their actions on "historical resources," "unique archaeological resources," and "tribal cultural resources." Pursuant to PRC Section 21084.1, a "project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment." Section 21083.2 requires agencies to determine whether projects would have effects on unique archaeological resources. PRC Section 21084.2 establishes that "[a] project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment."

Historical Resources

"Historical resource" is a term with a defined statutory meaning (PRC Section 21084.1; State CEQA Guidelines Sections 15064.5[a] and [b]). Under State CEQA Guidelines Section 15064.5(a), historical resources include the following:

1) A resource listed in, or determined to be eligible by the State Historical Resources Commission for listing in, the CRHR (PRC Section 5024.1).

2) A resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g), will be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.

3) Any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be a historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource will be considered by the lead agency to be historically significant if the resource meets the criteria for listing in the CRHR (PRC Section 5024.1).

4) The fact that a resource is not listed in or determined to be eligible for listing in the CRHR, not included in a local register of historical resources (pursuant to PRC Section 5020.1[k]) or identified in a historical resources survey (meeting the criteria in PRC Section 5024.1[g]) does not preclude a lead agency from determining that the resource may be a historical resource as defined in PRC Sections 5020.1(j) or 5024.1.

Unique Archaeological Resources

CEQA also requires lead agencies to consider whether projects will affect unique archaeological resources. PRC Section 21083.2(g) states that "unique archaeological resource" means an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets one or more of the following criteria:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.

2. Has a special and particular quality such as being the oldest of its type or the best available example of its type.

3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Tribal Cultural Resources

CEQA also requires lead agencies to consider whether projects will affect tribal cultural resources. PRC Section 21074 states:

a) "Tribal cultural resources" are either of the following:

    1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:

A) Included or determined to be eligible for inclusion in the California Register of Historical Resources.

B) Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.

2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

b) A cultural landscape that meets the criteria of subdivision (a) is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.

c) A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a "nonunique archaeological resource" as defined in subdivision (h) of Section 21083.2 may also be a tribal cultural resource if it conforms with the criteria of subdivision (a).

Public Resources Code Section 21080.3

AB 52 (Stats. 2014, ch. 532), signed by the California Governor in September of 2014, established a new class of resources under CEQA: "tribal cultural resources," defined in PRC Section 21074. Pursuant to PRC Sections 21080.3.1, 21080.3.2, and 21082.3, lead agencies undertaking CEQA review must, upon written request of a California Native American Tribe, begin consultation before the release of an EIR, negative declaration, or mitigated negative declaration.

PRC Section 21080.3.2 states:

> Within 14 days of determining that a project application is complete, or to undertake a project, the lead agency must provide formal notification, in writing, to the tribes that have requested notification of proposed projects in the lead agency's jurisdiction. If it wishes to engage in consultation on the project, the tribe must respond to the lead agency within 30 days of receipt of the formal notification. The lead agency must begin the consultation process with the tribes that have requested consultation within 30 days of receiving the request for consultation. Consultation concludes when either: 1) the parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource, or 2) a party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached.

California Native American Historical, Cultural, and Sacred Sites Act

The California Native American Historical, Cultural, and Sacred Sites Act (PRC Section 5097.9) applies to both State and private lands. The act requires, upon discovery of human remains, that construction or excavation activity cease and that the county coroner be notified. If the remains are those of a Native American, the coroner must notify the NAHC, which notifies and has the authority to designate the most likely descendant of the deceased. The act stipulates the procedures the descendants may follow for treating or disposing of the remains and associated grave goods.

Health and Safety Code, Sections 7050.5

Section 7050.5 of the Health and Safety Code requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If they are determined to be those of a Native American, the coroner must contact NAHC.

Public Resources Code, Section 5097

PRC Section 5097 specifies the procedures to be followed if human remains are unexpectedly discovered on nonfederal land. The disposition of Native American burials falls within the jurisdiction of NAHC. Section 5097.5 of the code states:

> No person shall knowingly and willfully excavate upon, or remove, destroy, injure, or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.

CEQA Guidelines section 15064.5, subdivision (e)

Subdivision (e) of section 15064.5 of the State CEQA Guidelines provides a good summary of the legal requirements set forth in Health and Safety Code Section 7050.5 and Public Resources Code Section 5097, which come into play when human remains are encountered during project construction. That provision reads as follows:

> In the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery, the following steps should be taken:
>
> (1) There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:
>
> (A) The coroner of the county in which the remains are discovered must be contacted to determine that no investigation of the cause of death is required, and
>
> (B) If the coroner determines the remains to be Native American:
>
> 1. The coroner shall contact the Native American Heritage Commission within 24 hours.
>
> 2. The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the deceased Native American.
>
> 3. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98, or
>
> (2) Where the following conditions occur, the landowner or his authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance.
>
> (A) The Native American Heritage Commission is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission.
>
> (B) The descendant identified fails to make a recommendation; or
>
> (C) The landowner or his authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.

LOCAL

The Town of Apple Valley is the lead agency for the Project under CEQA. A review of the Town's General Plan Cultural Resources Sensitivity Map shows that the Project does not directly fall within any areas designated as having elevated archaeological sensitivity (Town of Apple Valley 2009a:III-66). However, Project work along Johnson Road will occur immediately adjacent to an area with an elevated sensitivity for prehistoric archaeological sites. As such, to reduce potential impacts to archaeological resources which may be encountered during ground disturbing work, the following mitigation measure from the 2009 Town of Apple Valley General Plan EIR would apply.

- Cultural resource studies shall be required prior to development for all lands identified as having high potential for historic or archaeological resources, as identified in the [Cultural Resources Sensitivity Map]. The studies shall be reviewed and approved by the Town Planning Division prior to the issuance of any ground disturbing permit. The recommendations of the studies shall be made conditions of approval of the ground disturbing permits. (Town of Apple Valley 2009b:III-80).

3.3.2 Environmental Setting

REGIONAL PREHISTORY

Lake Mojave Period (Paleo-Indian and Early Archaic; ca. 12,000 – 7000 B.P.

Beginning at about 12,000 B.P., the Lake Mojave complex represents the earliest human occupation in the Mojave Desert region when peoples were occupying and utilizing the shores of Lake Mojave. This era, at the close of the Pleistocene, was a time of extreme environmental change as the relatively cool and moist conditions of the terminal Wisconsin glacial age were gradually replaced by the warmer and drier conditions of the Holocene (Andrews 2021:2).

Cultural materials characteristic of the Lake Mojave Complex includes Lake Mojave, Parman, Silver Lake, projectile points; lunate and eccentric crescents; small flake engravers; technical scrapers; leaf-shaped knives, drills, and heavy choppers or hammer stones. Milling stones are generally absent. This complex of tools is representative of the "Western Pluvial Lakes Tradition" which posits a generalized hunting and collecting economy, in which lakeside sites represent the seasonal exploitation of marsh resources. However, a more accurate characterization of this period of prehistory in California is extremely complex due to the large number of competing models and rarity of sites in datable contexts (Andrews 2021:2).

Pinto Period (Middle Archaic; ca. 7000 – 4000 B.P.)

Increasingly arid conditions pervaded throughout the region between about 7500 and 5000 B.P. Changes in the climate resulted in population movements to oases within the region or with groups leaving the region altogether (Andrews 2021:3).

Technological changes wrought by the increasing aridity are reflected in milling stone technologies. Simple flat milling stones, occasional shallow-basined milling stones, and hand stones become more prolific in Pinto period sites. This change is attributed to the exploitation of hard seeds, which is seen as part of a process of subsistence diversification brought on by increased aridity and reduced ecosystem carrying capacity. Big-game hunting probably continued as an important focus during this time, but the economic return of this activity likely decreased as artiodactyl populations declined in response to increased aridity (Andrews 2021: 3).

Gypsum Period (Late Archaic; ca. 4000 – 1500 B.P.)

Gradual improvement of the climate began by around 5000 B.P. and culminated at about 3600 B.P. when a period of greater effective moisture allowed seasonal streams and shallow lakes to appear within the Mojave. However, aridity returned to the region during the late Gypsum period after ca. 2500 B.P.(Andrews 2021: 3).

The Gypsum period is characterized by population increases and broadening economic activities as technological adaptation to the fluctuating environment evolved. The climatic fluctuations also led to intensified settlement and exploitation of the desert valley floor and of rockshelters and caves in the surrounding mountains. Gypsum period artifact assemblages are characterized by medium- to large-stemmed and notched projectile points (i.e., Elko series, Humboldt Concave Base, and Gypsum types). The assemblages also include rectangular-based knives, flake scrapers, infrequently large scraper planes, choppers, and hammer stones. Milling equipment becomes more common and the mortar and pestle appear for the first time. Sites dated to the Gypsum period are well represented in the mountains, rock shelters, and in adjoining areas toward the coast. Trade with coastal groups also increases, largely evidenced by marine shell beads and new ritualistic practices (Andrews 2021: 3-4).

Saratoga Springs Period (ca. 1500 – 750 B.P.)

Climate during the Saratoga Springs period saw another shift to arid and warm conditions between 1200 and 650 B.P., conditions which coincide with much of the cultural changes exhibited during this period. Cultural developments south of the Mojave River diverge from those in the north with populations south of the Mojave River showing increases in technological, material, and ritual influences from coastal groups. Groups north of the river exhibit the same influences from Hakatayan and Ancestral Puebloan peoples along the Colorado River to the east, as well as possible influences from Numic groups moving out of Death Valley from the north. Yet, despite these marginal

diversifications, groups living within larger Mojave Desert between the northern and southern groups, continue to exhibit general continuity with Gypsum pattern lifeways (Andrews 2021: 4-5).

A reduction in the size of projectile points throughout the region circa 1350 B.P. marks the introduction of the bow and arrow. Rose Spring and Cottonwood series points dominate Mojave desert assemblages of this period and are morphologically similar to Gypsum period points with the exception of their smaller size. Desert Side-notched points become common as the period concludes. Milling equipment, i.e., metates, manos, mortars and pestles, continue to be utilized. Marine shell beads become much more common at Saratoga Springs period sites, as trade with the southern California coast becomes standardized along the Mojave River, a route later known as the Mohave Trail. Ceramics were likely introduced into the region during this period, though evidence is scarce. Lower Colorado Buff Ware and Tizon Brown Ware ceramics are often associated with Cottonwood and Desert Side-notched points, and likely date from the very end of the Saratoga Springs period and into protohistoric times (Andrews 2021:4-5).

Protohistoric Period (750 B.P. – Contact)

The Protohistoric era, a transitional period between the prehistoric and the historic/ethnohistoric, dates from 750 B.P. until first contact with Euro-Americans in the 18th Century. Regional diversity continued and influences from neighboring groups, particularly the Hakataya and Southern Paiute from the east, become more perceptible. Most archaeologists agree that trade along the Mohave Trail was continuous throughout this period (Andrews 2022: 5-6).

Cultural technological developments established earlier during the Saratoga Springs period continue with some modifications. Typical diagnostic artifacts for this period across the Mojave Desert are Desert Side-notched points and various poorly defined types of brown ware pottery, as well as steatite beads, large triangular knives, unshaped manos and milling stones, mortars and pestles, incised stones, slate pendants, and shaped marine shell beads. North of the Mojave River, Cottonwood Triangular points and Great Basin Brownware pottery are added, while along the length of the Mojave River, Hakatayan brown, buff, and red-on-buff is the pottery used, and both Desert Side-notched and Cottonwood Triangular points are found. Pinyon pine nut exploitation is first exhibited in this period as denoted by the appearance of camps in the pinyon-juniper woodland and is attributed to the influence of the Southern Paiute (Andrews 2021: 5-6).

ETHNOGRAPHY

The major ethnographic Native American group associated with the Project area is the Maara'yam, also known as the Serrano. The Maara'yam group most associated with the Project area are the Yuhaaviatam, which means "People of the pines" because their main village was Yuhaaviat near Big Bear Lake in the San Bernardino Mountains (San Manuel Band of Mission Indians 2022). Neighbors included the Kitanemuk, the Mohave, the Chemehuevi, the Gabrielino, and Luiseño (Andrews 2021: 6).

Prior to European contact, the Maara'yam exploited a wide variety of animals and plants from the mountains, the desert, and the Mojave River based on seasonal availability. Large game—such as deer, mountain sheep, and pronghorn—was hunted with bow and arrow, and smaller animals such as rabbits, rodents, and reptiles were taken with throwing sticks, nets, and snares. Acorns, pinyon nuts, and mesquite beans were among the staple foods, which were seasonally supplemented by chia and ricegrass seeds, roots, tubers, and various fresh greens. Ceremonial events, occasionally inviting distant, linguistically unrelated groups. important festivals, harvest cycles, and other ceremonial events, occasionally inviting distant, linguistically unrelated groups (Andrews 2021: 7).

The presence of a perennial water source was the determining factor in the nature, duration, and distribution of Maara'yam villages. Small villages were more common, although there were larger villages in the Summit Valley and Cajon Pass. Small special purpose sites, such as temporary camps, food processing stations, and lithic procurement areas, were located at or near the location of the resource. The Maara'yam who inhabited the San Bernardino Mountains are known to have inhabited areas in Apple Valley and Lucerne Valley during the winter and the area in and around Baldwin Lake during the summer (Andrews 2021: 7; San Manuel Band of Mission Indians 2022).

Maara'yam contact with Europeans may have occurred as early as 1771, but by 1806, most Maara'yam were removed from their homelands and recruited into the Spanish mission and its *asistencia* agricultural labor system. After

secularization in 1833, the Mexican rancho system continued to impact traditional lifeways. The rancho system was shortly followed by California's admission to the United States of America as the 31st state in 1850. American emigration, mining, and farming throughout the remainder of the 19th century which cumulated in the removal of many Maara'yam people to the San Manuel Reservation in 1891 (San Manuel Band of Mission Indians 2022). By 1975, most Maara'yam lived on two southern California reservations, Morongo in Banning and San Manuel near Riverside. Today, Maara'yam ethnic identity remains strong, and their language, songs, and traditional lifeways are being revived and passed on to the next generations (Andrews 2021: 7).

HISTORIC SETTING

Regional History

As early as the late eighteenth century, explorers of all types were trekking through the desert along the Mohave Trail established by the Native Americans centuries before. One of the first explorers was Francisco Garcés. He traveled along the Mohave Trail as part of his search for an overland route from the Colorado River to Monterey in the mid-1770s. Famous fur-trapper and explorer Jedidiah Smith also traveled through the region on the trail in both 1826 and 1827. In the 1830s, the Mohave Trail was incorporated into a pack-train trade route known today as the Old Spanish Trail; the Old Spanish Trail extended between southern California and Santa Fe, New Mexico. Some 20 years later, the Mohave Trail became a wagon road known as the Mojave Road and it was incorporated into the Mormon Trail between Utah and southern California. It is estimated that over 13,000 people passed through the Mojave Desert on the Mohave Trail between 1849 and 1859 (Andrews 2021: 7)

In 1867 an important bypass to the Mojave Road was constructed, the Stoddard Wells Road. Engineered and constructed by local farmer Lafayette Meacham, the road served as the main wagon route from Victorville to Daggett during the late 19th to early 20th century. In 1912, it became part of the National Old Trails Road which was renamed Route 66 in 1930s. Stoddard Wells Road forms the part of the north border of the Project site.

When gold, silver, copper, marble, limestone, and borax were discovered in the Mojave Desert region in the 1860s, miners were added to the list of those who traveled to the region via the Mojave Road. This mining boom lasted into the first part of the 20th Century and represents the era when many small towns were established in the Mojave Desert. Mining started to die out in California during World War I, and by World War II, most mining in California ceased. For the region, loss of the mining economy changed many of the former boomtowns into the ghost towns so famously associated with the Mojave Desert today. Despite this, the Mojave Road survives today, either in its original location beside or under modern highways such as Interstate 15 and State Route 58 (Andrews 2021: 7-8).

Project Site History

The project site is located within the Town of Apple Valley, which is located in southwestern San Bernardino County, in the Victor Valley at the southern edge of the Mojave Desert. The Mojave River borders the town on its western side.

Historically, agriculture and ranching dominated the early economy of Apple Valley, particularly apple orchards. By 1914, apple growers were earning $350 to $500 per acre of fruit. The success of such orchards in Apple Valley was enhanced by increased irrigation opportunities created by the Victor Valley Water Project (the largest in the nation at that time), and the Santa Fe Railway, which laid double tracks through the area in anticipation of its growing economy. Taking advantage of the new opportunities, Max Ihmsen, publisher of the *Los Angeles Examiner* newspaper, developed 320 acres of prize-winning apples and pears that made the town famous for its fruit orchards. By 1920, apples were being grown by the ton at award-winning orchards giving Apple Valley its name. Orchards continued to be the mainstay of the town's economy until the 1930s when the cost of pumping water for irrigation became too high for the growers to afford. The final blow was from 1944-46, when frosts, extreme heat, and hail decimated the surviving orchards. For the next seven years, firewood was the only thing growers had left to sell (Andrews 2021: 8).

Ranching also contributed to economy of Apple Valley and many types of ranches were built in the area, including health resorts. The dry desert air was viewed as a cure for ailments of all sorts, such as tuberculosis, asthma, and even shell-shock for the soldiers of World War I. As the 20th century moved forward, guest ranches, where city dwellers could experience the life of the cowboy, became a prominent part of the economy. One of the most significant resort

endeavors was started by Long Beach oil and gas tycoons Newton T. Bass and B. J. "Bud" Westlund. They formed the Apple Valley Ranchos Land Co. in 1946 and marketed the Apple Valley area as a destination resort and quality residential community. They built the Apple Valley Inn and Hilltop House and invited famous celebrities of Hollywood to come visit and perform, including Roy Rogers and Dale Evans, who also built a ranch in the area. Within 10 years of the success of Bass and Westlund's endeavors, banks, churches, a school, a golf course, hospital, and 180 other businesses were operating in Apple Valley. Finally, on November 28, 1988, the Town of Apple Valley was incorporated and its legacy as a ranching and rustic resort destination continues (Andrews 2022: 8).

RECORDS SEARCHES, SURVEYS, AND CONSULTATION

On April 26, 2021, a records search of the project site and a one-mile buffer was conducted at the South Central Coastal Information Center, at California State University, Fullerton. The following information was reviewed as part of the records search:

- NRHP and CRHR listings,
- Office of Historic Preservation Archaeological Directory,
- Built Environment Resources Directory, and
- California Inventory of Historic Resources.

Only one previously recorded cultural resource was identified within the project site: P-36-009360/CA-SBR-9360H, Stoddard Wells Road. No additional built environment resources or archaeological resources have been previously recorded within the project site. The record search also found that the survey areas of three previous studies intersect the project site along Stoddard Wells Road and Johnson Road, but none of these studies cover a substantial portion of this part of the project site. The record search results also indicated that the location selected for the construction of the travel center and RV park has not been previously studied.

A pedestrian survey of the project site was conducted on May 17, 2021 and February 10, 2022. Field methods consisted of transects spaced at 15-meter intervals. The survey found that the project area where the travel center and RV park will be constructed has been previously disturbed by grading, vegetation removal, and the installation of subsurface drainage and piping features. The survey also found that shoulders along Stoddard Wells Road and Johnson Road had been heavily disturbed by road construction and maintenance activities, including vegetation removal. No prehistoric or historic-period archaeological resources were identified as a result of the survey. No additional built environment resources other than Stoddard Wells Road were identified.

Historical Resources

P-36-009360/CA-SBR-9360H Stoddard Wells Road

Stoddard Wells Road was one of the first alternative transportation routes across the Mojave Desert to bypass the Mojave Road. Starting with its completion in 1867, the road served as the main wagon route from Victorville to Daggett during the late 19th to early 20th century (O'Neil 2014: 2). In 1912, it became part of the National Old Trails Road, which was renamed Route 66 in 1930s. Stoddard Wells Road has also been recorded as Cape Gloucester Avenue, and the Fish Pond to Big Meadows Wagon Road. Stoddard Wells Road is understood to have been laid out and constructed by Lafayette Meacham in 1867 and then extended between 1896-1916. Stoddard Wells Road as a whole was determined eligible for both the NRHP and CRHR in 2014 under Criterion A/1 for its association with the development of the Mojave Desert region as a significant transportation corridor (O'Neil 2014: 2). Its period of significance is 1867 to the 1930s.

Prior to the 2014 evaluation of the entire resource, the segment of Stoddard Wells Road within the project site was determined not eligible for listing in the NRHP or CRHR in 2006 as part of the cultural resources inventory for Southern California Edison's Coolwater-Lugo Transmission Project (Hatheway 2006: 1, 10). The 2006 evaluation involved the length of Stoddard Wells Road starting at its intersection with Dale Evans Parkway, then traveling southwest across Interstate 15, and continuing south/southwest to the Mojave River; the portion of Stoddard Wells

Road in the current Project extends from Johnson Road (which is south of Dale Evans Parkway) to Interstate 15. This segment was determined not eligible for listing because it has been substantially altered and realigned. This segment originally was a one-lane dirt road, but San Bernardino County Road Maintenance Books indicate that the segment has been widened and paved multiple times, starting in 1941 (Hatheway 2006: 9). An examination of historic aerials and documents associated with the construction of Interstate 15 also revealed that the segment was realigned sometime between 1953 and 1959. Thus, it was determined that this segment of Stoddard Wells Road retains no distinctive characteristics or features of its original construction, design, or engineering from its period of significance (1896-1930s) that would convey its significance as an early transportation route, and thereby neither making it individually eligible for the NRHP or CRHR, nor an eligible contributing element to Stoddard Wells Road as a whole (Hatheway 2006: 10-11). The findings of the study conducted for the current Project found no new or additional information that would conflict with this assessment (Andrews 2022: 13-14).

Tribal Cultural Resources

Native American Heritage Scared Lands File Search

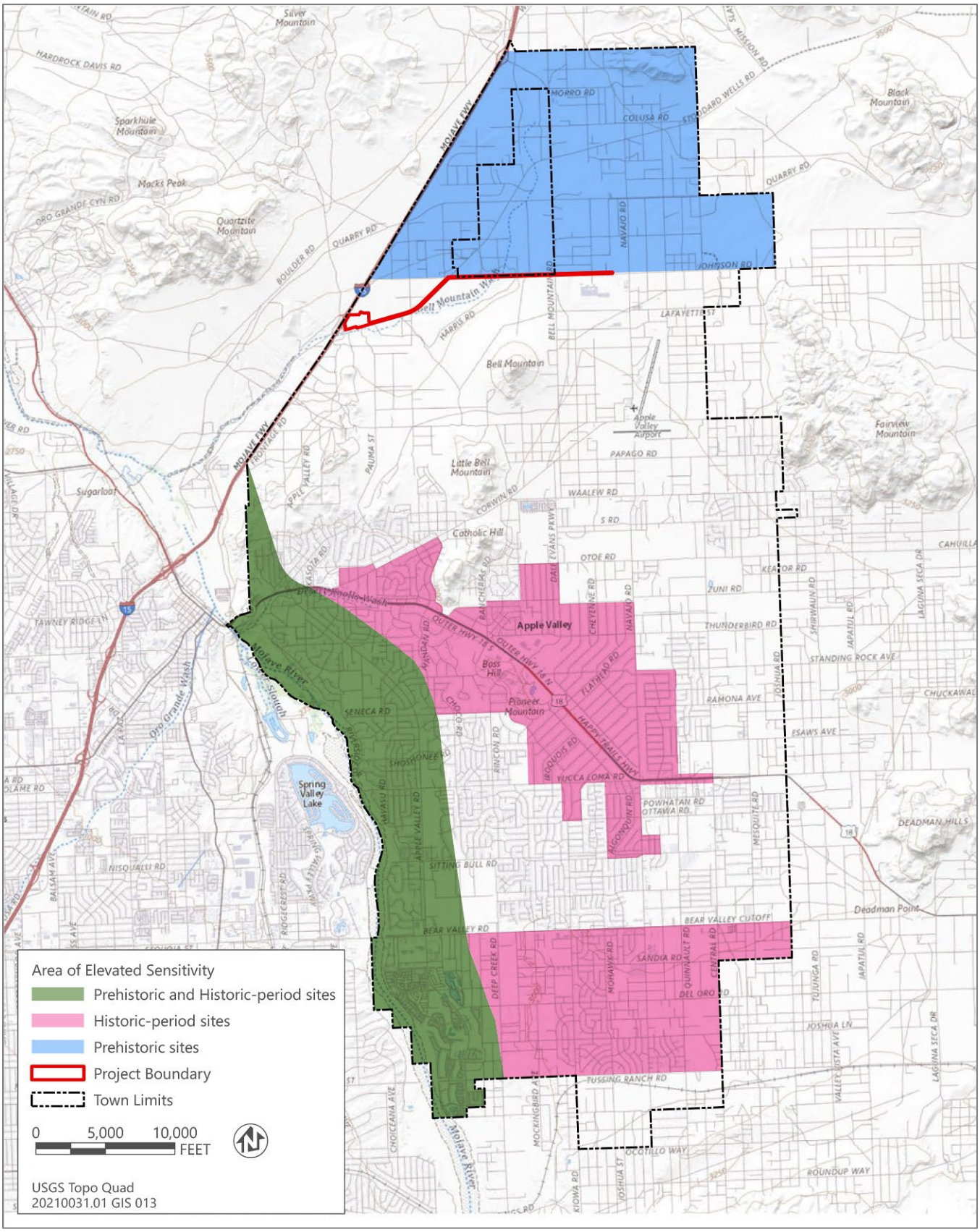
ASM Affiliates conducted outreach to Native American tribes as part of the 2021 *Cultural Resources Assessment Findings Memo for the Love's Travel Stop Apple Valley Project, San Bernardino County, California* (Andrews 2021). A query letter was sent to the San Manuel Band of Mission Indians, requesting any information or concerns that they may wish to share about the proposed project. The San Manuel Band of Mission Indians responded that while the project area is in Maara'yam ancestral territory and of interest to the Tribe, given the nature and location of the proposed project, they did not have concerns with implementation of the project as planned. Their response provided mitigation measures for consideration to be made part of the project plans.

Native American Consultation

In accordance with Assembly Bill (AB) 52 and PRC section 21080.3.1, the Town sent formal notification letters of the proposed project, dated July 6, 2022, to four Native American tribes that have requested notification from the Town: the Cabazon Band of Mission Indians, Cahuilla Band of Mission Indians, Palms Band of Mission Indians, and San Manuel Band of Mission Indians. None of the tribes requested consultation. No known resources within the project area were identified as tribal cultural resources as defined in PRC section 21074.

ARCHAEOLOGICAL SENSITIVITY

The results of the records search indicate a low archaeological sensitivity for the Project area (Andrews 2021: 13; Andrews 2022: 14). A review of the Town of Apple Valley's General Plan Cultural Resources Sensitivity Map also shows that the proposed Project does not fall within any areas of elevated archaeological sensitivity that have been defined by prior research (Town of Apple Valley 2009a: III-66). However, the portion of the Project along Johnson Road is located immediately adjacent to an area that is considered to have an elevated sensitivity for prehistoric archaeological sites (see Figure 3.3-1). Therefore, ground disturbing work in this section may impact subsurface prehistoric archaeological resources that, being Native American in origin, may also be considered Tribal Cultural Resources.



Source: adapted by Ascent Environmental in 2021

Figure 3.3-1 Cultural Sensitivity Map

3.3.3 Impacts and Mitigation Measures

METHODOLOGY

The impact analysis for archaeological resources is based on the findings and recommendations of the 2021 *Cultural Resources Assessment Findings Memo for the Love's Travel Stop Apple Valley Project, San Bernardino County, California* (Andrews 2021) and the 2022 follow-up memo (Andrews 2022). The historical resources impact analysis is based on the findings of aforementioned study as well as the Site Record for Stoddard Wells Road. Provisions and requirements of federal, state, and local laws and regulations that apply to cultural resources also informed the impact analysis.

PRC Section 21083.2(g) defines a "unique archaeological resource" as an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets one or more of the following CRHR-related criteria: (1) that it contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information; (2) that it as a special and particular quality, such as being the oldest of its type or the best available example of its type; or (3) that it is directly associated with a scientifically recognized important prehistoric or historic event or person. An impact on a resource that is not unique is not a significant environmental impact under CEQA (State CEQA Guidelines Section 15064.5[c][4]). If an archaeological resource qualifies as a resource under CRHR criteria, then the resource is treated as a unique archaeological resource for the purposes of CEQA.

PRC Section 21074 defines "tribal cultural resources" as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe" that are listed or determined eligible for listing in the CRHR, listed in a local register of historical resources, or otherwise determined by the lead agency to be a tribal cultural resource.

For the purposes of the impact discussion, the statutory category of "historical resource" is divided into two subcategories. The first category is limited to the built historical environment. The second subcategory involves archaeological resources (both prehistoric and historic-period), which may also qualify as "historical resources" pursuant to CEQA.

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, the project would result in a significant impact on cultural resources if it would:

- cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5 of the State CEQA Guidelines;
- cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the State CEQA Guidelines;
- cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe; or
- disturb any human remains, including those interred outside of formal cemeteries.

ISSUES NOT DISCUSSED FURTHER

All potential archaeological, historical, and tribal cultural resources issues identified in the significance criteria are evaluated below.

As described above, a non-contributing element of one historical resource P-36-009360/CA-SBR-9360H, the Stoddard Wells Road, was identified as being in the Project site. This segment of the road has been previously

evaluated and determined not to be a contributing element to the larger resource in 2006. This segment is also not eligible for listing in the CRHR or NRHP individually. As a result, it would not be considered significant for the purposes of CEQA. Therefore, project construction and operation would have no impact on historical resources. This issue is not analyzed further.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 3.3-1: Cause a Substantial Adverse Change in the Significance of Unique Archaeological Resources or Historical Resources of an Archaeological Nature

The results of the records search and pedestrian survey indicate the Project site has a low sensitivity for archaeological resources. Further, review of the Town's General Plan shows that the proposed Project does not fall within any areas of elevated archaeological sensitivity that have been defined by prior research. However, work along Johnson Road, which includes the installation of the offsite water main line, will occur immediately adjacent to an area that is considered to have elevated sensitivity for the presence of prehistoric archaeological sites. As such, project-related ground-disturbing activities could result in the discovery or damage of yet undiscovered archaeological resources as defined in State CEQA Guidelines Section 15064.5. This would be a **potentially significant** impact.

No known prehistoric or historic-period archaeological sites have been documented within the Project site and the Project site is located in an area considered to have no elevated sensitivity for archaeological resources. The proposed Project site is also highly disturbed from grading, vegetation removal, drainage and water main line installation, road construction, and regular maintenance. Regardless, the portion of the Project along Johnson Road is located next to an area that is considered to have elevated sensitivity for prehistoric archaeological resources (see Figure 3.3-1). Thus, there is the potential that ground disturbing work during construction, especially excavation for foundations and new utilities such as the water line to be constructed along Johnson Road could encounter previously undiscovered or unrecorded archaeological sites and materials. These activities could damage or destroy previously undiscovered archaeological resources. This would be a **potentially significant** impact.

Mitigation Measures

Mitigation Measure 3.3-1a: Town Planning Division Review of Project Specific Cultural Resources Study

Prior to the issuance of any ground disturbing permit, the Town Planning Division shall review and approve the cultural resource study or studies prepared for the project. The recommendations of the study or studies shall be made conditions of approval of the ground disturbing permits.

Mitigation Measure 3.3-1b: Procedures to Follow in the Event of Unanticipated Cultural Resources Discoveries

In the event that any prehistoric or historic-period subsurface archaeological resources, including features, artifacts, and locally darkened soil ("midden"), that could conceal cultural deposits are discovered during construction, all ground-disturbing activity within 100 feet of the resources shall be halted and a qualified professional archaeologist who meets Secretary of Interior standards for archaeology, shall be retained to assess the significance of the find. Work on the other portions of the project outside of the 100-foot buffer area may continue during this assessment period.

If the qualified archaeologist determines the archaeological material to be Native American in nature, the Town of Apple Valley shall contact the appropriate affiliated Native American tribe for their input with regard to the significance and the preferred treatment of the find. If the find is determined to be significant by the archaeologist (i.e., because it is determined to constitute a unique archaeological resource or an historical resource of an archaeological nature) or if the find is Native American in origin and determined to be culturally significant by the affiliated Native American representative, the archaeologist shall develop, and the Town of Apple Valley shall implement, a Monitoring and Treatment Plan. The Monitoring and Treatment Plan shall include appropriate procedures to protect the integrity of the resource and ensure that no additional resources are affected.

Development of the Monitoring and Treatment Plan will also be done in consultation with the affiliated Native American tribe if the find is of Native American in origin and determined to be culturally significant to the tribe. Protection procedures identified in the Monitoring and Treatment Plan could include, but would not necessarily be limited to, preservation in place (which shall be the preferred manner of mitigating impacts to significant archaeological sites and Tribal cultural resources), archival research, subsurface testing, or contiguous block unit excavation and data recovery pursuant to a data recovery plan. Avoidance and/or preservation in place shall be preferred primary option except where it would preclude the construction of important structures or infrastructure or require exorbitant expenditures. This Monitoring and Treatment Plan shall allow for a monitor to be present that represents the affiliated Native American tribe for the remainder of the project, should the tribe elect to place a monitor on-site. The Town shall supply all cultural documents created as a part of the project (e.g., isolate records, site records, survey reports, and testing reports) to the affiliated Native American Tribe and consult with tribe throughout the life of the project.

Significance after Mitigation

Implementation of Mitigation Measures 3.3-1a and 3.3-1b would reduce impacts to potential unique archaeological resources and historic resources of an archaeological nature to a **less-than-significant** level because they would require the performance of professionally accepted and legally compliant procedures for the discovery and protection of previously undocumented significant archaeological resources (primarily preservation in place). Adding this mitigation as a condition for the approval of ground disturbing permits would also allow the Town to meet its own cultural resource protection goals.

Impact 3.3-2: Cause a Substantial Adverse Change in the Significance of a Tribal Cultural Resource

No known resources within the project area were identified as tribal cultural resources as defined in PRC section 21074. However, there is the potential that ground disturbing work during construction could encounter previously undiscovered or unrecorded tribal cultural resources. This would be a **potentially significant** impact.

As discussed in Section 3.3.2, "Environmental Setting," no known resources within the project area were identified as tribal cultural resources as defined in PRC section 21074. The proposed project site is also highly disturbed from grading, vegetation removal, drainage and water main line installation, road construction, and regular maintenance. Regardless, there is the potential that ground disturbing work during construction could encounter previously undiscovered or unrecorded tribal cultural resources. These activities could cause a substantial adverse change in the significant of previously undiscovered tribal cultural resources. This would be a **potentially significant** impact.

Mitigation Measures

Mitigation Measure 3.3-2: Procedures to Follow in the Event of Unanticipated Tribal Cultural Resources Discoveries

Implement Mitigation Measure 3.3-1b.

Significance after Mitigation

Implementation of Mitigation Measure 3.3-2 would reduce impacts to tribal cultural resources to a **less-than-significant** level because it would require the performance of tribally approved preservation and treatment options and proper care of tribal cultural resources if they are recovered.

Impact 3.3-3: Disturb Human Remains

Based on documentary research, no evidence suggests that any prehistoric or historic-period marked or un-marked human interments are present within or in the immediate vicinity of the project site or along Johnson Avenue where the offsite water main line will be installed. However, ground-disturbing construction activities could uncover previously unknown human remains. Compliance with California Health and Safety Code Section 7050.5 and California Public Resources Code Section 5097 would make this impact **less than significant**.

Based on documentary research, no evidence suggests that any prehistoric or historic-period marked or un-marked human interments are present within or in the immediate vicinity of the project site or along Johnson Avenue where the offsite water main line will be installed. However, the location of grave sites and Native American remains can occur outside of identified cemeteries or burial sites. Therefore, there is a possibility that unmarked, previously unknown Native American or other graves could be present within the project site and could be uncovered by project-related construction activities.

California law recognizes the need to protect Native American human burials, skeletal remains, and funerary items associated with Native American burials from vandalism and inadvertent destruction. The procedures for the treatment of Native American human remains are contained in California Health and Safety Code Section 7050.5 and California Public Resources Code Section 5097.

These statutes require that, if human remains are discovered, potentially damaging ground-disturbing activities in the area of the remains shall be halted immediately, and the appropriate County coroner shall be notified immediately. If the remains are determined by the coroner to be Native American, the NAHC shall be notified within 24 hours and the guidelines of the NAHC shall be adhered to in the treatment and disposition of the remains. Following the coroner's findings, the NAHC-designated Most Likely Descendant, and the landowner shall determine the ultimate treatment and disposition of the remains and take appropriate steps to ensure that additional human interments, if present, are not disturbed. The responsibilities for acting upon notification of a discovery of Native American human remains are identified in PRC Section 5097.94.

Compliance with California Health and Safety Code Section 7050.5, California Public Resources Code Section 5097, and State CEQA Guidelines Section 15064.5(e) would provide an opportunity to avoid or minimize the disturbance of human remains, and to appropriately treat any remains that are discovered. Therefore, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

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3.4 BIOLOGICAL RESOURCES

This section addresses common and sensitive biological resources that could be affected by implementation of the I-15 Travel Center Project. This evaluation is based on data collected during a reconnaissance-level survey of the project site conducted on March 25 and 26, 2021; a Biological Resources Assessment completed by Bargas Environmental Consulting (Bargas) in February 2022 (see Appendix C); a pedestrian field survey conducted by Bargas on November 29 and 30, 2021; a review of aerial photographs of the project area; a review of U.S. Fish and Wildlife Service (USFWS) species lists (USFWS 2021a), USFWS National Wetlands Inventory (USFWS 2021b) and searches of the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CDFW 2021), California Native Plant Society Rare Plant Inventory (CNPS 2021); and other existing documentation pertaining to biological resources in the region.

This section uses the following definitions for areas referred to herein:

- Project Site: The project site refers to the parcel to be developed for the I-15 Travel Center Project. For the purposes of this report the project site refers to APN 0472-222-10-0000 (Parcel Map 114/78-80).
- Biological Study Area (BSA): The BSA consists of the project site and a 500-foot buffer of the project site, as well as the proposed 19,460-linear-foot water main line and a 50-foot buffer of the water main line. In some cases, where resources have potential to occur on or in the vicinity of the project site or the water main line individually, the following terms are used:
  - Project Site BSA: the project site and a 500-foot buffer.
  - Water Main BSA: the 19,460-linear-foot water main line and a 50-foot buffer.

Protocol-level surveys for special-status plants (i.e., floristic surveys covering the blooming periods of all potentially occurring special-status pant taxa) and focused or protocol-level wildlife species surveys have not been conducted in the BSA because the project site and offsite water line area is entirely disturbed and contains no natural or native vegetation communities. The water line construction is proposed in previously disturbed areas, such as roadways and road shoulders that do not contain habitat for sensitive species. In addition, the distribution and abundance of special-status plants, and use of sites by wildlife for different life history phases, are dynamic and can vary by year depending on ecological variables such as annual climatic conditions. Therefore, it is appropriate to conduct special-status species surveys in the appropriate season immediately prior to project implementation and after the exact construction details and disturbance limits have been determined as included in Mitigation Measure 3.4-2: Special-Status Plants.

3.4.1 Regulatory Setting

FEDERAL

Federal Endangered Species Act

Pursuant to the federal Endangered Species Act (ESA) (16 U.S.C. Section 1531 et seq.), USFWS regulates the taking of species listed in the ESA as threatened or endangered. In general, persons subject to ESA (including private parties) are prohibited from "taking" endangered or threatened fish and wildlife species on public or private property, and from "taking" endangered or threatened plants in areas under federal jurisdiction or in violation of state law. Under Section 9 of the ESA, the definition of "take" is to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." USFWS has also interpreted the definition of "harm" to include significant habitat modification that could result in take.

Section 10 of the ESA applies if a non-federal agency is the lead agency for an action that results in take and no other federal agencies are involved in permitting the action. Section 7 of the ESA applies if a federal discretionary action is required (e.g., a federal agency must issue a permit), in which case the involved federal agency consults with USFWS.

Section 7 requires federal agencies to consider the potential of their actions to jeopardize the continued existence of any listed species or to result in the destruction or adverse modification of such species' critical habitat.

Clean Water Act

Section 404 of the Clean Water Act (CWA) requires project proponents to obtain a permit from the U.S. Army Corps of Engineers (USACE) before performing any activity that involves any discharge of dredged or fill material into waters of the United States, including wetlands. Waters of the United States include navigable waters of the United States, interstate waters, tidally influenced waters, and all other waters where the use, degradation, or destruction of the waters could affect interstate or foreign commerce, tributaries to any of these waters, and wetlands that meet any of these criteria or that are adjacent to any of these waters or their tributaries. Many surface waters and wetlands in California meet the criteria for waters of the United States.

In accordance with Section 401 of the CWA, projects that apply for a USACE permit for discharge of dredged or fill material must obtain water quality certification from the appropriate regional water quality control board (RWQCB) indicating that the action would uphold state water quality standards.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c), enacted in 1940, and amended several times since then, prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" eagles, including their parts, nests, or eggs. The Act provides criminal penalties for persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export, or import, at any time or any manner, any bald eagle … [or any golden eagle], alive or dead, or any part, nest, or egg thereof." The Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb." For purposes of the guidelines, "disturb" means: "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior." In addition to immediate impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle's return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death, or nest abandonment.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA), first enacted in 1918, provides for protection of international migratory birds and authorizes the Secretary of the Interior to regulate the taking of migratory birds. The MBTA provides that it will be unlawful, except as permitted by regulations, to pursue, take, or kill any migratory bird, or any part, nest, or egg of any such bird. Under the MBTA, "take" is defined as "to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or any attempt to carry out these activities." A take does not include habitat destruction or alteration, as long as there is not a direct taking of birds, nests, eggs, or parts thereof. The current list of species protected by the MBTA can be found in Title 50 of the Code of Federal Regulations (CFR), Section 10.13 (50 CFR 10.13). The list includes nearly all birds native to the United States.

STATE

California Endangered Species Act

Pursuant to the California Endangered Species Act (CESA), a permit from CDFW is required for projects that could result in the "take" of a plant or animal species that is listed by the state as threatened or endangered. Under California Fish and Game Code section 86, "take" is defined as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." This definition does not include "harm" or "harass," as does the federal definition of take under the ESA. CDFW interprets the state definition of take, as applied in CESA, to encompass any activity that would directly or foreseeably indirectly kill an individual of a species. As a result, the threshold for take is higher under

CESA than under the federal ESA. Authorization for take of state-listed species can be obtained through a California Fish and Game Code Section 2081 incidental take permit.

Natural Communities Conservation Planning Act

The Natural Communities Conservation Planning Act is set forth in Fish and Game Code Sections 2800–2835. The intent of the legislation is to provide for conservation planning as an officially recognized policy that can be used as a tool to eliminate conflicts between the protection of natural resources and the need for growth and development. In addition, the legislation promotes conservation planning as a means of coordination and cooperation among private interests, agencies, and landowners, and as a mechanism for multispecies and multi-habitat management and conservation. The development of natural community conservation plans (NCCPs) is an alternative to obtaining take authorization under Section 2081 of the Fish and Game Code.

California Fish and Game Code Sections 3503 and 3503.5—Protection of Bird Nests and Raptors

Section 3503 of the Fish and Game Code states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 of the California Fish and Game Code states that it is unlawful to take, possess, or destroy any raptors (i.e., species in the orders *Falconiformes* and *Strigiformes*), including their nests or eggs. Typical violations include destruction of active nests as a result of tree removal or disturbance caused by project construction or other activities that cause the adults to abandon the nest, resulting in loss of eggs and/or young.

Fully Protected Species under the California Fish and Game Code

Protection of fully protected species is described in Sections 3511, 4700, 5050, and 5515 of the California Fish and Game Code (birds in Section 3511, mammals in Section 4700, reptiles and amphibians in Section 5050, and fish in Section 5515). These statutes strictly prohibit the take of these species, with limited exceptions. CDFW cannot issue a take permit for fully protected species, except under narrow conditions for scientific research or the protection of livestock, or if an NCCP has been adopted.

Porter-Cologne Water Quality Control Act

Under the Porter-Cologne Water Quality Control Act (Wat. Code, Div. 7, Section 13000 et seq.), waters of the state fall under the jurisdiction of the appropriate RWQCB. The RWQCB must prepare and periodically update water quality control plans (basin plans). Each basin plan sets forth water quality standards for surface water and groundwater, as well as actions to control point and nonpoint sources of pollution to achieve and maintain these standards. The RWQCB's jurisdiction includes federally protected waters as well as areas that meet the definition of "waters of the state." The RWQCB has jurisdiction over areas not federally protected under Section 401 provided they meet the definition of waters of the state or the state definition of a wetland. Actions that affect waters of the state, including wetlands, must meet the RWQCB's waste discharge requirements. The California Water Code generally regulates more substances contained in discharges and defines discharges to receiving waters more broadly than does the CWA.

On April 2, 2019, the State Water Resources Control Board (State Water Board) adopted Resolution 2019-0015, thereby adopting a document entitled, "State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State" ("Procedures") for inclusion in the Water Quality Control Plans for Inland Surface Waters, Enclosed Bays, and Estuaries of California.

In taking this action, the State Water Board noted that under the Porter-Cologne Water Quality Control Act (Porter-Cologne Act) (Wat. Code, Div. 7, Section 13000 et seq.), discharges of dredged or fill material to waters of the state are subject to waste discharge requirements or waivers thereof. The State Water Board further explained that "although the state has historically relied primarily on requirements in the Clean Water Act to protect wetlands, U.S. Supreme Court rulings reducing the jurisdiction of the Clean Water Act over wetland areas by limiting the definition of 'waters of the United States' have necessitated the use of California's independent authorities under the Porter-Cologne Act to protect these vital resources."

The Office of Administrative Law (OAL) approved the Procedures on August 28, 2019. Pursuant to the Procedures, the effective date is nine months upon OAL approval. Accordingly, the Procedures became effective on May 28, 2020.

By adopting the Procedures, the State Water Board mandated and standardized the evaluation of impacts and protection of waters of the state from impacts due to dredge and fill activities. The Procedures include: 1) a wetland definition; 2) a jurisdictional framework for determining if a feature that meets the wetland definition is a water of the state; 3) wetland delineation procedures; and 4) procedures for application submittal, and the review and approval of dredge or fill activities.

The Procedures define an area as a wetland if it meets three criteria: wetland hydrology, wetland soils, and (if vegetated) wetland plants. An area is a wetland if: (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation.

Waters of the State, by definition, includes more aquatic features than Waters of the U.S., which defines the jurisdiction of the federal government. Waters of the State are not so limited. In addition, the federal definition of a wetland requires a prevalence of wetland vegetation under normal circumstances. To account for wetlands in arid portions of the state, the State Water Board's definition differs from the federal definition in that an area may be a wetland even if it does not support vegetation. If vegetation is present, however, the State Water Board's definition requires that the vegetation be wetland vegetation. The State Water Board's definition clarifies that vegetated and unvegetated wetlands will be regulated in the same manner.

The Procedures also include a jurisdictional framework that applies to aquatic features that meet the wetland definition. The jurisdictional framework will guide applicants and staff in determining whether an aquatic feature that meets the wetland definition will be regulated as a water of the state. The jurisdictional framework is intended to exclude from regulation any artificially-created, temporary features, such as tire ruts or other transient depressions caused by human activity, while still capturing small, naturally-occurring features, such as seasonal wetlands and small vernal pools that may be outside of federal jurisdiction. The Procedures do not expand the State Water Board's jurisdiction beyond areas already under State Water Board's jurisdiction.

The Procedures exclude the following agricultural features from the protections accorded to wetlands: (1) ditches with ephemeral flow that are not a relocated water of the state or excavated in a water of the state; (2) ditches with intermittent flow that are not a relocated water of the state or excavated in a water of the state, or that do not drain wetlands other than any wetlands described in (4) or (5) below; (3) ditches that do not flow, either directly or through another water, into another water of the state; (4) artificially irrigated areas that would revert to dry land should application of waters to that area cease; or (5) artificial, constructed lakes and ponds created in dry land such as farm and stock watering ponds, irrigation ponds, and settling basins.

The Procedures clarify what information and analysis the applicant needs to submit to have a complete application. The Procedures standardize when an alternative analysis needs to be conducted and set a minimum mitigation ratio for any permanent impacts to waters of the state resulting from dredge and fill activities.

When an alternatives analysis is required, the applicant must demonstrate that the proposed alternative is the Least Environmentally Damaging Practicable Alternative. The term practicable means available and capable of being done after taking into consideration cost, existing technology, and other logistics in light of the overall project purpose.

California Fish and Game Code Section 1602—Lake or Streambed Alteration

All diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California that supports fish or wildlife resources are subject to regulation by CDFW under Section 1602 of the California Fish and Game Code. Under Section 1602, it is unlawful for any person, governmental agency, or public utility to do any of the following without first notifying CDFW:

- substantially divert or obstruct the natural flow of, or substantially change or use any material from, the bed, channel, or bank of any river, stream, or lake; or
- deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.

The regulatory definition of a stream is a body of water that flows at least periodically or intermittently through a bed or channel that has banks and supports fish or other aquatic life. This definition includes watercourses with a surface or subsurface flow that supports or has supported riparian vegetation (California Code of Regulations Title 14, Section 1.72). CDFW jurisdiction over altered or artificial waterways is based on the value of those waterways to fish and wildlife. A lake and streambed alteration agreement must be obtained for any diversion or alteration that would substantially adversely affect a fish or wildlife resource in a river, stream, or lake. CDFW takes the position that a substantial change or use of material from the bed, bank, or channel includes the alteration or removal of riparian vegetation associated with a lake or stream.

Native Plant Protection Act

The Native Plant Protection Act (NPPA) (California Fish and Game Code Section 1900 et seq.) allows the California Fish and Game Commission to designate plants as rare or endangered. Sixty-four species, subspecies, and varieties of plants are protected as rare under the NPPA. The act prohibits take of endangered or rare native plants but includes exceptions for agricultural and nursery operations; for emergencies; and, after proper notification of CDFW, for vegetation removal from canals, roads, and other building sites, changes in land use, and other situations.

California Desert Native Plants Act

The purpose of the CDNPA is to protect certain species of California desert native plants from unlawful harvesting on both public and privately-owned lands. The CDNPA only applies within the boundaries of Imperial, Inyo, Kern, Los Angeles, Mono, Riverside, San Bernardino, and San Diego Counties. Within these counties, the CDNPA prohibits the harvest, transport, sale, or possession of specific native desert plants under many circumstances unless a person has a valid permit or wood receipt, and the required tags and seals.

CDFW 2012 Staff Report on Burrowing Owl Mitigation

The revised 2012 Staff Report takes into account the California Burrowing Owl Consortium's Survey Protocol and Mitigation Guidelines (CBOC 1993, 1997) and supersedes the survey, avoidance, minimization and mitigation recommendations in the 1995 Staff Report. The revised 2012 Staff Report includes rigorous burrowing owl survey methods, works to improve the adequacy of impact assessments, and outlines clear and effective avoidance and minimization measures and mitigation measures to ensure impacts to the species are effectively addressed at the project, local, and/or regional level.

LOCAL

Town of Apple Valley Development Code

Desert native plants and Joshua trees occurring on private and public land within the Town of Apple Valley are protected by Chapter 9.76 Plant Protection and Management of the Town's Development Code.

1. Regulated Desert Native Plants. The following desert native plants or any part thereof, except the fruit, shall not be harvested or removed except under a permit issued by the Town Manager, or designee:
    a. The following desert native plants with stems two inches or greater in diameter or six feet or greater in height:
        1) *Dalea* (=*Psorothamnus*) *spinosa* (smoketree)
        2) All species of the family *Agavaceae* (century plants, nolinas, yuccas, cacti). Including the following known to Apple Valley:
            a) Mohave Yucca (*Yucca schidigera*)
            b) Lords Candle (*Yucca whipplei*)
            c) Barrel cactus (*Ferocactus acanthodes*)
        3) All species of the genus *Prosopis* (mesquites).
    b. Creosote Rings, ten feet or greater in diameter.
    c. All Joshua trees (mature or immature), subject to provision of Section 9.76.040

2. All plants protected or regulated by the State Desert Native Plant Act (i.e., Food and Agricultural Code 80001, et. seq.) shall be required to comply with the provisions of those statutes prior to the issuance of any county development permit or land use application approval. The Town Manager, or designee, is responsible for the issuance of any required wood tags, seals or permits.

Chapter 9.76.040 of the Town of Apple Valley provides regulatory and management guidance for the preservation and removal of Joshua trees within the town. The goal is to recognize and preserve the contributions that Joshua trees have made to the desert environment. In conformance with this recognition, no existing Joshua tree shall be disturbed, moved (transplanted or otherwise), removed, or destroyed unless such disturbance, move, removal or destruction is first reviewed and approved by the Town of Apple Valley.

3.4.2 Environmental Setting

The BSA is located within the Mojave Desert Region in undulating terrain with elevations ranging from 2,900 to 3,050 feet above mean sea level. The project site is surrounded by primarily vacant land, with the Victorville Landfill located west of I-15 along Stoddard Wells Road. Other nearby land uses include Walmart and Big Lots! Logistics/distribution centers, and the Apple Valley airport located approximately two miles east of the project site.

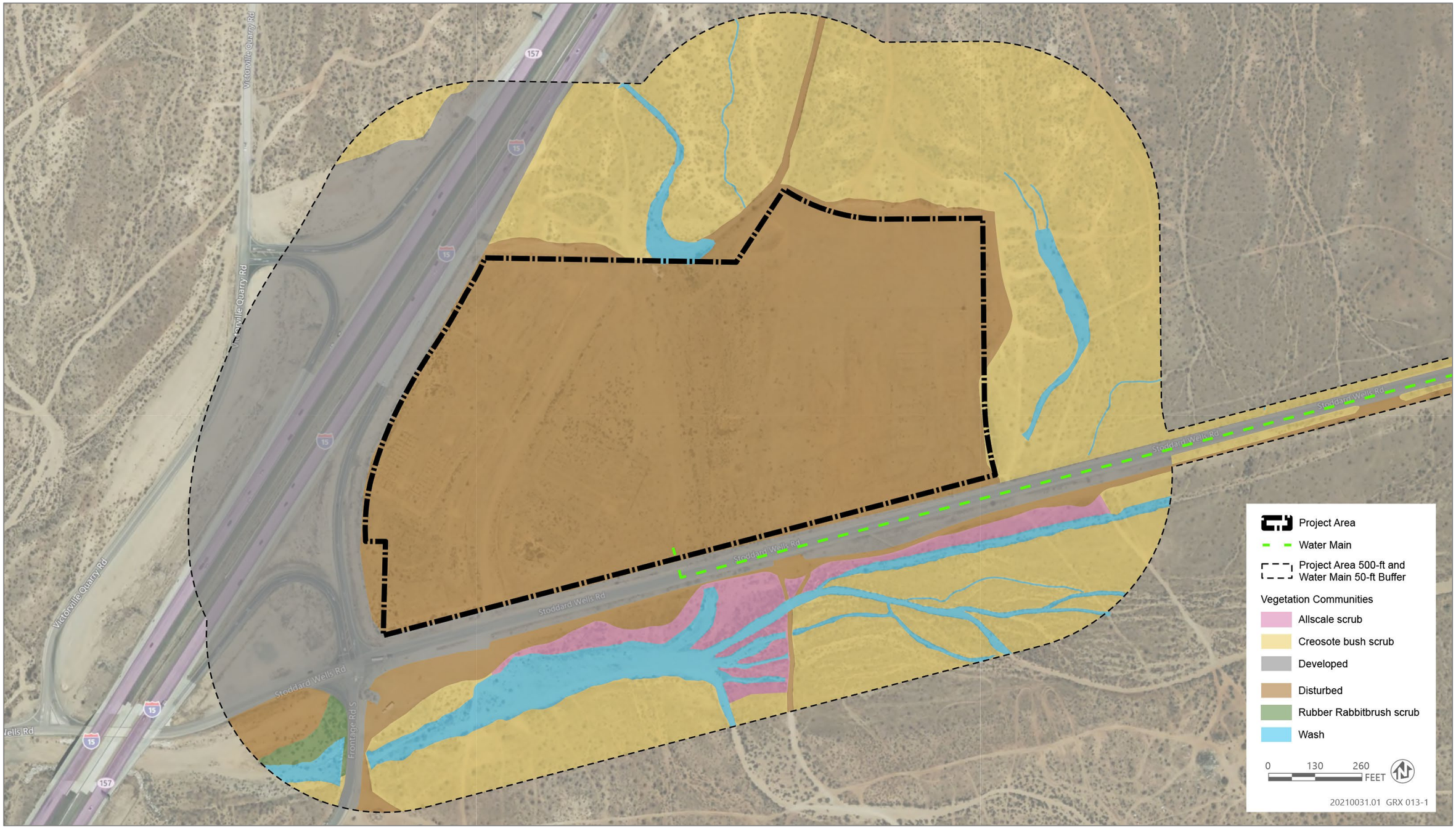
SOILS

The Bell Mountain wash traverses the southern portion of the project site BSA in the buffer zone and is disturbed by off-road vehicle usage. Five soil types are mapped within the BSA: Cajon-Arizo complex, Nebona-Cuddeback complex, Helendale-Bryman loamy sands, Cajon sand, and Rock Outcrop-Lithic Torriorthents complex. The Cajon-Arizo complex, 2 to 15 percent slopes is commonly found on alluvial fans mainly with desert shrubs, grasses, and forbs in elevations from 2,800 to 3,300 feet. The Nebona-Cuddeback complex, 2 to 9 percent slopes, is typically found on terraces and old alluvial fans that commonly support gravel desert pavement. Cajon sand, 2 to 9 percent slopes is commonly found on alluvial fans. Most areas with this soil type are dissected by long, shallow, intermittent drainageways. The natural vegetation typical within this soil type includes yucca, desert shrubs, grasses, and forbs at elevations ranging from 1,800 to 4,00 feet. Helendale-Bryman loamy sands, 2 to 5 percent slopes is typically found on terraces and fan remnants. Many areas with this soil type are dissected by deep intermittent drainageways and typically support yucca, desert shrubs, grasses and forbs at elevations ranging from 2,900 to 3,200 feet. Rock outcrop-lithic torriorthents complex, 15 to 50 percent slopes. Rock outcrop is typically on mountainsides, ridges, and rugged hills and generally dominates the landscape. Lithic Torriorthents are typically between the areas of rock outcrops, in small depressional areas, and on relatively stable hillsides (NRCS 1986, 2022).

VEGETATION

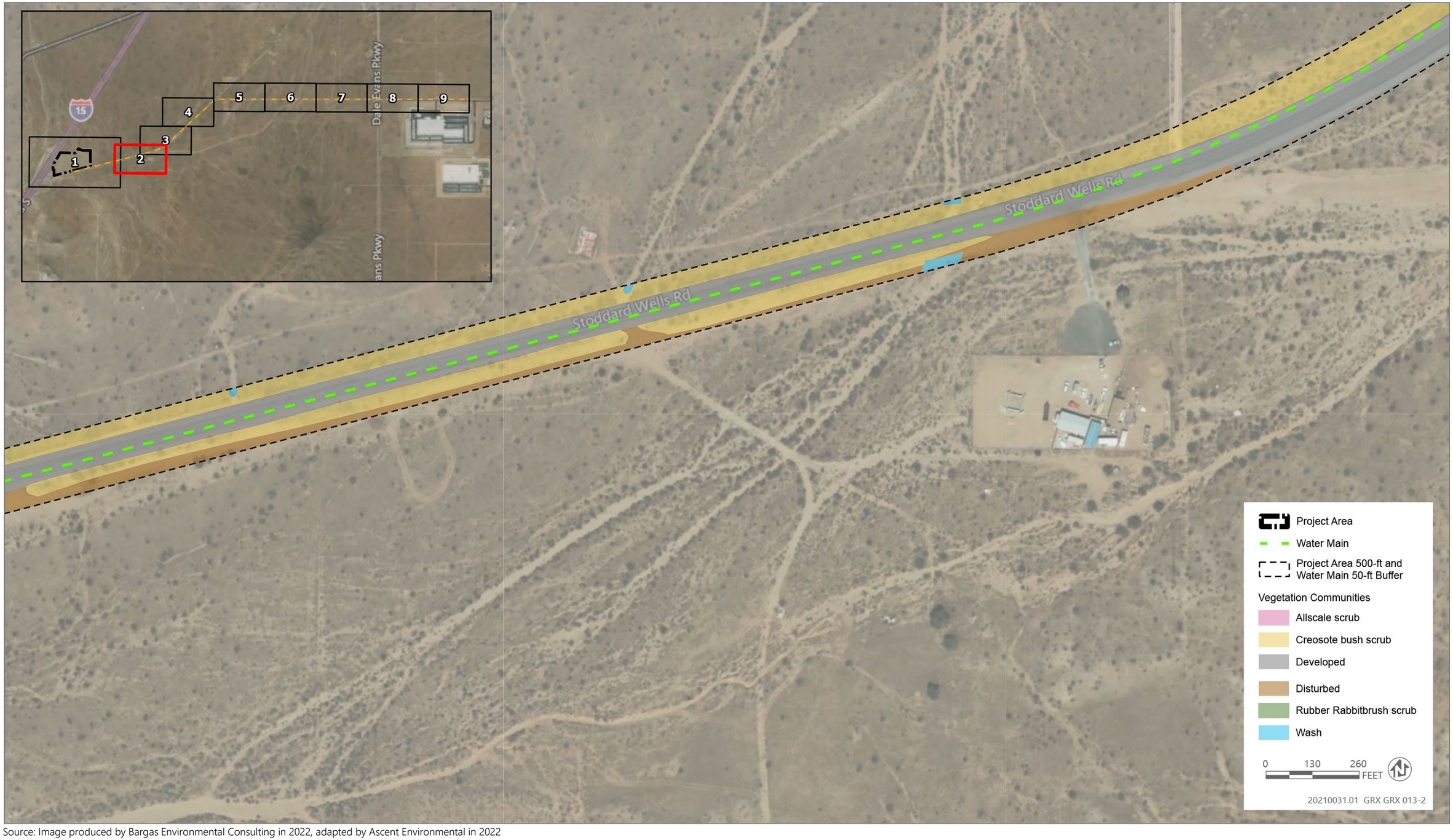
Maps depicting vegetation communities are provided in Figures 3.4-1a through 3.4-1i. The project site is entirely disturbed and contains no natural or native vegetation communities. Within the BSA 500-foot buffer are the following vegetation community types:

- *Larrea tridentata* Shrubland Alliance or Creosote Bush Scrub: Creosote bush scrub is the dominant community in the 500-foot buffer of the project site and the one most likely to become established over time absent continued disturbance. A characteristic community throughout the Mojave Desert, this community is dominated by widely spaced creosote bush (*Larrea tridentata*) plants, with few associate genera such as *Atriplex*, *Ambrosia*, and nonnative grasses.
- *Atriplex polycarpa* Shrubland Alliance or Allscale Scrub: Allscale scrub is dominated by allscale (*Atriplex polycarpa*), with species of *Ambrosia* and some creosote bush present, as well as nonnative grasses. This community is found in sandy, upland soils of old beach or lake deposits, alluvial fans, and rolling hills. This vegetation type is also commonly found adjacent to water courses, such as that which is found south of Stoddard Wells Road.
- *Ericameria nauseosa* Shrubland Alliance or Rubber Rabbitbrush Scrub: Rubber rabbitbrush scrub is restricted to the far southwest corner of the project site buffer along a wash. This community is dominated by its namesake, rubber rabbitbrush (*Ericameria nauseosa*), with little other ground cover.



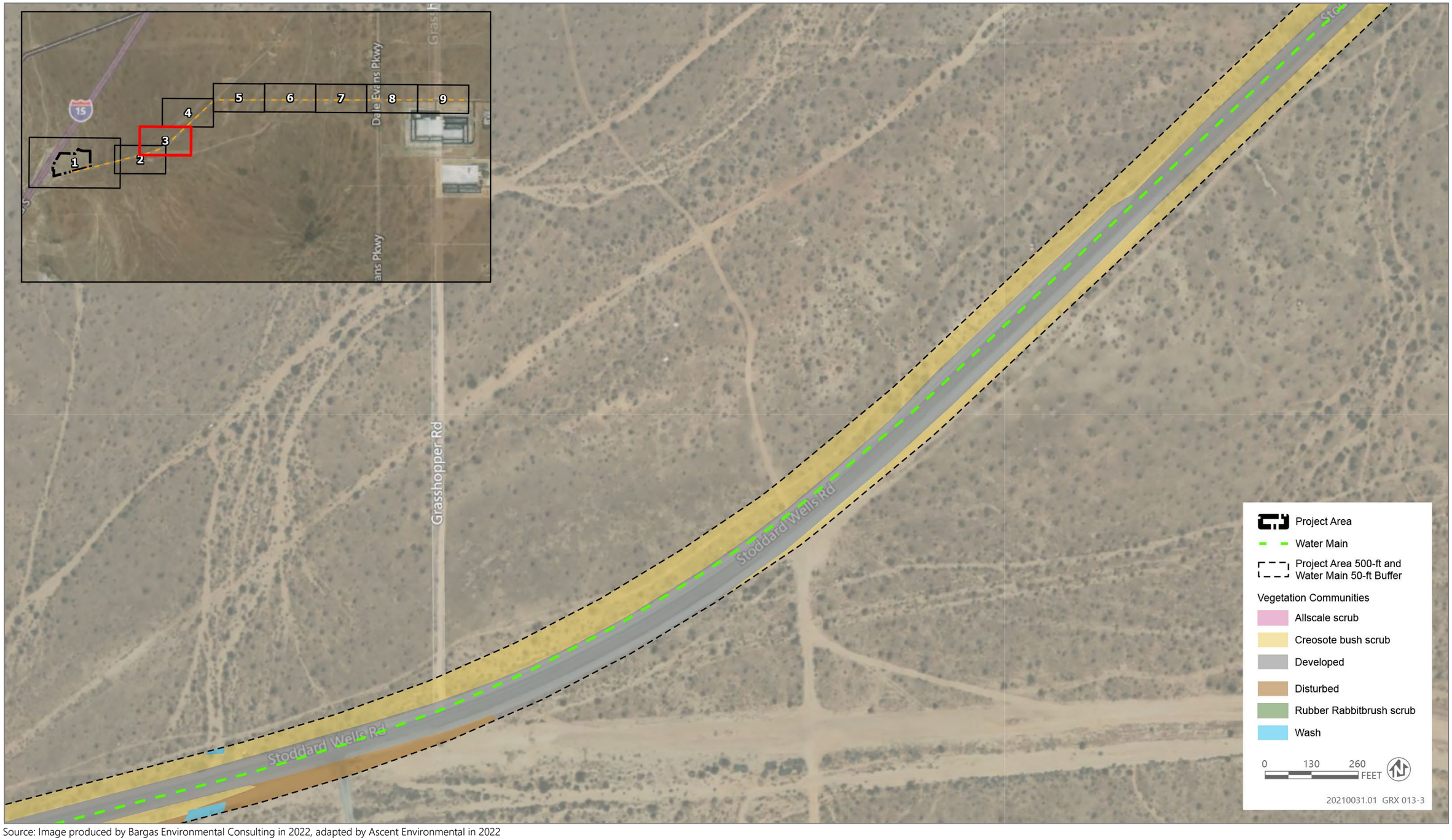
Source: Image produced by Bargas Environmental Consulting in 2022, adapted by Ascent Environmental in 2022

Figure 3.4-1a Vegetation Communities



Source: Image produced by Bargas Environmental Consulting in 2022, adapted by Ascent Environmental in 2022

Figure 3.4-1b Vegetation Communities



Source: Image produced by Bargas Environmental Consulting in 2022, adapted by Ascent Environmental in 2022

Figure 3.4-1c Vegetation Communities



Source: Image produced by Bargas Environmental Consulting in 2022, adapted by Ascent Environmental in 2022

Figure 3.4-1d Vegetation Communities



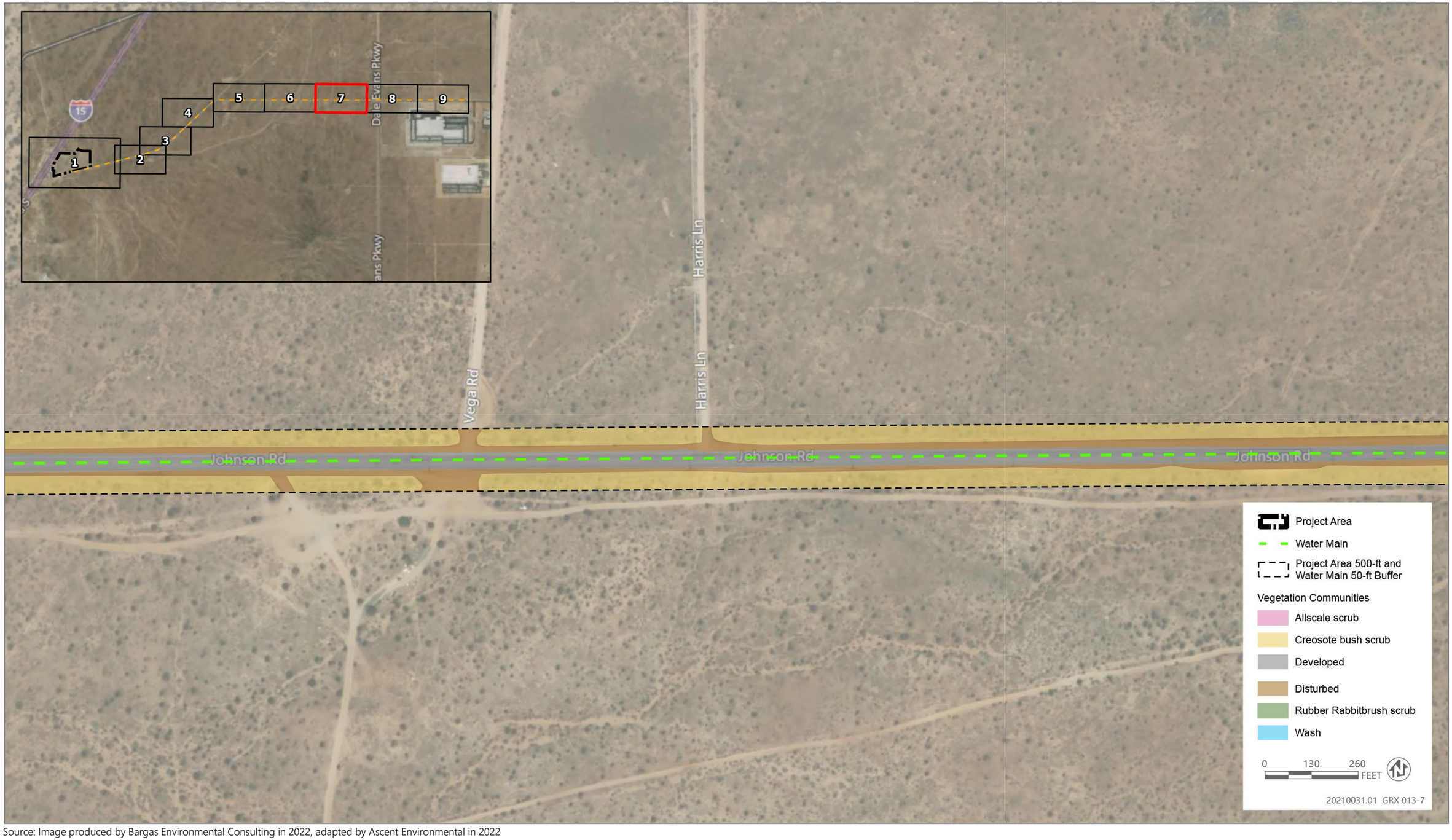
Source: Image produced by Bargas Environmental Consulting in 2022, adapted by Ascent Environmental in 2022

Figure 3.4-1e Vegetation Communities



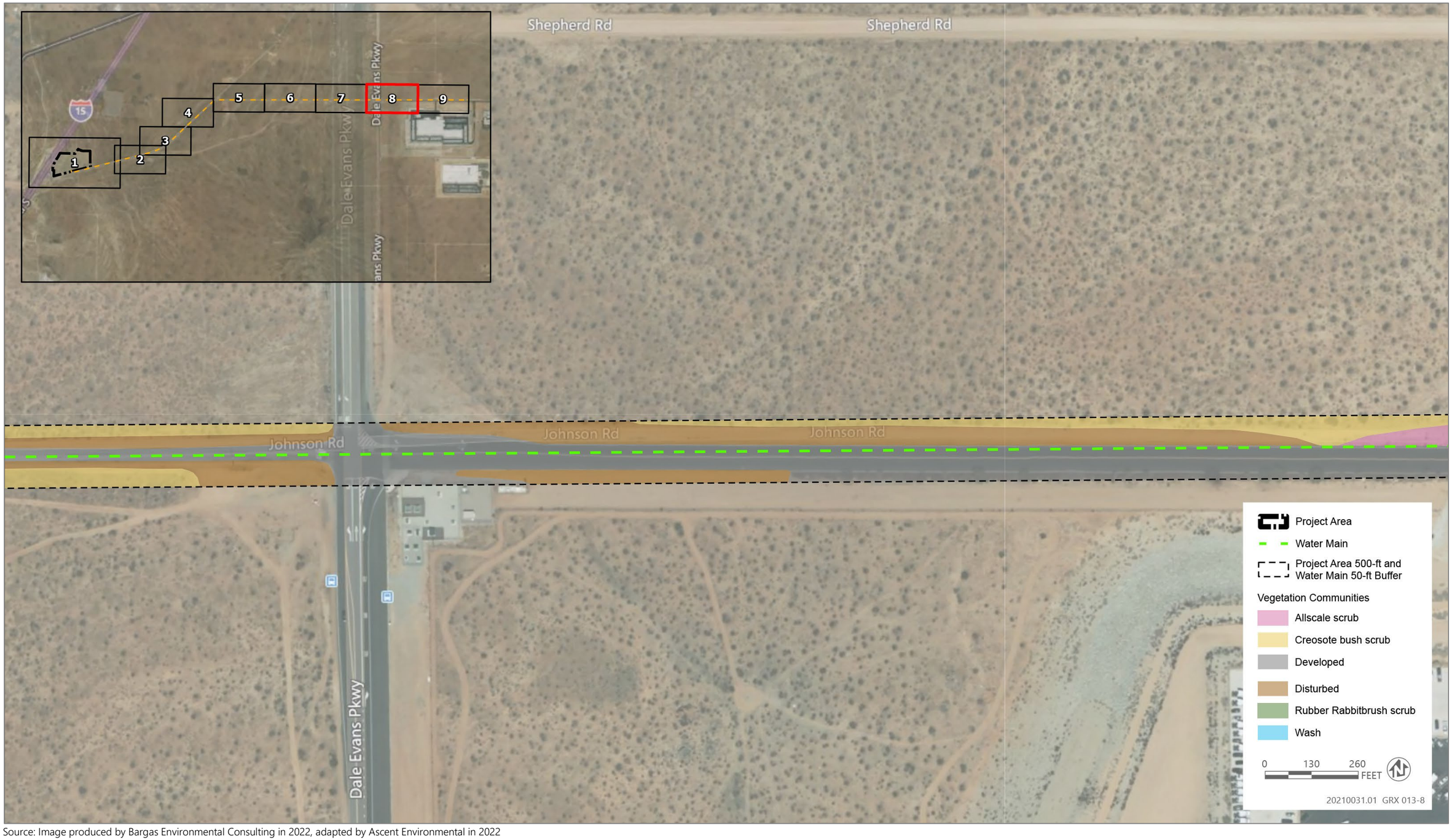
Source: Image produced by Bargas Environmental Consulting in 2022, adapted by Ascent Environmental in 2022

Figure 3.4-1f Vegetation Communities



Source: Image produced by Bargas Environmental Consulting in 2022, adapted by Ascent Environmental in 2022

Figure 3.4-1g Vegetation Communities



Source: Image produced by Bargas Environmental Consulting in 2022, adapted by Ascent Environmental in 2022

Figure 3.4-1h Vegetation Communities



Source: Image produced by Bargas Environmental Consulting in 2022, adapted by Ascent Environmental in 2022

Figure 3.4-1i Vegetation Communities

FLORAL DIVERSITY

Observed plant diversity, during the biological surveys, was relatively low. The project site is entirely disturbed and contains no natural or native vegetation communities. However, it is important to note that the surveys were not conducted during the blooming period for most annual plants. Plant species observed during the survey were white bursage (*Ambrosia dumosa*), rabbitbrush (*Ericameria* sp.), allscale, and creosote bush. None of the species detected onsite during the surveys are considered sensitive or special-status species by CDFW, USFWS, or the California Native Plant Society (CNPS); however, floristic surveys according to protocols established by CDFW and USFWS have not been conducted in the BSA and reconnaissance-level surveys were conducted outside of the season in which many plants of concern would be in bloom or otherwise identifiable. Although protocol-level floristic surveys have not yet been conducted for the project, surveys would be completed during the blooming period for the special-status plant species with potential to occur in the project site, prior to the issuance of construction-related permits (refer to Mitigation Measure 3.4-2 in Section 3.4.3 "Environmental Impacts and Mitigation Measures).

COMMON WILDLIFE SPECIES

Observed wildlife diversity during the reconnaissance field surveys was low. Wildlife species observed or detected were common raven (*Corvus corax*), white-crowned sparrow (*Zonotrichia leucophrys*), rock pigeon (*Columba livia*), horned lark (*Eremophilia alpestris*), American crow (*Corvus brachyrhynchos*), red-tailed hawk (*Buteo jamaicensis*), white-tailed antelope squirrel (*Ammospermophilus leucurus*), black-tailed jackrabbit (*Lepus californicus*), and coyote [scat] (*Canis latrans*).

SENSITIVE BIOLOGICAL RESOURCES

Special-Status Species

Special-status species are defined as species that are legally protected or that are otherwise considered sensitive by federal, state, or local resource agencies. Special-status species are species, subspecies, or varieties that fall into one or more of the following categories, regardless of their legal or protection status:

- officially listed by California or the federal government as endangered, threatened, or rare;
- a candidate for state or federal listing as endangered, threatened, or rare;
- taxa (i.e., taxonomic category or group) that meet the criteria for listing, even if not currently included on any list, as described in California Code of Regulations (CCR) Section 15380 of the State CEQA Guidelines;
- species identified by CDFW as species of special concern;
- species listed as Fully Protected under the California Fish and Game Code;
- species afforded protection under local planning documents; and
- taxa considered by the CDFW to be "rare, threatened, or endangered in California" and assigned a California Rare Plant Rank (CRPR). The CDFW system includes six rarity and endangerment ranks for categorizing plant species of concern, summarized as follows:
  - CRPR 1A - Plants presumed to be extinct in California;
  - CRPR 1B - Plants that are rare, threatened, or endangered in California and elsewhere;
  - CRPR 2A- Plants presumed to be extinct in California but common elsewhere;
  - CRPR 2B - Plants that are rare, threatened, or endangered in California but more common elsewhere;
  - CRPR 3 - Plants about which more information is needed (a review list); and
  - CRPR 4 - Plants of limited distribution (a watch list).

The term "California species of special concern" is applied by CDFW to animals not listed under ESA or CESA, but that are declining at a rate that could result in listing, or that historically occurred in low numbers and known threats to their persistence currently exist. CDFW's fully protected status was California's first attempt to identify and protect animals that were rare or facing extinction. Most species listed as fully protected were eventually listed as threatened or endangered under CESA; however, some species remain listed as fully protected but do not have simultaneous listing under CESA. Fully protected species may not be taken or possessed at any time and no take permits can be issued for these species except for scientific research purposes or for relocation to protect livestock or pursuant to an approved NCCP.

Appendix C provides a list of special-status species potentially occurring in the project vicinity and was developed based on review of the existing data sources described previously and on the biological surveys.

Special-Status Plants

Query results of the California Natural Diversity Database (CNDDB) and the CNPS Inventory of Rare and Endangered Plants of California indicate that 14 special-status plant species have been recorded within the U.S. Geological Survey (USGS) topographic quadrangle containing the project site and the eight surrounding quadrangles, although no occurrences of these species have been recorded in the BSA (see Appendix C). For each species listed, a determination was made regarding the potential for the species to occur in the BSA based on information gathered during the field reconnaissance, including the location of the site, habitats present, current site conditions, and past and present land use (Table 3.4-1). Although not included in the CNDDB or CNPS database query results, Joshua tree became a candidate species under the California Endangered Species Act (CESA) effective October 9, 2020, and is known to occur in the area.

No Joshua trees were observed on the project site; however, the species was observed in the project site BSA or within the water main BSA. No other special-status plant species were observed within the BSA. Seven other special-status plant species have a low potential of occurring on the project site BSA and include Clokey's cryptantha (*Cryptantha clokeyi*), Mojave monkeyflower (*Diplacus mohavensis*), Barstow woolly sunflower (*Eriophyllum mohavense*), short-joint beavertail (*Opuntia basilaris* var. *brachyclada*), beaver bam breadroot (*Pediomelum castoreum*), Latimer's woodland-gilia (*Saltugilia latimeri*), and San Bernardino aster (*Symphyotrichum defoliatum*). These species, their status, habitat associations, and potential for occurrence on the BSA are summarized in Table 3.4-1.

Table 3.4-1 Special-Status Plant Species that May Occur in the BSA

Name	Federal Status[1]	State Status/CRPR[1]	Habitat	Potential to Occur in the BSA
Clokey's cryptantha *Cryptantha clokeyi*	None	None/1B.2	Mojavean desert scrub at elevations between 2,380-4,480 feet in elevation. Blooms in April	**May occur:** Suitable habitat (desert scrub) is present in numerous areas of the BSA.
Mojave monkeyflower *Diplacus mohavensis*	None	None/1B.2	Found in gravelly banks of desert washes at 1,900 to 3,900 feet in elevation. Known only from San Bernardino County, and only from the Mojave Desert. Blooms April to June.	**May occur:** Suitable habitat (gravelly banks of desert washes) is present in numerous areas of the BSA.
Barstow wooly sunflower *Eriophyllum mohavense*	None	None/1B.2	Annual herb of chenopod scrub, Mojavean desert scrub, and playas at 1,640 to 3,150 feet in elevation. Blooms March to May.	**May occur:** Suitable habitat (desert scrub) is present in numerous areas of the BSA.
Short-joint beavertail *Opuntia basilaris* var. *brachyclada*	None	None/1B.2	Typically found in chaparral, Joshua tree woodland, Mohavean desert scrub, and pinyon and juniper woodland at 1,395 to 5,905 feet in elevation. Blooms April to June.	**May occur:** Suitable habitat (desert scrub) is present in numerous areas of the BSA.
Beaver bam breadroot *Pediomelum castoreum*	None	None/1B.2	Perennial herb found in cobbly sandy soils in sandy washes and creosote bush scrub or Joshua tree woodland habitats, including disturbed areas (i.e.,	**May occur:** Suitable habitat (creosote bush scrub) is present in numerous areas of the BSA.

Name	Federal Status[1]	State Status/CRPR[1]	Habitat	Potential to Occur in the BSA
			roadcuts) at elevations ranging from 636 to 5,339 feet in elevation. Blooms April to May.	
Latimer's woodland-gilia *Saltugilia latimeri*	None	None/1B.2	Typically found in chaparral, Mohavean desert scrub, and pinyon and juniper woodland at 1,310 to 6,235 feet in elevation. Blooms March to June.	**May occur:** Suitable habitat (desert scrub) is present in numerous areas of the BSA.
San Bernardino aster *Symphyotrichum defoliatum*	None	None/1B.2	Perennial herb of vernally mesic sites (such as ditches, streams, and springs) in many plant communities below 6,700 feet in elevation. Blooms July through November.	**May occur:** Suitable habitat (gravelly banks of desert washes) is present in numerous areas of the BSA.
Joshua tree *Yucca brevifolia*	None	SC/CBR	Desert grasslands and shrublands in hot, dry sites on flats, mesas, bajadas, and gentle slopes in the Mojave Desert. Soils in Joshua tree habitats are silts, loams, and/or sands and variously described as fine, loose, well drained, and/or gravelly, while the plants can reportedly tolerate alkaline and saline soils. 2,461-7,218 feet in elevation. Blooms March-June.	**Present:** Although this species was observed in the BSA, no Joshua trees were observed within the project site. Joshua trees were observed in the general vicinity and within the buffer area of the water main alignment.

General references: Unless otherwise noted all habitat and distribution data provided by CNDDB.

Note: CNDDB = California Natural Diversity Database

[1] Legal Status Definitions

Federal:

FT Threatened (legally protected)

State:

ST Threatened (legally protected)
SC State Candidate (legally protected)
SSC Species of special concern (no formal protection other than CEQA consideration)

California Rare Plant Rank (CRPR) only applicable to plants
CBR Considered but rejected

1B Considered rare or endangered in California and elsewhere (protected under CEQA, but not legally protected under ESA or CESA)

2 Considered rare or endangered in California but more common elsewhere (protected under CEQA, but not legally protected under ESA or CESA)

Extensions:

.1 Seriously endangered in California (>80% of occurrences are threatened and/or high degree and immediacy of threat)

.2 Fairly endangered in California (20 to 80% of occurrences are threatened)

[2] Potential for Occurrence Definitions

May occur: Suitable habitat is available in the BSA; however, there are little to no other indicators that the species might be present.

Likely to occur: All of the species life history requirements can be met by habitat present on the BSA, and populations/occurrences are known to occur in the immediate vicinity.

Source: CDFW 2021; USFWS 2021a

Special-Status Wildlife

Query results of the USFWS Information for Planning and Consultation System, and CNDDB indicate that there are 28 special-status wildlife species that have been recorded within the USGS topographic quadrangle containing the project site and the eight surrounding quadrangles, although no occurrences of these species have been recorded in the BSA (see Appendix C). Twenty-two of these wildlife species were removed from additional consideration due to lack of habitat, or because the BSA is outside the current known range of the species. Whitewash and owl pellets from burrowing owl (*Athene cunicularia*) were observed on the project site during reconnaissance surveys conducted in March 2021, but was not observed in November 2021 indicating that this species occupies the project site at least seasonally. No other special-status wildlife species were detected within the study area. One federally and state-listed threatened species, the Mojave Desert tortoise (*Gopherus agassizii*), one state-listed threatened species, Mohave ground squirrel (*Xerospermophilus* (=*Spermophilus*) *mohavensis*), and three other special-status species have a

moderate potential to occur within the BSA: loggerhead shrike (*Lanius ludovicianus*), Bendire's thrasher (*Toxostoma benfirei*), and coast (=Blainville's) horned lizard (*Phrynosoma blainvillii*).These species, their status, habitat associations, and potential for occurrence on the project site are summarized in Table 3.4-2.

Table 3.4-2 Special-Status Wildlife Species that May Occur in the BSA

Name	Federal Status[1]	State Status/CRPR[1]	Habitat	Potential to Occur in the BSA[2]
REPTILES				
Desert tortoise *Gopherus agassizii*	FT	ST	Joshua tree woodland, Mojavean desert scrub, Sonoran Desert scrub. Most common in desert scrub, desert wash, and Joshua tree habitats; occurs in almost every desert habitat. Require friable soil for burrow and nest construction. Creosote bush habitat with large annual wildflower blooms preferred.	**May occur:** Creosote bush scrub in the BSA provides suitable habitat for this species and since this species is mobile, it may stray onto the project site. The nearest recorded occurrence is approximately 2 miles southeast of the project site.
Coast (=Blainville's) horned lizard *Phrynosoma blainvillii*	None	SSC	Chaparral, cismontane woodland, coastal bluff scrub, coastal scrub, desert wash, pinyon and juniper woodlands, riparian scrub, riparian woodland, valley and foothill grassland. Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Open areas for sunning, bushes for cover, patches of loose soil for burial, and abundant supply of ants and other insects.	**May occur:** Creosote bush scrub in the BSA provides suitable habitat for this species and since this species is mobile, it may stray onto the project site. The nearest recorded occurrence is approximately 5 miles west of the project site.
BIRDS				
Burrowing owl *Athene cunicularia*	None	SSC	Coastal prairie, coastal scrub, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Sonoran Desert scrub, and valley and foothill grassland. Open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	**Likely to Occur:** Signs of burrowing owl were found in the project site. The nearest documented occurrence is 3 miles east of the project site.
Loggerhead shrike *Lanius ludovicianus*	None	SSC	Broadleaved upland forest, desert wash, Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodlands, riparian woodland, Sonoran Desert scrub. Broken woodlands, savannah, pinyon-juniper, Joshua tree, and riparian woodlands, desert oases, scrub and washes. Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.	**Likely to Occur:** Creosote bush scrub in the BSA provides suitable foraging and nesting habitat for this species. This species has been observed 0.5 mile to the west of the project site.
Bendire's thrasher *Toxostoma bendirei*	None	SSC	Joshua tree woodland, Mojavean desert scrub. Migratory; local spring/summer resident in flat areas of desert succulent shrub/Joshua tree habitats in Mojave Desert. Nests in cholla, yucca, paloverde, thorny shrub, or small tree, usually 0.5 to 20 feet above ground.	**May occur:** Creosote bush scrub in the BSA provides suitable foraging and nesting habitat for this species. The nearest occurrence is 9 miles southwest.
MAMMALS				
Mohave ground squirrel *Xerospermophilus mohavensis*	None	ST	Chenopod scrub, Joshua tree woodland, Mojavean desert scrub. Open desert scrub, alkali scrub and Joshua tree woodland. Also feeds in annual grasslands. Restricted to Mojave Desert. Prefers sandy to gravelly soils, avoids rocky areas. Uses burrows at base of shrubs for cover. Nests are in burrows.	**May occur:** Creosote bush scrub in the BSA provides suitable foraging and burrow habitat for this species. The nearest known occurrence is 1.8 miles to the southwest.

General references: Unless otherwise noted all habitat and distribution data provided by CNDDB.

Note: CNDDB = California Natural Diversity Database

[1] Legal Status Definitions

Federal:

FT Threatened (legally protected)

State:

ST Threatened (legally protected)
SSC Species of special concern (no formal protection other than CEQA consideration)

[2] Potential for Occurrence Definitions

Not expected to occur: Species is unlikely to be present within the BSA due to poor habitat quality, lack of suitable habitat features, or restricted current distribution of the species.

May occur: Suitable habitat is available in the BSA; however, there are little to no other indicators that the species might be present.

Likely to occur: All of the species life history requirements can be met by habitat present on the BSA, and populations/occurrences are known to occur in the immediate vicinity.

Source: CDFW 2021; USFWS 2021a

Sensitive Natural Communities

Sensitive natural communities are those native plant communities defined by CDFW as having limited distribution statewide or within a county or region and that are often vulnerable to environmental effects of projects (CDFW 2018). These communities may or may not contain special-status plants or their habitat (CDFW 2018). CDFW designates sensitive natural communities based on their state rarity and threat ranking using NatureServe's Heritage Methodology. Natural communities with rarity ranks of S1 to S3, where S1 is critically imperiled, S2 is imperiled, and S3 is vulnerable, are considered sensitive natural communities to be addressed in the environmental review processes of CEQA and its equivalents (CDFW 2018).

Sensitive natural communities are generally identified at the alliance level of vegetation classification hierarchy using the Manual of California Vegetation (Sawyer et al. 2009). Known occurrences of sensitive natural communities are included in the CNDDB; however, no new occurrences have been added to the CNDDB since the mid-1990s when funding was cut for this portion of the CNDDB program. No sensitive natural communities were identified as occurring within five miles of the project site during the desktop literature review or field surveys.

Aquatic Resources

The BSA and proposed water main line are located within the Bell Mountain Wash Subwatershed (HUC 12 Code 180902080705). This watershed is part of the Bell Mountain-Mojave River Watershed (HUC 10 Code 1809020807). The Bell Mountain Subwatershed encompasses approximately 23,160 acres (UC Davis 2022). The project site drains south towards the Bell Mountain Wash located approximately 170 feet south of the project site, which in turn is a tributary to the Mojave River. In general, several mapped seasonal streams (i.e., desert washes) mapped on the USFWS National Wetland Inventory cross the BSA and proposed water main line area. These features are classified within the USFWS National Wetlands Inventory as R4SBJ, defined as an intermittent riverine feature that has a natural streambed and experiences flowing water only part of the year. These seasonal streams were observed to be present in the BSA during field surveys, as shown on Figure 3.4-2; however, no streams, washes, or other aquatic features were observed within the project site boundaries. There is an existing 64-foot storm drain easement with three 60-inch storm drains located adjacent to the northern boundary of the project site. These storm drains receive stormwater flows from west of I-15 through a culvert under the freeway and redirected through a linear channel. The literature review found that this storm drain easement crossing the project site north to south was placed on a natural drainage; however, no physical evidence of a channel remains because flows appear routed through these storm drains crossing under the project site, discharging to Bell Mountain Wash south of Stoddard Wells Road and the project site. Field observations show the openings of these storm drains to contain substantial amounts of sediment suggesting there have not been many high flow events in recent years. The preliminary delineation along the proposed water main line area found 24 crossings of potentially jurisdictional drainages. Surface water and saturation were both absent from all aquatic features observed at the time of the survey. The observed drainage features exhibit an OHWM. A formal jurisdictional delineation of these observed drainages is required to fully assess these features and determine their state and federal jurisdictional boundaries that may be subject to permitting requirements from USACE pursuant to CWA Section 404, Colorado River RWQCB pursuant to CWA section 401, and CDFW pursuant to California Fish and Game Code Section 1600 et seq.

Wildlife Movement & Habitat Corridors

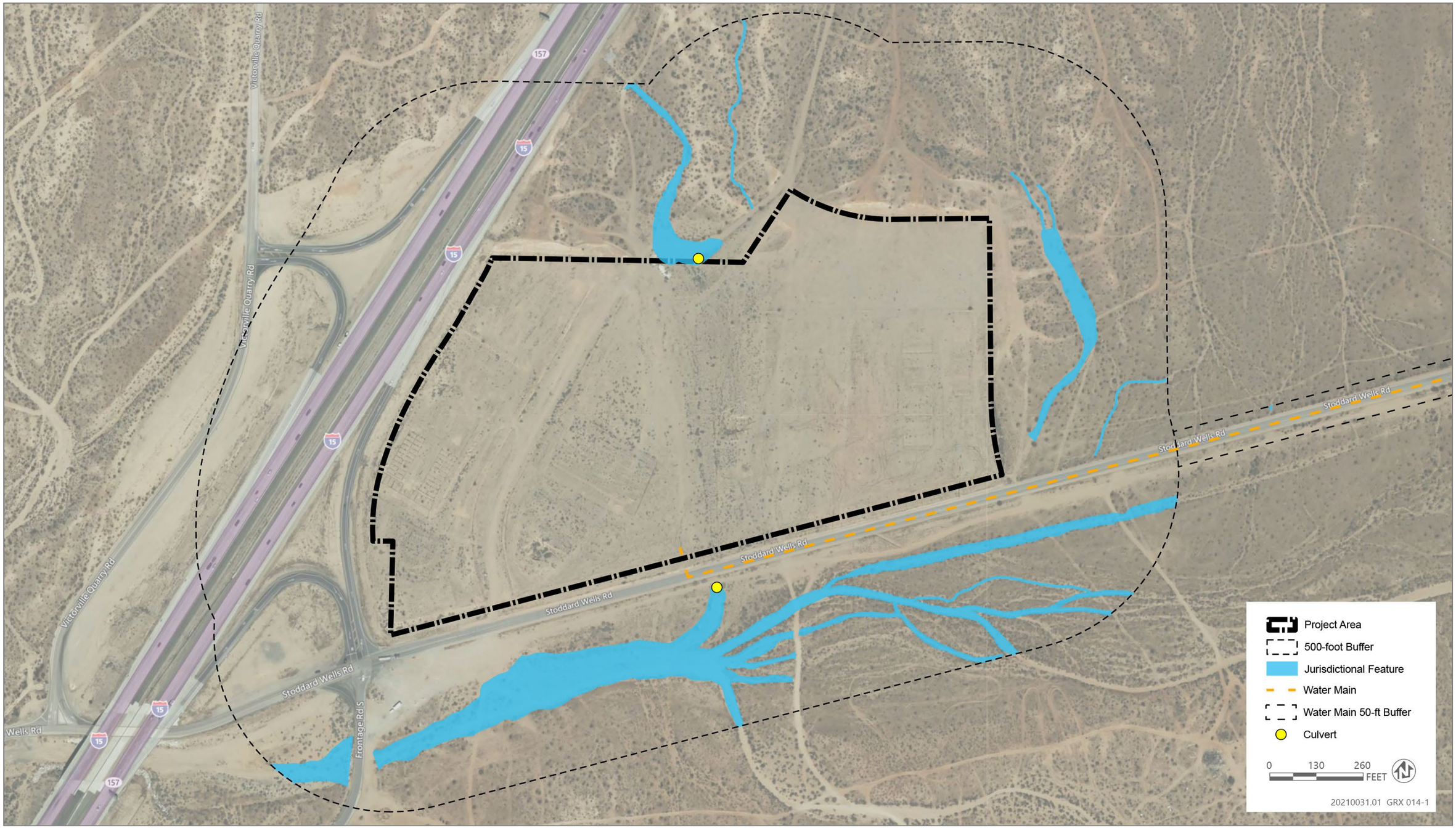
Effects on wildlife movement are an important consideration when assessing the potential impacts of any project. At a small enough scale, any project or activity can potentially affect the movement of wildlife if wildlife are present at all. In general, however, the term "wildlife movement corridor" means an area of habitat that is important for the movement of wildlife between larger habitat areas. Wildlife movement corridors provide connections between two or more areas of habitat that would otherwise be isolated and unusable. Often drainages, creeks, riparian areas, ridgelines, or topographic contours at bases of slopes are used by wildlife as movement corridors as they can provide cover and access across a landscape. Wildlife movement corridors are important for maintaining population levels and genetic diversity.

Some of the important areas for habitat connectivity in California were mapped as Essential Connectivity Areas (ECA) for the California Essential Habitat Connectivity Project, which was commissioned by the California Department of Transportation and CDFW with the purpose of making transportation and land-use planning more efficient and less costly, while helping reduce dangerous wildlife-vehicle collisions (Spencer et al. 2010). The ECAs were not developed for the purposes of defining areas subject to specific regulations by CDFW or other agencies. The project site does not contain any portion of an identified ECA or Natural Landscape Block (CDFW 2021).

The project site is unlikely to be of importance to wildlife movement for the following reasons:

- Substantial existing anthropogenic site disturbance to habitats.
- The presence of I-15 immediately west of the project site.

The water main, while covering 19,460 linear feet, will not have significant long-term effects on wildlife movement because it will be underground and will not inhibit wildlife movement through the area.



Source: Image produced by Bargas Environmental Consulting in 2022, adapted by Ascent Environmental in 2022

Figure 3.4-2a Aquatic Resources Delineation



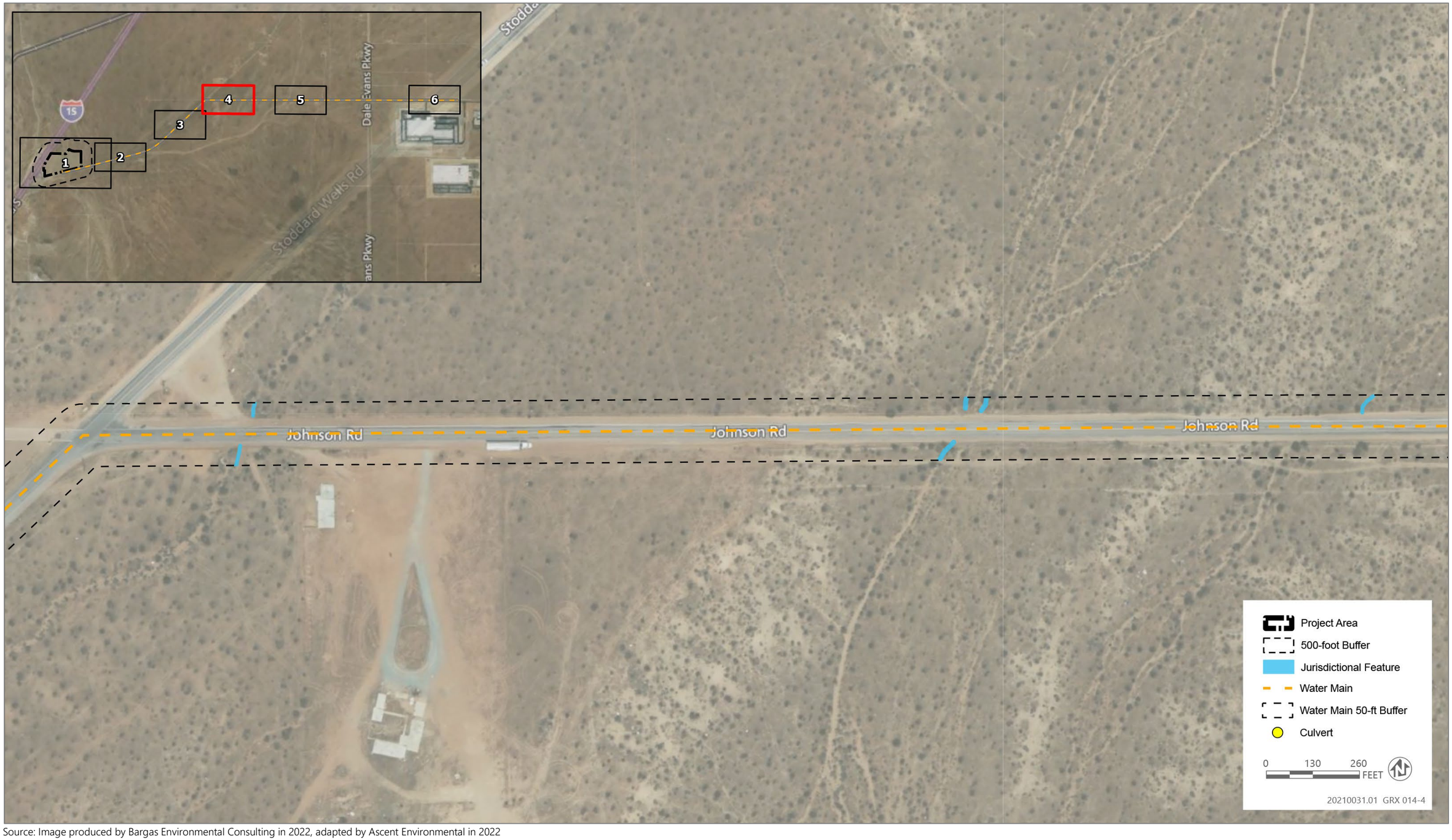
Source: Image produced by Bargas Environmental Consulting in 2022, adapted by Ascent Environmental in 2022

Figure 3.4-2b Aquatic Resources Delineation



Source: Image produced by Bargas Environmental Consulting in 2022, adapted by Ascent Environmental in 2022

Figure 3.4-2c Aquatic Resources Delineation



Source: Image produced by Bargas Environmental Consulting in 2022, adapted by Ascent Environmental in 2022

Figure 3.4-2d Aquatic Resources Delineation



Source: Image produced by Bargas Environmental Consulting in 2022, adapted by Ascent Environmental in 2022

Figure 3.4-2e Aquatic Resources Delineation



Source: Image produced by Bargas Environmental Consulting in 2022, adapted by Ascent Environmental in 2022

Figure 3.4-2f Aquatic Resources Delineation

3.4.3 Environmental Impacts and Mitigation Measures

METHODOLOGY

This impact evaluation is based on data collected during a reconnaissance-level field survey conducted by Ascent Environmental on March 25 and 26, 2021, a biological and wetland resource assessment conducted by Bargas on November 29 and 30, 2021, review of aerial photographs, and information from several previously completed documents that address biological resources in the project vicinity.

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, an impact on biological resources is considered significant if implementation of the I-15 Travel Center Project would do any of the following:

- have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS;
- have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by CDFW or USFWS;
- have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and/or
- conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan;

Based on the requirements set forth in section 15065 of the State CEQA Guidelines, "Mandatory Findings of Significance," implementation of the project may have a significant impact on the environment if the project has potential to do any of the following:

- substantially reduce the habitat of a fish or wildlife species;
- cause a fish or wildlife population to drop below self-sustaining levels;
- threaten to eliminate a plant or animal community; or
- substantially reduce the number or restrict the range of an endangered, rare or threatened species.

ISSUES NOT DISCUSSED FURTHER

Certain Special-Status Plants and Wildlife

As discussed in Section 3.4.2, "Environmental Setting," and listed in Appendix C, there are 18 special-status plant species and 28 special-status animal species (including 1 invertebrate, 1 fish, 2 amphibian, 3 reptile, 16 bird, and 5 mammal species) that were recorded within the USGS topographic quandrangle containing the project site and the eight surrounding quadrangles. The potential for each of these species to occur in the BSA is summarized in Section 3.4.2 and Appendix C.

Of these species, 8 special-status plant species and 6 special-status animal species (including 2 reptile, 3 bird, and 1 mammal species) have potential to occur in the project area based on the presence of suitable habitat. As listed in

Table 4.4-1 and Table 4.4-2, these species are Clokey's cryptantha (*Cryptantha clokeyi*), Mojave monkeyflower (*Diplacus mohavensis*), Barstow wooly sunflower (*Eriophyllum mohavense*), Short-joint beavertail (*Opuntia basilaris* var. *brachyclada*), Beaver bam breadroot (*Pediomelum castoreum*), Latimer's woodland-gilia (*Saltugilia latimeri*), San Bernardino aster (*Symphyotrichum defoliatum*), Joshua tree (*Yucca brevifolia*), Desert tortoise (*Gopherus agassizii*), Coast (=Blainville's) horned lizard (*Phrynosoma blainvillii*), Burrowing owl (*Athene cunicularia*), Loggerhead shrike (*Lanius ludovicianus*), Bendire's thrasher (*Toxostoma bendirei*), and Mohave ground squirrel (*Xerospermophilus mohavensis*). The potential for construction and operation of the project to result in impacts on these species is discussed further in Section 3.4.3, "Environmental Impacts and Mitigation Measures."

The remaining 10 special-status plant and 22 special-status animal species are not likely to occur in the project site because of lack of suitable habitat or because the project is located outside of the current known range of the species. As listed in Appendix C, these species are: Cushenbury oxytheca (*Acanthoscyphus parishii* var. *goodmaniana*), Pinyon rockcress (*Boechera dispar*), Desert cymopterus (*Cymopterus deserticola*), Purple-nerve cymopterus (*Cymopterus multinervatus*), San Bernardino Mountains dudleya (*Dudleya abramsii* ssp. *affinis*), Booth's evening-primrose (*Eremothera boothii* ssp. *Boothii*), Sagebrush loeflingia (*Loeflingia squarrosa* var. *artemisiarum*), Mojave menodora (*Menodora spinescens* var. *mohavensis*), Creamy blazing star (*Mentzelia tridentata*), Beaver Dam breadroot (*Pediomelum castoreum*), Southern mountains skullcap (*Scutellaria bolanderi* ssp. *austromontana*), Crotch bumble bee (*Bombus crotchii*), Mohave tui chub (*Siphateles bicolor mohavensis*), Arroyo toad (*Anaxyrus californicus*), California red-legged frog (*Rana draytonii*), Western pond turtle (*Actinemys marmorata*), Tricolored blackbird (*Agelaius tricolor*), Long-eared owl (*Aio otus*), Golden eagle (*Aquila chrysaetos*), Swainson's hawk (*Buteo swainsoni*), Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), Southwestern willow flycatcher (*Empidonax traillii extimus*), California condor (*Gymnogyps californicus*), Yellow-breasted chat (*Icteria virens*), Summer tanager (*Piranga rubra*), LeConte's trasher (*Toxostoma lecontei*), Yellow warbler (*Setophaga petechia*), Least Bell's vireo (*Vireo bellii pusillus*), Gray vireo (*Vireo vicinior*), Pallid bat (*Antrozous pallidus)* (roost), Pallid San Diego pocket mouse (*Chaetodipus fallax pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*) (roost), and Mohave river vole (*Microtus californicus mohavensis*). Appendix C provides rationale for why these species are not expected to occur in the project site. Therefore, these species are not addressed further in in Section 3.4.3, "Environmental Impacts and Mitigation Measures."

Riparian Habitat or Other Sensitive Natural Communities

The BSA does not support riparian habitat, sensitive natural communities, or sensitive vegetation alliances. Therefore, the project would have no impact on these resources and this issue is not analyzed further.

Conflict with Adopted Habitat Conservation Plan or Natural Community Conservation Plan

There are no habitat conservation plans; natural community conservation Plans; or other approved local, regional, or state habitat conservation plans in effect for the project area. The BSA is within the proposed Apple Valley Multi Species Habitat Conservation Plan/Natural Community Conservation Plan (MSHCP/NCCP) Plan Area. The Apple Valley MSCHP/NCCP is currently being drafted by the Town of Apple Valley and is in the initial stages of environmental review; however, the plan has not been adopted. Since the Apple Valley MSCHP/NCCP has not been adopted and is subject to change, it would be premature to analyze the project's consistency with it. Also, because it is not an adopted plan, the project's consistency is not required to be analyzed under CEQA. (See *Chaparral Greens v. City of Chula Vista* (1996) 50 Cal.App.4th 1134, 1145, fn.7.) For this reason, the following impact analysis does not evaluate potential conflicts with adopted conservation plans.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 3.4-1: Disturbance and Loss of State or Federally Protected Wetlands and Waters

Construction and operation of the project, including the offsite water main line, would result in the disturbance or fill of several mapped seasonal streams. Disturbance or loss of state and federally protected wetlands and other waters would be a **significant** impact.

There is an existing 64-foot storm drain easement with three 60-inch storm drains that is located in the middle of the project site between the proposed travel stop and the RV park. Additionally, a preliminary delineation along the proposed water main line area found 24 crossings of state or federally protected seasonal streams.

Although there is limited disturbance planned over the storm drains from constructing a road between the travel center and the RV park, the condition of the storm drains is unknown and grading and operating heavy construction machinery during construction could affect their integrity.

As described in Section 3.9 Hydrology and Water Quality Impact 3.9-2 the project would include storage and disposal of fuel and would generate oils, lubricants, heavy metals, and other water quality contaminants, which would be carried in stormwater runoff and could reach surface or groundwaters. Additionally, a fuel storage tank leak could result in the contamination of groundwater. However, the project incorporates water quality BMPs to reduce the potential for discharge and would comply with California underground storage tank regulations. Although these measures cannot eliminate the potential for adverse effects to water quality, they would reduce impacts to a **less-than-significant** level.

Construction of the proposed water main line has the potential to affect 24 seasonal stream crossings throughout the approximately 19,460-linear-foot length. Although surface water and saturation were both absent during the preliminary wetland survey, the observed drainage features exhibit an ordinary high water mark. Construction methods and exact location of the proposed water main line are not known, but potential disturbance of underground culverts that direct the flow of some of these stream crossings, within the right-of-way of Stoddard Wells Road and Johnson Road, would occur, although the total amount of fill or disturbance has not been quantified. Additionally, construction activities could result in diversion, obstruction, or other alteration of the natural flow of these streams or cause waste or discharge material to pass into the streams. Therefore, implementation of the project would result in a substantial adverse effect on state and federally protected wetlands and waters. This would be a **significant** impact.

Mitigation Measures

The project proponent will implement the following measures to compensate for the disturbance or loss of state and federally protected wetlands and other waters:

Mitigation Measure 3.4-1: State and Federally Protected Wetlands and other Waters

- Prior to any construction activities that would disturb a potential water of the United States or state, the project proponent shall commission an aquatic resources delineation conducted according to USACE methodology, state wetland procedures (California Water Boards 2020), and *Mapping Episodic Stream Activity* (Brady and Vyverberg 2013) and submit a wetland delineation report, to USACE and RWQCB and request a preliminary jurisdictional determination or verification. Based on the jurisdictional determination/verification, the project proponent shall determine the exact acreage of waters or the United States and/or waters of the state that would be filled or degraded as a result of project implementation.
- If it is determined that fill of waters of the United States would result from project implementation, authorization for such fill will be secured from USACE through the Section 404 permitting process. Any waters of the United States that would be affected by the project will be replaced or restored on a no-net-loss basis in accordance with USACE mitigation guidelines (or the applicable USACE guidelines in place at the time of construction permitting). In association with the Section 404 permit (if applicable) and prior to the issuance of any grading permit, Section 401 Water Quality Certification from the RWQCB will be obtained.
- If it is determined that disturbance or fill of state protected wetlands, streams, or any other waters of the state that are disclaimed by USACE cannot be avoided, the implementing party will notify the RWQCB before commencing any activity within a state wetland or other water of the state.
- The applicant will apply for a permit from the Lahontan RWQCB for any activity that may result in discharges of dredged or fill material to waters of the State. The application will be completed in accordance with State procedures (California Water Boards 2020).

- Prior to implementing activities that could divert or obstruct the natural flow of, or substantially change or use material, including vegetation, from the bed, bank, or channel of any stream, including desert washes, the implementing party will notify CDFW pursuant to California Fish and Game Code Section 1602. If project activities trigger the need for a Lake and Streambed Alteration Agreement, the proponent will obtain an agreement from CDFW before the activity commences. The applicant will conduct construction activities in accordance with the conditions of the agreement, including implementing reasonable measures in the agreement necessary to protect fish and wildlife resources when working within the bed or bank of waterways that function as a fish or wildlife resource
- The project proponent shall replace on a "no net loss" basis (minimum 1:1 ratio) (in accordance with USACE, RWQCB, and CDFW requirements) the acreage and function of all wetlands and other waters that would be removed, lost, or degraded as a result of project implementation. Waters of the United States and state will be replaced at an acreage and location agreeable to USACE and the RWQCB and as determined during the Section 401 and Section 404 permitting processes or through the application for waste discharge requirements from RWQCB, and pursuant to the conditions of the Lake and Streambed Alteration Agreement.

Significance after Mitigation

Implementation of Mitigation Measure 3.4-1 would reduce significant impacts on waters of the United States and waters of the state to a **less-than-significant** level because it would require identification of those resources by conducting an aquatic resources delineation, submitting an aquatic resources delineation report to USACE, RWQCB, avoiding impacts to waters, and if impacts are not avoidable, requiring compensatory mitigation resulting in no net loss of functions and acreage of wetlands, other waters of the United States, and waters of the state and associated fish and wildlife resources in the affected watershed. The project therefore would not have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

Impact 3.4-2: Have a Substantial Adverse Effect, Either Directly or Through Habitat Modifications, on Special-Status Plants

Construction and operation of the project would result in development of new facilities, and construction of a 19,460-linear-foot water main along the right-of-way of Stoddard Wells Road and Johnson Road. Depending on the final alignment of the water main line, construction may occur in creosote bush scrub, allscale scrub, desert washes, and disturbed habitat that may provide marginally suitable habitat for special-status plants. Removal of these habitats, therefore, would result in loss of special-status plants if they are present. Loss of special-status plants would be a **potentially significant** impact.

Ground disturbance associated with the project would result in the development of 33.52 acres of previously disturbed vacant land. Implementation of the project would include the construction of a 19,460-linear-foot water main along the right-of-way of Stoddard Wells Road and Johnson Road that supports creosote bush scrub, allscale scrub, numerous desert washes, and disturbed habitat. These habitat areas provide marginally suitable habitat for Clokey's cryptantha, Mojave monkeyflower, Barstow woolly sunflower, short-joint beavertail, beaver dam breadroot, Latimer's woodland-gilia, San Bernardino aster, and western Joshua tree. Joshua tree was the only species observed within the biological study area, and the other plant species have a low potential for occurrence. The project site is entirely disturbed and contains no natural or native vegetation communities. However, no floristic survey has been conducted within the project site or water main construction area and thus these plants cannot be ruled out. While it is the intent and desire of the project proponent to install the water main line in the paved roadways and road shoulders devoid of vegetation, it is currently unknown if it will be possible to limit construction impacts to these developed and disturbed areas. Therefore, construction activities could result in loss of special-status plants if they are present. In addition to direct removal of individuals and habitat grading, or other construction-related disturbances, plants could suffer other direct physical damage, including breaking, crushing, and burying. The project site and BSA also experience frequent off-road vehicle usage as evident by the number of unauthorized trails, reducing the quality of available habitat for special-status plants. Although development of the project could result in

the loss of special-status plants if they are present, construction activities would be limited to the construction area boundary. Damaged plants may experience altered growth and development, or reduced or eliminated seed-set and reproduction, and mortality of individuals or loss of populations can eventually result. Loss of special-status plants would be a **potentially significant** impact.

Mitigation Measures

Mitigation Measure 3.4-2: Special-Status Plants

The project proponent shall implement the following measures to reduce potential impacts on special-status plants:

- Prior to the issuance of a grading permit or construction related permits, the project applicant shall retain a qualified botanist to conduct protocol-level surveys for special-status plants during the blooming period for the special-status plant species with potential to occur in the project site, in areas where potentially suitable habitat would be removed or disturbed by project activities and following the CDFW rare plant survey protocols (CDFW 2018) or the most recent CDFW rare plant survey protocols. A qualified botanist will conduct the field surveys and will identify and map plant species occurrences according to the protocols.
- If no special-status plants are found, the botanist will document the findings in a letter report to the Town of Apple Valley and no further mitigation will be required.
- If special-status plant species are found that cannot be avoided during construction, the qualified botanist, in consultation with the Town of Apple Valley, shall prepare mitigation measures for direct and indirect impacts that could occur as a result of project construction and operation, and will implement the agreed-upon mitigation measures to offset the loss of occupied habitat or individuals. Mitigation measures may include preserving and enhancing existing populations, creation of offsite populations on project mitigation sites through seed collection or transplantation, and/or restoring or creating suitable habitat in sufficient quantities to achieve a performance standard of "no net loss of occupied habitat and/or individuals." If any of the identified plant species have been listed under CESA as threatened or endangered, or rare under the NPPA, the project proponent shall consult with CDFW pursuant to CESA or notify CDFW pursuant to NPPA. A Plant Protection Plan will be developed describing how impacts will be mitigated, restoration and/or avoided areas monitored and how unavoidable losses of special-status plants will be compensated.
- If relocation efforts are part of the Plant Protection Plan, the plan will include details on the methods to be used, including collection, storage, propagation, receptor site preparation, installation, long-term protection and management, monitoring and reporting requirements, success criteria, and remedial action responsibilities should the initial effort fail to meet long-term monitoring requirements.
- Success criteria for preserved and compensatory populations will include:
  - The extent of occupied area and plant density (number of plants per unit area) in compensatory populations will be equal to or greater than the affected occupied habitat.
  - Compensatory and preserved populations will be self-producing. Populations will be considered self-producing when:
    - plants reestablish annually for a minimum of five years with no human intervention such as supplemental seeding; and
    - reestablished and preserved habitats contain an occupied area and flower density comparable to existing occupied habitat areas in similar habitat types in the project vicinity.
- If offsite mitigation includes dedication of conservation easements, purchase of mitigation credits, or other offsite conservation measures, the details of these measures will be included in the Plant Protection Plan, including information on responsible parties for long-term management, conservation easement holders, long-term management requirements, success criteria such as those listed above and other details, as appropriate to target the preservation of long-term viable populations.

Significance after Mitigation

Implementation of Mitigation Measure 3.4-2 would reduce significant impacts on special-status plants to a **less-than-significant** level because it would require the project proponent to identify and avoid special-status plants or provide compensation for loss of special-status plants through enhancement of existing populations, creation and management of offsite populations, conservation easements, or other appropriate measures. Such steps would ensure that the proposed project would not have a substantial adverse effect, either directly or through habitat modifications, on special-status plants.

Impact 3.4-3: Have a Substantial Adverse Effect, Either Directly or Through Habitat Modifications, on Special-Status Reptiles

Construction and operation of the project could disturb desert tortoise and coast (=Blainville's) horned lizard due to ground disturbing activities potentially resulting in mortality of eggs, hatchlings, and adults. This would be a **potentially significant** impact.

The BSA supports marginally suitable habitat for desert tortoise and coast (=Blainville's) horned lizard. Field surveys did not reveal the presence of these species within the project site BSA or watermain BSA. As per the USFWS desert tortoise protocol (USFWS 2019), the field surveys already conducted at the project site BSA and watermain BSA should suffice to assess presence of desert tortoise. However, this species is mobile, and it could move onto the project site in the future.

Similarly, coast (=Blainville's) horned lizard was not observed within the project site BSA or watermain BSA, but they too are mobile and could occupy the project site in the future.

As described under Impact 3.1-3 in Section 3.1, "Aesthetics," the project would include onsite lighting once operational, consisting of high-mast light-emitting diode (LED) fixtures and LED canopy lighting. In addition, signs for the travel center facility, convenience store, fast food restaurant, and truck maintenance building would be illuminated. Interior lighting would also be noticeable at nighttime through building windows. The offsite water main line would be buried underground and would not introduce new sources of lighting along its alignment.

The project would introduce new lighting in a sparsely developed, natural desert environment with limited sources of existing lighting (i.e., freeway light posts at overpass, on/off ramps and freeway underpass). However, the proposed lighting would be introduced to an area designated for freeway-oriented commercial uses and is not within an area designated for dark sky protection. Furthermore, Stoddard Wells Road already experiences traffic from off-road enthusiasts, freight truck trailers from the nearby distribution centers, County Refuse Disposal Site, and other local traffic. The project would comply with the lighting requirements included in Chapter 9.70.020(H) of the Town of Apple Valley Code of Ordinances. Specifically, the intensity of light would not exceed 75-foot lamberts at the project site boundary and parking lot lighting would not exceed a height of 20 feet which is lower than existing lighting on the freeway. In addition, lighting would only be used for the functional requirements of safety, security, and identification in order to preserve night sky views. Furthermore, proposed lighting would be shielded and projected downward and proposed structures would be sited to meet Town setback requirements, which would minimize spillover effects on adjacent roadways, properties, the desert environment, and minimize potential impacts to wildlife.

Although natural occurring perches are present within the desert environment, the proposed project would include light fixtures and buildings that could provide potentially suitable perching locations for ravens. Ravens are known to prey upon desert tortoises and coast (=Blainville's) horned lizards. In addition, ravens obtain food from many different human sources such as dumpsters at gas stations and rest stops.

Development and operation of the project could injure or kill eggs, hatchlings, or adult desert tortoise and coast (=Blainville's) horned lizard if they were to be present, due to ground disturbing activities during construction that crush, bury, smother, or otherwise harm these reptiles. Similarly, implementation of the project would introduce new lighting in a sparsely developed, natural desert environment that without proper shielding and directed projection could spillover to adjacent areas that could affect the natural night behavior of wildlife. Additionally, development and operation of the project would introduce new sources of organic waste that could attract ravens and new

buildings and light posts could provide suitable perching locations for ravens that are known to prey upon desert tortoise and coast (=Blainville's) horned lizard. This would be a **potentially significant** impact.

Mitigation Measures

Mitigation Measure 3.4-3a: Desert Tortoise

- A pre-project survey shall be conducted in accordance with the USFWS desert tortoise protocol (USFWS 2019). Based on the USFWS protocol, the proposed travel center and RV park would fall under the small project survey protocol and the proposed water main line would fall under the linear project survey protocol. The surveys would determine whether desert tortoises are likely to be present based primarily on sign; therefore, a pre-project survey can be conducted during any time of the year prior to the issuance of construction related permits.
- If the surveys are negative, no additional mitigation is required. Because this is a mobile species, a biological monitor shall be present during initial grading and a worker environmental awareness training shall be conducted with construction personnel to educate them on desert tortoise, their protective status (threatened under ESA and CESA), and avoidance measures to be implemented by all personnel, including looking under vehicles and equipment prior to moving. The training shall include steps to be taken should desert tortoise be observed on the construction site, including ceasing construction activities and coordination with the resource agencies.
- If the survey is positive, a biological opinion and an incidental take permit (ITP) must be obtained from USFWS and CDFW, respectively, prior to initiation of construction activities. Loss of occupied habitat shall be mitigated at a minimum 1:1 ratio, or as specified in the biological opinion and ITP. Avoidance and minimization measures shall be implemented in accordance with provisions of the biological opinion and ITP and shall include, at a minimum:
  - Presence of a qualified biological monitor during initial grading activities, and as needed throughout construction, to document compliance with the conditions of the biological opinion/ITP. The biological monitor will have the authority to stop work as needed to avoid direct impacts to desert tortoise.
  - Should a desert tortoise be found during construction activities, activities shall cease until either the tortoise moves out of harm's way, or a qualified biologist authorized under the project's ITP ("authorized biologist") relocates the tortoise.

Mitigation Measure 3.4-3b: Coast (=Blainville's) Horned Lizard

- A pre-project survey shall be conducted within 48 hours of planned ground disturbance and can be conducted concurrent with the desert tortoise pre-project survey if within the required 48 hours. A report summarizing the results of the survey shall be prepared and submitted to the Town of Apple Valley.
- If the surveys are negative, no additional mitigation is required. Because this is a mobile species, a biological monitor shall be present during initial grading and a worker environmental awareness training shall be conducted with construction personnel to educate them on coast (=Blainville's) horned lizard, their protective status (species of special concern), and avoidance measures to be implemented by all personnel, including looking under vehicles and equipment prior to moving. The training shall include steps to be taken should coast (=Blainville's) horned lizard be observed on the construction site, including allowing the individual to leave the project site on its own accord.
- If the survey is positive, a qualified biological monitor with a coast (=Blainville's) horned lizard Scientific Collecting Permit authorization, shall be retained to be present during initial grading to monitor activities. The biological monitor shall be authorized to move individual coast (=Blainville's) horned lizards out of harm's way if the individual lizards do not move on their own.

Mitigation Measure 3.4-3c: Light Spillage

- During the Development Permit process, the project proponent shall ensure that lighting would only be used for the functional requirements of safety, security and that all project lighting complies with the lighting requirements included in Chapter 9.70.020(H) of the Town of Apple Valley Code of Ordinances.

Mitigation Measure 3.4-3d: Reduce the Habitat Suitability for Ravens.

- During the Development Permit process, the project design shall incorporate the use of raven-proof garbage dumpsters and garbage receptacles on the outside of the travel center and RV park use self-closing trash bins to reduce the availability of organic waste that could attract ravens to the area.
- During the Development Permit process, the project design shall incorporate anti-perching devices on the project's light posts, periphery buildings or structures that could be used for perching by ravens which could increase predation of desert tortoise and coast (=Blainville's) horned lizard. Maintenance of the facility shall include replacing anti-perching devices that are known to have fallen at least quarterly.

Significance after Mitigation

Implementation of Mitigation Measure 3.4-3 would reduce potentially significant impacts on special-status reptiles to a **less-than-significant** level because it would require the project proponent to conduct pre-construction surveys for desert tortoise and coast (=Blainville's) horned lizard to see if they have moved onto the project disturbance areas, have a biological monitor present during initial grading or ground disturbing activities, create and implement a worker environmental awareness training for all personnel working on the project, and consult with USFWS and CDFW and obtain a biological opinion (which would include take minimization measures and mitigating for the loss of occupied habitat) and an ITP if desert tortoise is found in the project site and ensuring that all project lighting complies with the lighting requirements in Chapter 9.70.020 (H) of the Town of Apple Valley Code of Ordinances would minimize light spillage onto adjacent parcels. By reducing the project's habitat suitability for ravens, the project would minimize the potential predation by ravens on desert tortoise and coast (=Blainville's) horned lizard. Such steps would ensure that the proposed project would not have a substantial adverse effect, either directly or through habitat modifications, on desert tortoise and coast (=Blainville's) horned lizard.

Impact 3.4-4: Have a Substantial Adverse Effect, Either Directly or Through Habitat Modifications, on Special-Status Birds

Implementation of the project could result in direct and indirect impacts to nesting birds, including the loss of nests, eggs, and young, from ground disturbing activities, such as vegetation removal, grading, or construction and operation in close proximity to active nests. This would be a **potentially significant** impact.

The BSA supports suitable habitat for the special-status bird species burrowing owl, loggerhead shrike, and Bendire's thrasher. Signs (i.e., white-wash and pellets at entrance to a burrow) attributable to burrowing owl were observed within the project site during the March 2021 surveys. No burrowing owls or their sign were observed in a follow up surveys in November 2021; however, evidence of their presence in March indicates they occur on the site at least seasonally. No Loggerhead shrike or Bendire's thrasher were observed during the surveys; however, there are known occurrences of these two special-status species nearby and suitable scrub habitat is present within the BSA.

Project construction could result in direct and indirect impacts to special-status and other nesting birds, including the loss of nests, eggs, and young if ground disturbing activities occur during the nesting season (generally February 1 through August 31). Loss of common migratory birds and raptors (those not meeting the definition of special-status as provided in Section 3.4.2) would not be a significant impact under CEQA; however, mitigation to avoid the loss of active nests of these species is required for compliance with the MBTA and California Fish and Game Code. Construction activities such as grading, vegetation removal, increase in activity (including noise), during the nesting season may result in disturbance or abandonment of nests, which could result in mortality of eggs and young and reduced reproductive success. Furthermore, burrowing owls need burrows at all times to survive and displacing individuals from their burrows at any time of year can result in indirect impacts such as predation, increased energetic costs, increased stress, and risks associated with having to find and compete for burrows, all of which can lead to take or reduced reproduction. Once

scrub habitat is removed the suitability for nesting within the project would be reduced, and since the adjacent areas currently experience off-road vehicular usage which reduces the nesting habitat quality, operational effects outside of the project site on special-status birds would be similar to those pre-project implementation. Impacts to burrowing owls and nesting special-status birds would be a **potentially significant** impact.

Mitigation Measures

Mitigation Measure 3.4-4a: Burrowing Owl

The project proponent shall retain a qualified biologist to conduct focused breeding and nonbreeding season surveys for burrowing owls in areas of suitable habitat on and within 1,500 feet of the project site where access is permitted. Surveys will be conducted prior to the start of construction activities and in accordance with Appendix D of CDFW's Staff Report on Burrowing Owl Mitigation (CDFW 2012). If no occupied burrows are found, a letter report documenting the survey methods and results will be submitted to the Town of Apple Valley and no further mitigation will be required.

If an active burrow is identified near a proposed work area and work cannot be conducted outside of the nesting season (February 1 to August 31), a qualified biologist will establish a no-activity zone that extends between 150 to 1,500 feet around the burrow, depending on nesting stage and level of disturbance. If burrowing owls are present at the site during the non-breeding season (September 1 through January 31), a qualified biologist will establish a no-activity zone that extends a minimum of 150 feet around the burrow. The size of the buffer will depend on the time of year and level of disturbance, as outlined in the CDFW Staff Report (2012, pg 9).

If the designated no-activity zone for breeding or non-breeding burrowing owls cannot be established because an active burrow is located within the project work area, a wildlife biologist experienced in burrowing owl behavior will evaluate site-specific conditions and, in consultation with CDFW, recommend a smaller buffer (if possible) that still minimizes the potential to disturb the owls (and is deemed to still allow reproductive success during the breeding season). The site-specific buffer will consider the type and extent of the proposed activity occurring near the occupied burrow, the duration and timing of the activity, the sensitivity and habituation of the owls, and the dissimilarity of the proposed activity to background activities. Additional measures may be identified by the designated biologist including regular monitoring of the owls by a qualified biologist, modified construction activity schedule in proximity to the owls, or establishment of a barrier between construction and the occupied burrow.

If burrowing owls are present within the construction area and cannot be avoided during the non-breeding season (generally September 1 through January 31), owls will be relocated to suitable habitat outside of the project site using passive or active methodologies developed in consultation with CDFW. No burrowing owls will be excluded from occupied burrows until a burrowing owl exclusion and relocation plan is developed for the project and approved by CDFW. Typically, owls maintain multiple burrows and refuge areas within their foraging area during the nonbreeding season.

Passive or active relocation also may be used during the breeding season (February 1 through August 30) if a qualified biologist, in consultation with CDFW, determines through site surveillance that the burrow is no longer occupied by burrowing owl adults, young, or eggs. Once the fledglings are capable of independent survival, the owls will be relocated to suitable habitat outside the project site in accordance with a burrowing owl exclusion and relocation plan developed in consultation with CDFW, and the burrow will be destroyed to prevent owls from reoccupying it. No burrowing owls will be excluded from occupied burrows until a burrowing owl exclusion and relocation plan is approved by CDFW. Passive relocation will be accomplished by installing one-way doors (e.g., modified dryer vents or other CDFW-approved method). The one-way doors will be left in place for a minimum of 3 days and will be monitored daily to verify that the one-way door stays in place and that at the end of the 3 days, the owls have left the burrow. The burrow will be excavated using hand tools, and a section of flexible plastic pipe (at least 3 inches in diameter) will be inserted into the burrow tunnel to maintain an escape route for any animals that may be inside the burrow. Following owl exclusion and burrow demolition, the site shall be monitored by a qualified biologist to ensure burrowing owls do not recolonize the site prior to construction.

If active burrowing owl burrows are found on the site and are destroyed by project implementation, the project proponent shall mitigate the loss of occupied habitat in accordance with guidance provided in the CDFW 2012 Staff Report, which states that permanent impacts on nesting, occupied, and satellite burrows and on burrowing owl habitat shall be mitigated such that the habitat acreage, number of burrows, and active burrows affected are replaced through permanent conservation of comparable or better habitat with similar vegetation communities and burrowing mammals (e.g., ground squirrels) present to provide for nesting, foraging, wintering, and dispersal. The project proponent shall retain a qualified biologist to develop a burrowing owl mitigation and management plan to be provided to the Town of Apple Valley that incorporates the following goals and standards:

- Mitigation lands shall be selected based on comparison of the habitat lost to the compensatory habitat, including type and structure of habitat; disturbance levels; potential for conflicts with humans, pets, and other wildlife; density of burrowing owls; and relative importance of the habitat to the species rangewide.
- Mitigation lands shall be provided adjacent to or near the project site so that displaced owls can relocate with reduced risk of take. The feasibility of providing mitigation adjacent to or otherwise near the project site depends on the availability of sufficient suitable habitat to support displaced owls that may be preserved in perpetuity.
- If suitable habitat is not available for conservation adjacent to or otherwise near the project site, mitigation lands shall be focused on consolidating and enlarging conservation areas outside of urban and planned growth areas and within foraging distance of other conservation lands. Mitigation may be accomplished through purchase of mitigation credits at a CDFW-approved mitigation bank, if available. If mitigation credits are not available from an approved bank and mitigation lands are not available adjacent to other conservation lands, alternative mitigation sites and acreage shall be determined in consultation with CDFW.
- If mitigation is not available through an approved mitigation bank and will be completed through permittee-responsible conservation lands, the mitigation plan shall include mitigation objectives, site selection factors, site management roles and responsibilities, vegetation management goals, financial assurances and funding mechanisms, performance standards and success criteria, monitoring and reporting protocols, and adaptive management measures. Success shall be based on the number of adult burrowing owls and pairs using the site and whether the numbers are maintained over time. Measures of success, as suggested in the 2012 Staff Report, shall include site tenacity, the number of adult owls present and reproducing, colonization by burrowing owls from elsewhere, changes in distribution, and trends in stressors.

Where this measure requires consultation with CDFW, the qualified biologist charged with such consultation shall satisfy the consultation requirements of this measure either where CDFW timely responds to such requests for consultation or where the qualified biologist has attempted to consult with CDFW but CDFW has failed to respond to such requests within 90 days of the placement of such requests.

Mitigation Measure 3.4-4b: Loggerhead Shrike, Bendire's thrasher, and other Nesting Birds

If ground disturbing activities are proposed during the general nesting bird season (February 1 through August 31), a pre-construction nesting bird survey shall be conducted by a qualified biologist within the project site and a 500-foot buffer around the project site. Surveys shall be conducted within 3 days prior to initiation of activities (or a new segment (i.e. outside of the 500-foot initial survey area) of the water main is to be started) and shall be conducted between dawn and noon. If construction activities lapse for more than two weeks during the breeding season, a follow up nesting bird survey shall be required. Follow-up surveys would only be required if there is a lapse of construction that lasts longer than two weeks or if construction is required along a new segment of the water main line that is outside of the 500-foot initial survey area. If no active nests are found, no further mitigation is required.

If an active nest is detected during the nesting bird survey, avoidance buffers shall be implemented as determined by a qualified biologist. The buffer shall be of a distance to ensure avoidance of adverse effects to the nesting bird by accounting for topography, ambient conditions, species, nest location, and activity type. Monitoring of the nest by a qualified biologist during construction activities shall be required if the activity has the potential to adversely affect the nest. If construction activities cause the nesting bird to vocalize, make defensive flights at intruders, get up from a brooding position, or fly off the nest, then the no-disturbance buffer shall be increased until the agitated behavior

ceases. The exclusionary buffer will remain in place until the chicks have fledged or as otherwise determined by a qualified biologist.

Mitigation Measure 3.4-4c: Light Spillage

Implement Mitigation Measure 3.4-3c.

Significance after Mitigation

Implementation of Mitigation Measures 3.4-4a through 3.4-4c would reduce potentially significant impacts on burrowing owl, loggerhead shrike, Bendire's trasher and other nesting birds to a **less-than-significant** level because these measures would require that active burrows and nests in or near the project site be identified and avoided or monitored so that project construction would not result in nest abandonment and loss of eggs or young, or displacement and mortality of wintering owl, and that loss of occupied burrowing owl habitat would be compensated, and by ensuring that all project lighting complies with the lighting requirements in Chapter 9.70.020 (H) of the Town of Apple Valley Code of Ordinances would minimize light spillage onto adjacent parcels. Such steps would ensure that the proposed project would not have a substantial adverse effect, either directly or through habitat modifications, on special-status birds.

Impact 3.4-5: Interfere with Wildlife Movement or Migration or Impede the Use of Nursery Sites

While implementation of the project includes construction of new buildings and light sources, these features would occur within a previously disturbed site and immediately adjacent to Interstate 15. The project would also install an underground water main line, but it would not interfere with local wildlife movement in the area. This would be a **less than significant** impact.

The project site does not support an important wildlife movement area or nursery site because it is within a highly disturbed area and adjacent to a major thoroughfare. The project site and BSA also experience frequent off-road vehicle usage as evident by the number of unauthorized trails, reducing the quality of available nursery and movement areas. Construction activities for the water main line would be temporary and not result in any new, substantially different, permanent structures that would interfere with wildlife movement in the area. Therefore, this impact would be **less than significant,** and no mitigation would be required.

Mitigation Measures

No mitigation required.

Impact 3.4-6: Substantially Reduce the Habitat of a Fish or Wildlife Species, cause a Fish or Wildlife Population to Drop Below Self-Sustaining Levels, Threaten to Eliminate a Plant or Animal Community, Substantially Reduce the Number or Restrict the Range of a Rare or Endangered Plant or Animal

While implementation of the project includes construction of new buildings and light sources, these features would occur within a previously disturbed site and immediately adjacent to Interstate 15. The project would also install an underground water main line, but it would not substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal. This would be a **less than significant** impact.

As previously mentioned, the project is located within the Mojave Desert area which covers approximately 43,750 square miles, the project itself would develop approximately 33.52 acres (0.05 square miles) and although the project will include the construction of new buildings, water main, light sources, and impervious surfaces, the project site and water main would be located within a highly disturbed area and adjacent to a major thoroughfare and thus the development of 0.05 square miles would not substantially reduce the habitat of any fish or wildlife species. Furthermore, implementation of Mitigation Measures 3.4-1 through 3.5-4 require the project proponent to conduct

surveys to identify, avoid, and/or mitigate effects to waters, special-status plants, reptiles, and birds. Mitigation Measure 3.4-3c requires compliance with the lighting requirements in Chapter 9.70.020 (H) of the Town of Apple Valley Code of Ordinances to minimize light spillage onto adjacent parcels. Therefore, Mitigation Measures 3.4-1 through 3.5-4 would further minimize potential impacts to these resources and take of rare and endangered plants and animals such that the project would not substantially reduce the number or restrict the range of such species. Therefore, this impact would be **less than significant**, and no mitigation would be required.

Mitigation Measures

No mitigation required.

3.5 ENERGY

This section evaluates whether implementation of the project would result in inefficient, wasteful, and unnecessary consumption of energy. The capacity of existing and proposed infrastructure to serve the project is evaluated in Section 3.10, "Utilities and Service Systems." Detailed calculations and results can be found in Appendix B.

No comments in response to the NOP were received that identified concerns regarding energy impacts.

3.5.1 Regulatory Setting

Energy conservation is embodied in many federal, state, and local statutes and policies. At the federal level, energy standards apply to numerous products (e.g., the US Environmental Protection Agency's [EPA] EnergyStar™ program) and transportation (e.g., fuel efficiency standards). At the state level, Title 24 of the California Code of Regulations sets forth energy standards for buildings. Further, the state provides rebates/tax credits for installation of renewable energy systems and offers the Flex Your Power program promotes conservation in multiple areas. At the local level, individual cities and counties establish policies in their general plans and climate action plans (CAPs) related to the energy efficiency of new development and land use planning and to the use of renewable energy sources.

FEDERAL

Energy Policy and Conservation Act, and CAFE Standards

The Energy Policy and Conservation Act of 1975 established nationwide fuel economy standards to conserve oil. Pursuant to this Act, the National Highway Traffic and Safety Administration, part of the US Department of Transportation (DOT), is responsible for revising existing fuel economy standards and establishing new vehicle economy standards.

The Corporate Average Fuel Economy (CAFE) program was established to determine vehicle manufacturer compliance with the government's fuel economy standards. Compliance with the CAFE standards is determined based on each manufacturer's average fuel economy for the portion of their vehicles produced for sale in the country. EPA calculates a CAFE value for each manufacturer based on the city and highway fuel economy test results and vehicle sales. The CAFE values are a weighted harmonic average of the EPA city and highway fuel economy test results. Based on information generated under the CAFE program, DOT is authorized to assess penalties for noncompliance. Under the Energy Independence and Security Act of 2007 (described below), the CAFE standards were revised for the first time in 30 years.

Energy Policy Act of 1992 and 2005

The Energy Policy Act of 1992 (EPAct) was passed to reduce the country's dependence on foreign petroleum and improve air quality. EPAct includes several parts intended to build an inventory of alternative fuel vehicles (AFVs) in large, centrally fueled fleets in metropolitan areas. EPAct requires certain federal, state, and local government and private fleets to purchase a percentage of light-duty AFVs capable of running on alternative fuels each year. In addition, financial incentives are also included in EPAct. Federal tax deductions are allowed for businesses and individuals to cover the incremental cost of AFVs. States are also required by the act to consider a variety of incentive programs to help promote AFVs. The Energy Policy Act of 2005 provides renewed and expanded tax credits for electricity generated by qualified energy sources, such as landfill gas; provides bond financing, tax incentives, grants, and loan guarantees for clean renewable energy and rural community electrification; and establishes a federal purchase requirement for renewable energy.

Energy Independence and Security Act of 2007

The Energy Independence and Security Act of 2007 is designed to improve vehicle fuel economy and help reduce US dependence on oil. It represents a major step forward in expanding the production of renewable fuels, reducing

dependence on oil, and confronting global climate change. The Energy Independence and Security Act of 2007 increases the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard requiring fuel producers to use at least 36 billion gallons of biofuel in 2022, which represents a nearly five-fold increase over current levels; and reduces US demand for oil by setting a national fuel economy standard of 35 miles per gallon by 2020—an increase in fuel economy standards of 40 percent.

By addressing renewable fuels and the CAFE standards, the Energy Independence and Security Act of 2007 builds upon progress made by the Energy Policy Act of 2005 in setting out a comprehensive national energy strategy for the 21st century.

STATE

Warren-Alquist Act

The 1975 Warren-Alquist Act established the California Energy Resources Conservation and Development Commission, now known as the California Energy Commission (CEC). The Act established state policy to reduce wasteful, uneconomical, and unnecessary uses of energy by employing a range of measures. The California Public Utilities Commission (CPUC) regulates privately-owned utilities in the energy, rail, telecommunications, and water fields.

State of California Energy Action Plan

CEC is responsible for preparing the State Energy Plan, which identifies emerging trends related to energy supply, demand, conservation, public health and safety, and the maintenance of a healthy economy. The first Energy Action Plan (EAP) emerged in 2003 from a crisis atmosphere in California's energy markets. The state's three major energy policy agencies (CEC, CPUC, and the Consumer Power and Conservation Financing Authority [established under deregulation and now defunct]) came together to develop one high-level, coherent approach to meeting California's electricity and natural gas needs. It was the first time that energy policy agencies formally collaborated to define a common vision and set of strategies to address California's future energy needs and emphasize the importance of the impacts of energy policy on the California environment.

In the October 2005 *Energy Action Plan II*, CEC and CPUC updated their energy policy vision by adding some important dimensions to the policy areas included in the original EAP, such as the emerging importance of climate change, transportation-related energy issues and research and development activities. CEC adopted an update to the EAP II in February 2008 that supplements the earlier EAPs and examines the state's ongoing actions in the context of global climate change.

The current plan is the 2019 *California Energy Action Plan* which was published in November 2019. The plan calls for the state to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators in implementing incentive programs for zero-emission vehicles and addressing their infrastructure needs; and encouragement of urban design that reduces vehicle miles traveled (VMT) and accommodates pedestrian and bicycle access (CEC 2019).

Assembly Bill 2076: Reducing Dependence on Petroleum

Pursuant to Assembly Bill (AB) 2076 (Chapter 936, Statutes of 2000), CEC and the California Air Resources Board (CARB) prepared and adopted a joint agency report in 2003, *Reducing California's Petroleum Dependence*. Included in this report are recommendations to increase the use of alternative fuels to 20 percent of on-road transportation fuel use by 2020 and 30 percent by 2030, significantly increase the efficiency of motor vehicles, and reduce per capita VMT (CEC 2003). Further, in response to the CEC's 2003 and 2005 *Integrated Energy Policy Reports*, Governor Davis directed CEC to take the lead in developing a long-term plan to increase alternative fuel use. A performance-based goal of AB 2076 was to reduce petroleum demand to 15 percent below 2003 demand by 2020 and maintaining that level for the foreseeable future.

Integrated Energy Policy Report

Senate Bill (SB) 1389 (Chapter 568, Statutes of 2002) required CEC to: "conduct assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and prices. The Energy Commission shall use these assessments and forecasts to develop energy policies that conserve resources, protect the environment, ensure energy reliability, enhance the state's economy, and protect public health and safety" (Public Resources Code [PRC] Section 25301[a]). This work culminated in the Integrated Energy Policy Report (IEPR).

CEC adopts an IEPR every two years and an update every other year. The 2021 IEPR is the most recent IEPR. The 2021 IEPR provides a summary of priority energy issues currently facing the state, outlining strategies and recommendations to further the state's goal of ensuring reliable, affordable, and environmentally responsible energy sources. The 2021 IEPR covers a broad range of topics, including building decarbonization, energy efficiency, challenges with decarbonizing California's gas system, quantifying the benefits of the Clean Transportation Program, and the California Energy Demand Forecast (CEC 2021a).

Senate Bill 100: California Renewables Portfolio Standard Program

SB 100 requires that all California utilities, including independently owned utilities, energy service providers, and community choice aggregators, supply 44 percent of retail sales from renewable resources by December 31, 2024, 50 percent by December 31, 2026, 52 percent by December 31, 2027, and 60 percent by December 31, 2030. The law requires that eligible renewable energy resources and zero-carbon resources supply 100 percent of retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all state agencies by December 31, 2045.

Senate Bill 350: Clean Energy and Pollution Reduction Act of 2015

The Clean Energy and Pollution Reduction Act of 2015 (SB 350) requires doubling of the energy efficiency savings in electricity and natural gas for retail customers through energy efficiency and conservation by December 31, 2030.

Assembly Bill 1007: State Alternative Fuels Plan

AB 1007 (Chapter 371, Statues of 2005) required CEC to prepare a state plan to increase the use of alternative fuels in California. CEC prepared the State Alternative Fuels Plan (SAF Plan) in partnership with CARB and in consultation with other state, federal, and local agencies. The SAF Plan presents strategies and actions California must take to increase the use of alternative non-petroleum fuels in a manner that minimizes the costs to California and maximizes the economic benefits of in-state production. The SAF Plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuel use, reduce greenhouse gas (GHG) emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

California Building Energy Efficiency Standards (Title 24, Part 6)

The energy consumption of new residential and nonresidential buildings in California is regulated by the state's Title 24, Part 6, Building Energy Efficiency Standards (California Energy Code). The California Energy Code was established by CEC in 1978 in response to a legislative mandate to create uniform building codes to reduce California's energy consumption, and provide energy efficiency standards for residential and non-residential buildings. CEC updates the California Energy Code every 3 years with more stringent design requirements for reduced energy consumption, which results in the generation of fewer GHG emissions.

The core focus of the building standards has been efficiency, but the 2019 Energy Code ventured into onsite generation by requiring solar PV on new homes, providing significant GHG savings. The most recent is the 2022 California Energy Code, which advances the onsite energy generation progress started in the 2019 California Energy Code, by encouraging electric heat pump technology and use, establishing electric-ready requirements when natural gas is installed, expanding solar photovoltaic (PV) system and battery storage standards, and strengthening ventilation standards to improve indoor air quality.

Statewide GHG Emission Targets and the Climate Change Scoping Plan

Reducing GHG emissions in California has been the focus of the state government for approximately two decades. GHG emission targets established by the state legislature include reducing statewide GHG emissions to 1990 levels by 2020 (Assembly Bill [AB] 32 of 2006) and reducing them to 40 percent below 1990 levels by 2030 (Senate Bill [SB] 32 of 2016). Executive Order S-3-05 calls for statewide GHG emissions to be reduced to 80 percent below 1990 levels by 2050. Executive Order B-55-18 calls for California to achieve carbon neutrality by 2045 and achieve and maintain net negative GHG emissions thereafter. These targets are in line with the scientifically established levels needed in the United States to limit the rise in global temperature to no more than 2 degrees Celsius, the warming threshold at which major climate disruptions, such as super droughts and rising sea levels, are projected; these targets also pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius (United Nations 2015:3).

California's 2017 Climate Change Scoping Plan (2017 Scoping Plan), prepared by the California Air Resources Board (CARB), outlines the main strategies California will implement to achieve the legislated GHG emission target for 2030 and "substantially advance toward our 2050 climate goals" (CARB 2017:1, 3, 5, 20, 25–26). It identifies the reductions needed by each GHG emission sector (e.g., transportation, industry, electricity generation, agriculture, commercial and residential, pollutants with high global warming potential, and recycling and waste).

The *2022 Draft Scoping Plan Update* (2022 Scoping Plan Update) assesses progress toward the statutory 2030 target, while laying out a path to achieving carbon neutrality no later than 2045. The 2022 Scoping Plan Update focuses on outcomes needed to achieve carbon neutrality by assessing paths for clean technology, energy deployment, natural and working lands, and others, and is designed to meet the State's long-term climate objectives and support a range of economic, environmental, energy security, environmental justice, and public health priorities (CARB 2022a). The Draft 2022 Scoping Plan Update and associated environmental documentation were released for public review on May 10, 2022. The comment period ended June 24, 2022.

The state has also passed more detailed legislation addressing GHG emissions associated with industrial sources, transportation, electricity generation, and energy consumption, as summarized below.

More details about the statewide GHG reduction goals and 2017 Scoping Plan measures are provided in the regulatory setting of Section 3.7, "Greenhouse Gas Emissions and Climate Change."

Senate Bill 375

SB 375, signed by the Governor in September 2008, aligns regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. SB 375 requires metropolitan planning organizations (MPOs) to adopt a Sustainable Communities Strategy (SCS) or Alternative Planning Strategy, showing prescribed land use allocation in each MPO's Regional Transportation Plan. CARB, in consultation with the MPOs, is to provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in their respective regions for 2020 and 2035. Implementation of SB 375 will have the co-benefit of reducing California's dependency of fossil fuels and making land use development and transportation systems more energy efficient.

The Southern California Association of Governments serves as the MPO for San Bernardino County where the project site is located. In 2020, the SCAG adopted *Connect SoCal*, the area's Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). SCAG was tasked by CARB to achieve an 8 percent per capita reduction compared to 2005 level emissions by 2020 and a 19 percent per capita reduction by 2035, which CARB confirmed the region would achieve by implementing its SCS (CARB 2020).

Fuel Economy and Electrification Programs and Regulations

As part of its Advanced Clean Cars program, CARB established more stringent GHG emission standards and fuel efficiency standards for fossil fuel–powered on-road vehicles than EPA. In addition, the program's zero-emission vehicle (ZEV) regulation requires battery, fuel cell, and plug-in hybrid electric vehicles to account for up to 15 percent of California's new vehicle sales by 2025. When the rules are fully implemented by 2025, GHG emissions from the statewide fleet of new cars and light-duty trucks will be reduced by 34 percent and cars will emit 75 percent less smog-forming pollution than the statewide fleet in 2016 (CARB 2022b).

Executive Order B-48-18, signed into law in January 2018, requires all State entities to work with the private sector to have at least 5 million ZEVs on the road by 2030, as well as 200 hydrogen fueling stations and 250,000 electric vehicle–charging stations installed by 2025. It specifies that 10,000 of these charging stations must be direct-current fast chargers.

LOCAL

City of Apple Valley General Plan

The City's General Plan was adopted in 2009 and contains the following policies related to energy that are applicable to the project.

The Energy and Mineral Resources Element of the General Plan is intended to guide the Town in the long-term management and use of energy resources. The following policies related to energy are applicable to the project:

- **Program 1.A.1:** While considering the future development of more stringent local energy performance standards, the Town shall continue to rigorously enforce all state mandated energy-conserving development and building codes/regulations.
- **Program 1.A.2:** The Town shall make available information to developers on energy efficient building design and conservation technologies addressing enhanced wall and ceiling insulation, efficient heating and cooling equipment, thermally efficient glazing, and efficient household appliances.
- **Policy 1.B:** Promote building design and construction that integrates alternative energy systems, including but not limited to solar, thermal, photovoltaics and other clean energy systems.
- **Policy 1.B.3:** The Town shall encourage building design that takes advantage of shade, prevailing winds and sun screens. Energy efficient lighting and installation of colored "cool roofs", cool pavement and strategically planted shade trees should also be encouraged. The Town shall support the installation of solar panels on carports and over parking areas where appropriate.

The Water, Wastewater, and Utilities Element includes the following applicable program related to energy:

- **Program I.K.2:** The Town shall confer and coordinate with Southern California Edison, Southwest Gas, and other applicable energy providers to educate and encourage developers to incorporate alternative energy systems in new development within the Town.

The Air Quality Element of the General Plan is intended to guide the Town in the reduction of emissions and improving air quality, which will lead to a reduction in energy consumption. The following policies related to energy are applicable to the project:

- **Policy 1.D:** The Town will encourage and facilitate the exploitation of local renewable resources by supporting public and private initiatives to develop and operate alternative systems of electricity generation, using wind, solar and other renewable energies.
- **Policy 1.E:** The use of clean and/or renewable alternative energy sources for transportation, heating and cooling, and construction shall be encouraged by the Town.
- **Policy 1.F:** The Town shall support, encourage, and facilitate the development of projects that enhance the use of alternative modes of transportation, including pedestrian-oriented retail and activity centers, dedicated bicycle paths and lanes, and community-wide multi-use trails.
- **Policy 1.G:** Future residential, commercial, and industrial development and remodeling projects, shall strive to exceed Title 24 standards by 15% and/or achieve LEED certification or similar performance standards for buildings.
- **Policy 1.H:** Residential, commercial, and industrial projects that reduce vehicle miles traveled (VMTs) by providing alternative transportation options, home office and live/work spaces, and/or promote employees living close to work are preferred.

- **Policy 1.J:** The Town shall promote the use of solar and alternative energies and give priority to projects that include the use of solar cells and other alternative energy sources in their designs.

Town of Apple Valley Climate Action Plan Update

The Town of Apple Valley has prepared a 2010 CAP and GHG inventory updates in 2016 and 2019 to evaluate progress towards reduction targets. The CAP was prepared using the year 2005 as the baseline for GHG emissions reduction targets, including 15 percent below 2005 levels by 2020 and 40 percent below 2005 levels by 2030. The 2050 target of 80 percent below baseline is acknowledged; however, the CAP Update focuses on the near term 2030 target.

In 2021, a Climate Action Plan Update was prepared for the Town of Apply Valley to set GHG reduction targets based on AB 32 and SB 32. Apple Valley set the GHG emission reduction target of 15 percent below 2005 levels by 2020 and 40 percent below 2005 levels by 2030. The Apple Valley CAP Update provides an updated inventory for 2019 with a 2030 forecast and updated to the proposed reduction measures developed to achieve state targets. The CAP Update also considers the Town's participation in the Apple Valley Choice Energy started in 2017, which allows Apple Valley energy residents to receive their energy from a higher renewable energy mix than those provided by the investor-owned utility, Southern California Edison (SCE).

While the CAP includes 88 reduction measures that guide the Town's approach to addressing sustainability and climate change, covering transportation, energy efficiency, renewable energy, and solid waste management, the CAP includes various measures that will also affect energy consumption in the Town, including energy efficiency, renewable energy production, and fuel savings from motor vehicles.

Community Operational (CO) Measures related to energy consumption include the following:

- **CO-6:** Replace failing or failed fixtures and appliances with energy efficient fixtures and appliances. Light bulbs shall be replaced with CFL or LED bulbs. Appliances shall be Energy Star rated
- **CO-7:** Replace traditional water heater with an instant water heating system.
- **CO-8:** Replace traditional roofing with a cool roof.
- **CO-9:** Increase insulation in walls and roof to a minimum R-30.
- **CO-10:** Install weather-stripping on all doors and windows.
- **CO-14:** Install solar panels or photovoltaic system

New Development (ND) Measures related to energy consumption include the following:

- **ND-12:** Building and site plan designs shall ensure that the project energy efficiencies meet applicable California Title 24 Energy Efficiency Standards
- **ND-14:** Use passive solar design by orienting buildings and incorporating landscaping to maximize passive solar heating during the winter, and minimize solar heating during the summer
- **ND-16:** Install Energy Star appliances and energy efficient fixtures.
- **ND-17:** Install all CFL or LED light bulbs.
- **ND-19:** To reduce the project's energy use from the grid: • Install solar panels/photovoltaic systems sufficient to provide electric power and heat water within the project, and/or • Install other clean energy system sufficient to provide electric power and heat water within the project, and/or
- **ND-20:** Install solar or photovoltaic systems on new roofs whether on residential, commercial or industrial buildings.

3.5.2 Environmental Setting

Energy Facilities and Services in the Project Area

Southern California Edison (SCE) provides electricity to the Town via distribution facilities connected to four 115kV regional electric transmission corridors. At the time the Apple Valley General Plan EIR was certified, there were three SCE substations in Apple Valley, with voltages ranging from 33kV to 115kV, which reduce power for distribution to residential, business and institutional clients (Town of Apple Valley 2009b).

Additionally, Apple Valley Choice Energy (AVCE) Program was rolled out in 2017. AVCE is Apple Valley's locally operated, locally controlled Community Choice Aggregation (CCA) that offers Town residents and businesses an alternative to SCE.

Natural gas is delivered to the Town by Southwest Gas Corporation (SWG) facilities. Southwest Gas owns and maintains a high-pressure pipeline corridor system with 4-inch to 12-inch diameter pipelines, and a distribution system consisting of pipelines ranging from 2 to 4 inches in diameter, which typically run within developed public rights-of-ways (Town of Apple Valley 2009b).

Energy Types and Sources

California relies on a regional power system comprised of a diverse mix of natural gas, renewable, hydroelectric, and nuclear generation resources. One-third of energy commodities consumed in California is natural gas. In 2014, approximately 35 percent of natural gas consumed in the state was used to generate electricity. Residential land uses represented approximately 17 percent of California's natural gas consumption with the balance consumed by the industrial, resource extraction, and commercial sectors (EIA 2017). Power plants in California generate approximately 70 percent of the in-state electricity demand, with large hydroelectric in the Pacific Northwest and power plants in the Southwestern US generating the remaining electricity (CEC 2021b). The contribution of in- and out-of-state power plants depends on the precipitation that occurred in the previous year, the corresponding amount of hydroelectric power that is available, and other factors. SCE power mix for 2020 was as follows: 30.9 percent eligible renewables, 15.2 percent natural gas, 8.4 percent nuclear, 3.3 percent large hydroelectric, and 42 percent unspecified (CEC 2021c).

AVCE offers two options for customers which are based on varying levels of renewables. CoreChoice, offers 35 percent renewable energy content, while MoreChoice offers up to 100 percent renewable energy content. In 2020, the CoreChoice power mix was as follows: 29.2 percent eligible renewables, 1.4 percent nuclear, 0.2 percent large hydroelectric, and 69.2 percent unspecified. In 2020, the MoreChoice power mix was as follows: 33.1 percent eligible renewables and 66.9 percent unspecified.

Alternative Fuels

A variety of alternative fuels are used to reduce demand for petroleum-based fuel. The use of these fuels is encouraged through various statewide regulations and plans (e.g., Low Carbon Fuel Standard, AB 32 Scoping Plan). Conventional gasoline and diesel may be replaced (depending on the capability of the vehicle) with many transportation fuels, including:

- biodiesel,
- electricity,
- ethanol (E-10 and E-85),
- hydrogen,
- natural gas (methane in the form of compressed and liquefied natural gas),
- propane,
- renewable diesel (including biomass-to-liquid),
- synthetic fuels, and
- gas-to-liquid and coal-to-liquid fuels.

California has a growing number of alternative fuel vehicles through the joint efforts of CEC, CARB, local air districts, federal government, transit agencies, utilities, and other public and private entities. As of June 2022, California contained 37,504 public alternative fueling stations (AFDC 2022).

COMMERCIAL AND RESIDENTIAL ENERGY USE

Homes built between 2000 and 2015 used 14 percent less energy per square foot than homes built in the 1980s, and 40 percent less energy per square foot than homes built before 1950. However, the increase in size of newer homes has offset these efficiency improvements. Primary energy consumption in the residential sector total 21 quadrillion Btu in 2009 (the latest year the EIA's *Residential Energy Consumption Survey* was completed), equal to 54 percent of consumption in the buildings sector and 22 percent of total primary energy consumption in the U.S. Energy consumption increased 24 percent from 1990 to 2009. However, because of projected improvements in building and appliance efficiency, the EIA 2017 Annual Energy Outlook forecast a 5 percent increase in energy consumption from 2016 to 2040 (EIA 2017).

In aggregate, commercial buildings consumed 46 percent of building energy consumption and approximately 19 percent of U.S. energy consumption. In comparison, the residential sector consumed approximately 22 percent of US energy consumption (US Department of Energy 2016).

TRANSPORTATION ENERGY USE

On-road vehicles use about 90 percent of the petroleum consumed in California. The California Department of Transportation (Caltrans) estimates that by 2030, over 13 billion gallons of gasoline and diesel fuel will be consumed in the five SCAG counties—an increase of about 5 million gallons over 2000 consumption levels (Caltrans 2009).

According to Caltrans, total gasoline consumption in California is expected to increase by 57 percent from 2007 to 2030, and VMT is expected to increase by 61 percent in the same period (Caltrans 2009). Total gasoline use in California varies from year to year because of a variety of factors, such as gas prices, periods of economic growth and decline, and fuel economy of vehicles. Between January 2013 and June 2022, approximately 139 billion gallons of gasoline were purchased in California. During this period, the volume of gasoline purchased ranged from a minimum of approximately 714 million gallons in April 2020 due to the effects of COVID-19, to a maximum of approximately 1.51 billion gallons in July 2019 (California Department of Tax and Fee Administration 2022). Long-term energy consumption trends for transportation are generally determined by fuel efficiency trends for motor vehicles, as motor vehicles are the predominant transportation mode for passengers and commercial goods.

ENERGY USE AND CLIMATE CHANGE

Scientists and climatologists have produced evidence that the burning of fossil fuels by vehicles, power plants, industrial facilities, residences, and commercial facilities has led to an increase of the earth's temperature. For an analysis of greenhouse gas production and the project's impacts on climate change, refer to Section 3.7, "Greenhouse Gas Emissions and Climate Change."

3.5.3 Impacts and Mitigation Measures

METHODOLOGY

Levels of construction- and operation-related energy consumption by the project, measured in kilowatt-hours of electricity, Metric Million British Thermal Unit (MMBTU) of natural gas, gallons of gasoline, and gallons of diesel fuel. Energy consumption estimates were calculated using the California Emissions Estimator Model (CalEEMod) version 2020.4.0 computer program using the same modeling used for air quality (Section 3.2) and GHGs and Climate Change (Section 3.7). Table 3.5-1 summarizes the levels of energy consumption for each year of construction and

Table 3.5-2 summarizes the levels of energy consumption for the first year of operation during the buildout year of 2024. Table 3.5-3 summarizes the gasoline and diesel consumption estimated for the project in 2036.

THRESHOLDS OF SIGNIFICANCE

The following significance criteria area based on CEQA Guidelines Appendix G (Energy), under which implementation of the project would have a potentially significant adverse impact if the project would:

- result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy, or wasteful use of energy resources, during project construction or operation; and/or
- conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 3.5-1: Wasteful, Inefficient, or Unnecessary Consumption of Energy, During Project Construction or Operation

Construction and operation of buildings and facilities associated with the project would result in consumption of fuel (gasoline and diesel), electricity, and natural gas. Energy consumption associated with construction would be temporary and would not require additional capacity or increased peak or base period demands for electricity or other forms of energy. Through adherence to and exceedance of current building code requirements, energy consumption associated with operation of the buildings and facilities would not result in wasteful, inefficient, or unnecessary consumption of energy. This impact would be **less than significant**.

Appendix G of the State CEQA Guidelines requires the consideration of the energy implications of a project. CEQA requires mitigation measures to reduce "wasteful, inefficient, and unnecessary energy usage" (PRC Section 21100[b][3]). Neither the law nor the State CEQA Guidelines establish criteria that define wasteful, inefficient, or unnecessary use. Compliance with the California Energy Code would result in energy-efficient buildings. However, compliance with the California Energy Code does not address all potential energy impacts during construction and operation of the project. Energy use is discussed by project component below.

Construction-Related Energy

Energy would be required for demolition and construction activities associated with the project. Construction-related energy use would be in the form of fuel (gasoline and diesel) required to operate and maintain construction equipment and transport construction materials. The one-time energy expenditure required to construct buildings would be nonrecoverable. Most energy consumption would result from the use of construction equipment and vehicle trips associated with commutes by construction workers and haul trucks carrying supplies. The modeled level of energy consumption associated with construction of both the travel center and the RV park and associated utility improvements would be 33,030 gallons of gasoline and 61,857 gallons of diesel fuel. Details about construction phasing can be found in Appendix B. The energy needs for project construction would be temporary and would not require additional capacity or increase peak or base period demands for electricity or other forms of energy.

Table 3.5-1 shows the amount of gasoline and diesel consumption associated with project construction by phase and year.

Table 3.5-1 Construction Energy Consumption

Phase	Diesel (Gallons)	Gasoline (Gallons)
Demolition	3,844	227
Site Preparation	3,872	273
Grading	6,333	303
Building Construction	32,563	30,377

Phase	Diesel (Gallons)	Gasoline (Gallons)
Water Main Trenching / Undergrounding	12,666	606
Paving	2,332	227
Architectural Coating	247	1,016
Total	**61,857**	**33,030**

Notes: Gasoline gallons include on-road gallons from worker trips. Diesel gallons include off-road equipment and on-road haul trucks and vendor trips.

Source: Calculations by Ascent Environmental in 2022

Building Energy

Operation of project buildings would be typical regarding use of electricity for lighting, space and water heating, appliances, and landscape maintenance activities. Indirect energy use would include wastewater treatment and solid waste removal. Implementation of the project would increase electricity consumption in the region relative to existing conditions. The project would not increase natural gas combustion because no natural gas connections would be provided. Table 3.5-2 summarizes estimated operational energy needs on an annual basis.

All new buildings proposed would be constructed in accordance with the most recent building code (i.e., California Building Code) at the time of construction, which includes energy and lighting efficiency.

It should also be noted that the estimated energy use is conservative because it does not reflect the anticipated increase in building energy efficiency that technological advances will provide over time. Building electricity and natural gas consumption are based on CalEEMod defaults, which do not take into account recent updates to California Building Code (e.g., 2022 Title 24), which will result in lower energy demand than assumed herein.

Table 3.5-2 Operational Energy Consumption

Land Use/Energy Type	Electricity Consumption (MWh/year)	Natural Gas (MMBtu/year)
Truck Maintenance Building	268	-
Convenience Store	165	-
Fast Food Restaurant	384	-
Gasoline Station	69	-
RV Park	892	-
Parking Areas	26	-
PV Panels	*-148*	-
Total	**1,656**	**0**

Notes: MWh/year = megawatt-hours per year; MMBtu/year = metric million British thermal units per year.

Source: Calculations by Ascent Environmental in 2022

Transportation Energy

Transportation-related fuel consumption was estimated using the estimated daily VMT estimates from the truck study and estimated miles per gallon per fuel type for San Bernardino County from the CARB mobile source emissions inventory EMFAC database. Accordingly, the project is estimated to result in the combustion of 143.757 gallons per year of gasoline and 21,393 gallons of diesel per year (see Appendix B). State and federal regulations regarding fuel efficiency standards for vehicles in California are designed to reduce wasteful, inefficient and unnecessary use of energy for transportation.

The project is proposed adjacent to I-15 and would serve existing vehicular/truck traffic. The proximity of the project to an existing major regional roadway would minimize travel distances, and associated fuel consumption, for vehicles using the project site. Although a slight increase in VMT would occur associated with pass-by trips and new trips generated by the RV park uses, locating these uses adjacent to I-15 would minimize increases in VMT.

Table 3.5-3 Operational Transportation Energy Consumption

Vehicle Category	Gasoline (gal/year)	Diesel (gal/year)
Passenger Vehicles	65,911	580
Trucks	75,374	19,775
Other Vehicles	2,472	1,037
Total (All Vehicle Types)	**143,757**	**21,393**

Notes: gal/year = gallons per year.

Source: Calculations by Ascent Environmental in 2022

Summary

The project would increase energy demand during temporary construction activities for new buildings and facilities. Construction activities would not increase long-term, ongoing demand for energy or fuel because project construction is anticipated to last 9 months and would be temporary.

Over time, the project's energy use would come from increasingly renewable sources according to California's renewable energy goals (see SB 100 description in Section 3.5.1), and enrollment in AVCE would ensure renewable energy would be used exclusively in the near-term as well.

All project buildings would meet the Title 24 building efficiency standards in effect at the time of construction. In addition, design features are included in the project that would improve energy efficiency and increase the use of renewable energy. For these reasons, implementation of the proposed project would not result in the wasteful, inefficient, or unnecessary consumption of energy resources during construction or operations. This impact would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

Impact 3.5-2: Conflict with or obstruct renewable energy or energy efficiency plans

Constructing and operating project buildings in compliance with the 2022 (or as updated) California Energy Code would improve energy efficiency compared to buildings built to earlier iterations of the code. Therefore, construction and operation of the project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency. This impact would be **less than significant with mitigation**.

Relevant plans that pertain to the efficient use of energy include the Town of Apple Valley General Plan and the Town of Apple Valley CAP, which together seek to increase on-site renewable energy generation, exceed RPS requirements, increase energy efficiency, and provide alternative transportation and use alternative fuels to meet GHG reduction goals (Town of Apple Valley 2009a, Town of Apple Valley 2021). While the intent of the CAP is to reduce GHG emissions in line with statewide goals and targets, the majority of the CAP's measures also reduce energy consumption by promoting renewable energy and energy efficiency and by reducing fuel consumption.

As discussed in Impact 3.5-1, although implementation of the project has the potential to result in the overall increase in consumption of energy resources during construction and operation of new buildings and facilities, consumption would be minor and would not result in wasteful, inefficient, or unnecessary consumption of energy through adherence to current building code requirements. The project would include energy efficient features, including EV charging, bike parking, and efficient lighting consistent with the 2022 California Energy Code.

However, as discussed in Chapter 3.7, "Greenhouse Gas Emissions and Climate Change," in the discussion and in Table 3.7-4, the project would be inconsistent with the CAP and its measures. Therefore, the project would conflict with or obstruct a state or local plan for renewable energy or energy efficiency before mitigation. Thus, the impact would be **potentially significant**.

Mitigation Measures

Refer to Mitigation Measure 3.7-1 in Section 3.7, "Greehouse Gas Emissions and Climate Change" and Mitigation Measure 3.14-1 in Section 3.14, "Transportation and Circulation."

Significance after Mitigation

As discussed in Section 3.7, "Greehouse Gas Emissions and Climate Change," mitigation would be implemented to ensure consistency with the CAP. Mitigation Measure 3.7-1 includes specific measures that are intended to align with measures in the CAP. These measures promote use of alternative or renewable fuels during construction; encourage the procurement of renewable electricity; and promote recycling, which reduces energy consumption to transport and dispose of waste. Specifically, Mitigation Measure 3.7-1 requires the project to procure renewable energy through the AVCE and to "opt-up" to the MoreChoice option, which provides 100 percent renewable energy, or to install on-site solar panels/photovoltaic systems to provide the project's power needs. Additionally, Mitigation 3.14-1 would require the installation of Class II bicycle facilities along Stoddard Wells Road, which would reduce VMT by promoting alternative forms of transportation. Therefore, by promoting measures in the CAP, and requiring the procurement of renewable energy, the project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency after mitigation. Thus, the impact would be **less than significant with mitigation incorporated**.

3.6 GEOLOGY, SOILS, AND MINERAL RESOURCES

This section describes current conditions relative to geology and soils at the project site for the Apple Valley I-15 Travel Center (project). This section includes a description of soils and mineral resources, analysis of environmental impacts, and recommendations for mitigation measures for any significant or potentially significant impacts. The primary sources of information used for this analysis are the *Geotechnical Engineering Report* prepared by Terracon Consultants, Inc. (2021) and the *Phase I Environmental Site Assessment* (ESA) prepared by Terracon Consultants, Inc. (2020) (provided in Appendix D and E of this Draft EIR, respectively). No public comments related to geology, soils, and mineral resources were received during the scoping period.

3.6.1 Regulatory Setting

FEDERAL

National Earthquake Hazards Reduction Act

In October 1977, the U.S. Congress passed the Earthquake Hazards Reduction Act to reduce the risks to life and property from future earthquakes in the United States. To accomplish this, the act established the National Earthquake Hazards Reduction Program (NEHRP). The mission of NEHRP includes improved understanding, characterization, and prediction of hazards and vulnerabilities; improved building codes and land use practices; risk reduction through post-earthquake investigations and education; development and improvement of design and construction techniques; improved mitigation capacity; and accelerated application of research results. The NEHRP designates the Federal Emergency Management Agency (FEMA) as the lead agency of the program and assigns several planning, coordinating, and reporting responsibilities.

Clean Water Act

The Federal Water Pollution Control Act of 1977 (33 U.S. Code 1251 et seq.), commonly referred to as the Clean Water Act (CWA), is the primary federal law that governs and authorizes water quality control activities by the U.S. Environmental Protection Agency (EPA), as well as the states. The CWA employs a variety of regulatory and non-regulatory tools to reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. Section 402 of the CWA creates the National Pollutant Discharge Elimination System (NPDES) regulatory program, which is described below. Point sources must obtain a discharge permit from the proper authority (usually a state, sometimes EPA, a tribe, or a territory).

STATE

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 (PRC Section 2621-2630) intends to reduce the risk to life and property from surface fault rupture during earthquakes by regulating construction in active fault corridors, and by prohibiting the location of most types of structures intended for human occupancy across the traces of active faults. The act defines criteria for identifying active faults, giving legal support to terms such as active and inactive, and establishes a process for reviewing building proposals in Earthquake Fault Zones. Under the Alquist-Priolo Act, faults are zoned and construction along or across these zones is strictly regulated if they are "sufficiently active" and "well-defined." A fault is considered sufficiently active if one or more of its segments or strands shows evidence of surface displacement during Holocene time (defined for purposes of the act as within the last 11,000 years). A fault is considered well defined if its trace can be clearly identified by a trained geologist at the ground surface or in the shallow subsurface, using standard professional techniques, criteria, and judgment (Bryant and Hart 2007). Before a project can be permitted in a designated Alquist-Priolo Earthquake Fault Zone, cities and counties must require a

geologic investigation to demonstrate that proposed buildings would not be constructed across active faults. The law addresses only the hazard of surface fault rupture and is not directed toward other earthquake hazards.

Seismic Hazards Mapping Act

The intention of the Seismic Hazards Mapping Act of 1990 (PRC Section 2690–2699.6) is to reduce damage resulting from earthquakes. While the Alquist-Priolo Act addresses surface fault rupture, the Seismic Hazards Mapping Act addresses other earthquake-related hazards, including ground shaking, liquefaction, and seismically induced landslides. The act's provisions are similar in concept to those of the Alquist-Priolo Act: The State is charged with identifying and mapping areas at risk of strong ground shaking, liquefaction, landslides, and other corollary hazards, and cities and counties are required to regulate development within mapped Seismic Hazard Zones. Under the Seismic Hazards Mapping Act, permit review is the primary mechanism for local regulation of development.

California Building Code

The California Building Code (CBC) (California Code of Regulations, Title 24) is based on the International Building Code. The CBC has been modified from the International Building Code for California conditions, with more detailed and/or more stringent regulations. Specific minimum seismic safety and structural design requirements are set forth in Chapter 16 of the CBC. The CBC identifies seismic factors that must be considered in structural design. Chapter 18 of the CBC regulates the excavation of foundations and retaining walls, while Chapter 18A regulates construction on unstable soils, such as expansive soils and areas subject to liquefaction. Appendix J of the CBC regulates grading activities, including drainage and erosion control. The CBC contains a provision that provides for a preliminary soil report to be prepared to identify "…the presence of critically expansive soils or other soil problems which, if not corrected, would lead to structural defects." (CBC Chapter 18 §1803.1.1.1).

National Pollutant Discharge Elimination System Permit

In California, the State Water Resources Control Board (SWRCB) administers the CWA (33 U.S. Code Section 1301 et seq.) and its associated regulations promulgated by the EPA (40 CFR Section 122 et seq.) requiring the permitting of stormwater-generated pollution under the NPDES. SWRCB's jurisdiction is administered through nine regional water quality control boards (RWQCBs). Under the federal CWA and the California Porter-Cologne Water Quality Control Act, an operator must obtain coverage under the General Construction Permit for any construction or demolition activity (e.g., clearing, grading, excavation) that results in a land disturbance of one acre or more. The General Construction Permit requires the implementation of best management practices (BMPs) to reduce sedimentation into surface waters and to control erosion. One element of compliance with the NPDES permit is preparation of a storm water pollution prevention plan (SWPPP) that addresses control of water pollution, including sediment, in runoff during construction (see Section 3.9, "Hydrology and Water Quality," for more information about the NPDES permit and SWPPPs.).

Surface Mining and Reclamation Act of 1975

The Surface Mining and Reclamation Act of 1975 (PRC Sections 2710–2796) provides for the classification of nonfuel mineral resources in the state to show where economically significant mineral resources occur or are likely to occur. Classification is carried out under the Mineral Land Classification Project under the direction of the State Geologist. Once lands have been classified, they may be designated by the State Mining and Geology Board as mineral-bearing areas of statewide or regional significance if they are in areas where urban expansion or other irreversible land uses may occur that could restrict or preclude future mineral extraction. Designation is intended to prevent future land use conflicts and occurs only after consultation with lead agencies and other stakeholders.

The California Geological Survey (CGS), formerly the California Department of Conservation, Division of Mines and Geology, developed guidelines for the classification and designation of mineral lands. These guidelines contain information on what are known as Mineral Resource Zones (MRZs), which together make up a system of classifying lands based on their economic importance. The MRZ system consists of four categories into which lands may be classified based on the degree of available knowledge about the resource, and the level of economic significance of the resource. These zones are described as follows:

- MRZ-1: Areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.
- MRZ-2: Areas where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood exists for their presence.
- MRZ-3: Areas containing mineral deposits for which the significance cannot be determined from available data.
- MRZ-4: Areas where available information is inadequate for assignment of any other MRZ category.

California Environmental Quality Act

The California Supreme Court has held that CEQA documents should not treat the effects of existing environmental hazards, including geological hazards such as earthquake faults, on future project users or residents as significant environmental effects subject to CEQA. In *California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal.4th 369, 377, the court held that "agencies subject to CEQA generally are *not* required to analyze the impact of existing environmental conditions on a project's future users or residents." (Italics added.) The court reasoned that "ordinary CEQA analysis is concerned with a project's impact on the environment, rather than with the environment's impact on a project and its users or residents." (*Id*. at p. 378.) The court did not hold, however, that CEQA never requires consideration of the effects of existing environmental conditions on the future occupants or users of a proposed project. The circumstances in which such conditions may be considered, though, are narrow: "when a proposed project risks *exacerbating* those environmental hazards or conditions that already exist, an agency must analyze the potential impact of such hazards on future residents or users. In those specific instances, it is the project's impact on the environment—and not the environment's impact on the project—that compels an evaluation of how future residents or users could be affected by exacerbated conditions." (*Id*. at pp. 377-378, italics added.)

LOCAL

Town of Apple Valley 2009 General Plan

The Apple Valley Town Council adopted the 2009 General Plan on August 11, 2009. The General Plan includes goals, policies, and programs intended to guide land use decisions within the Town's planning area. The Geotechnical Element establishes goals, policies, and programs aimed to reduce potential impacts, such as loss of life and property damage, associated with seismic and geologic hazards. The Energy and Mineral Resources Element of the General Plan is intended to guide the Town in the long-term management and use of energy and mineral resources. Applicable goals, policies, and programs related to geology, soils, and mineral resources include the following:

- **Policy 1.B:** In areas identified as being susceptible to slope instability, development shall be avoided unless adequately engineered to eliminate geotechnical hazards.
- **Policy 1.C:** The Town shall require that future development avoid disturbing unique rock outcroppings within the Town boundary and Sphere of Influence.
- **Policy 1.E:** In areas identified as being susceptible to rockfall, landslide, liquefaction and/or other associated hazards as depicted in the General Plan EIR, development shall be required to prepare detailed technical analysis, which shall include mitigation measures intended to reduce potential hazards below levels of significance.
- **Program 1.E.1:** The Town shall contract with a state-certified geologist and/or geological engineer to review and determine the adequacy of geotechnical studies for proposed projects.
- **Policy 1.F:** Development in areas susceptible to collapsible or expansive soils as shown in soils mapping in the General Plan EIR shall be required to conduct soil sampling and laboratory testing and to implement mitigation measures that reduce potential hazards below levels of significance.
- **Program 1.F.1:** The Town Building and Safety Division shall review soils studies conducted for proposed projects, determine their adequacy, and enforce the implementation of mitigation measures.

- **Policy 1.H:** To minimize the potential for localized collapse of soils, new septic tank leach fields, seepage pits, drainage facilities, and heavily irrigated areas shall be located away from structural foundations and supports.

GOAL 5: The Town will promote land use decisions that ensure compatibility between mineral resource extraction and adjacent land uses.

In addition, the Archaeological and Historic Resources Element contains goals, policies, and programs aimed to preserve the Town's cultural heritage, including paleontological resources. The following policy related to cultural resources, which also applies to paleontological resources, is applicable to the project:

- **Policy 1.A:** Early in the planning process, the Town shall implement its obligation to identify, document and assess archaeological, historical and cultural resources that proposed development projects and other activities may affect.
- **Program 1.A.1:** Where proposed development or land uses have the potential to adversely impact sensitive cultural resources, it shall be subject to evaluation by a qualified specialist, comprehensive Phase I studies and appropriate mitigation measures shall, as necessary, be incorporated into project approvals.

Town of Apple Valley Code of Ordinances

Title 8 of the Town Code of Ordinances governs buildings and construction and incorporates the requirements of the CBC. Title 9 of the Town Code of Ordinance includes the Development Code, which is intended to protect and promote the public health, safety, and welfare of the citizens of the Town of Apple Valley. Areas within designated seismic fault zones, as identified in the Alquist-Priolo Special Studies Zone Act, are subject to additional requirements outlined in Chapter 9.64 (Seismic Hazard Overlay District).

3.6.2 Environmental Setting

REGIONAL GEOLOGY

The project site is within the Mojave Desert Geomorphic Province of California. The Mojave Desert is bounded on the southwest by the San Andreas fault and the Transverse Ranges and on the northeast by the Garlock fault. The Mojave Desert is an ancient feature formed in response to the inception of movement on the San Andreas and Garlock faults. Broad alluviated basins burying the previous mountainous topography characterize the region (Terracon Consultants, Inc. 2021).

LOCAL GEOLOGY

The project site is located on a large, southeast-sloping alluvial fan derived from erosion of Quartzite Mountain, located northwest of the site. These alluvial deposits are generally very old, mapped as Pleistocene-age alluvium by Dibblee (1960). The older alluvium is well exposed in the existing south-facing cut slope along the northern site boundary. The older alluvium on the project site consists of silty sands with gravel in a hard, consolidated condition. Pedogenic soil horizons observed include petrocalcic (carbonate) layers. Formation of such horizons require tens of thousands of years of subaerial exposure and are evidence of a late Pleistocene age. Bedding exposed in the cut slope dips gently to the southeast (slightly out of slope) with no evidence of deformation observed. No fine-grained beds were observed (Terracon Consultants, Inc. 2021).

TOPOGRAPHY AND DRAINAGE

The older alluvium in the project site has been locally incised and reworked by a drainage known as Bell Mountain Wash, which flows to the southwest overall and eventually to the Mojave River to the southwest of the site. The wash includes very young alluvium of late Holocene age. The younger alluvium consists of silty sand with gravel. Stoddard Wells Road generally follows the alignment of the wash in the vicinity of the project site (Terracon Consultants, Inc. 2021).

The project site has been previously mass graded. The pre-grading imagery shows the older alluvial fan emanating from the northwest truncated at the surface by southwest-flowing Bell Mountain Wash (Terracon Consultants, Inc. 2021). Grades in the project site vary due to the previous development. Elevations range from 2,925 feet above mean sea level in the north to 2,900 feet above mean sea level in the south (Terracon Consultants, Inc. 2021).

GROUNDWATER

As part of the investigations for the *Geotechnical Engineering Report*, 22 test borings were drilled to depths ranging from approximately 5 to 51.5 feet below the existing ground surface (bgs). Groundwater seepage was not observed up to the maximum depth of 51.5 feet bgs. Groundwater level fluctuations occur due to seasonal variations in the amount of rainfall, runoff, and other factors not evident at the time the borings were performed (Terracon Consultants, Inc. 2021).

According to data collected from the Water Data Library of California Department of Water Resources from a nearby well, historic groundwater levels in the project area are deeper than 100 feet. As part of the geotechnical investigation, Terracon Consultants, Inc. attempted to measure the depth to groundwater in an uncapped well located on the southwest portion of the project site. The depth to water in the well was deeper than the length of the water level meter (200 feet), so no depth to water could be obtained (Terracon Consultants, Inc. 2021).

SOILS

The site is underlain with undocumented fill soils with thicknesses ranging from 1 to 11 feet. The fill is generally classified as silty sand with varying amounts of gravel and considered unsuitable for support of the proposed development in the current condition. The fill overlies alluvium consisting of sand with varying amounts of silt and gravel, and relative density of loose to very dense (Terracon Consultants, Inc. 2021).

Based on mapping by the U.S. Department of Agriculture Natural Resources Conservation Service, the southern portion of the project site is composed of Cajon-Arizo Complex soils and the northern portion of the project site is composed of Nebona-Cuddeback Complex soils (USDA 2021). Other soil types along the offsite water main line alignment include Helendale-Bryman loamy sands, Cajon sand, and Rock Outcrop-Lithic Torriorthents complex.

Table 3.6-1 describes the soil types within the project site and along the offsite water main line alignment.

Table 3.6-1 Summary of Soil Characteristics

Soil Type	Description	Erosion Potential
Cajon-Arizo complex	Located on the southern portion of the site, these soils are somewhat excessively drained with 2 to 15 percent slopes. Parent material consists of alluvium derived from granite sources. Typical soil profile consists of gravelly sand down to a total depth of 60 inches bgs.	Slight or moderate
Nebona-Cuddeback complex	Located on the northern portion of the site, these soils are well drained with 2 to 9 percent slopes. Parent material consists of alluvium derived from mixed sources. Typical soil profile consists of sandy loam in the upper two inches, fine sandy loam to sandy loam down to 8 inches bgs, followed by stratified gravelly sand to loam to a total depth of 65 inches bgs.	Slight or moderate
Cajon sand	Located along the offsite water main line alignment, these soils are commonly found on alluvial fans with 2 to 9 percent slopes. Most areas with this soil type are dissected by long, shallow, intermittent drainageways.	Slight or moderate
Helendale-Bryman loamy sands	Located along the offsite water main line alignment, these soils are typically found on terraces and fan remnants with 2 to 5 percent slopes. Many areas with this soil type are dissected by deep intermittent drainageways	Slight
Rock outcrop-lithic torriorthents complex	Located along the offsite water main line alignment, these soils are typically found on 15 to 50 percent slopes. Rock outcrop typically occurs on mountainsides, ridges, and rugged hills and generally dominates the landscape. Lithic Torriorthents are typically between the areas of rock outcrops, in small depressional areas, and on relatively stable hillsides.	Slight to high

Notes: bgs = below ground surface
Source: Terracon Consultants, Inc. 2021; USDA 2021; USDA 1986: Pages 31 and 55

SUBSIDENCE

Land subsidence is the gradual settling or sinking of an area with very little horizontal motion. Subsidence can be induced by both natural and human phenomena. Natural phenomena include shifting of tectonic plates and dissolution of limestone resulting in sinkholes. Subsidence related to human activity includes pumping water, oil, and gas from underground reservoirs; collapse of underground mines; drainage of wetlands; and soil compaction. Based on the Town General Plan EIR, subsidence has not been reported within the Town limits (Town of Apple Valley 2009b: Page III-91). Therefore, subsidence is not anticipated to be a geologic hazard at the project site.

SETTLEMENT

Strong ground shaking can, under certain circumstances, cause soils to densify and thereby result in local or regional settlement of the ground surface and associated ground failure, which occurs when loose granular, cohesionless soil grains become tightly packed due to the collapse of voids and pore spaces. These risks increase where there are recently deposited alluvial sediments and when artificial fills are not properly compacted, potentially resulting in damage to buildings and water, sewer, and other subsurface pipelines. The Town of Apple Valley is underlain by young, unconsolidated alluvial deposits and artificial fill, which may be susceptible to seismically induced settlement (Town of Apple Valley 2009a: Page IV-22).

Based on the *Geotechnical Engineering Report*, seismically induced settlement (dry sand settlement) at the project site is estimated to be less than one inch. Therefore, seismic settlement is not anticipated to be a substantial geologic hazard at the project site.

EXPANSIVE SOILS

Expansive soils (also known as shrink-swell soils) are soils that contain expansive clay minerals that can absorb significant amounts of water. The presence of these clay minerals makes the soil prone to large changes in volume in response to changes in water content. When an expansive soil becomes wet, water is absorbed and it increases in volume, and as the soil dries it contracts and decreases in volume. This repeated change in volume over time can produce enough force and stress on buildings, underground utilities, and other structures to damage foundations, pipes, and walls.

In the Town of Apple Valley and the vicinity, expansive soils are primarily associated with areas underlain by older fan deposits containing argillic (clay-rich) soil profiles, which are in the moderately expansive range. In addition, the Apple Valley Dry Lake contains very fine-grained silts and clays that are potentially expansive. Alluvial fan sediments, composed primarily of granular soils, underlie the low-lying areas of the Town and the expansion potential ranges from very low to moderately low (Town of Apple Valley 2009b: Page III-91).

Hydro-consolidation (i.e., soil collapse) testing was completed as part of the *Geotechnical Engineering Report* to evaluate the potential for deformation caused by the addition of water to subsurface soils. The collapse potentials for soils in the project site ranged from 0.9 percent to 4.2 percent.

MASS WASTING AND LANDSLIDES

Mass wasting refers to the collective group of processes that characterize down slope movement of rock and unconsolidated sediment overlying bedrock. These processes include landslides, slumps, rockfalls, flows, and creeps. Many factors contribute to the potential for mass wasting, including geologic conditions as well as the drainage, slope, and vegetation of the site. Based on the Town General Plan Geotechnical Element, the project site is not within hillside and mountainous areas where numerous rockfalls and landslides are expected to occur during an earthquake. In addition, the project site is not within an area where local topographic and geological conditions suggest the potential for earthquake-induced landslides (Town of Apple Valley 2009a: Exhibit IV-2).

SEISMICITY

Most earthquakes originate along fault lines. A fault is a fracture in the Earth's crust along which rocks on one side are displaced relative to those on the other side due to shear and compressive crustal stresses. Most faults are the result of repeated displacement that may have taken place suddenly and/or by slow creep (Bryant and Hart 2007). The state of California has a classification system that designates faults as either active, potentially active, or inactive, depending on how recently displacement has occurred along them. Faults that show evidence of movement within the last 11,000 years (the Holocene geologic period) are considered active, and faults that have moved between 11,000 and 1.6 million years ago (comprising the later Pleistocene geologic period) are considered potentially active.

Based on the CGS California Earthquake Hazards Zone Application, the project site is not within an earthquake fault zone. The nearest Alquist-Priolo earthquake fault zone is associated with the Helendale fault, approximately 6.1 miles northeast of the project site (CGS 2019).

The San Andreas fault, which has potential to produce the most substantial seismic effect at the project site, has a maximum magnitude of 8.00 and is located approximately 24.8 miles southwest of the project site (Terracon Consultants, Inc. 2021). Other faults with potential to cause seismic activity at the project site include the North Frontal fault, Lenwood – Lockhart – Old Woman Spring faults, Cleghorn fault, Cucamonga fault, Landers (or Kickapoo) fault, Sierra Madre fault, and Gravel Hills – Harper Lake fault (Town of Apple Valley 2009a: Pages IV-16 through IV-21).

Seismic hazards resulting from earthquakes include surface fault rupture, ground shaking, and liquefaction. Each of these potential hazards is discussed below.

Surface Fault Rupture

Surface rupture is the surface expression of movement along a fault. Structures built over an active fault can be torn apart if the ground ruptures. The potential for surface rupture is based on the concepts of recency and recurrence. Surface rupture along faults is generally limited to a linear zone a few meters wide. The Alquist-Priolo Act (see the Regulatory Setting discussion above) was created to prohibit the location of structures designed for human occupancy across, or within 50 feet of, an active fault, thereby reducing the loss of life and property from an earthquake. The project site is not within an Alquist-Priolo earthquake fault zone (CGS 2019), and there is no evidence of active faulting within or near the project site.

Ground Shaking

The intensity of seismic shaking, or strong ground motion, during an earthquake is dependent on the distance and direction from the epicenter of the earthquake, the magnitude of the earthquake, and the geologic conditions of the surrounding area. Ground shaking could potentially result in the damage or collapse of buildings and other structures. However, ground motions attenuate with distance from the causative fault. Due to the proximity of nearby faults, the project site could experience strong seismic ground shaking.

Liquefaction and Lateral Spreading

Liquefaction is a phenomenon in which loose, saturated, granular soil deposits lose a significant portion of their shear strength because of excess pore water pressure buildup. An earthquake typically causes the increase in pore water pressure and subsequent liquefaction. These soils behave like a liquid during seismic shaking and re-solidify when shaking stops. The potential for liquefaction is highest in areas with high groundwater and loose, fine, sandy soils at depths of less than 50 feet.

Based on the Town General Plan Geotechnical Element, the project site is not within an area where local geological and groundwater conditions suggest a potential for liquefaction (Town of Apple Valley 2009a: Figure IV-2). Therefore, there is low potential for liquefaction at the project site.

Liquefaction may also lead to lateral spreading. Lateral spreading (also known as expansion) is the horizontal movement or spreading of soil toward an "open face," such as a streambank, the open side of fill embankments, or the sides of levees. It often occurs in response to liquefaction of soils in an adjacent area. The potential for failure

from lateral spreading is highest in areas where there is a high groundwater table, where there are relatively soft and recent alluvial deposits, and where creek banks are relatively high.

The Mojave River is approximately 3.8 miles south of the project site. Because there is low potential for liquefaction and seismic settlement at the project site and because the project site is relatively distant from the Mojave River, lateral spreading cause by liquefaction is not expected to be a concern at the project site.

PALEONTOLOGICAL RESOURCES

The potential for geological formations to produce fossils is evaluated based on what fossil resources have been produced in the past at other nearby locations of similar geologic composition. There are substantial exposures of Mesozoic-age (65,000,000 to 245,000,000 years ago) rocks in more elevated portions of the Town that may contain no fossils. Shallow grading of younger Quaternary alluvium that occurs throughout most of the area is not likely to reveal significant fossil remains. Potential for the presence of significant non-renewable paleontological resources exists where surface or subsurface Pleistocene-age (1,808,000 to 11,550 years ago) soils occur in the Town. High priority is also given to older sediments along the Mojave River and at unknown depth below the surface (Town of Apple Valley 2009b: Page III-76).

Based on research of surface deposits, the soils in the Town, which are relatively young, have a low potential for containing significant fossil remains. Surface deposits may in some areas constitute only a "veneer cover" that directly overlays older sediments; however, research indicates that no fossils have been reported in the Town. Reports have, however, identified localities with fossil resources of an age that is similar soil deposits to those that occur in the Town planning area. Overall, research indicates that there is a range of likelihood from low to high of encountering paleontological resources throughout the Town, depending on the location and sediments encountered (Town of Apple Valley 2009b: Page III-76).

According to the Town General Plan EIR, the project site is within an area of low sensitivity for paleontological resources (Town of Apple Valley 2009b: Exhibit III-5).

MINERAL RESOURCES

The State of California Department of Conservation, Division of Mines and Geology, as required by the Surface Mining and Reclamation Act of 1975, has identified significant aggregate deposits within the Town planning area. The State has established a classification system for mineral resources, based on the presence or absence of significant concrete-grade aggregate deposits. These land classifications are presented in the form of MRZs.

According to the Town General Plan Energy and Mineral Resources Element, the project site is in an area designated MRZ-3a, which are areas containing known mineral deposits of undetermined significance. Further exploration work within these areas could result in the reclassification of specific localities into MRZ-2a or MRZ-2b categories, which are areas underlain by mineral deposits where significant measured or inferred resources are present (Town of Apple Valley 2009b: Exhibit III-16).

According to the Town General Plan Energy and Mineral Resources Element, important mineral resources that occur in the Town of Apple Valley area are aggregate and limestone, both of which are used in the manufacturing of cement. Current sources of aggregates and limestone are, for the most part, found adjacent to the Mojave River floodplain or within the mountain ranges in the region. There are several quarries with active mining operations in the Town planning area. The nearest active mining operation occurs at the Scheerer Quarry, located 0.9 mile south of the project site, which contains significant deposits of concrete aggregate. The Town has designated 452.5 acres as mineral resources land use, including the area south of Los Padres Road and encompassing the Scheerer Quarry (Town of Apple Valley 2009b).

3.6.3 Environmental Impacts and Mitigation Measures

METHODOLOGY

The examination of geology, soils, and mineral resources is based on information obtained from reviews of:

- the project description;
- available literature, including documents published by federal, State, County, and Town agencies, and published information dealing with geotechnical conditions in the Apple Valley area;
- applicable elements of the Town of Apple Valley General Plan (Town of Apple Valley 2009a), including the Geotechnical Element and Energy and Mineral Resources Element, and Town of Apple Valley General Plan EIR (Town of Apple Valley 2009b); and
- *Geotechnical Engineering Report* prepared by Terracon Consultants, Inc. (2021) and the *Phase I Environmental Site Assessment* (ESA) prepared by Terracon Consultants, Inc. (2020) (provided in Appendices D and E, respectively).

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, an impact related to geology and soils is considered significant if implementation of the project would do any of the following:

- directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving the rupture of a known earthquake fault (as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault), strong seismic shaking, seismic-related ground failure, liquefaction, or landslides;
- result in substantial soil erosion or the loss of topsoil;
- be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on-site or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse;
- be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property;
- have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water; and/or
- directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

An impact related to mineral resources is considered significant if implementation of the project would do any of the following:

- result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state; and/or
- result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

ISSUES NOT DISCUSSED FURTHER

Seismic Hazards

Implementation of the project would conform to the current CBC, in accordance with the Town Code of Ordinances and General Plan policies. The CBC contains specifications to minimize adverse effects on structures caused by ground shaking from earthquakes and to minimize secondary seismic hazards (e.g., settlement and liquefaction). The project design for the travel center would incorporate the geotechnical recommendations concerning earthwork,

pavements, foundations, and floor slabs for the proposed structures, as provided in the *Geotechnical Engineering Report* (Terracon Consultants, Inc. 2021). Geotechnical conditions are expected to be similar for the RV park; however, site-specific engineering studies would be completed prior to the development of the RV park, as needed. The offsite water main line would be constructed in accordance with Liberty Utilities adopted engineering standards and specifications. Thus, through conformance with the CBC and Liberty Utilities engineering standards and specifications, and implementation of site-specific engineering measures developed in compliance with these standards, the project would not result in exposure of people or structures to substantial adverse effects related to seismic hazards, nor would the project have the potential to exacerbate these hazards. The potential for seismic hazards at the project site is limited; therefore, seismic hazards are not discussed further. In addition, no aspect of the project would exacerbate any seismic hazards that might exist on the project site.

Unstable Geologic Units or Soils and Expansive Soils

As discussed in Section 3.6.2, landslides and subsidence are not anticipated to be geologic hazards in the project site or along the water main line alignment. In addition, implementation of the project would conform to the current CBC, which contains specifications to minimize adverse effects on structures caused by unstable or expansive soils. Therefore, unstable geologic units or soils and expansive soils, including those susceptible to landslide, subsidence, collapse, and compaction are not discussed further. The project would not exacerbate risks or instabilities that exist in the soil in the affected area.

Alternative Wastewater Systems

Water and sewer service would be provided to the project site through connections to existing Town main lines within and adjacent to the project site. No septic systems or alternative wastewater disposal systems are proposed or present onsite. Therefore, this issue will not be discussed further.

Paleontological Resources

As discussed in Section 3.6.2, the project site, including the offsite water main line alignment, is within an area of low sensitivity for paleontological resources (Town of Apple Valley 2009b: Exhibit III-5). Excavation would occur to an approximate depth of 7 feet bgs for mass grading, 10 feet bgs for installing onsite utilities, and 6 feet bgs for trenching needed to install the offsite water main line. Excavation would be limited to previously disturbed areas consisting of artificial fill and Holocene age Quaternary alluvium. Therefore, the project would have no impact on known paleontological resources. This issue is not analyzed further.

Mineral Resources

As discussed in Section 3.6.2, the project site, including the offsite water main line alignment, does not contain known valuable mineral resources or locally important mineral resource recovery sites. Furthermore, the land use and zoning designation for the project site is Regional Commercial (C-R), and as such, the project site does not contain active mines or mineral extraction operations. Thus, the project would not interfere with mineral extraction use and this issue is not discussed further.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 3.6-1: Soil Erosion and Loss of Topsoil

Project construction would involve clearing, hauling, and grading in areas where new structures would be built, and trenching and excavation for placement of the offsite water main line, utility connections, and underground storage tanks. These activities would temporarily expose soils to the effects of wind and water erosion. All demolition and construction activities would be required to comply with the CBC, which regulates grading and excavation. In addition, construction activities would be subject to the provisions of the General Construction Storm Water Permit, which includes the requirements for developing a SWPPP with erosion control measures. The potential for erosion of topsoil would be **less than significant**.

The project site has been the subject of previous entitlement actions by San Bernardino County prior to the incorporation of the Town of Apple Valley in 1988. The project site was previously mass graded, resulting in a mega-pad that slopes at a two percent grade from north to south. Substantial erosion along with off-road vehicular traffic have occurred, and end dumped piles of debris are present on the project site. Additionally, the alignment for the offsite water main line is paved with existing roadways, and the shoulders have been previously disturbed.

Once operational, areas of previously exposed soil would be covered with hardscaped surfaces (i.e., pavement sidewalks, and buildings) and landscaped areas, which would substantially reduce the potential for soil erosion and loss of topsoil. Stormwater control/drainage and water quality features would be implemented to prevent water quality impacts related to erosion, including temporary earthen diversion channels, detention/retention and water quality basins, and standard BMPs. Existing conditions along Stoddard Wells Road and Johnson Road would be restored following construction of the offsite water main line.

Project construction would involve clearing, hauling, and grading in areas where new structures would be built, and trenching and excavation for placement of utility connections and underground storage tanks. Trenching would also be required for construction of the offsite water main line. These activities would temporarily expose soils to the effects of wind and water erosion. During dry months, wind can move dry soil particles into the air, creating fugitive dust emissions. Water as surface runoff may erode topsoil during precipitation events. As shown in Table 3.6-1, the project site, including the offsite water main line alignment, is characterized by soils with slight to high erosion potential.

Risk of erosion associated with construction activity has long been acknowledged by regulators. Consequently, robust programs aimed at reducing these effects are encoded in policies, laws, and regulations at various levels of government. All demolition and construction activities would be required to comply with the CBC, which regulates grading and excavation.

Because construction activities would disturb more than one acre of soil, project construction, including construction of the offsite water main line, would be subject to the Statewide Construction General NPDES Permit from the Lahontan RWQCB. Before any ground-disturbing activities begin, the contractor would be required to apply for and maintain coverage under the General Construction Storm Water Permit. The contractor would be required to prepare and implement a SWPPP, including an erosion control plan that outlines erosion control measures and construction waste containment measures to ensure that waters of the United States and waters of the State are protected during and after project construction. The SWPPP would include site design measures to minimize offsite stormwater runoff that might otherwise affect surrounding habitats. The Lahontan RWQCB would review and monitor the effectiveness of the SWPPP through mandatory reporting by the Town and the contractor as required.

The SWPPP would be prepared with the following objectives: (a) identify all pollutant sources, including sources of sediment, that may affect the quality of stormwater discharges from the construction of the project; (b) identify BMPs that effectively reduce or eliminate pollutants in stormwater discharges and authorized non-stormwater discharges from the site during construction to the Best Available Technology/Best Control Technology standard; (c) provide calculations and design details as well as BMP controls for site run-on that are complete and correct; (d) identify project discharge points and receiving waters; and (e) provide stabilization BMPs to reduce or eliminate pollutants following construction.

The contractor would be required to implement the SWPPP, including all BMPs, and perform inspections of all BMPs during construction. Potential SWPPP BMPs could include, but would not be limited to the following:

- preserve existing vegetation where possible;
- surface roughening of final grades to prevent erosion, decrease run-off, increase infiltration, and aid in vegetation establishment;
- riparian buffers or filter strips along the perimeter of the disturbed area to intercept pollutants prior to offsite discharge;

- placing fiber rolls around on-site drain inlets to prevent sediment and construction-related debris from entering inlets;
- placing fiber rolls along down-gradient disturbed areas of the site to reduce runoff flow velocities and prevent sediment from leaving the site;
- placing silt fences down-gradient of disturbed areas to slow down runoff and retain sediment;
- stabilizing the construction entrance to reduce the tracking of mud and dirt onto public roads by construction vehicles;
- staging excavated and stored construction materials and soil stockpiles in stable areas and covering materials to prevent erosion; and
- stabilizing temporary construction entrances to limit transport/introduction of invasive species and control fugitive dust emissions.

With implementation of erosion control measures in the SWPPP, as required under the General Construction Storm Water Permit, and compliance with CBC requirements for grading and excavation, the potential for topsoil loss and soil erosion would be substantially minimized. Therefore, the project would have a **less-than-significant** impact on erosion and loss of topsoil.

3.7 GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

This section presents a summary of regulations applicable to greenhouse gas (GHG) emissions, a summary of climate change science and GHG sources in California, and quantification of project-generated GHGs and discussion about their contribution to global climate change. Detailed calculations, modeling inputs, and results can be found in Appendix B of this EIR.

3.7.1 Regulatory Setting

FEDERAL

Regulations for Greenhouse Gas Emissions from Passenger Cars and Trucks and Corporate Average Fuel Economy Standards

The Energy Policy and Conservation Act of 1975 (EPCA) mandated that the National Highway Traffic Safety Administration (NHTSA) establish and implement a regulatory program for motor vehicle fuel economy, known as the Corporate Average Fuel Economy (CAFE) program, to reduce national energy consumption. NHTSA and EPA developed two phases of standards. The first phase included final standards for model years 2017–2021, while the second phase covers model years 2022–2025. In 2018, NHTSA proposed revising the MY 2021 light-duty fuel economy standards and issuing new fuel economy standards for model years 2022 – 2026 as part of Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule. On January 20, 2021, President Biden issued Executive Order (EO) 13990, *Protecting Public Health and the Environment and Restoring Science To Tackle the Climate Crisis*, which directed NHTSA to consider publishing for notice and comment a proposed rule suspending, revising, or rescinding the SAFE Vehicles Final Rule by July 2021. NHTSA and EPA released the final rule in 2021 and released the Final Environmental Impact Statement (EIS) in March 2022 for model years 2024 – 2026, which will reduce fuel use by more than 200 billion gallons through 2050, as compared to continuing under the old standards (NHTSA 2022).

Affordable Clean Energy Rule

In June 2019, EPA, under authority of the Clean Air Act Section 111(d), issued the Affordable Clean Energy rule which provides guidance to states on establishing emissions performance standards for coal-fired electric generating units (EGUs). Under this rule, states are required to submit plans to EPA that demonstrate the use of specifically listed retrofit technologies and operating practices to achieve CO_2 emission reductions through heat rate improvement (HRI). HRI is a measurement of power plant efficiency that EPA determined as part of this rulemaking to be the best system of emission reductions for CO_2 generated from coal-fired EGUs (EPA 2018).

Energy Independence and Security Act of 2007

The Energy Independence and Security Act of 2007 is designed to improve vehicle fuel economy and help reduce U.S. dependence on oil. It represents a major step forward in expanding the production of renewable fuels, reducing dependence on oil, and confronting global climate change. The Energy Independence and Security Act of 2007 increases the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard requiring fuel producers to use at least 36 billion gallons of biofuel in 2022, which represents a nearly fivefold increase over current levels, and reduces U.S. demand for oil by setting a national fuel economy standard of 35 miles per gallon by 2020; an increase in fuel economy standards of 40 percent.

STATE

Plans, policies, regulations, and laws established by the state agencies are generally presented in the order they were established.

Statewide GHG Emission Targets and the Climate Change Scoping Plan

Reducing GHG emissions in California has been the focus of the state government for approximately two decades. GHG emission targets established by the state legislature include reducing statewide GHG emissions to 1990 levels by 2020 (Assembly Bill [AB] 32 of 2006) and reducing them to 40 percent below 1990 levels by 2030 (Senate Bill [SB] 32 of 2016). Executive Order S-3-05 calls for statewide GHG emissions to be reduced to 80 percent below 1990 levels by 2050. Executive Order B-55-18 calls for California to achieve carbon neutrality by 2045 and achieve and maintain net negative GHG emissions thereafter. These targets are in line with the scientifically established levels needed in the United States to limit the rise in global temperature to no more than 2 degrees Celsius, the warming threshold at which major climate disruptions, such as super droughts and rising sea levels, are projected; these targets also pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius (United Nations 2015:3).

California's 2017 Climate Change Scoping Plan (2017 Scoping Plan), prepared by the California Air Resources Board (CARB), outlines the main strategies California will implement to achieve the legislated GHG emission target for 2030 and "substantially advance toward our 2050 climate goals" (CARB 2017:1, 3, 5, 20, 25–26). It identifies the reductions needed by each GHG emission sector (e.g., transportation, industry, electricity generation, agriculture, commercial and residential, pollutants with high global warming potential, and recycling and waste).

On September 16, 2022, the state legislature passed AB 1279 which codified stringent emissions targets for the state of achieving carbon neutrality and an 85 percent reduction in 1990 emissions level by 2045. CARB released the *Final 2022 Scoping Plan for Achieving Carbon Neutrality* (2022 Scoping Plan) on November 16, 2022 as also directed by AB 1279. The 2022 Scoping Plan traces the pathway for the state to achieve its carbon neutrality and an 85 percent reduction in 1990 emissions goal by 2045 using a combined top down, bottom up approach using various scenarios. In addition, Appendix D of the 2022 Scoping Plan includes recommended actions for local governments actions to implement through the CEQA and climate action planning process to ensure local actions align with the State's climate goals (CARB 2022).

The 2022 Scoping Plan focuses on outcomes needed to achieve carbon neutrality by assessing paths for clean technology, energy deployment, natural and working lands, and others, and is designed to meet the State's long-term climate objectives and support a range of economic, environmental, energy security, environmental justice, and public health priorities (CARB 2022). CARB adopted the 2022 Scoping Plan on December 16, 2022.

The state has also passed more detailed legislation addressing GHG emissions associated with industrial sources, transportation, electricity generation, and energy consumption, as summarized below.

Transportation-Related Standards and Regulations

As part of its Advanced Clean Cars (ACC) program, CARB established more stringent GHG emission standards and fuel efficiency standards for fossil fuel–powered on-road vehicles than EPA. In addition, the program's zero-emission vehicle (ZEV) regulation requires battery, fuel cell, and plug-in hybrid electric vehicles to account for up to 15 percent of California's new vehicle sales by 2025 (CARB 2018a). In August 2022, CARB adopted the ACC II program, which sets sales requirements for ZEVs to ultimately reach the goal of 100 percent ZEV sales in the state by 2035).

Executive Order B-48-18, issued by Governor Jerry Brown in January 2018, requires all State entities to work with the private sector to have at least 5 million ZEVs on the road by 2030, as well as 200 hydrogen fueling stations and 250,000 electric vehicle–charging stations installed by 2025. It specifies that 10,000 of these charging stations must be direct-current fast chargers.

CARB adopted the Low Carbon Fuel Standard (LCFS) in 2007 to reduce the carbon intensity of California's transportation fuels. The LCFS applies to fuels used by on-road motor vehicles and off-road vehicles, including construction equipment.

In addition to regulations that address tailpipe emissions and transportation fuels, the State legislature has passed regulations to address the amount of driving by on-road vehicles. Since passage of SB 375 in 2008, CARB requires metropolitan planning organizations (MPOs) to develop and adopt sustainable communities strategies (SCSs) in addition to the federally-prepared regional transportation plans (RTPs) that show reductions in GHG emissions from passenger cars and light-duty trucks in their respective regions for 2020 and 2035 (CARB 2018b:1). These plans link

land use and housing allocation to transportation planning and related mobile-source emissions. The Southern California Association of Governments serves as the MPO for San Bernardino County where the project site is located. In 2020, the SCAG adopted *Connect SoCal*, the area's Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). SCAG was tasked by CARB to achieve an 8 percent per capita reduction compared to 2005 level emissions by 2020 and a 19 percent per capita reduction by 2035, which CARB confirmed the region would achieve by implementing its SCS (CARB 2020).

SB 743 of 2013 required that the Governor's Office of Planning and Research (OPR) propose changes to the State CEQA Guidelines to address transportation impacts in transit priority areas and, at OPR's discretion, other areas of the State. In response, Section 15064.3 was added to CEQA in December 2018, requiring that transportation impacts no longer consider congestion but instead focus on the impacts of vehicle miles traveled (VMT). Agencies had until July 1, 2020 to implement these changes. In support of these changes, OPR published its *Technical Advisory on Evaluating Transportation Impacts in CEQA,* which recommends that the transportation impact of a project be based on whether the project would generate a level of VMT per capita (or VMT per employee or some other metric) that is 15 percent lower than that of existing development in the region (OPR 2017:12–13), or that a different threshold is used based on substantial evidence. OPR's technical advisory explains that this criterion is consistent with Public Resources Code Section 21099, which states that the criteria for determining significance must "promote the reduction of greenhouse gas emissions" (OPR 2017:18). This metric is intended to replace the use of delay and level of service to measure transportation-related impacts. More detail about SB 743 is provided in the "Regulatory Setting" section of Section 3.14, *Transportation/Traffic*.

California Air Resources Board Truck and Bus Regulation

As part of CARB' s Sustainable Freight Strategy, CARB adopted the Truck and Bus Regulation. The latest amendments to the Truck and Bus Regulation became effective on December 31, 2014. The amended regulation requires diesel trucks and buses that operate in California to be upgraded to reduce emissions. Newer heavier trucks and buses had to meet particulate matter (PM) filter requirements as of January 1, 2012. Lighter and older heavier trucks had to be replaced starting January 1, 2015. By January 1, 2023, nearly all trucks and buses will need to have 2010 model year engines or equivalent.

This regulation applies to nearly all privately and federally owned diesel-fueled trucks and buses and to privately and publicly owned school buses with a gross vehicle weight rating greater than 14,000 pounds. The regulation provides a variety of flexibility options tailored to fleets operating low use vehicles, fleets operating in selected vocations like agricultural and construction, and small fleets of three or fewer trucks. [1]

California Air Resources Board Advanced Clean Trucks Rule

To further advance the State' s Sustainable Freight Strategy, CARB adopted the Advanced Clean Trucks (ACT) Rule in July 2020, which requires manufacturers of vehicle class 2b through vehicle class 8 trucks to begin meeting escalating in-State ZEV sales from 2024 through 2035. By 2035, the ACT Rule will require 55 percent of trucks class 2b through class 3 to be ZEVs, 75 percent of trucks class 4 through class 8 to be ZEVs, and 40 percent of truck tractors to be ZEVs.[2] Complementary to the ACT Rule, and as discussed further below, Executive Order N-79-20 set a goal of 100 percent of all in-State drayage truck sales to be ZEVs by 2035 and 100 percent of all in-State heavy- duty vehicle sales to be ZEVs by 2045. CARB is also in process of developing an Advanced Clean Fleet (ACF) Rule to accelerate the ACT Rule by requiring 100 percent of all in-State sales to be ZEVs in 2040 for class 2b through class 3 trucks, class 4 through class 8 vocational trucks, and class 7 through class 8 tractor trucks. The ACF Rule would also provide a clear timeline for requirements for phasing in in-State ZEV sales targets through 2040.[3]

[1] California Air Resources Board (ARB). 2015. On-Road Heavy-Duty Diesel Vehicles (In-Use) Regulation. Website: http:// www.arb.ca.gov/msprog/onrdiesel/ onrdiesel.htm. Accessed September 22, 2017.

[2] California Air Resources Board (ARB). 2021. Advanced Clean Trucks Fact Sheet. Website: https:// ww2.arb.ca.gov/ resources/ factsheets/advanced-clean-trucks-fact-sheet. Accessed April 8, 2022.

[3] California Air Resources Board (ARB). 2022. Path to Zero Emission Trucks FAQ. Website:https:// ww2.arb.ca.gov/ resources/ documents/ path-zero-emission-trucks-faq. Accessed April 8, 2022.

Legislation Associated with Electricity Generation

The state has passed legislation requiring the increasing use of renewables to produce electricity for consumers. California utilities are required to generate 33 percent of their electricity from renewables by 2020 (SB X1-2 of 2011); 52 percent by 2027 (SB 100 of 2018); 60 percent by 2030 (also SB 100 of 2018); and 100 percent by 2045 (also SB 100 of 2018).

Building Energy Efficiency Standards (Title 24, Part 6)

The energy consumption of new residential and nonresidential buildings in California is regulated by the California Code of Regulations Title 24, Part 6, Building Energy Efficiency Standards (California Energy Code or CALGreen). The California Energy Commission (CEC) updates the California Energy Code every three years with more stringent design requirements for reduced energy consumption, which results in the generation of fewer GHG emissions. The current California Energy Code will require builders to use more energy-efficient building technologies for compliance with increased restrictions on allowable energy use. The core focus of the building standards has been efficiency, but the 2019 Energy Code ventured into onsite generation by requiring solar photovoltaic (PV) on new homes, providing significant GHG savings. The most recent is the 2022 California Energy Code advances the onsite energy generation progress started in the 2019 California Energy Code, by encouraging electric heat pump technology and use, establishing electric-ready requirements when natural gas is installed, expanding solar PV system and battery storage standards, and strengthening ventilation standards to improve indoor air quality. The CEC estimates that the 2022 California Energy Code will save consumers $1.5 billion and reduce GHGs by 10 $MMTCO_2e$ over the next 30 years (CEC 2021). Title 24 includes both mandatory and voluntary measures. The voluntary measures are designed to serve as recommendations for local governments to use in considering above-code ordinances (also known as "reach" codes), and they also provide measures a builder can use to voluntarily exceed CALGreen requirements. The voluntary measures are grouped into two "voluntary" tiers: Tier 1 adds additional requirements for various categories (e.g., EV charging, water savings, construction waste reduction) beyond the mandatory measures, while Tier 2 further increases these requirements.

LOCAL

Mojave Desert Air Quality Management District

MDAQMD manages the air quality for the San Bernardino County's High Desert and Riverside County and regulates the stationary sources of air pollution located in those jurisdictional boundaries. The MDAQMD has developed recommended GHG thresholds in its CEQA Guidelines, but has not adopted a comprehensive strategy for reducing GHG emissions. The MDAQMD-recommended threshold for any given project is 100,000 tons of CO_2e per year or 90,718 $MTCO_2e$ (MDAQMD 2020).

Town of Apple Valley Climate Action Plan Update

The Town of Apple Valley has prepared a 2010 CAP and GHG inventory updates in 2013, 2016, and 2019 to evaluate progress towards reduction targets. The CAP was prepared using the year 2005 as the baseline for GHG emissions reduction targets, including 15 percent below 2005 levels by 2020 and 40 percent below 2005 levels by 2030. The 2050 target of 80 percent below baseline is acknowledged; however, the CAP Update focuses on the near term 2030 target.

In 2021, a Climate Action Plan Update was prepared for the Town of Apply Valley to set GHG reduction targets based on AB 32 and SB 32. Apple Valley set the GHG emission reduction target of 15 percent below 2005 levels by 2020 and 40 percent below 2005 levels by 2030. The Apple Valley CAP Update provides an updated inventory for 2019 with a 2030 forecast and updated to the proposed reduction measures developed to achieve state targets. The CAP Update also considers the Town's participation in the Apple Valley Choice Energy started in 2017, which allows Apple Valley energy residents to receive their energy from higher renewable energy sources than those provided by the inventor-owned utility, Southern California Edison (SCE).

The Town's CAP includes reduction measures divided into three broad categories:

1. Town Municipal Operational Measures: Those which the Town as a government entity can implement.

2. Community Operational Measures: Those which existing or new homes, businesses, and institutions can implement.
3. New Development Measures: Those which new development proposals for homes, businesses, and institutions can implement.

In total, there are 88 measures (43 Municipal Operational Measures, 18 Community Operational Measures, and 27 New Development Measures) that cover transportation, energy efficiency, renewable energy, solid waste management, and general activities. These measures are described in the impact analysis below.

City of Apple Valley General Plan

The City's General Plan was adopted in 2009 and contains the following policies related to GHGs that are applicable to the project.

Air Quality Element

- **Policy 1.E:** The use of clean and/or renewable alternative energy sources for transportation, heating and cooling, and construction shall be encouraged by the Town.
- **Policy 1.F**: The Town shall support, encourage, and facilitate the development of projects that enhance the use of alternative modes of transportation, including pedestrian-oriented retail and activity centers, dedicated bicycle paths and lanes, and community-wide multi-use trails.
- **Policy 1.G**: Future residential, commercial, and industrial development and remodeling projects, shall strive to exceed Title 24 standards by 15% and/or achieve LEED certification or similar performance standards for buildings.
- **Policy 1.H**: Residential, commercial, and industrial projects that reduce vehicle miles traveled (VMTs) by providing alternative transportation options, home office and live/work spaces, and/or promote employees living close to work are preferred.
- **Policy 1.I**: The Town shall continue to reduce waste generation, enhance recycling or reuse programs, and expand grey water systems for landscape irrigation
- **Policy 1.J**: The Town shall promote the use of solar and alternative energies and give priority to projects that include the use of solar cells and other alternative energy sources in their designs.
- **Policy 1.K**: The Town shall participate in regional greenhouse gas reduction planning efforts

Energy and Mineral Resources Element

- **Policy 1.A**: The community and all economic sectors shall be urged to conserve energy, with particular focus on the inclusion of energy saving measures in transport systems, and in the planning and construction of urban uses.
- **Policy 1.B**: Promote building design and construction that integrates alternative energy systems, including but not limited to solar, thermal, photovoltaics and other clean energy systems.
- **Policy 1.D**: The Town will encourage and facilitate the exploitation of local renewable resources by supporting public and private initiatives to develop and operate alternative systems of electricity generation, using wind, solar and other renewable energies.

3.7.2 Environmental Setting

THE PHYSICAL SCIENTIFIC BASIS OF GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

Certain gases in the earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the atmosphere from space. A portion of the radiation is absorbed by the earth's surface, and a smaller portion of this radiation is reflected toward space. The absorbed radiation is then emitted from the earth as low-frequency infrared radiation. The frequencies at which bodies emit radiation are proportional to temperature. The earth has a much lower temperature than the sun; therefore, the earth emits lower frequency radiation. Most solar radiation passes through GHGs; however, infrared radiation is absorbed by these gases. As a result, radiation that otherwise would have escaped back into space is instead "trapped," resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on earth.

Prominent GHGs contributing to the greenhouse effect are CO_2, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Human-caused emissions of these GHGs in excess of natural ambient concentrations are found to be responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth's climate, known as global climate change or global warming. It is "extremely likely" that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in GHG concentrations and other anthropogenic forcing (IPCC 2014:5).

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern. Whereas most pollutants with localized air quality effects have relatively short atmospheric lifetimes (approximately 1 day), GHGs have long atmospheric lifetimes (1 year to several thousand years). GHGs persist in the atmosphere long enough to be dispersed around the globe. Although the lifetime of any GHG molecule depends on multiple variables and cannot be determined with any certainty, it is understood that more CO_2 is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, and other forms of sequestration. Of the total annual human-caused CO_2 emissions, approximately 55 percent are estimated to be sequestered through ocean and land uptake every year, averaged over the last 50 years, whereas the remaining 45 percent of human-caused CO_2 emissions remain stored in the atmosphere (IPCC 2013:467).

The quantity of GHGs in the atmosphere responsible for climate change is not precisely known, but it is enormous. No single project alone would measurably contribute to an incremental change in the global average temperature or to global or local climates or microclimates. From the standpoint of CEQA, GHG impacts relative to global climate change are inherently cumulative.

GREENHOUSE GAS EMISSION SOURCES

As discussed previously, GHG emissions are attributable in large part to human activities. The total GHG inventory for California in 2019 was 418.2 million metric tons of carbon dioxide equivalent ($MMTCO_2e$) (CARB 2021). This is less than the 2020 target of 431 $MMTCO_2e$ (CARB 2018c:1). Table 3.7-1 summarizes the statewide GHG inventory for California.

Table 3.7-1 Statewide GHG Emissions by Economic Sector

Sector	Percent
Transportation	41
Industrial	24
Electricity generation (in state)	9
Electricity generation (imports)	5
Agriculture	7

Sector	Percent
Residential	8
Commercial	6
Not specified	<1

Source: CARB 2021

As shown in Table 3.7-1, transportation, industry, and electricity generation are the largest GHG emission sectors.

Emissions of CO_2 are byproducts of fossil fuel combustion. Methane, a highly potent GHG, primarily results from off-gassing (the release of chemicals from nonmetallic substances under ambient or greater pressure conditions) and is largely associated with agricultural practices and landfills. Nitrous oxide is also largely attributable to agricultural practices and soil management. CO_2 sinks, or reservoirs, include vegetation and the ocean, which absorb CO_2 through sequestration and dissolution (CO_2 dissolving into the water), respectively, two of the most common processes for removing CO_2 from the atmosphere.

A GHG inventory and 2030 forecast for the Town of Apple Valley was released in May 2021 and is summarized in Table 3.7-2.

Table 3.7-2 Town of Apple Valley County Greenhouse Gas Emissions Inventory for 2005 and 2019 and 2030 Building-as-Usual Forecast ($MTCO_2e$)

Emissions Sector	2005	2019	2030
Community			
Residential	141,417	118,327	116,146
Commercial	38,039	31,071	27,828
Industrial	14,460	10,371	4,719
On-road transportation	510,676	405,797	355,631
Off-road transportation	388	11,479	13,088
Solid waste	43,932	17,229	12,791
Total Community	748,912	594,274	530,203
Municipal			
Buildings and Facilities	1,100	1,332	1228
Employee Commute	347	195	145
Vehicle Fleet	620	971	852
Solid Waste	71	909	675
Total	2,138	3,407	2,900

Notes: Totals may not equal the sum of the numbers because of independent rounding.

$MTCO_2e$ = metric tons of carbon dioxide equivalent.

Source: Town of Apple Valley 2021

3.7.3 Environmental Impacts and Mitigation Measures

METHODOLOGY

GHG emissions associated with the project would be generated during project construction and during operation after the project is built. Estimated levels of construction- and operation-related GHGs are presented below. The project is evaluated for its consistency with adopted regulations, plans, and policies aimed at reducing GHG emissions, including the Scoping Plan, SCAG's adopted RTP/SCS, and the Town of Apple Valley General Plan and CAP.

Construction-Related Greenhouse Gas Emissions

Emissions of GHG emissions from the construction and operation of the project site were calculated using the California Emissions Estimator Model (CalEEMod) Version 2020.4.0 computer program, as recommended by MDAQMD. Construction is anticipated to start in 2022 and last 9 months, starting in October 2022. Project construction was modeled in CalEEMod using a combination of model defaults and project-specific information. The proposed water main extension is assumed to be 19,460 feet (ft) long and require a trenching width of three feet and depth of six feet. Based on the pipeline drawing, it is assumed that some trenching would occur on existing roadways and would require pavement replacement. Model defaults were used for construction fleet, hours of use per day for each piece, worker and vendor trip numbers, and worker and vendor trip length. It was assumed all cut and fill materials would be balanced on-site.

Operations-Related Greenhouse Gas Emissions

Operational GHG emissions were estimated using project-specific information, where available, and default values in CalEEMod based on the project's location and land use. Mobile-source emissions were modeled using trip generation and vehicle miles traveled data from the transportation analysis, provided in Appendix H, and emission rates from EMFAC2021. Indirect emissions associated with electricity consumption and solid waste generation were estimated using the applicable modules of CalEEMod using default consumption values. Water consumption was based on 26,000 gallons per day, split into indoor and outdoor (landscaping) uses, as described in Section 2.0, *Project Description*.

The operational GHG emissions analysis takes into account the 80-kilowatt (kW) rooftop solar system that would be installed at the project site. Based on the PV-Watts calculator (NREL 2022), an 80-kW system at this location (assuming default system information parameters) would produce an estimated 148,484 kW-hours of energy per year, which was accounted for in the CalEEMod model run.

Operational emissions from all sources were estimated for full buildout of the project which would become fully operational in 2024. Additionally, to demonstrate the downward trend in emissions, mobile source emissions were modeled to reflect mobile source emission rates in 2030 and 2045. Detailed model assumptions and inputs for these calculations can be found in Appendix B of this EIR.

Consistency with Applicable Plans, Policies, Regulations

The project was also evaluated for its consistency with adopted regulations, plans, and policies aimed at reducing GHG emissions. These include the Scoping Plan, the SCAG Connect SoCal RTP/SCS, the Town of Apple Valley General Plan, and the Town of Apple Valley CAP. The analysis was generally qualitative in nature.

THRESHOLDS OF SIGNIFICANCE

The issue of global climate change is inherently a cumulative issue because the GHG emissions of individual projects cannot be shown to have any material effect on global climate. Thus, the project's impact on climate change is addressed only as a cumulative impact.

CEQA Guidelines Appendix G is a sample Initial Study checklist that includes factual inquiries related to the subject of GHGs, as it does on a whole series of additional environmental topics. It is a common practice for lead agencies to take the language from the inquiries set forth in Appendix G of the State CEQA Guidelines and to use that language in fashioning thresholds. The State CEQA Guidelines do not indicate what amount of GHG emissions would constitute a significant impact on the environment. Instead, they authorize the lead agency to consider thresholds of significance previously adopted or recommended by other public agencies or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence (State CEQA Guidelines Sections 15064.4(a) and 15064.7(c)). State CEQA Guidelines Section 15064.4 and relevant portions of Appendix G recommend that a lead agency consider a project's consistency with relevant, adopted plans and discuss any inconsistencies with applicable regional plans, including plans to reduce GHG emissions. The State CEQA Guidelines provide the lead agency discretion whether to quantify GHG emissions resulting from a project and/or rely on a qualitative analysis or performance-based standards, focusing specifically on the following factors (State CEQA Guidelines Sections 15064.4(b):

- The extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting.
- Whether the project GHG emissions exceed a threshold of significance that the lead agency determines applies to the project.
- The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. The lead agency must include substantial evidence linking statewide goals, strategies, and plans to the project's findings.

This general direction from section 15064.4 gives rise to three different approaches for assessing the significance of GHG-related impacts. The first two bullets could be satisfied through reliance on a purely numerical emissions-based threshold, such as ones developed by MDAQMD (discussed earlier) and the South Coast Air Quality Management District (SCAQMD) (discussed below). In other words, one of these two numerical thresholds could be used both to evaluate the extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting (the first bullet above), and to assess whether the project GHG emissions exceed a threshold of significance that the lead agency determines applies to the project (the second bullet above). An alternative to the use of an emissions-based quantitative threshold is the use of a more comprehensive type of significance threshold, such as one recently developed by developed by the Bay Area Air Quality Management District (BAAQMD). As described below, this threshold addresses the first two bullets while also addressing the third: the extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. The Town has opted to rely on the BAAQMD threshold, with its numerical elements, while also including, for purely informational purposes, analysis regarding the level of impact that would occur under the MDAQMD and SCAQMD emissions-based thresholds.

Under the sample checklist questions derived from Appendix G of the State CEQA Guidelines, implementing a project would result in a cumulatively considerable contribution to climate change if it would:

- generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment, or
- conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.

As noted, CEQA authorizes the lead agency to consider thresholds of significance previously adopted or recommended by other public agencies or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence.

A number of air districts have developed and adopted thresholds of significance for CEQA projects. MDAQMD has developed significance thresholds that are applicable to CEQA projects within its jurisdiction (MDAQMD 2020). For GHGs, MDAQMD recommends that total emissions (direct and indirect) emissions be compared to the annual threshold of 100,000 tons of CO_2e per year or 90,718 $MTCO_2e$.

In addition, SCAQMD, which is the air quality agency for portions of Los Angeles, Riverside and San Bernardino counties and all of Orange County, manages the area immediately south of the area managed by MDAQMD. SCAQMD has adopted a significance threshold of 10,000 $MTCO_2e$ threshold for stationary/industrial facilities where SCAQMD is the lead agency (SCAQMD 2008, SCAQMD 2019). For land use development projects, SCAQMD proposed varying approaches to be taken by lead agencies when analyzing GHG emissions, including separate numerical thresholds for residential projects, commercial projects, and mixed-use projects, ultimately recommending a 3,000 $MTCO_2e$ numerical threshold for all non-industrial projects (SCAQMD 2010). SCAQMD noted in its draft threshold guidance that use of these thresholds was only a recommendation for lead agencies and not a mandatory requirement. While these land use development thresholds may be used at the discretion of the local lead agency, these thresholds for land use development projects have not been adopted by SCAQMD. Based on discussions in SCAQMD's guidance, this 3,000 $MTCO_2e$ level is intended to capture 90 percent of GHG emissions from new residential or commercial projects in the SCAQMD region. This type of market capture analysis captures a substantial fraction of the emissions from future development to accommodate for future population and job growth and excludes small development projects that would contribute a relatively small fraction of the cumulative statewide GHG emissions. Although the proposed

project is not a typical residential or commercial project (i.e., retail only, office), the sources of project-related emissions, including primarily mobile sources, would be similar to a typical residential or commercial project. As such, while this 3,000 $MTCO_2e$ "bright-line" threshold level has not been adopted by SCAQMD or MDAQMD, or the Town of Apple Valley, based on the project size and emission sources, as well as the supporting analysis presented its formulation, both direct and indirect GHG emissions from the project are discussed with respect to the 3,000 $MTCO_2e$ mass emissions "bright-line" criteria as well as the MDAQMD's 100,000 tons of CO_2e (90,718 $MTCO_2e$) criteria for informational purposes.

Additionally, the BAAQMD has developed qualitative guidelines intended to ensure that projects constructed and operated within their jurisdiction do their fair share to contribute to the state's long-term GHG reduction target of carbon neutrality by 2045, as mandated by Executive Order B-55-18. At the time BAAQMD's thresholds were developed, Executive Order B-55-18 comprised the most ambitious regulatory requirement at that time. As discussed in Section 3.7.1, "Regulatory Setting," the state adopted AB 1279 in 2022, which codified the goal of achieving carbon neutrality by 2045. Therefore, the BAAQMD's guidance is considered the most applicable threshold in the state used to show compliance with achieving this target.

BAAQMD's thresholds are structured to provide projects with two options to demonstrate consistency with the goal of carbon neutrality by 2045: (a) incorporation of certain project design elements and (b) incorporation of relevant GHG reduction measures from a CEQA-qualified CAP. The Town's CAP does not currently evaluate the Town's path towards the statewide carbon neutrality goal. Therefore option (a) of BAAQMD's guidance is most appropriate to the project and will be applied. This option includes the elimination of on-site natural gas, a reduction in VMT aligning with OPR's SB 743 VMT targets, and compliance with off-street electric vehicle requirements in the most recently adopted CalGreen code.

While these project design elements were developed by BAAQMD for projects within its jurisdiction, they are considered appropriate thresholds that may be applied to other projects within the state. Unlike criteria air pollutants, which are pollutants of regional concern, GHGs are considered global pollutants that have the capacity to affect the climate regardless of the location where they are emitted. The aforementioned project design features included in BAAQMD's guidance are intended to be used by local governments to physically provide the infrastructure to assist CARB and other agencies in implementing statewide policies and programs to further the state in meeting its long-term GHG reduction goals of carbon neutrality and an 85 percent reduction in 1990 levels of emissions by 2045 as mandated by AB 1279.

These project design features also align with Appendix D: Local Actions of the 2022 Scoping Plan, which directs municipalities to promote fully decarbonized development, reduce VMT, and provide EV charging infrastructure that, at a minimum, meets the most ambitious voluntary standard of the CalGreen Code at the time of project approval. Projects that implement these measures would not conflict with the 2022 Scoping Plan.

BAAQMD's guidance for land use projects is summarized below. The project would not result in a significant climate change impact if it would meet the following criteria:

- The project will not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development).
- The project will not result in any wasteful, inefficient, or unnecessary energy usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines.
- Achieve a reduction in project-generated vehicle miles traveled (VMT) below the regional average consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent) or meet a locally adopted Senate Bill 743 VMT target, reflecting the recommendations provided in the Governor's Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA:
  - Residential projects: 15 percent below the existing VMT per capita
  - Office projects: 15 percent below the existing VMT per employee
  - Retail projects: no net increase in existing VMT

- Achieve compliance with off-street electric vehicle requirements in the most recently adopted version of CALGreen Tier 2.

As noted, CEQA authorizes the lead agency to consider thresholds of significance previously adopted or recommended by other public agencies or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence (State CEQA Guidelines Sections 15064.4(a) and 15064.7(c)). In this case, the Town has elected to apply the guidance and quantitative data provided by SCAQMD and MDAQMD for informational purposes, and apply the guidance from BAAQMD in evaluating the climate change impacts of the proposed project.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 3.7-1: Generate Greenhouse Gas Emissions, Either Directly or Indirectly, That May Have a Significant Impact on the Environment

The project would result in GHG emissions from construction activities and operational activities including vehicle trips, area sources, electricity consumption, water use, and waste generation. The project would result in emissions below the numerical thresholds recommended by MDAQMD and SCAQMD. Additionally, BAAQMD requires projects to commit to certain project design features to demonstrate consistency with the state's goal of achieving carbon neutrality including the elimination of on-site natural gas, commit to the Tier 2 standards of the CalGreen Code, and demonstrate a VMT reduction consistent with OPR's guidance in SB 743. The project includes mitigation to meet the Tier 2 standards of the most recent version of the CalGreen Code (electric vehicle charging), would not include on-site natural gas, and has demonstrated a VMT reduction consistent with OPR's guidance. Therefore, the project would not have a significant impact on the environment, and this impact would be **less than significant with mitigation incorporated**.

GHG emissions associated with the project would be generated during construction and operation. Project-related construction activities would result in GHG emissions from the use of heavy-duty off-road construction equipment, delivery trucks associated with materials transport, and vehicle use during worker commute. Consistent with the guidance provided by BAAQMD, construction emissions have been disclosed for informational purposes; however, BAAQMD does not recommend that construction emissions be compared to a numeric threshold of significance as construction emissions represent a small portion of a project's lifetime emissions. Therefore, construction emissions are disclosed, amortized over a 30-year period consistent with SCAQMD guidance, but no significance determination is applied.

Operation of the project would result in mobile-source GHG emissions associated with vehicle trips to and from the project, area-source emissions from the operation of landscape maintenance equipment, energy-source emissions from the consumption of electricity, water-related energy consumption associated with water use and the conveyance and treatment of wastewater, and waste-generated emissions from the transport and disposal of solid waste. In addition, this analysis takes into account renewable energy generation associated with eh 80 kW solar system that would be installed on-site, which would offset some of the electrical needs for the project.

Table 3.7-3 provides a summary of the construction and operational GHG emissions. Mobile source emissions are presented for opening 2024, 2030, and 2045 to reflect the reduction in GHG emissions from mobile sources over time. 2024 is the assumed opening year of the project, while 2030 and 2045 denote milestone (reduction target) years evaluated in the 2022 Scoping Plan.

Table 3.7-3 Project-Generated Greenhouse Gas Emissions

Emissions Source	2024	2030	2045
Construction GHG Emissions			
Total ($MTCO_2e$)	812	812	812
Amortized ($MTCO_2e$/year)	27	27	27

Emissions Source	2024	2030	2045
Operational GHG Emissions ($MTCO_2e$/year)			
Area Sources	1	1	1
Energy Consumption	264	264	264
Vehicle Trips	1,791	1,583	1,399
Solid Waste Generation	91	91	91
Water Consumption and Wastewater Generation	24	24	24
Total Operational GHG Emissions	2,171	1,963	1,780
Total Project Annual GHG Emissions (Amortized Construction + Operational)	2,198	1,990	1,807

Notes: Totals may not add due to independent rounding. For purposes of this analysis, 2030 and 2045 estimates only account for changes in motor vehicle emission rates over time. All other emission sources (e.g., construction, area, energy), as well as activity (e.g., VMT, energy consumption) are the same as 2024.

$MTCO_2e$ = metric tons of carbon dioxide equivalent; GHG = greenhouse gas.

Source: Modeled conducted by Ascent Environmental in 2023

As shown, project annual GHG emissions (the sum of amortized construction and annual operations) would be an estimated 2,198 $MTCO_2e$/year at opening year 2024. As shown, the amount of GHG emissions would decrease through 2030 and 2045, as GHG emission standards and fuel efficiency standards for fossil fuel-powered on-road vehicles are implemented over time. This amount of emissions is much less than the 90,718 $MTCO_2e$/year (100,000 tons of CO_2e/year) numerical threshold recommended by MDAQMD and is lower than the 3,000 $MTCO_2e$/year numerical threshold recommended by SCAQMD. It is worth noting that the emissions analysis is based on a set of conservative emissions that are likely over-estimating emissions. For instance, emissions associated with the RV park assume that all RV spaces will be occupied every day of the year and each RV would travel from regional destinations (i.e., pass-by trips limited CalEEMod defaults). In addition, emission estimates in this analysis take into account an older version of Title 24 standards for commercial buildings known at the time of model development, whereas the project will be built to the more modern 2022 Title 24 standards, which will result in lower electricity consumption from building uses assumed herein.

Note that, as explained earlier, the comparison of project emissions to MDAQMD and SCAQMD numerical thresholds is provided for informational purposes only. As discussed under *Thresholds of Significance* heading above, the BAAQMD's guidance is the most appropriate threshold approach in the state because its qualitative guidelines are intended to ensure that projects do their fair share to contribute to the state's long-term GHG reduction target of carbon neutrality by 2045. Neither the MDAQMD nor the SCAQMD numerical thresholds were developed with 2045 in mind. Therefore, while comparison to MDAQMD and SCAQMD thresholds is included in this analysis for informational purposes, the BAAQMD guidance and approach is applied in evaluating the climate change impacts of the proposed project.

As explained above, BAAQMD requires projects to commit to certain project design features to demonstrate consistency with the state's goal of achieving carbon neutrality including the elimination of on-site natural gas, not resulting in any wasteful, inefficient, or unnecessary energy usage, committing to the Tier 2 electric vehicle charging standards of the CalGreen Code, and demonstrate a VMT reduction consistent with OPR's guidance in SB 743. Absent these design features, the conditions of BAAQMD's guidance would not be fully satisfied and impacts would be **significant**.

Mitigation Measures

Mitigation Measure 3.7-1: Electric Vehicle Charging

To provide electrification in support of the State's carbon neutrality goal, the project applicant shall provide electric vehicle charging consistent with the non-residential Tier 2 electric vehicle charging standards of the CalGreen Code. The number of electric vehicle supply equipment (EVSE) and EV-ready charging stations shall be determined by the Town based upon the number of parking spaces provided.

Significance after Mitigation

As explained above, BAAQMD requires projects to commit to certain project design features to demonstrate consistency with the state's goal of achieving carbon neutrality including the elimination of on-site natural gas, commitment to the Tier 2 standards of the CalGreen Code, and demonstration of a VMT reduction consistent with OPR's guidance in SB 743. With mitigation, the conditions of BAAQMD's guidance would be fully satisfied for the following reasons:

- Mitigation Measure 3.7-1 requires the project to implement EV charging consistent with the most recent version of the CalGreen Code.
- The project has made a commitment to prohibit on-site natural gas for all proposed land uses. For instance, there would be no natural gas connections provided at the project site. Therefore, all project-related building energy needs would be provided by onsite solar and the electrical grid.
- As discussed in Section 3.5.3 of Section 3.5, "Energy", the project would not result in any wasteful, inefficient, or unnecessary energy usage.
- The project has demonstrated a VMT reduction consistent with OPR's guidance. As discussed in Section 3.14.3 of Section 3.14, "Transportation", the project would result in mostly pass-by trips, as vehicles, trucks, and recreational vehicles divert only 0.5 miles from the I-15. As such, VMT would not exceed the Town of Apple Valley's General Plan Buildout VMT per service population. Therefore, the project would meet the locally adopted VMT target.

Following mitigation, the conditions of BAAQMD's guidance would be fully satisfied. The 2022 Scoping Plan and AB 1279 establish target emission levels under the presumption that achieving these targets through GHG emissions reduction would avoid or substantially lessen significant impacts on the environment. Based on the evidence provided in BAAQMD's Justification Report linking the application of best management practices in new development to consistency with the state's goal of attaining carbon neutrality by 2045 (AB 1279), the project's consistency with BAAQMD's project design features for land use development project indicates that it would not conflict with the state's 2022 Scoping Plan with the incorporation of mitigation, which sets the path for the state in meeting its long-term GHG reduction targets. This impact would be **less than significant with mitigation incorporated.**

Impact 3.7-2: Conflict with an Applicable Plan, Policy or Regulation Adopted for the Purpose of Reducing the Emissions of Greenhouse Gases

The project would be generally consistent with the Town of Apple Valley General Plan, the 2017 and 2022 Scoping Plan, and the Connect SoCal RTP/SCS. However, the project would be inconsistent with the Town of Apple Valley CAP because it would not implement relevant measures in the CAP. The implementation of Mitigation Measures 3.7-1, 3.7-2, and 3.14-1 would ensure that sustainability measures and Class II bicycle facilities along the project's frontage to Stoddard Wells Road are included in the project design. With implementation of these mitigation measures, implementation of the project would be consistent with and not conflict with applicable plans, policies, or regulations, including the 2017 and 2022 Scoping Plan, the Town of Apple Valley General Plan, Town of Apple Valley CAP, and the Connect SoCal RTP/SCS. This impact would be **less than significant with mitigation incorporated.**

The project was evaluated, qualitatively, for consistency with applicable local and State plans that were developed with the intent of reducing GHG emissions. Each applicable plan is discussed separately below.

Town of Apple Valley General Plan

The Town's General Plan contains various policies related to GHG emissions. This includes various policies in the Air Quality Element and Energy and Mineral Resources Element that aim to reduce vehicle activity, reduce resource consumption, and promote cleaner energy and fuel sources. In addition, the General Plan discusses the connection between land use patterns and resource consumption. For instance, Program 1.A.4 under Policy 1.A states that the Town shall strive for efficient community land use and transportation planning and design to minimize travel and facilitate the use of alternative means of transportation. The project is consistent with this policy and program.

In addition, the County of San Bernardino has set forth the Green Valley Initiative, which invites cities and towns to participate in the County's effort to reduce GHGs, increase production of green technologies, and integrate residents and businesses with natural resources.

Further, as discussed in Section 3.2, *Air Quality*, the proposed project is consistent with the Regional Commercial (C-R) General Plan land use and zoning designations. As discussed in Section 3.14, *Transportation/Traffic*, trip generation and VMT is anticipated to be low for the proposed project since the majority of trips will be short, diverted trips from the freeway.

Given this, the proposed project would be consistent with the Town of Apple Valley General Plan.

Town of Apple Valley Climate Action Plan

The Apple Valley CAP was originally adopted in 2013 and has been updated three times since, mostly recently in 2021. The CAP includes an emissions forecast through 2030 and various reduction measures to meet the 2030 target targets. As noted above, the CAP includes a total of 88 reduction measures from the three broad categories (covering municipal operations, community operations, and for new development). As noted in the CAP, these measures are intended to serve as a menu for existing and future development, any combination of which can be implemented to reach reduction targets on a project-by-project basis (Town of Apple Valley 2021: 34). Most of these measures are not applicable to the proposed new development project, as many are applicable to municipal operations, existing development, or other land use types, such as residential, infill, and industrial projects.

The relevant measures are limited to those community or new development measures specific to new commercial or recreational uses. These measures and the project consistency with those measures is summarized in Table 3.7-4. A more exhaustive table that includes all 88 CAP measures is provided in Appendix B of this EIR. As noted in Table 3.7-4, once Mitigation 3.7-1, Mitigation 3.7-2, and Mitigation 3.14-1 are incorporated, the project would be consistent with the CAP measures and thus consistent with the CAP.

Table 3.7-4 Project Consistency with Town of Apple Valley CAP

Measure Number	Measure Description	Project Consistency Analysis
CO-1	Encourage replacement of personal vehicles with hybrid or alternative fuel vehicle.	Mitigation 3.7-1 requires the applicant to include EV charging, which would support the deployment of electric vehicles in the region.
CO-3	Encourage the replacement of gasoline or diesel fleet vehicles with hybrid or alternative fuel vehicles, if available for intended use.	Mitigation 3.7-1 requires the applicant to include EV charging, which would support the deployment of electric vehicles in the region.
ND-9	During project construction, encourage on-site and off-road construction equipment to utilize biodiesel fuel (a minimum of B20), except for equipment where use of biodiesel fuel would void the equipment warranty.	Mitigation 3.7-2 encourages the project applicant to utilize zero emissions or alternative fueled equipment, including biodiesel or renewable diesel, except for equipment where use of biodiesel fuel would void the equipment warranty.
ND-11	Install pedestrian, bicycle and/or equestrian trails connecting project to school(s), commercial project(s) or transit.	Mitigation 3.14-1 requires the project applicant to construct Class II bicycle facilities along the project site's southern frontage along Stoddard Wells Road. This mitigation measure will ensure consistency with the CAP's goal of improving alternative forms of transportation.
ND-14	Use passive solar design by orienting buildings and incorporating landscaping to maximize passive solar heating during the winter, and minimize solar heating during the summer	Mitigation 3.7-2 requires the project applicant to enroll in the Apple Valley Choice Energy (AVCE) Program. The base renewable content in AVCE is 35%, and consumers can "opt-up" to 100% renewable under the MoreChoice option. Enrolling in the AVCE MoreChoice would have the same effect as implementing on-site solar energy because it would reduce GHG emissions from

Measure Number	Measure Description	Project Consistency Analysis
		electrical demand by ensuring all electricity consumption is powered by renewable energy. Additionally, the project would install an 80-kilowatt direct current solar system on the roof of the truck maintenance building, which would offset much of the energy demand of the project.
ND-15	To reduce energy demand associated with potable water conveyance: ▶ Landscaping palette emphasizing drought tolerant plants and exceeding Town standards for water conservation. ▶ For residential uses, limit turf areas to no more than 25% of all landscaped areas. ▶ Encourage limiting turf areas to no more than 20% for added water/energy savings. ▶ Turf is prohibited in public rights-of-way, including parkways, and in non-residential uses with the exception of Special Landscaping Areas. (Town Municipal Code Chapter 9.75 Water Conservation/Landscaping). ▶ Use of water-efficient irrigation techniques exceeding Town standards for water conservation. ▶ U.S. EPA Certified WaterSense labeled or equivalent faucets, high-efficiency toilets (HETs), and water-conserving shower heads. ▶ Consider use of artificial turf.	As described in Section 3.15,"Utilities and Service Systems," landscaping would include low water use trees and shrubs, consistent with the Water Conservation/Landscaping Regulations included in Chapter 9.75 of the Town of Apple Valley Code of Ordinances. Consistency with Water Conservation/Landscaping Regulations would ensure consistency with this CAP measure.
ND-17	Install all CFL or LED light bulbs.	Project design includes use of high-mast LED fixtures and LED canopy lighting.
ND-18	Install common area electric vehicle charging station(s) and secure bicycle racks.	The project would include EV charging and would install bicycle facilities as part of Mitigation 3.14-1.
ND-19	To reduce the project's energy use from the grid: ▶ Install solar panels/photovoltaic systems sufficient to provide electric power and heat water within the project, and/or ▶ Install other clean energy system sufficient to provide electric power and heat water within the project, and/or [install solar or photovoltaic systems as directed under Measure ND-20]	See response to ND-14
ND-20	Install solar or photovoltaic systems on new roofs whether on residential, commercial or industrial buildings.	See response to ND-14
ND-26	Facilitate the reduction of waste generated by building occupants that is hauled to and disposed of in landfills by providing easily accessible areas that serve each building and are dedicated to the collection and storage of paper, cardboard, glass, plastics, and metals.	Mitigation 3.7-2 requires the project applicant to ensure that common areas and the RV park include adequate bins for recycling of paper, cardboard, glass, plastics, and food waste.

Note: CO = Community Operational Measures; ND = New Development Measures

Source: Town of Apple Valley 2021.

Consistency with the Scoping Plan

The 2022 Scoping Plan traces the pathway for the state to achieve carbon neutrality and an 85 percent reduction in 1990 emissions goal by 2045 using a combined top down, bottom up approach using various scenarios. The 2022 Scoping Plan builds on previous approaches used in previous Scoping Plans, and was developed to achieve carbon neutrality by 2045 through a substantial reduction in fossil fuel dependence, while at the same time increasing

deployment of efficient non-combustion technologies and distribution of clean energy. Measures relevant to the proposed project include reducing VMT per capita 12 percent below 2019 levels by 2030 and 22 percent below 2019 levels by 2045, as well as supporting 100 percent ZEV vehicle sales for medium duty/heavy duty by 2040. Similar to the 2017 Scoping Plan, operational GHG emissions would be consistent with the intent of reducing GHG emissions in the 2022 Scoping Plan.

The 2022 Scoping Plan is accompanied by Appendix D, "Local Actions," which identifies GHG reduction measures and local actions that land use development projects can implement to support the state's climate goals. The Local Actions appendix of the 2022 Scoping Plan focuses on those priority areas that address the State's largest sources of emissions that local governments have authority or influence over. These priority areas include transportation electrification, VMT reduction, and building decarbonization.

The project would include many GHG reduction features. The purpose of the project is to construct a travel center facility near a major freeway onramp/offramp to minimize truck and automobile movements. As discussed in Section 3.14, "Transportation and Circulation," operational VMT is not expected to exceed the Town of Apple Valley's General Plan Buildout VMT (on a per-service-population basis), as the majority of total trips would be diverted trips from the I-15 which is only 0.5 miles from the project site. Moreover, the facility would facilitate regional vehicle electrification by providing electric vehicle charging stations through implementing Mitigation Measure 3.7-1. The project would include no natural gas consumption and would include PV that would exceed the requirement of Title 24. While Mitigation Measure 3.7-2 aims to ensure consistency with the Town CAP, these measures also ensure consistency with the Scoping Plan in that the CAP is intended to align with statewide GHG reduction planning efforts, including the Scoping Plan. Also, project design would include high-mast LED fixtures and LED canopy lighting, reducing electricity demand related to lighting. For these reasons, operational GHG emissions would be consistent with the intent of reducing GHG emissions in the 2022 Scoping Plan.

SCAG Connect SoCal

The Southern California Association of Governments (SCAG) serves as the MPO for San Bernardino County where the project site is located. In 2020, the SCAG adopted *Connect SoCal*, the areas Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). SCAG was tasked by CARB to achieve an 8 percent per capita reduction compared to 2005 level emissions by 2020 and a 19 percent per capita reduction by 2035, which CARB confirmed the region would achieve by implementing its SCS (CARB 2020).

Connect SoCal SCS includes performance goals that were adopted to help focus future investments on the best-performing projects; and different strategies to preserve, maintain, and optimize the performance of the existing transportation system. Five key SCS strategies are included in *Connect SoCal* to help the region meet its regional VMT and GHG reduction goals. The five key SCS strategies include:

1. Focus Growth Near Destinations and Mobility Options
2. Promote Diverse Housing Choices
3. Leverage Technology Innovations
4. Support Implementation of Sustainability Policies
5. Promote a Green Region

The project would be constructed with the current CALGreen and Title 24 standards for commercial buildings, and would include sustainability measures, such as electric vehicle charge and LED lighting. Moreover, the project will produce roadside services that will serve existing travels and trucks traveling along I-15. The project is consistent with land use designations and zoning and would be consistent with the overall framework of *Connect SoCal*. Thus, the proposed project would be consistent with the GHG emission reduction strategies contained in the *Connect SoCal* RTP/SCS.

Summary

The project would be generally consistent with the Town of Apple Valley General Plan, the 2022 Scoping Plan, and the Connect SoCal RTP/SCS. However, the project would be inconsistent with the Town of Apple Valley CAP because it would not implement relevant measures in the CAP. Therefore, this impact would be **significant**.

Mitigation Measures

Mitigation Measure 3.7-2: Include Sustainability Measures in Project Design

The project applicant shall implement the following measures during construction and project operations, subject to verification by the Town before construction permits are issued.

- Construction contractors shall use zero emission, near-zero emission, or alternative fueled equipment in lieu of traditional diesel-powered equipment, if such equipment is commercially available within 100 miles of the project site.
- Enroll in the Apple Valley Choice Energy (AVCE) Program, and "opt-up" to increased renewable content, or install on-site solar panels/photovoltaic systems sufficient to provide electric power and heat water within the project.
- Ensure that common areas, such as near retail entrances and in the fueling area, as well as throughout the RV park, include adequate bins for recycling of paper, cardboard, glass, plastics, and food waste.
- Implement onsite recycling.

Significance after Mitigation

Implementation of Mitigation Measure 3.7-1, Mitigation Measure 3.7-2, and Mitigation Measure 3.14-1, would ensure that the project is consistent with the CAP and other relevant plans adopted for the purpose of reducing GHG emissions. For this reason, the impact would be **less than significant with mitigation incorporated**.

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3.8 HAZARDS AND HAZARDOUS MATERIALS

This section describes the potential impacts of the Apple Valley I-15 Travel Center (project) related to hazardous materials and public health. The evaluation provided in this section is based, in part, on review of the *Phase I Environmental Site Assessment* (ESA) prepared by Terracon Consultants, Inc. (2020) for the project site (provided in Appendix E of this Draft EIR). No public comments related to hazards and hazardous materials were received during the scoping period.

3.8.1 Regulatory Setting

FEDERAL

Management of Hazardous Materials

Various federal laws address the proper handling, use, storage, and disposal of hazardous materials, as well as requiring measures to prevent or mitigate injury to health or the environment if such materials are accidentally released. The U.S. Environmental Protection Agency (EPA) is the agency primarily responsible for enforcement and implementation of federal laws and regulations pertaining to hazardous materials. Applicable federal regulations pertaining to hazardous materials are primarily contained in Code of Federal Regulations (CFR) Titles 29, 40, and 49. Hazardous materials, as defined in the Code, are listed in 49 CFR 172.101. Management of hazardous materials is governed by the following laws.

- The Toxic Substances Control Act of 1976 (15 U.S. Code [USC] Section 2601 et seq.) regulates the manufacturing, inventory, and disposition of industrial chemicals, including hazardous materials. Section 403 of the Toxic Substances Control Act establishes standards for lead-based paint hazards in paint, dust, and soil.
- The Resource Conservation and Recovery Act (RCRA) of 1976 (42 USC 6901 et seq.) is the law under which EPA regulates hazardous waste from the time the waste is generated until its final disposal ("cradle to grave").
- The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (also called the Superfund Act or CERCLA) (42 USC 9601 et seq.) gives EPA authority to seek out parties responsible for releases of hazardous substances and ensure their cooperation in site remediation.
- The Superfund Amendments and Reauthorization Act of 1986 (Public Law 99-499; USC Title 42, Chapter 116), also known as SARA Title III or the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA), imposes hazardous materials planning requirements to help protect local communities in the event of accidental release.
- The Spill Prevention, Control, and Countermeasure (SPCC) rule includes requirements for oil spill prevention, preparedness, and response to prevent oil discharges to navigable waters and adjoining shorelines. The rule requires specific facilities to prepare, amend, and implement SPCC Plans. The SPCC rule is part of the Oil Pollution Prevention regulation, which also includes the Facility Response Plan rule.

Transport of Hazardous Materials

The U.S. Department of Transportation (USDOT) regulates transport of hazardous materials between states and is responsible for protecting the public from dangers associated with such transport. The federal hazardous materials transportation law, 49 USC 5101 et seq. (formerly the Hazardous Materials Transportation Act 49 USC 1801 et seq.) is the basic statute regulating transport of hazardous materials in the United States. Hazardous materials transport regulations are enforced by the Federal Highway Administration, the U.S. Coast Guard, the Federal Railroad Administration, and the Federal Aviation Administration.

Worker Safety

The federal Occupational Safety and Health Administration (OSHA) is the agency responsible for assuring worker safety in the handling and use of chemicals identified in the Occupational Safety and Health Act of 1970 (Public Law 91-596, 9 USC 651 et seq.). OSHA has adopted numerous regulations pertaining to worker safety, contained in CFR Title 29. These regulations set standards for safe workplaces and work practices, including standards relating to the handling of hazardous materials and those required for excavation and trenching.

STATE

Management of Hazardous Materials

In California, both federal and state community right-to-know laws are coordinated through the Governor's Office of Emergency Services. The federal law, SARA Title III or EPCRA, described above, encourages and supports emergency planning efforts at the state and local levels and to provide local governments and the public with information about potential chemical hazards in their communities. Because of the community right-to-know laws, information is collected from facilities that handle (e.g., produce, use, store) hazardous materials above certain quantities. The provisions of EPCRA apply to four major categories:

- emergency planning,
- emergency release notification,
- reporting of hazardous chemical storage, and
- inventory of toxic chemical releases.

The corresponding state law is Chapter 6.95 of the California Health and Safety Code (Hazardous Materials Release Response Plans and Inventory). Under this law, qualifying businesses are required to prepare a hazardous materials business emergency/contingency plan (HMBEP), which must include hazardous materials and hazardous waste management procedures and emergency response procedures, including emergency spill cleanup supplies and equipment. At such time as the applicant begins to use hazardous materials at levels that reach applicable state and/or federal thresholds, the plan is submitted to the administering agency. A HMBEP must be submitted by any business that handles a hazardous material or a mixture containing a hazardous material in quantities equal to, or greater than:

- a total weight of 500 pounds or a total volume of 55 gallons;
- 200 cubic feet of a compressed gas at standard temperature and pressure; and/or
- a radioactive material handled in quantities for which an emergency plan is required pursuant to Parts 30, 40, or 70 of Chapter 10, Title 10, CFR, or equal to or greater than the amounts specified above, whichever amount is less.

The California Department of Toxic Substances Control (DTSC), a division of the California Environmental Protection Agency, has primary regulatory responsibility over hazardous materials in California, working in conjunction with EPA to enforce and implement hazardous materials laws and regulations. As required by Section 65962.5 of the California Government Code, DTSC maintains a hazardous waste and substances site list for the State, known as the Cortese List. Individual regional water quality control boards (RWQCBs) are the lead agencies responsible for identifying, monitoring, and cleaning up leaking underground storage tanks (USTs).

The Lahontan RWQCB has jurisdiction over the project site. The Lahontan RWQCB enforces the protection and restoration of water resources, including remediation of unauthorized releases of hazardous substances in soil, groundwater, and surface water bodies in the project area.

Transport of Hazardous Materials and Hazardous Materials Emergency Response Plan

The State of California has adopted USDOT regulations for the movement of hazardous materials originating within the state and passing through the state; state regulations are contained in 26 California Code of Regulations (CCR). State agencies with primary responsibility for enforcing state regulations and responding to hazardous materials

transportation emergencies are the California Highway Patrol and the California Department of Transportation (Caltrans). Together, these agencies determine container types used and license hazardous waste haulers to transport hazardous waste on public roads.

California has developed an emergency response plan to coordinate emergency services provided by federal, state, and local governments and private agencies. Response to hazardous materials incidents is one part of the plan. The plan is managed by the Governor's Office of Emergency Services, which coordinates the responses of other agencies in the project area.

Management of Construction Activities

Through the Porter-Cologne Water Quality Act and the National Pollution Discharge Elimination System (NPDES) program, RWQCBs have the authority to require proper management of hazardous materials during project construction. For a detailed description of the Porter-Cologne Water Quality Act, the NPDES program, and the role of the Central Valley RWQCB, see Section 3.9, "Hydrology and Water Quality."

The State Water Resources Control Board (SWRCB) adopted the statewide NPDES General Permit in August 1999. The state requires that projects disturbing more than one acre of land during construction file a Notice of Intent with the RWQCB to be covered under this permit. Construction activities subject to the General Permit include clearing, grading, stockpiling, and excavation. Dischargers are required to eliminate or reduce non-stormwater discharges to storm sewer systems and other waters. A stormwater pollution prevention plan (SWPPP) must be developed and implemented for each site covered by the permit. The SWPPP must include best management plans (BMPs) designed to prevent construction pollutants from contacting stormwater and keep products of erosion from moving off-site into receiving waters throughout the construction and life of the project; the BMPs must address source control and, if necessary, pollutant control.

Worker Safety

The California Occupational Safety and Health Administration (Cal/OSHA) assumes primary responsibility for developing and enforcing workplace safety regulations within the state. Cal/OSHA standards are typically more stringent than federal OSHA regulations and are presented in Title 8 of the CCR. Cal/OSHA conducts onsite evaluations and issues notices of violation to enforce necessary improvements to health and safety practices.

Title 8 of the CCR also includes regulations that provide for worker safety when blasting and explosives are utilized during construction activities. These regulations identify licensing, safety, storage, and transportation requirements related to the use of explosives in construction.

LOCAL

Project Review

For the Town of Apple Valley, the Hazardous Materials Division (HMD) of the San Bernardino County (County) Fire Department is the administering agency and the Certified Unified Program Agency (CUPA) is responsible for the regulation of hazardous materials. The County HMD works closely with the Town Planning and Building and Safety departments to evaluate new land use projects for hazardous materials requirements. The County HMD's responsibilities include reviewing project descriptions and commenting on environmental documents for new land use projects.

Planning and Building and Safety permit applications are required to ask applicants about the handling of hazardous materials to ensure that certain documents and programs are in place prior to occupancy. Typical conditions applied to new land use projects include obtaining permits, filing a business/emergency contingency plan, preparing a Risk Management Plan, filing construction plans, and obtaining construction permits for the installation and/or removal of underground storage tanks. Applicants who require the County HMD to sign-off on projects are required to pay a fee, and must either file the above listed plans to apply for permits or must file a Business Emergency/Contingency Plan Exemption Form if no operations of the planning project are subject to CUPA regulations.

Management of Hazardous Materials

Within the Town of Apple Valley, businesses that are classified as "small quantity generators" (i.e., businesses that use or produce hazardous materials, such as gasoline service stations, medical clinics, equipment and fuel storage yards, and waste haulers) are required to certify any onsite hazardous materials with the County HMD on an annual basis. The County HMD inspects and monitors these businesses to ensure compliance with DTSC regulations outlined in Title 22, Division 4.5 of the CCR.

Hazardous Materials Response

The Town of Apple Valley has developed a Multi Hazard Functional Planning Guidance Document (Multi Hazard Plan) that, among other priorities, establishes contingency plans when an incident involving hazardous materials occurs. The Multi Hazards Plan is compliant with the statewide Standardized Emergency Management System, which enables a multiple agency response to an incident, and the National Incident Response Management System, which is intended to standardize agency response across federal, state, and local jurisdictions.

When the Town receives a call related to hazardous materials, the Hazardous Materials Team, a unit of the Apple Valley Fire Protection District and a member of the San Bernardino County Hazardous Materials Team, responds. The Hazardous Materials Team consists of specialist level, certified personnel. This level of certification allows members to identify the hazardous material, participate in Level A entries (fully encapsulated suits), and assist with any measures necessary to mitigate the hazard, except disposal. The Hazardous Materials Team responds to hazardous material spills including fuel spills and the illegal dumping of unknown products in the Town and may assist in other jurisdictions as requested.

Town of Apple Valley 2009 General Plan

The Apple Valley Town Council adopted the 2009 General Plan on August 11, 2009. The General Plan includes goals, policies, and programs intended to guide land use decisions within the Town's planning area. The Hazardous and Toxic Materials Element characterizes hazards within the Town of Apple Valley and presents methods to reduce or eliminate them by establishing policies and programs to ensure the utilization of appropriate management practices, as well as the effective and secure use, storage, and transport of hazardous and toxic substances in the community. The following policies and programs are applicable to the project:

- **Policy 1.A:** The Town shall cooperate with regulators and encourage the enforcement of laws that require all users, producers, and transporters of hazardous materials and wastes to clearly identify such materials, and notify the appropriate county, state and/or federal agencies as required by law.
  - **Program 1.A.1:** The Town shall maintain a protocol for communicating with responsible agencies, and will coordinate efforts to assure that state and federal regulations for the testing and monitoring of leaking underground fuel storage tanks are enforced.
- **Policy 1.D:** The Town shall require all business that use, store, or produce hazardous material to comply with the County's Business Plan.
  - **Program 1.D.1:** As part of the development approval process, new businesses handling hazardous materials shall be required to submit a Business Plan for handing, storing, transporting, and disposing of hazardous materials and wastes.
- **Policy 1.F:** The Town shall thoroughly evaluate development proposals for lands directly adjacent to sites known to be contaminated with hazardous or toxic materials, or sites that use or contain potentially hazardous or toxic materials.
- **Policy 1.G:** Require and facilitate an efficient cleanup of contaminated sites identified within the Town of Apple Valley.

3.8.2 Environmental Setting

For purposes of this section, the term "hazardous materials" refers to both hazardous substances and hazardous wastes. A "hazardous material" is defined in the CFR as "a substance or material that … is capable of posing an unreasonable risk to health, safety, and property when transported in commerce" (49 CFR 171.8). California Health and Safety Code Section 25501 defines a hazardous material as follows:

> "Hazardous material" means any material that, because of its quantity, concentration, or physical, or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. "Hazardous materials" include, but are not limited to, hazardous substances, hazardous waste, and any material which a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.

"Hazardous wastes" are defined in California Health and Safety Code Section 25141(b) as wastes that:

> … because of their quantity, concentration, or physical, chemical, or infectious characteristics, [may either] cause, or significantly contribute to an increase in mortality or an increase in serious illness [or] pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

PROJECT SITE CONDITIONS

A Phase I ESA was completed for the project site by Terracon Consultants, Inc. on November 2, 2020. The project site consists of undeveloped land that is currently unoccupied. During the site reconnaissance, apparent electrical conduit riser pipes; graded areas with apparent former building pads; approximately three cubic yards of asphalt, concrete, and ceramic/clay tile debris; and several 8-inch cast iron/steel pipes from apparent abandoned water wells and/or utility pipes were observed. Recognized Environmental Conditions (REC) or Controlled RECs were not identified in connection with existing uses of the project site.

Based on a review of the historical information, the project site consisted of undeveloped land with an intermittent stream and water well from the early 1930s through the early 1950s. By the mid-1950s, the intermittent stream and water well were no longer observed. An unimproved road was visible on the site from the late 1950s through the early 1990s, followed by apparent grading activities in the late-1980s to early 1990s. The observed grading was depicted across the entire project site. There appeared to be rectangular building pads on the western portion of the project site, along with a graded dirt road entering from the southern portion of the project site and extending northeasterly across the western portion of the project site. These observations were generally consistent through the present. RECs associated with the project site and adjoining properties were not identified during the review of the historical information.

The offsite water main line alignment is within the roadway rights-of-way of Stoddard Wells Road and Johnson Road. The existing roadways are paved and the shoulders have been graded and disturbed by past road construction and maintenance activities, including vegetation removal. As described in Section 3.3, "Archaeological, Historical, and Tribal Cultural Resources," Stoddard Wells Road was established as a dirt roadway in 1867 and has been widened and paved multiple times, starting in 1941.

The northern adjoining property consists of vacant land followed by Interstate 15 (I-15). The eastern adjoining property consists of vacant land. The southern adjoining property consists of Stoddard Wells Road followed by vacant land. The western adjoining property consists of I-15. RECs were not identified in connection with the adjoining properties.

ENVIRONMENTAL RECORDS REVIEW

As part of the Phase I ESA, a regulatory database review was completed to identify RECs in connection with the project site. Selected federal and state environmental regulatory databases as well as responses from state and local regulatory agencies were reviewed; a full list of the searched databases and contacted agencies is included in Appendix E. The project site was not identified in the regulatory database and no mapped sites were identified that represent a REC in connection with the site, based on distance, topographic gradient, and regulatory status.

The following data resources were reviewed to identify any facilities or sites meeting the Cortese List requirements within or in proximity to the alignment of the proposed water main line extension:

- List of Hazardous Waste and Substances sites from the DTSC's EnviroStor Database (DTSC 2021a);
- List of Leaking Underground Storage Tank sites from the SWRCB's GeoTracker Database (SWRCB 2021);
- List of solid waste disposal sites identified by the SWRCB with waste constituents above hazardous waste levels outside the waste management unit (CalEPA 2016a);
- List of active Cease and Desist Orders and Cleanup and Abatement Orders from the SWRCB (CalEPA 2016b); and
- List of hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the California Health and Safety Code, identified by DTSC (CalEPA 2021).

There are no Cortese List sites within the alignment of the proposed water main line extension. However, one hazardous waste and substances site included in the DTSC EnviroStor Database was identified immediately south of Johnson Road. This site is the former location of the Victorville Precision Bombing Range (PBR) N-1 Formerly Used Defense Site (FUDS). The property was formerly a practice range used by the U.S. Army Air Force and is known or suspected to contain military munitions and explosives of concern. According to the EnviroStor Database, the cleanup status is listed as inactive and action is required as of August 15, 2018 (DTSC 2021b). A portion of the site is currently developed with a Walmart Distribution Center, located at 21101 Johnson Road, and a Big Lot! Distribution Center, located at 18880 Navajo Road (Figure 3.8-1).

EMERGENCY RESPONSE

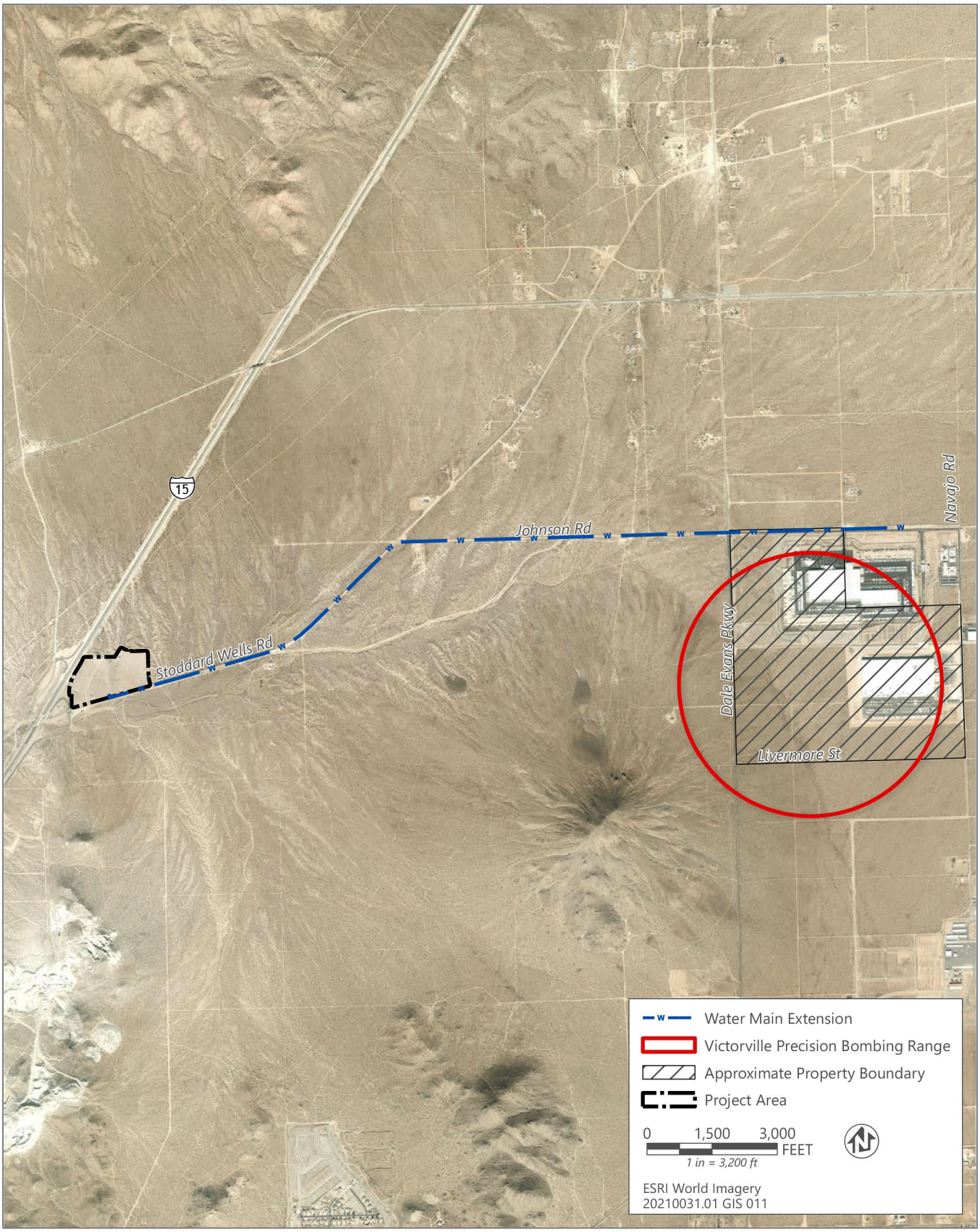
The Town of Apple Valley Office of Emergency Preparedness (OEP) is responsible for coordinating the Town's response to disasters and emergencies as well as aiding residents, businesses, and visitors in preparedness for major catastrophes both natural and man-made. The OEP Local Hazard Mitigation Plan, which was last updated in 2017, was developed to demonstrate the Town's plan for reducing and eliminating risks from potential hazards. Based on the OEP Local Hazard Mitigation Plan, it is anticipated that major interstates and highways, including I-15 and State Route 18, would serve as the major response and evacuation routes for the Town (Town of Apple Valley 2017).

3.8.3 Environmental Impacts and Mitigation Measures

METHODOLOGY

The following reports and data sources documenting potential hazardous conditions at the project site and offsite water main line alignment were reviewed for this analysis:

- available literature, including documents published by federal, State, County, and Town agencies;
- applicable elements of the Town of Apple Valley General Plan (Town of Apple Valley 2009a), including the Hazards and Toxic Materials Element and Emergency Preparedness Element, and Town of Apple Valley General Plan EIR (Town of Apple Valley 2009b); and
- Phase I ESA for the project prepared by Terracon Consultants, Inc. (2020); refer to Appendix E.



Source: adapted by Ascent Environmental in 2021

Figure 3.8-1 Victorville Precision Bombing Range

Project construction and operation were evaluated against the hazardous materials information gathered from these sources to determine whether any risks to public health and safety or other conflicts would occur. In determining the level of significance, the analysis assumes that construction and operation of the proposed project would comply with relevant federal and state laws and regulations, Town of Apple Valley General Plan policies, and other applicable ordinances.

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, an impact related to hazards and hazardous materials is considered significant if implementation of the project would do any of the following:

- create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment;
- emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment;
- be located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, and result in a safety hazard or excessive noise for people residing or working in the project area;
- impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; and/or
- expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

ISSUES NOT DISCUSSED FURTHER

Hazardous Materials Within One-Quarter Mile of a School

The project site is not within one-quarter mile of an existing or proposed school. The nearest school, Victorville Northgate Head Start, is located approximately 2.5 miles southwest of the project site. Therefore, no impacts related to emitting or handling hazardous materials within one-quarter mile of an existing or proposed school are anticipated. This issue is not discussed further.

Airports

The nearest airport, the Apple Valley Airport, is located approximately 3.8 miles southeast of the project site. The project site is not within the airport's land use compatibility plan (Town of Apple Valley 1995). Potential safety hazards related to public or private airports are not evaluated as the project site is neither in an area with an adopted airport land use plan nor within two miles of an airport or airstrip. This issue is not discussed further.

Wildfire

The project site and vicinity are within a local responsibility area that is classified by the California Department of Forestry and Fire Protection as a Non-Very High Fire Hazard Severity Zone (VHFHSZ). There are no lands within the Town that are classified as state responsibility areas or VHFHSZs (CAL FIRE 2008). Therefore, no impacts related to wildland fires are anticipated, and this issue will not be discussed further.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 3.8-1: Routine Transport, Use, or Disposal of Hazardous Materials

The project would involve the routine transport, use, and disposal of hazardous materials during construction, as well as during fueling activities, vehicle maintenance, and landscaping and site maintenance. However, the project would include standard safety and spill prevention requirements for USTs and fuel storage areas; comply with applicable regulations related to the use, transport, storage, and sale of hazardous materials; and implement an HMBEP. Therefore, impacts associated the routine transport, use, and disposal of hazardous materials would be **less than significant**.

Construction

Construction of the project would require the use of construction materials that could be hazardous, such as diesel fuel, oil, transmission fluids, paints, sealants, and cement. Construction activities would be short-term in nature, and the materials would not be used in such quantities or stored in such a manner as to pose a significant safety hazard. The construction contractor would be required to comply with local, State, and federal regulations governing the use, storage, and transportation of hazardous materials. As discussed in Section 3.8.1, "Regulatory Setting," regulations that would minimize potential hazards and hazardous materials impacts associated with the project include:

- OSHA has adopted numerous regulations pertaining to worker safety, contained in Title 29 of the Code of Federal Regulations (29 CFR). These regulations set standards for safe workplaces and work practices, including standards relating to the handling of hazardous materials and those required for excavation and trenching.
- Cal/OSHA assumes primary responsibility for developing and enforcing workplace safety regulations in California. Cal/OSHA standards, which typically are more stringent than federal OSHA regulations, are presented in Title 8 of the California Code of Regulations (8 CCR). Cal/OSHA conducts on-site evaluations and issues notices of violation to enforce necessary improvements to health and safety practices.
- Under RCRA, DTSC has the authority to implement permitting, inspection, compliance, and corrective action programs to ensure that people who manage hazardous waste follow state and federal requirements. The Hazard Communication Standard defined in 29 CFR Part 1910 requires that workers be informed of the hazards associated with the materials they handle. USDOT has also developed regulations (10 CFR and 49 CFR) pertaining to the transport of hazardous substances and hazardous wastes by all modes of transportation.
- California has adopted USDOT regulations for the movement of hazardous materials originating within the state and passing through the state; state regulations are contained in 26 CCR. State agencies with primary responsibility for enforcing state regulations and responding to hazardous materials transportation emergencies are California Highway Patrol and Caltrans. Together, these agencies determine container types used and license hazardous waste haulers to transport hazardous waste on public roads.
- Construction activities would be required to comply with the Storm Water Discharges Associated with Construction Activities (Construction General Permit), Construction General Permit Order No. 2009-009-DWQ, as further described under Section 3.9.1, "Regulatory Setting," and under Impact 3.9-1 in Section 3.9, "Hydrology and Water Quality." The NPDES permit requires that permit registration documents be filed for construction projects with greater than 1 acre of disturbance. The documents must include a notice of intent and a SWPPP that identifies proposed best management practices and includes a site-specific construction site monitoring and reporting plan developed by a Qualified SWPPP Developer. Although a major focus of the SWPPP is managing stormwater on the construction site, it also must address proper use and storage of hazardous materials, spill prevention and containment, and cleanup and reporting of any hazardous materials releases if they do occur.
- The County HMD, as the local CUPA, is responsible for enforcing regulations related to hazardous materials and wastes at a local level. Additionally, the County HMD manages various programs intended to prevent or minimize the damage to public health and safety and the environment from a release or threatened release of hazardous materials.

Compliance with these regulations would avoid or minimize the potential for accidental release of hazardous materials and wastes into the environment. Additionally, compliance with the regulations would ensure that hazardous materials would be promptly contained and remediated in the event of an accidental release. Given the short-term and minor use of construction-related hazardous materials and compliance with applicable regulations, impacts associated the routine transport, use, and disposal of hazardous materials during construction impact would be **less than significant**.

Operation

Project uses that would involve the routine transport, use, and disposal of hazardous materials include refueling of vehicles; fuel delivery, which could occur up to six times per day; vehicle maintenance; and landscaping and site maintenance activities. The travel center would include an 8-position passenger vehicle fueling station and a 10-position truck fueling station. The 18 fueling positions would be supplied by one 30,000-gallon below ground gasoline storage tank, eight 12,000-gallon above-ground and below-ground diesel storage tanks, one two-compartment combined high octane gasoline/diesel tank, and one 20,000-gallon diesel exhaust fluid storage tank. In addition, the travel center and RV park would each include a 1,000-gallon propane tank. The maintenance building would consist of four truck maintenance bays for light maintenance activities, which may include tire repair and replacement, air filter change, wiper blade maintenance, and oil and other fluid changes. Potentially hazardous materials such as petroleum products, paint products, solvents, cleaning products, and automotive fluids may be transported, stored, and used. Potentially hazardous materials such as pesticides, fertilizer, and other household hazardous products may be used during landscaping and site maintenance activities. The routine transport, use, and disposal of hazardous materials would not be required for operation of the offsite water main line.

The project would be subject to standard regulations related to the routine transportation, storage, and dispensing of gasoline. Fuel pump dispensers would be required to be equipped with automatic shutoffs and other safety device and signage, as required by Fire, Building, and Health codes. All USTs would be double walled and all above ground fuel storage tanks would be surrounded by fencing. In accordance with Title 23, Section 2635(b) of the CCR, USTs would be required to have spill containment and overfill prevention systems. Fuel tank storage areas would have appropriate safety design, equipment, and signage to protect public health and safety from leaks, fires, or spills involving vehicle fuel if any were to occur on the project site. A SWPPP would be prepared and would include BMPs designed to prevent project-generated pollutants from entering stormwater and moving off-site into receiving waters throughout operation of the project.

As described in Title 49 of the CFR and implemented by Title 13 of the CCR, the USDOT Office of Hazardous Materials Safety has established strict regulations for the safe transportation of hazardous materials. Appropriate documentation for all hazardous waste that is transported in connection with project activities would be provided as required for compliance with existing hazardous materials regulations. Hazardous wastes produced on site are subject to requirements associated with accumulation time limits, proper storage locations and containers, and proper labeling. Additionally, for removal of hazardous waste from the site, hazardous waste generators are required to use a certified hazardous waste transportation company, which must ship hazardous waste to a permitted facility for treatment, storage, recycling, or disposal.

As previously stated, the State of California requires all businesses that handle more than a specified amount of hazardous materials or extremely hazardous materials, to submit an HMBEP to its local CUPA. The HMBEP must include an inventory of the hazardous materials used in the facility, and emergency response plans and procedures to be used in the event of a significant or threatened significant release of a hazardous material. The HMBEP must also include the Material Safety Data Sheet for each hazardous and potentially hazardous substance used, which summarizes the physical and chemical properties of the substances and their health impacts. In the event of an accidental release of hazardous materials, the HMBEP requires immediate notification to all appropriate agencies and personnel of a release, identification of local emergency medical assistance appropriate for potential accident scenarios, contact information of all company emergency coordinators of the business, a listing and location of emergency equipment at the business, an evacuation plan, and a training program for business personnel.

Given measures taken to improve the safety of USTs and fuel storage areas; compliance with applicable regulations which would reduce impacts associated with the use, transport, storage, and sale of hazardous materials; and the handling of hazardous materials in accordance with the HMBEP, impacts associated the routine transport, use, and disposal of hazardous materials during operation would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

Impact 3.8-2: Accidental Release of Hazardous Materials

Construction of the project would involve grading, excavation, and other ground-disturbing activities which could result in the accidental release of hazardous materials. No RECs were found on or near the project site during site observations or through the records search. However, it is possible that the project area could be affected by undocumented contamination that has not been characterized or remediated. Therefore, impacts would be **potentially significant**.

Construction

As discussed under Impact 3.8-1, "Routine transport, use, and disposal of hazardous materials," the construction contractor would be required to comply with federal, state, and local regulations pertaining to hazardous materials that would be routinely used during construction (e.g., diesel fuel, oil, transmission fluids, paints, sealants, and cement). As discussed above, these regulations include the following: OSHA and Cal/OSHA regulations pertaining to worker safety; RCRA requirements regarding the management of hazardous waste; USDOT regulations pertaining to the transportation of hazardous materials; NPDES Construction General Permit conditions regarding spill prevention, containment, cleanup, and reporting; and County HMD programs to minimize the threatened release of hazardous materials. Compliance with these regulations would ensure worker safety during the handling of hazardous materials, would minimize the potential for accidental spills and releases of hazardous materials into the environment, and would ensure that hazardous materials would be promptly contained and remediated in the event of an accidental release.

Construction of the project would involve grading, excavation, and other ground-disturbing activities that could result in the accidental release of hazardous materials if soil or groundwater contamination is present. No RECs were found on or near the project site during site observations or through the records search. However, it is possible that the project area, including the areas surrounding the offsite water main line alignment, could be affected by undocumented contamination that has not been characterized or remediated, which could be exposed during ground disturbing activities, creating a significant hazard to the public or the environment. Therefore, this impact would be **potentially significant**.

Operation

As discussed under Impact 3.8-1, "Routine transport, use, and disposal of hazardous materials," the project would involve the use, transport, and storage of hazardous materials (e.g., petroleum products, paint products, solvents, cleaning products, and automotive fluids, pesticides, fertilizer). As described above, the project design and operation would be subject to federal, state, and local regulations, which include the following: automatic shutoff and safety requirements under the applicable Fire, Building, and Health codes, spill containment and overfill prevention regulations for USTs; USDOT standards for the safe transportation of hazardous materials; and notification and emergency response requirements under the project-specific HMBEP. Compliance with these regulations would ensure employee safety during the handling of hazardous materials, would minimize the potential for accidental spills and releases of hazardous materials into the environment, and would ensure that hazardous materials would be promptly contained and remediated in the event of an accidental release (refer to Impact 3.8-1 for additional information). Therefore, this impact would be **less than significant**.

Mitigation Measures

Mitigation Measure 3.8-2: Prepare and implement a hazardous materials management plan for onsite and offsite construction

Prior to issuance of grading permits, a construction hazardous materials management plan shall be prepared by the project proponent or the project proponent's contractor or construction manager. The plan shall be reviewed and approved by the Town of Apple Valley prior to any onsite or offsite project construction. The management plan shall include measures to reduce potential hazards to workers, the public, and the environment associated with use of hazardous materials and exposure to potentially contaminated soil during onsite and offsite project construction. The management plan shall include provisions for halting work, agency notification, managing impacted materials, sampling and analytical requirements and disposal procedures. Specifically, the construction hazardous materials management plan shall:

- describe the necessary actions to be taken if evidence of contaminated soil or groundwater is encountered during construction;
- describe the types of evidence that could indicate potential hazardous materials contamination, such as soil discoloration, petroleum or chemical odors, or buried building materials;
- include measures to protect worker safety if signs of contamination are encountered;
- identify sampling and analysis protocols for various substances that might be encountered;
- list required regulatory agency contacts if contamination is found;
- include recommendations on soil management in the event that aerially deposited lead is discovered in existing road right-of-way;
- identify legal and regulatory processes and thresholds for cleanup of contamination.
- include provisions for delineation, removal, and disposal of any contaminants identified as exceeding human health risk levels.
- require that the project contractor follow all procedural direction given by County Environmental Health Services Department to ensure that suspect soils are isolated, protected from runoff, and disposed of in accordance with the requirements of the licensed receiving facility.

Significance after Mitigation

Mitigation Measure 3.8-1 would include implementation of a construction hazardous materials management plan that would reduce potential hazards to workers, the public, and the environment associated with exposure to previously unknown hazardous materials during ground disturbance activities. As mitigated, the project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment. Thus, implementation of Mitigation Measure 3.8-1 would reduce project impacts to **less than significant**.

Impact 3.8-3: List of Hazardous Materials Sites

The alignment of the offsite water main line is in proximity to a former firing range that is listed as a hazardous waste and substances site on the DTSC EnviroStor Database. Based on a Site Inspection Report completed for the property, no explosives or metals with concentrations that exceed human health screening criteria were detected in soil samples; however, the DTSC concluded that additional sampling is warranted. Although the water main line would be installed within the City's ROW in areas that have been previously disturbed, the potential for undocumented contamination to be present cannot be ruled out. Therefore, construction of the project would have potential to create a significant hazard to the public or the environment if undocumented contamination is encountered during ground-disturbing activities for the water main line. This impact would be **potentially significant.**

As indicated by the results of the Phase I ESA regulatory database search, the 33.52-acre parcel is not located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, and therefore would not create a significant hazard to the public or the environment.

However, one hazardous waste and substances site included in the DTSC EnviroStor Database was identified in proximity to the proposed offsite water main line alignment (see Figure 3.8-1). As noted in Section 3.8.2, this site is the former location of the Victorville PBR N-1 FUDS, which is immediately south of Johnson Road. The property was formerly a practice range used by the U.S. Army Air Force and is known or suspected to contain military munitions and explosives of concern (DTSC 2021b). The site is currently occupied by a Walmart Distribution Center, located at 21101 Johnson Road in Apple Valley, California.

Based on a Site Inspection Report completed by the U.S. Army Corps of Engineers (USACE) for the Victorville PBR N-1 FUDS property, no explosives were detected in soil samples. Lead was the only munitions constituents metal detected above background concentrations. The report recommended that a Remedial Investigation/Feasibility Study (RI/FS) be completed based on the presence of munitions debris. Although potential for soil contamination from munitions constituents was also identified, the report concluded that additional sampling during the RI/FS and removal actions were not warranted (USACE 2008).

In a letter dated March 11, 2008, DTSC concurred with the recommendation in the Site Inspection Report to proceed with an RI/FS. However, DTSC did not concur with the recommendation that no additional sampling was needed for the RI/FS. DTSC recommended completion of additional soil sampling and an ecological screening that meets the recommendations and requirements of the U.S. EPA, DTSC, and California Department of Fish and Wildlife. According to the EnviroStor Database, the cleanup status is listed as inactive and action is required as of August 15, 2018 (DTSC 2021b).

Based on the current alignment for the water main line, trenching activities are anticipated to occur in previously disturbed areas within the City's right of way along Stoddard Wells Road and Johnson Road (see Figure 3.8-1). Therefore, installation of the offsite water main line is not anticipated to disturb soil with potential to contain military munitions and explosives of concern from former activities associated with the Victorville PBR N-1 FUDS site. Additionally, it is unlikely that military munitions and explosives of concern are still present within the boundaries of the former Victorville PBR N-1 FUDS site because a portion of the site was subsequently disturbed and developed with distribution centers for Walmart and Big Lots! and associated roadways. Regardless, the potential for undocumented contamination to be present cannot be ruled out because DTSC recommended additional soil sampling be completed for the site. Therefore, construction of the project would have potential to create a significant hazard to the public or the environment if undocumented contamination is encountered during ground-disturbing activities for the water main line. This impact would be **potentially significant.**

Mitigation Measures

Mitigation Measure 3.8-3: Conduct a Phase I Environmental Site Assessment of the Water Main Line Alignment

Prior to construction of the water main line, the water service provider responsible for constructing the water main line shall retain a licensed Environmental Professional to conduct a Phase I Environmental Site Assessment (ESA) of the alignment along Stoddard Wells Road and Johnson Road in accordance with ASTM standards. The water service provider shall be responsible for implementing the recommendations in the Phase I ESA, which may include completion of Phase II subsurface investigations or remedial actions if warranted.

The water service provider shall retain a licensed Ordnance Munitions and Explosives Professional to conduct a geophysical survey for military munitions and explosives of concern along the segment of the water main line alignment on Johnson Road between Dale Evans Parkway and Navajo Road. If contamination is identified in connection with the former Victorville Precision Bombing Range (PBR) N-1 Formerly Used Defense Site (FUDS), the water service provider shall be responsible for coordination with the Department of Toxic Substances Control (DTSC). The U.S. Army Corps of Engineers shall be responsible for conducting the appropriate response actions in to the requirements and satisfaction of DTSC. The response actions shall comply with the requirements of all legal authorities, which may include the Comprehensive Environmental Response, Compensation, and Liability Act; Defense

Environmental Restoration Program; National Oil and Hazardous Substances Pollution Contingency Plan; and the Resources Conservation and Recovery Act.

Significance after Mitigation

Mitigation Measure 3.8-3 would require surveys of the water main line alignment to identify the potential for environmental contamination, including the potential presence of military munitions and explosives of concern from former activities associated with the Victorville PBR N-1 FUDS site. This measure would ensure that any potential environmental contamination is identified and remediated prior to construction of the water main line. As mitigated, the project would not create a significant hazard to the public or the environment. Thus, implementation of Mitigation Measure 3.8-3 would reduce project impacts to **less than significant**.

Impact 3.8-4: Emergency Response or Evacuation Plans

Project construction activities could cause temporary lane closures on Stoddard Wells Road, which provides access to I-15, a potential evacuation route. Construction activities would comply with the provisions set forth in the California Fire Code. Additionally, the project proponent would be required to obtain an encroachment permit from the Town, which would require preparation and implementation of a traffic control plan for work performed within the public right-of-way. Compliance with these requirements would ensure that adequate emergency access is maintained throughout the construction period. Additionally, the project would be designed and maintained in accordance with applicable standards associated with vehicular access, such that interference with existing emergency response or evacuation plans would not occur during project operations. Therefore, the project would not impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan. This impact would be **less than significant.**

Construction

The project would include a variety of offsite improvements, including installation of a water main line, street improvements and transitions, drainage facility connections, utility connections, and landscaping. These offsite improvements could require temporary lane closures on Stoddard Wells Road and Johnson Road. Although Stoddard Wells Road and Johnson Road are not officially designated emergency evacuation routes, on- and off-ramps to I-15 from Stoddard Wells Road are adjacent to the project site. As identified in Section 3.8.2, I-15 could serve as a major response and evacuation routes for the Town during an emergency.

Construction activities would be required to follow the provisions set forth in the 2019 California Fire Code. Section 3310.1 of the 2019 California Fire Code identifies minimum requirements to provide required emergency access during construction activities. Prior to construction activities, the project proponent would be required to obtain an encroachment permit from the Town for work performed within public right-of-way. As a condition of encroachment permit approval, the project proponent would be required to prepare and implement a traffic control plan consistent with the most current California Manual on Uniform Traffic Control Devices and State Standard Plans. The traffic control plan would demonstrate appropriate traffic handling during construction activities for all work that may affect access to the traveling public and emergency service providers.

The project would be required to follow all State and Town requirements to ensure any potential impacts to emergency vehicles are minimized during construction. Therefore, the project would not result in inadequate emergency access; thus, the impact would be **less than significant**.

Operation

Implementation of the project, including the offsite main line, would not result in the permanent modification of existing roadway alignments. The project would be designed and maintained in accordance with applicable standards associated with vehicular access, such that interference with existing emergency response or evacuation plans would not occur. As a condition of project approval, the County HMD and Apple Valley Fire and Police Departments would review the project plans to ensure that adequate emergency vehicle access is provided. Given proper design of ingress/egress driveways and compliance with applicable standards and local regulations, operation of the project

would not impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan. This impact would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

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3.9 HYDROLOGY AND WATER QUALITY

This section identifies the regulatory context and policies related to hydrology and water quality, describes the existing hydrologic conditions at the project site, and evaluates potential hydrology and receiving water-quality impacts of the project. Potential effects on the capacity of the Town of Apple Valley water supply, sewer/wastewater, and drainage/stormwater facilities are addressed in Section 3.15, "Utilities and Service Systems." No public comments related to hydrology and water quality were received during the scoping period.

3.9.1 Regulatory Setting[1]

FEDERAL

Clean Water Act

The U.S. Environmental Protection Agency (EPA) is the lead federal agency responsible for water quality management. The Clean Water Act (CWA) is the primary federal law that governs and authorizes water quality control activities by EPA as well as the states. Various elements of the CWA address water quality, as discussed below.

CWA Water Quality Criteria/Standards

Pursuant to federal law, EPA has published water quality regulations under Title 40 of the Code of Federal Regulations (CFR). Section 303 of the CWA requires states to adopt water quality standards for all surface waters of the United States. As defined by the act, water quality standards consist of designated beneficial uses of the water body in question and criteria that protect the designated uses. Section 304(a) requires EPA to publish advisory water quality criteria that accurately reflect the latest scientific knowledge on the kind and extent of all effects on health and welfare that may be expected from the presence of pollutants in water. Where multiple uses exist, water quality standards must protect the most sensitive use. As described in the discussion of state regulations below, the State Water Resources Control Board (SWRCB) and its nine regional water quality control boards (RWQCBs) have designated authority in California to identify beneficial uses and adopt applicable water quality objectives.

CWA Section 303(d) Impaired Waters List

Under Section 303(d) of the CWA, states are required to develop lists of water bodies that do not attain water quality objectives after implementation of required levels of treatment by point source dischargers (municipalities and industries). Section 303(d) requires that the state develop a total maximum daily load (TMDL) for each of the listed pollutants. The TMDL is the amount of the pollutant that the water body can receive and still comply with water quality objectives. The TMDL is also a plan to reduce loading of a specific pollutant from various sources to achieve compliance with water quality objectives. In California, implementation of TMDLs is achieved through water quality control plans, known as Basin Plans, of the State RWQCBs. See "State Plans, Policies, Regulations, and Laws," below.

National Pollutant Discharge Elimination System

The National Pollutant Discharge Elimination System (NPDES) permit program was established in the CWA to regulate municipal and industrial discharges to surface waters of the United States. NPDES permit regulations have been established for broad categories of discharges including point source waste discharges and nonpoint source stormwater runoff. Each NPDES permit identifies limits on allowable concentrations and mass emissions of pollutants contained in the discharge. Sections 401 and 402 of the CWA contain general requirements regarding NPDES permits.

"Nonpoint source" pollution originates over a wide area rather than from a definable point source. Nonpoint source pollution often enters receiving water in the form of surface runoff and is not conveyed by way of pipelines or

[1] See also Section 3.8.1 (Regulatory Setting for Hazards and Hazardous Materials) for a discussion of federal and state regulatory requirements relevant to water quality protection in connection with the use of hazardous materials.

discrete conveyances. Two types of nonpoint source discharges are controlled by the NPDES program: discharges caused by general construction activities and the general quality of stormwater in municipal stormwater systems. The goal of the NPDES nonpoint source regulations is to improve the quality of stormwater discharged to receiving waters to the maximum extent practicable. The RWQCBs in California are responsible for implementing the NPDES permit system (see the discussion of "State Plans, Policies, Regulations, and Laws" section below).

National Flood Insurance Act

The Federal Emergency Management Agency (FEMA) is tasked with responding to, planning for, recovering from and mitigating against disasters. The Federal Insurance and Mitigation Administration within FEMA is responsible for administering the National Flood Insurance Program (NFIP) and administering programs that aid with mitigating future damages from natural hazards.

FEMA prepares Flood Insurance Rate Maps (FIRMs) that delineate the regulatory floodplain to assist local governments with the land use planning and floodplain management decisions needed to meet the requirements of NFIP. Floodplains are divided into flood hazard areas, which are areas designated per their potential for flooding, as delineated on FIRMs. Special Flood Hazard Areas are the areas identified as having a one percent chance of flooding in each year (otherwise known as the 100-year flood). In general, the NFIP mandates that development is not to proceed within the regulatory 100-year floodplain, if the development is expected to increase flood elevation by one foot or more.

STATE

California Porter-Cologne Act

California's primary statute governing water quality and water pollution issues with respect to both surface waters and groundwater is the Porter-Cologne Water Quality Control Act of 1970 (Porter-Cologne Act). The Porter-Cologne Act grants SWRCB and each of the nine RWQCBs power to protect water quality, and is the primary vehicle for implementation of California's responsibilities under the Clean Water Act. The applicable RWQCB for the project is the Lahontan RWQCB, which has jurisdiction from the Oregon border to the northern Mojave Desert and includes all of California east of the Sierra Nevada crest. SWRCB and the Lahontan RWQCB have the authority and responsibility to adopt plans and policies, regulate discharges to surface and groundwater, regulate waste disposal sites, and require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting requirements for unintended discharges of any hazardous substances, sewage, or oil or petroleum products.

Under the Porter-Cologne Act, each RWQCB must formulate and adopt one or more water quality control plans (known as "Basin Plans") for waters within its region. A Basin Plan shall consist of a designation or establishment for the waters within a specified area of all of the following: (1) beneficial uses to be protected; (2) water quality objectives (WQOs); and (3) a program of implementation needed for achieving the WQOs. The Lahontan RWQCB adopted the Water Quality Control Plan for the Lahontan Region (Lahontan Basin Plan) on March 31, 1995, and subsequently amended the document in 2019 to modify beneficial use designations for the Mojave River (Lahontan RWQCB 2019). The Lahontan Basin Plan is described in more detail under the "Local" regulations section below.

NPDES Construction General Permit for Stormwater Discharges Associated with Construction Activity

SWRCB adopted the statewide NPDES General Permit in August 1999. The state requires that projects disturbing more than one acre of land during construction file a Notice of Intent with the RWQCB to be covered under this permit. Construction activities subject to the General Permit include clearing, grading, stockpiling, and excavation. Dischargers are required to eliminate or reduce non stormwater discharges to storm sewer systems and other waters. A stormwater pollution prevention plan (SWPPP) must be developed and implemented for each site covered by the permit. The SWPPP must include best management plans (BMPs) designed to prevent construction pollutants from contacting stormwater and keep products of erosion from moving off-site into receiving waters throughout the construction and life of the project; the BMPs must address source control and, if necessary, pollutant control.

NPDES Stormwater Permit for Discharges from Small Municipal Separate Storm Sewer Systems

The Municipal Stormwater Permitting Program regulates stormwater discharges from municipal separate storm sewer systems (MS4s). As defined by the U.S. EPA, an MS4 refers to "a conveyance or system of conveyances including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains." Phase I permit requirements apply to larger MS4s (i.e., municipalities serving over 100,00 people. Phase II permits provide coverage for smaller municipalities (i.e., populations less than 100,000 people) and non-traditional small MS4s, which include facilities such as military bases, public campuses, and prison and hospital complexes.

In accordance with WQ Order No. 2003-0005-DWQ and NPDES General Permit No. CAS000004, the Town of Apple Valley, Cities of Hesperia and Victorville, and County of San Bernardino, collectively referred to as the Mojave River Watershed Group (MRWG), submitted a Notice of Intent (NOI) and Stormwater Management Program (SWMP) to the Lahontan RWQCB in August 2003 requesting coverage under the Phase II Small MS4 General Permit. The SWMP for the Mojave River Watershed (MRWG 2003) describes control measures for protecting area water quality from stormwater and non-stormwater discharges, particularly for the urbanized portion of the watershed. The Lahontan RWQCB accepted the SWMP and issued coverage under the Phase II permit to the MRWG in February 2005 (MRWG 2012).

California Water Code

California Department of Water Resources

The California Department of Water Resources (DWR) manages some of California's most important water resources, systems, and infrastructure, including the State Water Project (SWP). DWR's responsibilities and duties include: preventing and responding to floods, droughts, and catastrophic events; informing and educating the public on water issues; developing scientific solutions; restoring habitats; planning for future water needs, climate change impacts, and flood protection; constructing and maintaining facilities; generating power; ensuring public safety; and providing recreational opportunities.

Groundwater Management

Groundwater Management is accomplished through two statutory schemes. The first is the Groundwater Management Act (GMA), which is found in Water Code Sections 10750 through 10755.4. The GMA was first introduced in 1992 as Assembly Bill (AB) 3030, and has since been modified by Senate Bill (SB) 1938 in 2002, AB 359 in 2011. The intent of the GMA is to encourage local agencies to work cooperatively to manage groundwater resources within their jurisdictions and to provide a methodology for developing a Groundwater Management Plan.

The second, more important statutory scheme is the Sustainable Groundwater Management Act (SGMA) (SB 1168, SB 1319, and AB 1739), which was enacted in 2014 and is found in Water Code Section 10720 et seq. SGMA requires governments and water agencies of high and medium priority groundwater basins, as identified by DWR, to halt overdraft and bring groundwater basins into balanced levels of pumping and recharge. SGMA required the creation of groundwater sustainability agencies (GSAs) within these high- and medium priority basins. GSAs within high-priority basins were required to submit groundwater sustainability plans (GSPs) for their basins by January 31, 2020. GSAs in medium-priority basins were required to submit their GSPs by January 31, 2022. Following DWR's approval of these GSPs, the affected basins are to be managed under the GSPs. The basins should reach sustainability within 20 years of adoption of their GSPs. (For more detail regarding SGMA, see section 3.15.1 [Regulatory Setting portion of Section 3.15, "Utilities and Service Systems."])

The project site is within the boundaries of the Upper Mojave River Valley Groundwater Basin. Because the groundwater basin was classified as a very low priority basin, the project site is not within the service area of a groundwater sustainability agency (DWR 2021).

LOCAL[2]

Town of Apple Valley 2009 General Plan

The Town Council adopted the 2009 General Plan on August 11, 2009. The General Plan includes goals, policies, and programs intended to guide land use decisions within the Town's planning area. The Water Resources Element addresses water sources, availability, current and future demand, conservation, water quality, and the future of the water resources serving the community. The following program related to water quality and groundwater supplies is applicable to the project:

- **Program 1.F.1:** Require that the development and maintenance of project-specific on-site stormwater retention/detention basins implements the NPDES program, enhances groundwater recharge, complements regional flood control facilities, and addresses applicable community design policies subject to all applicable regulations, standards and guidelines.

The Open Space and Conservation Element is intended to provide for the inclusive long-term preservation and conservation of valuable natural resources, including water resources, and open space lands within the Town's planning area. The following program related to hydrology and groundwater recharge is applicable to the project:

- **Program 1.A.1:** The Town shall preserve all watercourses and washes necessary for regional flood control, ground water recharge areas and drainage for open space and appropriate recreational purposes.

The Flooding and Hydrology Element includes goals, policies, and programs to address potential drainage and flooding hazards within the community. The following policy and programs related to drainage and hydrology are applicable to the project:

- **Program 1.A.4:** As part of project development, all new development shall be required to complete on site drainage improvements at their expense.
- **Policy 1.D:** All new development within the Town shall be required to incorporate adequate flood mitigation measures, including the adequate siting of structures locating within flood plains, grading that prevents adverse drainage impacts to adjacent properties, and on-site retention of runoff.
- **Program 1.D.1:** The retention of stormwater on a project site shall be enforced through the development review process and routing site inspection.

Water Quality Control Plan for the Lahontan Region

The Lahontan RWQCB adopted the Water Quality Control Plan for the Lahontan Region (Lahontan Basin Plan) on March 31, 1995, and subsequently amended the document in 2019 to modify beneficial use designations for the Mojave River (Lahontan RWQCB 2019). The amended Mojave River plan portion of the Lahontan Basin Plan was adopted to update beneficial use descriptions, clarify water quality objectives for the Mojave River, and to make other minor figure edits.

The Lahontan Basin Plan includes a comprehensive list of waterbodies within the region and detailed language about the components of applicable WQOs. The Lahontan Basin Plan recognizes natural water quality, existing and potential beneficial uses, and water quality problems associated with human activities throughout the Lahontan Region. Through the Lahontan Basin Plan, the Lahontan RWQCB executes its regulatory authority to enforce the implementation of TMDLs, and to ensure compliance with surface WQOs. The Lahontan Basin Plan includes both narrative and numerical WQOs designed to provide protection for all designated and potential beneficial uses in all its principal streams and tributaries. Beneficial uses for surface and ground waters that could receive runoff or discharges for the project site are summarized in the water quality discussion of Section 3.9.2, "Environmental Setting." Section 3.9.2 also includes a list of the constituents in these surface and ground waters for which WQOs have been established.

[2] See also Section 3.15.1 (Regulatory Setting for Utilities and Service Systems) for a discussion of the Urban Water Management Plans for the Mojave Water Agency and Liberty Utilities – Apple Valley.

The Lahontan RWQCB also administers the adoption of waste discharge requirements, manages groundwater quality, and adopts projects within its boundaries under the NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (General Permit).

3.9.2 Environmental Setting

HYDROLOGY AND DRAINAGE

Regional Hydrology

The project site is located in the Southern Lahontan Hydrologic Region and is part of the Bell Mountain Wash – Mojave River Watershed (Figure 3.9-1). The Bell Mountain Wash – Mojave River Watershed encompasses 176,739 acres and drains into the Mojave River (UC Davis n.d.). The Mojave River originates in the San Bernardino Mountains and flows approximately 110 miles before emptying into Soda Lake in the Mojave Desert. The Mojave River is ephemeral, and the majority of its flow is underground (MRWG n.d.).

Local Hydrology

There are no perennial surface waters within the project site; however, seasonal drainage features cross the project site and water main extension area. The project site drains into the Bell Mountain Wash, located approximately 150 feet south of the project site (Figure 3.9-2). The Bell Mountain Wash is a dry stream bed that flows intermittently after heavy rains. The wash flows 11 miles and drains into the Mojave River approximately two miles north of the City of Victorville (Digital Desert n.d.).

Stormwater Drainage

The project site is currently undeveloped, except for underground infrastructure utility improvements that were abandoned and never completed. The project site has been previously affected by mass grading operations and off highway vehicle use. According to the Hydrology Report (Lane Engineers, Inc. 2022), the project site drains from northeast to southwest at a slope of approximately 2 percent (Appendix F). As stated above, the project site drains into the Bell Mountain Wash, which eventually discharges into the Mojave River.

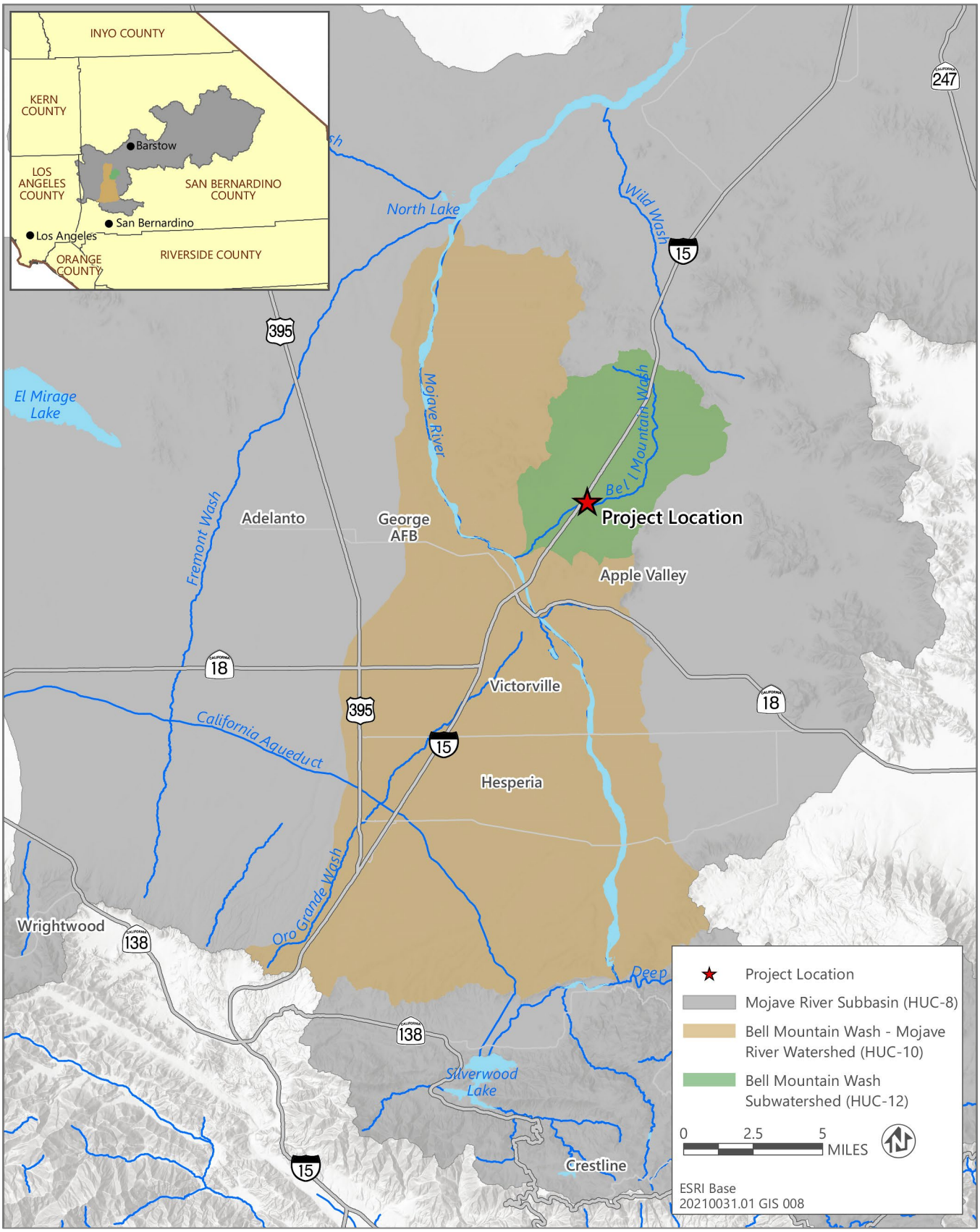
Flood Conditions

As shown on FEMA FIRM No. 06071C5810H, the project site is within an area in which flood hazards are undetermined, but possible, labeled Flood Zone D (FEMA 2008).

Groundwater Supplies

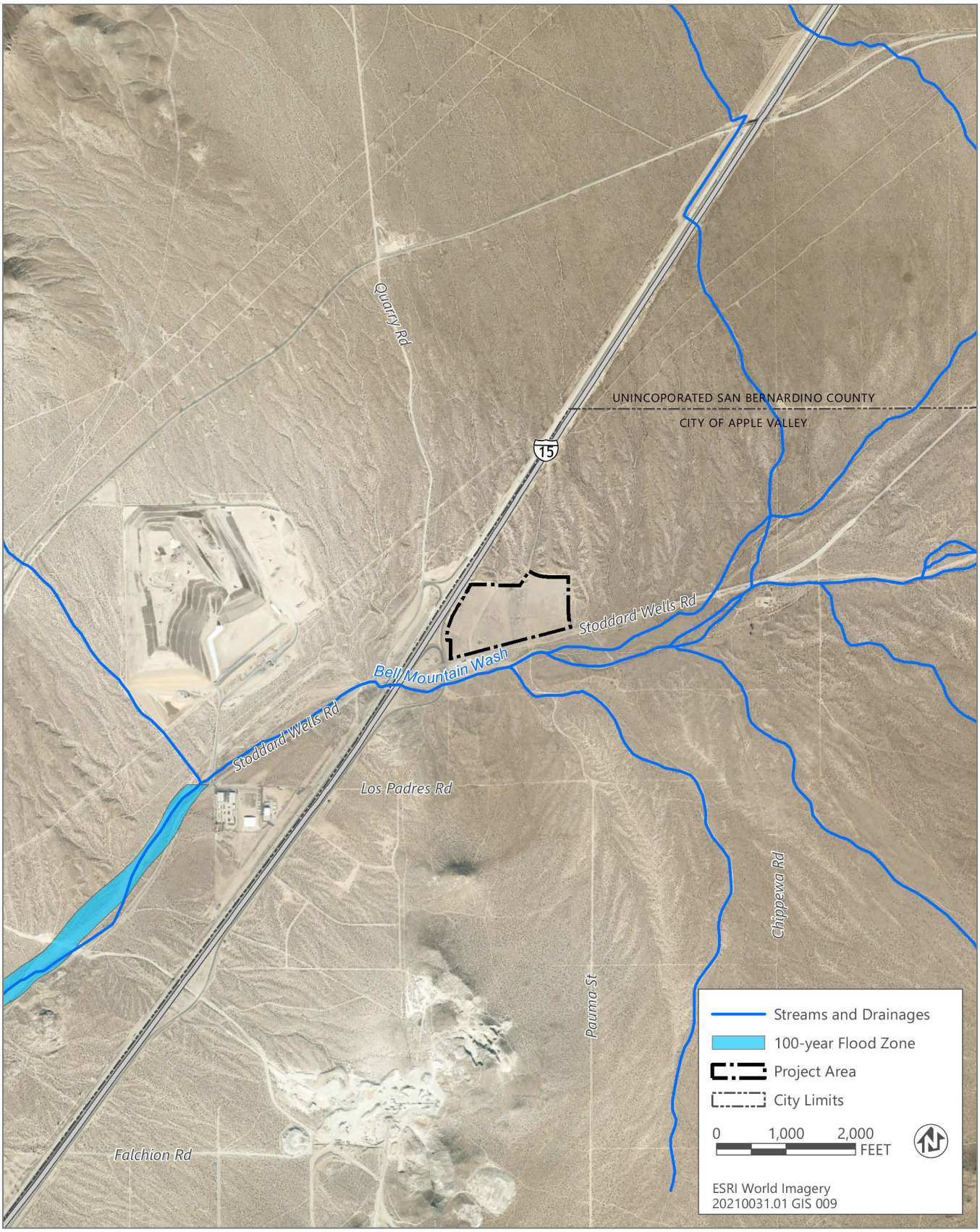
The project site is within the Upper Mojave River Valley Groundwater Basin, which is the primary source of domestic groundwater to the Town of Apple Valley. The Basin encompasses 413,000 acres (645 square miles) and consists of the Alto, Baja, Centro, Este, and Oeste Subareas. The Alto Subarea, which underlies the project site, has the largest water supply in the groundwater basin with a total effective storage capacity of 2,086,000 acre feet. The Mojave River is the primary source of recharge to the groundwater basin (DWR 2004).

Groundwater levels in the Mojave groundwater basin have generally declined since the early 1950s, resulting in overdraft conditions (DWR 2020; MWA 2021). Overdraft conditions occur when ground water discharge exceeds recharge, resulting in a net reduction in ground water stored in the aquifer. The Mojave Water Agency (MWA) was established in 1960 to address overdraft conditions in the groundwater basin. Since its formation, MWA has been responsible for securing supplemental waters supplies to improve the groundwater overdraft conditions within the aquifers in MWA's service area. The Mojave groundwater basin is not currently identified by the California Department of Water Resources (DWR) as a critically overdraft basin. Rather, the Mojave groundwater basin is identified by DWR as a very low-priority groundwater basin partially due to the fact that it is adjudicated.



Source: Data downloaded from USGS in 2017

Figure 3.9-1 Watersheds



Source: Data downloaded from FEMA and USGS in 2021

Figure 3.9-2 Streams and Drainages

MWA is a wholesale supplier and is responsible for long-term reliability of surface and groundwater within its 4,900-square mile service area. According to MWA's 2020 Urban Water Management Plan (UWMP), the agency anticipates having adequate supplies to meet demands during average, single-dry, and multiple-dry years through 2040. MWA's portfolio of water supplies includes natural and recharged groundwater, imported wastewater, return flow, and stored and SWP carryover supplies. To address projected dry conditions, MWA captures and stores surplus imported water in normal and wet years to meet regional demands in dry years. MWA has stored over 200,000 acre-feet of water in anticipation of future dry years (MWA 2021). Refer to the Environmental Setting discussion in Section 3.15, "Utilities and Service Systems," of this EIR for more information regarding MWA's existing and future water supplies.

MWA supplies water to Liberty Utilities, the water service provider to the Town of Apple Valley. Liberty Utilities anticipates that MWA's water supplies will continue to be a reliable source of water for the Town. Additionally, Liberty Utilities has identified potential water supply projects and programs to enhance and augment existing water supplies, which include participation in voluntary water transfer programs, conjunctive use of stored groundwater supplies, and future use of recycled water from the Victor Valley Wastewater Reclamation Authority facility. Furthermore, Liberty Utilities plans to implement demand reduction measures in the event that water supplies from existing sources are not sufficient to meet anticipated demands. These measures, which include irrigation and other outdoor use restrictions, rate structure changes, and other water use prohibitions, are intended to encourage customers to reduce water usage. A full list of measures is provided in Chapter 8.4 of the UWMP (Liberty Utilities 2021). Liberty Utilities' UWMP demonstrates that the provider can meet water demands over the next 25 years during normal years, single dry years, and multiple dry years (Liberty Utilities 2021). Refer to the Environmental Setting discussion in Section 3.15, "Utilities and Service Systems," of this EIR for more information regarding Liberty Utilities' existing and future water supplies.

WATER QUALITY

Surface Water Quality

Within the Mojave Watershed, water quality degradation has resulted from urbanization and past and current agricultural, industrial, and military land uses (Lahontan RWQCB 2002). The nearest surface waters to the project site include Bell Mountain Wash and the Mojave River. Beneficial uses for the Mojave River are municipal and domestic supply, agricultural supply, groundwater recharge, water contact recreation, non-contact water recreation, commercial and sport fishing, cold freshwater habitat, and wildlife habitat.

To protect beneficial uses of all surface waters within the Lahontan Region, the RWQCB established narrative and numerical water quality objectives for the following constituents: ammonia; bacteria, coliform; biostimulatory substances; chemical constituents; chlorine, total residual; color; dissolved oxygen; floating materials; oil and grease; non-degradation of aquatic communities and populations; pesticides; pH; radioactivity; sediment; settleable materials; suspended materials; taste and odor; temperature; toxicity; and turbidity. Site-specific water quality objectives for total dissolved solids and nitrate have been adopted for water bodies within the Mojave River hydrologic unit.

The 3.68-mile segment of the Mojave River from the Upper Narrows to Lower Narrows is listed as an impaired water body on the 2018 303(d) List for dissolved oxygen, fluoride, sulfates, total dissolved solids, and sodium. The Mojave River (Upper Narrows to Lower Narrows) is a Category 5 water body segment, which refers to water segments where standards are not met and a TMDL is required, but not yet completed, for at least one of the pollutants being listed for the segment. The estimated TMDL completion date for these pollutants is 2031 (SWRCB 2021).

Groundwater Quality

Groundwater quality can be affected by many factors that include the source and chemical composition of recharge water, properties of the host sediment, and history of discharge or leakage of pollutants. Groundwater quality impairments in the Mojave groundwater basin include trace elements, total dissolved solids, and manganese, perchlorate, volatile organic compounds, and pesticides (USGS and SWRCB 2013). Beneficial uses of the Basin include municipal and domestic supply, agricultural supply, industrial service supply, freshwater replenishment, and aquaculture (Lahontan RWQCB 2019; Table 2-2). To protect beneficial uses of all ground waters within the Lahontan Region, the RWQCB established narrative and numerical water quality objectives for the following constituents:

bacteria, coliform; chemical constituents; radioactivity; and taste and odor. Additionally, the RWQCB adopted specific water quality objectives for the Mojave River Valley.

3.9.3 Environmental Impacts and Mitigation Measures

METHODOLOGY

Evaluation of potential hydrologic and water quality impacts is based on a review of existing documents and studies that address water resources in the vicinity of the project. Information obtained from these sources was reviewed and summarized to describe existing conditions and to identify potential environmental effects, based on the standards of significance presented in this section. In determining the level of significance, the analysis assumes that the project would comply with relevant federal, state, and local laws, ordinances, and regulations.

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, an impact on hydrology or water quality is considered significant if implementation of the project would do any of the following:

- violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality;
- substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin;
- substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would
  - result in substantial erosion or siltation on- or off-site;
  - result in flooding on-site or off-site;
  - create or contribute runoff water that would exceed the capacity of existing or planned stormwater- drainage systems or provide substantial additional sources of polluted runoff;
  - impede or redirect flood flows
- in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation; and/or
- conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

ISSUES NOT DISCUSSED FURTHER

Flood Hazard Area, Tsunami, and Seiche

The project site is not located within a 100-year flood zone (FEMA 2008) and is not within a flood hazard overlay district, as identified on the Town's zoning map (Town of Apple Valley 2012). In addition, the project site is not located within a tsunami hazard area (CGS 2021), near a large body of water that could generate seiche, or in the potential inundation area of a levee or dam. Therefore, the potential for the release of pollutants due to project inundation in flood hazard, tsunami, or seiche zones is not discussed further.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 3.9-1: Violation of Water Quality Standards or Waste Discharge Requirements or Degradation of Water Quality During Construction

Construction of the project would require ground disturbance and the use of hazardous materials. These activities have the potential to degrade water quality through facilitating erosion or resulting in accidental spills of hazardous materials. However, project construction would include best management practices to ensure compliance with all applicable permit conditions and regulations governing the protection of water quality. Therefore, potential construction-related impacts on water quality would be **less than significant**.

The project would include vegetation removal, grading, earth moving, excavation, installation of onsite and offsite utilities, and building construction. During these activities, exposed soils would be subject to wind, rainfall, and stormwater runoff that could enter receiving waters. The project would be subject to the requirements of the NPDES Construction General Permit from the Lahontan RWQCB because construction activities would disturb more than one acre of soil. The contractor would be required to apply for and maintain coverage under the Construction General Permit before any ground-disturbing activities begin. As a requirement under the Construction General Permit, the contractor would prepare and implement a SWPPP. The SWPPP would include an erosion control plan that outlines erosion control measures and construction waste containment measures to ensure that waters of the United States and waters of the State are protected during and after project construction. The SWPPP would include site design measures to minimize offsite stormwater runoff that might otherwise affect surrounding habitats. The Lahontan RWQCB would review and monitor the effectiveness of the SWPPP through mandatory reporting by the Town and the contractor as required. A list of potential BMPs is included under Impact 3.6-1 in Section 3.6.

Additionally, construction associated with the project would require the use and handling of hazardous materials such as fuels, lubricants, coolants, hydraulic fluids, and cleaning solvents, which have potential to degrade water quality through accidental spills. The use of hazardous materials during construction activities would be conducted in compliance with applicable regulations described in Section 3.8, "Hazards and Hazardous Materials." These regulations would ensure that hazardous materials are properly stored, handled, and contained, and that accidental releases of hazardous materials are promptly addressed.

Compliance with the NPDES Permit and regulations governing hazardous materials would ensure that water quality standards and waste discharge requirements are not violated; therefore, potential construction-related impacts on water quality would be **less than significant**.

Impact 3.9-2: Violation of Water Quality Standards or Waste Discharge Requirements or Degradation of Water Quality During Operation

The project would include storage and disposal of fuel and would generate oils, lubricants, heavy metals, and other water quality contaminants, which would be carried in stormwater runoff and could reach surface or groundwaters. Additionally, a fuel storage tank leak could result in the contamination of groundwater. However, the project incorporates water quality BMPs to reduce the potential for discharge and would comply with California underground storage tank regulations. Although these measures cannot eliminate the potential for adverse effects to water quality, they would reduce impacts to a **less-than-significant** level.

The proposed travel center would include passenger vehicle and truck fueling stations, a truck maintenance facility, one 30,000-gallon below ground gasoline storage tank, eight 12,000-gallon above-ground and below ground diesel storage tanks, one two-compartment combined high octane gasoline/diesel tank, one 20,000-gallon diesel exhaust fluid storage tank. In addition, the proposed RV park would include a 1,000-gallon propane tank. Fuel could be spilled while being dispensed into automobiles and trucks or during fuel deliveries, which would take place several times each day. Oils, lubricants, heavy metals, and other water quality contaminants would create residue on the paved surfaces of the project site, which would be carried in stormwater runoff and could reach surface or groundwaters. Additionally, a leak in an underground storage tank (UST) could continue for a long period undetected, resulting in the potential contamination of groundwater.

The project includes operational water quality BMPs that would reduce the potential for pollutant discharge. All fueling and delivery areas would be surfaced with Portland cement concrete. Fueling bays would be covered by a canopy and would have a hydrologically isolated drainage system that discharges to an oil/water separator. The truck maintenance facility would also be enclosed and would include a similar drainage system. The travel center's eight above-ground storage tanks would include a concrete containment curb which would catch and retain fuel in the event of a fuel spill.

The paved and impervious surfaces of the travel stop would generate stormwater runoff that would carry with it the roadway and automotive contaminants found on the pavement surface. The travel center would include five onsite bioretention facilities and the RV park would include one bioretention area that would collect surface runoff from the project site (see Figure 2-3 and Figure 2-4 in Section 2, "Project Description"). Bioretention systems are designed to function in a similar manner as the physical, chemical, and biological processes in the natural environment. They capture runoff, promote infiltration and evapotranspiration, recharge groundwater, and remove up to 99 percent of the nutrients, sediment, and heavy metals carried in stormwater (Ahiablame et al. 2012).

As the Certified Unified Program Agency (CUPA) for jurisdictions within San Bernardino County, the Hazardous Materials Division of the San Bernardino County Fire Protection District oversees the Underground Storage Tank Program. The purpose of the program is to ensure that hazardous substances from UST systems are not released into groundwater and the environment. The project proponent would be required to submit plans to the CUPA and obtain a valid permit prior to commencing site work. In addition, project operations would be required to comply with Chapter 6.7 of the California Health & Safety Code and the associated regulations in Title 23 of the California Code of Regulations (Underground Storage of Hazardous Substances).

The protection of waters of the State from discharges of hazardous substances from USTs are regulated through California Code of Regulations, Title 23, Water, Division 3, Chapter 16 (UST Regulations). The UST regulations require rigorous design, construction, testing, and monitoring for all UST systems. These regulations require reinforcement of tank areas that receive the greatest wear and an independent secondary containment system large enough to contain 150 percent of the volume of the largest tank, or 10 percent of the total volume of all tanks, whichever is greater. A leak interception and detection system is also required, which prevents stored fuel from contacting groundwater. Additionally, the owners of all new USTs are required to develop a routine monitoring and reporting plan, and a response plan for any unauthorized release before the storage tank system is put into service.

The operation of the proposed travel stop would involve the use and transport of automotive fuels, lubricants, and other chemicals that could be spilled or otherwise discharged and carried to surface or groundwaters. However, the project incorporates water quality BMPs to reduce the potential for discharge and would comply with California UST regulations. Although these measures cannot eliminate the potential for adverse effects to water quality, they would reduce the potential to a **less-than-significant** level.

Mitigation Measures

No mitigation is required.

Impact 3.9-3: Decrease Groundwater Supplies or Interfere with Groundwater Recharge

Liberty Utilities would have adequate groundwater supplies to meet the water demands of the project. The project would create new impervious surfaces, which could reduce the amount of precipitation that is able to infiltrate the soil and recharge groundwater reserves. However, the project's stormwater bioretention basins would preserve groundwater recharge on the site. Therefore, the project would have a **less-than-significant** impact on groundwater supplies and groundwater recharge.

The project would be served by Liberty Utilities, the water service provider to the Town of Apple Valley. As discussed in more detail in Section 3.15, "Utilities and Service Systems," Liberty Utilities' distribution system is supplied solely by groundwater. The project would have an overall estimated water demand of approximately 26,000 gallons per day (gpd), or approximately 30 acre-feet per year (AFY). The estimated water demand for the project would represent a 0.2 percent increase in Liberty Utilities' average water demand of 15,280 AFY (Liberty Utilities 2021). This minor increase in water demand would not substantially decrease groundwater supplies. Furthermore, Liberty Utilities'

Urban Water Management Plan demonstrates that the provider can meet water demands over the next 25 years during normal years, single dry years, and multiple dry years (Liberty Utilities 2021). Refer to Section 3.15, for additional analysis of the project's effects on groundwater supplies.

The project would result in a net increase of approximately 24.2 acres of impervious surfaces, which could reduce the amount of precipitation that is able to infiltrate the soil and recharge groundwater reserves. However, the project incorporates stormwater bioretention basins, which would allow runoff from impervious surfaces to infiltrate into the soil and would preserve groundwater recharge. For these reasons, the project would have a **less-than-significant** impact on groundwater supplies and groundwater recharge.

Mitigation Measures

No mitigation is required.

Impact 3.9-4: Alter Existing Drainage Patterns

The project would comply with the NPDES Construction General Permit, which would reduce potential for erosion, siltation, and polluted runoff during construction activities. Once operational, the project site would include landscaping and hardscaping to prevent long-term erosion and bioretention basins to collect and filter polluted runoff. Although the project would create new impervious surfaces, the project is designed to decrease the volume of storm water runoff and peak discharge from the existing pre-development condition. Therefore, the project would not result in flooding or exceed the capacity of stormwater drainage systems. Therefore, the project would have a **less-than-significant** impact related to the alteration of drainage patterns.

The volume and rate of stormwater runoff generated from an area is affected by development through conversion of vegetated or pervious surfaces to impervious surfaces and by the development of drainage systems that connect these impervious surfaces to streams or other water bodies. In this way, development can increase the rate of runoff and eliminate storage and infiltration that would naturally occur along drainage paths. As water runs off the land surface, it collects and carries materials and sediment, which can be potentially harmful to downstream receiving waters. Additionally, runoff from impervious surfaces can become concentrated, overwhelming existing storm drain systems, causing erosion and increasing sediment transport, downstream deposition, and flooding in lower watershed areas. These effects are described in the following sections.

Erosion and Siltation

As described under Impact 3.9-1, vegetation removal, grading, earth moving, and excavation during project construction, including construction of the offsite water main line, could result in erosion and siltation in receiving waters. However, construction activities would comply with the NPDES General Permit, which requires preparation of a SWPPP and implementation of BMPs to control erosion and siltation. Once operational, the project site would be covered with paved surfaces and landscaped areas to provide long-term soil stability and minimize the potential for erosion. The offsite water main line alignment would be restored to existing conditions.

Stormwater Drainage System Capacity and Polluted Runoff

The project would result in a net increase of approximately 24.2 acres of impervious surfaces, which would affect the drainage conditions of the project site. As detailed in the Hydrology Report (Lane Engineers, Inc. 2022), the project is designed to direct surface flow to bioretention basins around the perimeter of the project site (Appendix F). During larger storm events, the bioretention basins would overflow into an underground storm drain system composed of drain inlets and pipes that would ultimately discharge to Bell Mountain Wash. Based on the findings of the Project Hydrology Report, the project design and storm drain system would have capacity to accommodate the modeled rainfall events (2-year, 5-year, 10-year, 25-year, 50-year, and 100-year 24-hour storm events). In addition, the Hydrology Report concluded that the project would decrease the volume of storm water runoff and peak discharge from the existing pre-development condition (Lane Engineers, Inc. 2022).

Flood Flows

As described above, the proposed bioretention basins and underground storm drain system would have adequate capacity to accommodate storm water runoff from the project site. Therefore, the project would not result in onsite and offsite flooding. Furthermore, the project site is not within a flood hazard overlay district and would not impede or redirect flood flows (Town of Apple Valley 2012).

Summary

Based on the above discussion, the project would not affect drainage patterns in a manner that would (1) result in substantial erosion or siltation; (2) result in onsite or offsite flooding; (3) exceed the capacity of stormwater drainage systems or introduce new sources of polluted runoff; or (4) impede or redirect flood flows. Impacts would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

Impact 3.9-5: Conflict with or Obstruct Implementation of Water Quality Control or Sustainable Groundwater Management Plans

The project would comply with applicable permits and regulations governing water quality; therefore, construction and operational activities would not result in exceedances of any water quality objectives established for protecting the beneficial uses of receiving water bodies (i.e., Mojave River and Mojave groundwater basin), as established in the Basin Plan for the Lahontan Region. Although a sustainable groundwater management plan has not been adopted for the Upper Mojave Valley Groundwater Basin, the project includes stormwater bioretention basins to facilitate groundwater recharge. In addition, Liberty Utilities would have adequate groundwater supplies to meet the needs of the project. Therefore, the project would have a **less-than-significant** impact related to conflicting with or obstructing implementation of a water quality control plan or sustainable groundwater management plan.

As discussed under Impact 3.9-1 above, project construction would be subject to the NPDES Construction General Permit from the Lahontan RWQCB. In addition, as discussed under Impact 3.9-2, the project includes operational water quality BMPs that would reduce the potential for pollutant discharge during operations and bioretention systems that would collect and filter pollutants from stormwater runoff. Furthermore, the storage, use, and disposal of hazardous materials during construction and operational activities would be conducted in compliance with applicable regulations described in Section 3.8, "Hazards and Hazardous Materials." Compliance with applicable permits and regulations governing water quality would ensure that construction and operational activities would not result in exceedances of any water quality objectives established for protecting the beneficial uses of receiving water bodies (i.e., Mojave River and Mojave groundwater basin), as established in the Basin Plan for the Lahontan Region.

As discussed in Section 3.9.1, the project site is within the Upper Mojave River Valley Groundwater Basin, which was classified as a very low priority basin (DWR 2021). As such, the project site is not within the service area of a groundwater sustainability agency and a sustainable groundwater management plan has not been adopted for the region. Therefore, the project would not conflict with a sustainable groundwater management plan. Furthermore, as discussed under Impact 3.9-3 above, the project incorporates stormwater bioretention basins, which would allow runoff from impervious surfaces to infiltrate into the soil and would preserve groundwater recharge. Additionally, Liberty Utilities would have adequate groundwater supplies to meet the needs of the project. Refer to Section 3.15, "Utilities and Service Systems" for an analysis of the project's effects on water supplies.

Based on the above discussion, the project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. Impacts would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

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3.10 LAND USE AND PLANNING

This section evaluates the consistency of the Apple Valley I-15 Travel Center (project) with applicable land use plans and policies. The physical environmental effects associated with the project, many of which pertain to issues of land use compatibility (e.g., noise, aesthetics, air quality) are evaluated in other sections of Chapter 3 of this Draft Environmental Impact Report. No public comments related to land use and planning were received during the scoping period.

3.10.1 Regulatory Setting

FEDERAL

No federal plans, policies, regulations, or laws related to land use are applicable to the project.

STATE

State Planning and Zoning Laws

Article 5 of Chapter 3 of Division 1 of Title 7 of the Government Code (Section 65300 et seq.) establishes the obligation of cities and counties to adopt and implement general plans. The general plan is a comprehensive, long-term, document that describes plans for the physical development of a city or county and of any land outside its boundaries that, in the city's or county's judgment, bears relation to its planning. The general plan addresses a broad range of topics, including, at a minimum, land use, circulation, housing, conservation, open space, noise, and safety. In addressing these topics, the general plan identifies the goals, objectives, policies, principles, standards, and plan proposals that support the city's or county's vision for the area. The general plan is a long-range document that typically addresses the physical character of an area over an approximate 20-year period.

Chapter 4 of Division 1 of Title 7 of the Government Code (Section 65800 et seq.) is entitled, Zoning Regulations. Within that chapter, section 65860 requires that zoning ordinances, which are local laws that define allowable land uses within a specific district, be consistent with the general plan and any applicable specific plans. The California Supreme Court has noted that "'[t]he propriety of virtually any local decision affecting land use and development depends upon consistency with the applicable general plan and its elements.'" (*Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 570, quoting *Resource Defense Fund v. County of Santa Cruz* (1982) 133 Cal.App.3d 800, 806.)

LOCAL

Town of Apple Valley 2009 General Plan

The Apple Valley Town Council adopted the 2009 General Plan on August 11, 2009. The Land Use Element establishes the long-term development plan for the Town and provides specific goals, policies, and programs that govern each land use category within the community. The land use and zoning designation for the project site is Regional Commercial (C-R). This land use category allows retail uses that serve the residents and businesses within the Town of Apple Valley, as well as the surrounding region. Permitted uses in this designation include auto malls, regional malls, business parks, factory stores and outlets, entertainment, hotels and motels, restaurants, institutional uses, and public uses. The Town of Apple Valley has determined that the proposed project fits within the definition of allowable Regional Commercial land uses. The minimum size for a Regional Commercial project site is 10 acres. Specific goals, policies, and programs applicable to the project that govern commercial land uses include the following:

GOAL 6: Commercial development shall strengthen the local economy and enhance the quality of life.

- Policy 6.A: Commercial development shall be permitted only in areas with provisions for adequate circulation, utilities, infrastructure and public services.
  - Program 6.A.1: Commercial development shall be focused on major roadways, the State Route 18 corridor, the High Desert Corridor, and Interstate 15 as shown on the Land Use Map.
  - Program 6.A.2: Commercial development projects will be required to extend adequate infrastructure, utilities and public services prior to occupancy.
- Policy 6.B: The Town shall promote commercial and industrial development that are capable of strengthening the local economy and enhancing the quality of life of Town residents.
  - Program 6.B.1: The Development Code will maintain development standards and guidelines which encourage creative, high quality design of commercial projects.

3.10.2 Environmental Setting

The project site in the northwest portion of the Town of Apple Valley, located immediately east of Interstate 15 (I-15) and north of Stoddard Wells Road. The project site is currently vacant and mostly undeveloped, but it has been the subject of previous entitlement actions by San Bernardino County before the incorporation of the Town of Apple Valley in 1988. The previously approved project resulted in the construction of underground infrastructure utility improvements, which were abandoned and never completed.

The project site is primarily surrounded by vacant land, with the Victorville Landfill located approximately 0.5 mile west of the project site across from I-15 and along Stoddard Wells Road. Other proximal land uses include the Walmart and Big Lots! logistics/distribution centers approximately 2.8 miles east of the project site, and the Apple Valley airport located approximately 3.8 miles southeast of the project site. The closest residences are approximately 2.6 miles south of the project site.

As stated above, the land use and zoning designation for the project site is C-R (see Figure 2-9 and Figure 2-10 in Section 2, Project Description). The areas adjacent to the project site to the north, south, and east are also designated C-R. The area west of the project site across I-15, which is within unincorporated San Bernardino County, includes Facilities and Vacant land uses and is zoned Regional Conservation, General Commercial, and Institutional.

3.10.3 Environmental Impacts and Mitigation Measures

METHODOLOGY

Evaluation of potential land use impacts is based on a review of the planning documents pertaining to the project study area, including the 2009 General Plan (Town of Apple Valley 2009).

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, a land use impact is considered significant if implementation of the project would do either of the following:

- physically divide an established community; or
- cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

ISSUES NOT DISCUSSED FURTHER

Physically Divide an Established Community

The project site is currently vacant and adjacent to the northbound I-15 on-ramp and Stoddard Wells Road. The land immediately surrounding the project site is predominately vacant in each direction. As described in Section 3.10.2, the nearest development is the Victorville Landfill 0.5 mile west of the project site, while the nearest residential community is 2.6 miles south of the project site. The project site is not within an existing community and would not introduce physical barriers or change existing circulation patterns in a manner that would hinder access to existing communities. Therefore, there would be no impact related to physically dividing an established community. This issue is not discussed further.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 3.10-1: Conflict with Applicable Land Use Plans, Policies, or Regulations Adopted for the Purpose of Avoiding or Mitigating an Environmental Effect

The Town has determined that the project is consistent with the general plan and zoning land use designations. The applicant would obtain the necessary Town approvals and permits to ensure compatibility with the General Plan and zoning designations for the project site. Additionally, the project would be consistent with the goals and policies in the various elements of the Town's General Plan, which are intended to avoid or mitigate environmental effects. Therefore, this impact would be **less than significant**.

The Land Use Element of the Town of Apple Valley 2009 General Plan includes goals, policies, and programs that govern land use diversity and compatibility. These goals, policies, and programs are designed to protect the environment as the Town continues to experience growth and development. The project proposes construction of a travel center and recreational vehicle (RV) park, which are allowed under the General Plan and C-R zoning designation with the following permits and approvals from the Town: Vesting Tentative Parcel Map, Conditional Use Permit, Development Permit, and Reimbursement Agreement. Some of the uses included in the project would be permitted by right (e.g., "Commercial retail uses such as clothing, food, gifts, studios, services and other similar uses" and "Convenience stores"). Other uses would require special use permits or conditional use permits (e.g., "Automotive services, including motorcycles, boats, motorhomes, trailers, and campers"). Because adjacent properties are vacant and also designated for commercial uses, the project would not introduce features that would be incompatible with adjacent land uses.

As demonstrated in Table 3.10-1, the project would be consistent with the land use goals, policies, and programs in the Town of Apple Valley 2009 General Plan.

The Town of Apple Valley 2009 General Plan includes an Environmental Resources chapter, containing a Water Resources Element, Open Space and Conservation Element, Biological Resources Element, Archaeological and Historic Resources Element, Air Quality Element, and Energy and Mineral Resources Element. Additionally, the Environmental Hazards chapter contains a Geotechnical Element, Flooding and Hydrology Element, Noise Element, Hazardous and Toxic Materials Element, Air Quality Element, and Energy and Mineral Resources Element. The Regulatory Setting discussions in Sections 3.1 through 3.9 and 3.11 through 3.15 of this EIR include the goals and policies from these elements that are applicable to the project. These goals and policies were specifically adopted to reduce environmental effects associated with the physical development of land within the Town's boundaries. As evaluated in Sections 3.1 through 3.9 and 3.11 through 3.15 of this EIR, the project would be consistent with the goals and policies in the Town of Apple Valley 2009 General Plan.

Table 3.10-1 Consistency With Land Use Plans, Policies, and Regulations

Plan, Policy, or Regulation	Project Consistency
Town of Apple Valley 2009 General Plan	
Policy 6.A: Commercial development shall be permitted only in areas with provisions for adequate circulation, utilities, infrastructure and public services.	Yes. The project includes construction of a commercial development adjacent to existing transportation corridors with access to existing electric, gas, and sewer systems.
Program 6.A.1: Commercial development shall be focused on major roadways, the State Route 18 corridor, the High Desert Corridor, and Interstate 15 as shown on the Land Use Map.	Yes. The project includes construction of a commercial development adjacent to Interstate 15.
Program 6.A.2: Commercial development projects will be required to extend adequate infrastructure, utilities and public services prior to occupancy.	Yes. The project includes connections to existing offsite utilities, including electric, gas, sewer, and water systems.
Policy 6.B: The Town shall promote commercial and industrial development that are capable of strengthening the local economy and enhancing the quality of life of Town residents.	Yes. The project involves construction of a high-quality travel center that would generate tax revenue for the Town of Apple Valley. The project would also provide employment opportunities and services, including a fuel station, convenience store, and fast-food restaurant, for residents.
Program 6.B.1: The Development Code will maintain development standards and guidelines which encourage creative, high quality design of commercial projects.	Yes. The project design would comply with the standards and guidelines provided in the Town of Apple Valley Development Code.

Source: Town of Apple Valley 2009.

As discussed above, the project applicant would obtain the necessary Town approvals and permits to ensure compatibility with the General Plan and C-R zoning designations for the project site. Additionally, the project would be consistent with the goals and policies in the various elements of the Town's General Plan, which are intended to avoid or mitigate environmental effects. Therefore, impacts related to conflicts with adopted plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect would be **less-than-significant**.

Mitigation Measures

No mitigation is required for this impact.

3.11 NOISE AND VIBRATION

This section includes a summary of applicable regulations related to noise and vibration, a description of ambient-noise conditions, and an analysis of potential short-term construction and long-term operational-source noise and vibration impacts associated with the Apple Valley I-15 Travel Center Project. Additional data is provided in Appendix G, "Noise Measurement Data and Noise Modeling Calculations" of this EIR.

3.11.1 Regulatory Setting

FEDERAL

Federal Noise Control Act of 1972

The Federal Noise Control Act of 1972 established a requirement that all Federal agencies must comply with applicable Federal, State, interstate, and local noise control regulations. Federal agencies also are directed to administer their programs in a manner that promotes an environment free from noise that jeopardizes public health or welfare.

U.S. Environmental Protection Agency Office of Noise Abatement and Control

The U.S. Environmental Protection Agency (EPA) Office of Noise Abatement and Control was originally established to coordinate Federal noise control activities. In 1981, EPA administrators determined that subjective issues such as noise would be better addressed at more local levels of government. Consequently, in 1982 responsibilities for regulating noise control policies were transferred to state and local governments. However, documents and research completed by the EPA Office of Noise Abatement and Control continue to provide value in the analysis of noise effects.

Federal Transit Administration Exposure to Ground Vibration Standards

To address the human response to ground vibration, the Federal Transit Administration (FTA) has set forth guidelines for maximum-acceptable vibration criteria for different types of land uses. These guidelines are presented in Table 3.11-1.

Table 3.11-1 Ground-Borne Vibration (GBV) Impact Criteria for General Assessment

Land Use Category	GVB Impact Levels (VdB re 1 micro-inch/second)		
	Frequent Events[1]	Occasional Events[2]	Infrequent Events[3]
Category 1: Buildings where vibration would interfere with interior operations.	65 [4]	65 [4]	65 [4]
Category 2: Residences and buildings where people normally sleep.	72	75	80
Category 3: Institutional land uses with primarily daytime uses.	75	78	83

Notes: VdB = vibration decibels referenced to 1 µ inch/second and based on the root mean square (RMS) velocity amplitude.

[1] "Frequent Events" is defined as more than 70 vibration events of the same source per day.

[2] "Occasional Events" is defined as between 30 and 70 vibration events of the same source per day.

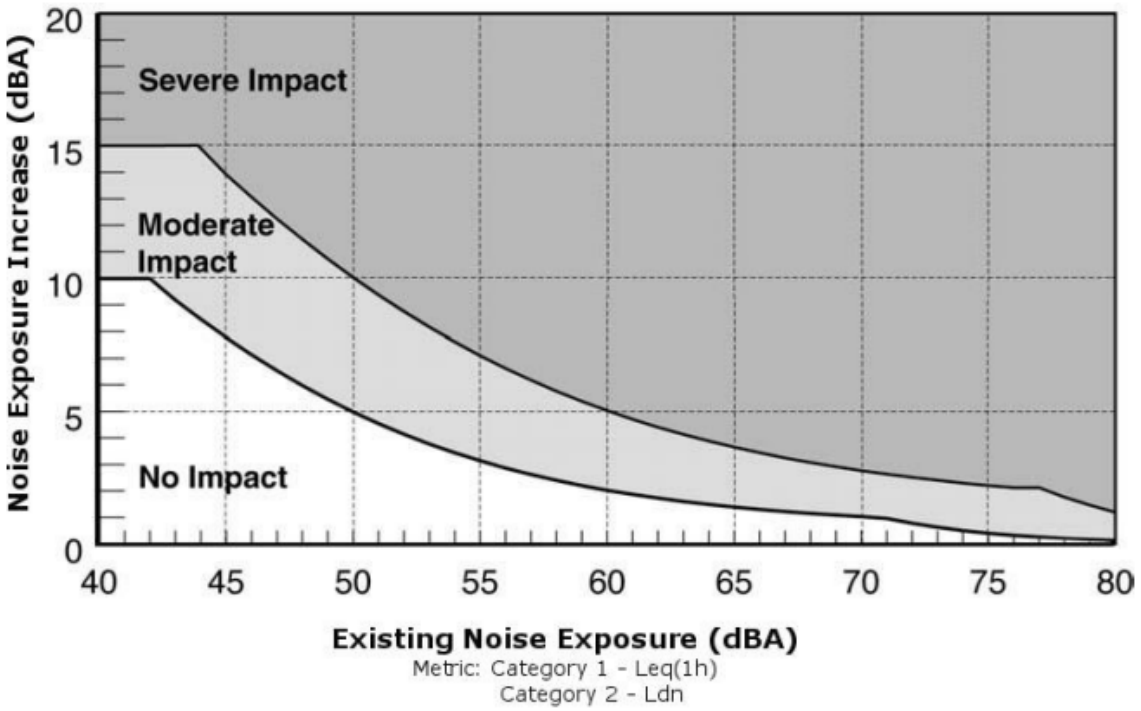
[3] "Infrequent Events" is defined as fewer than 30 vibration events of the same source per day.

[4] This criterion is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes. Vibration-sensitive manufacturing or research would require detailed evaluation to define acceptable vibration levels.

Source: FTA 2018: 123–126.

Federal Transit Administration Incremental Increases in Existing Noise Exposure Standards

FTA has provided noise impact criteria based on increases in cumulative noise between existing and existing-plus-project conditions. As the existing level of ambient noise increases, the allowable level of transportation noise increases, but the total amount that community noise exposure is allowed to increase is reduced. This accounts for the unexpected result that a project exposure which is less than the existing noise exposure can still cause impact (FTA 2018: 29). These guidelines are presented in Figure 3.11-1.



Source: FTA 2018: Figure 4-3.

Figure 3.11-1 Increase in Cumulative Noise Levels Allowed by Criteria (Land Use Cat. 1 & 2)

STATE

California Building Code Sound Transmission Standards

California's noise insulation standards became effective in 1974. In 1988, the Building Standards Commission approved revisions to these standards (Title 24, Part 2, CCR). Noise within habitable units that is attributable to external sources is regulated by the California Building Standards codified in CCR, Title 24, Part 2, Section 1207. These standards are enforceable at the time of construction or during occupancy and apply to habitable units with common interior walls, partitions, and ceilings, or those adjacent to public areas such as halls, corridors, stairways, and service areas. Under these standards, the interior noise levels attributable to exterior sources shall not exceed 45 decibels (dB) in any habitable room. The noise metrics used to measure these levels can be day-night average sound level (L_{dn}) or Community Noise Equivalent Level (CNEL), consistent with the local general plan. An acoustical analysis documenting compliance with the interior sound level standards shall be prepared for structures containing habitable rooms. The commission also specifies that residential buildings or structures proposed to be located within exterior L_{dn} contours of 60 dB or greater, generated by an existing or planned freeway, expressway, parkway, major street, thoroughfare, rail line, rapid transit line, or industrial noise source, shall require an acoustical analysis showing that the building has been designed to limit intruding noise to an interior L_{dn} of 45 dB. Under California Public Resources Code Section 25402.1(g), all cities and counties in the state are required to enforce the adopted California Building Code, including these standards for noise in interior environments.

California General Plan Guidelines

The State of California General Plan Guidelines 2017, published by the California Governor's Office of Planning and Research (2017), provide guidance for the compatibility of projects within areas of specific noise exposure. Acceptable and unacceptable community noise exposure limits for various land use categories have been determined to help guide new land use decisions in California communities. In many local jurisdictions, these guidelines are used to derive local noise standards and guidance. Citing EPA materials and the State Sound Transmissions Control Standards, the State's general plan guidelines recommends interior and exterior CNEL of 45 and 60 dB for residential units, respectively (OPR 2017: 378).

California Department of Transportation

In 2020, Caltrans published the Transportation and Construction Vibration Manual (Caltrans 2020). The manual provides general guidance on vibration issues associated with construction and operation of projects in relation to human perception and structural damage. Table 3.11-2 presents recommendations for levels of vibration that could result in damage to structures exposed to continuous vibration.

Table 3.11-2 Caltrans Recommendations Regarding Levels of Vibration Exposure

PPV (in/sec)	Effect on Buildings
0.4-0.6	Architectural damage and possible minor structural damage
0.2	Risk of architectural damage to normal dwelling houses
0.1	Virtually no risk of architectural damage to normal buildings
0.08	Recommended upper limit of vibration to which ruins and ancient monuments should be subjected
0.006-0.019	Vibration unlikely to cause damage of any type

Notes: PPV= Peak Particle Velocity; in/sec = inches per second

Source: Caltrans 2020.

LOCAL

Town of Apple Valley General Plan

The Noise Element of the Town of Apple Valley General Plan (Town of Apple Valley 2009) references noise standards included in the Town of Apple Valley Noise Control Ordinance, discussed separately below, and establishes the following program that is relevant to the analysis in this report:

- Policy 1.A The Town shall adhere to the standards of "Land Use Compatibility for Community Environments" (presented as Table 3.11-3, below)
  - Program 1.A.1 The Town shall continue to maintain and enforce its Noise Control Ordinance.
  - Program 1.A.2 The Town shall include noise attenuation in its development review process when development projects are proposed. Design techniques that can alleviate noise include, but are not limited to building setbacks, the installation of wall and window insulation, sound walls and earthen berms.
  - Program 1.A.3 The mechanical equipment associated with commercial and industrial development, including compactors, trash disposal areas, heating and air conditioning systems shall be located as far as practicable from adjacent sensitive receptors, or from lands designated on the Land Use map for noise sensitive uses.
  - Program 1.A.4 Minimum requirements for noise analyses for proposed development projects shall be developed and distributed to applicants early in the development review process. Studies shall evaluate project impacts and the effectiveness of proposed mitigation measures.
  - Program 1.A.6 Commercial and industrial projects proposed adjacent to sensitive receptors, or lands designated for sensitive receptors, including residential, school or hospital sites, shall be required to submit a noise analysis in conjunction with entitlement applications.
- Policy 1.B New development projects shall assure that exterior noise levels in back yards and/or useable open space do not exceed 65 dBA [A-weighted decibels] CNEL, and that interior noise levels are consistent with the requirements of the Building Code.
- Policy 1.D The development review and environmental review process shall require all development proposals within the noise impact area of U.S. I-15, State Route 18, the High Desert Corridor or the railroads to mitigate both noise and vibration to acceptable levels through the preparation of focused studies.

Table 3.11-3 Land Use Compatibility for Community Noise Environments

Land Use Category	Community Noise Exposure - L_{dn} or CNEL (db)													
	50		55		60		65		70		75		80	
Residential – Low-Density Single Family, Duplex, Mobile Homes														
Residential - Multi-Family														
Transient Lodging – Motels, Hotels														
Schools, Libraries, Churches, Hospitals, Nursing Homes														
Auditoriums, Concert Halls, Amphitheaters														
Sports Arenas, Outdoor Spectator Sports														
Playgrounds, Neighborhood Parks														
Golf Courses, Riding Stables, Water Recreation, Cemeteries														
Office Buildings, Business Commercial and Professional														
Industrial, Manufacturing, Utilities, Agriculture														

Land Use Category	Community Noise Exposure - L_{dn} or CNEL (db)						
	50	55	60	65	70	75	80
Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.							
Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice.							
Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.							
Clearly Unacceptable: New construction or development generally should not be undertaken.							

Source: Town of Apple Valley 2009.

Town of Apple Valley Noise Control Ordinance

The Noise Control Ordinance in the Town of Apple Valley Code of Ordinances (Town of Apple Valley 2021) establishes the following standards related to noise and vibration that are applicable to the project:

9.73.040 - General Noise Regulations

A. General Noise Regulations. Notwithstanding any other provision of this chapter, and in addition thereto, it shall be unlawful for any person to willfully or negligently make or continue, or cause to be made or continued, any loud, unnecessary, or unusual noise which disturbs the peace and quiet enjoyment of any neighborhood or which causes any discomfort or annoyance to any reasonable person of normal sensitivity residing in the area.

   The factors which shall be considered in determining whether a violation of the provisions of this section exists shall include, but not be limited to, the following:

   1. The sound level of the objectionable noise;
   2. The sound level of the ambient noise;
   3. The proximity of the noise to residential sleeping facilities;
   4. The nature and zoning of the area within which the noise emanates;
   5. The number of persons affected by the noise source;
   6. The time of day or night the noise occurs;
   7. The duration of the noise and its tonal, informational or musical content;
   8. Whether the noise is continuous, recurrent, or intermittent;
   9. Whether the noise is produced by a commercial or noncommercial activity.

B. Noise Measurement Procedure

   1. Receipt of Complaint. Upon receipt of a complaint from a citizen, the NCO shall, equipped with the appropriate sound level measurement equipment, investigate the complaint. The investigation shall consist of a measurement of the offending noise and the gathering of data to adequately define the noise problem and shall include the following:
      a. Type of noise source;
      b. Location of noise source relative to complainant's property;
      c. Time period during which noise source is considered by complainant to be intrusive;
      d. Total duration of noise produced by noise source;
      e. Date and time of noise measurement survey.

2. Noise Measurement Procedure

   a. Utilizing the "A" weighting scale of the sound level meter and the "slow" meter response (use "fast" response for impulsive type sounds), the noise level shall be measured at a position or positions at any point on the receiver's property.

   b. In general, the microphone shall be located four to five feet above the ground; ten feet or more from the nearest reflective surface where possible. However, in those cases where another elevation is deemed appropriate, the latter shall be utilized. If the noise complaint is related to interior noise levels, interior noise measurements shall be made within the affected residential unit. The measurements shall be made at a point at least four feet from the wall, ceiling, or floor nearest the noise source, with windows in the normal seasonal configuration. Calibration of the measurement equipment, utilizing an acoustic calibration, shall be performed immediately prior to recording any noise data.

9.73.50 - External and Internal Noise Standards

A. External Noise Standards

1. Maximum Permissible Sound Levels by Receiving Land Use

   a. The noise standards for the various categories of land use identified by the Noise Control Officer as presented in Table 9.73.050-A (presented as Table 3.11-4, below) shall, unless otherwise specifically indicated, apply to all such property within a designated zone.

   b. No person shall produce or cause to be produced any sound at any location within the incorporated Town or allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person, which causes the noise level when measured on any other property, either incorporated or unincorporated, to exceed:

      1) The noise standard for that land use as specified in Table 9.73.050-A (presented as Table 3.11-4, below) for a cumulative period of more than thirty (30) minutes in any hour; or

      2) The noise standard plus five (5) dBA for a cumulative period of more than fifteen (15) minutes in any hour; or

      3) The noise standard plus ten (10) dBA for a cumulative period of more than five (5) minutes in any hour; or

      4) The noise standard plus fifteen (15) dBA for a cumulative period of more than one (1) minute in any hour; or

      5) The noise standard plus twenty (20) dBA or the maximum measured ambient level, for any period of time.

   c. If the measured ambient level differs from that permissible within any of the first four noise limit categories above, the allowable noise exposure standard shall be adjusted in five (5) dBA increments in each category as appropriate to encompass or reflect said ambient noise level.

      In the event the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under this category shall be increased to reflect the maximum ambient noise level.

   d. If the measurement location is on a boundary between two different zones, the noise level limit applicable to the lower noise zone plus five (5) dBA shall apply.

   e. If possible, the ambient noise shall be measured at the same location along the property line utilized in paragraph 9.73.050.A.1.b of this Chapter with the alleged offending noise source inoperative. If, for any reason, the alleged offending noise source cannot be shut down, the ambient noise must be estimated by performing a measurement in the same general area of the source but at a sufficient distance such that the noise from the source is at least ten (10) dBA below the ambient in order that only the ambient level be measured. If the difference between the ambient and the noise source is five (5) to ten (10) dBA,

then the level of the ambient itself can be reasonably determined by subtracting a one decibel correction to account for the contribution of the source.

2. **Correction for Character of Sound.** In the event the alleged offensive noise, as judged by the NCO, contains a steady, audible tone such as a whine, screech, or hum, or is a repetitive noise such as hammering or riveting, or contains music or speech conveying informational content, the standard limits set forth in Table 9.73.050-A (presented as Table 3.11-4, below) shall be reduced by five (5) dBA.

Table 3.11-4 Exterior Noise Limits (Levels Not To Be Exceeded by More than 30 Minutes in Any Hour)

Receiving Land Use Category	Time Period	Noise Level (dBA)
Single Family Residential	10 p.m. – 7 a.m.	40
	7 a.m. – 10 p.m.	50
Multiple Dwelling Residential, Public Space	10 p.m. – 7 a.m.	45
	7 a.m. – 10 p.m.	50
Limited Commercial and Office	10 p.m. – 7 a.m.	55
	7 a.m. – 10 p.m.	60
General Commercial	10 p.m. – 7 a.m.	60
	7 a.m. – 10 p.m.	65
Light and Heavy Industrial	Anytime	70
	Anytime	75

Notes: dBA = A-weighted decibel

Source: Town of Apple Valley 2021: Table 9.73.050-A

B. Interior Noise Standards

1. **Maximum Permissible Dwelling Interior Sound Levels**

a. The interior noise standards for multi-family residential dwellings as presented in Table 9.73.050-B (presented as Table 3.11-5, below) shall apply, unless otherwise specifically indicated, within all such dwellings with windows in their normal seasonal configuration.

Table 3.11-5 Interior Noise Limits

Type of Land Use	Time Period	Allowable Interior Noise Level (dBA)
Multi-Family Residential	10 p.m. – 7 a.m.	35
	7 a.m. – 10 p.m.	45

Notes: dBA = A-weighted decibel

Source: Town of Apple Valley 2021: Table 9.73.050-B

c. If the measured ambient level differs from that permissible within any of the noise limit categories above, the allowable noise exposure standard shall be adjusted in five (5) dBA increments in each category as appropriate to reflect said ambient noise level.

2. **Correction for Character of Sound**. In the event the alleged offensive noise, as judged by the NCO, contains a steady, audible tone such as a whine, screech, or hum, or is a repetitive noise such as hammering or riveting, or contains music or speech conveying informational content, the standard limits set forth in Table 9.73.050-B (presented as Table 3.11-5, above) shall be reduced by five (5) dBA.

9.7360 - Prohibited Noise and Vibration

No person shall unnecessarily make, continue, or cause to be made or continued, any noise disturbance. The following acts, and the causing or permitting thereof, are declared to be in violation of this ordinance:

E. Loading, unloading, opening, closing or other handling of boxes, crates, containers, building materials, garbage cans, or similar objects between the hours of 10 p.m. and 7 a.m. in such a manner as to cause a noise disturbance across a residential real property line or at any time to violate the provisions of 9.73.050.A.1.

F. Construction/Demolition

1. Operating or causing the operation of any tools or equipment used in construction, drilling, repair, alteration, or demolition work between weekday hours of 7 p.m. and 7 a.m., or at any time on weekends or holidays, such that the sound therefrom creates a noise disturbance across a residential or commercial real property line, except for emergency work of public service utilities or by variance issued by the Town.

2. Where technically and economically feasible, construction activities shall be conducted in such a manner that the maximum noise levels at affected properties will not exceed those listed in the following schedule:

Table 3.11-6 Maximum Construction Noise Levels at Residential Properties

Mobile Equipment: Maximum noise levels for nonscheduled intermittent, short-term operation (less than 10 days) of mobile equipment			
	Type I Areas (Single-Family Residential)	Type II Areas (Multi-Family Residential)	Type III Areas (Semi-Residential/Commercial)
Daily, except Sundays and Legal Holidays, 7 a.m. to 7 p.m.	75 dBA	80 dBA	85 dBA
Daily, 7 p.m. to 7 a.m. and all day Sunday and Legal Holidays	60 dBA	65 dBA	70 dBA
Stationary Equipment: Maximum noise levels for repetitively scheduled and relatively long-term operation (periods of 10 days or more) of stationary equipment			
	Type I Areas (Single-Family Residential)	Type II Areas (Multi-Family Residential)	Type III Areas (Semi-Residential/Commercial)
Daily, except Sundays and Legal Holidays, 7 a.m. to 7 p.m.	60 dBA	65 dBA	70 dBA
Daily, 7 p.m. to 7 a.m. and all day Sunday and Legal Holidays	50 dBA	55 dBA	60 dBA

Source: Town of Apple Valley 2021: Table 9.73.060-A

3. All mobile or stationary internal combustion engine powered equipment or machinery shall be equipped with suitable exhaust and air intake silencers in proper working order.

G. Vibration. Operating or permitting the operation of any device that creates a vibration which is above the vibration perception threshold of an individual at or beyond the property boundary of the source if on private property or at one hundred fifty (150) feet (46 meters) from the source if on a public space or public right-of-way.

3.11.2 Environmental Setting

ACOUSTIC FUNDAMENTALS

Prior to discussing the noise setting for the project, background information about sound, noise, vibration, and common noise descriptors is needed to provide context and a better understanding of the technical terms referenced throughout this section.

Sound, Noise, and Acoustics

Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium (e.g., air) to a human ear. Noise is defined as loud, unexpected, annoying, or unwanted sound.

In the science of acoustics, the fundamental model consists of a sound (or noise) source, a receiver, and the propagation path between the two. The loudness of the noise source and obstructions or atmospheric factors affecting the propagation path to the receiver determines the sound level and characteristics of the noise perceived by the receiver. The field of acoustics deals primarily with the propagation and control of sound.

Frequency

Continuous sound can be described by frequency (pitch) and amplitude (loudness). A low-frequency sound is perceived as low in pitch. Frequency is expressed in terms of cycles per second, or hertz (Hz) (e.g., a frequency of 250 cycles per second is referred to as 250 Hz). High frequencies are sometimes more conveniently expressed in kilohertz, or thousands of hertz. The audible frequency range for humans is generally between 20 Hz and 20,000 Hz.

Sound Pressure Levels and Decibels

The amplitude of pressure waves generated by a sound source determines the loudness of that source. Sound pressure amplitude is measured in micro-Pascals (mPa). One mPa is approximately one hundred billionth (0.00000000001) of normal atmospheric pressure. Sound pressure amplitudes for different kinds of noise environments can range from less than 100 to 100,000,000 mPa. Because of this large range of values, sound is rarely expressed in terms of mPa. Instead, a logarithmic scale is used to describe sound pressure level (SPL) in terms of decibels.

Addition of Decibels

Because decibels are logarithmic units, SPLs cannot be added or subtracted through ordinary arithmetic. Under the decibel scale, a doubling of sound energy corresponds to a 3-dB increase. In other words, when two identical sources are each producing sound of the same loudness at the same time, the resulting sound level at a given distance would be 3 dB higher than if only one of the sound sources was producing sound under the same conditions. For example, if one idling truck generates an SPL of 70 dB, two trucks idling simultaneously would not produce 140 dB; rather, they would combine to produce 73 dB. Under the decibel scale, three sources of equal loudness together produce a sound level approximately 5 dB louder than one source.

A-Weighted Decibels

The decibel scale alone does not adequately characterize how humans perceive noise. The dominant frequencies of a sound have a substantial effect on the human response to that sound. Although the intensity (energy per unit area) of the sound is a purely physical quantity, the loudness or human response is determined by the characteristics of the human ear.

Human hearing is limited in the range of audible frequencies as well as in the way it perceives the SPL in that range. In general, people are most sensitive to the frequency range of 1,000–8,000 Hz and perceive sounds within this range better than sounds of the same amplitude with frequencies outside of this range. To approximate the response of the human ear, sound levels of individual frequency bands are weighted, depending on the human sensitivity to those frequencies. Then, an "A-weighted" sound level (expressed in units of A-weighted decibels, or dBA) can be computed based on this information.

The A-weighting network approximates the frequency response of the average young ear when listening to most ordinary sounds. When people make judgments of the relative loudness or annoyance of a sound, their judgment correlates well with the A-scale sound levels of those sounds. Thus, noise levels are typically reported in terms of A-weighted decibels. All sound levels discussed in this section are expressed in A-weighted decibels. Table 3.11-7 describes typical A-weighted noise levels for various noise sources.

Table 3.11-7 Typical A-Weighted Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	— 110 —	Rock band
Jet fly-over at 1,000 feet	— 100 —	
Gas lawn mower at 3 feet	— 90 —	
Diesel truck at 50 feet at 50 miles per hour	— 80 —	Food blender at 3 feet, Garbage disposal at 3 feet
Noisy urban area, daytime, Gas lawn mower at 100 feet	— 70 —	Vacuum cleaner at 10 feet, Normal speech at 3 feet
Commercial area, Heavy traffic at 300 feet	— 60 —	
Quiet urban daytime	— 50 —	Large business office, Dishwasher next room
Quiet urban nighttime	— 40 —	Theater, large conference room (background)
Quiet suburban nighttime	— 30 —	Library, Bedroom at night
Quiet rural nighttime	— 20 —	
	— 10 —	Broadcast/recording studio
Lowest threshold of human hearing	— 0 —	Lowest threshold of human hearing

Source: Caltrans 2013: Table 2-5.

Human Response to Changes in Noise Levels

The doubling of sound energy results in a 3-dB increase in the sound level. However, given a sound level change measured with precise instrumentation, the subjective human perception of a doubling of loudness will usually be different from what is measured.

Under controlled conditions in an acoustical laboratory, the trained, healthy human ear can discern 1-dB changes in sound levels when exposed to steady, single-frequency ("pure-tone") signals in the mid-frequency (1,000–8,000 Hz) range. In general, the healthy human ear is most sensitive to sounds between 1,000 and 5,000 Hz and perceives both higher and lower frequency sounds of the same magnitude with less intensity (Caltrans 2013: 2-18). In typical noisy environments, changes in noise of 1–2 dB are generally not perceptible. However, it is widely accepted that people can begin to detect sound level increases of 3 dB in typical noisy environments. Further, a 5-dB increase is generally perceived as a distinctly noticeable increase, and a 10-dB increase is generally perceived as a doubling of loudness (Caltrans 2013: 2-10). Therefore, a doubling of sound energy (e.g., doubling the volume of traffic on a highway) that would result in a 3-dB increase in sound would generally be perceived as barely detectable.

Vibration

Vibration is the periodic oscillation of a medium or object with respect to a given reference point. Sources of vibration include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) and those introduced by human activity (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous, (e.g., operating factory machinery) or transient in nature (e.g., explosions). Vibration levels can be depicted in terms of amplitude and frequency, relative to displacement, velocity, or acceleration.

Ground-borne vibration amplitudes are commonly expressed in peak particle velocity (PPV) or root-mean-square (RMS) vibration velocity. PPV and RMS vibration velocity are normally described in inches per second (in/sec) or in millimeters per second. PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is typically used in the monitoring of transient and impact vibration and has been found to correlate well to the stresses experienced by buildings (FTA 2018: 110; Caltrans 2020: 6).

Although PPV is appropriate for evaluating the potential for building damage, it is not always suitable for evaluating human response. It takes some time for the human body to respond to vibration signals. In a sense, the human body responds to average vibration amplitude. The RMS of a signal is the average of the squared amplitude of the signal, typically calculated over a 1-second period. As with airborne sound, the RMS velocity is often expressed in decibel

notation as vibration decibels (VdB), which serves to compress the range of numbers required to describe vibration (FTA 2018: 110, 199; Caltrans 2020: 7). This is based on a reference value of 1 microinch per second.

The typical background ground-borne vibration-velocity level in residential areas is approximately 50 VdB. Ground vibration is normally perceptible to humans at approximately 65 VdB. For most people, a vibration-velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels (FTA 2018: 120; Caltrans 2020: 27).

Typical outdoor sources of perceptible ground vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the ground vibration is rarely perceptible. The range of interest is from approximately 50 VdB, which is the typical background vibration-velocity level, to 100 VdB, which is the general threshold where minor damage can occur to fragile buildings. Construction activities can generate sufficient ground vibrations to pose a risk to nearby structures. Constant or transient vibrations can weaken structures, crack facades, and disturb occupants (FTA 2018: 113).

Ground vibration levels generated by construction activity can be transient, random, or continuous. Transient construction vibrations are generated by blasting, impact pile driving, and wrecking balls. Continuous vibrations are generated by vibratory pile drivers, large pumps, and compressors. Random vibration can result from jackhammers, pavement breakers, and heavy construction equipment.

Table 3.11-8 summarizes the general human response to different ground vibration-velocity levels.

Table 3.11-8 Human Response to Different Levels of Ground Noise and Vibration

Vibration-Velocity Level	Human Reaction
65 VdB	Approximate threshold of perception.
75 VdB	Approximate dividing line between barely perceptible and distinctly perceptible. Many people find that transportation-related vibration at this level is unacceptable.
85 VdB	Vibration acceptable only if there are an infrequent number of events per day.

Notes: VdB = vibration decibels referenced to 1 μ inch/second and based on the root mean square (RMS) velocity amplitude.

Source: FTA 2018: 120.

Common Noise Descriptors

Noise in our daily environment fluctuates over time. Various noise descriptors have been developed to describe time-varying noise levels. The following are the noise descriptors used throughout this section.

Equivalent Continuous Sound Level (L_{eq}): L_{eq} represents an average of the sound energy occurring over a specified period. In effect, L_{eq} is the steady-state sound level containing the same acoustical energy as the time-varying sound level that occurs during the same period (Caltrans 2013: 2-48). For instance, the 1-hour equivalent sound level, also referred to as the hourly L_{eq}, is the energy average of sound levels occurring during a 1-hour period and is the basis for noise abatement criteria used by Caltrans and FTA (Caltrans 2013: 2-47; FTA 2018: 210).

Maximum Sound Level (L_{max}): L_{max} is the highest instantaneous sound level measured during a specified period (Caltrans 2013: 2-48; FTA 2006: 2-16).

Day-Night Level (L_{dn}): L_{dn} is the energy average of A-weighted sound levels occurring over a 24-hour period, with a 10-dB "penalty" applied to sound levels occurring during nighttime hours between 10 p.m. and 7 a.m. (Caltrans 2013: 2-48; FTA 2018: 214).

Community Noise Equivalent Level (CNEL): CNEL is the energy average of the A-weighted sound levels occurring over a 24-hour period, with a 10-dB penalty applied to sound levels occurring during the nighttime hours between 10 p.m. and 7 a.m. and a 5-dB penalty applied to the sound levels occurring during evening hours between 7 p.m. and 10 p.m. (Caltrans 2013: 2-48).

Sound Propagation

When sound propagates over a distance, it changes in level and frequency content. The manner in which a noise level decreases with distance depends on geometric spreading, ground absorption, atmospheric effects, and shielding by natural or human-made features, which are described in detail below.

Geometric Spreading

Sound from a localized source (i.e., a point source) propagates uniformly outward in a spherical pattern. The sound level attenuates (or decreases) at a rate of 6 dB for each doubling of distance from a point source. Roads and highways consist of several localized noise sources on a defined path and hence can be treated as a line source, which approximates the effect of several point sources, thus propagating at a slower rate in comparison to a point source. Noise from a line source propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels attenuate at a rate of 3 dB for each doubling of distance from a line source.

Ground Absorption

The propagation path of noise from a source to a receiver is usually very close to the ground. Noise attenuation from ground absorption and reflective-wave canceling provides additional attenuation associated with geometric spreading. Traditionally, this additional attenuation has also been expressed in terms of attenuation per doubling of distance. This approximation is usually sufficiently accurate for distances of less than 200 feet. For acoustically hard sites (i.e., sites with a reflective surface between the source and the receiver, such as a parking lot or body of water), no excess ground attenuation is assumed. For acoustically absorptive or soft sites (i.e., those sites with an absorptive ground surface between the source and the receiver, such as soft dirt, grass, or scattered bushes and trees), additional ground-attenuation value of 1.5 dB per doubling of distance is normally assumed. When added to the attenuate rate associated with cylindrical spreading, the additional ground attenuation results in an overall drop-off rate of 4.5 dB per doubling of distance. This would hold true for point sources, resulting in an overall drop-off rate of up to 7.5 dB per doubling of distance.

Atmospheric Effects

Receivers located downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lowered noise levels, as wind can carry sound. Sound levels can be increased over large distances (e.g., more than 500 feet) from the source because of atmospheric temperature inversion (i.e., increasing temperature with elevation). Other factors such as air temperature, humidity, and turbulence can also affect sound attenuation.

Shielding by Natural or Human-Made Features

A large object or barrier in the path between a noise source and a receiver attenuate noise levels at the receiver. The amount of attenuation provided by shielding depends on the size of the object and the frequency content of the noise source. Natural terrain features (e.g., hills and dense woods) and human-made features (e.g., buildings and walls) can substantially reduce noise levels. A barrier that breaks the line of sight between a source and a receiver will typically result in at least 5 dB of noise reduction (Caltrans 2013: 2-41; FTA 2018: 42). Barriers higher than the line of sight provide increased noise reduction (FTA 2018: 16). Vegetation between the source and receiver is rarely effective in reducing noise because it does not create a solid barrier unless there are multiple rows of vegetation of sufficient height (FTA 2018: 15, 104, 106).

EXISTING NOISE ENVIRONMENT

Existing Noise- and Vibration-Sensitive Land Uses

Noise-sensitive land uses are generally considered to include those uses where noise exposure could result in health-related risks to individuals, as well as places where quiet is an essential element of their intended purpose. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels, and because of the potential for nighttime noise to result in sleep disruption. Additional land uses such as schools, transient lodging, historic sites, cemeteries, and places of worship are also

generally considered sensitive to increases in noise levels. These land use types are also considered vibration-sensitive land uses, in addition to commercial and industrial buildings where vibration would interfere with operations within the building, including levels that may be well below those associated with human annoyance.

The nearest noise-sensitive receptor is a rural, single-family residence located south of Stoddard Wells Road, approximately 2,800 feet east of the nearest project site boundary, 340 feet from the north side of Stoddard Wells Road where the water main line would be constructed, and 307 feet from the southern side of Stoddard Wells Road when traffic noise would emanate from. Additional rural, single-family residences are located north of Johnson Road, and all are over 1.5 miles away from the project site and 860 feet or further from where the water main line would be constructed. The nearest residences south of the project site, within the more developed portion of Apple Valley, are over two miles away.

Existing Noise Sources and Ambient Levels

The project is located in a rural, primarily undeveloped area with few existing noise sources. Background noise sources include aircraft overflights from Apple Valley Airport and Southern California Logistics Airport, trains travelling on the rail line along the northern side of Quarry Road, and activities at Victorville Landfill. However, ambient noise levels in the project area tend to be most affected by proximity to transportation noise sources. The existing noise environment in the project area is primarily influenced by transportation noise from vehicle traffic along Interstate 15 (I-15). Existing traffic noise levels on the segment of I-15 adjacent to the project site were modeled using calculation methods consistent with FHWA Traffic Noise Model, Version 2.5 (FHWA 2004) and using 2019 average annual daily traffic volumes for I-15 (Caltrans 2019). For further details on traffic-noise modeling inputs and parameters, refer to Appendix G of this EIR. Based on the modeling conducted, the existing traffic noise levels at 100 feet from the centerline of I-15 is 80.8 dB L_{eq}. The noise levels of other surrounding roadways in the vicinity of the project site were modeled using average daily traffic (ADT) data obtained from CR Associates and are presented in Table 3.11-9.

Table 3.11-9 Summary of Modeled Existing Traffic Noise Levels

Roadway Segment/Segment Description	L_{eq} at 100 feet from Roadway Centerline	Distance (feet) from Roadway Centerline to L_{eq} Contour		
		70	65	60
I-15 North junction Stoddard Wells Road (Bell Mountain)	80.8	528	1,138	2,452
Quarry Road (I-15 SB Ramps to Stoddard Wells Road)	51.7	6	13	28
Stoddard Wells Road (Quarry Road to I-15 Northbound Ramps)	52.8	7	15	33
Stoddard Wells Road (East of I-15 Northbound Ramps)	54.5	9	20	43

Notes: L_{eq} = Equivalent Continuous Sound Level

All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow, and does not account for shielding of any type or finite roadway adjustments. All noise levels are reported as A-weighted noise levels. For additional details, refer to Appendix G of this EIR for detailed traffic data, and traffic-noise modeling input data and output results.

Source: Data modeled by Ascent Environmental in 2022

The nearest sensitive receptor is a single-family residence located approximately 2,800 feet east of the project site, just off of Stoddard Wells Road. To calculate the existing ambient noise level at this sensitive receptor, the combined noise level of I-15 (i.e., 80.8 dB L_{eq}) and Stoddard Wells Road east of the I-15 northbound ramps, which are the existing primary noise sources in the vicinity of the project site, was attenuated out to the sensitive receptor. Based on this calculation, the estimated existing ambient noise level at the sensitive receptor nearest to the project site is 46.8 dB L_{eq} (see Appendix G of this EIR).

3.11.3 Environmental Impacts and Mitigation Measures

METHODOLOGY

Construction Noise and Vibration

To assess potential short-term (construction-related) noise and vibration impacts, sensitive receptors and their relative exposure were identified. Project-generated construction-generated noise and vibration levels were estimated based on methodologies, reference emission levels, and usage factors from FTA's *Guide on Transit Noise and Vibration Impact Assessment* methodology (FTA 2018) and FHWA's *Roadway Construction Noise Model User's Guide* (FHWA 2006). Reference levels for noise and vibration emissions for specific equipment or activity types are well documented and their use common practice in the field of acoustics. This analysis compares levels of noise exposure at off-site noise-sensitive receptors to applicable Town noise standards, as well as Caltrans and FTA vibration standards listed in Section 3.11.1, "Regulatory Setting."

Operational Noise and Vibration

With respect to non-transportation noise sources (e.g., stationary) associated with project implementation, the assessment of long-term (operational-related) impacts was based on reconnaissance data, reference noise emission levels, and standard attenuation rates and modeling techniques.

Additionally, parking lot noise levels were estimated to account for noise generated by the RV park. Noise associated with parking lots is generally short-term and sources can include car engines revving or idling, tires squeaking, car alarms, car horns, doors slamming, and people talking.

To assess potential long-term (operation-related) noise impacts due to project-generated increases in traffic, noise levels were estimated using calculations consistent with the FHWA's Traffic Noise Model Version 2.5 (FHWA 2004) and project-specific traffic volume data from the analysis prepared for the project and provided in Appendix G of this EIR. The analysis is based on the reference noise emission levels for automobiles, medium trucks (including RVs), and heavy trucks, and accounts for vehicle volume, speed, roadway configuration, distance to the receiver, and ground attenuation factors. Special consideration was given to the fleet mix (i.e., trucks vs. passenger vehicles) traveling along the affected local roads because the project would attract a disproportionately high number of truck trips. Also, given that the project would be operational 24-hours per day, special consideration is also given to the time of day when project-related vehicle travel would occur. Because of the freeway-oriented nature of a truck stop, temporal distribution of project-related traffic on local roads is based on Caltrans Annual Average Daily Traffic data for I-15. Note that the modeling conducted does not account for any natural or human-made shielding (e.g., the presence of walls, buildings, intervening topography, or stands of forest).

THRESHOLDS OF SIGNIFICANCE

CEQA Guidelines Appendix G is a sample Initial Study checklist that includes number of factual inquiries related to the subject of noise, as it does on a whole series of additional environmental topics. It is a common practice for lead agencies to take the language from the inquiries set forth in Appendix G of the State CEQA Guidelines and to use that language in fashioning thresholds. Here, the Town has used the inquiries found in Appendix G of the State CEQA Guidelines as the starting point for its formulation of thresholds but has refined the general concepts found in those inquiries by considering them in light of the specific standards found in the City's own General Plan Noise Element and Noise Control Ordinance. Applicable noise standards detailed in the City's adopted General Plan Noise Element and codified within Section 9.73 (Noise Control Ordinance) of the Town of Apple Valley Development Code are utilized herein. Additionally, the Town has also relied on standards recommended by the Federal Interagency Committee on Aviation Noise (FICAN) as it relates to single-event noise levels (SENLs). Finally, the Town has not adopted noise standards specific to temporary or permanent increases in ambient noise levels. Therefore, FTA guidance related to allowable incremental increases in noise levels based on existing ambient noise levels, along with

human response to changes in noise levels as defined by Caltrans were used to analyze substantial temporary and permanent increases in ambient noise levels at sensitive receptors.

In accordance with Appendix G of the State CEQA Guidelines, noise policies and standards in the Town's Municipal Code, Town General Plan policies, and Caltrans and FTA vibration and noise standards, the project would result in a significant noise or vibration impact if it would:

- generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
  - result in stationary construction-related activity exceeding the Town's ambient noise standard of 60 dB L_{eq} for single-family residential uses between the hours of 7:00 a.m. and 7:00 p.m. or 50 dB L_{eq} 7:00 p.m. to 7:00 a.m. and all-day Sunday (Table 3.11-6);
  - result in mobile construction-related activity exceeding the Town's ambient noise standard of 75 dB L_{eq} for single-family residential uses between the hours of 7:00 a.m. and 7:00 p.m. or 60 dB L_{eq} 7:00 p.m. to 7:00 a.m. and all-day Sunday (Table 3.11-6);
  - expose nearby residential structures to SENLs generated by truck pass-bys associated with the project such that an interior noise level of 65 SENL (FICAN 1997) is exceeded;
  - generate a substantial long-term increase in noise levels due to stationary or on-site activity, exceeding Town's exterior noise standard of for single family residential uses of 50 dB L_{eq} between the hours of 7:00 a.m. and 10:00 p.m. or 40 dB L_{eq} between the hours of 10:00 p.m. to 7:00 a.m. (Table 3.11-4);
- generate a substantial temporary or permanent increase in ambient noise levels at sensitive receptors above levels existing without the project;
  - generate a substantial short-term increase in noise levels due to construction activity, exceeding 5 dB at sensitive receptors;
  - generate a substantial long-term increase in noise levels due to stationary or on-site activity, exceeding 5 dB at sensitive receptors;
  - generate a substantial long-term increase in traffic-generated noise levels exceeding FTA guidance for allowable incremental increases in noise (Figure 3.11-1);
- generate excessive groundborne vibration or groundborne noise levels;
  - result in construction-generated vibration levels exceeding Caltrans' recommended standards with respect to the prevention of structural building damage (0.2 in/sec PPV) or FTA's maximum-acceptable-vibration standard with respect to human response (80 VdB for residential uses) at nearby existing vibration-sensitive land uses;
- result in a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport of public use airport, such that the project would expose people residing or working in the project area to excessive noise levels

ISSUES NOT DISCUSSED FURTHER

Vibration

No major sources of vibration would be constructed within the project area and construction of the proposed project would not include vibration-intensive activities such as blasting or pile driving. This is based on the geology of the project area which would not require blasting activities for construction, and the scale and intensity of the proposed uses and facilities (e.g., Travel Center, RV Park) is not likely to necessitate the construction of multi-story structures that require pile-driving activities.

The nearest sensitive receptor would be located approximately 2,800 feet from where construction activities occur and project construction would not result in any major sources of vibration. As described above, typical sources of perceptible outdoor operational sources of ground vibration are steel-wheeled trains and traffic on rough roads. If a roadway is smooth, the ground vibration is rarely perceptible. Therefore, project operation would not result in major sources of noise vibration (e.g., rough roadways, transit stations) and would not locate any new sensitive receptors near existing major sources of vibration (e.g., steel-wheeled trains). Therefore, the project would not result in excessive vibration or vibration levels such that any receptors would be adversely affected. This issue is not discussed further in this DEIR.

Airport Noise

The project is not located within an airport land use plan, or within two miles of a public airport or public use airport. Additionally, the project is not located within two miles of a private airstrip; Apple Valley Airport is the closest airport and is located approximately 3.6 miles southeast of the project site. Additionally, the second closest airport is the Southern California Logistics Airport which is located approximately 6 miles west of the project site. Thus, the project would not result in noise impacts related to the exposure of people residing or working in the project area to excessive aircraft-related noise levels. This issue is not discussed further in this Draft EIR.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 3.11-1: Short-Term Construction-Generated Noise Levels

Short-term construction-generated noise levels associated with the project would not expose nearby noise-sensitive receptors to levels that exceed applicable local standards. Additionally, construction activity would occur Monday through Friday, during daytime hours during less noise-sensitive daytime hours. The change in noise from on- and off-site construction at the nearest sensitive receptor would be 1.1 dB and 14.1 dB, respectively. Therefore, the increase in noise levels during off-site construction would exceed 5 dB at the nearest sensitive receptor. Therefore, this impact would be **significant**.

As detailed in Chapter 2, "Project Description," construction is anticipated to begin as early as October 2022 and last approximately 9 months. Construction would occur during daytime hours, Monday through Friday between 7:00 a.m. and 7:00 p.m. Noise levels associated with on- and off-site construction are described below.

On-Site Construction

On-site construction of the project, which includes the Travel Center and RV park components, would include site preparation, grading, underground actives, building construction, paving, and architectural coating. Additionally, short demolition phase would be required to remove existing underground utility lines that were abandoned by the previous developer. The project would result in a significant noise impact related to on-site construction if it would result in stationary construction-related activity exceeding the Town's ambient noise standard of 60 dB L_{eq} for single-family residential uses between the hours of 7:00 a.m. and 7:00 p.m. or 50 dB L_{eq} 7:00 p.m. to 7:00 a.m. and all-day Sunday (as detailed in Table 3.11-6). Additionally, the impact would be considered significant if it would result in a substantial temporary or periodic increase in ambient noise levels exceeding 5 dB at sensitive receptors.

Construction-generated noise levels would fluctuate depending on the type, number, and duration of equipment used. The effects of construction noise largely depend on the type of construction activities occurring on any given day, noise levels generated by those activities, distances to noise sensitive receptors, and the ambient noise environment at nearby receptors. Types of heavy equipment that would be used for construction include air compressors, backhoes, compactors, concrete/industrial saws, excavators, paving equipment, forklifts, graders, rollers, scrapers, and water trucks. Noise emission levels from these types of construction equipment as well as other common equipment types are shown in Table 3.11-10, below. Noise generated by these pieces of equipment would be intermittent and short-term in duration as typical use is characterized by short periods of full-power operation followed by extended periods of lower power, idling, or powered-off conditions.

Modeling of on-site construction noise conservatively assumed simultaneous operation of four pieces of heavy equipment (a concrete saw, scraper, excavator, and grader) in close proximity and at the boundary of the project site. Based on the reference noise levels listed in Table 3.11-10 and accounting for typical usage factors of individual pieces of equipment, on-site construction-related activities could generate a combined hourly average noise level of approximately 87.6 dB L_{eq} at 50 feet. Detailed inputs and parameters for the estimated construction noise exposure levels are provided in Appendix G of this EIR.

Table 3.11-10 Noise Levels Generated by Construction Equipment

Equipment Type	Typical Noise Level (dB) at 50 feet
Air compressor	80
Backhoe	80
Compactor	80
Concrete/industrial saw	90
Excavator	85
Forklift/Manlift	85
Grader	85
Paver	85
Roller	85
Scraper	85

Notes: dB = decibel

Source: FHWA 2006: 3.

Noise Level Increase as Compared to Standards

Based on the modeled construction noise exposure levels detailed above, construction noise would attenuate to the Town of Apple Valley's most stringent daytime noise standard for construction noise of 60 dB L_{eq} at a distance of 637 feet. No offsite residences or other noise-sensitive receptors are located within 637 feet of the project site; and thus, the Town Apple Valley's applicable daytime noise standards for construction noise would not be exceeded during the on-site construction activities of the project.

Incremental Noise Level Increase at Nearest Sensitive Receptor

On-site construction noise would attenuate to 41.6 dB L_{eq} at the nearest sensitive receptor approximately 2,800 feet east of the project site. The combined noise from construction (i.e., 41.6 dB L_{eq}) and the existing ambient noise level at the nearest sensitive receptor (i.e., 46.8 dB L_{eq}) would result in a noise level of 47.9 dB $L_{eq.}$ Therefore, the noise level at the nearest sensitive receptor would increase by approximately 1.1 dB during on-site construction activities; and thus, the project would not generate an increase in ambient noise levels exceeding 5 dB at any nearby sensitive receptor. Finally, construction would be short-term and intermittent and would only occur during daytime hours; and thus, would not result in sleep awakenings at the nearest sensitive receptor.

For these reasons, on-site construction noise would result in a less-than-significant impact.

Off-Site Construction

Off-site improvements would include construction of a water main line extension within the north shoulders or pavement of Stoddard Wells Road and Johnson Road. The off-site construction would involve different activities than on-site construction; and thus, would require different types of equipment. As this work is linear in nature, elevated noise levels would only occur temporarily in the location where construction occurs before moving along the roadway. Therefore, the Town's daytime construction noise standard for mobile equipment (i.e., short-term construction) is most applicable. The project would result in a significant noise impact related to off-site construction if it would result in mobile construction-related activity exceeding the Town's ambient noise standard of 75 dB L_{eq} for single-family residential uses between the hours of 7:00 a.m. and 7:00 p.m. or 60 dB L_{eq} 7:00 p.m. to 7:00 a.m. and all-

day Sunday (as detailed in Table 3.11-6). Additionally, the impact would be considered significant if it would result in a substantial temporary or periodic increase in ambient noise levels exceeding 5 dB at sensitive receptors.

Modeling for the off-site water line construction assumed simultaneous operation of three pieces of heavy equipment (i.e., an excavator, a compactor, and an air compressor) along the north shoulder of Stoddard Wells Road. Based on reference noise levels and accounting for typical usage factors of individual pieces of equipment, off-site construction-related activities could generate a combined hourly average noise level of approximately 82.7 dB L_{eq} at 50 feet. Detailed inputs and parameters for the estimated construction noise exposure levels are provided in Appendix G of this EIR.

Noise Level Increase as Compared to Standards

The nearest noise-sensitive receptor, a single-family residence, is located approximately 340 feet from the north side of Stoddard Wells Road where the water line construction would occur. At this distance, off-site construction noise would attenuate, through distance alone, to a level of 60.8 dB L_{eq} at the sensitive receptor. Therefore, the off-site construction activities would not result in an exceedance of the applicable Town Apple Valley daytime noise standard for construction noise of 75 dB L_{eq}.

Incremental Noise Level Increase at Nearest Sensitive Receptor

The proximity of the off-site construction to the nearest noise sensitive receptor could result in a 14.1 dB increase at the sensitive receptor when compared to the existing ambient noise level of 46.8 dB L_{eq} (see Appendix G of this EIR for detailed modeling). Although the increase in ambient noise at the nearest sensitive receptor would surpass a 5 dB increase, characterized as distinctly noticeable (Caltrans 2013: 2-10), off-site construction activities would move continually along the roadways and not occur in one place over an extended period of time. Additionally, the off-site construction activities would occur during daytime hours (i.e., Monday through Friday between 7:00 a.m. and 7:00 p.m.); and thus, would not take place during the more noise sensitive times of day when people typically sleep. Therefore, off-site construction associated with the project would be short-term and intermittent and would not result in sleep awakenings at the nearest sensitive receptor. However, the project would generate an increase in ambient noise levels exceeding 5 dB at a nearby sensitive receptor.

For these reasons, off-site construction noise would result in a significant impact.

Summary

On- and off-site construction would not exceed applicable Town standards for construction at the nearest sensitive receptor approximately 2,800 feet to the east of the project site and approximately 340 feet from where the off-site construction activities would occur. Although the off-site construction noise would be short-term, intermittent, and would only occur during daytime hours, it would result in increased noise levels exceeding 5 dB at the nearest sensitive receptor. The impact would be **significant**.

Mitigation Measures

Mitigation Measure 3.11-1: Implement Measures to Reduce Exposure to Construction Noise During Off-Site Construction Activities

For all off-site outdoor construction activity that is to take place within 635 feet of the nearest noise sensitive receptor, and/or is anticipated to generate exterior noise levels above 53.6 dB L_{eq} (i.e., greater than a 5 dB increase above ambient noise levels), the construction contractor shall comply with the following measures:

- All construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations. Equipment engine shrouds shall be closed during equipment operation.
- Construction equipment with back-up alarms shall be equipped with either audible self-adjusting backup alarms or alarms that only sound when an object is detected. Self-adjusting backup alarms shall automatically adjust to 5 dBA over the surrounding background levels. All non-self-adjusting backup alarms shall be set to the lowest setting required to be audible above the surrounding noise levels.

- Locate any trailers and materials used during off-site construction capable of breaking the line of sight between the noise-sensitive receptors and construction-noise generating equipment such that they would serve as noise barriers in order to protect noise-sensitive receptors from noise generated by off-site construction activity.
- Install temporary noise curtains as close as possible to the noise-generating activity such that the curtains obstruct the direct line of sight between the noise-generating construction activity and the nearby sensitive receptors. Temporary noise curtains shall consist of durable, flexible composite material featuring a noise barrier layer bounded to sound-absorptive material on one side. The noise barrier layer shall consist of rugged, impervious, material with a surface weight of at least one pound per square foot.
- Noise-reducing enclosures and techniques shall be used around stationary noise-generating equipment (e.g., concrete mixers, generators, compressors).
- Operate heavy-duty construction equipment at the lowest operating power possible.

Significance after Mitigation

Implementation of Mitigation Measure 3.11-1 would provide substantial reductions in levels of construction noise exposure at noise-sensitive receptors by ensuring proper equipment use; locating noise-generating equipment away from sensitive land uses; and requiring the use of enclosures, shields, and noise curtains (noise curtains typically can reduce noise by up to 10 dBA [EPA 1971]). Although noise reduction would be achieved with implementation of these measures, reductions of more than 14 dBA would be required during the period of off-site construction nearest to noise sensitive receptors. Reductions of this magnitude are not expected to be achieved under all circumstances with implementation of Mitigation Measures 3.11-1. Because it cannot be assured at this time that this level of noise reduction could be met, this impact would remain **significant and unavoidable**.

Impact 3.11-2: Expose Sensitive Receptors to Substantial Traffic-Noise Increases

The project would increase traffic on the surrounding roadway network; however, the increase in traffic noise would not surpass the applicable FTA incremental increase threshold at any nearby noise sensitive receptor. Additionally, implementation of the project would not result in an exceedance of the California Building Code Title 24 interior noise standard (i.e., 45 L_{dn}) at any nearby noise sensitive receptor. Therefore, the project would not expose sensitive receptors to substantial traffic noise increases. This impact would be **less than significant**.

Project-generated vehicle trips would result in an increase in average daily traffic volumes and associated increases in traffic noise levels along affected roadway segments near the project site. The project would result in a significant noise impact related to traffic noise if it would generate a substantial long-term increase in traffic-generated noise levels exceeding FTA guidance for allowable incremental increases in noise (as detailed in Figure 3.11-1). To analyze the impact of project-generated operational transportation noise sources, traffic noise levels under existing and existing-plus-project conditions were modeled for the affected roadway segments. Refer to Appendix G of this EIR for detailed noise modeling input parameters.

Table 3.11-11 summarizes the modeled traffic noise levels at a distance of 100 feet from the roadway centerlines under existing and existing-plus-project conditions, along with the overall net change in noise level as a result of project-generated traffic.

Table 3.11-11 Summary of Modeled Traffic Noise Levels under Existing and Existing Plus Project Conditions

Segment Description		Noise (dB L_{dn}) at 100 feet from Roadway Centerline			Allowable Noise Exposure Increase Before Moderate Impact[1]
		Existing	Plus Project	Change	
1	I-15 North junction Stoddard Wells Road (Bell Mountain)	84.1	84.1	0	0
2	Quarry Road (I-15 Southbound Ramps to Stoddard Wells Road)	51.8	55.1	3.3	4
3	Stoddard Wells Road (Quarry Road to I-15 Northbound Ramps)	52.8	55.7	2.9	3.5
4	Stoddard Wells Road (East of I-15 Northbound Ramps)	54.6	58.1	3.5	3

Notes: dB = a-weighted decibels

[1] Allowable incremental noise increases based on FTA criteria established in Figure 4-3 of the Transit Noise and Vibration Impact Assessment Manual (FTA 2018: 30)

Source: Modeled by Ascent Environmental in 2022

According to FTA guidance, the allowable noise increase for environments with an existing noise level between 50 dB L_{dn} and 55 dB L_{dn} is between 5 and 3 dB, respectively (FTA 2018: 30-31). As shown in Table 3.11-11, the addition of project-generated traffic to the surrounding roadway network would not result in any of the studied roadway segments, except for the segment of Stoddard Wells Road east of the I-15 northbound ramps, experiencing changes in noise above FTA's recommended thresholds before an impact would be considered moderate. Stoddard Wells Road east of the I-15 northbound ramps would experience an increase of 3.5 dB at 100 feet from the roadway centerline, resulting from implementation of the project; thus, exceeding the allowable noise exposure increase before a moderate impact would occur, as defined by FTA.

However, to further refine the analysis, the change in noise level at the nearest noise sensitive receptor was analyzed according to the aforementioned FTA guidance. The property line of the noise sensitive receptor nearest to the segment of Stoddard Wells Road east of the I-15 northbound ramps is approximately 205 feet from the roadway centerline. The existing traffic noise level at this receptor is 47.4 dB L_{dn}. The traffic noise level at this receptor with implementation of the project would be 50.4 dB L_{dn}. Refer to Appendix G of this EIR for detailed noise modeling input parameters. Therefore, the addition of project-generated traffic to the segment of Stoddard Wells Road east of the I-15 northbound ramps would not result in an increase in noise at the nearest noise sensitive receptor above FTA's recommended threshold (i.e., 3 dB L_{dn}).

Additionally, interior noise levels at the noise sensitive receptor located along Stoddard Wells Road would not exceed the California Building Code Title 24 interior noise standard (i.e., 45 L_{dn}), because both the existing and existing-plus-project noise levels are below 69 dB L_{dn}; and thus, when the 24 dB noise attenuation for residential buildings with the windows closed is applied, the interior noise levels would not exceed 45 dB L_{dn} (69-24=45).

For these reasons, traffic generated by the project would not expose residents to a substantial increase in noise at the nearest sensitive receptor. The impact would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

Impact 3.11-3: Intermittent Single-Event Noise Levels from Trucks

Intermittent single-event noise levels (SENL) from project-generated truck trips at off-site sensitive receptors during the more noise-sensitive hours would not exceed 65 SENL. Therefore, the percentage of people expected to be awakened when inside the affected homes would not exceed 5 percent. This impact would be a **less than significant**.

The project would result in heavy vehicles (e.g., semi-trailer trucks, motorhomes) entering and exiting the project site using the surrounding roadway network during more noise-sensitive nighttime and early-morning hours. In addition to increases in average daily traffic noise, intermittent SENL associated with the operation of heavy vehicles on the surrounding roadway network and increases in the frequency of occurrence of such events would be of additional concern, particularly during the more noise-sensitive evening and nighttime hours. The project would result in a significant noise impact related to SENLs if it would expose nearby residential structures to SENLs generated by truck pass-bys associated with the project such that an interior noise level of 65 SENL (FICAN 1997) is exceeded.

Although the average daily noise descriptors (i.e., L_{dn} and CNEL) incorporate a nighttime weighting or "penalty" that is intended to reflect the expected increased sensitivity to noise annoyance at night, L_{dn} and CNEL standards do not fully protect residents from sleep disturbance. The SENL describes a receiver's cumulative noise exposure from a single impulsive noise event (e.g., a passing truck, a truck downshifting to engine brake, or an aircraft flying overhead), which is a rating of a discrete noise event that compresses the total sound energy of the event into a 1-

second period, measured in decibels (Caltrans 2011). These noise events can be more startling to receptors if they occur when ambient noise levels are quieter, such as during nighttime hours.

Many studies have been conducted regarding the effects of single-event noise on sleep disturbance, but because of the wide variation in the reaction of test subjects to SENLs of various levels, no definitive consensus has been reached with respect to a universal criterion to apply. Upon a review of studies about sleep disturbance and aircraft-generated SENLs, the FICAN provided estimates of the percentage of people expected to be awakened when exposed to specific SENLs inside a home (FICAN 1997). According to FICAN's review, 10 percent of the population is estimated to be awakened when the SENL interior noise level is 81 dB. An estimated 5 to 10 percent of the population is affected when the SENL interior noise level is between 65 and 81 dB, and few sleep awakenings (less than 5 percent) are predicted if the interior SENL is less than 65 dB. However, FICAN did not recommend a threshold of significance based on the percent of people awakened.

For the purposes of this analysis, exposure of interior rooms of residential structures, regardless of location, to SENLs from truck pass-bys generated by the project that exceed 65 SENL, which is the level determined by FICAN to result in sleep disturbance to 5 percent of the exposed population (FICAN 1997), would be considered significant.

Noise levels generated by passing haul trucks typically range from approximately 87 to 90 SENL at 50 feet (EPA 1971). The nearest sensitive receptor where individuals would sleep is located approximately 307 feet from where the SENL's could occur; and thus, a 90 SENL would attenuate to an exterior noise level of 74.2. It should be noted that heavy truck travel is not expected to increase along this portion of Stoddard Wells Road, because the sensitive receptor is located east of both the I-15 and the project site; thus, vehicles are not anticipated to access the project site from this direction. Assuming the average exterior-to-interior noise level reduction of 24 dB typically provided by residential buildings with the windows closed (EPA 1978: 11), the interior SENL at the sensitive receptor nearest to the where the heavy vehicle activity could occur would be approximately 50.2 SENL. Thus, SENL's at the nearest noise-sensitive receptors would not exceed 65 SENL. The impact would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

Impact 3.11-4: Expose Noise-Sensitive Land Uses to Operational Stationary and On-Site Noise That Exceeds Applicable Standards

Activity related to heavy vehicle operation on-site and the parking area would increase ambient noise levels in the vicinity of the project site. The exterior noise level at the nearest sensitive receptor would not exceed the Town's most stringent noise standard of 40 dB L_{eq} during nighttime hours. Additionally, noise levels at the nearest sensitive receptor would increase by no more than .5 dB due to activity associated with the parking area and RV park. Thus, this impact would be **less than significant**.

This impact analyzes potential exposure of existing sensitive receptors to noise generated by non-transportation aspects of the operation of the project. The project would result in a significant noise impact related to operational noise if it would generate a substantial long-term increase in noise levels due to stationary or on-site activity and exceed the Town's exterior noise standard for single family residential uses of 50 dB L_{eq} between the hours of 7:00 a.m. and 10:00 p.m. or 40 dB L_{eq} between the hours of 10:00 p.m. to 7:00 a.m. (as detailed in Table 3.11-4). Additionally, the impact would be considered significant if it would result in a substantial permanent increase in ambient noise levels exceeding 5 dB at sensitive receptors.

Noise Level Increase as Compared to Standards

Based on project site plans, mechanical equipment associated with building operations (such as HVAC equipment) would be located in enclosed areas. This type of equipment does not typically generate high noise levels. Therefore, because the HVAC equipment would be enclosed, and because the nearest sensitive receptor is approximately 0.8 miles east of the project site, this equipment would not generate excessive noise such that applicable standards would be exceeded.

However, the proposed project would include the operation of heavy vehicles on-site (e.g., idling trucks, on-site truck circulation, release of compression brakes, trailer-mounted refrigeration units, doors slamming, truck deliveries, and the operation of forklifts). Noise generated by these types of activities is considered a non-transportation noise source because it is not linear in nature. Additionally, these activities within the project site would not occur within an enclosed space; therefore, it would not be blocked or attenuated by project structures.

Based on reference noise levels and accounting for typical usage factors of individual pieces of equipment, such activities could result in noise levels of approximately 82 dB L_{eq} and 86 dB L_{max} at a distance of 50 feet. Additionally, the proposed land use and services provided on the project site (e.g., heavy vehicle fueling, truck tire maintenance, truck deliveries) would result in many on-site heavy vehicles operating simultaneously. Thus, these activities could generate a combined hourly average noise level of approximately 84 dB L_{eq} and a maximum noise level as high as 86 dB L_{max} at 50 feet from the project boundary. Detailed inputs and parameters for the estimated operational non-transportation noise exposure levels are provided in Appendix G of this EIR.

The noise-sensitive receptor nearest to the project site that could be adversely affected by operational non-transportation noise is located approximately 2,800 feet east of the project site boundary. At this distance, the operational non-transportation noise levels would attenuate to 38 dB L_{eq} and 40 dB L_{max} at the nearest sensitive receptor. Therefore, the noise level at the nearest sensitive receptor would remain below the Town's most stringent nighttime noise standard of 40 dB L_{eq}. Applying the modeled operational stationary source noise levels of 38 dB L_{eq} during each hour of the day to account for the 24-hour operation of the proposed project, the nearest sensitive receptors would be exposed to an exterior L_{dn} of approximately 45 dB during operational (non-transportation) activities. The modeling conservatively assumes that the noise levels generated by the on-site non-transportation operations detailed above would occur continuously throughout the entirety of the day and night. Based on the modeled operational, non-transportation noise level of 45 L_{dn} and the average exterior-to-interior noise level reduction of 24 dB typically provided by residential buildings with the windows closed (EPA 1978: 11), the interior noise levels at the nearest surrounding residences would not exceed 20 L_{dn}, well below the recommended interior noise level of 45 L_{dn}.

Incremental Noise Level Increase at Nearest Sensitive Receptor

As detailed in the Environmental Setting section, the existing ambient noise level at the nearest sensitive receptor is approximately 46.8 dB L_{eq}. When combined with the 38 dB L_{eq} generated by operational non-transportation activities, the ambient noise level would increase by 0.5 dB resulting in 47.3 dB L_{eq}. Therefore, the project would not generate an increase in ambient noise levels exceeding 5 dB at any nearby sensitive receptor. Additionally, the change in noise would be characterized as a steady increase in comparison to intermittent noise such as that generated by construction equipment.

Summary

Operational, non-transportation generated noise levels at nearby residences would not violate applicable Town of Apple Valley or California Building Code noise standards or result in a substantial permanent increase in ambient noise levels at nearby noise sensitive receptors. This impact would be a **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

3.12 POPULATION, EMPLOYMENT, AND HOUSING

This section provides an overview of existing population, employment, and housing in the Town of Apple Valley and evaluates the potential for implementation of the project to affect population growth and the displacement of people or housing. No public comments related to population, employment, and housing were received during the scoping period.

3.12.1 Regulatory Setting

FEDERAL

No federal plans, policies, regulations, or laws related to population, employment, and housing are applicable to the project.

STATE

State California Environmental Quality Act Guidelines Section 15131

State CEQA Section 15131 provides that economic or social information may be included in an environmental impact report (EIR), but those economic or social effects shall not be considered significant effects on the environment. An EIR should, however, address any foreseeable physical changes in the environment that may result from economic or social changes caused by a project. The intermediate economic or social changes need not be analyzed in any detail greater than necessary to trace the chain of cause and effect. The focus of the analysis shall be on the physical changes.

In addition, economic or social changes can be used to determine the significance of physical changes on the environment. For example, if the construction of a new freeway or rail line divides an existing community, the construction would be the physical change, but the social effect on the community would be the basis for determining that the effect would be significant.

LOCAL

No local plans, policies, regulations, or laws related to population, employment, and housing are applicable to the project.

3.12.2 Environmental Setting

The information in this section is based in part on the information in the Town of Apple Valley 2009 General Plan Housing Element (Town of Apple Valley 2009a). Because the demographic information from the Housing Element is based on 2010 U.S. Census Data, the information in this section includes more recent demographic information from the Southern California Association of Governments (SCAG). SCAG is a metropolitan planning organization for Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura Counties. SCAG is responsible for developing a long-term Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) for the region that is updated every 4 years. The resources used for this section include SCAG's local profile report for the Town of Apple Valley (SCAG 2019), the Demographics and Growth Forecast that accompanies SCAG's 2020 RTP/SCS (SCAG 2020), and SCAG's Regional Housing Needs Assessment (RHNA) Allocation Plan for the 2021 to 2029 planning period (SCAG 2021). In addition, this section includes demographic information from the U.S. Census Bureau American Community Survey (ACS).

POPULATION AND POPULATION GROWTH

In 2018, the population in Town of Apple Valley was 73,984 people (SCAG 2019). From 2000 to 2018, the population in the Town of Apple Valley increased by 19,745 people, with a growth rate of 36.4 percent. Although the Town experienced an overall trend of population growth from 2000 to 2018, the population declined by 672 residents from 2016 to 2018. The population growth rate in the Town of Apple Valley was higher than that of San Bernardino County, which grew by 27.2 percent from 2000 to 2018. From 2016 to 2045, SCAG forecasts a population growth of 27,100 residents, with a growth rate of 36.5 percent (SCAG 2020).

EMPLOYMENT AND EMPLOYMENT CENTERS

In 2017, employment in the Town of Apple Valley was 17,820 jobs (SCAG 2019). From 2007 to 2017, employment in the Town of Apple Valley increased by 1,968 jobs, with a growth rate of 12.4 percent. Although the Town experienced an overall trend of employment growth from 2007 to 2017, some years experienced declines in jobs. From 2016 to 2045, SCAG forecasts employment growth of 12,200 jobs, with a growth rate of 67.8 percent (SCAG 2020). In 2017, education jobs comprised the highest proportion of the workforce (45.9 percent), followed by retail (13.9 percent), leisure (9.8 percent) and professional (8.4 percent) jobs.

Commercial centers in the Town include the Village commercial area, which is situated along State Highway 18 between Navajo Road and Central Road; retail and office uses between Rancherias Road and Dale Evans Parkway, north to Thunderbird Road along Highway 18, in the vicinity of Town Hall, and other public facilities associated with the Civic Center complex; and further west along Highway 18, near its intersection with Corwin Road, St. Mary Medical Center and associated medical offices and other commercial uses. In recent years, there has also been a sizeable expansion of commercial development west of Bear Valley Road (Town of Apple Valley 2009b).

HOUSING UNITS AND VACANCY

In 2018, the number of households in the Town of Apple Valley was 24,855 occupied housing units, with an average household size of three people. From 2000 to 2018, housing in the Town of Apple Valley increased by 6,298 units, with a growth rate of 33.9 percent (SCAG 2019). Although the Town experienced an overall trend of household growth from 2000 to 2018, the number of occupied housing units declined by 122 units from 2016 to 2018. Household growth in the Town of Apple Valley was higher than that of San Bernardino County, which grew by 21.9 percent from 2000 to 2018. From 2016 to 2045, SCAG forecasts a growth of 12,200 households, with a growth rate of 51.4 percent (SCAG 2020).

According to the U.S. Census Bureau 2018 ACS 5-Year Estimates, 92.5 percent of housing units were occupied and 7.5 percent of housing units were vacant. Approximately 64.5 percent of occupied housing units were owner-occupied and 35.5 percent of housing units were renter-occupied (U.S. Census Bureau 2018).

Residential development is concentrated in the southern and central portions of the Town of Apple Valley, generally south of Waalew Road. Residential densities in these areas range from very low to high densities (1 dwelling unit per 5 acres or more, to 20 dwelling units per acre). The majority of single-family development in the Town occurs on lots of between 0.5 and 2.5 acres. There are also residential developments within Specific Plan areas, such as Jess Ranch in the southwest portion of Town. The approved North Pointe and Bridle Path Specific Plan areas are located in the northwest portion of Town. These Specific Plans were approved in 2006 but have not yet been developed (Town of Apple Valley 2009b).

SCAG's RHNA Allocation Plan for the 2021 to 2029 planning period identifies a housing need of 4,290 households in the Town of Apple Valley. Of the projected housing need, 23.5 percent of housing need is for very-low income, 14 percent is for low income, 17.4 percent is for moderate income, and 43.4 percent is for above moderate income households (SCAG 2021).

3.12.3 Environmental Impacts and Mitigation Measures

METHODOLOGY

Evaluation of potential project impacts on population, employment, and housing was based on a review of existing and forecasted demographics information from the Town of Apple Valley, SCAG, and U.S. Census Bureau. Impacts on population, employment, and housing that would result from the project were identified by evaluating the project's potential to contribute to unplanned population growth and displace existing populations or housing.

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, a population, employment, and housing impact is considered significant if implementation of the project would do either of the following:

- induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure); or
- displace substantial numbers of existing people or homes, necessitating the construction of replacement housing elsewhere.

ISSUES NOT DISCUSSED FURTHER

Displace People or Homes

The project includes construction of a full-service travel center and recreational vehicle (RV) park on vacant land within a largely undeveloped area, and would include construction of an offsite water main line. There are no existing residences within the project site or along the offsite water main line alignment. The nearest residences are approximately 2.6 miles south of the project site and would not be affected by project construction or operation. Therefore, the project would not have potential to displace people or homes and would not necessitate the construction of replacement housing. This issue is not discussed further.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 3.12-1: Induce substantial unplanned population growth

Because the project would not introduce new homes and would create employment opportunities that would be sourced from the local workforce, the project is not expected to induce substantial unplanned population growth. This impact would be **less than significant**.

The project includes construction of a full-service travel center and RV park on vacant land within a largely undeveloped area. As described in Section 3.10, "Land Use and Planning," the project would be a permitted land use within the existing Regional Commercial (C-R) land use and zoning designation for the project site with various Town permits and approvals. As such, the project would be consistent with projected build out conditions under the Town's General Plan.

The project does not include the construction of new homes and would not increase the residential population in the Town of Apple Valley. Although an RV park is proposed, occupancy would be limited to short-term stays and would not constitute permanent housing. The project would include various services and amenities, such as a convenience store, fast-food restaurant, truck maintenance building, and recreational facilities; however, these services and amenities are intended to serve thru-motorists on Interstate 15.

The project would generate temporary construction jobs and long-term employment opportunities associated with the proposed fuel station, convenience store, fast-food restaurant, and RV park facilities. It is expected that these jobs

would be sourced from the local workforce and would not require people to relocate from surrounding communities. Therefore, the project is not expected to contribute to direct unplanned growth in the Town of Apple Valley.

The project would not include the development of infrastructure that would attract additional development in the surrounding area. The project would require an approximate 3.5-mile extension of a water main line from the Walmart Distribution Center Johnson Road, approximately 4,100 feet east of Dale Evans Parkway. However, the proposed water main line is intended to serve the proposed travel center. Any new development in the project vicinity would need to be conducted in accordance with Town General Plan policies and land use and zoning designations. Therefore, the project is not expected to contribute to indirect unplanned growth in the Town of Apple Valley.

Based on the above discussion, the project would not induce substantial unplanned population growth in area, either directly or indirectly. This impact would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

3.13 PUBLIC SERVICES AND RECREATION

This section provides an overview of existing public services in proximity to the project site for the Apple Valley I-15 Travel Center (project) and evaluates the potential for implementation of the project to affect availability, service level, and/or capacity of public services, including fire-protection services, police-protection services, parks and recreation, and public schools, and, if such an effect is determined to occur, whether new or expanded facilities would be required that could result in a potentially significant impact to the environment. Publicly provided utility services, such as water and wastewater treatment, stormwater management, electricity, natural-gas services, solid waste disposal are addressed in Section 3.15, "Utilities and Service Systems." No public comments related to public services and recreation were received during the scoping period.

3.13.1 Regulatory Setting

FEDERAL

No federal plans, policies, regulations, or laws are applicable to the provision of public services for the project.

STATE

California Fire Code

The 2016 California Fire Code, which incorporates by adoption the 2015 International Fire Code, contains regulations related to construction, maintenance, and use of buildings. Topics addressed in the California Fire Code include fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous materials storage and use, provisions intended to protect and assist fire responders, industrial processes, and many other general and specialized fire-safety requirements for new and existing buildings and the surrounding premises. The California Fire Code contains specialized technical regulations related to fire and life safety.

California Health and Safety Code

State fire regulations are set forth in Sections 13000 et seq. of the California Health and Safety Code, which includes regulations for building standards (as set forth in the California Building Code), fire protection and notification systems, fire protection devices such as extinguishers, smoke alarms, high-rise building and childcare facility standards, and fire-suppression training.

Leroy F. Greene School Facilities Act of 1998

This bill, commonly known as "SB 50" (Stats. 1998, ch. 470) was passed in 1998 and placed limitations on cities and counties with respect to mitigation requirements for school facilities. SB 50 permits school districts to levy fees, based on justification studies, for the purposes of funding construction of school facilities, subject to established limits.

Enacted as part of SB 50, Government Code Section 65996 prohibits local agencies from denying either legislative or adjudicative land use approvals on the basis that school facilities are inadequate. Under the same statute, moreover, payment of the development fees authorized by SB 50 are deemed to be "full and complete school facilities mitigation" for impact caused by new development.

LOCAL

Town of Apple Valley 2009 General Plan

The Apple Valley Town Council adopted the 2009 General Plan on August 11, 2009. The General Plan includes goals, policies, and programs intended to guide land use decisions within the Town's planning area. Chapter V, Public

Services and Facilities, of the General Plan includes the Public Building and Facilities Element, Schools and Libraries Element, and Police and Fire Protection Element.

The Public Buildings and Facilities Element describes the various structures and facilities owned by public and quasi-public agencies in the Town, including fire and police stations, schools, libraries, parks, and community centers. This Element also establishes goals, policies, and programs related to the planning and development of public buildings and facilities. Applicable policies and programs from the Public Building and Facilities Element include the following:

- **Policy 1.B:** The Town shall continue to identify and assess viable mechanisms for long-term funding for construction, maintenance and operation of existing and future public buildings and facilities. This assessment shall include mechanisms that assure that new development provides its fair share of funding for these facilities.
  - **Program 1.B.1:** To ensure an on-going funding source for adequate provision of public buildings, utilities and other facilities associated with future development, the Town shall explore the possibility of establishing a New Construction Tax or Development Impact Fee that provides a rational nexus between development and demand for future facilities.

The Schools and Libraries Element includes goals, policies, and programs to ensure the provision of adequate and accessible educational facilities in the Town. Applicable policies from the Schools and Libraries Element include the following:

- **Policy 1.B:** The Town shall assist Apple Valley Unified School District in securing school impact fees from developers, in accordance with state law.
- **Policy 1.F:** The Town shall continue to coordinate with the County of San Bernardino to assure that adequate library resources and facilities are available to meet to needs of the community.

The Police and Fire Protection Element includes goals, policies, and programs intended to ensure the long-term and adequate public safety in the Town through the provision of adequate police and fire protection services. Applicable policies and programs from the Police and Fire Protection Element include the following:

- **Policy 1.A:** The Town shall review all new development proposals, as well as significant remodeling projects to determine potential impacts to public safety and the provision of police and fire protection services.
  - **Program 1.A.1:** The Town shall continue to monitor development levels in the planning area to assess the need for new fire and police stations.
- **Policy 1.B:** All proposed development shall be designed to provide unencumbered access for police, fire, and paramedic vehicles, to the satisfaction of the Sheriff's Department and the Fire Marshal.
- **Policy 1.E:** The Town shall utilize the process of reviewing development and building plans, and of conducting building inspections, to strictly enforce fire standards and regulations.
  - **Program 1.E.1:** The Fire District and the Fire Marshal shall review all development proposals, and project design or conditions of approval, as appropriate, shall incorporate their input.
  - **Program 1.E.2:** The Town and Fire Protection District shall coordinate with the local Water Districts to ensure availability of adequate water supplies and pressures for fire flows for all existing and proposed development.
  - **Program 1.E.3:** The Town shall encourage the Fire Protection District to conduct periodic inspections of commercial, industrial and institutional buildings, and multi-family developments, to ensure compliance with fire code compliance and to educate building and development managers on fire safety issues.
- **Policy 1.F:** The use and storage of potentially hazardous materials shall be regulated by the Town, County Department of Environmental Health, Apple Valley Fire Protection District and other appropriate agencies.
  - **Program 1.F.1:** Town public safety specialists shall thoroughly review the general location and siting of facilities which involve the use and/or storage of hazardous, highly flammable or explosive materials. Reviews shall be conducted in such a manner so as to assure the highest level of safety, and strict conformance with the Uniform Fire Code and other applicable codes and regulations.

- **Policy 1.H:** The Fire Protection District shall maintain a 6-minute response time, or as close thereto as possible.
- **Policy 1.I:** The Fire Protection District shall maintain a level of service that ensures the provision of 1 fire personnel per 1,500 residents, or as close thereto as possible.
- **Policy 1.J:** New and substantially remodeled development shall incorporate crime prevention design techniques, including the use of "defensible space," high security hardware, optimal site planning and building orientation, and other design approaches to enhance security.
- **Policy 1.O:** The Sheriff's Department shall maintain a level of service that ensures the provision of 1 sworn officers per 1,500 residents, or as close thereto as possible.

The Parks and Recreation Element includes goals, policies, and programs to ensure the planning and provision of adequate parkland and recreational space in the Town. Programs and polices applicable to the project include the following:

- **Program 1.C.3:** The Town will investigate and identify a broad range of sources for supplementary financing and operating revenue. Development Impact Fees, developer fees, Mello Roos special districts, public/private ventures, state and federal grant opportunities, as well as inter-agency joint use agreements are among the sources to be considered.
- **Program 1.C.4:** In addition to revenues collected for the development of parks and recreational facilities, the Town shall pursue supplementary sources of development funding and revenue from state and federal grant opportunities, and charitable organizations.
- **Policy 1.D:** In addition to Town park requirements, developers of new projects may be required to provide further on-site recreational space/landscaped open space.

Town of Apple Valley Ordinance No. 57

Effective January 1, 2020, Ordinance No. 57 established the Fire Code of the Apple Valley Fire Protection District (AVFPD). This ordinance incorporates elements of the California Fire Code and addresses requirements for fire department access, adequate fire flow and water supplies, and sprinkler systems.

3.13.2 Environmental Setting

FIRE PROTECTION

The Apple Valley Fire Protection District (AVFPD) provides fire prevention and protection services within approximately 206 square miles in the Town of Apple Valley and surrounding rural unincorporated areas of San Bernardino County, including the project site. In addition, AVFPD provides emergency medical and technical rescue services, conducts commercial fire safety inspections, operates a hazard abatement program, and provides public education for residents. In 2020, AVFPD responded to over 13,209 incidents with an average response time of approximately six minutes for emergency services. AVFPD operates five fire stations. The nearest AVFPD fire station is Station 332, located at 18857 CA-18 in the Town of Apple Valley, approximately 3.8 miles south of the project site (AVFPD 2021).

The AVFPD has a desired ratio of one full time AVFPD personnel per 1,500 population (Town of Apple Valley 2009b). The AVFPD currently employs 51 full-time personnel for a service population of 90,000 residents (AVFPD 2021). Based on this population, 60 full-time personnel would be needed to meet AVFPD's desired ratio. Therefore, AVFPD is not currently meeting its desired service ratio.

LAW ENFORCEMENT

Apple Valley Police Department

Police services are provided to the Town of Apple Valley through a contractual agreement with the San Bernardino County Sheriff's Department. The Sheriff's Department assigns staff to the Apple Valley Police Department (AVPD), which serves approximately 72 square miles of incorporated Town areas (Town of Apple Valley 2009a). AVPD provides public safety services, including general patrols, youth programs, and special teams for traffic enforcement, retail theft, and gangs.

The nearest AVPD police station is located at 14931 Dale Evans Parkway, approximately 5.1 miles southeast of the project site. Response times for AVPD ranged from three to seven minutes in 2009, depending on the time of day and traffic flow (Town of Apple Valley 2009b).

According to the General Plan EIR, the AVPD has a desired service ratio of one police officer per 1,500 residents. (Town of Apple Valley 2009b). AVPD employs 51 officers and 13 general employees (San Bernardino Sheriff's Department 2021). Based on the Town's 2020 population of 73,681 people (Town of Apple Valley 2021a), the AVPD needs 49 officers to meet its desired service ratio. Therefore, AVPD is currently meeting its desired service ratio.

California Highway Patrol

The California Highway Patrol (CHP) Victorville Area serves the High Desert communities of Apple Valley, Victorville, Hesperia, Phelan, Pinon Hills, Lucerne Valley, Wrightwood, Silver Lakes, Helendale, Ore Grande, Spring Valley Lake, Oak Hills and Adelanto. As part of the CHP's Inland Division, the Victorville Area encompasses approximately 1,700 square miles and patrols portions of Interstate 15, State Route 138, State Route 2, State Route 173, State Route 18, State Route 247, U.S. Route 395, and hundreds of miles of unincorporated county roadways within San Bernardino County (CHP 2021). The CHP Victorville Area station is located at 14210 Amargosa Road in Victorville, California, approximately 7.3 miles southwest of the project site.

SCHOOLS

The Apple Valley Unified School District (AVUSD) provides public education for approximately 13,000 students in the Town, ranging from preschool through 12th grade. AVUSD's facilities currently include five K-6 schools, five K-8 schools, two high schools, one adult school, one premier academy, and one state preschool program. The AVUSD schools that serve the project vicinity include Sycamore Rocks Elementary School (grades K-6), Phoenix Academy (grades K-8), and Granite Hills High School (grades 9-12) (Davis Demographics 2021). These schools were not identified as having impacted enrollment, indicating that there is available capacity for the enrollment of new students (AVUSD 2021).

RECREATION

The Town of Apple Valley Park and Recreation Department operates the Town Hall Recreation Center, Conference Center, James Woody Community Center, a gymnasium, 11 parks and playgrounds, an equestrian center, and numerous ball fields. As of 2013, 370 acres of park and open space land were identified within the Town, with additional sites identified for planned parks (Town of Apple Valley 2013). The nearest public park to the project site within the Town of Apple Valley is Corwin Park, located at 18577 Corwin Road. The park includes playground equipment, restrooms, and reservable barbeques and picnic tables.

The Town has adopted the Park Standards of the National Recreational Park Association, which require five acres of parkland per 1,000 persons (Town of Apple Valley 2009b). As described in Section 3.12, the current population within the Town of Apple Valley is 73,681 residents. Based on this population, 368 acres of park and open space land would be needed to meet the Park Standards of the National Recreational Park Association. Therefore, the Town of Apple Valley currently meets the National Recreational Park Association standard.

The Town also has a recreational trail system, that includes a series of bridle trails (i.e., equestrian trails) and lifeline trails. The purpose of lifeline trails is to provide connectivity between residential areas with equestrian uses to equestrian amenities and trailheads. Lifeline trails extend through commercial areas within the Town of Apple Valley, including on Stoddard Wells Road north of Johnson Road (Town of Apple Valley 2009a; Exhibit II-9).

OTHER PUBLIC FACILITIES

The nearest public library is the Apple Valley Newton T. Bass Branch Library, which is part of the San Bernardino County library system. The library is located approximately 5.2 miles southeast of the project site at 14901 Dale Evans Parkway in Apple Valley, California. The library offers computer workstations with free public Wi-Fi and free public programs, including adult literacy services.

3.13.3 Environmental Impacts and Mitigation Measures

METHODOLOGY

Evaluation of potential public service impacts was based on a review of documents pertaining to the proposed project, including the Town of Apple Valley General Plan and General Plan EIR; websites of appropriate public service providers, such as AVFPD, CHP, AVPD, and AVUSD; and desktop review of the project study area and surroundings. Impacts on public services that would result from the project were identified by comparing existing service capacity and facilities against future demand associated with project implementation.

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, a public services and recreation impact is considered significant if implementation of the project would do any of the following:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:
  - fire,
  - police protection,
  - schools,
  - parks, and
  - other public facilities;
- Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated, and/or
- Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment.

ISSUES NOT DISCUSSED FURTHER

Schools

The project includes construction of a full-service travel stop and recreational vehicle (RV) park on vacant land adjacent to Interstate 15 (I-15) in the Town of Apple Valley. The project would serve local residents and travelers on I-15 passing through the Town. The project would not include new residential land uses and would not contribute to

direct population in the Town. Temporary construction jobs and long-term employment opportunities at the proposed travel stop facilities would be sourced from the local workforce and would not require people to relocate from surrounding communities. Therefore, the project is not expected to increase enrollment at nearby schools or affect performance objectives, such as teacher to student ratios, that would require the construction new or expanded schools. Furthermore, the applicant would be required to pay development impact fees to offset potential impacts to schools as a condition of project approval. In the Town of Apple Valley, the school fee for new commercial development is $0.61 per square foot (Town of Apple Valley 2021b). This issue is not discussed further.

Parks and Recreational Facilities

As discussed above, the project would not contribute to residential population growth within the Town of Apple Valley. Therefore, the project is not expected to increase the use of existing nearby parks and recreational facilities. Furthermore, the applicant would be required to pay development impact fees to offset potential impacts to parks as a condition of project approval. In the Town of Apple Valley, the general park fee for new commercial development is $0.0064 per square foot (Town of Apple Valley 2021b).

The project would provide recreational amenities, including cornhole courts, pickleball courts, a splash pad, horseshoe courts, shuffleboard courts, a basketball court, a dog park, picnic tables, walking paths, and landscaped areas. These onsite recreation facilities are intended to serve the visitors of the travel center and RV park. Impacts associated with the construction of new recreational facilities are discussed in Sections 3.1 through 3.12 and 3.14 and 3.15 of this EIR. As evaluated in those Sections, no significant unavoidable physical effects on the environment would result from construction of the project through compliance with existing regulations and implementation of the identified mitigation measures. Therefore, the project would not require the provision of new governmental facilities, contribute to the physical deterioration of existing parks and recreational facilities, or result in adverse physical effects from the construction of new recreational facilities. This issue is not discussed further.

Other Public Facilities

As discussed above, the project would not contribute to residential population growth within the Town of Apple Valley. Therefore, the project is not expected to increase the use of existing nearby public facilities, such as libraries. Furthermore, the applicant would be required to pay development impact fees to offset potential impacts to government facilities as a condition of project approval. In the Town of Apple Valley, the general government facilities fee for new commercial development is $0.03 per square foot (Town of Apple Valley 2021b). Therefore, the project would not require the construction of new or expanded public facilities. This issue is not discussed further.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 3.13-1: Result in Substantial Adverse Impacts from the Expansion or Construction of New Fire Protection Facilities

Because the project would adhere to all applicable standards and fire codes and would not adversely impact existing fire response and performance, implementation of the project would not necessitate the construction of new or expanded fire service facilities within the Town of Apple Valley. This impact is therefore considered **less than significant**.

Construction

During construction of the proposed project, hazards associated with construction sites, such as the operation of mechanical equipment and use of flammable materials, would increase the risk of personal injuries and fires. Construction workers would be required to comply with mandatory Occupational Safety and Health Administration (OSHA) and California Occupational Safety and Health Administration (Cal/OSHA) regulations to minimize these hazards and reduce demands for emergency services. Additionally, the transport, use, and disposal of flammable materials would be conducted in compliance with applicable federal, state, and local laws pertaining to the safe handling, transport, and disposal of hazardous materials. These regulations include the following: Resource Conservation and Recovery Act requirements regarding the management of hazardous waste; US Department of

Transportation regulations pertaining to the transportation of hazardous materials; National Pollutant Discharge Elimination System Construction General Permit conditions regarding spill prevention, containment, cleanup, and reporting; and the San Bernardino County Hazardous materials Division programs to minimize the threatened release of hazardous materials. Refer to Section 3.8, "Hazards and Hazardous Materials," for additional information. Compliance with applicable regulations would minimize demands for emergency services by reducing the potential for accidental releases of hazardous materials into the environment.

During construction, lane or road closures and the movement of construction equipment on local roads could affect fire protection services, such as emergency vehicle response. However, these impacts would be temporary and would not result in lasting effects. Additionally, as discussed in Section 3.14, "Transportation," the project applicant would be required to obtain all necessary permits for work performed within public right-of-way, including a traffic control plan that would demonstrate appropriate traffic handling during construction activities for all work that may impact the emergency responders. As part of the permit process, the nearest AVFPD responders would be notified to coordinate emergency response routing during construction. Despite road or lane closures, emergency vehicles would continue to have the right-of-way, and emergency vehicle response would not be substantially affected.

As described in Section 3.13.2, the project site, including the offsite water main line alignment, is within the AVFPD service area. The minor increase in demand for fire protection services during construction activities would be accommodated by AVFPD. Therefore, project construction would not require the provision of new or expanded fire protection facilities to maintain acceptable service ratios, response times, or other performance objectives for fire protection. This impact would be less than significant.

Operation

As described in Section 3.13.2, the project site, including the offsite water main line alignment, is within the AVFPD service area. The project site would be served by Station 332, located at 18857 CA-18 in the Town of Apple Valley, approximately 3.8 miles south of the project site.

As discussed in Section 3.12, "Population and Housing," the proposed project would not add new residential units or increase the residential population within the Town of Apple Valley. However, the project would add a new commercial development with multiple structures, providing services and amenities that could accommodate up to 271 visitors to the project site at any given time (89 automobiles, 102 trucks, and 80 RVs). Overnight truck and RV parking would be limited to short-term stays. The periodic increase in visitors to the project site could result in an increase in the number of calls for fire protection service.

Although AVFPD is not currently meeting its desired service ratio, the applicant would be required to pay development impact fees to offset potential impacts on fire services as a condition of project approval. In the Town of Apple Valley, the fire fee for new commercial development is $0.586 per square foot (Town of Apple Valley 2021b). Furthermore, fire services are a general fund department and are funded primarily by sales tax revenue. Operational sales tax revenue generated by the project would help fund existing and future fire protection needs. Therefore, the project would not create a unique demand on fire protection resources and would not interfere with existing services, resulting in the need to expand existing or construct new fire protection facilities.

Project operations would involve the storage of highly flammable materials that may increase the risk of on-site fires (e.g., petroleum products, paint products, solvents, cleaning products, and automotive fluids, pesticides, fertilizer). However, all new on-site structures would be designed and operated according to applicable requirements of the California Fire Code, California Health and Safety Code, and Apple Valley Fire Code, which include provisions for smoke detectors; sprinklers; building and emergency access; hydrant sizing, pressure, and siting; and storage of hazardous materials. The project design would be subject to review and approval by the Apple Valley Fire Marshal, who provides project review services for all new development projects.

Based on the above discussion, the project would not result in the need for new or expanded fire service facilities. Impacts related to fire protection would be considered **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

Impact 3.13-2: Result in Substantial Adverse Impacts from the Expansion or Construction of New Police Protection Facilities

The project would not result in an increased need for police protection services or facilities, the construction or expansion of which could have physical effects on the environment. Therefore, this impact is considered **less than significant**.

As described in Section 3.13.2, the project site, including the offsite water main line alignment, is within the AVPD service area. The project site would be served by the nearest AVPD station, which is located at 14931 Dale Evans Parkway, approximately 5.1 miles southeast of the project site.

Construction

During construction, lane or road closures and the movement of construction equipment on local roads could affect police protection services. However, these impacts would be temporary and would not result in lasting effects. In addition, the nearest AVPD station would be notified to coordinate emergency response routing during construction. Despite road or lane closures, law enforcement vehicles would continue to have the right-of-way, and police response would not be substantially affected.

The potential for theft and vandalism at the construction site could contribute to a temporary increased demand for police protection services. During construction, the project site would be fenced and screened, and access would be controlled to deter theft, vandalism, and other crimes. In addition, security lighting would be used to discourage trespassing. The minor demand for police protection services during construction would be served by the nearest AVPD station. Therefore, construction activities would not result in the need for new or expanded police protection facilities. Impacts related to police protection would be considered **less than significant**.

Operation

The project would be designed to meet applicable safety standards, including proper site distances at new intersections, adequate site access for law enforcement personnel, and the use of security lighting throughout the project site.

As described under Impact 3.13-1 above, the project would not increase the residential population within the Town of Apple Valley, but it would attract visitors to the project site for short periods. The periodic increase in visitors to the project site could result in an increase in the number of calls for police protection services. The demand for police protection services during project operation would be served by the nearest AVPD station. The applicant would also be required to pay development impact fees to offset potential impacts on law enforcement facilities as a condition of project approval. In the Town of Apple Valley, the law enforcement fee for new commercial development is $0.2 per square foot (Town of Apple Valley 2021b). Furthermore, police services are a general fund department funded primarily by sales tax revenue. Operational sales tax revenue generated by the project would help fund existing and future police protection needs. Therefore, the project would not create a unique demand on police protection resources and would not interfere with existing services, resulting in the need to expand existing or construct new AVPD facilities.

As described in Section 3.13.2, the project site is adjacent to I-15, which is within the service area of CHP's Inland Division, Victorville Area. As discussed in Section 3.14, "Transportation/Traffic," the project would not generate substantial new vehicle trips on I-15. Rather, the project would predominately result in the diversion of existing trips on I-15 because the project is intended to provide amenities and rest areas for thru-motorists. The project is not anticipated to substantially increase demand for CHP services or affect existing CHP service ratios or response times. Therefore, the expansion of existing or construction of new CHP facilities would not be required as a result of the project.

Based on the above discussion, the project would not result in the need for new or expanded police protection facilities. Impacts related to police protection would be considered **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

3.14 TRANSPORTATION

This section describes the applicable federal, state, and local transportation regulations and policies; discusses the existing roadway network and transportation facilities in the vicinity of the project; and analyzes the potential impacts from implementation of the project on transportation. Mitigation measures that would reduce impacts, where applicable, are also discussed. Information contained within this section was provided primarily in the Love's Travel Center Transportation Impact Study (TIS) prepared for Love's Travel Stops & Country Stores Corporate Office (CR Associates 2022), which is included as Appendix H of this EIR and incorporated herein.

Pursuant to Senate Bill (SB) 743, Public Resources Code (PRC) Section 21099, and California Code of Regulations (CCR) Section 15064.3(a), generally, vehicle miles traveled (VMT) is the most appropriate measure of transportation impacts and a project's effect on automobile delay shall no longer constitutes a significant impact under CEQA. Therefore, the transportation analysis here-in evaluates impacts using VMT and does not include level of service (LOS) analysis. Although not addressed in this EIR, the analysis of traffic operations (i.e., intersection and freeway LOS analysis) for the project were conducted by CR Associates and are included in the TIS (CR Associates 2022) attached as Appendix H.

There were no comments received during the project's scoping period related to transportation.

3.14.1 Regulatory Setting

FEDERAL

Federal Highway Administration

The Federal Highway Administration (FHWA), an agency of the U.S. Department of Transportation, provides stewardship over the construction and preservation of the nation's highways, bridges, and tunnels. FHWA also conducts research and provides technical assistance to State and local agencies to improve safety, mobility, and livability and to encourage innovation in these areas. FHWA also provides regulation and guidance related to work zone safety, mobility, and temporary traffic control device implementation.

STATE

California Department of Transportation

The California Department of Transportation (Caltrans) is the state agency responsible for the design, construction, maintenance, and operation of the California State Highway System, as well as the segments of the Interstate Highway System that lie within California. Caltrans District 8 is responsible for the operation and maintenance of Interstate 15 (I-15) in the vicinity of the project site. Caltrans requires a transportation permit for any transport of heavy construction equipment or materials that necessitates the use of oversized vehicles on state highways.

The Caltrans Transportation Impact Study Guide (TISG) was prepared to provide guidance to Caltrans Districts, lead agencies, tribal governments, developers, and consultants regarding Caltrans review of a land use project or plan's transportation analysis using a VMT metric. This guidance is not binding on other public agencies, and it is intended to be a reference and informational document. The TISG replaces the Guide for the Preparation of Traffic Impact Studies and is for use with local land use projects, not for transportation projects on the State Highway System (Caltrans 2020).

California Manual on Uniform Traffic Control Devices, Part 6: Temporary Traffic Control

The California Manual on Uniform Traffic Control Devices (CA-MUTCD), Part 6: Temporary Traffic Control provides principles and guidance for the implementation of temporary traffic control (TTC) to ensure the provision of reasonably safe and effective movement of all roadway users (e.g., motorists, bicyclists, pedestrians) through or

around TTC zones while reasonably protecting road users, workers, responders to traffic incidents, and equipment. Additionally, this document notes that TTC plans and devices shall be the responsibility of the authority of a public body or official having jurisdiction for guiding road users (i.e., Town of Apple Valley Public Works for this project).

Senate Bill 743

SB 743, passed in 2013, required the Governor's Office of Planning and Research (OPR) to develop new State CEQA guidelines that address traffic metrics under CEQA. As stated in the legislation, upon adoption of the new guidelines, "automobile delay, as described solely by LOS or similar measures of vehicular capacity or traffic congestion shall not be considered a significant impact on the environment pursuant to this division, except in locations specifically identified in the guidelines, if any."

In November 2017, OPR published its proposal for the comprehensive updates to the State CEQA Guidelines, which included proposed updates related to analyzing transportation impacts pursuant to SB 743. These updates indicated that VMT would be the primary metric used to identify transportation impacts. In December of 2018, OPR published the most recent version of the *Technical Advisory on Evaluating Transportation Impacts in CEQA* (December 2018) which provides guidance for VMT analysis.

In December 2018, OPR and the State Natural Resources Agency submitted the updated CEQA Guidelines to the Office of Administrative Law for final approval to implement SB 743. The Office of Administrative Law subsequently approved the updated CEQA Guidelines, and local agencies had an opt-in period until July 1, 2020 to implement the updated guidelines. As of July 1, 2020, implementation of Section 15064.3 of the updated CEQA Guidelines apply statewide.

REGIONAL

Southern California Association of Governments

The Southern California Association of Governments (SCAG) is an association that includes the Counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino and Ventura, as well as 191 cities, including the Town of Apple Valley. As a metropolitan planning organization, SCAG is required to prepare a long-range transportation plan (the regional transportation plan) for all modes of transportation, including public transit, automobile, bicycle, and pedestrian, every four years for the six-county area. In addition to preparing the region's long-range transportation plan, SCAG assists in planning for transit, bicycle networks, clean air, and airport land uses.

Regional Transportation Plan/Sustainable Communities Strategy

SCAG is responsible for preparing and updating the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) and the corresponding Regional Transportation Improvement Program for the six-county region. In response to this requirement, SCAG completed the 2020-2045 RTP/SCS: Connect SoCal (Connect SoCal). The purposes of Connect SoCal are to establish regional access and identify mobility goals; identify present and future transportation needs, deficiencies, and constraints within the transportation system; analyze potential solutions; estimate available funding; and propose investments. On September 3, 2020, SCAG's Regional Council adopted the 2020 update to the RTP/SCS.

Federal Transportation Improvement Program

SCAG prepares and adopts the Federal Transportation Improvement Program (FTIP) on a biennial basis. The FTIP is a short-term listing of surface transportation projects that receive federal funds, are subject to a federally required action, or are regionally significant. SCAG adopted the Fiscal Year 2020/21-2025/26 FTIP in March 2021. The project listing in the FTIP provides a detailed description for each individual project in Connect SoCal, including those in San Bernadino County and the Town of Apple Valley.

County of San Bernardino Non-Motorized Transportation Plan

The County of San Bernardino Non-Motorized Transportation Plan was adopted by the San Bernardino County Transportation Authority (SBCTA) in June 2018. The Non-Motorized Transportation Plan was developed to increase

safety and comfort and provide an interconnected cycling and walking system in the San Bernardino County area. The Non-Motorized Transportation Plan includes systemwide goals, objectives, and policies, an inventory of existing conditions, recommendations for proposed improvements, and design guidelines.

LOCAL

Town of Apple Valley General Plan

The Town Council adopted the Town of Apple Valley General Plan on August 11, 2009. The General Plan serves as a blueprint for future development in the Town of Apple Valley. General Plan policies that are relevant to the transportation impacts analyzed in this document are listed below.

- Policy 1.C Sidewalks shall be provided on Local Streets of 60 feet in width and on all roadways 88 feet wide or wider. In Rural Residential land use areas designated pathways may be provided as an alternate to sidewalks.
  - Program 1.C.2 Concurrent with construction, all new development proposals located adjacent to public roadways shall be required to install all improvements to their ultimate General Plan half-width.
- Policy 1.D Traffic calming devices shall be integrated into all Town streets to the greatest extent possible.
- Policy 1.E Bus pullouts shall be designed into all new projects on arterial roadways, to allow buses to leave the flow of traffic and reduce congestion.
- Policy 1.F Local streets shall be scaled to encourage neighborhood interaction, pedestrian safety and reduced speeds.
- Policy 1.H New development proposals shall pay their fair share for the improvement of street within and surrounding their projects on which they have an impact, including roadways, bridges, and traffic signals.
  - Program 1.H.1 The Town shall require the payment of developer impact fees as appropriate.
- Policy 1.I Pedestrian access shall be preserved and enhanced.
  - Program 1.I.1 All development and redevelopment proposals shall include enhanced sidewalk, pedestrian walkway, lighting and landscaping designs and assure connections to existing and planned sidewalks and trails except in rural residential land use areas where pathways may be provided as an alternative to sidewalks.
- Policy 1.J The Town shall implement a coordinated and connected bicycle lane network consistent with the Bicycle Lane Map in this Element.
  - Program 1.J.1 New development proposals shall be required to construct bicycle lanes consistent with this Element in conjunction with off-site improvements.
  - Program 1.K.2 New development proposals shall be required to construct recreational trails consistent with this Element in conjunction with off-site improvements.
- Policy 1.M Encourage the expansion of an integrated public transit system (Town of Apple Valley 2009).

3.14.2 Environmental Setting

This section describes the existing environmental setting, which is the baseline scenario upon which project-specific impacts are evaluated. The environmental setting for transportation includes baseline descriptions for roadway, bicycle, pedestrian, and transit facilities.

ROADWAY SYSTEM

There are seven roadway types in the Town Apple Valley excluding freeways. The roadway types in the Town of Apple Valley are major divided parkways, major divided arterials, major roads, secondary roads, collector streets, local industrial/commercial streets, and local streets. A description of each as defined in the General Plan Circulation Element is provided below. Regional access to the project is provided by I-15 and Stoddard Wells Road, which are identified as a freeway and major divided arterial, respectively.

Freeway

A freeway is a highway upon which the abutter's rights of access are controlled and that provides separated grades at intersecting streets. The minimum right-of-way width and number of lanes is determined by Caltrans. In the project area, I-15 is a northeast-southwest six-lane highway that runs immediately west of the project site and connects to Stoddard Wells Road, which would provide direct access to the project site.

Major Divided Parkway

Major divided parkways have a minimum 142-foot right-of-way. This roadway type includes a 20-foot median and 15-foot parkways on both sides of the roadway, as well as three lanes of traffic in each direction, bike or parking lanes in each direction, curb, gutter, and sidewalk.

Major Divided Arterial

Major divided arterials require a minimum 104-foot right-of-way, including four traffic lanes, two bike or parking lanes, a 12-foot-wide center left turn lane or median, curb, gutter, and sidewalk. Stoddard Wells Road would provide access to the project site and is designated as a major divided arterial in the General Plan. Located south of the project site, Stoddard Wells Road is a northeast/southwest two-lane roadway connecting to I-15. There are no bicycle or pedestrian facilities present on Stoddard Wells Road, which is identified as an arterial roadway in the vicinity of the project site.

Secondary Roads

Secondary roads connect Major Roads to local streets. They have a minimum right-of-way of 88 feet, including two travel lanes in each direction, and a bike or parking lane. Secondary Roads may not be required to include curbs and gutters in low-density residential areas, but are required to do so in industrial areas.

Collector Streets

Collector streets allow for a 66 foot right-of-way to contain one lane of travel in each direction, a bike or parking lane, and a 10- to 11-foot-wide parkway. Collector streets do not include a center turn lane or median.

Local Industrial/Commercial Streets

Local Industrial/Commercial Streets require a right-of-way of 66 feet to accommodate the increased trip generation associated with industrial areas and the turning radius needed by delivery trucks. Local Industrial/Commercial Streets transport local traffic from commercial and industrial areas to higher volume, higher speed roadways.

Local Streets

Local streets have a 60-foot right-of-way with two traffic lanes, parking lanes in each direction, curbs, and gutters. Sidewalks may be provided within the 10-foot, non-paved right-of-way. Most of the streets in residential neighborhoods throughout the Town are designated as Local Streets.

TRANSIT SYSTEM

Transit service in the Town of Apple Valley is operated by the Victor Valley Transit Authority (VVTA). VVTA provides local bus service for the communities of Adelanto, Apple Valley, Hesperia, Victorville, and San Bernardino County. Five bus routes provide service within the Town of Apple Valley, running from approximately 6:00 a.m. to 9:00 p.m. Monday through Friday, and 7:00 a.m. to 8:00 p.m. on Saturdays. There is no transit service provided in the vicinity of

the project site. The nearest bus stop is served by Route 42 and is located approximately three miles away at the intersection of Dale Evens Parkway and Johnson Road. Routes 40, 41, 43, and 47 also serve the Town of Apple Valley.

BICYCLE AND PEDESTRIAN SYSTEM

The bicycle and pedestrian transportation system in the Town of Apple Valley is composed of bikeways and trails. The General Plan classifies bicycle facilities into the following three types:

Class I Bikeway: Class I bikeways provide a separate, paved right-of-way for bicycle travel, outside the roadbed, but within the right-of-way.

Class II Bikeway: Class II bikeways provide a striped and stenciled lane for one-way travel on a street or highway.

Class III Bikeway: Class III bikeways are unmarked routes identified only by signage, which allow shared travel with pedestrians and motor vehicles.

As of 2018, the Town of Apple Valley had 13.53 miles of Class I and 24.16 miles of Class II facilities (SBCTA 2018: 5-13). There are currently no bicycle or pedestrian facilities present in the vicinity of the project site.

3.14.3 Environmental Impacts and Mitigation Measures

This section describes the analysis techniques, assumptions, and results used to identify potential significant impacts of the proposed project on the transportation system. Transportation impacts are described and assessed, and mitigation measures are recommended for impacts identified as significant or potentially significant.

VMT METHODOLOGY

State CEQA Guidelines Section 15064.3 was added December 28, 2018, to address the determination of significance for transportation impacts. The new guideline requires that the analysis is based on VMT instead of congestion (such as LOS). The change in the focus of transportation analysis is the result of legislation (SB 743) and is intended to shift the emphasis from congestion to, among other things, reducing greenhouse gas emissions, promoting a diversity of land uses, and developing multimodal transportation networks. Pursuant to CEQA Guidelines Section 15064.3(c), this change in analysis is mandated to be used beginning July 1, 2020. Therefore, VMT is included in the analysis of this EIR.

For projects in San Bernardino County, VMT is typically calculated using the San Bernardino County Transportation Analysis Model (SBTAM), which considers the interaction between different land uses. However, SBTAM is limited in its ability to accurately quantify VMT for unique land uses and projects with unusual travel patterns, such as the proposed project. Therefore, due to the model's limitations in accurately estimating VMT for the proposed project, it was determined to not be appropriate for use under this circumstance (CR Associates 2022).

State CEQA Guidelines Section 15064.3(b) identifies criteria for analyzing the transportation impacts of a project. Section 15064.3(b)(3), "Qualitative Analysis," explains that there may be conditions under which a qualitative rather than quantitative analysis of VMT is appropriate. This section states that if existing models or methods are not available to estimate the VMT for the particular project being considered, a lead agency may qualitatively analyze VMT generated by a project. This section notes that for many projects, a qualitative analysis of construction traffic may be appropriate. Additionally, Section 15064.3(b)(4), "Methodology," explains that the lead agency has discretion to choose the most appropriate methodology to evaluate VMT subject to other applicable standards such as CEQA Guidelines Section 15151 (standards of adequacy for EIR analyses). Therefore, because the project's unique land uses make it infeasible to accurately analyze project generated VMT using the SBTAM, a qualitative methodology was developed to assess potential impacts.

The Town of Apple Valley adopted VMT Guidelines in May of 2021 (CR Associates 2022). Therefore, the VMT analysis here-in primarily relies on the guidance provided in the Town of Apple Valley VMT Guidelines and CEQA Guidelines

Section 15064.3. As previously described, CR Associates prepared the project TIS analyzing potential impacts to the transportation system. See Appendix H for a detailed description of TIS methodology.

THRESHOLDS OF SIGNIFICANCE

The significance criteria used to evaluate the project impacts to transportation under CEQA are based on Appendix G of the CEQA Guidelines, CEQA Guidelines Section 15064.3, and the VMT thresholds adopted by the Town of Apple Valley in May of 2021. CEQA Guidelines Section 15064.3 and the Town of Apple Valley VMT thresholds provide more detailed guidance and thresholds than that which is contained in Appendix G of the CEQA Guidelines. Impacts to the roadway system would be significant if the project would:

- conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities;
- results in an exceedance of the established Town of Apple VMT significance thresholds listed below:
  - The baseline project generated VMT per service population exceeds the Town of Apple Valley General Plan Buildout VMT per service population; or
  - The cumulative project generated VMT per service population exceeds Town of Apple Valley General Plan Buildout VMT per service population
- substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); and/or
- result in inadequate emergency access.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 3.14-1: Conflict with a Program, Plan, Ordinance or Policy Addressing the Circulation System, Including Transit, Roadway, Bicycle and Pedestrian Facilities

The project would not alter or conflict with any existing or planned transit facilities or conflict with the general plan policy or program as there are no existing, planned, or programmed transit services or facilities in the immediate vicinity of the project site. The project would include internal pathways and circulation for pedestrians navigating the project site. However, the General Plan and County Non-Motorized Transportation Plan include proposed Class II bicycle facilities along Stoddard Wells Road and the project, as currently designed, does not include the implementation of any such bicycle facilities along its frontage. The implementation of Mitigation Measure 3.14-1 would ensure that Class II bicycle facilities along the project's frontage to Stoddard Wells Road are provided as established in local plans. Therefore, the impact would be **less than significant with mitigation incorporated**.

Bicycle and Pedestrian Facilities

The project involves the construction of a full-service travel stop on vacant land in the Town of Apple Valley. The project would include a fast-food restaurant, convenience store, dog park, truck scale, recreational vehicle (RV) dump station, fueling and charging stations for trucks and passenger vehicles, and a future Speedco truck maintenance building. Additionally, the project would include the development of a RV Park adjacent to the aforementioned uses. The project would include concrete sidewalks around the fast-food restaurant, convenience store, and dog park. Additionally, a pedestrian path would be constructed along the perimeter of the RV Park. Additionally, concrete sidewalks would be provided along the frontage on Stoddard Wells Road, around the main building and other facilities in the RV Park area. The project does not involve any off-site bicycle or pedestrian facility improvements.

A number of bicycle and pedestrian policies and programs are included in the Circulation Element of the General Plan that are applicable to new development; and thus, the project. Program 1.I.1 in the Town of Apple Valley General Plan states that development and redevelopment proposals shall include enhanced sidewalk, pedestrian walkway,

lighting, and landscaping designs and assure connections to existing and planned sidewalks and trails except in rural residential land use areas where pathways may be provided as an alternative to sidewalks. There are no existing pedestrian facilities in the vicinity of the project site as the surrounding area is largely undeveloped. However, as detailed above, the project would provide sidewalks and pedestrian connections throughout the project site; thus, complying with Program 1.I.1.

Policy 1.J in the Town of Apple Valley General Plan states that the Town shall implement a coordinated and connected bicycle lane network consistent with the Bicycle Lane Map in the Circulation Element. Additionally, Program 1.J.1 states that new development proposals shall be required to construct bicycle lanes consistent with the Circulation Element in conjunction with off-site improvements. The Bicycle Lane Map in the General Plan and the San Bernardino County Non-Motorized Transportation Plan identify proposed Class II bike lanes along Stoddard Wells Road between I-15 and Alembic Street south of the project site (Town of Apple Valley 2009: II-64 and II-66; SBCTA 2018: 5-15). However, the project does not include the construction of these bicycle improvements along the Stoddard Wells Road project frontage as they would not connect to any other facilities; and thus, the impact to bicycle and pedestrian facilities would be significant.

Transit Services

The General Plan indicates the need for development proposals to include bus stops in off-site improvements (Town of Apple Valley 2009: II-70). Policy 1.E of the General Plan states that bus pullouts shall be designed into all new projects on arterial roadways to allow buses to leave the flow of traffic and reduce congestion. The nearest future long-range transit route identified in the General Plan is located along Stoddard Road between Evans Parkway and Alembic (Town of Apple Valley 2009: III-304), northeast of the project site. However, there are no planned or programmed future transit routes or facilities identified in the General Plan that would be located along the portion of Stoddard Wells Road adjacent to the project site. Additionally, because the project is primarily intended to provide service and accommodations to professional truck drivers and travelers passing through Apple Valley along I-15, the vast majority of the trips associated with project would occur regardless of the available modes of transportation (e.g., public transit) in the project vicinity. Therefore, General Plan Policy 1.E is not applicable to the proposed project.

Finally, because there are no existing transit facilities in the vicinity of the project site, the project would not alter any existing transit facilities. Therefore, the project would not conflict with a program, plan, ordinance, or policy addressing transit service and the impact to transit services would be less than significant.

Summary

The project would not alter or conflict with any existing or planned transit facilities or conflict with the general plan policy or program as there are no existing, planned, or programmed transit services or facilities along the project frontage. However, the General Plan identifies a Class II bicycle facility along Stoddard Wells Road between I-15 and Alembic Street and the project as currently designed would not include such bicycle facilities. Therefore, the project would conflict with Policy 1.J of the General Plan Circulation Element; and thus, this impact would be significant.

Mitigation Measures

Mitigation Measure 3.14-1: Include Class II bicycle facilities along Stoddard Wells Road

The project applicant shall construct Class II bicycle facilities along the project site's southern frontage along Stoddard Wells Road as identified in the General Plan and San Bernardino County Non-Motorized Transportation Plan. The Class II bicycle facilities shall be incorporated into project site plan and subsequent engineering plans and designed in accordance with Town standards. The Class II bicycle facilities along the project frontage shall be painted green for high visibility due to its close proximity to the freeway. The bicycle improvements shall be subject to review by Town staff to ensure all requirements are met related to design and safety during construction and operations.

Significance after Mitigation

Implementation of Mitigation Measure 3.14-1 would include the construction of a Class II bicycle facility as recommended in the General Plan and County Non-Motorized Transportation Plan. Constructing this bicycle facility on the project's southern frontage of Stoddard Wells Road would ensure that the project is consistent with existing

plans and would not conflict with General Plan Policy 1.J. For this reason, the impact would be **less than significant with mitigation incorporated**.

Impact 3.14-2: Conflict or be Inconsistent with CEQA Guidelines Section 15064.3, Subdivision (b) Regarding Vehicle Miles Traveled

The project is not anticipated to substantially increase VMT under construction and operational scenarios. Construction personnel do not generate new trips. Rather, they are redistributed throughout the region and construction activity is short-term and temporary. Additionally, the land uses proposed on the project site would result in trips primarily consisting of diverted trips only traveling 0.5 mile. Thus, the overall VMT per service population would be much closer to 0.5 than to the Town of Apple Valley General Plan Buildout VMT per service population. For these reasons, the project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3, and the impact would be **less than significant**.

As discussed in Chapter 2, "Project Description," the project would develop the site to accommodate a new full-service travel stop east of, and adjacent to I-15 in the Town of Apple Valley. The project would include a passenger vehicle fueling station, truck fueling station, electric vehicle charging station, convenience store, fast-food restaurant, future Speedco truck maintenance building, dog park, truck scale, and an RV dump station. In addition to the travel stop, the project would include the development of a RV Park with the capacity to accommodate eight automobiles and 80 RVs and would include recreational amenities, a convenience store, laundry room, and bathrooms.

As detailed above in "VMT Methodology," the SBTAM is typically used to quantify and analyze project generated VMT impacts. While SBTAM, which is based off the SCAG model, does include a Heavy-Duty Truck Model (HDTM), it is not within the purview of the HDTM to include "pit-stops" such as those associated with the proposed project. Rather, the HDTM focuses on the origin and ultimate destination of heavy-duty trucks, such as the various ports, warehouses, and intermodal centers. Therefore, the model is not sensitive to projects that generate high amount of pass-by driveway trips, such as the proposed project; and thus, is not able to accurately quantify the VMT that would be generated by the proposed project. Thus, a qualitative approach was utilized to analyze the project's construction and operational impacts to VMT, as permitted by CEQA Guidelines Section 15064.3(b)(3).

Construction

Construction activities would be temporary and intermittent in nature and, thus, would not result in long-term increases in vehicular trips. Therefore, construction activities are not expected to result in a significant long-term increase to VMT, and the impact related to construction would be less than significant.

Operations

Travel Center

The area surrounding the project site is rural and primarily consists of vacant, undeveloped land. Access to the project site is provided by I-15 and Stoddard Wells Road with limited roadway connections and few adjacent land uses, the nearest active land use being a single-family residence located over 0.5 mile to the east.

In June of 2018, the *Love's Trip Generation and Travel Characteristics Study* (Omni-Means 2018) was prepared, which included a survey of six Love's Travel Centers in California (Lodi, Santa Nella, Tulare, Lost Hills, Barstow, and Coachella). All six sites are similar to the Travel Center portion of the project in land use and size; all including gas pumps, a convenience store, and a drive-through fast food restaurant. The *Love's Trip Generation and Travel Characteristics Study* established that the majority of trips to the surveyed sites were existing trips diverted off the adjacent highway. Therefore, consistent with the findings of the *Love's Trip Generation and Travel Characteristics Study*, it is assumed that most project trips associated with the Travel Center land uses would be diverted existing vehicles trips traveling along I-15, and only a small number of new trips would be generated by employees associated with the Travel Center component of the project. Consequently, it was assumed that 90 percent of the project passenger vehicle trips and 95 percent of project truck trips would be existing trips along the adjacent I-15 freeway diverted to the project site (CR Associates 2022).

The VMT for trips diverting from I-15, which represents vast majority (i.e., 90 percent of automobile and 95% of heavy vehicles) of the total trips traveling to the site, is approximately 0.5 mile. Based on data extracted from SBTAM, at buildout of the Town of Apple Valley in the year 2040 the total VMT per service population would be approximately 29.14. Therefore, because such a large percentage of all trips traveling to the Travel Center portion of the project site would be diverted trips only traveling 0.5 mile, the overall VMT per service population would skew much closer to 0.5 than to the Town of Apple Valley General Plan Buildout VMT per service population. Therefore, it is not anticipated that the baseline project generated VMT per service population of the Travel Center portion of the project would exceed the Town of Apple Valley's General Plan Buildout VMT per service population. Thus, the Travel Center component is anticipated to result in a less-than-significant VMT impact.

RV Park

The RV Park is designed to provide visitors a place to relax, refuel, and recharge on their way to their final destination. Based on internal research and collected data, the project applicant anticipates an average stay of only one night per visitor at the RV Park. Additionally, the project's rural location and the lack of travel destinations (e.g., recreational uses or major tourist destinations) in the surrounding area further supports the assumption that visitors would be using the RV Park as a rest stop before continuing their travel to their destination. Further, there are several other existing overnight RV stops in adjacent communities that provide similar services to the project; and thus, the RV stop is not expected to create regional diversion of trips. Therefore, similar to the Travel Center, the RV Park is not anticipated to generate new trips but, rather, serve existing trips on the way to their final destination (CR Associates 2022).

Consistent with the approach discussed above for the Travel Center, it is assumed that the vast majority trips traveling to the RV Park would be diverted from the I-15; and thus, VMT generated for most trips associated with the RV Park would increase by only 0.5 miles. As noted above, at buildout of the Town of Apple Valley in the year 2040 the total VMT per service population would be approximately 29.14. Therefore, because such a large percentage of all trips traveling to the RV Park portion of the project site would be diverted trips only traveling 0.5 mile, the overall VMT per service population would skew much closer to 0.5 than to the Town of Apple Valley General Plan Buildout VMT per service population.. Therefore, it is not anticipated that the baseline project generated VMT per service population of the RV Park portion of the project would exceed the Town of Apple Valley's General Plan Buildout VMT per service population. Thus, the RV Park component is anticipated to result in a less-than-significant VMT impact.

Summary

VMT related to construction activity is not considered to be newly generated, but rather temporary and redistributed through the roadway network. Additionally, operational VMT per service population attributed to the project is not expected to exceed the Town of Apple Valley's General Plan Buildout VMT per service population as the majority of total trips (i.e., 90 percent of automobile and 95 percent of heavy vehicles) would be diverted trips from the I-15 which is only 0.5 miles from the project site. Therefore, the impact to VMT would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

Impact 3.14-3: Substantially Increase Hazards due to a Design Feature or Incompatible Uses

The project would be required to comply with Town safety standards during construction of on- and off-site improvements. Additionally, the project is subject to review by Town staff to ensure appropriate traffic handling during construction, and that design standards are met to minimize any potential hazards related to the transportation circulation network. For these reasons, the project would not substantially increase hazards due to a design feature or incompatible uses, and the impact would be **less than significant**.

Construction

As detailed in Chapter 2, "Project Description," construction would begin as early as October 2022 and would last approximately 9 months. Construction activities would take place on weekdays, Monday through Friday, between 7:00 a.m. and 7:00 p.m. All phases of construction would comply with Town safety standards and regulations. Prior to

construction the project applicant would need to obtain an encroachment permit and submit a traffic control plan prepared by a registered engineer for all construction work that would occur in public right-of-way in order to ensure safety and minimal inconvenience during construction as required by the Town (Town of Apple Valley 2019). Additionally, the project would be subject to review by Town staff as part of the Development Permit process prior to construction to ensure all relevant policies are met, including those identified in the *Notes for Street Improvement Plans* and *General Excavation Permit Conditions and Trench Standards* as applicable for off-site water main line and utility work and the *Street Vacation Procedures/Application* for work performed in the Town's right-of-way.

Construction traffic impacts would be localized and temporary; however, during construction of the project, traffic operations could be degraded. For this reason, the project would be required to follow all local protocols to ensure safety to travelers and minimize traffic disturbance during construction activities. Therefore, the project would not substantially increase hazards during construction; thus, the impact would be less than significant.

Operations

As discussed in Chapter 2, "Project Description," the project would involve the development of an approximately 33.52-acre project site to accommodate a new full-service travel stop and RV Park serving professional truck drivers and the general public. The project would be required to meet all development design standards as identified by the Town of Apple Valley. Chapter 9.37 of the Town of Apple Valley's Municipal Code addresses design standards for the Town's Commercial and Office Districts. Municipal Code Section 9.37.040 details requirements regulating access and circulation such as standards for sight distance, parking, pedestrian circulation, transit facilities, and provisions for visitor serving development. Additionally, the project is subject to Town review processes, which would ensure that that the project design would comply with all applicable industry roadway and driveway design standards, including County and State standards as adopted by the Town.

Summary

On- and off-site construction would comply with all applicable Town standards as to not degrade safety and minimize potential disturbance to the transportation network. Additionally, all access and roadway related improvements associated with the project would be constructed in accordance with applicable Town design and safety standards, and permit requirements. For these reasons, the project would not substantially increase hazards due to geometric design features or incompatible uses. This impact would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

Impact 3.14-4: Result in Inadequate Emergency Access

The project would be required to meet the Town's design standards, which include width requirements to allow for emergency vehicles to access and navigate the project site via driveways, internal circulation, and turnaround points. The project is subject to Town staff and applicable emergency service agency review to ensure all relevant standards are met during construction and operation. Additionally, provisions set forth in the California Fire Code must be followed, which include allowing for continuous emergency access during construction and requiring that particular design standards are followed to guarantee the project would remain in compliance in case of an event where emergency personnel would need to respond. For these reasons, the project would not result in inadequate emergency access, and the impact would be **less than significant**.

As discussed in Impact 3.14-3 above, all improvements related to the project would meet Town design standards. Emergency access to the project would be subject to review by the Town and the responsible emergency service agencies, including the Apple Valley Fire Protection District and Police Department. Section 9.72.070 of the Municipal Code identifies access standards for parking and loading spaces requiring the project's design to provide for adequate turning radii and turnarounds for emergency vehicles. Additionally, Municipal Code Section 9.37.040 pertains to driveway access for emergency vehicles.

The project would also be required to follow the provisions set forth in the 2019 California Fire Code. Section 3310.1 of the 2019 California Fire Code identifies minimum requirements to provide required emergency access during construction activities. As detailed in Impact 3.14-3 above, the project applicant would be required to obtain all necessary permits for work performed within public right-of-way including a traffic control plan which would demonstrate appropriate traffic handling during construction activities for all work that may impact the traveling public.

The project would be required to follow all State and Town requirements to ensure any potential impacts to emergency vehicles are minimized during construction and maintained during operations. Therefore, the project would not result in inadequate emergency access; thus, the impact would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

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3.15 UTILITIES AND SERVICE SYSTEMS

This section evaluates the availability of existing utility and infrastructure systems (water, wastewater, stormwater, electricity, and natural gas) to serve the Apple Valley I-15 Travel Center (project) and the impact of the project on these systems. The analysis is based on documents obtained from utility service providers, including the Town of Apple Valley, Liberty Utilities, AVCO Disposal, Inc./Burrtec Company, Southern California Edison, and Southwest Gas Corporation. No public comments related to utilities and service systems were received during the scoping period.

3.15.1 Regulatory Setting

DOMESTIC WATER

Federal

Safe Drinking Water Act

As mandated by the Safe Drinking Water Act (Public Law 93-523), passed by Congress in 1974, the U.S. Environmental Protection Agency (EPA) regulates contaminants of concern to domestic water supply. Such contaminants are defined as those that pose a public health threat or that alter the aesthetic acceptability of the water. These types of contaminants are regulated by EPA primary and secondary Maximum Contaminant Levels (MCLs). MCLs and the process for setting these standards are reviewed every three years. Amendments to the Safe Drinking Water Act enacted in 1986 established an accelerated schedule for setting drinking water MCLs. EPA has delegated responsibility for California's drinking water program to the State Water Resources Control Board Division of Drinking Water (SWRCB-DDW). SWRCB-DDW is accountable to EPA for program implementation and for adoption of standards and regulations that are at least as stringent as those developed by EPA.

State

Urban Water Management Planning Act

In 1983, the California Legislature enacted the Urban Water Management Planning Act (UWMPA) (California Water Code Sections 10610–10656). The UWMPA states that every urban water supplier that provides water to 3,000 or more customers, or that provides more than 3,000 acre-feet (af) of water annually, should make every effort to ensure the appropriate level of reliability in its water service sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry years. This effort includes the adoption of an urban water management plan (UWMP) by every urban-water supplier and an update of the plan every 5 years on or before December 31, of every year ending in a five or zero.

The project area is within the management area of the Mojave Water Agency (MWA), which adopted its most recent UWMP on May 27, 2021. This plan is discussed in more detail under the "Local" regulations section below. The project site is also within the service area of Liberty Utilities, which has adopted its own UWMP in June 2021. This plan is also discussed below in the "Local" regulations section.

California Model Water Efficient Landscape Ordinance

The Water Conservation in Landscaping Act was enacted in 2006, requiring the California Department of Water Resources (DWR) to update the Model Water Efficient Landscape Ordinance (MWELO).[1] In 2009, the Office of Administrative Law approved the updated MWELO, which required a retail water supplier or a county to adopt the provisions of the MWELO by January 1, 2010, or enact its own provisions equal to or more restrictive than the MWELO provisions.[2]

[1] Gov. Code §§ 65591-65599

[2] California Code of Regulations (CCR), Tit. 23, Div. 2, Ch. 27, Sec. 492.4. The MWELO provides the local agency discretion to calculate the landscape water budget assuming a portion of landscape demand is met by precipitation, which would further reduce the outdoor water budget.

In response to the Governor's executive order dated April 1, 2015, (EO B-29-15), DWR updated the MWELO and the California Water Commission approved the adoption and incorporation of the updated State standards for MWELO on July 15, 2015.[3] The changes included a reduction to 45 percent for the maximum amount of water that may be applied to a landscape for non-residential projects, which effectively reduces the landscape area that can be planted with high water use plants. The MWELO applies to all types of new construction with a landscape area greater than 500 square feet (the prior MWELO applied to landscapes greater than 2,500 sf).[4] For non-residential projects, the coverage of high water use plants is reduced due to the new 45 percent water maximum and turf is limited.

California Safe Drinking Water Act

The SWRCB-DDW is responsible for implementing the federal SDWA and its updates, as well as California statutes and regulations related to drinking water. State primary and secondary drinking-water standards are promulgated in California Code of Regulations (CCR) Title 22, Sections 64431–64501.

The California Safe Drinking Water Act (CA SDWA) was passed in 1976 to build on and strengthen the federal SDWA. The CA SDWA authorizes DHS to protect the public from contaminants in drinking water by establishing maximum contaminant levels (MCLs) that are at least as stringent as those developed by EPA, as required by the federal SDWA.

Sustainable Groundwater Management Act of 2014

The Sustainable Groundwater Management Act of 2014 (SGMA) became law on January 1, 2015, and applies to all groundwater basins in the state (Water Code Section 10720.3). By enacting the SGMA, the Legislature intended to provide "groundwater sustainability agencies" (GSAs) with the authority and the technical and financial assistance necessary to sustainably manage groundwater within their jurisdictions (Water Code Section 10720.1). The SGMA is a follow up to SB X7-6, adopted in November 2009, which mandated a statewide groundwater elevation monitoring program to track seasonal and long-term trends in groundwater elevations in California's groundwater basins. In accordance with this amendment to the Water Code, DWR developed the California Statewide Groundwater Elevation Monitoring program.

Pursuant to the SGMA, any local agency or combination of local agencies overlying a groundwater basin may decide to become a GSA for that basin, with the exception of a list of existing public agencies that the Legislature designated as GSAs for their basins (Water Code Section 10723). The MWA has management responsibility for the long-term reliability of surface and groundwater within the Mojave River Groundwater Basin, which is the groundwater basin that underlies the project site.

The SGMA also requires DWR to categorize each groundwater basin in the state as high-, medium-, low-, or very low priority (Water Code Sections 10720.7, 10722.4). All basins designated as high- or medium-priority basins must be managed by a GSA under a groundwater sustainability plan (GSP) that complies with Water Code Section 10727 et seq. If required to be prepared, GSPs must be prepared by January 31, 2020 for all high- and medium-priority basins that are subject to critical conditions of overdraft, as determined by DWR, or by January 31, 2022 for all other high- and medium-priority basins. In lieu of preparation of a groundwater sustainability plan, a local agency was permitted to submit an alternative that complies with the SGMA no later than January 1, 2017 (Water Code Section 10733.6).

Following DWR's approval of adopted GSPs, the affected high- and medium-priority basins are to be managed under the GSPs. The basins should reach sustainability within 20 years of adoption of their GSPs. SGMA defines sustainable groundwater management as the "management and use of groundwater in a manner that can be maintained during the planning and implementation horizon without causing undesirable results." The legislation defines "undesirable results" to be any of the following effects caused by groundwater conditions occurring throughout the basin:

- chronic lowering of groundwater levels indicating a significant and unreasonable depletion of supply;
- significant and unreasonable reduction of groundwater storage;
- significant and unreasonable seawater intrusion;

[3] These updated changes have been incorporated into California Code of Regulations (CCR), Tit. 23, Div. 2, Ch. 27, Sec. 490-495.
[4] CCR Tit. 23, Div. 2, Ch. 27, Sec. 490.1.

- significant and unreasonable land subsidence;
- significant and unreasonable degraded water quality; and
- surface water depletions that have significant and unreasonable adverse impacts on beneficial uses of the surface water.

Local

2020 Urban Water Management Plan for Mojave Water Agency

MWA is a State Water Project (SWP) contractor and serves as a wholesale supplier to 12 urban retail water suppliers, including Liberty Utilities, the water supplier for the project area. The MWA service area encompasses approximately 4,900 square miles of the High Desert in eastern San Bernardino County. The agency was founded due to concerns over declining groundwater levels in the region, with the purpose of doing "any and every act necessary, so that sufficient water may be available for any present or future beneficial use of the lands and inhabitants within the Agency's jurisdiction."

As required under the UWMPA, MWA's 2020 UWMP is a long-term plan for water supplies and water management within the MWA service area. The UWMP includes projections of future water demand based on forecasted population growth through 2040. In addition, the UWMP includes projections of future water supply, based on accurate historic water use patterns and water usage records, for average year, single-dry year, and multiple-dry year conditions. The UWMP also includes water demand management measures to meet water reduction goals.

2020 Urban Water Management Plan for Liberty Utilities - Apple Valley

Liberty Utilities is an urban water supplier with a service area of approximately 50 square miles that encompasses the Town of Apple Valley and unincorporated areas of San Bernardino County. As an urban water supplier, Liberty Utilities is required to prepare and adopt a UWMP. Liberty Utilities' most recent update is the 2020 UWMP, which was adopted in June 2021 (Liberty Utilities 2021a). The 2020 UWMP outlines a reliable management action plan for long-term resource planning to ensure adequate water supplies are available to meet existing and future water supply needs. The 2020 UWMP also incorporates water supply reliability determinations resulting from potential prolonged drought, regulatory revisions, and changing climate conditions.

Liberty Utilities is a sub-agency of MWA. MWA's 2020 UWMP is incorporated by reference in Liberty Utilities' 2020 UWMP. In addition, Liberty Utilities provided its 2020 UWMP to MWA, which includes water use projections in 5 year increments for a normal year, a single dry year, and a five consecutive year drought conditions over the next 25 years.

Town of Apple Valley 2009 General Plan

The Town Council adopted the 2009 General Plan on August 11, 2009. The General Plan includes goals, policies, and programs intended to guide land use decisions within the Town's planning area. The Water Resources Element addresses water sources, availability, current and future demand, conservation, water quality, and the future of the water resources serving the community. The following programs related to water supplies are applicable to the project (Town of Apple Valley 2009a):

- **Policy 1.B:** To ensure that overall and per capita water demand from new development is reduced, the Town shall continue to require the use of drought-tolerant, low water consuming landscaping, intelligent irrigation controllers, and other water-conserving strategies and technologies in irrigated areas.
- **Program 1.C.2:** Continue to implement the Town's Water Conservation/Landscaping Regulations to optimize conservation and comply with State Assembly Bill 325 (AB 325), by requiring the use of native and other drought-tolerant planting materials and efficient irrigation systems.
- **Policy 1.D:** To the greatest extent practicable, the Town shall direct new development to provide irrigation systems that are able to utilize reclaimed water, when available, for use in common area and streetscape landscaping.

- **Policy 1.H:** The Town shall confer with appropriate water agencies and purveyors, as necessary, to assure adequate review and mitigation of potential impacts of proposed development on local water resources.

The Water, Wastewater, and Utilities Element includes goals, policies, and programs intended to ensure the adequate provision of domestic water, sewage treatment and utility services to the community. Programs related to water supplies that are applicable to the project include the following:

- **Program 1.A.2:** The Town shall seek to reduce per capita water consumption by requiring the use of planned landscapes in new developments, and by requiring review of all new agricultural and mining uses related to water.
- **Program 1.A.2:** New developments will be required to utilize measures designed to conserve water resources including low flow irrigation and plumbing fixtures.
- **Program 1.A.4:** The Town shall use and promote reclaimed water for irrigation in parks, golf courses, agricultural uses, recreation areas, and industrial uses, as well as from residential and other urban uses where practical and economically feasible.

WASTEWATER AND STORMWATER

Federal

Clean Water Act

The Clean Water Act (CWA) employs a variety of regulatory and non-regulatory tools to reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. Those portions of the CWA that relate to wastewater and stormwater discharges are discussed below.

National Pollutant Discharge Elimination System

The National Pollutant Discharge Elimination System (NPDES) permit program was established under the CWA to regulate municipal and industrial discharges to surface waters of the US. NPDES permit regulations have been established for broad categories of discharges including point source waste discharges and nonpoint sources (nonpoint source discharges are further discussed in Section 4.10, "Hydrology and Water Quality"). Each NPDES permit identifies limits on allowable concentrations and mass loadings of pollutants contained in the discharge. Sections 401 and 402 of the CWA contain general requirements regarding NPDES permits. Section 307 of the CWA describes the factors that EPA must consider in setting effluent limits for priority pollutants.

NPDES permits cover various industrial and municipal discharges, including discharges from storm sewer systems in larger cities, stormwater generated by industrial activity, runoff from construction sites disturbing more than 1 acre, and mining operations. Point source dischargers must obtain a discharge permit from the proper authority (usually a state, sometimes EPA, a tribe, or a territory). So-called "indirect" point source dischargers are not required to obtain NPDES permits. "Indirect" dischargers send their wastewater into a public sewer system, which carries it to the municipal sewage treatment plant, through which it passes before entering any surface water.

The CWA was amended in 1987 with Section 402(p) requiring NPDES permits for nonpoint source (i.e., stormwater) pollutants in discharges. Stormwater sources are diffuse and originate over a wide area rather than from a definable point. The goal of the NPDES stormwater regulations is to improve the water quality of stormwater discharged to receiving waters to the "maximum extent practicable" using structural and nonstructural best management practices (BMPs). BMPs can include educational measures (e.g., workshops informing the public of what impacts can result when household chemicals are dumped into storm drains), regulatory measures (e.g., local authority of drainage-facility design), public-policy measures (e.g., labeling storm-drain inlets as to impacts of dumping on receiving waters) and structural measures (e.g., filter strips, grass swales, and detention ponds).

State

NPDES Stormwater Permit for Discharges from Small Municipal Separate Storm Sewer Systems

The Municipal Stormwater Permitting Program regulates stormwater discharges from municipal separate storm sewer systems (MS4s). Stormwater is runoff from rain or snow melt that runs off surfaces such as rooftops, paved streets, highways, or parking lots and can carry with it pollutants such as oil, pesticides, herbicides, sediment, trash, bacteria and metals. The runoff can then drain directly into a local stream, lake, or bay. Often, the runoff drains into storm drains which eventually drain untreated into a local waterbody.

In accordance with WQ Order No. 2003-0005-DWQ and NPDES General Permit No. CAS000004, the Town of Apple Valley, Cities of Hesperia and Victorville, and County of San Bernardino, collectively referred to as the Mojave River Watershed Group (MRWG), submitted a Notice of Intent and Stormwater Management Program (SWMP) to the Lahontan RWQCB in August 2003 requesting coverage under the Phase II Small MS4 General Permit. The SWMP for the Mojave River Watershed (MRWG 2003) describes control measures for protecting area water quality from stormwater and non-stormwater discharges, particularly for the urbanized portion of the watershed. The Lahontan RWQCB accepted the SWMP and issued coverage under the Phase II permit to the MRWG in February 2005 (MRWG 2012).

Local

Town of Apple Valley Sewer System Management Plan

The Town's Sewer System Management Plan (SSMP) provides the framework for properly managing, operating, inspecting, and maintaining all components of the Town's sewer system. The purpose of the SSMP is to ensure that the Town's sewer system provides adequate sewer capacity for peak wastewater flows, protect the public health by minimizing the frequency and impact of unauthorized Sanitary Sewer Overflows (SSO), implement standard procedures for responding to SSOs, preserve and improves the collection system to ensure dependable service in the present and the future, and assure compliance with all regulatory notification and reporting requirements (Town of Apple Valley 2019).

Town of Apple Valley 2009 General Plan

Water Resources Element policies related to wastewater and stormwater:

- **Policy 1.E:** To the greatest extent practicable, the Town shall continue to require new development to connect to the community sewer system. Where sewer service is not available and lots are created of less than one (1) acre in size, the Town shall require the installation of "dry sewers" and the payment of connection fees for future sewer main extensions.
- **Policy 1.F:** Consistent with community design standards and local and regional drainage plans, the Town shall provide development standards and guidelines for the construction of on-site storm water retention facilities.
  - **Program 1.F.1:** Require that the development and maintenance of project-specific on-site stormwater retention/detention basins implements the NPDES program, enhances groundwater recharge, complements regional flood control facilities, and addresses applicable community design policies subject to all applicable regulations, standards and guidelines.

The Water, Wastewater, and Utilities Element includes the following polices related to wastewater and stormwater:

- **Policy 1.B:** The Town shall continue to require sewer connection where feasible at the time that a lot is developed, or when service becomes available.
  - **Program 1.B.3:** The Town and its Departments of Public Works and Building and Safety shall continue to require that, to the greatest extent feasible, new development extend and connect to sewer lines. Should on-lot septic systems be required, the Town shall require the installation of "dry sewers" and the payment of connection fees for future sewer main extensions.

ENERGY

Federal

No federal plans, policies, regulations, or laws related to energy are applicable to the project.

State

California Environmental Quality Act

Appendix F of the State CEQA Guidelines sets forth goals for energy conservation, including decreasing per capita energy consumption and reliance on fossil fuels and increasing reliance on renewable energy sources. CEQA requires EIRs to describe potential energy impacts of projects, with an emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy (Public Resources Code [PRC] Section 21100[b][3]).

The California Energy Commission (CEC) prepares an integrated policy report every two years that assesses major energy trends and issues facing the state's electricity, natural gas, and transportation fuel sectors and provides policy recommendations to conserve resources; protect the environment; ensure reliable, secure, and diverse energy supplies; enhance the state's economy; and protect public health and safety (CEC 2021). Energy efficiency is one of the key components of the state's strategy to reduce greenhouse gas emissions (GHGs) and to achieve reduction targets set forth by Assembly Bill (AB) 32, Senate Bill (SB) 32, and Governor Brown's Executive Order B-30-15. Efficiency achieved through building codes, appliance standards, and ratepayer-funded programs has had a positive impact on GHG emissions in recent years. The policy report discusses efforts to decarbonize California's energy system and recognizes transitioning to zero- and near-zero emission vehicles will be a fundamental part of meeting the state's climate goals.

The California Public Utilities Commission 2008 Energy Efficiency Strategic Plan established goals of having all new residential construction in California be zero net energy (ZNE) by 2020 and all new commercial construction ZNE by 2030 (CPUC 2008).

Clean Energy and Pollution Reduction Act

On October 7, 2015, the Clean Energy and Pollution Reduction Act (SB 350) was signed into law, establishing new clean energy, clean air and GHG reduction goals for 2030 and beyond. SB 350 codifies Governor Brown's clean energy goals to increase California's renewable electricity procurement goal from 33 percent by 2020 to 50 percent by 2030, and is part of California's overall strategy to address climate change. SB 350 enhances the state's ability to meet its long-term climate goal of reducing GHG emissions to 40 percent of 1990 levels by 2030 and 80 percent below 1990 levels by 2050 (CEC 2022).

California Code of Regulations, Energy Efficiency Standards

Energy consumption of new buildings in California is regulated by State Building Energy Efficiency Standards contained in the California Code of Regulations, Title 24, Part 2, Chapter 2-53. Title 24 applies to all new construction of both residential and nonresidential buildings, and regulates energy consumed for heating, cooling, ventilation, water heating, and lighting. The 2016 Building Energy Efficiency Standards have improved efficiency requirements from previous codes and the updated standards are expected to result in a statewide energy consumption reduction. Effective January 1, 2011, CALGreen became California's first green building standards code. It is formally known as the California Green Building Standards Code, Title 24, Part 11, of the California Code of Regulations.

Green Building Initiative

In 2012, Governor Brown's Executive Order B-18-12 and its related Green Building Action Plan state the following energy and water efficiency improvement goals for facilities owned, funded, and leased by the State:

- All new state buildings beginning design after 2025 shall be constructed as ZNE facilities with an interim target for 50 percent of new facilities beginning design after 2020 to be ZNE. State agencies shall also take measures toward achieving ZNE for 50 percent of the square footage of existing state-owned building area by 2025.
- The state shall identify at least three buildings by January 1, 2013, to pursue ZNE as pilot projects.

- New and major renovated state buildings shall be designed and constructed to exceed the applicable version of CCR Title 24, Part 6, by 15 percent or more, and include building commissioning, for buildings authorized to begin design after July 1, 2012.
- Any proposed new or major renovation of state buildings larger than 10,000 square feet shall use clean, onsite power generation such as solar photovoltaic, solar thermal, and wind power generation, and clean backup power supplies, if economically feasible.
- New and major renovated state buildings larger than 10,000 square feet shall obtain Leadership in Energy and Environmental Design (LEED) "Silver" certification or higher.
- State agencies shall reduce water use at the facilities they operate by 10 percent by 2015 and by 20 percent by 2020, as measured against a 2010 baseline.
- All new and renovated state buildings and landscapes shall utilize alternative sources of water wherever cost-effective. Sources may include, but are not limited to: recycled water, graywater, rainwater capture, stormwater retention, and other water conservation measures.
- Landscape plants shall be selected based on their suitability to local climate and site conditions, and reduced water needs and maintenance requirements.
- State agencies shall identify and pursue opportunities to provide electric vehicle charging stations, and accommodate future charging infrastructure demand, at employee parking facilities in new and existing buildings.

Local

Town of Apple Valley 2009 General Plan

The Energy and Mineral Resources Element of the General Plan is intended to guide the Town in the long-term management and use of energy and mineral resources. The following policies related to energy are applicable to the project:

- **Program 1.A.1:** While considering the future development of more stringent local energy performance standards, the Town shall continue to rigorously enforce all state mandated energy-conserving development and building codes/regulations.
- **Program 1.A.2:** The Town shall make available information to developers on energy efficient building design and conservation technologies addressing enhanced wall and ceiling insulation, efficient heating and cooling equipment, thermally efficient glazing, and efficient household appliances.
- **Policy 1.B:** Promote building design and construction that integrates alternative energy systems, including but not limited to solar, thermal, photovoltaics and other clean energy systems.
- **Policy 1.B.3:** The Town shall encourage building design that takes advantage of shade, prevailing winds and sun screens. Energy efficient lighting and installation of colored "cool roofs", cool pavement and strategically planted shade trees should also be encouraged. The Town shall support the installation of solar panels on carports and over parking areas where appropriate.

In addition, the Water, Wastewater, and Utilities Element includes the following applicable program related to energy:

- **Program I.K.2**: The Town shall confer and coordinate with Southern California Edison, Southwest Gas, and other applicable energy providers to educate and encourage developers to incorporate alternative energy systems in new development within the Town.

Town of Apple Valley Climate Action Plan

The Town of Apple Valley Climate Action Plan was originally adopted in 2010 and most recently updated in 2019 (Town of Apple Valley 2021). The 2019 Climate Action Plan Update is the Town's comprehensive strategy to reduce GHG emissions in response to the challenges of climate change. Specifically, the 2019 CAP Update seeks to ensure

that the reduction measures proposed and implemented in the CAP continue to support the Town's greenhouse gas emissions reduction targets of 15% below 2005 levels by 2020 and 40 percent below 2005 levels by 2030 per Senate Bill 32. The 2019 CAP Update includes measures related to energy efficiency and renewable energy for new development. Measures that are applicable to the project include the following:

- **ND-12:** Building and site plan designs shall ensure that the project energy efficiencies meet applicable California Title 24 Energy Efficiency Standards. Verification of increased energy efficiencies shall be documented in Title 24 Compliance Reports provided by the applicant, and reviewed and approved by the Town prior to the issuance of the first building permit. Any combination of the following design features may be used to fulfill this measure provided that the total increase in efficiency meets or exceeds Title 24 standards:
  - Buildings shall meet or exceed California Title 24 Energy Efficiency performance standards for water heating and space heating and cooling.
  - Increase in insulation such that heat transfer and thermal bridging is minimized.
  - Limit air leakage through the structure or within the heating and cooling distribution system to minimize energy consumption.
  - Incorporate dual-paned or other energy efficient windows.
  - Incorporate energy efficient space heating and cooling equipment.
  - Incorporate the use of tankless water heaters in all residential units and community buildings.
  - Promote building design that will incorporate solar control in an effort to minimize direct sunlight upon windows. A combination of design features including roof eaves, recessed windows, "eyebrow" shades and shade trees shall be considered.
  - Interior and exterior energy efficient lighting which exceeds the California Title 24 Energy Efficiency performance standards shall be installed, as deemed acceptable by Town. Automatic devices to turn off lights when they are not needed shall be implemented.
  - To the extent that they are compatible with landscaping guidelines established by the Town, shade producing trees, particularly those that shade paved surfaces such as streets and parking lots and buildings shall be planted at the Project site.
  - Paint and surface color palette for the Project shall emphasize light and off-white colors which will reflect heat away from the buildings.
  - All buildings shall be designed to accommodate renewable energy sources, such as photovoltaic solar electricity systems, and wind energy systems on properties greater than 2 acres, appropriate to their architectural design.
  - Consideration shall be given to using LED lighting for all outdoor uses (i.e. buildings, pathways, landscaping, carports).
- **ND-14:** Use passive solar design by orienting buildings and incorporating landscaping to maximize passive solar heating during the winter, and minimize solar heating during the summer.
- **ND-15:** To reduce energy demand associated with potable water conveyance:
  - Landscaping palette emphasizing drought tolerant plants and exceeding Town standards for water conservation.
  - For residential uses, limit turf areas to no more than 25% of all landscaped areas. Encourage limiting turf areas to no more than 20% for added water/energy savings. Turf is prohibited in public rights-of-way, including parkways, and in non-residential uses with the exception of Special Landscaping Areas. (Town Municipal Code Chapter 9.75 Water Conservation/Landscaping).
  - Use of water-efficient irrigation techniques exceeding Town standards for water conservation.

  - U.S. EPA Certified WaterSense labeled or equivalent faucets, high-efficiency toilets (HETs), and water-conserving shower heads.
  - Consider use of artificial turf.
- **ND-16:** Install Energy Star appliances and energy efficient fixtures.
- **ND-17:** Install all CFL or LED light bulbs.
- **ND-18:** Install common area electric vehicle charging station(s) and secure bicycle racks.
- **ND-19:** To reduce the project's energy use from the grid:
  - Install solar panels/photovoltaic systems sufficient to provide electric power and heat water within the project, and/or
  - Install other clean energy system sufficient to provide electric power and heat water within the project, and/or
- **ND-20:** Install solar or photovoltaic systems on new roofs whether on residential, commercial or industrial buildings.
- **ND-21:** Use on-site generated bio-gas in appropriate applications.
- **ND-22:** Install combined heat and power facilities in appropriate applications.
- **ND-23:** Specify rubberized and/or recycled asphalt for roads and driveways to the extent economically viable.

SOLID WASTE

Federal

No federal plans, policies, regulations, or laws related to solid waste are applicable to the project.

State

California Building Standards Code (Title 24)

CALGreen establishes mandatory minimum green building standards and requirements for construction and demolition (C&D) material diversion. Under Section 5.408 of the CALGreen Code, projects involving C&D activities are required to recycle and/or salvage for reuse a minimum of 65 percent of their nonhazardous C&D material. Applicable projects are required to prepare and implement a construction waste management plan.

California Integrated Waste Management Act

To minimize the amount of solid waste that must be disposed of in landfills, the State Legislature passed the California Integrated Waste Management Act of 1989 (AB 939), effective January 1990. According to AB 939, all cities and counties were required to divert 25 percent of their generated waste from landfill facilities by January 1, 1995 and 50 percent by January 1, 2000. Solid waste plans are required to explain how each city's AB 939 plan will be integrated with the county plan. In order of priority, the plans must promote source reduction, recycling and composting, and environmentally safe transformation and land disposal.

In 1999, Governor Davis signed AB 75 (Chapter 764, Statutes of 1999), which mandated that State agencies comply with AB 939 diversion requirements.

In addition to the requirements of AB 75, the following policies and statutes address State agency recycling:

- Executive Order W-7-91 requires California State agencies to buy recycled products and set up recycling programs.

- Public Contract Code (PCC) Sections 12164.5–12167.1 require the California Department of Resources Recycling and Recovery (CalRecycle) to develop a recycling plan and implement recycling programs for the Legislature and all State-owned and leased buildings.
- PCC 12167.1 requires State agencies and institutions to report materials collected for recycling to the CalRecycle.
- PRC 42560–42562 requires the CalRecycle to recycle high-grade white office paper in California State offices.
- California State Administration Manual Chapter 1990 encourages employees at State facilities to prevent waste, reuse, and recycle.

Local

Town of Apple Valley Code of Ordinances

Chapter 8.19, "Requirement to Recycle Construction and Demolition Debris for Certain Construction, Demolition, and Renovation Projects within the Town of Apple Valley," of the Town's Code of Ordinance applies to all construction, demolition, and renovation projects within the Town that are 1,000 square feet or greater (covered projects). These covered projects must comply with construction and demolition debris requirements listed in Section 8.19.030 of the Town's Code of Ordinances. In addition, covered projects are required to submit and comply with a Waste Management Plan, meeting the requirements outlined in Sections 8.19.040 through 8.19.080 of the Town's Code of Ordinances prior to any construction or demolition activities.

Town of Apple Valley 2009 General Plan

The Water, Wastewater, and Utilities Element includes the following polices related to solid waste:

- **Policy 1.F:** The Town and its solid waste disposal service provider shall continue to consult and coordinate to maintain and surpass, where possible, the provisions of AB 939 by means of expanded recycling programs to divert resources from the waste stream that can be returned to productive use.
- **Policy 1.G:** To the greatest extent feasible, the Town shall encourage commercial and industrial establishments to minimize the amount of packaging and potential waste associated with product manufacturing and sales.

In addition, the Energy and Mineral Resources Element includes the following applicable policies related to recycling:

- **Program 1.E.3:** The Town shall require the recycling of mineral-based construction materials, including asphalt, concrete, gypsum and similar materials, and the use of recycled materials in new construction.

Town of Apple Valley Climate Action Plan

The 2019 CAP Update (Town of Apple Valley 2021) includes measures related to solid waste for new development. Measures that are applicable to the project include the following:

- **ND-24:** Recycle and/or salvage non-hazardous construction and demolition waste, and develop and implement a construction waste management plan quantifying the reduction in the waste stream.
- **ND-25:** Reuse construction waste in project features (e.g. shattered concrete or asphalt can be ground and used in walkways and parking lots).
- **ND:-26:** Facilitate the reduction of waste generated by building occupants that is hauled to and disposed of in landfills by providing easily accessible areas that serve each building and are dedicated to the collection and storage of paper, cardboard, glass, plastics, and metals.

3.15.2 Environmental Setting

Public utilities in the project area are provided by various entities, as identified in Table 3.15-1 and discussed in detail below.

Table 3.15-1 Utilities Providers for the Project Area

Utility	Agency/Provider
Water Supply	Liberty Utilities
Sewer	Town of Apple Valley Wastewater Division
Solid Waste Collection	AVCO Disposal, Inc./Burrtec Company
Electrical Service	Southern California Edison
Natural Gas	Southwest Gas Corporation

Source: Data compiled by Ascent Environmental in 2021.

WATER SUPPLIES AND USE

Mojave Water Agency

The project area is within the MWA service area, which encompasses 4,900 square miles of eastern San Bernardino County. Water supplies for MWA's service area are sourced almost entirely from pumped groundwater from the various basins, subbasins, and aquifers in the area. The Mojave groundwater basin is not currently identified by DWR as a critically overdraft basin; however, groundwater levels have generally declined since the early 1950s (DWR 2020; MWA 2021). Overdraft conditions occur when ground water discharge exceeds recharge, resulting in a net reduction in ground water stored in the aquifer. Since its formation, the MWA has been responsible for securing supplemental waters supplies to improve the groundwater overdraft conditions within the aquifers in MWA's service area. Today, the Mojave groundwater basin is identified by DWR as a very low-priority groundwater basin partially due to the fact that it is adjudicated.

MWA's groundwater supplies come from the following sources:

- Natural Supply: Natural supplies for the MWA service area come from percolation of storm water flows and infiltration from the Mojave river and tributaries, including treated wastewater flow from the Crestline Sanitation District. Although natural supplies may fluctuate on an annual basis, the long-term average supply availability is expected to remain relatively constant at 57,349 acre-feet per year through the 2065 planning horizon.
- Return Flow: When water supplies are extracted from groundwater basins, extracted water is either consumed or returned to the groundwater aquifer to become part of the available water supply (i.e., return flow). Return flow supplies are expected to range from 47,655 to 58,283 acre-feet per year through the 2065 planning horizon.
- Imported Wastewater: Treated wastewater effluent is imported to the MWA service area from the Lake Arrowhead Community Services District, Big Bear Area Regional Wastewater Agency, and Crestline Sanitation District. Wastewater imports from outside MWA represent a small portion of MWA's overall water supply – approximately 2,800 acre-feet per year through the 2065 planning horizon.
- Imported SWP Supply: MWA uses SWP supplies to recharge local groundwater basins. The SWP is a state-built water storage and delivery system comprised of dams and reservoirs, pumping and generating plants, and aqueducts. MWA is one of 29 water agencies that has a SWP Contract. Under the SWP, the Table A Annual Amount is the maximum amount of water an agency may receive under its contract. MWA's Table A Annual Amount in 2020 was 89,800 acre-feet per year; however, the amount of water that was actually allocated to MWA in 2020 was 17,960 acre-feet per year, which is 20 percent of the contracted maximum amount. From 2010 to 2020, MWA has used between 5 and 80 percent of its Table A Annual Amount. The last year that MWA used 100 percent of its Table A Annual Amount was 2006. MWA anticipates that the reliability of SWP supplies will decline to as low as 52 percent reliability by 2040; therefore, MWA assumes that future SWP allocations will range from 5 to 58 percent of the Table A Annual Amount in future normal years, single dry years, and five consecutive dry years.

  MWA's SWP contract allows a portion of allocated water supplies to be stored for future use (i.e., carryover water). From 2010 to 2020, available carryover water has ranged from 268 to 53,246 acre-feet per year. In a normal year, MWA anticipates having a carryover supply of 20,000 acre-feet. MWA also directly stores imported

water supplies in the groundwater basins within the MWA service area. In 2020, MWA's total stored water was approximately 191,915 acre-feet. Including carryover water supplies from the SWP, MWA anticipates having 200,000 acre-feet of stored groundwater for future use through the 2065 planning horizon.

Table 3.15-2 includes a summary of the current and projected water supplies that would be used in the MWA service area for the next 5 years.

Table 3.15-2 Current and Projected Supplies for the Next 5 Years

Year	Total Supplies (acre-feet)
Normal Year	156,580
Single Dry Year	129,400
Multi-Year Drought	
Year 1 (2021)	136,583
Year 2 (2022)	129,700
Year 3 (2023)	130,000
Year 4 (2024)	130,400
Year 5 (2025)	139,234

Source: MWA 2021.

Table 3.15-3 include a summary of the current and projected water supplies that would be used in the MWA service area from 2025 through 2065.

Table 3.15-3 Current and Projected Supplies through 2065

Year	Total Supplies (acre-feet)								
	2025	2030	2035	2040	2045	2050	2055	2060	2065
Normal Year	158,541	159,452	159,372	159,299	160,710	161,985	163,141	164,186	165,128
Single Dry Year	130,800	135,300	137,700	140,200	142,900	145,500	147,800	149,800	151,800
Multi-Year Drought									
Year 1	139,234	141,492	142,759	144,033	145,444	146,719	147,875	149,800	151,800
Year 2	130,800	135,300	137,700	140,200	142,900	145,500	147,800	149,800	151,800
Year 3	130,800	135,300	137,700	140,200	142,900	145,500	147,800	149,800	151,800
Year 4	130,800	135,300	137,700	140,200	142,900	145,500	147,800	149,800	151,800
Year 5	139,234	141,492	142,759	144,033	145,444	146,719	147,875	149,800	151,800

Source: MWA 2021.

Regional water supplies in the MWA service area are used by the 12 urban retail water suppliers (including Liberty Utilities – Apple Valley), small water systems and rural domestic users, agricultural users, and other users (e.g., industrial, golf course, and recreational). In 2020, regional water use in the MWA service area was 129,192 acre-feet, of which 9,802 acre-feet was used by Liberty Utilities – Apple Valley. MWA anticipates a 15 to 20 percent increase in water needs from current conditions to 2065, which is predominately attributed to anticipated population growth. Future regional water use in the MWA service area is anticipated to range from 130,800 acre-feet in 2025 to 151,900 acre-feet in 2065. Of this regional water use, Liberty Utilities – Apple Valley's water use is anticipated to range from 10,220 acre-feet in 2025 to 11,950 acre-feet in 2065. Under drought conditions, regional water use is anticipated to range from 129,600 acre-feet in 2021 to 130,800 acre-feet in 2025.

MWA anticipates having reliable water supplies available to meet regional water demands through 2065, including during normal, single-dry, and multiple-dry years. As discussed above, the reliability of SWP supplies is anticipated to decline in future years; however, MWA's portfolio of water supplies includes natural and recharged groundwater,

imported wastewater, return flow, and stored and SWP carryover supplies. MWA manages its water supplies to address projected dry conditions. Specifically, MWA captures and stores surplus imported water in normal and wet years to meet regional demands in dry years. As noted above, MWA has stored over 200,000 acre-feet of water in anticipation of future dry years (MWA 2021).

Liberty Utilities - Apple Valley

The Town of Apple Valley has several privately owned water companies that provide water service to residents and businesses in Apple Valley. The project site would be served by Liberty Utilities, which is one of the largest utility companies in the Town of Apple Valley. Liberty Utilities is a sub-agency of MWA.

According to the 2020 Urban Water Management Plan (UWMP) for Apple Valley (Liberty Utilities 2021a), Liberty Utilities provides water service to residential, commercial, industrial, institutional, and open space customers in the Town of Apple Valley and unincorporated areas of San Bernardino County. Liberty Utilities conveys water through a network of 475 miles of underground pipes over a service area of approximately 50 square miles that is generally bordered by the City of Victorville to the east and the City of Hesperia to the southeast. The service area had a population of 61,444 in 2020, which is projected to grow to 80,334 by 2045.

Liberty Utilities' distribution system is supplied solely by groundwater. According to the Liberty Utilities 2020 Annual Water Quality Report for Apple Valley (Liberty Utilities 2021b), 100 percent of source water within the Town was obtained from 18 deep wells that draw water from the Alto subarea of the Mojave groundwater basin.

As shown in Table 3.15-4, Liberty Utilities' total water demands (including potable and non-potable water) over the past 10 years have ranged from 13,515 to 18,230 acre-feet per year (AFY), with an average of 15,280 AFY. Water use in 2020 was 14,979 AFY. As described in the UWMP, Liberty Utilities met 100 percent of its total demands with supplies from the Mojave groundwater basin during a normal year (2022), a single dry year (2017) and a five consecutive year drought (2011 to 2015).

Table 3.15-4 Liberty Utilities – Apple Valley Historic Water Supplies

Calendar Year	System Water Supply Sources (Acre-Feet)		Total
	Mojave Basin Area Groundwater (Potable Use)	Mojave Basin Area Groundwater (Agricultural Irrigation)	
2011	12,479	5,751	18,230
2012	12,475	4,314	16,788
2013	12,255	4,869	17,124
2014	12,275	4,211	16,486
2015	9,582	3,933	13,515
2016	9,257	4,467	13,724
2017	9,470	4,637	14,106
2018	9,541	4,765	14,307
2019	9,367	4,172	13,539
2020	10,067	4,912	14,979

Source: Liberty Utilities 2021a: Section 6-1.

As shown in Table 3.15-5, projected water supplies are expected to range from 15,846 to 18,538 AFY from 2025 to 2045. As described in the UWMP, Liberty Utilities has the flexibility to increase groundwater production from the Mojave groundwater basin. Therefore, Liberty Utilities would be able meet water demands over the next 25 years during normal years, single dry years, and multiple dry years (Liberty Utilities 2021a).

Table 3.15-5 Liberty Utilities – Apple Valley Projected Water Supplies

Year	Total Supplies (Acre-Feet)				
	2025	2030	2035	2040	2045
Normal Year	15,846	16,466	17,120	17810	18,538
Single-Dry Year	14,922	15,506	16,122	16,772	17,458
Multiple Dry Years					
Year 1	19,285	20,039	20,835	21,675	22,561
Year 2	17,760	18,454	19,188	19,961	20,777
Year 3	18,114	18,823	19,571	20,360	21,192
Year 4	17,440	18,122	18,842	19,602	20,403
Year 5	14,296	14,856	15,446	16,069	16,726

Source: Liberty Utilities 2021a: Tables 7-2, 7-3, and 7-4.

Liberty Utilities anticipates that the Mojave groundwater basin will continue to be a reliable water supply for the Town; however, the water supplier has identified potential water supply projects and programs to enhance and augment existing water supplies, which include participation in voluntary water transfer programs, conjunctive use of stored groundwater supplies, and future use of recycled water from the Victor Valley Wastewater Reclamation Authority facility. Furthermore, Liberty Utilities plans to implement demand reduction measures in the event that water supplies from existing sources are not sufficient to meet anticipated demands. These measures, which include irrigation and other outdoor use restrictions, rate structure changes, and other water use prohibitions, are intended to encourage customers to reduce water usage. A full list of measures is provided in Chapter 8.4 of the UWMP (Liberty Utilities 2021a).

WASTEWATER AND STORMWATER

Wastewater Treatment and Disposal

The Town of Apple Valley Waster Water Division operates and maintains approximately 140 miles of collector sewer, trunk lines, and interceptors, as well as nine sewer lift (pump) stations, and provides service to a population of over 22,000 people. The Wastewater Division also provides plan review and approval for development projects that require connection to the sewer system, using the County of San Bernardino Sewer Standards.

The Northern Apple Valley Interceptor is an existing 21-inch sewer line that runs along Stoddard Wells Road, fronting the project site (Town of Apple Valley 2012). According to the Town Sewer System Master Plan, the sewer line transports flows from the High Desert Juvenile Detention Center at the intersection of Dale Evans Parkway and Morro Road in the northerly portion of the Town of Apple Valley. The sewer line continues southerly until it reaches Interstate 15, where sewer flows then travel downstream to the Victorville sewer collection system. The total sewer pipeline length is 38,925 feet, with diameters ranging from 18 to 24 inches. Because the sewer line only receives discharge form the detention center, flows are extremely low and no deficiencies have been reported. The Sewer System Master Plan indicates that the sewer line has adequate capacity to receive projected flows from future development (Town of Apple Valley 2013).

The Town's Sewer Master Plan (Town of Apple Valley 2012) identifies the wastewater facilities that are needed to serve potential future development within the Town. Development that is not connected to the sewer system is served by on-lot septic systems. The Town has adopted a Sewer Connection Policy that requires new development with less than one acre lots and within one-half mile of existing sewer facilities to connect to the Town's collection system. Development that does not meet these criteria is required to install dry sewers or interim holding tank systems subject to approval by the Regional Water Quality Control Board.

The Victor Valley Wastewater Reclamation Authority (VVWRA) operates the Victor Valley Regional Wastewater Treatment Plant, which is located in the City of Victorville. The facility processes wastewater from the Town of Apple Valley, as well as the Cities of Hesperia and Victorville and the communities of Spring Valley Lake and Oro Grande. The facility treats approximately 10.7 million gallons per day (mgd) of wastewater over an area of 279 square miles (VVWRA 2021). According to the facility's NPDES permit (No. CA0102822), the facility has a treatment capacity of 18 mgd and is permitted to discharge 14 mgd to the Mojave River on an average annual basis.

ENERGY

Electricity

The Southern California Edison (SCE) provides electricity to the Town via distribution facilities connected to four 115 kilovolts (kV) regional electric transmission corridors. At the time the Apple Valley General Plan EIR was certified, there were three SCE substations in Apple Valley, with voltages ranging from 33kV to 115kV, which reduce power for distribution to residential, business and institutional clients (Town of Apple Valley 2009b). In 2017, Apple Valley Choice Energy (AVCE) began procuring electricity for the Town, while SCE continues to deliver energy and maintain and repair electricity infrastructure. AVCE serves 25,000 customers in the Town of Apple Valley.

Natural Gas

Natural gas is delivered to the Town by Southwest Gas Corporation (SWG) facilities. Southwest Gas owns and maintains a high-pressure pipeline corridor system with 4-inch to 12-inch diameter pipelines, and a distribution system consisting of pipelines ranging from 2 to 4 inches in diameter, which typically run within developed public rights-of-ways (Town of Apple Valley 2009b).

SOLID WASTE

The Town of Apple Valley is part of the Mojave Desert and Mountain Recycling Joint Powers Authority (JPA), which was formed in 1991 to meet the recycling goals established under AB 939. Other members of the JPA are the Cities of Victorville, Barstow, Needles, Big Bear, Twentynine Palms, and Adelanto, as well as the Town of Yucca Valley and the County of San Bernardino.

The Town of Apple Valley contracts with AVCO Disposal, Inc./Burrtec Company (AVCO) for trash disposal and recycling services. AVCO hauls non-hazardous solid waste to the Victorville Landfill, which is located approximately 0.5 mile west of the project site across from I-15 and along Stoddard Wells Road. Other nearby landfills within San Bernardino County include Barstow Landfill, located 22 miles northeast of the project site, and Mid-Valley Landfill, located 32 miles southwest of the project site.

The maximum permitted and remaining capacities of the Victorville, Barstow, and Mid-Valley landfills are summarized in Table 3.13-6. The County of San Bernardino Countywide Integrated Waste Management Plan (IWMP), prepared pursuant to the requirements of AB 939, demonstrates that there is at least 15 years of remaining disposal capacity to serve all jurisdictions within the County (County of San Bernardino 2018).

Table 3.13-6 Landfill Capacity

Facility	Address	Maximum Permitted Throughput (tons per day)	Maximum Permitted Capacity (cubic yards)	Remaining Capacity (cubic yards)	Remaining Capacity Date	Ceased Operation Date
Victorville Landfill	18600 Stoddard Wells Road, Victorville, CA	3,000	93,400,000	79,400,000	3/31/2020	10/1/2047
Barstow Landfill	32553 Barstow Road, Barstow, CA	1,500	80,354,500	71,481,660	12/31/2014	5/1/2071
Mid-Valley Landfill	2390 Alder Avenue, Rialto, CA	7,500	101,300,000	61,219,377	6/30/2019	4/1/2045

Source: CalRecycle 2019a, 2019b, 2019c.

TELECOMMUNICATIONS

Telephone and telecommunications services, including high-speed Internet and cable television, are provided to the Town by Verizon Communications, Charter Communications, and Charter Spectrum Business Solutions.

3.15.3 Environmental Impacts and Mitigation Measures

ANALYSIS METHODOLOGY

Impacts on utilities that would result from the project were identified by comparing existing service capacity against future demand associated with project implementation. When possible, a quantitative comparison was used to determine impacts of the project on future demands. Evaluations of potential utilities impacts are based on personal communications and a review of documents pertaining to the project area, including the Town of Apple Valley 2009 General Plan and the EIR for the General Plan; various management plans for water, sewer, and solid waste systems; and the Hydrology Report prepared by Lane Engineers (2022). Additional information was obtained through consultation with appropriate agencies and a review of letters received during public scoping.

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, a utilities and service systems impact is considered significant if implementation of the project would do any of the following:

- require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects
- have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years
- result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand, in addition to the provider's existing commitments
- generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals; and/or
- comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 3.15-1: Relocation or Construction of New or Expanded Facilities

The project would require the construction of a new offsite water main line, stormwater drainage features, transformers, and connections to existing utility facilities and infrastructure to serve the new development. Impacts associated with the proposed utility infrastructure are evaluated and disclosed in Sections 3.1 through 3.16 of this EIR. Most impacts associated with constructing the proposed utility infrastructure would be less than significant or reduced to less-than-significant levels with mitigation; however, construction noise levels at the nearest-noise sensitive receptor would exceed 5 decibels. Therefore, this impact would be **significant**.

The following sections include a discussion of the new or expanded facilities proposed as part of the project.

Water

As discussed in more detail under Impact 3.15-2, the project would have an overall estimated water demand of approximately 26,000 gallons per day (gpd), or approximately 30 AFY during operation. The projected water demand would be served by Liberty Utilities, the water service provider to the Town of Apple Valley.

The Town notified Liberty Utilities of the project. In a response dated March 10, 2021, Liberty Utilities outlined several requirements that would serve as conditions of approval for the project (Appendix I). As described in the letter from Liberty Utilities, there are no existing offsite water mains on Stoddard Wells Road fronting the project site. The nearest existing water main connection is approximately 3.5 miles northeast of the project site along Johnson Road, approximately 4,100 feet east of Dale Evans Parkway, fronting the Walmart Distribution Center. Therefore, the project may require extension of the existing 16-inch diameter pipeline for approximately 19,460 linear feet within existing disturbed areas, such as within the north shoulders or pavement of Johnson Road and Stoddard Wells Road (see Figure 2-13). The proposed pipeline alignment would cross several existing washes. Therefore, it is anticipated that a jack and bore (i.e., horizontal drilling) would be used to install the pipeline under any washes where there are culverts.

The proposed water main line and appurtenances would be installed in accordance with Liberty Utilities' conditions of approval and Town of Apple Valley standards and specifications. In addition, a fire service line would be developed in accordance with Apple Valley Fire Protection District requirements. All water facilities would be installed within dedicated public right-of-way (ROW) and public utility easements to all unobstructed access for the maintenance, repair, connection, and operation of water facilities. Domestic service lines would be installed from the existing water main line to the street ROW line that fronts the development.

Impacts associated with the proposed offsite water main line are evaluated and disclosed in Sections 3.1 through 3.16 of this EIR. The impacts associated with construction of the offsite water main line are summarized as follows:

- As discussed in Section 3.1, "Aesthetics," the presence of construction equipment along the offsite water line alignment would be temporary and would not substantially degrade public views. Once constructed, the offsite water main line would be buried underground and would not be visible.
- As discussed in Section 3.2, "Air Quality," and Section 3.7, "Greenhouse Gas Emissions and Climate Change," the use of construction vehicles and equipment would temporarily generate air pollutants and greenhouse gas emissions below applicable Mojave Desert Air Quality Management District thresholds. Additionally, construction activities would not expose the public to substantial pollutant concentrations. Operation of the offsite water main line would not generate air pollutants and greenhouse gas emissions.
- As discussed in Section 3.3, "Archaeological, Historical, and Tribal Cultural Resources," trenching along the offsite water main line alignment could result in damage to or destruction of previously undiscovered cultural resources; however, these impacts would be reduced to a less-than-significant level through compliance with applicable regulations governing the protection of human remains (California Health and Safety Code Section 7050.5 and California Public Resources Code Section 5097) and implementation of Mitigation Measures 3.3-1 and 3.3-2, which require the applicant to implement the recommendations of a project-specific cultural resources study and follow procedures in the event of an unanticipated discovery.
- As discussed in Section 3.4, "Biological Resources," construction activities along the offsite water main line alignment could result in the disturbance or fill of several mapped seasonal streams, removal of marginally suitable habitat for special-status plants or damage to special-status plants, and disturbance and mortality to special-status reptiles and nesting birds. Mitigation Measure 3.4-1 would include measures to compensate for the disturbance or loss of state and federally protected wetlands and other water, Mitigation Measure 3.4-2 would include measures to reduce potential impacts on special-status plants, Mitigation Measures 3.4-3a and 3.4-3b would include measures to reduce potential impacts on special-status reptiles, and Mitigation Measures 3.4-4a and 3.4-4b would include measures to reduce potential impacts on nesting birds.
- As discussed in Section 3.5, "Energy," construction-related energy consumption would be temporary and would not require additional capacity or increase peak or base period demands for electricity or other forms of energy. Operation of the offsite water main line would not require the consumption of energy.

- As discussed in Section 3.6, "Geology and Soils," and Section 3.9, "Hydrology and Water Quality," all structures would be designed and engineered based on site-specific geologic, soil, and drainage conditions. During the construction period, ground-disturbing activities could result in erosion and degradation of water quality; however, adherence to the California Building Code, compliance with the National Pollutant Discharge Elimination System Construction General Permit, and implementation of a site-specific Stormwater Pollution Prevention Plan would ensure that impacts would be less than significant.
- As discussed in Section 3.8, Hazards and Hazardous Materials," construction activities would comply with all applicable regulations governing the use of hazardous materials and would adhere to a hazardous materials management plan, as required by Mitigation Measure 3.8-2. A segment of the offsite water main line alignment is in proximity to a hazardous waste and substances site that is listed on the Department of Toxic Substances Control EnviroStor Database and is known or suspected to contain military munitions and explosives of concern. Mitigation Measure 3.8-3 would require a military munitions/unexploded ordnance survey of the offsite water main line and removal or remedial actions, if warranted, to prevent explosive safety hazards during trenching activities.
- As discussed in Section 3.10, "Land Use and Planning," construction of the project, including the offsite water main line, would not conflict with land use plans, policies, or regulations. The offsite water main line would be intended to serve the project and would not induce unplanned population growth or increase the demand for other public services (see Section 3.12, "Population and Housing," and Section 3.12, "Public Services").
- As discussed in Section 3.11, "Noise," off-site construction would not increase noise levels at the nearest sensitive receptor above applicable local standards; however, construction activities would generate a 14.1-decibel increase in ambient noise levels at a nearby sensitive receptor. Mitigation Measure 3.11-1 would include measures to reduce construction noise exposure at noise-sensitive receptors, but would not be able to achieve reductions of more than 14 decibels in all circumstances.
- As discussed in Section 3.14, "Transportation and Circulation," construction of the offsite water main line would occur within roadway rights-of-way. The project applicant would be required to obtain an encroachment permit and submit a traffic control plan to ensure safety and minimize disruptions to the traveling public and emergency service providers.

As summarized above and substantiated throughout this EIR, most impacts associated with constructing the proposed offsite water main line would be less than significant or reduced to less-than-significant levels with mitigation; however, even with implementation of the noise reduction measures required under Mitigation Measure 3.11-1, construction noise levels at the nearest-noise sensitive receptor along the offsite water main line alignment could exceed 5 decibels. Therefore, the construction of the offsite water main line would cause a significant environmental effect.

Wastewater

As discussed in Section 3.15.2, "Environmental Setting," there is an existing 21-inch sanitary sewer line that runs along Stoddard Wells Road, fronting the project site. The project would be able to connect to VVWRA's existing regional wastewater system and associated infrastructure.

As discussed in Section 3.15.2, the Victor Valley Regional Wastewater Treatment Plant treats approximately 10.7 mgd of wastewater and has a treatment capacity of 18 mgd. Therefore, the facility has sufficient capacity to accommodate up to 7.3 mgd of additional wastewater. As discussed in more detail under Impact 3.15-3, It is anticipated that the project would generate wastewater flows of approximately 22,609 gpd. The projected wastewater flows could be accommodated by VVWRA's existing wastewater infrastructure and the existing wastewater treatment facility for the Town of Apple Valley. Therefore, the project would not require an expansion of existing wastewater treatment facilities.

Stormwater Drainage

The project would result in a net increase of approximately 24.2 acres in impervious surfaces from the construction of buildings and paved parking areas. Stormwater from the travel center would be drained toward the five onsite

bioretention facilities shown in Figure 2-3 and Figure 2-4 in Section 2, "Project Description." From the onsite retention basins, stormwater would flow through a new underground stormwater pipe that would discharge to existing drainage south of the project site. Stormwater from the RV park would be drained toward a bioretention basin along Stoddard Wells Road, just south of the parking area (see Figure 2-5 in Section 2, "Project Description").

Impacts associated with construction of bioretention facilities and stormwater pipes are within the scope of the environmental impacts disclosed in Sections 3.1 through 3.16 of this EIR. The impacts associated with construction of on-site stormwater drainage facilities are summarized as follows:

- As discussed in Section 3.1, "Aesthetics," the presence of construction equipment would be temporary and would not substantially degrade public views. Stormwater drainage facilities would be constructed at ground level or would be buried underground and would not be visible.
- As discussed in Section 3.2, "Air Quality," and Section 3.7, "Greenhouse Gas Emissions and Climate Change," the use of construction vehicles and equipment would temporarily generate air pollutants and greenhouse gas emissions below applicable Mojave Desert Air Quality Management District thresholds. Operation of stormwater drainage facilities would not generate air pollutants and greenhouse gas emissions.
- As discussed in Section 3.3, "Archaeological, Historical, and Tribal Cultural Resources," excavations could result in damage to or destruction of previously undiscovered cultural resources; however, these impacts would be reduced to a less-than-significant level through compliance with applicable regulations governing the protection of human remains (California Health and Safety Code Section 7050.5 and California Public Resources Code Section 5097) and implementation of Mitigation Measures 3.3-1 and 3.3-2, which require the applicant to implement the recommendations of a project-specific cultural resources study and follow procedures in the event of an unanticipated discovery.
- As discussed in Section 3.4, "Biological Resources," construction activities would result in the disturbance or fill of several mapped seasonal streams, removal of marginally suitable habitat for special-status plants or damage to special-status plants, and disturbance and mortality to special-status reptiles and nesting birds. Mitigation Measure 3.4-1 would include measures to compensate for the disturbance or loss of state and federally protected wetlands and other water, Mitigation Measure 3.4-2 would include measures to reduce potential impacts on special-status plants, Mitigation Measures 3.4-3a and 3.4-3b would include measures to reduce potential impacts on special-status reptiles, and Mitigation Measures 3.4-4a and 3.4-4b would include measures to reduce potential impacts on nesting birds.
- As discussed in Section 3.5, "Energy," construction-related energy consumption would be temporary and would not require additional capacity or increase peak or base period demands for electricity or other forms of energy. Operation of stormwater drainage facilities would not require the consumption of energy.
- As discussed in Section 3.6, "Geology and Soils," and Section 3.9, "Hydrology and Water Quality," all on-site structures (including bioretention facilities and stormwater pipes) would be designed and engineered based on site-specific geologic, soil, and drainage conditions. During the construction period, ground-disturbing activities could result in erosion and degradation of water quality; however, adherence to the California Building Code, compliance with the National Pollutant Discharge Elimination System Construction General Permit, and implementation of a site-specific Stormwater Pollution Prevention Plan would ensure that impacts would be less than significant.
- As discussed in Section 3.8, Hazards and Hazardous Materials," construction activities would comply with all applicable regulations governing the use of hazardous materials and would adhere to a hazardous materials management plan, as required by Mitigation Measure 3.8-2. No contamination was identified on the 33.52-acre parcel where stormwater drainage facilities would be constructed.
- As discussed in Section 3.10, "Land Use and Planning," construction of the project, including stormwater facilities, would not conflict with land use plans, policies, or regulations. The proposed stormwater infrastructure would be intended to serve the project and would not induce unplanned population growth or increase the demand for other public services (see Section 3.12, "Population and Housing," and Section 3.12, "Public Services").

- As discussed in Section 3.11, "Noise," on-site construction would not expose noise-sensitive receptors to increases in noise levels that exceed applicable local standards or that would exceed 5 decibels.
- The construction and design of on-site stormwater facilities would not affect the existing circulation system; generate substantial vehicle trips; create transportation-related hazards; or impair emergency access (see Section 3.14, "Transportation and Circulation").

As summarized above and substantiated throughout this EIR, all potentially significant impacts associated with the project, including construction of stormwater drainage facilities, would be reduced to less-than-significant levels with mitigation.

Electric Power and Natural Gas

As discussed in Section 3.5, "Energy," construction activities would require the consumption of diesel fuel associated with the operation of heavy-duty construction equipment, material deliveries, and debris hauling; gasoline associated with worker commute trips; and minor amounts of electricity associated with operation of electric-powered construction equipment. Construction-related energy use would represent a small demand on local and regional fuel and electricity supplies that could be accommodated by existing facilities and infrastructure.

During operations, the project would require the consumption of approximately 953 megawatt hours (MWh) per year of electricity and 3,386 metric million British thermal units per year (MMBtu) per year of natural gas associated with the proposed on-site land uses (refer to Section 3.5 for additional information). The estimated energy demand is conservative because it does not reflect the anticipated increase in building energy efficiency that technological advances will provide over time. All project buildings would meet the Title 24 building efficiency standards in effect at the time of construction. On-site transformers (300 and 150 kilo-volt-amperes) would be required to supply electricity to the travel center. The environmental impacts from constructing these on-site transformers are within the scope of the environmental impacts described throughout Sections 3.1 through 3.16 of this EIR (the impacts of constructing on-site transformers would be similar to the impacts described under the "Stormwater Drainage" section above). The estimated energy demand from operations would not require the expansion of SCE's and SWG's existing facilities and infrastructure. Therefore, the project would not result in any new or expanded energy facilities or infrastructure.

Telecommunication Facilities

During project operation, the minor phone and internet needs would be served by existing telecommunications service providers. Although the project would require new electronic wiring, cabling, and equipment, the project would not require the construction of new or expansion of existing telecommunications facilities, such as towers and substations, that would cause significant environmental effects.

Summary

As summarized above and substantiated throughout this EIR, most impacts associated with constructing the proposed utility infrastructure would be less than significant or reduced to less-than-significant levels with mitigation. However, construction of the offsite water main line would result in an increase in noise levels resulting in a significant environmental effect.

Mitigation Measures

Refer to Mitigation Measure 3.11-1 in Section 3.11, "Noise."

Significance after Mitigation

As discussed in Section 3.11, "Noise," implementation of Mitigation Measure 3.11-1 would provide substantial reductions in levels of construction noise exposure at noise-sensitive receptors by ensuring proper equipment use; locating noise-generating equipment away from sensitive land uses; and requiring the use of enclosures, shields, and noise curtains (noise curtains typically can reduce noise by up to 10 dBA [EPA 1971]). Although noise reduction would be achieved with implementation of these measures, reductions of more than 14 dBA would be required during the period of off-site construction nearest to noise sensitive receptors. Reductions of this magnitude are not expected to be achieved under all circumstances with implementation of Mitigation Measures 3.11-1. Because it cannot be assured at this time that this level of noise reduction could be met, this impact would remain **significant and unavoidable**.

Impact 3.15-2: Sufficient Water Supplies

The project would result in increased water demand of approximately 30 acre-feet per year. The project site would be served by Liberty Utilities, which would be able to obtain water rights for the project upon payment of a supplemental water acquisition fee and supply facility fee. Therefore, Liberty Utilities would have sufficient water supplies to accommodate the project's water demand. Impacts would be **less than significant**.

During operation, the project would have an overall estimated water demand of approximately 26,000 gallons per day (gpd), or approximately 30 acre-feet per year (AFY). The estimated water demand for the travel center in the western portion of the project site would be approximately 12,000 gpd, of which 3,000 gpd of water would be used for landscaping. The estimated water demand for the RV park in the eastern portion of the project site would be approximately 14,000 gpd, of which 11,000 gpd of water would be used for landscaping. The project would be designed to meet the most current water efficiency requirements of the California Green Building Code. In addition, landscaping would include low water use trees and shrubs, consistent with the Water Conservation/Landscaping Regulations included in Chapter 9.75 of the Town of Apple Valley Code of Ordinances.

The project would be served by Liberty Utilities, the water service provider to the Town of Apple Valley. As discussed in Section 3.15.2, MWA is a wholesale supplier to Liberty Utilities. Liberty Utilities anticipates that MWA's water supplies will continue to be a reliable source of water for the Town. As described in the MWA UWMP, MWA's portfolio of water supplies includes natural and recharged groundwater, imported wastewater, return flow, and stored and SWP carryover supplies. To address projected dry conditions, MWA captures and stores surplus imported water in normal and wet years to meet regional demands in dry years. MWA has stored over 200,000 acre-feet of water in anticipation of future dry years (MWA 2021).

Additionally, Liberty Utilities has identified potential water supply projects and programs to enhance and augment existing water supplies, which include participation in voluntary water transfer programs, conjunctive use of stored groundwater supplies, and future use of recycled water from the Victor Valley Wastewater Reclamation Authority facility. Furthermore, Liberty Utilities plans to implement demand reduction measures in the event that water supplies from existing sources are not sufficient to meet anticipated demands. These measures, which include irrigation and other outdoor use restrictions, rate structure changes, and other water use prohibitions, are intended to encourage customers to reduce water usage. A full list of measures is provided in Chapter 8.4 of the UWMP (Liberty Utilities 2021a). Liberty Utilities' UWMP demonstrates that the provider can meet water demands over the next 25 years during normal years, single dry years, and multiple dry years (Liberty Utilities 2021a).

The estimated water demand for the project (30 AFY) would represent a 0.2 percent increase in Liberty Utilities' average water demand of 15,280 AFY. Liberty Utilities has the flexibility to increase groundwater production from the Mojave groundwater basin. Therefore, it is anticipated that Liberty Utilities would be able to accommodate this minor increase in water demand.

The Town notified Liberty Utilities of the project. In a response dated March 10, 2021, Liberty Utilities outlined several requirements that would serve as conditions of approval for the project, which include payment of a Supplemental Water Acquisition Fee and payment of a Supply Facility Fee to fund development of new wells (Appendix I). Upon meeting these conditions of approval, Liberty Utilities would be able to secure the water rights for this project. Therefore, impacts would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

Impact 3.15-3: Adequate Capacity of the Wastewater Treatment Provider

The project would result in increased wastewater flows of approximately 22,609 gpd. The project site would be served by the Victor Valley Regional Wastewater Treatment Plant, which has sufficient capacity to accommodate up to 7.3 mgd of additional wastewater. Therefore, the facility would have adequate capacity to accommodate the project's wastewater demand. Impacts would be **less than significant**.

Implementation of the project would result in increased wastewater flows. The typical water demand to sewer demand ratio is 1.15:1, meaning that for every 115 gallons of water consumed, 100 gallons of wastewater would be generated. Based on the project's anticipated water demand of 26,000 gpd, wastewater generation would average approximately 22,609 gpd.

As discussed in Section 3.15.2, "Environmental Setting," the Victor Valley Regional Wastewater Treatment Plant treats approximately 10.7 mgd of wastewater and has a treatment capacity of 18 mgd. Therefore, the facility has sufficient capacity to accommodate up to 7.3 mgd of additional wastewater. It is anticipated that the project would generate wastewater flows of approximately 22,609 gpd, which would be accommodated by VVWRA's existing wastewater infrastructure and the existing wastewater treatment facility for the Town of Apple Valley. Therefore, VVWRA would have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

Mitigation Measures

No mitigation is required for this impact.

Impact 3.15-4: Impacts on Solid Waste

Implementation of the project would incrementally increase solid waste generation at the project site. However, adequate waste services and landfill capacity would be available to accommodate solid waste generated by the project. Impacts would be **less than significant**.

CalRecycle provides a reference list of solid waste generation rates, which can be used to estimate the amount of solid waste generated by new developments. The reference list includes estimates of solid waste generation rates for various land use types in the commercial, industrial, institutional, residential, and service sectors. These generation rates are compiled from various sources, including local agency planning guidance and environmental documents (CalRecycle 2019d).

Table 3.15-7 includes a summary of the estimated solid waste generated by the project based on CalRecycle generation rates for the various land uses that are proposed. Although solid waste generation rates were not available for all land use types proposed under the project, the most similar land use types were selected. As shown in Table 3.15-7, the project is estimated to generate approximately 620 pounds (0.31 tons) per day of solid waste based on CalRecycle disposal rates.

Table 3.15-7 Solid Waste Generation

Project Land Use	Size	CalRecycle Land Use[1]	CalRecycle Generation Rate[2]	Estimated Solid Waste Generated from the Project
Travel Center				
Convenience Store	9,659 SF	Commercial Retail	0.046 lb/SF/day	444 lbs/day
Fast-Food Restaurant	3,043 SF	Restaurant	0.005 lb/SF/day	15 lbs/day
Truck Maintenance/Tire Building	13,786 SF	Auto Dealer/Service Station	0.9 lb/100 SF/day	124 lbs/day
RV Park				
Main Building	3,250 SF	Commercial Retail	0.046 lb/SF/day	149 lbs/day
RV Parking	80 spaces	Motel	3.6 lb/unit/day	288 lbs/day
Total	--	--	--	**620 lbs/day**

Notes: SF = square feet; lb = pound

[1] CalRecycle solid waste generation rates were not available for all land use types proposed under the project. The most similar land use types were selected.

[2] CalRecycle generation rates are compiled from various sources, including local agency planning guidance and environmental documents. These rates are not officially endorsed by CalRecycle but are useful in providing a general level of information

Source: CalRecycle 2019d

CalRecycle's waste generation rates account for all materials discarded, whether or not they are later recycled or disposed in a landfill (CalRecycle 2019d). The average diversion rate for jurisdictions within San Bernardino County is approximately 70 percent (County of San Bernardino 2018). Therefore, assuming the project would achieve a diversion rate of 70 percent, it is expected that approximately 434 pounds of waste would be recycled and 186 pounds (0.09 tons) of waste would be sent to a landfill per day.

As discussed in Section 3.15.2, "Environmental Setting," AVCO hauls non-hazardous solid waste from the Town of Apple Valley to the Victorville Landfill located approximately 0.5 mile west of the project site. The Victorville Landfill is estimated to operate until October 2047 (CalRecycle 2019a). According to the Countywide Siting Element of the County's IWMP, the average daily rate of waste received at the Victorville Landfill is 931 tons per day, which is well below the landfill's daily capacity of 3,000 tons per day (County of San Bernardino 2018; CalRecycle 2019a).

The estimated 0.09 ton of solid waste that would be generated during project operation would represent a negligible increase in the daily waste received at the Victorville Landfill. Therefore, it is foreseeable that the solid waste hauler would be able to serve the project. Furthermore, solid waste that would be generated during project operation would not cause the facility to operate near maximum capacity because existing throughput is substantially lower than capacity. Based on the total available capacity of the landfill, the incremental increase in solid waste generated as a result of the project would not substantially affect landfill capacity such that additional waste disposal facilities would be required.

The project would generate standard construction and demolition debris, which may include concrete, asphalt, wood waste, glass, metals, gypsum, and cardboard. Earthmoving activities would not generate large amounts of soil waste because cut and fill for finish grading would be balanced onsite. Demolition activities would be minor and would consist of removing existing underground utilities that were abandoned by the previous developer of the project site. Construction waste would be recycled in compliance with AB 939. Prior to construction and demolition activities, the project applicant would be required to develop and implement a Waste Management Plan in compliance with Chapter 8.19 of the Town's Code of Ordinances. Hazardous waste would be disposed of in accordance with applicable laws and regulations described in Section 3.8, "Hazards and Hazardous Materials."

Based on the discussion above, the project would not be expected to generate solid waste in excess of the capacity of local infrastructure. In addition, the project would comply with all applicable state and local requirements including those pertaining to solid waste, construction waste diversion, and recycling. For these reasons, impacts related to solid waste are considered **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

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4 CUMULATIVE IMPACTS

4.1 INTRODUCTION TO THE CUMULATIVE ANALYSIS

This draft environmental impact report (Draft EIR) provides an analysis of cumulative impacts of the proposed project taken together with other past, present, and probable future projects producing related impacts, as required by Section 15130 of the California Environmental Quality Act Guidelines (State CEQA Guidelines). The goal of such an exercise is twofold: first, to determine whether the overall long-term impacts of all such projects would be cumulatively significant; and second, to determine whether the incremental contribution to any such cumulatively significant impacts by the project would be "cumulatively considerable" (and thus significant). (See State CEQA Guidelines Sections 15130[a]–[b], Section 15355[b], Section 15064[h], and Section 15065[c]; and Communities for a Better Environment v. California Resources Agency [2002] 103 Cal. App. 4th 98, 120.) In other words, the required analysis intends first to create a broad context in which to assess cumulative impacts, viewed on a geographic scale beyond the project site itself, and then to determine whether the project's incremental contribution to any significant cumulative impacts from all projects is itself significant (i.e., "cumulatively considerable").

Cumulative impacts are defined in State CEQA Guidelines Section 15355 as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." A cumulative impact occurs from "the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time" (State CEQA Guidelines Section 15355[b]).

Consistent with State CEQA Guidelines Section 15130, the discussion of cumulative impacts in this Draft EIR focuses on significant and potentially significant cumulative impacts. Section 15130(b) of the State CEQA Guidelines provides, in part, the following:

> [t]he discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion should be guided by the standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact.

A proposed project is considered to have a significant cumulative effect (i.e., a "cumulatively considerable" effect) if:

- the cumulative effects of development without the project are not significant and the project's additional impact is substantial enough, when added to the cumulative effects, to result in a significant impact; or
- the cumulative effects of development without the project are already significant and the project contributes measurably to the effect.

The term "measurably" is subject to interpretation. The standards used herein to determine measurability are that the impact must be noticeable to a reasonable person, or must exceed an established threshold of significance (defined throughout the resource sections in Chapter 3 of this Draft EIR).

4.2 GEOGRAPHIC CONTEXT

The geographic area that could be affected by the project and is appropriate for a cumulative impact analysis varies depending on the environmental resource topic, as presented in Table 4-1.

Table 4-1 Geographic Scope of Cumulative Impacts

Resource Topic	Geographic Area
Aesthetics	Key viewpoints defined in Section 3.1, "Aesthetics," including areas with views to and from the project site.
Agricultural and Forestry Resources	Not applicable. This topic has been eliminated from further discussion because the project would not result in impacts on agricultural and forestry resources.
Air Quality	Mojave Desert Air Basin
Archaeological, Historical, and Tribal Cultural Resources	Town of Apple Valley
Biological Resources	Bell Mountain Wash Watershed
Energy	San Bernardino County and Southern California Edison (SCE) service area
Geology and Soils	Project Site, including all areas of ground disturbance and new permanent structures
Greenhouse Gas Emissions and Climate Change	Planet Earth
Hazards and Hazardous Materials	Project Site, including all areas of ground disturbance and new permanent structures
Hydrology and Water Quality	Bell Mountain Wash – Mojave River Watershed for surface waters and Upper Mojave River Valley Groundwater Basin for groundwater
Land Use and Planning	Town of Apple Valley
Noise and Vibration	Project area
Population and Housing	Town of Apple Valley
Public Services and Recreation	Town of Apple Valley
Transportation/Traffic	Project area and the surrounding roadway network
Utilities and Service Systems	Town of Apple Valley
Wildfire	Not applicable. This topic has been eliminated from further discussion because the project is not within or near state responsibility areas or lands classified as very high fire hazard severity zones and would not result in impacts on wildfire.

Source: Compiled by Ascent Environmental in 2022

4.3 RELATED PROJECTS

Table 4-2 includes a list of present and reasonably foreseeable future projects within the Town of Apple Valley. A list of past projects was not included in Table 4-2 because the environmental effects of these actions are already considered as part of the existing cumulative condition. Table 4-2 includes projects for which a development application has been submitted or is anticipated to be submitted within the next year and projects that are currently undergoing environmental review within the northern Town limits.

Table 4-2 Present and Reasonably Foreseeable Future Projects

#	Project Name	Location	Description	Status
1	Apple Valley 143	On Stoddard Wells Road, immediately north of the project site, Town of Apple Valley, CA	2.6-million-square-foot logistics center	Draft environmental impact report anticipated Fall/Winter 2022
2	Inland Empire Logistics Center (Apple Valley and Victorville)	Parcel A is southeast of I-15/Outer Highway 15 South and south of Norco Street in the Town of Apple Valley, CA Parcel B is north of I-15 in the City of Victorville, CA	3.9-million-square-foot logistics center	Two draft environmental impact reports anticipated Summer 2023

#	Project Name	Location	Description	Status
3	Quarry/Cordova	Southwest corner of Cardova Road/Navajo Road and southwest corner of Flint Road/Quarry Road in the Town of Apple Valley, CA	2.9-million-square-foot industrial development	Draft environmental impact report anticipated Summer 2023
4	The Development	Southeast corner of Lafayette Road and Dale Evans Parkway in the Town of Apple Valley, CA	1.2-million-square-foot industrial development	Pre-application
5	Green Trucking Solutions Cold Storage	Northwest corner of Lafayette Street and Navajo Road in the Town of Apple Valley, CA	400,000-square-foot cold storage facility	Pre-application
6	Brooklyn-Based Developer Industrial	Northeast corner of Johnson Road and Central Road in the Town of Apple Valley, CA	1-million-square-foot industrial development	Pre-application
7	Lake Creek Industrial	East of the Apple Valley Airport, south of Gustine Street, and west of Central Road in the Town of Apple Valley, CA	3-million-square-foot industrial development	Application was submitted
8	Watson Land Company Projects	Johnson Road/Navajo Road and Los Padres Road/Navajo Road in the Town of Apple Valley, CA	1- to 3-million-square-foot industrial development	Pre-application
9	Central/Lafayette Warehouse	Southwest corner of Johnson Road and Central Road in the Town of Apple Valley, CA	1-million-square-foot industrial development	Draft environmental impact report anticipated Winter 2023
10	Suke Investment	Northeast corner of Quarry Road and Central Road in the Town of Apple Valley, CA	1-million-square-foot industrial development	Unknown

Source: Compiled by Ascent Environmental in 2022

4.4 ANALYSIS OF CUMULATIVE IMPACTS BY RESOURCE TOPIC

The following sections contain discussions of the cumulative effects anticipated from implementation of the project, together with related projects and planned development in the Town of Apple Valley, for each of the 15 environmental issue areas evaluated in this Draft EIR. The analysis conforms with Section 15130(b) of the State CEQA Guidelines, which specifies that the "discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion should be guided by the standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact."

When considered in relation to other reasonably foreseeable projects, cumulative impacts to some resources would be significant and more severe than those caused by the proposed project alone.

For purposes of this EIR, the project would result in a significant cumulative (i.e., a "cumulatively considerable") effect if:

- the cumulative effects of related projects (past, current, and probable future projects) are not significant and the incremental impact of implementing the project is substantial enough, when added to the cumulative effects of related projects, to result in a new cumulatively significant impact; or
- the cumulative effects of related projects (past, current, and probable future projects) are already significant and implementation of the project makes a considerable contribution to the effect. The standards used herein to determine a considerable contribution are that either the impact must be appreciable or must exceed an established threshold of significance.

This cumulative analysis assumes that all mitigation measures identified in Chapter 4 to mitigate project impacts are adopted and implemented, and all elements of the design build performance criteria that would minimize environmental effects are implemented. The analysis herein analyzes whether, after implementation of project-

specific mitigation and performance criteria that minimize environmental effects, the residual impacts of the project would cause a cumulatively significant impact or would contribute considerably to existing/anticipated (without the project) cumulatively significant effects. Where the project would so contribute, additional mitigation is recommended where feasible.

4.4.1 Aesthetics

As described in Section 3.1, "Aesthetics," the project would have no impact related to scenic resources within a state scenic highway therefore, no cumulative analysis is required for this topic area. The project would have a less than significant impact related to scenic vistas, visual character and quality, and light and glare.

The cumulative study area for aesthetics includes the project site and surrounding areas with views to and from the project site. The cumulative study area is characterized as a non-urbanized desert landscape. The project site consists of highly disturbed, generally flat land that has been previously affected by mass grading operations and off highway vehicle use. Views from the project site generally consist of vast open space, with visual elements that include Bell Mountain to the east, the Victorville Landfill to the west, and distant mountains in all directions, including the San Bernardino mountains in the distance to the south. Light and glare sources in the cumulative study area are minimal and consist of street lights on I-15 and Stoddard Wells Road, as well as headlights and reflective surfaces from vehicles traveling on these roadways.

Based on the analysis in Section 3.1, aesthetics impacts would not be cumulatively considerable because (1) the proposed structures would be of similar height and massing to other rural commercial development in the region; (2) the development would be located in an area designated for freeway-oriented commercial uses; (3) views of construction activities and the proposed development would be limited to motorists traveling at high speeds on I-15 and moderate speeds on Stoddard Wells Road; (4) the project architecture and design would conform with Town of Apple Valley Development Code requirements; and (5) the project lighting would be shielded, projected downward, and would meet lighting requirements in the Town of Apple Valley Code of Ordinances. Therefore, the project in conjunction with the cumulative projects listed in Table 4-2, would not contribute to a significant cumulative effect related to aesthetics. This impact would be **less than significant**.

4.4.2 Air Quality

Potential cumulative air quality impacts would result when pollutant emissions from cumulative projects would combine to degrade air quality conditions to below acceptable levels. This could occur on a local level, such as through increases in vehicle emissions at congested intersections, or at sensitive receptor locations due to concurrent construction activities; at a regional level, such as the potential impact of multiple past, present, and probable future projects on ozone within the Mojave Desert Air Basin; or globally, such as the potential impact of greenhouse gas (GHG) emissions on global climate change (see Section 4.4.7).

The nonattainment status for the entire county is a consequence of past and present projects, plans, and programs, and is subject to continued nonattainment status by the cumulative contribution of probable future projects, plans, and programs within the area, including those projects shown in Table 4-2. Mojave Desert Air Quality Management District (MDAQMD) significance thresholds are cumulative in nature; that is, they identify the level of project-generated emissions above which impacts would be cumulatively considerable. Thus, they represent the level at which emissions of a given project would impede the air basin from achieving ambient air quality standards, considering anticipated growth and associated emissions in that region. A quantitative emission analysis was conducted to determine cumulative impacts from short-term construction and long-term operational emissions associated with the project.

As described in Section 3.2, "Air Quality," the project would have less than significant air quality impacts. The project would be consistent with the Town General Plan and relevant air quality plans, would result in construction and operational emissions well below thresholds, and would not expose sensitive receptors to substantial pollutant

increases or other emissions (such as those leading to odors). Therefore, the project would not result in a considerable contribution to a significant cumulative impact on air quality. This impact would be **less than significant**.

4.4.3 Archaeological, Historical, and Tribal Cultural Resources

As described in Section 3.3, the project would have no impact to historical resources and a less than a significant impact to archaeological and Tribal cultural resources. The cumulative context for prehistoric and historic-period archaeological resources is the Mojave Desert. The cumulative context for Tribal cultural resources is the former territory of the Maara'yam, also known as the Serrano. As explained in Section 3.3.2, the former territory of the Maara'yam was located in and around the San Bernardino Mountains, down into the Mojave Desert and through the project area to the Mojave River.

ARCHAEOLOGICAL RESOURCES

Because all significant archaeological resources are unique and nonrenewable members of finite classes which are limited in number, all adverse effects erode a dwindling resource base. The loss of any one archaeological site or defining feature of an archaeological site could affect the scientific value of others in a geographical region because these resources are best understood in the context of the entirety of the cultural system of which they are a part. The cultural system is represented archaeologically by the total inventory of all sites and other cultural remains in the region. As a result, a meaningful approach to preserving and managing cultural resources must focus on the likely distribution of cultural resources, rather than on a single project or parcel boundary.

The cumulative context for archaeological resources is the Mojave Desert. Within this region, archaeologists have developed a taxonomic framework describing both Native American and Euromerican cultural patterns characterized by technology, particular artifact types, economic systems, trade, burial practices, events, people, and other aspects of culture. Prehistoric use and occupation in the region starts around 10,000 years ago when Paleo-Indian peoples inhabited the shores of Lake Mojave. After Lake Mojave had dried-up, prehistoric occupation in the region appears to have been more transient and by 4,000 years ago peoples who chose to inhabit the desert were reliant on a seasonal round of resource acquisition between the mountains and the desert. Trade with coastal groups and southwestern cultures also helped alleviate resource deficiencies for these people. Eventually, these trading partnerships as well as the environment helped shape the Maara'yam culture that was present in the region at the time of Spanish contact. Spanish and later Euromerican use of Mojave Desert is centered on the Mojave Trail and Mojave River. This historic-period use of the region was largely temporary and related to traveling through the region until the last half of 19th century when precious metals and mineral mining brought settlement to the Mojave Desert. However, this boom was short lived and those who decided to stay shortly turned to agricultural endeavors using water from the Mojave River, particularly apple orchards. When irrigation rights were terminated, these orchards became western-tyle ranches to entertain well-paying tourists from Hollywood. Because of these fluctuations in use and occupation over time, many of the archaeological sites in the Mojave Desert are ephemeral and chronologically discrete. Each loss leaves gaps in the cultural context used in the archaeological interpretation of Native American and/or Euromerican history in the Mojave Desert.

Proper planning and appropriate mitigation can help to capture and preserve knowledge of such resources and can provide opportunities for increasing our understanding of the past environmental conditions and cultures by recording data about sites discovered and preserving features and artifacts found. Federal, State, and local laws are also in place that protect these resources in most instances. Even so, it is not always feasible to protect these resources, particularly when preservation in place would make projects infeasible, and for this reason the cumulative effects of past and present projects in the Town of Apple Valley on cultural resources are considered significant.

However, the Town of Apple Valley has created a Cultural Resources Sensitivity Map to assist with project planning and has a policy of requiring a cultural resources study before approval of a development permit to help avoid significant impacts to cultural resources (Town of Apple Valley 2009:III-66). This policy also requires that the recommendations of the cultural resources study be included as conditions for permit approval. Therefore, with the support of Town planners, implementation of Mitigation Measures 3.3-1a and 3.3-1b would reduce potential adverse impacts to

archaeological resources from ground-disturbing construction activities. Implementation of this mitigation measure would also ensure that the project's contribution to cumulatively significant archeological resource impacts would not be cumulatively considerable by requiring construction work to cease in the event of an accidental find and appropriate treatment of discovered resources be performed, in accordance with pertinent state laws and regulations as well as local policy. Therefore, the project, in conjunction with the cumulative projects listed in Table 4-2, would not contribute to a significant cumulative effect on archaeological resources. This impact would be **less than significant**.

TRIBAL CULTURAL RESOURCES

Because all Tribal cultural resources are unique and nonrenewable members of finite classes, meaning there are a limited number, all adverse effects erode a dwindling resource base. Tribal cultural systems are represented by the total inventory of all sites and other remains in the region. As a result, a meaningful approach to preserving and managing cultural resources must focus on the likely distribution of Tribal cultural resources within a region, rather than on a single project or parcel boundary.

The Maara'yam, also known as the Serrano, and their territory has been affected by Euromerican occupation and settlement since the late 1700s when the Spanish began establishing missions in southern California. Even after the secularization of the missions in 1833 and the end of the Mexican rancheria system in 1850, emigration along the Mojave Trail brought Americans into the region looking for gold and other precious minerals. As mining waned, Americans that stayed established farms and orchards on former Maara'yam lands, including along the Mojave River. By 1891, most Maara'yam had been removed from their traditional territory and forced onto the San Manuel Reservation. Cumulative settlement and travel driven development in the Mojave Desert continues to contribute to the disturbance and loss of Maara'yam and other local Native American Tribal cultural resources, including Native American human remains.

Proper planning and appropriate mitigation can help to capture and preserve knowledge of such resources and can provide opportunities for increasing our understanding of the past environmental conditions and cultures by recording data about sites discovered and preserving them in place. To aid in just such efforts, the Town has created a Cultural Resources Sensitivity Map which identifies areas of elevated sensitivity for prehistoric and historic-period cultural resources (Town of Apple Valley 2009:66). Federal, State, and local laws are also in place that protect these resources in most instances. Even so, it is not always feasible to protect these resources, particularly when preservation in place would make projects infeasible, and for this reason the cumulative effects of past and present projects in the Town of Apple Valley are considered to be significant.

Implementation of Mitigation Measure 3.3-2 and compliance with existing policies and regulations (California Health and Safety Code Section 7050.5 and California Public Resources Code Section 5097) would prevent the project from impacting Tribal cultural resources, including Native American human remains. Because this impact would be avoided with implementation of mitigation, the project's contribution to the existing cumulative impact on Tribal cultural resources including human remains in the area would not be cumulatively considerable. Therefore, the project, in conjunction with the cumulative projects listed in Table 4-2, would not contribute to a significant cumulative effect on archaeological resources. This impact would be **less than significant**.

4.4.4 Biological Resources

The cumulative context for biological resources impacts for the Apple Valley I-15 Travel Center Project is the Bell Mountain Wash watershed because this area shares similar habitats and species that could potentially be affected by development on the project site, contains known occurrences of many of these species, and contains occupied and potential habitat for these species.

Past development in the region, ranging from conversion of natural land to agricultural production more than a hundred years ago to recent expansion of urban development, has resulted in a substantial loss of native habitat to other uses. This land conversion has benefited a few species adapted to urban or industrial uses, but the overall effect on native plants, animals, and habitats has been decidedly negative.

Development of the Apple Valley I-15 Travel Center Project could result in potentially significant impacts on waters of the U.S., state, and CDFW jurisdictional areas; special-status plants (i.e., Mojave monkeyflower, Barstow woolly sunflower, short-joint beavertail, beaver dam breadroot, Latimer's woodland-gilia, San Bernardino aster, and western Joshua tree); special-status reptiles (i.e., desert tortoise and coast (=Blainville's) horned lizard); special-status birds (i.e., burrowing owl, loggerhead shrike, and Bendire's thrasher). However, these potential impacts would be mitigated to less-than-significant levels with implementation of Mitigation Measures 3.4-1, 3.4-2, 3.4-3, and 3.4-4. Furthermore, the project site consists of low quality, disturbed habitat surrounded by undeveloped but also disturbed habitat areas (i.e., high ATV usage areas) and has low potential to support special-status species. It is unlikely that large or important populations of any special-status species exist on the project site or within the water main extension and no high-quality habitat important to the long-term conservation of any species in the region is present on the project site. Therefore, the project's incremental contribution to the cumulative impact on biological resources in the region would not be considerable.

Cumulative development project could result in potentially significant biological resource impacts. However, with implementation of the mitigation measures proposed for the project, the contribution to these impacts due to the implementation of the proposed project would be reduced to a less-than-significant level. Therefore, while the overall cumulative condition is adverse, the project's contribution to cumulative biological resource impacts would not be considerable. Therefore, the project, in conjunction with the cumulative projects listed in Table 4-2, would not contribute to a significant cumulative effect on biological resources. This impact would be **less than significant**.

4.4.5 Energy

The geographic area considered for cumulative impacts related to energy use includes the San Bernardino County and Southern California Edison (SCE) service area. A cumulative energy consumption impact would occur if development associated with plans and programs identified in Table 4-2 or within the geographic scope of the cumulative impact analysis for energy use, combined with the proposed project, results in wasteful, inefficient, or unnecessary consumption of energy resources throughout the region.

The County, the Town, and SCE employ various programs and mechanisms to support provision of gas and electricity services to new development. The project would increase energy demand during temporary construction activities for new buildings and facilities; however, construction activities would not increase long-term, ongoing demand for energy or fuel because project construction is anticipated to last only 9 months and would be temporary. The project would comply with applicable energy efficiency requirements and would implement design features that meet current requirements, which include installing efficient lighting, an 80-kilowatt direct current solar system, bike parking, and electric vehicle charging. Mitigation Measures 3.7-1 and 3.14-1 would ensure the project would be consistent with the CAP project and would ensure that electricity would be provided through renewable energy. Because the project would not result in wasteful or inefficient use of energy and not contribute to a significant cumulative impact, the project would not result in a considerable contribution to a significant cumulative impact on energy consumption. Therefore, the project, in conjunction with the cumulative projects listed in Table 4-2, would not contribute to a significant cumulative effect related to energy. This impact would be **less than significant with mitigation incorporated**.

4.4.6 Geology and Soils

Impacts related to geology and soils would not be cumulatively considerable because the geographic context for geology and soils impacts is generally site-specific, rather than cumulative in nature. Each development site has unique geologic considerations that would be subject to uniform site development and construction standards. Therefore, the cumulative study area for geology and soils includes all areas within the project site where ground disturbing activities would occur. As discussed in Section 3.6, "Geology and Soils," the project would be designed and constructed in accordance with the California Building Code, which accounts for geotechnical factors affecting a site and incorporates seismic safety design features. The project would not exacerbate any existing environmental hazards such as existing seismic risks. Therefore, the project, in conjunction with the cumulative projects listed in Table 4-2, would not contribute to a significant cumulative effect related to geology and soils. This impact would be **less than significant**.

4.4.7 Greenhouse Gas Emissions and Climate Change

The impact of GHG emissions generated by project construction and operation, discussed in Section 3.7, "Greenhouse Gas Emissions and Climate Change," is inherently cumulative. GHG emissions from one project cannot, on their own, result in changes in climatic conditions; therefore, the emissions from any project must be considered in the context of their contribution to cumulative global emissions, which is the basis for determining a significant cumulative impact, as noted in Section 3.7. (See *Center for Biological Diversity v. Department of Fish & Wildlife* (2015) 62 Cal.4th 204, 219 ["because of the global scale of climate change, any one project's contribution is unlikely to be significant by itself"; "[t]he challenge for CEQA purposes is to determine whether the impact of the project's emissions of greenhouse gases is cumulatively considerable"].)

The project would result in construction and operational emissions below the relevant numerical threshold and would be consistent with local, regional, and statewide GHG reduction plans. Therefore, because GHG impacts are inherently cumulative, and because the project would result in less than significant impacts at the project level, the project would result in a less than cumulatively considerable contribution to greenhouse gas emission and climate change. Therefore, the project, in conjunction with the cumulative projects listed in Table 4-2, would not contribute to a significant cumulative effect related to GHG emissions and climate change. This impact would be **less than significant**.

4.4.8 Hazards and Hazardous Materials

As described in Section 3.8, "Hazards and Hazardous Materials," the project would have no impact related to emitting or handling hazardous materials within one-quarter mile of a school, hazardous materials sites on the Cortese List, airport safety hazards, and wildland fires; therefore, no cumulative analysis is required for these topic areas. The project would have a less than significant impact related to the routine transport, use, and disposal of hazardous materials and emergency response and evacuation plans. Impacts related to the accidental release of hazardous materials would be less than significant with mitigation.

The cumulative study area for hazards and hazardous materials is the project site, including all areas of ground disturbance and new permanent structures. The cumulative study area is characterized as undeveloped, highly disturbed land that has been previously affected by mass grading operations and off highway vehicle use. No recognized environmental conditions (REC) were identified in connection with existing or historic uses of the project site or in connection with adjoining properties.

Based on the analysis in Section 3.9, hazards and hazardous materials impacts would not be cumulatively considerable because (1) no RECs were identified in connection with the project site and adjacent properties; (2) project construction and operation would comply with standard regulations related to transportation, storage, and disposal of hazardous materials and wastes; (3) mitigation would be implemented to ensure that hazardous materials are properly managed in the event that unanticipated contamination is identified during construction activities; and (4) adequate emergency access would be maintained at all times in coordination with the Apple Valley Police and Fire Departments. Therefore, the project would not contribute to a cumulative effect on hazards and hazardous material and no further analysis is required. Therefore, the project, in conjunction with the cumulative projects listed in Table 4-2, would not contribute to a significant cumulative effect related to hazards and hazardous materials. This impact would be **less than significant**.

4.4.9 Hydrology and Water Quality

As described in Section 3.9, "Hydrology and Water Quality," the project would have no impact related to the release of pollutants due to project inundation; therefore, no cumulative analysis is required for this topic area. The project would have a less than significant impact related to the following topic areas: violation of water quality standards or waste discharge requirements or degradation of water quality; decrease of groundwater supplies or interference with groundwater recharge; alteration of existing drainage patterns; and conflicts with water quality control or sustainable groundwater management plans.

WATER QUALITY

The cumulative study area for water quality with respect to surface waters is the Bell Mountain Wash – Mojave River Watershed and the Upper Mojave River Valley Groundwater Basin with respect to groundwater. As discussed in Section 3.9, water quality degradation has resulted from urbanization and past and current agricultural, industrial, and military land uses throughout the watershed. Water quality impairments within the watershed's surface waters include dissolved oxygen, fluoride, sulfates, total dissolved solids, and sodium. Water quality impairments in the Basin include trace elements, total dissolved solids, and manganese, perchlorate, volatile organic compounds, and pesticides.

Impacts related to water quality would not be cumulatively considerable because project construction would comply with the requirements of applicable permits, including the Statewide Construction General NPDES Permit from the Lahontan RWQCB. In addition, fueling areas would be designed with containment curbs to catch and retain fuel in the event of spills and an isolated drainage systems with oil/water separators. Lastly, project operations would comply with applicable permits and regulations governing water quality including regulations for underground storage of hazardous materials. Therefore, the project, in conjunction with the cumulative projects listed in Table 4-2, would not contribute to a significant cumulative effect related to water quality. This impact would be **less than significant**.

HYDROLOGY AND DRAINAGE PATTERNS

The cumulative study area for hydrology is the Bell Mountain Wash – Mojave River Watershed. As noted above, urbanization has altered the natural hydrologic regime of the watershed. As discussed in Section 3.9, the proposed project would create new impervious surfaces and change existing drainage patterns within the project site; however, the project was designed to decrease the volume of storm water runoff and peak discharge from the existing pre-development condition. Therefore, the project would have beneficial cumulative effects on hydrology and drainage patterns. The project, in conjunction with the cumulative projects listed in Table 4-2, would not contribute to a significant cumulative effect related to hydrology and drainage patterns. This impact would be **less than significant**.

WATER SUPPLIES

The cumulative study area for water supplies is the Upper Mojave River Valley Groundwater Basin because the distribution system for Liberty Utilities, the water service provider for the Town, relies solely on groundwater. As discussed in Sections 3.9 and 3.15, the Basin was previously subject to overdraft conditions in the 1950s due to agriculture. The Mojave Water Agency (MWA) was established in 1960 to address overdraft conditions in the groundwater basin. Since its formation, MWA has been responsible for securing supplemental waters supplies to improve the groundwater overdraft conditions within the aquifers in MWA's service area.

MWA anticipates having adequate supplies to meet demands during average, single-dry, and multiple-dry years through 2040. MWA's portfolio of water supplies includes natural and recharged groundwater, imported wastewater, return flow, and stored and SWP carryover supplies. To address projected dry conditions, MWA captures and stores surplus imported water in normal and wet years to meet regional demands in dry years. MWA has stored over 200,000 acre-feet of water in anticipation of future dry years (MWA 2021).

MWA supplies water to Liberty Utilities, the water service provider to the Town of Apple Valley. Liberty Utilities anticipates that MWA's water supplies will continue to be a reliable source of water for the Town. Additionally, Liberty Utilities has identified potential water supply projects and programs to enhance and augment existing water supplies, which include participation in voluntary water transfer programs, conjunctive use of stored groundwater supplies, and future use of recycled water from the Victor Valley Wastewater Reclamation Authority facility. Furthermore, Liberty Utilities plans to implement demand reduction measures in the event that water supplies from existing sources are not sufficient to meet anticipated demands. These measures, which include irrigation and other outdoor use restrictions, rate structure changes, and other water use prohibitions, are intended to encourage customers to reduce water usage. A full list of measures is provided in Chapter 8.4 of the UWMP (Liberty Utilities 2021). Liberty Utilities' UWMP demonstrates that the provider can meet water demands over the next 25 years during normal years, single dry years, and multiple dry years (Liberty Utilities 2021).

As described in Sections 3.9 and 3.15, the estimated water demand for the project would represent a 0.2 percent increase in Liberty Utilities' average water demand of 15,280 AFY (Liberty Utilities 2021). Impacts related to water supplies would not be cumulatively considerable because the project's water demand could be accommodated by Liberty Utilities in combination with the providers' existing and reasonably foreseeable commitments. Additionally, the project design includes bioretention areas that collect and filter surface runoff and allow percolation into the soil for groundwater recharge. Therefore, the project, in conjunction with the cumulative projects listed in Table 4-2, would not contribute to a significant cumulative effect related to water supplies. This impact would be **less than significant**.

4.4.10 Land Use

As described in Section 3.10, "Land Use," the project would have no impact related to physically dividing an established community; therefore, no cumulative analysis is required for this topic area. The project would have a less than significant impact related to conflicts with land use plans, policies, and regulations.

The cumulative study area for land use is the Town of Apple Valley. All new development within the cumulative study area is reviewed by applicable Town of Apple Valley departments to ensure that development occurs in a manner consistent with Town plans, policies, and regulations.

Based on the analysis in Section 3.10, land use impacts would not be cumulatively considerable because the project would be consistent with the Regional Commercial land use and zoning designation for the project site; would be compatible with adjacent land uses; and would not conflict with applicable land use plans, policies, and regulations. Therefore, the project, in conjunction with the cumulative projects listed in Table 4-2, would not contribute to a significant cumulative effect related to land use. This impact would be **less than significant**.

4.4.11 Noise

The geographic context for cumulative impacts related to noise is the local project vicinity. As discussed in Section 3.11, "Noise and Vibration," implementation of the project would not result in the exposure of people to excessive noise levels associated with airport noise or adverse vibration effects on off-site receptors. Therefore, the project would not combine to create considerable changes and cumulative impacts related to these issues, and these impacts are not discussed further.

Construction Noise

Cumulative impacts from construction-generated noise may result if other future planned construction activities were to take place close to the project site and cumulatively combine with construction noise from the project. As discussed in Impact 3.11-1, project construction activities would involve the use of heavy-duty construction equipment occurring over an approximately 9-month period. There are planned construction projects in the immediate vicinity of the project site (e.g., Apple Valley 143 project); and thus, the on-site construction noise generated by the project could potentially combine with another project to simultaneously affect the residential receptor located south of Stoddard Wells Road approximately 2,800 feet east of the project site. Additionally, as discussed in Impact 3.11-1, the off-site construction activities, consisting of construction of a water main line extension within the north shoulders or pavement of Stoddard Wells Road and Johnson Road, would result in a significant and unavoidable impact with implementation of Mitigation Measure 3.11-1. Therefore, construction of nearby projects such as the Apple Valley 143 logistics center project could potentially occur simultaneously in the vicinity of the on- and off-site construction area. Thus, the project could result in a cumulatively considerable contribution to a significant cumulative construction noise impact. The project, in conjunction with the cumulative projects listed in Table 4-2, would contribute to a significant cumulative effect related to construction noise. This impact would be **significant and unavoidable**.

Traffic Noise

Table 4-3 summarizes traffic noise levels along roadway segments serving the project site under existing and cumulative conditions and the associated incremental increases. The traffic volume forecasts for Cumulative-No-Project Conditions were generated using the San Bernardino Transportation Analysis Model (SBTAM). The SBTAM

includes the growth projections anticipated by the Southern California Association of Governments (SCAG) that were developed in collective effort involving SCAG, local jurisdictions, and the San Bernardino Associated Governments. The SBTAM represents the state of the practice in terms of cumulative year traffic volume forecasting in the region and is based on population and job data but does not include specific project land use quantities.

Table 4-3 Summary of Modeled Traffic Noise Levels

Roadway Segment	Applicable Incremental Noise Standard (dB)			Allowable Noise Exposure Increase Before Moderate Impact[1]	Incremental Increase from Existing Conditions (dB)	Incremental Increase from Cumulative-No-Project Conditions (dB)
	Existing Conditions	Cumulative-No-Project Conditions	Cumulative-Plus-Project Conditions		Cumulative-Plus-Project Conditions	
Quarry Road (I-15 Southbound Ramps to Stoddard Wells Road)	51.8	56.3	57.7	2.5	5.9	1.4
Stoddard Wells Road (Quarry Road to I-15 Northbound Ramps)	52.8	56.6	58.0	2	5.2	1.4
Stoddard Wells Road (East of I-15 Northbound Ramps)	54.6	59.0	60.6	2	6	1.6

Notes: dB = a-weighted decibels; L_{dn} = day-night average sound level.

[1] Allowable incremental noise increases based on FTA criteria established in Figure 4-3 of the Transit Noise and Vibration Impact Assessment Manual (FTA 2018: 30)

Source: Modeled by Ascent Environmental in 2022

As shown in Table 4-3, the project's contribution to Cumulative-Plus-Project conditions would be less than 2 dB under Cumulative-No-Project Conditions. Based on Federal Transit Administration criteria, the project would not exceed any applicable allowable incremental noise increase associated under cumulative conditions. As detailed in Section 3.11, "Noise and Vibration," changes in noise of 1–2 dB are generally not perceptible, and people can begin to detect sound level increases of 3 dB in typical noisy environments. Therefore, the project would not contribute to a cumulative effect on traffic noise. The project, in conjunction with the cumulative projects listed in Table 4-2, would not contribute to a significant cumulative effect related to traffic noise. This impact would be **less than significant**.

Single Event Noise Levels from Trucks

As explained under Impact 3.11-3, the project would generate heavy truck traffic to the project site; however, most truck activity is expected to travel from I-15 just west of the project site and would, therefore, not pass any sensitive receptors. Nonetheless, residences along Stoddard Wells Road located east of the project site are not expected to be exposed to single-event noise exposure levels (SENLs) that exceed the 65-decibel (dB) threshold. For this reason, sleep disturbance events (i.e., awakenings) caused by project-generated truck travel would not combine with SENLs from other past, present, and reasonably foreseeable projects to cause a significant cumulative impact. Therefore, the project would not contribute to a cumulative effect on SENLs. The project, in conjunction with the cumulative projects listed in Table 4-2, would not contribute to a significant cumulative effect related to SENLS from trucks. This impact would be **less than significant**.

Stationary, Non-Transportation Operational Noise

Cumulative impacts related to on-site operational and stationary noise sources are site-specific, dissipate with distance from the source, and typically result in cumulative impacts only when project-generated noise is located close to other off-site noise sources. The Apple Valley 143 logistics center is planned to be constructed adjacent to and north of the project site, and although the design and equipment associated with this development is currently unknown, it can be assumed that due to the nature of the project it would likely include stationary noise sources such

as noise from HVAC units, electrical generators, parking lots, and commercial loading docks. However, there are no sensitive receptors located near the project site (i.e., nearest receptor approximately 2,800 feet away). Additionally, the Apple Valley 143 logistics center would be subject to project-level environmental review and compliance with Town of Apple Valley noise standards. Thus, no significant cumulative noise impacts are anticipated to occur. As discussed in the project-level analysis, the project would not result in any significant noise impacts as it relates to on-site operational and stationary noise sources. Therefore, the project would not contribute to a cumulative effect on on-site operational and stationary noise. The project, in conjunction with the cumulative projects listed in Table 4-2, would not contribute to a significant cumulative effect related to stationary, non-transportation operational noise. This impact would be **less than significant**.

4.4.12 Population and Housing

As described in Section 3.12, "Population and Housing," the project would have no impact related to displacement of people or homes; therefore, no cumulative analysis is required for this topic area. The project would have a less than significant impact related to inducing substantial unplanned population growth.

The cumulative study area for population and housing is the Town of Apple Valley. As described in Section 3.12, the Town of Apple Valley is projected to grow by 27,100 residents, or approximately 36.5 percent, from 2016 to 2045.

Based on the analysis in Section 3.12, land use impacts would not be cumulatively considerable because the project would not contribute to permanent population growth within the Town of Apple Valley. Therefore, the project, in conjunction with the cumulative projects listed in Table 4-2, would not contribute to a significant cumulative effect related to population and housing. This impact would be **less than significant**.

4.4.13 Public Services and Recreation

As described in Section 3.13, "Public Services and Recreation," the project would have no impact on schools, parks and recreational facilities, and other public facilities; therefore, no cumulative analysis is required for these topic areas. The project would have less than significant impacts on fire and police protection.

The cumulative study area for public services is the Town of Apple Valley. Fire and police departments in proximity to the project site, including response times and service ratios, are identified in Section 3.13.

Impacts related to fire and police protection would not be cumulatively considerable because the project would not (1) contribute to substantial congestion on surrounding roadways that would affect response times for emergency services providers and (2) would not result in population growth that would affect service ratios or increase the demand for emergency service providers. Therefore, the project, in conjunction with the cumulative projects listed in Table 4-2, would not contribute to a significant cumulative effect on public services and recreation. This impact would be **less than significant**.

4.4.14 Transportation and Circulation

As described in Section 3.14, "Transportation and Circulation," the project would have less than significant impacts on bicycle and pedestrian facilities, transit services, vehicle miles traveled (VMT), and transportation hazards. The geographic context for cumulative impacts related to transportation is the project area and the surrounding roadway network.

Transit, Bicycle, and Pedestrian Facilities

As described under Impact 3.14-1, implementation of the project would not create demand for public transit services and would not disrupt existing or planned transit facilities and services, because there are none within the immediate vicinity of the project site. Additionally, as described under Impact 3.14-1, there are no existing bicycle or pedestrian facilities in the project vicinity, so implementation of the project would not disrupt any existing bicycle or pedestrian facilities or degrade the bicycle or pedestrian network as it exists; however, the project as planned does not include any bicycle improvements as the General Plan and County Non-Motorized Transportation Plan have identified. Thus, Mitigation

Measure 3.14-1 would require the project applicant to include Class II bicycle facilities along Stoddard Wells Road so that the project remains compliant with existing policies and plans. Therefore, with the implementation of Mitigation Measure 3.14-1, the project would not contribute to a cumulative effect on transit, bicycle, and pedestrian facilities. The project, in conjunction with the cumulative projects listed in Table 4-2, would not contribute to a significant cumulative effect related to transit, bicycle, and pedestrian facilities. This impact would be **less than significant**.

Vehicle Miles Traveled

The discussion of VMT impacts associated with the project is inherently a cumulative impact analysis as it compares the project to Town VMT thresholds associated with buildout of the Town General Plan. A VMT impact would be considered cumulatively significant if the cumulative project generated VMT per service population exceeds Town of Apple Valley General Plan Buildout VMT per service population.

As detailed under Impact 3.14-2, the vast majority of trips traveling to the Travel Center and RV Park would be diverted from the I-15; and thus, VMT generated for most trips associated with the project would increase by only 0.5 mile. Therefore, because such a large percentage of all trips traveling to the project site would be diverted trips only traveling 0.5 mile, the overall VMT per service population would skew much closer to 0.5 than to the Town of Apple Valley General Plan Buildout VMT per service population. Therefore, the project would not contribute to a cumulative effect on VMT. The project, in conjunction with the cumulative projects listed in Table 4-2, would not contribute to a significant cumulative effect related to VMT. This impact would be **less than significant**.

Transportation Hazards and Emergency Access

Cumulative impacts from project-generated construction effects on transportation may result if other future planned construction activities were to take place close to the project site and cumulatively combine to exacerbate the construction-related transportation impacts of the project. If construction of other projects occur simultaneously with construction activities for the project and affect the same roadways, a significant cumulative effect to traffic could occur.

The project would involve off-site construction within the public roadway right-of-way. Therefore, the project could substantially increase hazards because of a design feature or incompatible uses along Stoddard Wells Road. In addition, construction associated with the project could potentially impede or delay emergency access. However, as detailed in Impact 3.14-3, the Town encroachment permitting process would ensure that temporary traffic hazards and effects to emergency access are reduced by requiring the construction contractor to prepare and implement a traffic control plan subject to Town approval. Additionally, the project is subject to review by the Town and applicable emergency service departments to ensure transportation hazards are minimized and adequate emergency access is maintained. Therefore, the project would not contribute to a cumulative effect on hazards or emergency access. Therefore, the project, in conjunction with the cumulative projects listed in Table 4-2, would not contribute to a significant cumulative effect related to transportation hazards and emergency access. This impact would be **less than significant**.

4.4.15 Utilities and Service Systems

As described in Section 3.15, "Utilities and Service Systems," the project would have a less than significant impact on water, wastewater treatment and stormwater drainage, electric power, natural gas, telecommunications, and solid waste facilities.

The cumulative study area for utilities and service systems is the Town of Apple Valley. As discussed in Section 3.15, the Town's utility service providers include the Town of Apple Valley, Liberty Utilities, AVCO Disposal, Inc./Burrtec Company, Southern California Edison, and Southwest Gas Corporation. These service providers have adequate capacity to serve existing utility demands and anticipate having adequate capacity to serve future utility demands with implementation of new management strategies and facility/infrastructure projects.

Impacts related to utilities and service systems would not be cumulatively considerable because the project's utility demand could be accommodated by the service providers in combination with the providers' existing and reasonably foreseeable commitments (see also Section 4.4.9, "Hydrology and Water Quality," above for a discussion of water supplies). Furthermore, the cumulative effects associated with the construction of new and expanded utility

infrastructure (i.e., offsite water main line, stormwater drainage features, and connections to existing utility facilities and infrastructure) to serve the new development are evaluated and disclosed in Sections 4.4.1 to 4.4.14 of this EIR. Most impacts associated with constructing the proposed offsite water main line would not be cumulatively considerable; however, as discussed in Section 4.4.11, "Noise," construction of the offsite water main line could result in a cumulatively considerable contribution to a significant cumulative construction noise impact. Therefore, the project, in conjunction with the cumulative projects listed in Table 4-2, would contribute to a significant cumulative effect related to the environmental effects of construction an off-site water main line. This impact would be **significant and unavoidable**.

5 ALTERNATIVES

5.1 INTRODUCTION

The California Code of Regulations (CCR), Title 14, Section 15126.6(a) (State CEQA Guidelines) requires EIRs to describe "… a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather, it must consider a range of potentially feasible alternatives that will avoid or substantially lessen the significant adverse impacts of a project, and foster informed decision making and public participation. An EIR is not required to consider alternatives that are infeasible. The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason." This section of the State CEQA Guidelines also provides guidance regarding what the alternatives analysis should consider. Subsection (b) further states the purpose of the alternatives analysis is as follows:

> Because an EIR must identify ways to mitigate or avoid the significant effects that a project may have on the environment (Public Resources Code [PRC] Section 21002.1), the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly.

The State CEQA Guidelines require that the EIR include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative must be discussed, but in less detail than the significant effects of the project as proposed (CCR Section 15126.6[d]).

The State CEQA Guidelines further require that the "no project" alternative be considered (CCR Section 15126.6[e]). The purpose of describing and analyzing a no project alternative is to allow decision makers to compare the impacts of approving a proposed project with the impacts of not approving the proposed project. If the no project alternative is the environmentally superior alternative, CEQA requires that the EIR "…shall also identify an environmentally superior alternative among the other alternatives." (CCR Section 15126[e][2]).

In defining "feasibility" (e.g., "… feasibly attain most of the basic objectives of the project …"), CCR Section 15126.6(f) (1) states, in part:

> Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent). No one of these factors establishes a fixed limit on the scope of reasonable alternatives.

In determining what alternatives should be considered in the EIR, it is important to consider the objectives of the project, the project's significant effects, and unique project considerations. These factors are crucial to the development of alternatives that meet the criteria specified in Section 15126.6(a). Although, as noted above, EIRs must contain a discussion of "potentially feasible" alternatives, the ultimate determination as to whether an alternative is actually feasible or infeasible is made by the lead agency's decision-making body, here the Town Planning Commission. (See PRC Sections 21081.5, 21081[a] [3]; *California Native Plant Society v. City of Santa Cruz* (2009) 177 Cal.App.4th 957, 981.)

5.2 CONSIDERATIONS FOR SELECTION OF ALTERNATIVES

5.2.1 Attainment of Project Objectives

As discussed above, potentially feasible alternatives must meet most of the basic objectives of the project. The project applicant has developed the following project objectives:

- Create a high-quality travel center commercial development along I-15, a major interstate transportation corridor.
- Develop a property of sufficient size to create a regional travel center that would accommodate a truck and auto fuel dispensing area, convenience store, fast-food restaurant, truck parking and maintenance services, RV park, and recreational amenities.
- Construct a travel center facility near a major freeway onramp/offramp to minimize truck and automobile movements, Vehicle Miles Traveled (VMT), and associated air pollutant and greenhouse gas emissions and traffic noise on local streets.
- Assist the Town of Apple Valley with meeting its economic development goals, as set forth in its General Plan.
- Maximize tax revenue to the Town of Apple Valley.
- Provide employment opportunities for residents of Apple Valley and surrounding areas.
- Construct a facility with proximal access to adequate existing or anticipated utility infrastructure to support planned operations.
- Provide minimal stay, full-service RV accommodations for the public traveling to and from destinations along Interstate 15 and Stoddard Wells Road.

5.2.2 Environmental Impacts of the Apple Valley I-15 Travel Center Project

Sections 3.1 through 3.15 of this Draft EIR address the environmental impacts of implementation of the proposed project. Potentially feasible alternatives were developed with consideration of avoiding or lessening the significant, and potentially significant, adverse impacts of the project, as identified in Chapter 3 of this Draft EIR and summarized below. If an environmental issue area analyzed in this Draft EIR is not addressed below, it is because no impacts were identified for that issue area. As discussed below, the project would result in a significant and unavoidable environmental impact related to construction-generated noise levels associated with construction of the proposed water main line (Impact 3.11-1 and Impact 3.15-1). Additionally, the project could result in a cumulatively considerable contribution to a significant cumulative construction noise impact.

- Aesthetics:
  - Impact 3.1-1: Have a substantial adverse effect on a scenic vista. *Less than significant.*
  - Impact 3.1-2: Substantially degrade the existing visual character or quality of the site on its surroundings. *Less than significant.*
  - Impact 3.1-3: Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area. *Less than significant.*
- Air Quality:
  - Impact 3.2-1: Conflict with or Obstruct Implementation of the Applicable Air Quality Plan. *Less than significant.*
  - Impact 3.2-2: Construction Emissions of Criteria Air Pollutants and Ozone Precursors. *Less than significant.*

- Impact 3.2-3: Operational Emissions of Criteria Air Pollutants and Ozone Precursors. *Less than significant.*
- Impact 3.2-4: Expose Sensitive Receptors to Substantial Pollutant Concentrations. *Less than significant.*
- Impact 3.3-5: Exposure of sensitive receptors to other emissions (including odors). *Less than significant.*

- Archaeological, Historical, and Tribal Cultural Resources:
  - Impact 3.3-1: Cause a Substantial Adverse Change in the Significance of Unique Archaeological Resources or Historical Resources of an archaeological nature. *Less than significant with implementation of mitigation measures*.
  - Impact 3.3-2: Cause a Substantial Adverse Change in the Significance of a Tribal Cultural Resource. *Less than significant with implementation of mitigation measures*.
  - Impact 3.3-3: Disturb Human Remains. *Less than significant*.
- Biological Resources:
  - Impact 3.4-1: Disturbance or loss of state or federally protected wetlands and Waters of the U.S. *Less than significant with implementation of mitigation measures.*
  - Impact 3.4-2: Have a substantial adverse effect, either directly or through habitat modification, on special-status plants. *Less than significant with implementation of mitigation measures.*
  - Impact 3.4-3: Have a substantial adverse effect, either directly or through habitat modification, on special-status reptiles. *Less than significant with implementation of mitigation measures.*
  - Impact 3.4-4: Have a substantial adverse effect, either directly or through habitat modification, on special-status birds. *Less than significant with implementation of mitigation measures.*
  - Impact 3.4-5: Interfere with wildlife movement or migration or impede the use of nursery sites. *Less than significant.*
  - Impact 3.4-6: Substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal. *Less than significant.*
- Energy:
  - Impact 3.5-1: Wasteful, Inefficient, or Unnecessary Consumption of Energy, During Project Construction or Operation. *Less than significant.*
  - Impact 3.5-2: Conflict with or obstruct renewable energy or energy efficiency plans. *Less than significant with implementation of mitigation measures.*
- Geology and Soils:
  - Impact 3.6-1: Soil erosion and loss of topsoil. *Less than significant.*
- Greenhouse Gas Emissions and Climate Change:
  - Impact 3.7-1: Generate Greenhouse Gas Emissions, Either Directly or Indirectly, That May Have a Significant Impact on the Environment. *Less than significant.*
  - Impact 3.7-2: Conflict with an Applicable Plan, Policy or Regulation Adopted for the Purpose of Reducing the Emissions of Greenhouse Gases. *Less than significant with implementation of mitigation measures.*
- Hazards and Hazardous Materials:
  - Impact 3.8-1: Routine transport, use, or disposal of hazardous materials. *Less than significant.*
  - Impact 3.8-2: Accidental release of hazardous materials. *Less than significant with implementation of mitigation measures.*

- Impact 3.8-3: List of Hazardous Materials Sites. *Less than significant with implementation of mitigation measures.*
- Impact 3.8-4: Emergency response or evacuation plans. *Less than significant.*

- Hydrology and Water Quality:
  - Impact 3.10-1: Violation of Water Quality Standards or Waste Discharge Requirements or Degradation of Water Quality During Construction. *Less than significant.*
  - Impact 3.10-2: Violation of Water Quality Standards or Waste Discharge Requirements or Degradation of Water Quality During Operation. *Less than significant.*
  - Impact 3.10-3: Decrease Groundwater Supplies or Interfere with Groundwater Recharge. During Operation. *Less than significant.*
  - Impact 3.10-4: Alter Existing Drainage Patterns. *Less than significant.*
  - Impact 3.10-5: Conflict with or Obstruct Implementation of Water Quality Control or Sustainable Groundwater Management Plans. *Less than significant.*
- Land Use and Planning:
  - Impact 3.10-1: Conflict with applicable land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. *Less than significant.*
- Noise and Vibration:
  - Impact 3.11-1: Short-term construction-generated noise levels. *Significant and unavoidable.*
  - Impact 3.11-2: Expose sensitive receptors to substantial traffic-noise increases. *Less than significant.*
  - Impact 3.11-3: Intermittent single-event noise levels from trucks. *Less than significant.*
  - Impact 3.11-4: Long-term operational stationary and on-site noise. *Less than significant.*
- Population and Housing:
  - Impact 3.12-1: Induce substantial unplanned population growth. *Less than significant.*
- Public Services and Recreation:
  - Impact 3.13-1: Result in substantial adverse impacts from the expansion or construction of new fire protection facilities. *Less than significant.*
  - Impact 3.13-2: Result in substantial adverse impacts from the expansion or construction of new police protection facilities. *Less than significant.*
- Transportation:
  - Impact 3.14-1: Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities. *Less than significant with mitigation incorporated.*
  - Impact 3.14-2: Conflict or be Inconsistent with CEQA Guidelines Section 15064.3, Subdivision (b) Regarding Vehicle Miles Traveled. *Less than significant.*
  - Impact 3.14-3: Substantially Increase Hazards due to a Design Feature or Incompatible Uses. *Less than significant.*
  - Impact 3.14-4: Result in inadequate emergency access. *Less than significant.*
- Utilities and Service Systems:
  - Impact 3.15-1: Relocation or Construction of New or Expanded Facilities. *Significant and unavoidable.*
  - Impact 3.15-2: Sufficient Water Supplies. *Less than significant.*

- Impact 3.15-3: Adequate Capacity of the Wastewater Treatment Provider. *Less than significant.*
- Impact 3.15-4: Impacts on Solid Waste. *Less than significant.*

5.3 ALTERNATIVES SELECTED FOR DETAILED ANALYSIS

The following alternatives evaluated in this Draft EIR.

- **Alternative 1: No Project–No Development Alternative** assumes no construction of a new travel center and RV park. The project site would remain in its current, vacant condition.
- **Alternative 2: No RV Park Alternative** assumes no construction of a new RV park. The project would only consist of a new travel center.
- **Alternative 3: Reduced RV Park Alternative** assumes construction of a new travel center and RV park; however, the RV park would be reduced in size by 50 percent, with 40 spaces instead of the 80 spaces evaluated under the proposed project.

Further details on these alternatives, and an evaluation of environmental effects relative to the proposed project, are provided below. There were no other alternatives that were considered by the Town.

5.3.1 Alternative 1: No Project–No Development Alternative

As discussed above, the State CEQA Guidelines requires that a "no project" alternative be considered (CCR Title 14 Section 15126.6[e]). The purpose of describing and analyzing a no project alternative is to allow decision makers to compare the impacts of approving a proposed project with the impacts of not approving the proposed project.

Under Alternative 1, the No Project–No Development Alternative, no actions would be taken by the applicant and the project site would remain unchanged from current conditions. The project site would remain vacant and in its current condition. The No Project – No Development Alternative would not meet the project objectives because it would not result in the development of a regional travel center and related commercial land uses that would serve thru-motorists on I-15 and provide economic benefits to the Town. However, as required by CEQA, the No Project – No Development Alternative is evaluated in this Draft EIR.

It should be noted that the project site is unlikely to remain undeveloped indefinitely because of the Regional Commercial land use designation for the project site under the Town's General Plan. As the General Plan designation indicates, the Town Council has determined that commercial development of some kind is appropriate for the site. In creating this Commercial designation, the Town has signaled to the property owners and to the real estate market in general that economic investments in the project site in the form of environmental review, permitting, and engineering work should ultimately lead to the right to make a substantial economic use of the property. If, after creating expectations of this kind, the Town were to repeatedly deny requests to allow development of the site, at some point the Town might face a claim that such denials have amounted to a regulatory taking of the property without just compensation. In short, it is unrealistic to assume that the project site will remain open space for the foreseeable future. Indeed, as noted in Section 2, "Project Description," the project site had been the subject of previous entitlement actions by San Bernardino County. The previously approved project resulted in the construction of underground infrastructure utility improvements, which were abandoned and never completed.

The following sections provide a general discussion of the environmental effects of Alternative 1 relative to the proposed project for each environmental issue area. Table 5-1 in Section 5.4, "Environmentally Superior Alternative," summarizes the impacts identified for the proposed project and those identified for Alternative 1. Alternative 1 would not involve discretionary action by the State, and thus would not result in environmental impacts. However, for purposes of comparison with the other action alternatives, conclusions for each technical area are characterized as "impacts" that are greater, similar, or less, to describe conditions that are worse than, similar to, or better than those of the proposed project.

AESTHETICS

Under Alternative 1, there would be no development on the project site. The existing visual character and quality of the site and its surrounding would remain as an undeveloped site, the same as under the existing conditions. There would be no impacts to aesthetic resources. In summary, Alternative 1 would avoid the less-than-significant aesthetics impacts that would result from the proposed project (i.e., Impact 3.1-1 through Impact 3.1-3). Therefore, aesthetics impacts would be less under Alternative 1 than under the proposed project (see Table 5-1).

AIR QUALITY

Under Alternative 1, there would be no development on the project site. The project site would remain vacant and in its current condition with no new construction and no installation and operation of new facilities. Thus, there would be no construction-generated or operational sources of emissions associated with the project. There would be no impacts to air quality. In summary, Alternative 1 would avoid the less-than-significant air quality impacts that would result from the proposed project (i.e., Impact 3.2-1 through Impact 3.2-5). Therefore, air quality impacts would be less under Alternative 1 than under the proposed project (see Table 5-1).

ARCHAEOLOGICAL, HISTORICAL, AND TRIBAL CULTURAL RESOURCES

Under Alternative 1, there would be no development of the project site. No construction or project ground disturbing actions would occur, and the site would remain the same as under the existing conditions. Additionally, because no work would occur along Johnson Avenue for the water line, there would be no potential to impact areas that have been previously identified as having an elevated sensitivity for prehistoric archaeological resources. There would be no impacts to archaeological, historical, or Tribal cultural resources. In summary, Alternative 1 would avoid the proposed project's impacts on archaeological, historical, and tribal cultural resources that would be less than significant with mitigation (Impact 3.3-1 and Impact 3.3-2) and less than significant (Impact 3.3-3). Therefore, impacts related to archaeological, historical, and tribal cultural resources would be less under Alternative 1 than under the proposed project (see Table 5-1).

BIOLOGICAL RESOURCES

Under Alternative 1, the No Project–No Development Alternative, no actions would be taken by the applicant and the project site would remain unchanged from current conditions. The project site would remain vacant and in its current condition with no new construction and no installation and operation of new facilities. Alternative 1, would result in no impacts on biological resources. In summary, Alternative 1 would avoid the proposed project's impacts on biological resources that would be less than significant with mitigation (Impact 3.4-1 through Impact 3.4-4) and less than significant (Impact 3.4-5 and Impact 3.4-6). Therefore, impacts related to biological resources would be less under Alternative 1 than under the proposed project (see Table 5-1).

ENERGY

Under Alternative 1, there would be no development on the project site. The project site would remain vacant and in its current condition with no new construction and no installation and operation of new facilities. Thus, there would be no construction-generated or operational energy consumption associated with the project. There would be no impacts to energy. In summary, Alternative 1 would avoid the proposed project's energy impacts that would be less than significant with mitigation (Impact 3.5-2) and less than significant (Impact 3.5-1). Therefore, impacts related to energy would be less under Alternative 1 than under the proposed project (see Table 5-1).

GEOLOGY AND SOILS

Under Alternative 1, there would be no development on the project site. Because no ground disturbance would occur, Alternative 1 would not result in soil erosion and loss of topsoil associated with construction activities. In the long-term, however, the project site would remain vacant with exposed soils that are susceptible to erosion. Alternative 1 would not result in beneficial impacts related to erosion because no landscaping, hardscaping, and stormwater drainage features would be implemented to stabilize soils. Overall, Alternative 1 would not result in impacts to geology and soils, but Alternative 1 would not result in the beneficial long-term impacts on erosion and loss of topsoil from development of the project site. In summary, Alternative 1 would avoid the proposed project's geology and soils impact that would be less than significant (Impact 3.6-1). Therefore, the impact related to geology and soils would be less under Alternative 1 than under the proposed project (see Table 5-1).

GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

Under Alternative 1, there would be no development on the project site. The project site would remain vacant and in its current condition with no new construction and no installation and operation of new facilities. Thus, there would be no construction-generated or operational sources of greenhouse gas (GHG) emissions associated with the project. There would be no impacts to GHG emissions and climate change. In summary, Alternative 1 would avoid the proposed project's impacts related to GHG emissions and climate change that would be less than significant with mitigation (Impact 3.7-2) and less than significant (Impact 3.7-1). Therefore, impacts related to GHG emissions and climate change would be less under Alternative 1 than under the proposed project (see Table 5-1).

HAZARDS AND HAZARDOUS MATERIALS

Under Alternative 1, there would be no development on the project site. Thus, there would be no transport, use, disposal, or accidental release of hazardous materials; public or environmental hazards from hazardous materials sties; or impairment to emergency response or evaluation plans. There would be no impacts related to hazards and hazardous materials. In summary, Alternative 1 would avoid the proposed project's impacts related to hazards and hazardous materials that would be less than significant with mitigation (Impact 3.8-2 and Impact 3.8-3) and less than significant (Impact 3.8-1 and Impact 3.8-4). Therefore, impacts related to hazards and hazardous materials would be less under Alternative 1 than under the proposed project (see Table 5-1).

HYDROLOGY AND WATER QUALITY

Under Alternative 1, there would be no development on the project site. Thus, there would be no potential to violate water quality standards or waste discharge requirements, degrade water quality, deplete groundwater supplies or interfere with groundwater recharge, alter drainage patterns, or conflict with water quality control or sustainable groundwater management plans. There would be no impacts related to hydrology and water quality. In summary, Alternative 1 would avoid the proposed project's impacts related to hydrology and water quality that would be less than significant (Impact 3.9-1 through Impact 3.9-5). Therefore, impacts related to hydrology and water quality would be less under Alternative 1 than under the proposed project (see Table 5-1).

LAND USE AND PLANNING

Under Alternative 1, there would be no development on the project site. Thus, there would be no conflicts with applicable land use plans, policies, or regulations. There would be no impacts associated with land use. In summary, Alternative 1 would avoid the proposed project's land use and planning impact that would be less than significant (Impact 3.10-1). Therefore, the impact related to land use and planning would be less under Alternative 1 than under the proposed project (see Table 5-1).

NOISE AND VIBRATION

Under Alternative 1, there would be no development on the project site. Thus, Alternative 1 would not result in construction-generated or operational noise impacts. In summary, Alternative 1 would avoid the proposed project's noise and vibration impacts that would be significant and unavoidable (Impact 3.11-1) and less than significant (Impact 3.11-2 through Impact 3.11-4). Therefore, the impact related to noise and vibration would be less under Alternative 1 than under the proposed project (see Table 5-1).

POPULATION AND HOUSING

Under Alternative 1, there would be no development on the project site. Thus, there would be no potential to induce substantial unplanned population growth. There would be no impacts to population and housing. In summary, Alternative 1 would avoid the proposed project's population and housing impact that would be less than significant (Impact 3.12-1). Therefore, the impact related to population and housing would be less under Alternative 1 than under the proposed project (see Table 5-1).

PUBLIC SERVICES AND RECREATION

Under Alternative 1, there would be no development on the project site. Thus, there would be no changes in demand for fire and police protection that would require the construction of new or physically altered governmental facilities. There would be no impacts to public services and recreation. In summary, Alternative 1 would avoid the proposed project's impacts related to public services and recreation that would be less than significant (Impact 3.13-1 and Impact 3.13-2). Therefore, impacts related to public services and recreation would be less under Alternative 1 than under the proposed project (see Table 5-1).

TRANSPORTATION

Under Alternative 1, there would be no development on the project site. Thus, traffic and transportation conditions would not change and there would be no impacts. In summary, Alternative 1 would avoid the proposed project's impacts related to transportation and traffic that would be less than significant with mitigation (Impact 3.14-1) and less than significant (Impact 3.14-2 through Impact 3.13-4). Therefore, impacts related to transportation and traffic would be less under Alternative 1 than under the proposed project (see Table 5-1).

UTILITIES AND SERVICE SYSTEMS

Under Alternative 1, there would be no development on the project site. Therefore, there would be no changes in demand for water, wastewater treatment or storm water drainage, electric power, natural gas, telecommunications, or solid waste facilities. There would be no impacts related to utilities and service systems. In summary, Alternative 1 would avoid the proposed project's impacts related to utilities and service systems that would be significant and unavoidable (Impact 3.15-1) and less than significant (Impact 3.15-2 through Impact 3.15-4). Therefore, impacts related to utilities and service systems would be less under Alternative 1 than under the proposed project (see Table 5-1).

5.3.2 Alternative 2: No RV Park Alternative

Alternative 2 would include all of the elements evaluated under the proposed project and as described in Section 2, "Project Description," except for the RV Park described in Section 2.3.2, "RV Park." Under Alternative 2, the travel center would be developed on 15.33 acres, which is 46 percent of the 33.53-acres that would be developed under the proposed project. Similar to the proposed project, construction of the approximately 19,460-linear-foot offsite water main line would be needed under Alternative 2 to supply water to the travel center.

Under Alternative 2, the RV park footprint that would be developed under the proposed project, which includes the area east of the proposed Traveler's Way, would remain vacant and undeveloped. However, as noted in Section 5.3.1, "Alternative 1: No Project-No Development Alternative" above, this land could be developed in accordance with the Regional Commercial land use designation in the reasonably foreseeable future.

Alternative 2 would meet most of the objectives of the proposed project because it would create a commercial development with facilities and amenities for travelers along a major transportation corridor. Alternative 2 would contribute to the Town's economic development and increase tax revenue and employment opportunities in the Town; however, the economic merits and available services of Alternative 2 would be slightly reduced in comparison to the proposed project because the RV park would not be constructed. Alternative 2 would not meet the proposed project objective of providing minimal stay, full-service RV accommodations for the public traveling to and from destinations along Interstate 15 and Stoddard Wells Road. Therefore, Alternative 2 would meet the project objectives to a lesser extent than the proposed project.

Alternative 2 would occupy a smaller area than the proposed project, but would be developed at the same project location. Alternative 2 would be similar to the proposed project with respect to site suitability, availability of infrastructure, and general plan consistency; therefore, the same factors that would affect the feasibility of the proposed project would apply to Alternative 2.

The following sections provide a discussion of the environmental effects of Alternative 2 relative to the proposed project for each environmental issue area. Table 5-1 in Section 5.4, "Environmentally Superior Alternative," summarizes the impacts identified for the proposed project and those identified for Alternative 2. Conclusions for each technical area are characterized as "impacts" that are greater, similar, or less, to describe conditions that are worse than, similar to, or better than those of the proposed project.

AESTHETICS

Under Alternative 2, only 15.33 acres, or 46 percent, of the overall 33.52-acre parcel would be developed with commercial land uses. Aesthetics impacts from the travel center west of the proposed Traveler's Way would be the same as those under the proposed project, as described in Section 3.1, "Aesthetics." However, Alternative 2 would not result in aesthetics impacts east of the proposed Traveler's Way because Alternative 2 would not result in construction of the RV park. Aesthetics impacts from Alternative 2 would be less when compared to the impacts from the proposed project. Specifically, views of Alternative 2 would be less prominent from scenic vistas because the footprint would be approximately 45 percent of the proposed project footprint. In addition, Alternative 2 would add fewer non-natural encroaching elements to existing viewpoints. In summary, Alternative 2 would result in similar types of aesthetics impacts that would result from the proposed project (Impact 3.1-1 through Impact 3.1-3), but these impacts would be of a lesser degree under Alternative 2. Therefore, aesthetics impacts would be less under Alternative 2 than under the proposed project (see Table 5-1).

AIR QUALITY

Under Alternative 2, impacts to air quality would be less than significant for the same reasons as described in Section 3.2, "Air Quality." Because the project site would have a smaller footprint and the project would only include implementation of the Travel Center, there would be less equipment and activity to complete construction. Thus, construction-related emissions would be less under Alternative 2 relative to the proposed project. In addition, without the inclusion of the RV Park, there would be fewer vehicle trips, resulting in 20 percent less VMT than assumed for the proposed project. Additionally, energy consumption from natural gas would be reduced up to 58 percent under Alternative 2. A reduction in the number of trips, VMT, and natural gas consumed would decrease emissions on existing sensitive receptors. Distances to existing receptors would be the same for the travel center uses but those uses would not change compared to the proposed project. Thus, long-term operational air quality emissions would be less under Alternative 2 compared to the project. In summary, Alternative 2 would result in similar types of air quality impacts that would result from the proposed project (Impact 3.2-1 through Impact 3.2-5), but these impacts

would be of a lesser degree under Alternative 2. Therefore, air quality impacts would be less under Alternative 2 than under the proposed project (see Table 5-1).

ARCHAEOLOGICAL, HISTORICAL, AND TRIBAL CULTURAL RESOURCES

Even though Alternative 2 would result in less ground disturbance overall, the water line down Johnson Road would still be installed. Therefore, the potential for Alternative 2 to impact archaeological resources and Tribal cultural resources remains the same as it would under the proposed project as described in Section 3.3, "Archaeological, Historical, and Tribal Cultural Resources." Specifically, no impacts would occur to historical resources, but there would still be a potential to impact unknown archaeological resources, particularly unknown significant prehistoric resources which may also be considered Tribal Cultural Resources. Implementation of Mitigation Measures 3.3-1a, 3.3-1b, and 3.3-2 would still be required to reduce the level of impact to a less than significant level. In summary, Alternative 2 would result in similar types of archaeological, historical, and tribal cultural resources impacts that would result from the proposed project (Impact 3.2-1 through Impact 3.2-5), and these impacts would be of a similar degree under Alternative 2. Therefore, archaeological, historical, and tribal cultural resources impacts would be similar between Alternative 2 and the proposed project (see Table 5-1).

BIOLOGICAL RESOURCES

Under Alternative 2, only 15.33 acres, or 46 percent, of the overall 33.52-acre parcel would be developed with commercial land uses. Biological resource impacts from the travel center west of the proposed Traveler's Way would be the same as those under the proposed project, as described in Section 3.4, "Biological Resources." However, Alternative 2 would not result in construction of the RV park and the connecting driveway would not be developed. Alternative 2 would have potential to affect the same special-status plant and wildlife species as described in Section 3.4, "Biological Resources" except the probability of these species being found is reduced because the impact footprint would be smaller. In summary, Alternative 2 would result in similar types of biological resources impacts that would result from the proposed project, and these impacts would be of a lesser (Impact 3.4-1 through Impact 3.4-4) or a similar degree (Impact 3.4-5 and Impact 3.4-6) under Alternative 2. Therefore, some biological resources impacts would be similar between Alternative 2 and the proposed project, while some would be less under Alternative 2 than under the proposed project (see Table 5-1).

ENERGY

Under Alternative 2, impacts related to wasteful energy consumption would be less than significant, but impacts related to conflicting with or obstructing renewable energy or energy efficiency plans would be significant for the same reasons as described in Section 3.5, "Energy." Because the project site would only occupy 46 percent of the project site and the project would only include implementation of the Travel Center, there would be approximately 54 percent less equipment and activity to complete construction. Thus, construction energy impacts would be less under Alternative 2 relative to the proposed project. In addition, without the inclusion of the RV Park, there would be fewer vehicle trips and visitors to the project site under Alternative 2, resulting in 20 percent less VMT, 58 percent less natural gas consumption, and 48 percent less electricity consumption compared to the proposed project. A reduction in the number of trips and visitors would decrease transportation- and building-related energy consumption. Thus, long-term operational energy consumption would be less under Alternative 2 compared to the proposed project. However, mitigation to align with the renewable energy or energy efficiency in the CAP would still be required to reduce the level of impact to a less than significant level. In summary, Alternative 2 would result in similar types of energy impacts that would result from the proposed project, and these impacts would be of a lesser (Impact 3.5-1) or a similar degree (Impact 3.5-2) under Alternative 2. Therefore, some energy impacts would be similar between Alternative 2 and the proposed project, while some would be less under Alternative 2 than under the proposed project (see Table 5-1).

GEOLOGY AND SOILS

Under Alternative 2, only 15.33 acres, or 46 percent, of the overall 33.52-acre parcel would be disturbed during construction activities and developed with commercial land uses. Alternative 2 would be subject to the same Construction General National Pollutant Discharge Elimination System (NPDES) Permit conditions that would apply to the proposed project. However, Alternative 2 would result in less soil erosion and loss of topsoil than the proposed project because less ground disturbance would occur during construction. Once operational, the area east of the proposed Traveler's Way would remain vacant with exposed soils that are susceptible to erosion. As such, Alternative 2 would result in fewer beneficial impacts related to erosion than the proposed project because no landscaping, hardscaping, and stormwater drainage features would be implemented to stabilize soils in that portion of the project site. Overall, Alternative 2 would result in less short-term impacts to geology and soils, but Alternative 2 would have fewer beneficial long-term impacts on erosion and loss of topsoil compared to the proposed project. In summary, Alternative 2 would result in a similar type of energy impact that would result from the proposed project (Impact 3.6-1), and this impact would be of a lesser degree under Alternative 2. Therefore, the geology and soils impact would be less under Alternative 2 than under the proposed project (see Table 5-1).

GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

Under Alternative 2, impacts related to GHG emissions would be less than significant, but inconsistency with GHG emission reductions plans would be significant for the same reasons as described in Section 3.7, "Greenhouse Gas Emissions and Climate Change." Because the project site would only occupy 46 percent of the project site and the project would only include implementation of the Travel Center, there would be approximately 54 percent less equipment and activity to complete construction. Thus, construction GHG impacts would be less under Alternative 2 relative to the proposed project. In addition, without the inclusion of the RV Park, there would be fewer vehicle trips and visitors to the project site under Alternative 2, resulting in 20 percent less VMT, 58 percent less natural gas consumption, 48 percent less electricity consumption, 54 percent less water consumption, and 22 percent less waste generation, compared to the proposed project. A reduction in the number of trips and visitors would decrease GHG emissions. Thus, long-term operational GHG emissions would be less under Alternative 2 compared to the proposed project. However, mitigation to align with the CAP would still be required to reduce the level of impact to a less than significant level. In summary, Alternative 2 would result in similar types of GHG emissions and climate change impacts that would result from the proposed project, and these impacts would be of a lesser (Impact 3.7-1) or a similar degree (Impact 3.7-2) under Alternative 2. Therefore, some GHG emissions and climate change impacts would be similar between Alternative 2 and the proposed project, while some would be less under Alternative 2 than under the proposed project (see Table 5-1).

HAZARDS AND HAZARDOUS MATERIALS

Under Alternative 2, only 15.33 acres, or 46 percent, of the overall 33.52-acre parcel would be disturbed during construction activities and developed with commercial land uses. Alternative 2 would be subject to the same rules and regulations for the transport, use, disposal, storage, and accidental release of hazardous materials that would apply to the proposed project. In addition, Alternative 2 would be subject to the same project review and approval requirements for emergency vehicle access. The proposed offsite water main line extension would still be needed to serve the development and would follow the same alignment as evaluated under the proposed project. As such, impacts related to the Victorville PBR N-1 FUDS hazardous waste and substances site would be the same as those described under Impact 3.8-3 in Section 3.8, "Hazards and Hazardous Materials." Furthermore, Alternative 2 would require the same mitigation that would be implemented under the proposed project. Overall, Alternative 2 would result in similar impacts related to hazards and hazardous materials. In summary, Alternative 2 would result in similar types of hazards and hazardous impacts that would result from the proposed project, and these impacts would be of a lesser (Impact 3.8-1) or a similar degree (Impact 3.8-2 through Impact 3.8-4) under Alternative 2. Therefore, some hazards and hazardous materials impacts would be similar between Alternative 2 and the proposed project, while some would be less under Alternative 2 than under the proposed project (see Table 5-1).

HYDROLOGY AND WATER QUALITY

Under Alternative 2, only 15.33 acres, or 46 percent, of the overall 33.52-acre parcel would be disturbed during construction activities and developed with commercial land uses. Alternative 2 would be subject to the same Construction General NPDES Permit conditions and Storm Water Pollution Prevention Plan (SWPPP) requirements that would apply to the proposed project. Alternative 2 would result in less potential for short-term water quality impacts than the proposed project because less ground disturbance would occur during construction. Once operational, the area east of the proposed Traveler's Way would not be developed with impervious surfaces and existing drainage patterns would be maintained. However, this area would not include features of the proposed project that are intended to improve drainage conditions, preserve groundwater recharge, and stabilize soils, such as bioretention basins, landscaping, and other stormwater drainage features. Overall, Alternative 2 would result in less short-term impacts to hydrology and water quality, but Alternative 2 would have fewer beneficial long-term impacts on hydrology and water quality compared to the proposed project. In summary, Alternative 2 would result in similar types of hydrology and water quality impacts that would result from the proposed project (Impact 3.9-1 through Impact 3.9-3), but these impacts would be of a lesser degree under Alternative 2. Therefore, hydrology and water quality impacts would be less under Alternative 2 than under the proposed project (see Table 5-1).

LAND USE AND PLANNING

Alternative 2 would be subject to the same applicable requirements of the Town's 2009 General Plan, policies, and ordinances. Like the proposed project, development of the travel center under Alternative 2 would be a permitted use of the C-R land use and zoning designation for the project site. In addition, Alternative 2 and would be consistent with the Town General Plan policies and development standards for commercial projects. In summary, Alternative 2 would result in a similar type of land use and planning impact that would result from the proposed project (Impact 3.10-1), and this impact would be of a similar degree under Alternative 2. Therefore, the land use and planning impact would be similar between Alternative 2 and the proposed project (see Table 5-1).

NOISE AND VIBRATION

Under Alternative 2, impacts to noise would be the same for the reasons described in Section 3.11, Noise and Vibration. Because the project site would have a smaller footprint and the project would only include implementation of the Travel Center, there would be a decreased period of time necessary to complete construction. Thus, on-site construction noise impacts would be less under Alternative 2 relative to the proposed project. However, the water main line extension within the north shoulders or pavement of Stoddard Wells Road and Johnson Road would still be completed under Alternative 2. Therefore, similar to the project, the off-site construction impacts would result in a significant and unavoidable construction noise impact. Without the inclusion of the RV Park, there would be less trips to the project site under Alternative 2. A reduction in the number of trips would decrease traffic noise exposure on existing sensitive receptors and intermittent single-event noise levels from trucks. In addition, there would be fewer visitors accessing the site with RVs because overnight accommodations for travelers would not be available. Thus, long-term operational non-transportation noise levels would be less under Alternative 2 compared to the project. In summary, Alternative 2 would result in similar types of noise and vibration impacts that would result from the proposed project, and these impacts would be of a lesser (Impact 3.11-1 through Impact 3.11-4) or a similar degree (Impact 3.11-1) under Alternative 2. Therefore, some noise and vibration impacts would be similar between Alternative 2 and the proposed project, while some would be less under Alternative 2 than under the proposed project (see Table 5-1). Alternative 2 would not avoid the significant and unavoidable impact that would result under the proposed project (Impact 3.11-1).

POPULATION AND HOUSING

Like the proposed project, Alternative 2 would include commercial services and amenities that are consistent with the Town's General Plan and are intended to serve thru-motorists on Interstate 15. Alternative 2 would not result in the

construction of new homes, but it would require the extension of water infrastructure to serve the proposed development. Alternative 2 would create fewer employment opportunities than the proposed project (approximately three fewer employees per day), which would be sourced from the local workforce. Like the proposed project, Alternative 2 is not expected to induce substantial unplanned population growth. In summary, Alternative 2 would result in a similar type of population and housing impact that would result from the proposed project (Impact 3.12-1), and this impact would be of a similar degree under Alternative 2. Therefore, the population and housing impact would be similar between Alternative 2 and the proposed project (see Table 5-1).

PUBLIC SERVICES AND RECREATION

Like the proposed project, Alternative 2 would not increase the residential population within the Town. The periodic increase in visitors to the project site would not constitute an increase in the service population and would not substantially affect existing service ratios or response times for the Town's police and fire departments. Development under Alternative 2 would adhere to all applicable standards and codes, and development impact fees would be required to offset impacts to public services as a condition of project approval. The construction of new or expanded fire service facilities within the Town are not anticipated. In summary, Alternative 2 would result in similar types of public services and recreation impacts that would result from the proposed project (Impact 3.13-1 through Impact 3.13-2), and these impacts would be of a similar degree under Alternative 2. Therefore, public services and recreation impacts would be similar between Alternative 2 and the proposed project (see Table 5-1).

TRANSPORTATION

Under Alternative 2, there would be fewer amenities for visitors and travelers compared the project as proposed. For instance, there would be no RV stalls and hookups for overnight parking, nor would the main building with the convenience store, laundry room, bathrooms, and showers be constructed. Therefore, Alternative 2 would result in a decreased number of trips to the site relative to the project. As a result, vehicle miles traveled generated by the project would be reduced. Additionally, the project as proposed does not include any bicycle improvements; however, the Town's General Plan and County's Non-Motorized Transportation Plan identify Class II bicycle lanes along Stoddard Wells Road. Thus, implementation of Mitigation Measure 3.11-1 would still be required under Alternative 2 to reduce the level of impact to a less than significant level. In summary, Alternative 2 would result in similar types of transportation and circulation impacts that would result from the proposed project, and these impacts would be of a lesser (Impact 3.14-2) or a similar degree (Impact 3.14-1, Impact 3.14-3, and Impact 3.14-4) under Alternative 2. Therefore, some transportation and circulation impacts would be similar between Alternative 2 and the proposed project, while some would be less under Alternative 2 than under the proposed project (see Table 5-1).

UTILITIES AND SERVICE SYSTEMS

Under Alternative 2, only 15.33 acres, or 46 percent, of the overall 33.52-acre parcel would be developed with commercial land uses. Like the proposed project, Alternative 2 would require the construction of new and extended utility infrastructure, the impacts of which are disclosed in the sections above. Similar to the project, a significant and unavoidable environmental effect would result from the noise generated during construction of the off-site water main line. Overall, Alternative 2 would have a reduced demand for utilities and service systems compared to the proposed project due to the smaller footprint and service population. As described under "Greenhouse Gas and Climate Change" above, Alternative 2 would have 58 percent less natural gas consumption, 48 percent less electricity consumption, 54 percent less water consumption, and 22 percent less waste generation compared to the proposed project. In summary, Alternative 2 would result in similar types of utilities and service systems impacts that would result from the proposed project, and these impacts would be of a lesser (Impact 3.15-2 and Impact 3.15-4) or a similar degree (Impact 33.15-1) under Alternative 2. Therefore, some utilities and service systems impacts would be similar between Alternative 2 and the proposed project, while some would be less under Alternative 2 than under the proposed project (see Table 5-1). Alternative 2 would not avoid the significant and unavoidable impact that would result under the proposed project (Impact 3.15-1).

5.3.3 Alternative 3: Reduced RV Park Alternative

Alternative 3 would include all of the elements evaluated under the proposed project and as described in Section 2, "Project Description;" however, the RV park described in Section 2.3.2, "RV Park," would provide 40 fewer RV parking spaces and would be developed on approximately 8.19 acres, which is half the footprint of the RV park under the proposed project. Overall, Alternative 3 would have a footprint of 23.52 acres, which is 70 percent of the 33.53-acres that would be developed under the proposed project. Similar to the proposed project, construction of the approximately 19,460-linear-foot offsite water main line would be needed under Alternative 3 to supply water to the travel center.

Under Alternative 3, approximately half of the RV park footprint that would be developed under the proposed project would remain vacant and undeveloped. However, as noted in Section 5.3.1, "Alternative 1: No Project-No Development Alternative" above, this land could be developed in accordance with the Regional Commercial land use designation in the reasonably foreseeable future.

Alternative 3 would meet most of the objectives of the proposed project because it would create a commercial development with facilities and amenities for travelers along a major transportation corridor. Alternative 3 would contribute to the Town's economic development and increase tax revenue and employment opportunities in the Town. However, Alternative 3 would provide fewer minimal stay, full-service RV accommodations for the public traveling to and from destinations along Interstate 15 and Stoddard Wells Road. Therefore, Alternative 3 would meet the project objectives to a lesser extent than the proposed project. Additionally, the economic merits and available services of Alternative 3 would be slightly reduced in comparison to the proposed project because the RV park would be reduced in size.

Alternative 3 would occupy a smaller area than the proposed project, but would be developed at the same project location. Alternative 3 would be similar to the proposed project with respect to site suitability, availability of infrastructure, and general plan consistency; therefore, the same factors that would affect the feasibility of the proposed project would apply to Alternative 3.

The following sections provide a discussion of the environmental effects of Alternative 3 relative to the proposed project for each environmental issue area. Table 5-1 in Section 5.4, "Environmentally Superior Alternative," summarizes the impacts identified for the proposed project and those identified for Alternative 3. Conclusions for each technical area are characterized as "impacts" that are greater, similar, or less, to describe conditions that are worse than, similar to, or better than those of the proposed project.

AESTHETICS

Under Alternative 3, the RV park would provide 40 fewer spaces than under the proposed project. As such, approximately 70 percent of the proposed project footprint would be disturbed during construction activities and developed with commercial land uses under Alternative 3. Aesthetics impacts from the travel center and RV park would be the similar to those under the proposed project, as described in Section 3.1, "Aesthetics." However, aesthetics impacts from Alternative 3 would be less when compared to the impacts from the proposed project. Specifically, views of Alternative 3 would be less prominent from scenic vistas because the footprint would be approximately 70 percent of the proposed project footprint. In addition, Alternative 3 would add fewer non-natural encroaching elements to existing viewpoints. In summary, Alternative 3 would result in similar types of aesthetics impacts that would result from the proposed project (Impact 3.1-1 through Impact 3.1-3), but these impacts would be of a lesser degree under Alternative 3. Therefore, aesthetics impacts would be less under Alternative 3 than under the proposed project (see Table 5-1).

AIR QUALITY

Under Alternative 3, impacts to air quality would be less than significant for the same reasons as described in Section 3.2, "Air Quality." Because the project site would have a smaller footprint and the project would only include

implementation of the Travel Center and half the footprint and parking spaces of the RV park, there would be less equipment and activity to complete construction. Thus, construction-related emissions would be less under Alternative 3 relative to the proposed project. In addition, inclusion of only 48 RV Park spaces (40 fewer than the proposed project), there would be fewer overall vehicle trips, resulting 10 percent less VMT than assumed for the proposed project. Additionally, energy consumption from natural gas would be reduced up to 29 percent under Alternative 3. A reduction in the number of trips, VMT, and natural gas consumed would decrease emissions on existing sensitive receptors. Distances to existing receptors would be similar but emissions would be lower. Thus, long-term operational air quality emissions would be less under Alternative 3 compared to the proposed project. In summary, Alternative 3 would result in similar types of air quality impacts that would result from the proposed project (Impact 3.2-1 through Impact 3.2-5), but these impacts would be of a lesser degree under Alternative 3. Therefore, air quality impacts would be less under Alternative 3 than under the proposed project (see Table 5-1).

ARCHAEOLOGICAL, HISTORICAL, AND TRIBAL CULTURAL RESOURCES

Like Alternative 2, Alternative 3 would result in less ground disturbance within the travel center construction site; however, the water line down Johnson Road would still be installed. Therefore, the potential for Alternative 3 to impact archaeological resources and Tribal cultural resources remains the same as it would under the proposed project as described in Section 3.3, "Archaeological, Historical, and Tribal Cultural Resources." Specifically, there would be no potential to impact historical resources; however, the potential to impact archaeological resources, particularly prehistoric archaeological resources which may also be considered Tribal Cultural Resources would remain the same as under the proposed project. Thus, implementation of Mitigation Measures 3.3-1a, 3.3-1b, and 3.3-2 would still be required under Alternative 3 to reduce the level of impact to a less than significant level. In summary, Alternative 3 would result in similar types of archaeological, historical, and tribal cultural resources impacts that would result from the proposed project (Impact 3.3-1 through Impact 3.3-3), and these impacts would be of a similar degree under Alternative 3. Therefore, archaeological, historical, and tribal cultural resources impacts would be similar between Alternative 3 and the proposed project (see Table 5-1).

BIOLOGICAL RESOURCES

Under Alternative 3, approximately 23.52 acres, or 70 percent, of the overall 33.52-acre parcel would be developed. Compared to the proposed project, a smaller area would be used during construction activities and developed with commercial land uses. Biological resource impacts from the travel center and RV park would be the same to those under the proposed project, as described in Section 3.4, "Biological Resources." However, as noted in Section 5.3.1, "Alternative 1: No Project-No Development Alternative" above, this land could be developed in accordance with the Regional Commercial land use designation in the reasonably foreseeable future and since the area is already disturbed the impacts would be similar as the proposed project. In summary, Alternative 3 would result in similar types of biological resources impacts that would result from the proposed project (Impact 3.4-1 through Impact 3.4-6), and these impacts would be of a similar degree under Alternative 3. Therefore, biological resources impacts would be similar between Alternative 3 and the proposed project (see Table 5-1).

ENERGY

Under Alternative 3, the RV Park would provide 40 fewer parking spaces and contain the same type of uses as the project as proposed. Energy consumption associated with construction and operation of the Travel Center would be lower than the project because there would be fewer visitors accessing the RV Park portion of the project. Impacts related to wasteful energy consumption would be less than significant, but impacts related to conflicting with or obstructing renewable energy or energy efficiency plans would be significant, similar to the proposed project. Because the project site would occupy 70 percent of the project site and the project would only include implementation of the Travel Center and half of the RV Park, there would be approximately 30 percent less equipment and activity to complete construction. In addition, without inclusion of half of the RV Park, there would be fewer vehicle trips and visitors to the project site under Alternative 3, resulting in 10 percent less VMT, 29 percent less

natural gas consumption, and 24 percent less electricity consumption compared to the proposed project. A reduction in the number of trips and visitors would decrease transportation- and building-related energy consumption. Thus, long-term operational energy consumption would be less under Alternative 3 compared to the proposed project. However, mitigation to align with the renewable energy or energy efficiency in the CAP would still be required to reduce the level of impact to a less than significant level. In summary, Alternative 3 would result in similar types of energy impacts that would result from the proposed project, and these impacts would be of a lesser (Impact 3.5-1) or a similar degree (Impact 3.5-2) under Alternative 3. Therefore, some energy impacts would be similar between Alternative 3 and the proposed project, while some would be less under Alternative 3 than under the proposed project (see Table 5-1).

GEOLOGY AND SOILS

Under Alternative 3, approximately 23.52 acres, or 70 percent, of the overall 33.52-acre parcel would be disturbed during construction activities and developed with commercial land uses. Alternative 3 would be subject to the same Construction General NPDES Permit conditions that would apply to the proposed project. However, Alternative 3 would result in less soil erosion and loss of topsoil than the proposed project because less ground disturbance would occur during construction. Once operational, a small area east of the proposed Traveler's Way would remain vacant with exposed soils that are susceptible to erosion. As such, Alternative 3 would result in fewer beneficial impacts related to erosion than the proposed project because no landscaping, hardscaping, and stormwater drainage features would be implemented to stabilize soils in that portion of the project site. Overall, Alternative 3 would result in less short-term impacts to geology and soils, but Alternative 3 would have fewer beneficial long-term impacts on erosion and loss of topsoil compared to the proposed project. In summary, Alternative 3 would result in a similar type of energy impact that would result from the proposed project (Impact 3.6-1), and this impact would be of a lesser degree under Alternative 3. Therefore, the energy impact would be less under Alternative 3 than under the proposed project (see Table 5-1).

GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

Under Alternative 3, impacts related to GHG emissions would be less than significant, but inconsistency with GHG emission reductions plans would be significant for the same reasons as described in Section 3.7, "Greenhouse Gas Emissions and Climate Change." Because the project site would occupy 70 percent of the project site and the project would only include implementation of the Travel Center and half of the RV Park, there would be approximately 30 percent less equipment and activity to complete construction. Thus, construction GHG impacts would be less under Alternative 3 relative to the proposed project. In addition, with inclusion of 40 fewer RV Park spaces, there would be fewer vehicle trips and visitors to the project site under Alternative 3, resulting 10 percent less VMT, 29 percent less natural gas consumption, 24 percent less electricity consumption, 27 percent less water consumption, and 11 percent less waste generation, compared to the proposed project. A reduction in the number of trips and visitors would decrease GHG emissions. Thus, long-term operational GHG emissions would be less under Alternative 3 compared to the proposed project. However, mitigation to align with the CAP would still be required to reduce the level of impact to a less than significant level. In summary, Alternative 3 would result in similar types of GHG emissions and climate change impacts that would result from the proposed project, and these impacts would be of a lesser (Impact 3.7-1) or a similar degree (Impact 3.7-2) under Alternative 3. Therefore, some GHG emissions and climate change impacts would be similar between Alternative 3 and the proposed project, while some would be less under Alternative 3 than under the proposed project (see Table 5-1).

HAZARDS AND HAZARDOUS MATERIALS

Under Alternative 3, approximately 23.52 acres, or 70 percent, of the overall 33.52-acre parcel would be disturbed during construction activities and developed with commercial land uses. Compared to the proposed project, a smaller area would be subject to the same rules and regulations for the transport, use, disposal, storage, and accidental release of hazardous materials that would apply to the proposed project. In addition, Alternative 3 would

be subject to the same project review and approval requirements for emergency vehicle access. The proposed offsite water main line extension would still be needed to serve the development and would follow the same alignment as evaluated under the proposed project. As such, impacts related to the Victorville PBR N-1 FUDS hazardous waste and substances site would be the same as those described under Impact 3.8-3 in Section 3.8, "Hazards and Hazardous Materials." Furthermore, Alternative 3 would require the same mitigation that would be implemented under the proposed project. Overall, Alternative 3 would result in similar impacts related to hazards and hazardous materials compared to the proposed project. In summary, Alternative 3 would result in similar types of hazards and hazardous impacts that would result from the proposed project, and these impacts would be of a lesser (Impact 3.8-1) or a similar degree (Impact 3.8-2 through Impact 3.8-4) under Alternative 3. Therefore, some hazards and hazardous materials impacts would be similar between Alternative 3 and the proposed project, while some would be less under Alternative 3 than under the proposed project (see Table 5-1).

HYDROLOGY AND WATER QUALITY

Under Alternative 3, approximately 23.52 acres, or 70 percent, of the overall 33.52-acre parcel would be disturbed during construction activities and developed with commercial land uses. Compared to the proposed project, a smaller area would be disturbed during construction activities and developed with commercial land uses. Alternative 3 would be subject to the same Construction General NPDES Permit conditions and SWPPP requirements that would apply to the proposed project. Alternative 3 would result in less potential for short-term water quality impacts than the proposed project because less ground disturbance would occur during construction. Once operational, the area east of the proposed Traveler's Way would have a smaller impervious surface area and some existing drainage patterns would be maintained. This area would include features similar to the proposed project that are intended to improve drainage conditions, preserve groundwater recharge, and stabilize soils, such as bioretention basins, landscaping, and other stormwater drainage features. Overall, Alternative 3 would result in less short-term impacts to hydrology and water quality, and Alternative 3 would have similar beneficial long-term impacts on hydrology and water quality compared to the proposed project. In summary, Alternative 3 would result in similar types of hydrology and water quality impacts that would result from the proposed project (Impact 3.9-1 through Impact 3.9-3), but these impacts would be of a lesser degree under Alternative 3. Therefore, hydrology and water quality impacts would be less under Alternative 3 than under the proposed project (see Table 5-1).

LAND USE AND PLANNING

Alternative 3 would be subject to the same applicable requirements of the Town's 2009 General Plan, policies, and ordinances. Like the proposed project, development of the travel center and reduced size RV park under Alternative 3 would be a permitted use of the C-R land use and zoning designation for the project site. In addition, Alternative 3 and would be consistent with the Town General Plan policies and development standards for commercial projects. In summary, Alternative 3 would result in a similar type of land use and planning impact that would result from the proposed project (Impact 3.10-1), and this impact would be of a similar degree under Alternative 3. Therefore, the land use and planning impact would be similar between Alternative 3 and the proposed project (see Table 5-1).

NOISE AND VIBRATION

Under Alternative 3, the RV Park would provide 40 fewer parking spaces and contain the same type of uses as the project as proposed. Distances to existing receptors would be the same for this alternative as the proposed project. The nearest sensitive receptor is located approximately 2,800 feet from edge of the project site. However, the water main line extension within the north shoulders or pavement of Stoddard Wells Road and Johnson Road would still be completed under Alternative 3. Therefore, similar to the project, the off-site construction impacts would result in a significant and unavoidable construction noise impact. Noise levels associated with construction and operation of the Travel Center would be the same under the project and Alternative 3; however, fewer visitors would be expected to access the RV Park portion of the project site because of the reduced capacity proposed under Alternative 3. Thus, Alternative 3 could result in some reduction of noise levels associated with non-transportation operational noise and

traffic noise in comparison to the full build out of the RV Park. In summary, Alternative 3 would result in similar types of noise and vibration impacts that would result from the proposed project, and these impacts would be of a lesser (Impact 3.11-1 through Impact 3.11-4) or a similar degree (Impact 3.11-1) under Alternative 3. Therefore, some noise and vibration impacts would be similar between Alternative 3 and the proposed project, while some would be less under Alternative 3 than under the proposed project (see Table 5-1). Alternative 3 would not avoid the significant and unavoidable impact that would result under the proposed project (Impact 3.11-1).

POPULATION AND HOUSING

Like the proposed project, Alternative 3 would include commercial services and amenities that are consistent with the Town's General Plan and are intended to serve thru-motorists on Interstate 15. Alternative 3 would not result in the construction of new homes, but it would require the extension of water infrastructure to serve the proposed development. Alternative 3 would create fewer employment opportunities than the proposed project (approximately one to two fewer employees per day), which would be sourced from the local workforce. Like the proposed project, Alternative 3 is not expected to induce substantial unplanned population growth. In summary, Alternative 3 would result in a similar type of population and housing impact that would result from the proposed project (Impact 3.12-1), and this impact would be of a similar degree under Alternative 3. Therefore, the population and housing impact would be similar between Alternative 3 and the proposed project (see Table 5-1).

PUBLIC SERVICES AND RECREATION

Like the proposed project, Alternative 3 would not increase the residential population within the Town. The periodic increase in visitors to the project site would not constitute an increase in the service population and would not substantially affect existing service ratios or response times for the Town's police and fire departments. Development under Alternative 3 would adhere to all applicable standards and codes, and development impact fees would be required to offset impacts to public services as a condition of project approval. The construction of new or expanded fire service facilities within the Town are not anticipated. In summary, Alternative 3 would result in similar types of public services and recreation impacts that would result from the proposed project (Impact 3.13-1 through Impact 3.13-2), and these impacts would be of a similar degree under Alternative 3. Therefore, public services and recreation impacts would be similar between Alternative 3 and the proposed project (see Table 5-1).

TRANSPORTATION

Under Alternative 3, the RV Park would provide 40 fewer parking spaces and contain the same type of uses including no changes to the Travel Center. Because of the reduction of RV parking under Alternative 3, it can be assumed that there could be a reduction of RV trips associated with Alternative 3 as compared to the project as proposed. Impacts to transportation hazards and emergency access would be the same under the proposed project and Alternative 3 because the general layout and uses would remain the same. Additionally, the project as proposed does not include any bicycle improvements; however, the Town's General Plan and County's Non-Motorized Transportation Plan identify Class II bicycle lanes along Stoddard Wells Road. Thus, implementation of Mitigation Measure 3.11-1 would still be required under Alternative 3 to reduce the level of impact to a less than significant level. In summary, Alternative 3 would result in similar types of transportation and circulation impacts that would result from the proposed project, and these impacts would be of a lesser (Impact 3.14-2) or a similar degree (Impact 3.14-1, Impact 3.14-3, and Impact 3.14-4) under Alternative 3. Therefore, some transportation and circulation impacts would be similar between Alternative 3 and the proposed project, while some would be less under Alternative 3 than under the proposed project (see Table 5-1).

UTILITIES AND SERVICE SYSTEMS

Under Alternative 3, approximately 23.52 acres, or 70 percent, of the overall 33.53-acre parcel would be developed with commercial land uses. Like the proposed project, Alternative 3 would require the construction of new and

extended utility infrastructure, the impacts of which are disclosed in the sections above. Similar to the project, a significant and unavoidable environmental effect would result from the noise generated during construction of the off-site water main line. Overall, Alternative 3 would have a reduced demand for utilities and service systems compared to the proposed project due to the smaller footprint and service population. As described under "Greenhouse Gas and Climate Change" above, Alternative 3 would have 29 percent less natural gas consumption, 24 percent less electricity consumption, 27 percent less water consumption, and 11 percent less waste generation, compared to the proposed project. In summary, Alternative 3 would result in similar types of utilities and service systems impacts that would result from the proposed project, and these impacts would be of a lesser (Impact 3.15-2 and Impact 3.15-4) or a similar degree (Impact 33.15-1) under Alternative 3. Therefore, some utilities and service systems impacts would be similar between Alternative 3 and the proposed project, while some would be less under Alternative 3 than under the proposed project (see Table 5-1). Alternative 3 would not avoid the significant and unavoidable impact that would result under the proposed project (Impact 3.15-1).

5.4 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Because the No Project–No Development Alternative (described above in Section 5.4.1) would avoid all adverse impacts resulting from construction and operation of the proposed project analyzed in Chapter 3, it is the environmentally superior alternative. However, the No Project–No Development Alternative would not meet the project objectives as presented above in Section 5.2.

When the environmentally superior alternative is the No Project Alternative, the State CEQA Guidelines (Section 15126[d][2]) requires selection of an environmentally superior alternative from among the other action alternatives evaluated. As illustrated in Table 5-1, below, the No RV Park Alternative would be environmentally superior action alternative because although the environmental impacts would be similar to the proposed project, it would require less ground disturbance with potential to affect sensitive resources (e.g., biological, cultural, and water resources) or exacerbate hazards during construction, when compared to the other action alternatives. During operations, the no RV Park Alternative would have a smaller building footprint and would generate fewer vehicle trips, which would contribute to less traffic, noise, air pollutant and greenhouse gas emissions, energy consumption, and demand on public services and utilities than the other action alternatives.

Table 5-1 Summary of Environmental Effects of the Alternatives Relative to the Proposed Project

Impacts	Project	Alternative 1: No Project – No Development Alternative	Alternative 2: No RV Park Alternative	Alternative 3: Reduced RV Park Alternative
Aesthetics				
Impact 3.1-1: Have a substantial adverse effect on a scenic vista	Less than Significant	Less	Less	Less
Impact 3.1-2: Substantially degrade the existing visual character or quality of the site on its surroundings	Less than Significant	Less	Less	Less
Impact 3.1-3: Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area	Less than Significant	Less	Less	Less
Air Quality				
Impact 3.2-1: Conflict with or Obstruct Implementation of the Applicable Air Quality Plan	Less than Significant	Less	Less	Less
Impact 3.2-2: Construction Emissions of Criteria Air Pollutants and Ozone Precursors	Less than Significant	Less	Less	Less
3.2-3: Operational Emissions of Criteria Air Pollutants and Ozone Precursors	Less than Significant	Less	Less	Less
3.2-4: Expose Sensitive Receptors to Substantial Pollutant Concentrations	Less than Significant	Less	Less	Less

Impacts	Project	Alternative 1: No Project – No Development Alternative	Alternative 2: No RV Park Alternative	Alternative 3: Reduced RV Park Alternative
Impact 3.2-5: Exposure of sensitive receptors to other emissions (including odors)	Less than Significant	Less	Less	Less
Archaeological, Historical, and Tribal Cultural Resources				
Impact 3.3-1: Cause a Substantial Adverse Change in the Significance of Unique Archaeological Resources	Less than Significant with Mitigation	Less	Similar	Similar
Impact 3.3-2: Cause a Substantial Adverse Change in the Significance of a Tribal Cultural Resource	Less than Significant with Mitigation	Less	Similar	Similar
Impact 3.3-3: Disturb Human Remains	Less than Significant	Less	Similar	Similar
Biological Resources				
Impact 3.4-1: Disturbance and Loss of State or Federally Protected Wetlands and Waters	Less than Significant with Mitigation	Less	Less	Similar
Impact 3.4-2: Have a Substantial Adverse Effect, Either Directly or Through Habitat Modifications, on Special-Status Plants	Less than Significant with Mitigation	Less	Less	Similar
Impact 3.4-3: Have a Substantial Adverse Effect, Either Directly or Through Habitat Modifications, on Special-Status Reptiles	Less than Significant with Mitigation	Less	Less	Similar
Impact 3.4-4: Have a Substantial Adverse Effect, Either Directly or Through Habitat Modifications, on Special-Status Birds	Less than Significant with Mitigation	Less	Less	Similar
Impact 3.4-5: Interfere with Wildlife Movement or Migration or Impede the Use of Nursery Sites	Less than Significant	Less	Similar	Similar
Impact 3.4-6: Substantially Reduce the Habitat of a Fish or Wildlife Species, cause a Fish or Wildlife Population to Drop Below Self-Sustaining Levels, Threaten to Eliminate a Plant or Animal Community, Substantially Reduce the Number or Restrict the Range of a Rare or Endangered Plant or Animal	Less than Significant	Less	Similar	Similar
Energy				
Impact 3.5-1: Wasteful, Inefficient, or Unnecessary Consumption of Energy, During Project Construction or Operation	Less than Significant	Less	Less	Less
Impact 3.5-2: Conflict with or obstruct renewable energy or energy efficiency plans	Less than Significant with Mitigation	Less	Similar	Similar
Geology and Soils				
Impact 3.6-1: Soil erosion and loss of topsoil	Less than Significant	Less	Less	Less
Greenhouse Gas Emissions and Climate Change				
Impact 3.7-1: Generate Greenhouse Gas Emissions, Either Directly or Indirectly, That May Have a Significant Impact on the Environment	Less than Significant	Less	Less	Less

Impacts	Project	Alternative 1: No Project – No Development Alternative	Alternative 2: No RV Park Alternative	Alternative 3: Reduced RV Park Alternative
Impact 3.7-2: Conflict with an Applicable Plan, Policy or Regulation Adopted for the Purpose of Reducing the Emissions of Greenhouse Gases	Less than Significant with Mitigation	Less	Similar	Similar
Hazards and Hazardous Materials				
Impact 3.8-1: Routine transport, use, or disposal of hazardous materials	Less than Significant	Less	Less	Less
Impact 3.8-2: Accidental release of hazardous materials	Less than Significant with Mitigation	Less	Similar	Similar
Impact 3.8-3: List of Hazardous Materials Sites	Less than Significant with Mitigation	Less	Similar	Similar
Impact 3.8-4: Emergency response or evacuation plans	Less than Significant	Less	Similar	Similar
Hydrology and Water Quality				
Impact 3.9-1: Violation of Water Quality Standards or Waste Discharge Requirements or Degradation of Water Quality During Construction	Less than Significant	Less	Less	Less
Impact 3.9-2: Violation of Water Quality Standards or Waste Discharge Requirements or Degradation of Water Quality During Operation	Less than Significant	Less	Less	Less
Impact 3.9-3: Decrease Groundwater Supplies or Interfere with Groundwater Recharge	Less than Significant	Less	Less	Less
Impact 3.9-4: Alter Existing Drainage Patterns	Less than Significant	Less	Less	Less
Impact 3.9-5: Conflict with or Obstruct Implementation of Water Quality Control or Sustainable Groundwater Management Plans	Less than Significant	Less	Less	Less
Land Use and Planning				
Impact 3.10-1: Conflict with applicable land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect	Less than Significant	Less	Similar	Similar
Noise and Vibration				
Impact 3.11-1: Short-term construction-generated noise levels	Significant and Unavoidable	Less	Similar	Similar
Impact 3.11-2: Expose sensitive receptors to substantial traffic-noise increases	Less than Significant	Less	Less	Less
Impact 3.11-3: Intermittent single-event noise levels from trucks	Less than Significant	Less	Less	Less
Impact 3.11-4: Long-term operational stationary and on-site noise	Less than Significant	Less	Less	Less
Population and Housing				
Impact 3.12-1: Induce substantial unplanned population growth	Less than Significant	Less	Similar	Similar
Public Services and Recreation				
Impact 3.13-1: Result in substantial adverse impacts from the expansion or construction of new fire protection facilities	Less than Significant	Less	Similar	Similar

Impacts	Project	Alternative 1: No Project – No Development Alternative	Alternative 2: No RV Park Alternative	Alternative 3: Reduced RV Park Alternative
Impact 3.13-2: Result in substantial adverse impacts from the expansion or construction of new police protection facilities	Less than Significant	Less	Similar	Similar
Transportation				
Impact 3.14-1: Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities	Less than Significant with Mitigation	Less	Similar	Similar
Impact 3.14-2: Conflict or be Inconsistent with CEQA Guidelines Section 15064.3, Subdivision (b) Regarding Vehicle Miles Traveled	Less than Significant	Less	Less	Less
Impact 3.14-3: Substantially Increase Hazards due to a Design Feature or Incompatible Uses	Less than Significant	Less	Similar	Similar
Impact 3.14-4: Result in inadequate emergency access	Less than Significant	Less	Similar	Similar
Utilities and Service Systems				
Impact 3.15-1: Relocation or Construction of New or Expanded Facilities	Significant and Unavoidable	Less	Similar	Similar
Impact 3.15-2: Sufficient Water Supplies	Less than Significant	Less	Less	Less
Impact 3.15-3: Adequate Capacity of the Wastewater Treatment Provider	Less than Significant	Less	Less	Less
Impact 3.15-4: Impacts on Solid Waste	Less than Significant	Less	Less	Less

6 OTHER CEQA SECTIONS

6.1 GROWTH INDUCEMENT

California Environmental Quality Act (CEQA) Section 21100(b)(5) specifies that the growth-inducing impacts of a project must be addressed in an environmental impact report (EIR). Section 15126.2(d) of the State CEQA Guidelines provides the following guidance for assessing growth-inducing impacts of a project:

> Discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth (a major expansion of a wastewater treatment plant might, for example, allow for more construction in service areas). Increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. Also, discuss the characteristics of some projects which may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

A project can induce growth directly, indirectly, or both. Direct growth inducement would result if a project involved construction of new housing. Indirect growth inducement would result, for instance, if implementing a project resulted in any of the following:

- substantial new permanent employment opportunities (e.g., commercial, industrial, or governmental enterprises);
- substantial short-term employment opportunities (e.g., construction employment) that indirectly stimulates the need for additional housing and services to support the new temporary employment demand; and/or
- removal of an obstacle to additional growth and development, such as removing a constraint on a required public utility or service (e.g., construction of a major sewer line with excess capacity through an undeveloped area).

Growth inducement itself is not an environmental effect but may foreseeably lead to environmental effects. If substantial growth inducement occurs, it can result in secondary environmental effects, such as increased demand for housing, demand for other community and public services and infrastructure capacity, increased traffic and noise, degradation of air or water quality, degradation or loss of plant or animal habitats, conversion of agricultural and open-space land to urban uses, and other effects.

6.1.1 Growth-Inducing Impacts of the Project

The project includes construction of a full-service travel center and recreational vehicle (RV) park on vacant land within a largely undeveloped area. As described in Section 3.10, "Land Use and Planning," the project would be a permitted land use within the existing Regional Commercial (C-R) land use and zoning designation for the project site. As such, the project would be consistent with projected build out conditions under the Town's General Plan.

The project does not include the construction of new homes and would not increase the residential population in the Town of Apple Valley. Although an RV park is proposed, occupancy would be limited to short-term stays and would not constitute permanent housing. The project would include various services and amenities, such as a convenience store, fast-food restaurant, truck maintenance building, and recreational facilities; however, these services and amenities are intended to serve thru-motorists on Interstate 15.

The project would generate temporary construction jobs, which would commence as early as October 2022 and last for a duration of approximately nine months. Once constructed, the project would generate up to 39 long-term employment opportunities associated with the proposed fuel station, convenience store, fast-food restaurant, and RV park facilities. It is expected that these temporary and long-term jobs would be sourced from the local workforce and

would not require people to relocate from surrounding communities. Therefore, the project is not expected to contribute to direct unplanned growth in the Town of Apple Valley.

The project would not include the development of infrastructure that would attract additional development in the surrounding area. The project would require an approximate 3.5-mile extension of a water main line from the Walmart Distribution Center Johnson Road, approximately 4,100 feet east of Dale Evans Parkway. However, the proposed water main line would connect with existing utility infrastructure and is intended to serve the proposed travel center. Furthermore, the project would not result in an expansion of regional facilities (e.g., water treatment plants, wastewater treatment plants, electrical substations). Any new development in the project vicinity would need to be conducted in accordance with Town General Plan policies and land use and zoning designations. Therefore, the project is not expected to contribute to indirect unplanned growth in the Town of Apple Valley.

6.2 SIGNIFICANT AND UNAVOIDABLE ADVERSE IMPACTS

The State CEQA Guidelines Section 15126.2(b) requires EIRs to include a discussion of the significant environmental effects that cannot be avoided if the proposed project is implemented. As documented throughout Chapter 3 (project level impacts) and Chapter 4, "Cumulative Impacts," of this Draft EIR, most of the impacts associated with the proposed project would be less than significant or reduced to a less-than-significant level after implementation of the recommended mitigation measures. The following impact is considered significant and unavoidable; that is, no feasible mitigation is available to reduce the project's impact to a less-than-significant level:

- Impact 3.11-1: Short-term construction-generated noise levels
- Impact 3.15-1: Relocation or Construction of New or Expanded Facilities

Additionally, the project could result in a cumulatively considerable contribution to a significant cumulative construction noise impact.

6.3 SIGNIFICANT AND IRREVERSIBLE ENVIRONMENTAL CHANGES

The State CEQA Guidelines requires a discussion of any significant irreversible environmental changes that would be caused by the project. Specifically, the State CEQA Guidelines section 15126.2(c) states:

> Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible, since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generation to similar uses. Also, irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.

The project would result in the irreversible and irretrievable commitment of energy and material resources during construction and operation, including the following:

- construction materials, including such resources as soil, rocks, wood, concrete, glass, and steel;
- water supply for project construction and operation; and
- energy expended in the form of electricity, diesel fuel, gasoline, and oil for equipment and transportation vehicles that would be needed for project construction and operation.

These nonrenewable resources would represent only a modest portion of the resources available in the region and would not affect the availability of these resources for other needs within the region.

Demolition and construction activities would not result in inefficient use of energy or natural resources. During site preparation activities, materials such as concrete would be separated, sorted, and recycled. During construction, contractors would use best available engineering techniques, construction and design practices, and equipment operating procedures.

Resources that would be permanently and continually consumed by project implementation include water, electricity, and fossil fuels. However, the project would meet the Title 24 water and building efficiency standards in effect at the time of construction. See Section 3.5, "Energy," and Section 3.7, "Greenhouse Gas Emissions and Climate Change," for additional information. Landscaping would include low water use trees and shrubs, consistent with the Water Conservation/Landscaping Regulations included in Chapter 9.75 of the Town of Apple Valley Code of Ordinances. Additionally, sustainability measures would be implemented to improve energy efficiency and increase the use of renewable energy (Mitigation Measures 3.7-1, 3.7-2, and 3.14-1). Therefore, the amount and rate of consumption of these resources would not result in significant environmental impacts related to the unnecessary, inefficient, or wasteful use of resources. Refer to Sections 3.5, "Energy," 3.7, "Greenhouse Gas Emissions," 3.14, "Transportation and Circulation," and 3.15, "Utilities and Service Systems," for additional information.

With respect to operational activities, compliance with all applicable building codes and other regulations, would ensure that natural resources are conserved or recycled to the maximum extent feasible. It is also possible that new technologies or systems would emerge, or would become more cost-effective or user-friendly, that would further reduce the site's reliance upon nonrenewable natural resources. Nonetheless, even with implementation of conservation measures, consumption of natural resources would increase with implementation of the project because the site is currently vacant no demand for utilities.

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Chapter 5 Alternatives

No references were used in this chapter.

Chapter 6 Other CEQA Sections

No references were used in this chapter.

Appendix A

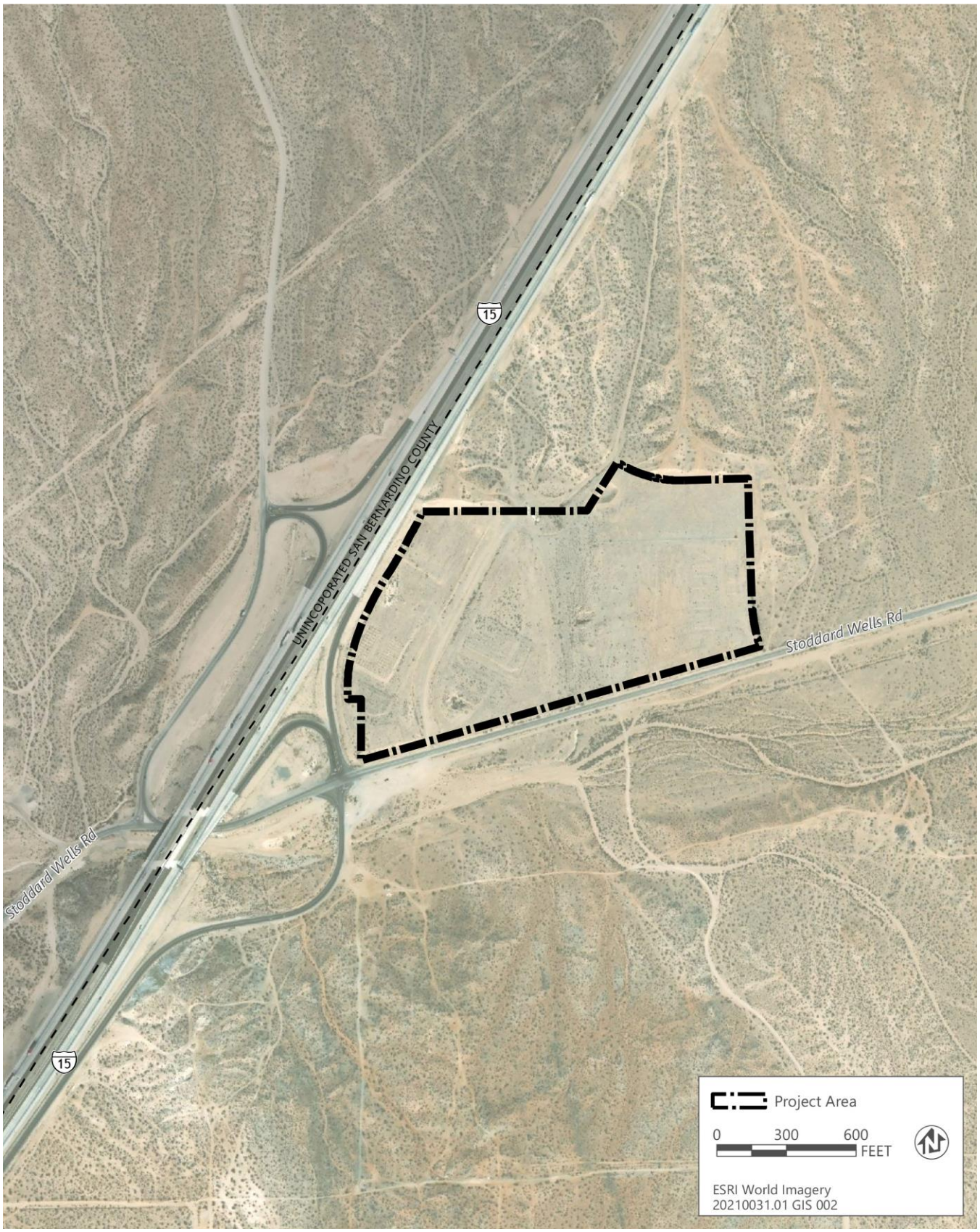
NOP and Scoping Comments

Town of Apple Valley California

NOTICE OF PREPARATION OF AN ENVIRONMENTAL IMPACT REPORT FOR THE PROPOSED APPLE VALLEY I-15 TRAVEL CENTER

GENERAL INFORMATION

To:	Interested Agencies, Organizations, and Parties
Project Title:	Apple Valley I-15 Travel Center
Review Period:	December 3, 2021 to January 6, 2022
Lead Agency:	Town of Apple Valley 14955 Dale Evans Parkway Apple Valley, CA 92307 Contact: Daniel Alcayaga, Planning Manager (760) 240-7000 ext. 7205
Purpose of Notice:	In accordance with provisions of the California Environmental Quality Act (CEQA), the Town of Apple Valley is distributing a Notice of Preparation (NOP) to solicit comments on the scope of the Environmental Impact Report (EIR) to address the development of a proposed Apple Valley I-15 Travel Center (project). This NOP provides a summary of the proposed project, general background information on the scoping process, the environmental issues to be addressed in the EIR, and the anticipated uses of the EIR. This NOP is intended to satisfy the requirements of CEQA (Public Resources Code, Division 13, Section 21000–21177), and the CEQA Guidelines (California Code of Regulations, Title 14, Section 15000–15387).
Project Location:	The project site consists of a 33.52-acre parcel (Assessor's Parcel Number 0472-222-10-0000), located northeast of the interchange between Interstate 15 (I-15) and Stoddard Wells Road (Figure 1). The site is bounded to the north and east by vacant land, to the west by I-15, and to the south by Stoddard Wells Road.



Sources: Data downloaded from ESRI in 2021 and adapted by Ascent Environmental in 2021

Figure 1 Project Vicinity

Project Description

The applicant is proposing to construct and operate a full-service travel center and recreational vehicle (RV) park (project) on approximately 33.52 acres of vacant land in the northwest portion of the Town of Apple Valley (project site). On the western portion of the project site, the travel center would provide professional truck drivers and motorists with 24-hour access to purchase gasoline, diesel fuel, propane, electronics, snacks, travel items, and fast-food restaurant offerings. A truck maintenance building, dog park, RV dump station, stormwater basins, truck and automobile parking areas, and landscaping/lighting are also proposed. The eastern portion of the project site would include an RV park, which would consist of a convenience store, automobile and overnight RV parking with utility hookups, recreational amenities, and landscaping/lighting. Project visitors/customers would include "over-the-road" trucks (i.e., professional long-haul drivers who are on the road for consecutive days or weeks at a time), local residents, and traveling motorists.

Primary site access would be provided via a proposed roadway (Traveler's Way) connecting to Stoddard Wells Road. Access to the travel center facility would be using three ingress/egress driveways along the proposed Traveler's Way. The southern driveway (40 feet wide) along Traveler's Way would be for the exclusive use of automobiles while the two northern driveways (60 feet wide) would be for trucks only. Access to the RV park would be provided via one ingress/egress drive (40 feet wide) along the proposed Traveler's Way.

The travel center on the western portion of the project site would include the following characteristics and design features:

- an 8-position passenger vehicle fueling station;
- a 10-position truck fueling station;
- an electric vehicle charging station;
- a 9,659 square-foot (SF) convenience store;
- a 3,043 fast food restaurant;
- a 13,786 SF truck maintenance building (4-bay);
- a dog park;
- a truck scale;
- an RV dump station;
- one 30,000-gallon below ground gasoline storage tank, including fuel delivery parking;
- eight 12,000-gallon above-ground and below ground diesel storage tanks, including fuel delivery parking;
- one two-compartment combined high octane gasoline/diesel tank;
- one 20,000-gallon diesel exhaust fluid storage tank;
- truck (102 spaces) and automobile (81 spaces) parking – 183 total parking spaces;
- onsite lighting, consisting of high-mast LED fixtures and LED canopy lighting;
- high-rise freeway oriented signage, street signage, and other directional signage;
- landscaping, hardscaping, pavement, and fencing;
- a 200,000-gallon fire water supply storage tank; and
- five stormwater quality basins/features.

The RV park on the eastern portion of the project site would include the following characteristics and design features:

- a 3,250 SF main building with a convenience store, laundry room, bathrooms, and showers;
- automobile (8 spaces) and overnight RV (80 spaces) parking with utility hookups – 88 total parking spaces;
- recreational amenities, including pergolas/gazebos, cornhole courts, pickleball courts, splash pad, horseshoe courts, shuffleboard courts, basketball court, dog park, picnic tables, fire pits, and walking paths;
- a 1,000-gallon propane tank;
- an 80,000 SF bioretention area;
- onsite lighting, consisting of high-mast LED fixtures and LED canopy lighting; and
- landscaping, hardscaping, pavement, and fencing.

Table 1 provides a summary of the proposed land uses.

Table 1 Summary of Proposed Land Uses

	Floor Area/Square Feet	Parking		
		Auto	Truck	Overnight RV
Travel Center				
Convenience Store	9,659	42	58	--
Fast-Food Restaurant (w/drive-through)	3,043	39	32	--
Truck Maintenance/Tire Building	13,786	--	12	--
Pavement/Parking	350,000	--	--	--
RV Park				
Main Building	3,250	8	--	--
Pavement/Parking	786,000	--	--	80
Total	1,165,738	89	102	80

Source: Information provided by project applicant and compiled by Ascent Environmental in 2021

The proposed travel center and RV park would be open 24 hours per day, 7 days per week. The travel center is designed to accommodate up to 102 trucks and 81 cars onsite at any given time and the RV park is anticipated to accommodate parking of up to 8 cars and 80 RVs onsite at any given time. Overnight truck parking would be available; however, idling of trucks would be limited to no more than five minutes, consistent with California Air Resources Board (CARB) and Mojave Desert Air Quality Management District (MDAQMD) requirements.

In terms of employment, approximately 39 employees would be located at the project site, spread over three daily shifts. It is anticipated that up to 12 employees would be located at the travel center and 3 employees would be located at the RV park at one time. The travel stop would receive up to six (6) fuel deliveries per day. Up to three (3) small deliveries, such as those delivered by UPS or FedEx are also expected to occur. While the restaurant would likely receive one (1) delivery truck per week, a total of one (1) delivery per day would be the maximum. Diesel fuel, gasoline, and diesel exhaust fluid would be stored onsite in above-ground storage tanks. Total annual fuel throughput for the travel stop is planned to be 14,000,000 gallons (diesel fuel and gasoline).

Water and sewer service would be provided by a public utility through connections to existing main lines within and adjacent to the project site. During operation, the travel stop would have an estimated water demand of approximately 27,000 gallons per day (gpd) or 30 acre-feet per year. There are no existing offsite

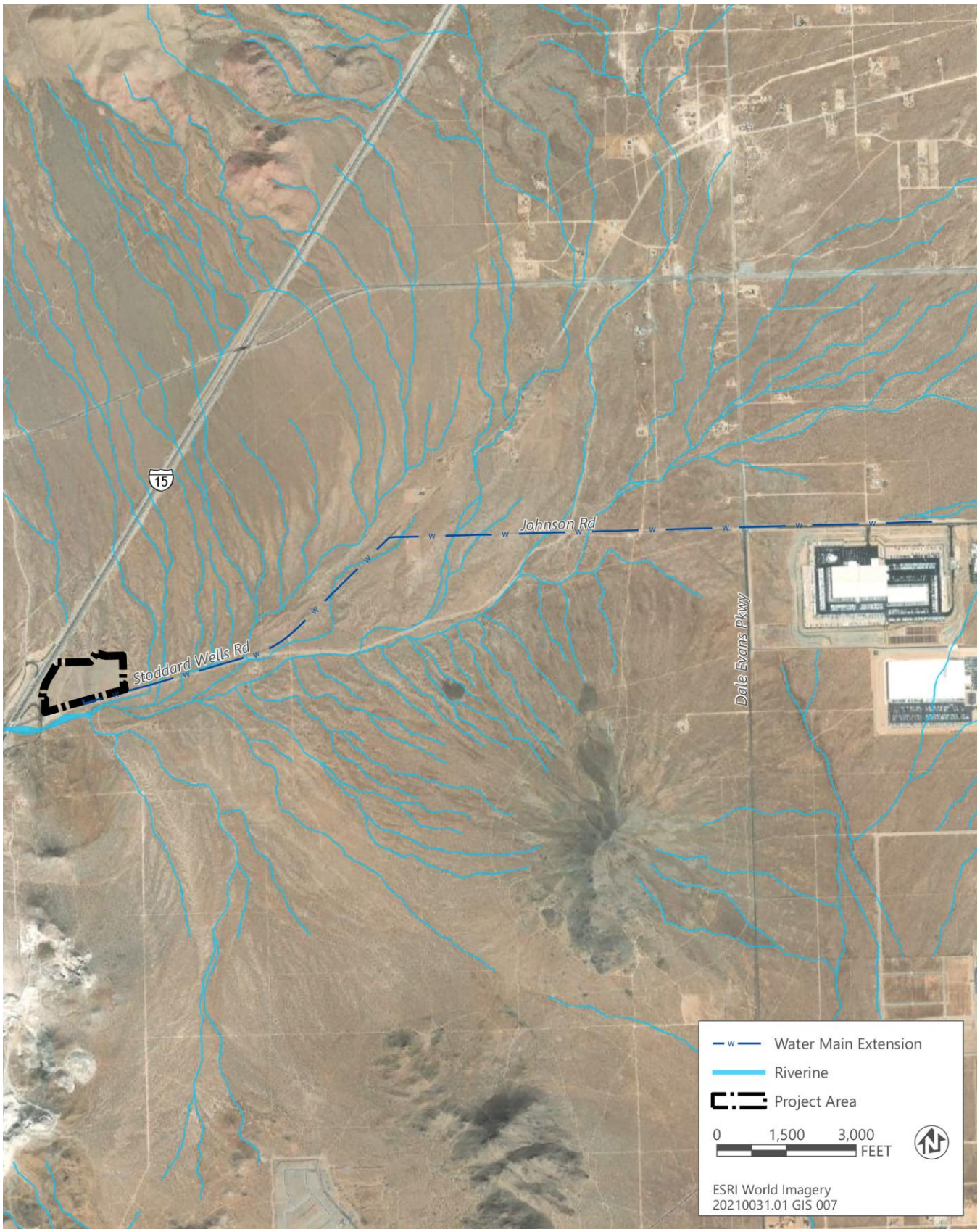
water mains on Stoddard Wells Road fronting the proposed project site. The nearest existing water main connection is approximately 3.5 miles northeast of the project site along Johnson Road, approximately 4,100 feet east of Dale Evans Parkway. The project would require extension of the exiting 16-inch diameter pipeline for approximately 19,460 linear feet within existing disturbed areas, such as within the north shoulders or pavement of Johnson Road and Stoddard Wells Road (see Figure 2). In lieu of constructing an offsite water main line, the project may include an onsite domestic water well to supply water to the proposed development.

Stormwater from the travel center would be drained toward five (5) onsite bioretention facilities. From the onsite retention basins, stormwater would flow through a new underground stormwater pipe that would discharge to existing drainage south of the project site. Stormwater from the RV park would be drained toward a bioretention basin along Stoddard Wells Road, just south of the parking area.

PROJECT OBJECTIVES

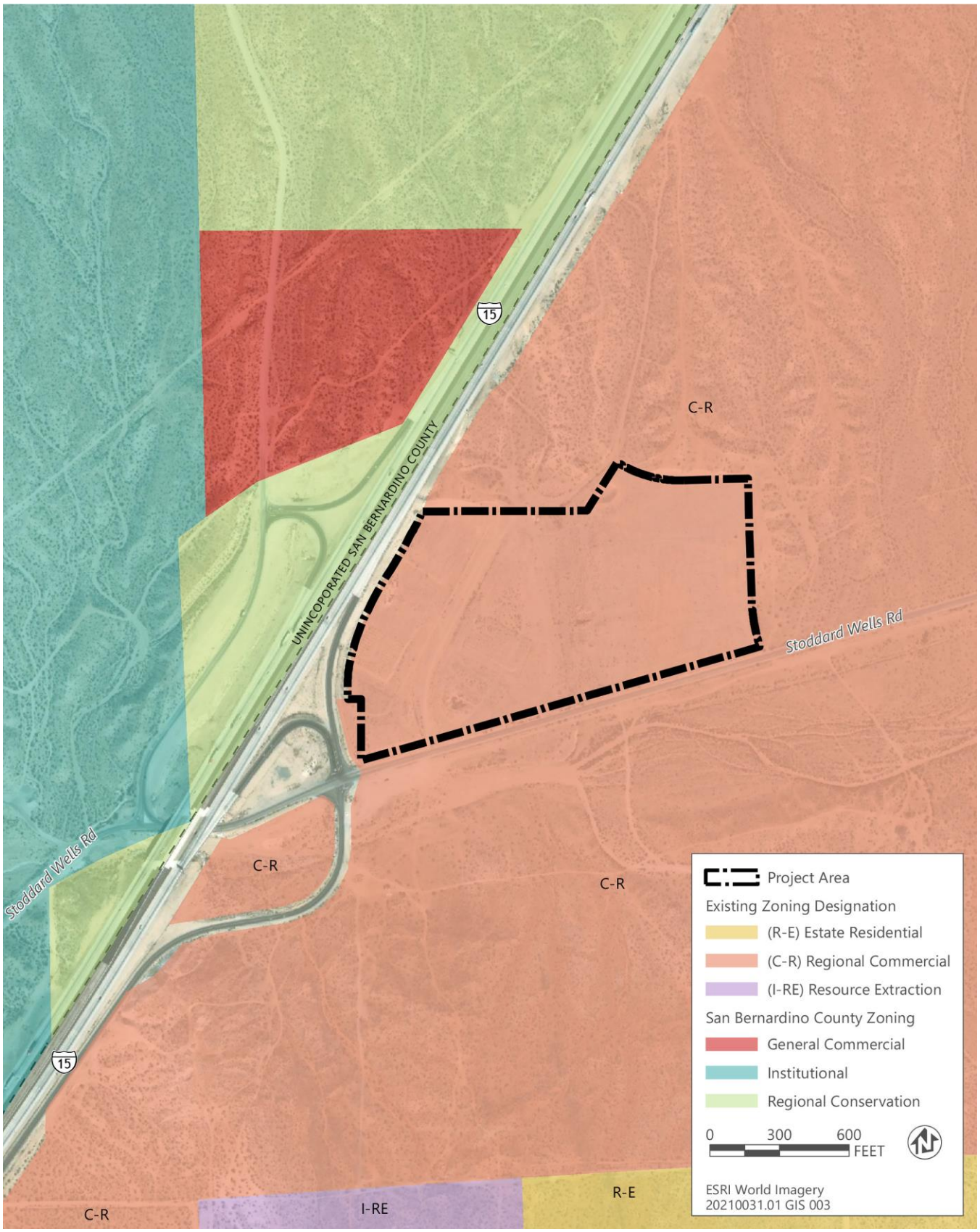
Consistent with CEQA Guidelines Section 15124(b), a clear statement of objectives and the underlying purpose of the project shall be discussed in the Draft EIR. The underlying purpose of the project is to develop a regional travel center and related commercial land uses on Regional Commercial (C-R)-designated land within the Town of Apple Valley that is consistent with Town General Plan policies and zoning (Figure 3). A subdivision map is proposed to create the 33.52-acre project parcel. This underlying purpose, in turn, gives rise to the following project objectives:

- Create a high-quality travel center commercial development along I-15, a major interstate transportation corridor.
- Develop a property of sufficient size to create a regional travel center that would accommodate a truck and auto fuel dispensing area, convenience store, fast-food restaurant, truck parking and maintenance services, RV park, and recreational amenities.
- Construct a travel center facility near a major freeway onramp/offramp to minimize truck and automobile movements, Vehicle Miles Traveled (VMT), and associated air pollutant and greenhouse gas emissions and traffic noise on local streets.
- Assist the Town of Apple Valley with meeting its economic development goals, as set forth in its General Plan.
- Maximize tax revenue to the Town of Apple Valley.
- Provide employment opportunities for residents of Apple Valley and surrounding areas.
- Construct a facility with proximal access to adequate existing or anticipated utility infrastructure to support planned operations.



Sources: Data downloaded from NWI in 2020 and adapted by Ascent Environmental in 2021

Figure 2 Water Main Extension



Sources: Data downloaded from Town of Apple Valley and San Bernardino County in 2021 and adapted by Ascent Environmental in 2021

Figure 3 Existing Zoning Designation

PROBABLE ENVIRONMENTAL IMPACTS

Pursuant to CEQA Guidelines Section 15064, the discussion of effects on the environment in the EIR shall be focused on those impacts that the Town has determined may be potentially significant. The EIR also will evaluate the cumulative impacts of the project when considered in conjunction with other related past, present, and reasonably foreseeable future projects. Although, at this very early stage of the environmental review process, it is impossible to know with certainty the precise nature and extent of the environmental effects that will be identified as preparation of the Draft EIR gets underway in earnest, it is possible to identify key categories of environmental effects that the proposed project will implicate. The Town has determined that the EIR will evaluate the following environmental impacts:

- Aesthetics: The EIR will describe how the project would change the view of the site from sensitive viewpoints near the project site, such as I-15. The EIR will also describe any light- and glare-related impacts, focusing on sensitive viewsheds, changes to the visual character of the project site, and changes to light and glare associated with the project. Mitigation measures will be recommended to reduce or eliminate any significant project impacts, as necessary.
- Air Quality/Greenhouse Gas Emissions: This project is located within Mojave Desert Air Quality Management District (MDAQMD) jurisdiction. During construction and operation, the project would emit criteria air pollutants, primarily through vehicular operation. The EIR will quantify the project's construction- and operation-related emissions of criteria air pollutants and precursors (e.g., reactive organic gasses [ROG], nitrogen oxides [NO_X], sulfur dioxide [SO_2], carbon monoxide [CO], respirable particulate matter [PM_{10}], and fine particulate matter [$PM_{2.5}$]). The EIR will compare these estimates to the significant health-based emissions thresholds specified in MDAQMD's 2020 CEQA Guidelines. The EIR will also evaluate the potential for substantial concentrations of toxic air contaminants and odors perceived by nearby land uses as a result of project implementation. Greenhouse gas (GHG) emissions, particularly from any additional truck trips, will be assessed in the EIR. The EIR will recommend mitigation measures, if necessary.
- Biological Resources: The EIR will include a description of the special-status plant and wildlife species known to occur within the project site, and a determination of whether suitable habitat exists on-site to support any special-status species. The chapter will be based a survey of the project site and any off-site infrastructure alignments. Mitigation measures to reduce impacts to sensitive resources will be developed and recommended as necessary.
- Cultural Resources/Tribal Cultural Resources: The EIR will evaluate potential effects to archaeological resources from implementation of the proposed project, focusing on any unique archaeological resources, historical resources, or tribal cultural resources. These chapters will be based on a site-specific technical report. A records search will be conducted to identify any documented historical or archaeological resources on or immediately adjacent to the project site. In accordance with Assembly Bill 52, Native American tribes that have traditional lands or cultural places located within the project site and vicinity will be consulted. The EIR will provide mitigation measures as needed.
- Energy: The EIR will discuss the potential impacts of the project's energy usage, emphasizing any inefficient, wasteful, or unnecessary energy consumption, including an analysis of any change in vehicle miles traveled. The analysis will be informed by reference to Appendix F of the CEQA Guidelines. The EIR will provide mitigation measures as needed.

- Geology and Soils/Mineral Resources: The EIR will summarize the setting and describe the potential effects from soil erosion, earthquakes, liquefaction, and expansive soils, as well as identify any unique geological features within the project site. The chapter will also include an assessment of potential impacts to paleontological resources from project implementation. Mineral resources will also be discussed in this chapter. The EIR will provide mitigation measures as needed.
- Hazards and Hazardous Materials: The EIR will evaluate the potential for existing or possible hazardous materials within the project site and the potential for on-site hazardous materials usage. No schools are located proximate to the project site. The EIR will provide mitigation measures as needed.
- Hydrology and Water Quality: The EIR will evaluate the potential for on- and off-site drainage and flooding impacts, and any effects of construction and operation of the project on water quality. The EIR will provide mitigation measures as needed.
- Land Use and Planning: The EIR will evaluate the project's land use relative to the Town's General Plan land use policies and diagram. In addition, the EIR will examine any possible land use conflicts with existing communities or policies implemented to reduce or avoid environmental impacts. The chapter will recommend mitigation measures, if necessary.
- Noise and Vibration: The EIR will evaluate noise increases because of traffic and construction, and ground vibration due to construction and truck movements. The significance of transportation noise impacts will be determined in relation to the Town's General Plan. The EIR will provide mitigation measures as needed.
- Population and Housing/Public Services/Recreation: The EIR will evaluate the potential for the project to induce direct and indirect population growth. In addition, the EIR will summarize existing information available from local service providers and identify potential new demand for services, including fire protection, police, schools, parks, recreation, and other public facilities. Information from the Town's General Plan, as appropriate, and up-to-date information received from appropriate Town and other agencies will be utilized to address the project's potential to create impacts related to population and housing, public services, and recreation. The EIR will provide mitigation measures as needed.
- Transportation/Traffic: The EIR will include a project-specific technical traffic study that evaluates potential project impacts on traffic and suggests mitigation measures as needed.
- Utilities and Service Systems: The EIR will evaluate and discuss potential impacts related to water, wastewater, and solid waste associated with the project, and provide mitigation measures as needed. The EIR will evaluate the impacts associated with construction of the proposed 19,460-foot water main line extension.

The following topics will not be discussed further in the EIR:

- Agriculture and Forestry Resources: The project site is zoned Regional Commercial and is currently vacant. There are no agricultural lands (including lands classified by the California Resources Agency as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance) or forest lands within or in proximity the project site. Therefore, no impacts on agriculture and forestry resources are anticipated, and this topic will not be discussed further in the EIR.
- Wildfire: The project site and vicinity are within a local responsibility area that is classified as a Non-Very High Fire Hazard Severity Zone (VHFHSZ) by the California Department of Forestry and Fire Protection. There are no lands within the Town that are classified as state responsibility areas or VHFHSZs. Therefore, no impacts related to wildfire are anticipated, and this topic will not be discussed further in the EIR.

ALTERNATIVES TO BE EVALUATED IN THE EIR

In accordance with the State CEQA Guidelines Section 15126.6, the EIR will describe a range of reasonable alternatives to the project that are capable of meeting most of the projects' objectives, and would avoid or substantially lessen any of the significant effects of the project. The EIR will also identify any alternatives that were considered but rejected by the lead agency as infeasible and briefly explain the reasons why. The EIR will provide an analysis of the No-Project Alternative and will also identify the environmentally superior alternative.

OPPORTUNITY FOR PUBLIC COMMENT

Agencies and interested parties may provide the Town with written comments on topics to be addressed in the EIR for the project. Because of time limits mandated by State law, comments should be provided no later than 5 p.m. on January 6, 2022. Please send all comments to:

Contact: Daniel Alcayaga, Planning Manager
Phone: (760) 240-7000 ext. 7205
Email: dalcayaga@applevalley.org

Agencies that will need to use the EIR when considering permits or other approvals for the project should provide the name of a contact person, phone number, and email address. Comments provided by email should include "Apple Valley I-15 Travel Center" in the subject line, and the name and physical address of the commenter in the body of the email.

The Town will host a virtual EIR Scoping Meeting to gather additional input on the scope (content and focus) of the EIR analysis. The date, time, and access information for the scoping meeting is listed in the section below.

Copies of current and future environmental documents related to the Apple Valley I-15 Travel Center will be available for review at the following locations:

San Bernardino County Library
14901 Dale Evans Parkway
Apple Valley, CA 92307

Apple Valley Town Hall
14955 Dale Evans Parkway
Apple Valley, CA 92307

Or online at the following website: https://www.applevalley.org/services/planning-division/environmental

All comments on environmental issues received during the public comment period will be considered and addressed in the Draft EIR, which is anticipated to be available for public review in summer 2022.

Signature: _____ Date: _____

Name: Daniel Alcayaga

Title: Planning Manager

NATIVE AMERICAN HERITAGE COMMISSION

Governor's Office of Planning & Research

Dec 10 2021

STATE CLEARINGHOUSE

December 7, 2021

Daniel Alcayaga
Town of Apple Valley
14955 Dale Evans Parkway
Apple Valley, CA 92307

Re: 2021120062, Apple Valley I-15 Travel Center Project, San Bernardino County

Dear Mr. Alcayaga:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements**. If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

CHAIRPERSON
Laura Miranda
Luiseño

VICE CHAIRPERSON
Reginald Pagaling
Chumash

PARLIAMENTARIAN
Russell Attebery
Karuk

COMMISSIONER
William Mungary
Paiute/White Mountain Apache

COMMISSIONER
Isaac Bojorquez
Ohlone-Costanoan

COMMISSIONER
Sara Dutschke
Miwok

COMMISSIONER
Buffy McQuillen
Yokayo Pomo, Yuki, Nomlaki

COMMISSIONER
Wayne Nelson
Luiseño

COMMISSIONER
Stanley Rodriguez
Kumeyaay

EXECUTIVE SECRETARY
Christina Snider
Pomo

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:

- **a.** A brief description of the project.
- **b.** The lead agency contact information.
- **c.** Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
- **d.** A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).

- **a.** For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

- **a.** Alternatives to the project.
- **b.** Recommended mitigation measures.
- **c.** Significant effects. (Pub. Resources Code §21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:

- **a.** Type of environmental review necessary.
- **b.** Significance of the tribal cultural resources.
- **c.** Significance of the project's impacts on tribal cultural resources.
- **d.** If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:

- **a.** Whether the proposed project has a significant impact on an identified tribal cultural resource.
- **b.** Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:

a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or

b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:

a. Avoidance and preservation of the resources in place, including, but not limited to:

i. Planning and construction to avoid the resources and protect the cultural and natural context.

ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:

i. Protecting the cultural character and integrity of the resource.

ii. Protecting the traditional use of the resource.

iii. Protecting the confidentiality of the resource.

c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.

d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).

e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).

f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:

a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.

b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.

c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf.

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).

2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.

3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).

4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:

- **a.** The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
- **b.** Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/.

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:

- **a.** If part or all of the APE has been previously surveyed for cultural resources.
- **b.** If any known cultural resources have already been recorded on or adjacent to the APE.
- **c.** If the probability is low, moderate, or high that cultural resources are located in the APE.
- **d.** If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.

- **a.** The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
- **b.** The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:

a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.

b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.

a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.

b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.

c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Andrew.Green@nahc.ca.gov.

Sincerely,



Andrew Green
Cultural Resources Analyst

cc: State Clearinghouse

Appendix B

Air Quality, Greenhouse Gas, and Energy Modeling

Love's Truck Stop Apple Valley - San Bernardino-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Love's Truck Stop Apple Valley

San Bernardino-Mojave Desert County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	1.34	Acre	1.34	58,370.40	0
Parking Lot	183.00	Space	1.65	73,200.00	0
City Park	11.20	Acre	11.20	487,872.00	0
Fast Food Restaurant with Drive Thru	3.04	1000sqft	0.07	3,040.00	0
Mobile Home Park	88.00	Dwelling Unit	11.09	105,600.00	0
Automobile Care Center	13.79	1000sqft	0.32	13,790.00	0
Convenience Market (24 Hour)	12.91	1000sqft	0.30	12,910.00	0
Gasoline/Service Station	25.00	Pump	0.08	3,529.37	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - 2023 operational for SCE EF Based on CAPCOA Handbook Update, Table E-4.3: https://www.airquality.org/residents/climate-change/ghg-handbook-caleemod

Land Use - for Service Center: 183 spaces, 25 pumps, fast food, auto care, and convenience store per PD. For RV park, mobile home park represents RV park (for electrical hookups and utilities) spaces. Convenience store added to service center one. Landscaping for service and RV + renention basin = city park.

Construction Phase - Construction schedule based on a 9-month construction phase and operation in 2023 per PD. Default schedule adjusted based on PD. Trenching accounts for water main work - overlaps with building construction and lasts 2 months. Water main paving added as "other asphalt".

Love's Truck Stop Apple Valley - San Bernardino-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Trips and VMT - worker trips adjusted to 0.32 per tsf based on Caleemod Appx A for blg const. Others default.

Architectural Coating - Rule 1113. 150 g/L. No residential painting.

Vehicle Trips - Adjusted based on trip rates provided by trip analysis. 106.52 trips/pumpand 2.7 trips/RV site per day. VMT adjusted per traffic sub to relfect most trips are diverted. 1.82 miles/ trip fro Truck Stop (see VMT sheet); default for mobile home park for RV park

Fleet Mix - Gas/Service Station and Mobile Home park fleeet adjusted to be 50% auto (0.167 each), 50% HHDT, and RV park 100% MH

Woodstoves - no hearths assumed (RV park)

Energy Use - default utilities

Water And Wastewater - Adjusted based on PD: 18,250,000 gal/year provided in PD: The estimated water demand for the travel center in the western portion of the project site would be approximately 12,000 gpd, of which 3,000 gpd of water would be used for landscaping. The estimated water demand for the RV park in the eastern portion of the project site would be approximately 14,000 gpd, of which 11,000 gpd of water would be used for landscaping. Zero'd out water demand for other uses.

Solid Waste - default waste

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Residential_Exterior	71,280.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Interior	213,840.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	150.00
tblArchitecturalCoating	EF_Parking	250.00	150.00
tblConstructionPhase	NumDays	35.00	22.00
tblConstructionPhase	NumDays	440.00	132.00
tblConstructionPhase	NumDays	30.00	22.00
tblConstructionPhase	NumDays	45.00	22.00
tblConstructionPhase	NumDays	35.00	22.00
tblConstructionPhase	NumDays	20.00	22.00
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	NumberGas	48.40	0.00
tblFireplaces	NumberNoFireplace	8.80	0.00
tblFireplaces	NumberWood	30.80	0.00
tblFleetMix	HHD	0.02	0.00

Love's Truck Stop Apple Valley - San Bernardino-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblFleetMix	HHD	0.02	0.00
tblFleetMix	LDA	0.54	0.17
tblFleetMix	LDA	0.54	0.00
tblFleetMix	LDT1	0.06	0.17
tblFleetMix	LDT1	0.06	0.00
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LDT2	0.17	0.00
tblFleetMix	LHD1	0.03	0.00
tblFleetMix	LHD1	0.03	0.00
tblFleetMix	LHD2	7.1960e-003	0.00
tblFleetMix	LHD2	7.1960e-003	0.00
tblFleetMix	MCY	0.03	0.00
tblFleetMix	MCY	0.03	0.00
tblFleetMix	MDV	0.14	0.00
tblFleetMix	MDV	0.14	0.00
tblFleetMix	MH	5.0710e-003	0.00
tblFleetMix	MH	5.0710e-003	1.00
tblFleetMix	MHD	0.01	0.50
tblFleetMix	MHD	0.01	0.00
tblFleetMix	OBUS	5.5900e-004	0.00
tblFleetMix	OBUS	5.5900e-004	0.00
tblFleetMix	SBUS	9.5400e-004	0.00
tblFleetMix	SBUS	9.5400e-004	0.00
tblFleetMix	UBUS	2.5400e-004	0.00
tblFleetMix	UBUS	2.5400e-004	0.00
tblLandUse	Population	252.00	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.033	0
tblProjectCharacteristics	CO2IntensityFactor	390.98	351
tblProjectCharacteristics	N2OIntensityFactor	0.004	0

Love's Truck Stop Apple Valley - San Bernardino-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	WorkerTripNumber	334.00	243.00
tblVehicleTrips	CC_TL	6.60	1.82
tblVehicleTrips	CC_TTP	79.00	100.00
tblVehicleTrips	CNW_TL	6.60	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CW_TL	14.70	0.00
tblVehicleTrips	CW_TTP	2.00	0.00
tblVehicleTrips	DV_TP	27.00	0.00
tblVehicleTrips	PB_TP	59.00	0.00
tblVehicleTrips	PR_TP	14.00	100.00
tblVehicleTrips	ST_TR	23.72	0.00
tblVehicleTrips	ST_TR	1.96	0.00
tblVehicleTrips	ST_TR	1,084.17	0.00
tblVehicleTrips	ST_TR	616.12	0.00
tblVehicleTrips	ST_TR	182.17	213.04
tblVehicleTrips	ST_TR	4.61	2.70
tblVehicleTrips	SU_TR	11.88	0.00
tblVehicleTrips	SU_TR	2.19	0.00
tblVehicleTrips	SU_TR	901.17	0.00
tblVehicleTrips	SU_TR	472.58	0.00
tblVehicleTrips	SU_TR	166.88	213.04
tblVehicleTrips	SU_TR	4.24	2.70
tblVehicleTrips	WD_TR	23.72	0.00
tblVehicleTrips	WD_TR	0.78	0.00
tblVehicleTrips	WD_TR	762.28	0.00
tblVehicleTrips	WD_TR	470.95	0.00
tblVehicleTrips	WD_TR	172.01	213.04
tblVehicleTrips	WD_TR	5.00	2.70

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblWater	IndoorWaterUseRate	1,297,378.47	0.00
tblWater	IndoorWaterUseRate	956,276.25	0.00
tblWater	IndoorWaterUseRate	922,742.49	0.00
tblWater	IndoorWaterUseRate	332,047.22	3,285,000.00
tblWater	IndoorWaterUseRate	5,733,554.25	1,095,000.00
tblWater	OutdoorWaterUseRate	795,167.45	0.00
tblWater	OutdoorWaterUseRate	13,344,591.12	0.00
tblWater	OutdoorWaterUseRate	586,104.80	0.00
tblWater	OutdoorWaterUseRate	58,898.46	0.00
tblWater	OutdoorWaterUseRate	203,512.81	1,095,000.00
tblWater	OutdoorWaterUseRate	3,614,632.03	4,015,000.00
tblWoodstoves	NumberCatalytic	4.40	0.00
tblWoodstoves	NumberNoncatalytic	4.40	0.00

2.0 Emissions Summary

Love's Truck Stop Apple Valley - San Bernardino-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	9.6693	97.8131	71.3396	0.1446	29.5376	4.4936	34.0312	13.9357	4.1462	18.0819	0.0000	14,014.8461	14,014.8461	4.2042	0.4093	14,124.6713
2023	25.7152	53.8061	55.1455	0.1361	4.0703	2.1700	6.2403	1.0956	2.0122	3.1078	0.0000	13,451.5334	13,451.5334	2.6760	0.3892	13,634.4098
Maximum	**25.7152**	**97.8131**	**71.3396**	**0.1446**	**29.5376**	**4.4936**	**34.0312**	**13.9357**	**4.1462**	**18.0819**	**0.0000**	**14,014.8461**	**14,014.8461**	**4.2042**	**0.4093**	**14,124.6713**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	9.6693	97.8131	71.3396	0.1446	29.5376	4.4936	34.0312	13.9357	4.1462	18.0819	0.0000	14,014.8461	14,014.8461	4.2042	0.4093	14,124.6713
2023	25.7152	53.8061	55.1455	0.1361	4.0703	2.1700	6.2403	1.0956	2.0122	3.1078	0.0000	13,451.5334	13,451.5334	2.6760	0.3892	13,634.4098
Maximum	**25.7152**	**97.8131**	**71.3396**	**0.1446**	**29.5376**	**4.4936**	**34.0312**	**13.9357**	**4.1462**	**18.0819**	**0.0000**	**14,014.8461**	**14,014.8461**	**4.2042**	**0.4093**	**14,124.6713**

Love's Truck Stop Apple Valley - San Bernardino-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Love's Truck Stop Apple Valley - San Bernardino-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.4061	0.0839	7.2873	3.9000e-004		0.0403	0.0403		0.0403	0.0403	0.0000	13.1274	13.1274	0.0127	0.0000	13.4452
Energy	0.1000	0.8777	0.5312	5.4600e-003		0.0691	0.0691		0.0691	0.0691		1,091.2489	1,091.2489	0.0209	0.0200	1,097.7337
Mobile	11.2587	17.0587	63.4994	0.1549	9.7852	0.2862	10.0714	2.6862	0.2718	2.9580		15,796.7533	15,796.7533	1.0614	0.9896	16,118.1969
Total	**15.7649**	**18.0203**	**71.3179**	**0.1607**	**9.7852**	**0.3956**	**10.1808**	**2.6862**	**0.3812**	**3.0674**	**0.0000**	**16,901.1296**	**16,901.1296**	**1.0950**	**1.0096**	**17,229.3758**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.4061	0.0839	7.2873	3.9000e-004		0.0403	0.0403		0.0403	0.0403	0.0000	13.1274	13.1274	0.0127	0.0000	13.4452
Energy	0.1000	0.8777	0.5312	5.4600e-003		0.0691	0.0691		0.0691	0.0691		1,091.2489	1,091.2489	0.0209	0.0200	1,097.7337
Mobile	11.2587	17.0587	63.4994	0.1549	9.7852	0.2862	10.0714	2.6862	0.2718	2.9580		15,796.7533	15,796.7533	1.0614	0.9896	16,118.1969
Total	**15.7649**	**18.0203**	**71.3179**	**0.1607**	**9.7852**	**0.3956**	**10.1808**	**2.6862**	**0.3812**	**3.0674**	**0.0000**	**16,901.1296**	**16,901.1296**	**1.0950**	**1.0096**	**17,229.3758**

Love's Truck Stop Apple Valley - San Bernardino-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	10/3/2022	11/1/2022	5	22	
2	Site Preparation	Site Preparation	10/3/2022	11/1/2022	5	22	
3	Grading	Grading	10/3/2022	11/1/2022	5	22	
4	Water Main Trenching / Undergrounding	Trenching	11/2/2022	1/2/2023	5	44	
5	Building Construction	Building Construction	12/1/2022	6/2/2023	5	132	
6	Paving	Paving	6/3/2023	7/4/2023	5	22	
7	Architectural Coating	Architectural Coating	6/3/2023	7/4/2023	5	22	

Acres of Grading (Site Preparation Phase): 33

Acres of Grading (Grading Phase): 66

Acres of Paving: 2.99

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 49,904; Non-Residential Outdoor: 16,635; Striped Parking Area: 7,894 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40

Love's Truck Stop Apple Valley - San Bernardino-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Water Main Trenching / Undergrounding	Excavators	2	8.00	158	0.38
Water Main Trenching / Undergrounding	Graders	1	8.00	187	0.41
Water Main Trenching / Undergrounding	Rubber Tired Dozers	1	8.00	247	0.40
Water Main Trenching / Undergrounding	Scrapers	2	8.00	367	0.48
Water Main Trenching / Undergrounding	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Air Compressors	0	6.00	78	0.48
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Grading	8	20.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	243.00	116.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Water Main Trenching / Undergrounding	8	20.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	67.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	67.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553		3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**2.6392**	**25.7194**	**20.5941**	**0.0388**		**1.2427**	**1.2427**		**1.1553**	**1.1553**		**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Demolition - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0666	0.0472	0.5678	1.6000e-003	0.1916	9.9000e-004	0.1926	0.0508	9.1000e-004	0.0517		161.4885	161.4885	4.3600e-003	4.4800e-003	162.9334
Total	**0.0666**	**0.0472**	**0.5678**	**1.6000e-003**	**0.1916**	**9.9000e-004**	**0.1926**	**0.0508**	**9.1000e-004**	**0.0517**		**161.4885**	**161.4885**	**4.3600e-003**	**4.4800e-003**	**162.9334**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553	0.0000	3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**2.6392**	**25.7194**	**20.5941**	**0.0388**		**1.2427**	**1.2427**		**1.1553**	**1.1553**	**0.0000**	**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Demolition - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0666	0.0472	0.5678	1.6000e-003	0.1916	9.9000e-004	0.1926	0.0508	9.1000e-004	0.0517		161.4885	161.4885	4.3600e-003	4.4800e-003	162.9334
Total	**0.0666**	**0.0472**	**0.5678**	**1.6000e-003**	**0.1916**	**9.9000e-004**	**0.1926**	**0.0508**	**9.1000e-004**	**0.0517**		**161.4885**	**161.4885**	**4.3600e-003**	**4.4800e-003**	**162.9334**

3.3 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.6570	0.0000	19.6570	10.1025	0.0000	10.1025			0.0000			0.0000
Off-Road	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836		3,686.0619	3,686.0619	1.1922		3,715.8655
Total	**3.1701**	**33.0835**	**19.6978**	**0.0380**	**19.6570**	**1.6126**	**21.2696**	**10.1025**	**1.4836**	**11.5860**		**3,686.0619**	**3,686.0619**	**1.1922**		**3,715.8655**

Love's Truck Stop Apple Valley - San Bernardino-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Site Preparation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0799	0.0566	0.6814	1.9200e-003	0.2299	1.1900e-003	0.2311	0.0610	1.1000e-003	0.0621		193.7862	193.7862	5.2300e-003	5.3800e-003	195.5200
Total	**0.0799**	**0.0566**	**0.6814**	**1.9200e-003**	**0.2299**	**1.1900e-003**	**0.2311**	**0.0610**	**1.1000e-003**	**0.0621**		**193.7862**	**193.7862**	**5.2300e-003**	**5.3800e-003**	**195.5200**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.6570	0.0000	19.6570	10.1025	0.0000	10.1025			0.0000			0.0000
Off-Road	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836	0.0000	3,686.0619	3,686.0619	1.1922		3,715.8655
Total	**3.1701**	**33.0835**	**19.6978**	**0.0380**	**19.6570**	**1.6126**	**21.2696**	**10.1025**	**1.4836**	**11.5860**	**0.0000**	**3,686.0619**	**3,686.0619**	**1.1922**		**3,715.8655**

Love's Truck Stop Apple Valley - San Bernardino-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Site Preparation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0799	0.0566	0.6814	1.9200e-003	0.2299	1.1900e-003	0.2311	0.0610	1.1000e-003	0.0621		193.7862	193.7862	5.2300e-003	5.3800e-003	195.5200
Total	**0.0799**	**0.0566**	**0.6814**	**1.9200e-003**	**0.2299**	**1.1900e-003**	**0.2311**	**0.0610**	**1.1000e-003**	**0.0621**		**193.7862**	**193.7862**	**5.2300e-003**	**5.3800e-003**	**195.5200**

3.4 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.2036	0.0000	9.2036	3.6538	0.0000	3.6538			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041		6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**9.2036**	**1.6349**	**10.8385**	**3.6538**	**1.5041**	**5.1579**		**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0888	0.0629	0.7571	2.1300e-003	0.2555	1.3200e-003	0.2568	0.0678	1.2200e-003	0.0690		215.3179	215.3179	5.8100e-003	5.9800e-003	217.2445
Total	**0.0888**	**0.0629**	**0.7571**	**2.1300e-003**	**0.2555**	**1.3200e-003**	**0.2568**	**0.0678**	**1.2200e-003**	**0.0690**		**215.3179**	**215.3179**	**5.8100e-003**	**5.9800e-003**	**217.2445**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.2036	0.0000	9.2036	3.6538	0.0000	3.6538			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041	0.0000	6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**9.2036**	**1.6349**	**10.8385**	**3.6538**	**1.5041**	**5.1579**	**0.0000**	**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0888	0.0629	0.7571	2.1300e-003	0.2555	1.3200e-003	0.2568	0.0678	1.2200e-003	0.0690		215.3179	215.3179	5.8100e-003	5.9800e-003	217.2445
Total	**0.0888**	**0.0629**	**0.7571**	**2.1300e-003**	**0.2555**	**1.3200e-003**	**0.2568**	**0.0678**	**1.2200e-003**	**0.0690**		**215.3179**	**215.3179**	**5.8100e-003**	**5.9800e-003**	**217.2445**

3.5 Water Main Trenching / Undergrounding - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041		6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**		**1.6349**	**1.6349**		**1.5041**	**1.5041**		**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Water Main Trenching / Undergrounding - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0888	0.0629	0.7571	2.1300e-003	0.2555	1.3200e-003	0.2568	0.0678	1.2200e-003	0.0690		215.3179	215.3179	5.8100e-003	5.9800e-003	217.2445
Total	**0.0888**	**0.0629**	**0.7571**	**2.1300e-003**	**0.2555**	**1.3200e-003**	**0.2568**	**0.0678**	**1.2200e-003**	**0.0690**		**215.3179**	**215.3179**	**5.8100e-003**	**5.9800e-003**	**217.2445**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041	0.0000	6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**		**1.6349**	**1.6349**		**1.5041**	**1.5041**	**0.0000**	**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Water Main Trenching / Undergrounding - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0888	0.0629	0.7571	2.1300e-003	0.2555	1.3200e-003	0.2568	0.0678	1.2200e-003	0.0690		215.3179	215.3179	5.8100e-003	5.9800e-003	217.2445
Total	**0.0888**	**0.0629**	**0.7571**	**2.1300e-003**	**0.2555**	**1.3200e-003**	**0.2568**	**0.0678**	**1.2200e-003**	**0.0690**		**215.3179**	**215.3179**	**5.8100e-003**	**5.9800e-003**	**217.2445**

3.5 Water Main Trenching / Undergrounding - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.3217	34.5156	28.0512	0.0621		1.4245	1.4245		1.3105	1.3105		6,011.4777	6,011.4777	1.9442		6,060.0836
Total	**3.3217**	**34.5156**	**28.0512**	**0.0621**		**1.4245**	**1.4245**		**1.3105**	**1.3105**		**6,011.4777**	**6,011.4777**	**1.9442**		**6,060.0836**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Water Main Trenching / Undergrounding - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0822	0.0552	0.6928	2.0600e-003	0.2555	1.2400e-003	0.2567	0.0678	1.1500e-003	0.0689		208.4024	208.4024	5.2100e-003	5.4900e-003	210.1687
Total	**0.0822**	**0.0552**	**0.6928**	**2.0600e-003**	**0.2555**	**1.2400e-003**	**0.2567**	**0.0678**	**1.1500e-003**	**0.0689**		**208.4024**	**208.4024**	**5.2100e-003**	**5.4900e-003**	**210.1687**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.3217	34.5156	28.0512	0.0621		1.4245	1.4245		1.3105	1.3105	0.0000	6,011.4777	6,011.4777	1.9442		6,060.0836
Total	**3.3217**	**34.5156**	**28.0512**	**0.0621**		**1.4245**	**1.4245**		**1.3105**	**1.3105**	**0.0000**	**6,011.4777**	**6,011.4777**	**1.9442**		**6,060.0836**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Water Main Trenching / Undergrounding - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0822	0.0552	0.6928	2.0600e-003	0.2555	1.2400e-003	0.2567	0.0678	1.1500e-003	0.0689		208.4024	208.4024	5.2100e-003	5.4900e-003	210.1687
Total	**0.0822**	**0.0552**	**0.6928**	**2.0600e-003**	**0.2555**	**1.2400e-003**	**0.2567**	**0.0678**	**1.1500e-003**	**0.0689**		**208.4024**	**208.4024**	**5.2100e-003**	**5.4900e-003**	**210.1687**

3.6 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Love's Truck Stop Apple Valley - San Bernardino-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1894	5.1700	1.9009	0.0208	0.7110	0.0581	0.7691	0.2048	0.0555	0.2603		2,232.3741	2,232.3741	0.0599	0.3307	2,332.4103
Worker	1.0783	0.7642	9.1985	0.0259	3.1039	0.0161	3.1199	0.8231	0.0148	0.8379		2,616.1130	2,616.1130	0.0706	0.0726	2,639.5205
Total	**1.2677**	**5.9342**	**11.0994**	**0.0467**	**3.8149**	**0.0741**	**3.8890**	**1.0279**	**0.0704**	**1.0982**		**4,848.4871**	**4,848.4871**	**0.1305**	**0.4033**	**4,971.9308**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Love's Truck Stop Apple Valley - San Bernardino-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1894	5.1700	1.9009	0.0208	0.7110	0.0581	0.7691	0.2048	0.0555	0.2603		2,232.3741	2,232.3741	0.0599	0.3307	2,332.4103
Worker	1.0783	0.7642	9.1985	0.0259	3.1039	0.0161	3.1199	0.8231	0.0148	0.8379		2,616.1130	2,616.1130	0.0706	0.0726	2,639.5205
Total	**1.2677**	**5.9342**	**11.0994**	**0.0467**	**3.8149**	**0.0741**	**3.8890**	**1.0279**	**0.0704**	**1.0982**		**4,848.4871**	**4,848.4871**	**0.1305**	**0.4033**	**4,971.9308**

3.6 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Love's Truck Stop Apple Valley - San Bernardino-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1243	4.1794	1.7402	0.0200	0.7110	0.0294	0.7404	0.2048	0.0281	0.2329		2,144.3541	2,144.3541	0.0555	0.3170	2,240.2020
Worker	0.9984	0.6709	8.4173	0.0251	3.1039	0.0151	3.1190	0.8231	0.0139	0.8370		2,532.0892	2,532.0892	0.0633	0.0667	2,553.5495
Total	**1.1226**	**4.8503**	**10.1576**	**0.0450**	**3.8149**	**0.0445**	**3.8594**	**1.0279**	**0.0421**	**1.0699**		**4,676.4433**	**4,676.4433**	**0.1187**	**0.3837**	**4,793.7515**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Love's Truck Stop Apple Valley - San Bernardino-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1243	4.1794	1.7402	0.0200	0.7110	0.0294	0.7404	0.2048	0.0281	0.2329		2,144.3541	2,144.3541	0.0555	0.3170	2,240.2020
Worker	0.9984	0.6709	8.4173	0.0251	3.1039	0.0151	3.1190	0.8231	0.0139	0.8370		2,532.0892	2,532.0892	0.0633	0.0667	2,553.5495
Total	**1.1226**	**4.8503**	**10.1576**	**0.0450**	**3.8149**	**0.0445**	**3.8594**	**1.0279**	**0.0421**	**1.0699**		**4,676.4433**	**4,676.4433**	**0.1187**	**0.3837**	**4,793.7515**

3.7 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694		2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.3561					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3888**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**		**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.7 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0616	0.0414	0.5196	1.5500e-003	0.1916	9.3000e-004	0.1925	0.0508	8.6000e-004	0.0517		156.3018	156.3018	3.9000e-003	4.1200e-003	157.6265
Total	**0.0616**	**0.0414**	**0.5196**	**1.5500e-003**	**0.1916**	**9.3000e-004**	**0.1925**	**0.0508**	**8.6000e-004**	**0.0517**		**156.3018**	**156.3018**	**3.9000e-003**	**4.1200e-003**	**157.6265**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694	0.0000	2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.3561					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3888**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**	**0.0000**	**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.7 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0616	0.0414	0.5196	1.5500e-003	0.1916	9.3000e-004	0.1925	0.0508	8.6000e-004	0.0517		156.3018	156.3018	3.9000e-003	4.1200e-003	157.6265
Total	**0.0616**	**0.0414**	**0.5196**	**1.5500e-003**	**0.1916**	**9.3000e-004**	**0.1925**	**0.0508**	**8.6000e-004**	**0.0517**		**156.3018**	**156.3018**	**3.9000e-003**	**4.1200e-003**	**157.6265**

3.8 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	23.5225					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**23.7142**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

Love's Truck Stop Apple Valley - San Bernardino-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.8 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.5505	0.3700	4.6417	0.0138	3.1998	8.3400e-003	3.2081	0.8192	7.6800e-003	0.8269		1,396.2961	1,396.2961	0.0349	0.0368	1,408.1302
Total	**0.5505**	**0.3700**	**4.6417**	**0.0138**	**3.1998**	**8.3400e-003**	**3.2081**	**0.8192**	**7.6800e-003**	**0.8269**		**1,396.2961**	**1,396.2961**	**0.0349**	**0.0368**	**1,408.1302**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	23.5225					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**23.7142**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.8 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.5505	0.3700	4.6417	0.0138	3.1998	8.3400e-003	3.2081	0.8192	7.6800e-003	0.8269		1,396.2961	1,396.2961	0.0349	0.0368	1,408.1302
Total	**0.5505**	**0.3700**	**4.6417**	**0.0138**	**3.1998**	**8.3400e-003**	**3.2081**	**0.8192**	**7.6800e-003**	**0.8269**		**1,396.2961**	**1,396.2961**	**0.0349**	**0.0368**	**1,408.1302**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Love's Truck Stop Apple Valley - San Bernardino-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	11.2587	17.0587	63.4994	0.1549	9.7852	0.2862	10.0714	2.6862	0.2718	2.9580		15,796.7533	15,796.7533	1.0614	0.9896	16,118.1969
Unmitigated	11.2587	17.0587	63.4994	0.1549	9.7852	0.2862	10.0714	2.6862	0.2718	2.9580		15,796.7533	15,796.7533	1.0614	0.9896	16,118.1969

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Automobile Care Center	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
Convenience Market (24 Hour)	0.00	0.00	0.00		
Fast Food Restaurant with Drive Thru	0.00	0.00	0.00		
Gasoline/Service Station	5,326.00	5,326.00	5326.00	3,528,368	3,528,368
Mobile Home Park	237.60	237.60	237.60	869,467	869,467
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	5,563.60	5,563.60	5,563.60	4,397,836	4,397,836

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Automobile Care Center	14.70	6.60	6.60	33.00	48.00	19.00	21	51	28
City Park	14.70	6.60	6.60	33.00	48.00	19.00	66	28	6
Convenience Market (24 Hour)	14.70	6.60	6.60	0.90	80.10	19.00	24	15	61
Fast Food Restaurant with Drive	14.70	6.60	6.60	2.20	78.80	19.00	29	21	50

Love's Truck Stop Apple Valley - San Bernardino-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Gasoline/Service Station	0.00	1.82	0.00	0.00	100.00	0.00	100	0	0
Mobile Home Park	16.80	7.10	7.90	40.20	19.20	40.60	86	11	3
Other Asphalt Surfaces	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
Parking Lot	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Automobile Care Center	0.537785	0.055838	0.172353	0.139003	0.027005	0.007196	0.011392	0.017285	0.000559	0.000254	0.025303	0.000954	0.005071
City Park	0.537785	0.055838	0.172353	0.139003	0.027005	0.007196	0.011392	0.017285	0.000559	0.000254	0.025303	0.000954	0.005071
Convenience Market (24 Hour)	0.537785	0.055838	0.172353	0.139003	0.027005	0.007196	0.011392	0.017285	0.000559	0.000254	0.025303	0.000954	0.005071
Fast Food Restaurant with Drive Thru	0.167000	0.167000	0.166000	0.000000	0.000000	0.000000	0.500000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Gasoline/Service Station	0.537785	0.055838	0.172353	0.139003	0.027005	0.007196	0.011392	0.017285	0.000559	0.000254	0.025303	0.000954	0.005071
Mobile Home Park	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.000000
Other Asphalt Surfaces	0.537785	0.055838	0.172353	0.139003	0.027005	0.007196	0.011392	0.017285	0.000559	0.000254	0.025303	0.000954	0.005071
Parking Lot	0.537785	0.055838	0.172353	0.139003	0.027005	0.007196	0.011392	0.017285	0.000559	0.000254	0.025303	0.000954	0.005071

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Love's Truck Stop Apple Valley - San Bernardino-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.1000	0.8777	0.5312	5.4600e-003		0.0691	0.0691		0.0691	0.0691		1,091.2489	1,091.2489	0.0209	0.0200	1,097.7337
NaturalGas Unmitigated	0.1000	0.8777	0.5312	5.4600e-003		0.0691	0.0691		0.0691	0.0691		1,091.2489	1,091.2489	0.0209	0.0200	1,097.7337

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Automobile Care Center	1221.45	0.0132	0.1198	0.1006	7.2000e-004		9.1000e-003	9.1000e-003		9.1000e-003	9.1000e-003		143.7005	143.7005	2.7500e-003	2.6300e-003	144.5544
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Convenience Market (24 Hour)	77.8137	8.4000e-004	7.6300e-003	6.4100e-003	5.0000e-005		5.8000e-004	5.8000e-004		5.8000e-004	5.8000e-004		9.1546	9.1546	1.8000e-004	1.7000e-004	9.2090
Fast Food Restaurant with Drive Thru	2270.92	0.0245	0.2226	0.1870	1.3400e-003		0.0169	0.0169		0.0169	0.0169		267.1673	267.1673	5.1200e-003	4.9000e-003	268.7549
Gasoline/Service Station	312.615	3.3700e-003	0.0307	0.0257	1.8000e-004		2.3300e-003	2.3300e-003		2.3300e-003	2.3300e-003		36.7783	36.7783	7.0000e-004	6.7000e-004	36.9968
Mobile Home Park	5392.81	0.0582	0.4970	0.2115	3.1700e-003		0.0402	0.0402		0.0402	0.0402		634.4484	634.4484	0.0122	0.0116	638.2186
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.1000**	**0.8777**	**0.5312**	**5.4600e-003**		**0.0691**	**0.0691**		**0.0691**	**0.0691**		**1,091.2489**	**1,091.2489**	**0.0209**	**0.0200**	**1,097.7336**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Automobile Care Center	1.22145	0.0132	0.1198	0.1006	7.2000e-004		9.1000e-003	9.1000e-003		9.1000e-003	9.1000e-003		143.7005	143.7005	2.7500e-003	2.6300e-003	144.5544
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Convenience Market (24 Hour)	0.0778137	8.4000e-004	7.6300e-003	6.4100e-003	5.0000e-005		5.8000e-004	5.8000e-004		5.8000e-004	5.8000e-004		9.1546	9.1546	1.8000e-004	1.7000e-004	9.2090
Fast Food Restaurant with Drive Thru	2.27092	0.0245	0.2226	0.1870	1.3400e-003		0.0169	0.0169		0.0169	0.0169		267.1673	267.1673	5.1200e-003	4.9000e-003	268.7549
Gasoline/Service Station	0.312615	3.3700e-003	0.0307	0.0257	1.8000e-004		2.3300e-003	2.3300e-003		2.3300e-003	2.3300e-003		36.7783	36.7783	7.0000e-004	6.7000e-004	36.9968
Mobile Home Park	5.39281	0.0582	0.4970	0.2115	3.1700e-003		0.0402	0.0402		0.0402	0.0402		634.4484	634.4484	0.0122	0.0116	638.2186
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.1000**	**0.8777**	**0.5312**	**5.4600e-003**		**0.0691**	**0.0691**		**0.0691**	**0.0691**		**1,091.2489**	**1,091.2489**	**0.0209**	**0.0200**	**1,097.7336**

6.0 Area Detail

6.1 Mitigation Measures Area

Love's Truck Stop Apple Valley - San Bernardino-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.4061	0.0839	7.2873	3.9000e-004		0.0403	0.0403		0.0403	0.0403	0.0000	13.1274	13.1274	0.0127	0.0000	13.4452
Unmitigated	4.4061	0.0839	7.2873	3.9000e-004		0.0403	0.0403		0.0403	0.0403	0.0000	13.1274	13.1274	0.0127	0.0000	13.4452

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.1415					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.0435					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.2211	0.0839	7.2873	3.9000e-004		0.0403	0.0403		0.0403	0.0403		13.1274	13.1274	0.0127		13.4452
Total	**4.4061**	**0.0839**	**7.2873**	**3.9000e-004**		**0.0403**	**0.0403**		**0.0403**	**0.0403**	**0.0000**	**13.1274**	**13.1274**	**0.0127**	**0.0000**	**13.4452**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.1415					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.0435					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.2211	0.0839	7.2873	3.9000e-004		0.0403	0.0403		0.0403	0.0403		13.1274	13.1274	0.0127		13.4452
Total	**4.4061**	**0.0839**	**7.2873**	**3.9000e-004**		**0.0403**	**0.0403**		**0.0403**	**0.0403**	**0.0000**	**13.1274**	**13.1274**	**0.0127**	**0.0000**	**13.4452**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Love's Truck Stop Apple Valley - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Love's Truck Stop Apple Valley

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	1.34	Acre	1.34	58,370.40	0
Parking Lot	183.00	Space	1.65	73,200.00	0
City Park	11.20	Acre	11.20	487,872.00	0
Fast Food Restaurant with Drive Thru	3.04	1000sqft	0.07	3,040.00	0
Mobile Home Park	88.00	Dwelling Unit	11.09	105,600.00	0
Automobile Care Center	13.79	1000sqft	0.32	13,790.00	0
Convenience Market (24 Hour)	12.91	1000sqft	0.30	12,910.00	0
Gasoline/Service Station	25.00	Pump	0.08	3,529.37	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - 2023 operational for SCE EF Based on CAPCOA Handbook Update, Table E-4.3: https://www.airquality.org/residents/climate-change/ghg-handbook-caleemod

Land Use - for Service Center: 183 spaces, 25 pumps, fast food, auto care, and convenience store per PD. For RV park, mobile home park represents RV park (for electrical hookups and utilities) spaces. Convenience store added to service center one. Landscaping for service and RV + renention basin = city park.

Construction Phase - Construction schedule based on a 9-month construction phase and operation in 2023 per PD. Default schedule adjusted based on PD. Trenching accounts for water main work - overlaps with building construction and lasts 2 months. Water main paving added as "other asphalt".

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Trips and VMT - worker trips adjusted to 0.32 per tsf based on Caleemod Appx A for blg const. Others default.

Architectural Coating - Rule 1113. 150 g/L. No residential painting.

Vehicle Trips - Adjusted based on trip rates provided by trip analysis. 106.52 trips/pumpand 2.7 trips/RV site per day. VMT adjusted per traffic sub to relfect most trips are diverted. 1.82 miles/ trip fro Truck Stop (see VMT sheet); default for mobile home park for RV park

Fleet Mix - Gas/Service Station and Mobile Home park fleeet adjusted to be 50% auto (0.167 each), 50% HHDT, and RV park 100% MH

Woodstoves - no hearths assumed (RV park)

Energy Use - default utilities

Water And Wastewater - Adjusted based on PD: 18,250,000 gal/year provided in PD: The estimated water demand for the travel center in the western portion of the project site would be approximately 12,000 gpd, of which 3,000 gpd of water would be used for landscaping. The estimated water demand for the RV park in the eastern portion of the project site would be approximately 14,000 gpd, of which 11,000 gpd of water would be used for landscaping. Zero'd out water demand for other uses.

Solid Waste - default waste

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Residential_Exterior	71,280.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Interior	213,840.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	150.00
tblArchitecturalCoating	EF_Parking	250.00	150.00
tblConstructionPhase	NumDays	35.00	22.00
tblConstructionPhase	NumDays	440.00	132.00
tblConstructionPhase	NumDays	30.00	22.00
tblConstructionPhase	NumDays	45.00	22.00
tblConstructionPhase	NumDays	35.00	22.00
tblConstructionPhase	NumDays	20.00	22.00
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	NumberGas	48.40	0.00
tblFireplaces	NumberNoFireplace	8.80	0.00
tblFireplaces	NumberWood	30.80	0.00
tblFleetMix	HHD	0.02	0.00

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tblFleetMix	HHD	0.02	0.00
tblFleetMix	LDA	0.54	0.17
tblFleetMix	LDA	0.54	0.00
tblFleetMix	LDT1	0.06	0.17
tblFleetMix	LDT1	0.06	0.00
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LDT2	0.17	0.00
tblFleetMix	LHD1	0.03	0.00
tblFleetMix	LHD1	0.03	0.00
tblFleetMix	LHD2	7.1960e-003	0.00
tblFleetMix	LHD2	7.1960e-003	0.00
tblFleetMix	MCY	0.03	0.00
tblFleetMix	MCY	0.03	0.00
tblFleetMix	MDV	0.14	0.00
tblFleetMix	MDV	0.14	0.00
tblFleetMix	MH	5.0710e-003	0.00
tblFleetMix	MH	5.0710e-003	1.00
tblFleetMix	MHD	0.01	0.50
tblFleetMix	MHD	0.01	0.00
tblFleetMix	OBUS	5.5900e-004	0.00
tblFleetMix	OBUS	5.5900e-004	0.00
tblFleetMix	SBUS	9.5400e-004	0.00
tblFleetMix	SBUS	9.5400e-004	0.00
tblFleetMix	UBUS	2.5400e-004	0.00
tblFleetMix	UBUS	2.5400e-004	0.00
tblLandUse	Population	252.00	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.033	0
tblProjectCharacteristics	CO2IntensityFactor	390.98	351
tblProjectCharacteristics	N2OIntensityFactor	0.004	0

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tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	WorkerTripNumber	334.00	243.00
tblVehicleTrips	CC_TL	6.60	1.82
tblVehicleTrips	CC_TTP	79.00	100.00
tblVehicleTrips	CNW_TL	6.60	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CW_TL	14.70	0.00
tblVehicleTrips	CW_TTP	2.00	0.00
tblVehicleTrips	DV_TP	27.00	0.00
tblVehicleTrips	PB_TP	59.00	0.00
tblVehicleTrips	PR_TP	14.00	100.00
tblVehicleTrips	ST_TR	23.72	0.00
tblVehicleTrips	ST_TR	1.96	0.00
tblVehicleTrips	ST_TR	1,084.17	0.00
tblVehicleTrips	ST_TR	616.12	0.00
tblVehicleTrips	ST_TR	182.17	213.04
tblVehicleTrips	ST_TR	4.61	2.70
tblVehicleTrips	SU_TR	11.88	0.00
tblVehicleTrips	SU_TR	2.19	0.00
tblVehicleTrips	SU_TR	901.17	0.00
tblVehicleTrips	SU_TR	472.58	0.00
tblVehicleTrips	SU_TR	166.88	213.04
tblVehicleTrips	SU_TR	4.24	2.70
tblVehicleTrips	WD_TR	23.72	0.00
tblVehicleTrips	WD_TR	0.78	0.00
tblVehicleTrips	WD_TR	762.28	0.00
tblVehicleTrips	WD_TR	470.95	0.00
tblVehicleTrips	WD_TR	172.01	213.04
tblVehicleTrips	WD_TR	5.00	2.70

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tblWater	IndoorWaterUseRate	1,297,378.47	0.00
tblWater	IndoorWaterUseRate	956,276.25	0.00
tblWater	IndoorWaterUseRate	922,742.49	0.00
tblWater	IndoorWaterUseRate	332,047.22	3,285,000.00
tblWater	IndoorWaterUseRate	5,733,554.25	1,095,000.00
tblWater	OutdoorWaterUseRate	795,167.45	0.00
tblWater	OutdoorWaterUseRate	13,344,591.12	0.00
tblWater	OutdoorWaterUseRate	586,104.80	0.00
tblWater	OutdoorWaterUseRate	58,898.46	0.00
tblWater	OutdoorWaterUseRate	203,512.81	1,095,000.00
tblWater	OutdoorWaterUseRate	3,614,632.03	4,015,000.00
tblWoodstoves	NumberCatalytic	4.40	0.00
tblWoodstoves	NumberNoncatalytic	4.40	0.00

2.0 Emissions Summary

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.2177	2.1501	1.7340	3.7900e-003	0.3714	0.0943	0.4657	0.1658	0.0871	0.2529	0.0000	335.8798	335.8798	0.0874	4.3300e-003	339.3559
2023	0.4283	1.2071	1.7275	4.4700e-003	0.2426	0.0481	0.2908	0.0650	0.0452	0.1102	0.0000	406.6424	406.6424	0.0449	0.0197	413.6229
Maximum	**0.4283**	**2.1501**	**1.7340**	**4.4700e-003**	**0.3714**	**0.0943**	**0.4657**	**0.1658**	**0.0871**	**0.2529**	**0.0000**	**406.6424**	**406.6424**	**0.0874**	**0.0197**	**413.6229**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.2177	2.1501	1.7340	3.7900e-003	0.3714	0.0943	0.4657	0.1658	0.0871	0.2529	0.0000	335.8795	335.8795	0.0874	4.3300e-003	339.3556
2023	0.4283	1.2071	1.7275	4.4700e-003	0.2426	0.0481	0.2908	0.0650	0.0452	0.1102	0.0000	406.6422	406.6422	0.0449	0.0197	413.6228
Maximum	**0.4283**	**2.1501**	**1.7340**	**4.4700e-003**	**0.3714**	**0.0943**	**0.4657**	**0.1658**	**0.0871**	**0.2529**	**0.0000**	**406.6422**	**406.6422**	**0.0874**	**0.0197**	**413.6228**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**10-3-2022**	**1-2-2023**	2.3792	2.3792
2	**1-3-2023**	**4-2-2023**	0.7048	0.7048
3	**4-3-2023**	**7-2-2023**	0.8761	0.8761
4	**7-3-2023**	**9-30-2023**	0.0269	0.0269
		Highest	2.3792	2.3792

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.7837	7.5500e-003	0.6559	3.0000e-005		3.6300e-003	3.6300e-003		3.6300e-003	3.6300e-003	0.0000	1.0718	1.0718	1.0400e-003	0.0000	1.0978
Energy	0.0183	0.1602	0.0970	1.0000e-003		0.0126	0.0126		0.0126	0.0126	0.0000	332.3655	332.3655	3.4600e-003	3.3100e-003	333.4391
Mobile	1.9868	3.1427	11.8578	0.0283	1.7491	0.0520	1.8011	0.4811	0.0494	0.5305	0.0000	2,622.2877	2,622.2877	0.1767	0.1646	2,675.7413
Waste						0.0000	0.0000		0.0000	0.0000	36.8246	0.0000	36.8246	2.1763	0.0000	91.2314
Water						0.0000	0.0000		0.0000	0.0000	1.3896	18.1189	19.5084	0.1427	3.3700e-003	24.0807
Total	**2.7887**	**3.3105**	**12.6106**	**0.0294**	**1.7491**	**0.0682**	**1.8173**	**0.4811**	**0.0656**	**0.5467**	**38.2142**	**2,973.8439**	**3,012.0580**	**2.5002**	**0.1712**	**3,125.5902**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.7837	7.5500e-003	0.6559	3.0000e-005		3.6300e-003	3.6300e-003		3.6300e-003	3.6300e-003	0.0000	1.0718	1.0718	1.0400e-003	0.0000	1.0978
Energy	0.0183	0.1602	0.0970	1.0000e-003		0.0126	0.0126		0.0126	0.0126	0.0000	332.3655	332.3655	3.4600e-003	3.3100e-003	333.4391
Mobile	1.9868	3.1427	11.8578	0.0283	1.7491	0.0520	1.8011	0.4811	0.0494	0.5305	0.0000	2,622.2877	2,622.2877	0.1767	0.1646	2,675.7413
Waste						0.0000	0.0000		0.0000	0.0000	36.8246	0.0000	36.8246	2.1763	0.0000	91.2314
Water						0.0000	0.0000		0.0000	0.0000	1.3896	18.1189	19.5084	0.1427	3.3700e-003	24.0807
Total	**2.7887**	**3.3105**	**12.6106**	**0.0294**	**1.7491**	**0.0682**	**1.8173**	**0.4811**	**0.0656**	**0.5467**	**38.2142**	**2,973.8439**	**3,012.0580**	**2.5002**	**0.1712**	**3,125.5902**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	10/3/2022	11/1/2022	5	22	
2	Site Preparation	Site Preparation	10/3/2022	11/1/2022	5	22	
3	Grading	Grading	10/3/2022	11/1/2022	5	22	

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4	Water Main Trenching / Undergrounding	Trenching	11/2/2022	1/2/2023	5	44	
5	Building Construction	Building Construction	12/1/2022	6/2/2023	5	132	
6	Paving	Paving	6/3/2023	7/4/2023	5	22	
7	Architectural Coating	Architectural Coating	6/3/2023	7/4/2023	5	22	

Acres of Grading (Site Preparation Phase): 33

Acres of Grading (Grading Phase): 66

Acres of Paving: 2.99

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 49,904; Non-Residential Outdoor: 16,635; Striped Parking Area: 7,894 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Water Main Trenching / Undergrounding	Excavators	2	8.00	158	0.38
Water Main Trenching / Undergrounding	Graders	1	8.00	187	0.41
Water Main Trenching / Undergrounding	Rubber Tired Dozers	1	8.00	247	0.40
Water Main Trenching / Undergrounding	Scrapers	2	8.00	367	0.48
Water Main Trenching / Undergrounding	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Air Compressors	0	6.00	78	0.48
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	243.00	116.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Water Main Trenching / Undergrounding	8	20.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	67.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	67.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0290	0.2829	0.2265	4.3000e-004		0.0137	0.0137		0.0127	0.0127	0.0000	37.3893	37.3893	0.0105	0.0000	37.6518
Total	**0.0290**	**0.2829**	**0.2265**	**4.3000e-004**		**0.0137**	**0.0137**		**0.0127**	**0.0127**	**0.0000**	**37.3893**	**37.3893**	**0.0105**	**0.0000**	**37.6518**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.8000e-004	5.4000e-004	6.5500e-003	2.0000e-005	2.0700e-003	1.0000e-005	2.0800e-003	5.5000e-004	1.0000e-005	5.6000e-004	0.0000	1.6436	1.6436	4.0000e-005	5.0000e-005	1.6585
Total	**6.8000e-004**	**5.4000e-004**	**6.5500e-003**	**2.0000e-005**	**2.0700e-003**	**1.0000e-005**	**2.0800e-003**	**5.5000e-004**	**1.0000e-005**	**5.6000e-004**	**0.0000**	**1.6436**	**1.6436**	**4.0000e-005**	**5.0000e-005**	**1.6585**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Demolition - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0290	0.2829	0.2265	4.3000e-004		0.0137	0.0137		0.0127	0.0127	0.0000	37.3892	37.3892	0.0105	0.0000	37.6518
Total	**0.0290**	**0.2829**	**0.2265**	**4.3000e-004**		**0.0137**	**0.0137**		**0.0127**	**0.0127**	**0.0000**	**37.3892**	**37.3892**	**0.0105**	**0.0000**	**37.6518**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.8000e-004	5.4000e-004	6.5500e-003	2.0000e-005	2.0700e-003	1.0000e-005	2.0800e-003	5.5000e-004	1.0000e-005	5.6000e-004	0.0000	1.6436	1.6436	4.0000e-005	5.0000e-005	1.6585
Total	**6.8000e-004**	**5.4000e-004**	**6.5500e-003**	**2.0000e-005**	**2.0700e-003**	**1.0000e-005**	**2.0800e-003**	**5.5000e-004**	**1.0000e-005**	**5.6000e-004**	**0.0000**	**1.6436**	**1.6436**	**4.0000e-005**	**5.0000e-005**	**1.6585**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2162	0.0000	0.2162	0.1111	0.0000	0.1111	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0349	0.3639	0.2167	4.2000e-004		0.0177	0.0177		0.0163	0.0163	0.0000	36.7833	36.7833	0.0119	0.0000	37.0807
Total	**0.0349**	**0.3639**	**0.2167**	**4.2000e-004**	**0.2162**	**0.0177**	**0.2340**	**0.1111**	**0.0163**	**0.1275**	**0.0000**	**36.7833**	**36.7833**	**0.0119**	**0.0000**	**37.0807**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.1000e-004	6.5000e-004	7.8600e-003	2.0000e-005	2.4800e-003	1.0000e-005	2.4900e-003	6.6000e-004	1.0000e-005	6.7000e-004	0.0000	1.9724	1.9724	5.0000e-005	6.0000e-005	1.9902
Total	**8.1000e-004**	**6.5000e-004**	**7.8600e-003**	**2.0000e-005**	**2.4800e-003**	**1.0000e-005**	**2.4900e-003**	**6.6000e-004**	**1.0000e-005**	**6.7000e-004**	**0.0000**	**1.9724**	**1.9724**	**5.0000e-005**	**6.0000e-005**	**1.9902**

Love's Truck Stop Apple Valley - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Site Preparation - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2162	0.0000	0.2162	0.1111	0.0000	0.1111	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0349	0.3639	0.2167	4.2000e-004		0.0177	0.0177		0.0163	0.0163	0.0000	36.7833	36.7833	0.0119	0.0000	37.0807
Total	**0.0349**	**0.3639**	**0.2167**	**4.2000e-004**	**0.2162**	**0.0177**	**0.2340**	**0.1111**	**0.0163**	**0.1275**	**0.0000**	**36.7833**	**36.7833**	**0.0119**	**0.0000**	**37.0807**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.1000e-004	6.5000e-004	7.8600e-003	2.0000e-005	2.4800e-003	1.0000e-005	2.4900e-003	6.6000e-004	1.0000e-005	6.7000e-004	0.0000	1.9724	1.9724	5.0000e-005	6.0000e-005	1.9902
Total	**8.1000e-004**	**6.5000e-004**	**7.8600e-003**	**2.0000e-005**	**2.4800e-003**	**1.0000e-005**	**2.4900e-003**	**6.6000e-004**	**1.0000e-005**	**6.7000e-004**	**0.0000**	**1.9724**	**1.9724**	**5.0000e-005**	**6.0000e-005**	**1.9902**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1012	0.0000	0.1012	0.0402	0.0000	0.0402	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0399	0.4273	0.3195	6.8000e-004		0.0180	0.0180		0.0166	0.0166	0.0000	59.9881	59.9881	0.0194	0.0000	60.4731
Total	**0.0399**	**0.4273**	**0.3195**	**6.8000e-004**	**0.1012**	**0.0180**	**0.1192**	**0.0402**	**0.0166**	**0.0567**	**0.0000**	**59.9881**	**59.9881**	**0.0194**	**0.0000**	**60.4731**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.0000e-004	7.3000e-004	8.7400e-003	2.0000e-005	2.7600e-003	1.0000e-005	2.7700e-003	7.3000e-004	1.0000e-005	7.5000e-004	0.0000	2.1915	2.1915	6.0000e-005	6.0000e-005	2.2114
Total	**9.0000e-004**	**7.3000e-004**	**8.7400e-003**	**2.0000e-005**	**2.7600e-003**	**1.0000e-005**	**2.7700e-003**	**7.3000e-004**	**1.0000e-005**	**7.5000e-004**	**0.0000**	**2.1915**	**2.1915**	**6.0000e-005**	**6.0000e-005**	**2.2114**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Grading - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1012	0.0000	0.1012	0.0402	0.0000	0.0402	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0399	0.4273	0.3195	6.8000e-004		0.0180	0.0180		0.0166	0.0166	0.0000	59.9880	59.9880	0.0194	0.0000	60.4730
Total	**0.0399**	**0.4273**	**0.3195**	**6.8000e-004**	**0.1012**	**0.0180**	**0.1192**	**0.0402**	**0.0166**	**0.0567**	**0.0000**	**59.9880**	**59.9880**	**0.0194**	**0.0000**	**60.4730**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.0000e-004	7.3000e-004	8.7400e-003	2.0000e-005	2.7600e-003	1.0000e-005	2.7700e-003	7.3000e-004	1.0000e-005	7.5000e-004	0.0000	2.1915	2.1915	6.0000e-005	6.0000e-005	2.2114
Total	**9.0000e-004**	**7.3000e-004**	**8.7400e-003**	**2.0000e-005**	**2.7600e-003**	**1.0000e-005**	**2.7700e-003**	**7.3000e-004**	**1.0000e-005**	**7.5000e-004**	**0.0000**	**2.1915**	**2.1915**	**6.0000e-005**	**6.0000e-005**	**2.2114**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Water Main Trenching / Undergrounding - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0779	0.8351	0.6244	1.3300e-003		0.0352	0.0352		0.0323	0.0323	0.0000	117.2494	117.2494	0.0379	0.0000	118.1974
Total	**0.0779**	**0.8351**	**0.6244**	**1.3300e-003**		**0.0352**	**0.0352**		**0.0323**	**0.0323**	**0.0000**	**117.2494**	**117.2494**	**0.0379**	**0.0000**	**118.1974**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7600e-003	1.4200e-003	0.0171	5.0000e-005	5.3900e-003	3.0000e-005	5.4200e-003	1.4300e-003	3.0000e-005	1.4600e-003	0.0000	4.2834	4.2834	1.2000e-004	1.2000e-004	4.3222
Total	**1.7600e-003**	**1.4200e-003**	**0.0171**	**5.0000e-005**	**5.3900e-003**	**3.0000e-005**	**5.4200e-003**	**1.4300e-003**	**3.0000e-005**	**1.4600e-003**	**0.0000**	**4.2834**	**4.2834**	**1.2000e-004**	**1.2000e-004**	**4.3222**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Water Main Trenching / Undergrounding - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0779	0.8351	0.6244	1.3300e-003		0.0352	0.0352		0.0323	0.0323	0.0000	117.2493	117.2493	0.0379	0.0000	118.1973
Total	**0.0779**	**0.8351**	**0.6244**	**1.3300e-003**		**0.0352**	**0.0352**		**0.0323**	**0.0323**	**0.0000**	**117.2493**	**117.2493**	**0.0379**	**0.0000**	**118.1973**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7600e-003	1.4200e-003	0.0171	5.0000e-005	5.3900e-003	3.0000e-005	5.4200e-003	1.4300e-003	3.0000e-005	1.4600e-003	0.0000	4.2834	4.2834	1.2000e-004	1.2000e-004	4.3222
Total	**1.7600e-003**	**1.4200e-003**	**0.0171**	**5.0000e-005**	**5.3900e-003**	**3.0000e-005**	**5.4200e-003**	**1.4300e-003**	**3.0000e-005**	**1.4600e-003**	**0.0000**	**4.2834**	**4.2834**	**1.2000e-004**	**1.2000e-004**	**4.3222**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Water Main Trenching / Undergrounding - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.6600e-003	0.0173	0.0140	3.0000e-005		7.1000e-004	7.1000e-004		6.6000e-004	6.6000e-004	0.0000	2.7268	2.7268	8.8000e-004	0.0000	2.7488
Total	**1.6600e-003**	**0.0173**	**0.0140**	**3.0000e-005**		**7.1000e-004**	**7.1000e-004**		**6.6000e-004**	**6.6000e-004**	**0.0000**	**2.7268**	**2.7268**	**8.8000e-004**	**0.0000**	**2.7488**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	3.0000e-005	3.6000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0964	0.0964	0.0000	0.0000	0.0972
Total	**4.0000e-005**	**3.0000e-005**	**3.6000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0964**	**0.0964**	**0.0000**	**0.0000**	**0.0972**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Water Main Trenching / Undergrounding - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.6600e-003	0.0173	0.0140	3.0000e-005		7.1000e-004	7.1000e-004		6.6000e-004	6.6000e-004	0.0000	2.7268	2.7268	8.8000e-004	0.0000	2.7488
Total	**1.6600e-003**	**0.0173**	**0.0140**	**3.0000e-005**		**7.1000e-004**	**7.1000e-004**		**6.6000e-004**	**6.6000e-004**	**0.0000**	**2.7268**	**2.7268**	**8.8000e-004**	**0.0000**	**2.7488**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	3.0000e-005	3.6000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0964	0.0964	0.0000	0.0000	0.0972
Total	**4.0000e-005**	**3.0000e-005**	**3.6000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0964**	**0.0964**	**0.0000**	**0.0000**	**0.0972**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0188	0.1718	0.1800	3.0000e-004		8.9000e-003	8.9000e-003		8.3700e-003	8.3700e-003	0.0000	25.4898	25.4898	6.1100e-003	0.0000	25.6424
Total	**0.0188**	**0.1718**	**0.1800**	**3.0000e-004**		**8.9000e-003**	**8.9000e-003**		**8.3700e-003**	**8.3700e-003**	**0.0000**	**25.4898**	**25.4898**	**6.1100e-003**	**0.0000**	**25.6424**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1200e-003	0.0570	0.0205	2.3000e-004	7.7000e-003	6.4000e-004	8.3400e-003	2.2200e-003	6.1000e-004	2.8300e-003	0.0000	22.2622	22.2622	6.0000e-004	3.3000e-003	23.2600
Worker	0.0110	8.8200e-003	0.1062	2.9000e-004	0.0335	1.8000e-004	0.0337	8.8900e-003	1.6000e-004	9.0600e-003	0.0000	26.6269	26.6269	7.2000e-004	7.5000e-004	26.8681
Total	**0.0131**	**0.0658**	**0.1267**	**5.2000e-004**	**0.0412**	**8.2000e-004**	**0.0420**	**0.0111**	**7.7000e-004**	**0.0119**	**0.0000**	**48.8891**	**48.8891**	**1.3200e-003**	**4.0500e-003**	**50.1281**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Building Construction - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0188	0.1718	0.1800	3.0000e-004		8.9000e-003	8.9000e-003		8.3700e-003	8.3700e-003	0.0000	25.4898	25.4898	6.1100e-003	0.0000	25.6424
Total	**0.0188**	**0.1718**	**0.1800**	**3.0000e-004**		**8.9000e-003**	**8.9000e-003**		**8.3700e-003**	**8.3700e-003**	**0.0000**	**25.4898**	**25.4898**	**6.1100e-003**	**0.0000**	**25.6424**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1200e-003	0.0570	0.0205	2.3000e-004	7.7000e-003	6.4000e-004	8.3400e-003	2.2200e-003	6.1000e-004	2.8300e-003	0.0000	22.2622	22.2622	6.0000e-004	3.3000e-003	23.2600
Worker	0.0110	8.8200e-003	0.1062	2.9000e-004	0.0335	1.8000e-004	0.0337	8.8900e-003	1.6000e-004	9.0600e-003	0.0000	26.6269	26.6269	7.2000e-004	7.5000e-004	26.8681
Total	**0.0131**	**0.0658**	**0.1267**	**5.2000e-004**	**0.0412**	**8.2000e-004**	**0.0420**	**0.0111**	**7.7000e-004**	**0.0119**	**0.0000**	**48.8891**	**48.8891**	**1.3200e-003**	**4.0500e-003**	**50.1281**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0865	0.7912	0.8934	1.4800e-003		0.0385	0.0385		0.0362	0.0362	0.0000	127.4926	127.4926	0.0303	0.0000	128.2508
Total	**0.0865**	**0.7912**	**0.8934**	**1.4800e-003**		**0.0385**	**0.0385**		**0.0362**	**0.0362**	**0.0000**	**127.4926**	**127.4926**	**0.0303**	**0.0000**	**128.2508**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.0900e-003	0.2288	0.0942	1.1000e-003	0.0385	1.6100e-003	0.0401	0.0111	1.5400e-003	0.0127	0.0000	106.8369	106.8369	2.7800e-003	0.0158	111.6130
Worker	0.0507	0.0387	0.4856	1.4100e-003	0.1675	8.3000e-004	0.1683	0.0445	7.7000e-004	0.0452	0.0000	128.8501	128.8501	3.2000e-003	3.4400e-003	129.9556
Total	**0.0578**	**0.2675**	**0.5798**	**2.5100e-003**	**0.2060**	**2.4400e-003**	**0.2084**	**0.0556**	**2.3100e-003**	**0.0579**	**0.0000**	**235.6871**	**235.6871**	**5.9800e-003**	**0.0192**	**241.5687**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0865	0.7912	0.8934	1.4800e-003		0.0385	0.0385		0.0362	0.0362	0.0000	127.4925	127.4925	0.0303	0.0000	128.2507
Total	**0.0865**	**0.7912**	**0.8934**	**1.4800e-003**		**0.0385**	**0.0385**		**0.0362**	**0.0362**	**0.0000**	**127.4925**	**127.4925**	**0.0303**	**0.0000**	**128.2507**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.0900e-003	0.2288	0.0942	1.1000e-003	0.0385	1.6100e-003	0.0401	0.0111	1.5400e-003	0.0127	0.0000	106.8369	106.8369	2.7800e-003	0.0158	111.6130
Worker	0.0507	0.0387	0.4856	1.4100e-003	0.1675	8.3000e-004	0.1683	0.0445	7.7000e-004	0.0452	0.0000	128.8501	128.8501	3.2000e-003	3.4400e-003	129.9556
Total	**0.0578**	**0.2675**	**0.5798**	**2.5100e-003**	**0.2060**	**2.4400e-003**	**0.2084**	**0.0556**	**2.3100e-003**	**0.0579**	**0.0000**	**235.6871**	**235.6871**	**5.9800e-003**	**0.0192**	**241.5687**

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3.7 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0114	0.1121	0.1604	2.5000e-004		5.6100e-003	5.6100e-003		5.1600e-003	5.1600e-003	0.0000	22.0296	22.0296	7.1200e-003	0.0000	22.2077
Paving	3.9200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0153**	**0.1121**	**0.1604**	**2.5000e-004**		**5.6100e-003**	**5.6100e-003**		**5.1600e-003**	**5.1600e-003**	**0.0000**	**22.0296**	**22.0296**	**7.1200e-003**	**0.0000**	**22.2077**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	4.8000e-004	6.0000e-003	2.0000e-005	2.0700e-003	1.0000e-005	2.0800e-003	5.5000e-004	1.0000e-005	5.6000e-004	0.0000	1.5907	1.5907	4.0000e-005	4.0000e-005	1.6044
Total	**6.3000e-004**	**4.8000e-004**	**6.0000e-003**	**2.0000e-005**	**2.0700e-003**	**1.0000e-005**	**2.0800e-003**	**5.5000e-004**	**1.0000e-005**	**5.6000e-004**	**0.0000**	**1.5907**	**1.5907**	**4.0000e-005**	**4.0000e-005**	**1.6044**

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3.7 Paving - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0114	0.1121	0.1604	2.5000e-004		5.6100e-003	5.6100e-003		5.1600e-003	5.1600e-003	0.0000	22.0295	22.0295	7.1200e-003	0.0000	22.2077
Paving	3.9200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0153**	**0.1121**	**0.1604**	**2.5000e-004**		**5.6100e-003**	**5.6100e-003**		**5.1600e-003**	**5.1600e-003**	**0.0000**	**22.0295**	**22.0295**	**7.1200e-003**	**0.0000**	**22.2077**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	4.8000e-004	6.0000e-003	2.0000e-005	2.0700e-003	1.0000e-005	2.0800e-003	5.5000e-004	1.0000e-005	5.6000e-004	0.0000	1.5907	1.5907	4.0000e-005	4.0000e-005	1.6044
Total	**6.3000e-004**	**4.8000e-004**	**6.0000e-003**	**2.0000e-005**	**2.0700e-003**	**1.0000e-005**	**2.0800e-003**	**5.5000e-004**	**1.0000e-005**	**5.6000e-004**	**0.0000**	**1.5907**	**1.5907**	**4.0000e-005**	**4.0000e-005**	**1.6044**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.8 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2588					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1100e-003	0.0143	0.0199	3.0000e-005		7.8000e-004	7.8000e-004		7.8000e-004	7.8000e-004	0.0000	2.8086	2.8086	1.7000e-004	0.0000	2.8128
Total	**0.2609**	**0.0143**	**0.0199**	**3.0000e-005**		**7.8000e-004**	**7.8000e-004**		**7.8000e-004**	**7.8000e-004**	**0.0000**	**2.8086**	**2.8086**	**1.7000e-004**	**0.0000**	**2.8128**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.5900e-003	4.2700e-003	0.0536	1.5000e-004	0.0345	9.0000e-005	0.0346	8.8300e-003	8.0000e-005	8.9200e-003	0.0000	14.2106	14.2106	3.5000e-004	3.8000e-004	14.3326
Total	**5.5900e-003**	**4.2700e-003**	**0.0536**	**1.5000e-004**	**0.0345**	**9.0000e-005**	**0.0346**	**8.8300e-003**	**8.0000e-005**	**8.9200e-003**	**0.0000**	**14.2106**	**14.2106**	**3.5000e-004**	**3.8000e-004**	**14.3326**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.8 Architectural Coating - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2588					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1100e-003	0.0143	0.0199	3.0000e-005		7.8000e-004	7.8000e-004		7.8000e-004	7.8000e-004	0.0000	2.8086	2.8086	1.7000e-004	0.0000	2.8128
Total	**0.2609**	**0.0143**	**0.0199**	**3.0000e-005**		**7.8000e-004**	**7.8000e-004**		**7.8000e-004**	**7.8000e-004**	**0.0000**	**2.8086**	**2.8086**	**1.7000e-004**	**0.0000**	**2.8128**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.5900e-003	4.2700e-003	0.0536	1.5000e-004	0.0345	9.0000e-005	0.0346	8.8300e-003	8.0000e-005	8.9200e-003	0.0000	14.2106	14.2106	3.5000e-004	3.8000e-004	14.3326
Total	**5.5900e-003**	**4.2700e-003**	**0.0536**	**1.5000e-004**	**0.0345**	**9.0000e-005**	**0.0346**	**8.8300e-003**	**8.0000e-005**	**8.9200e-003**	**0.0000**	**14.2106**	**14.2106**	**3.5000e-004**	**3.8000e-004**	**14.3326**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.9868	3.1427	11.8578	0.0283	1.7491	0.0520	1.8011	0.4811	0.0494	0.5305	0.0000	2,622.2877	2,622.2877	0.1767	0.1646	2,675.7413
Unmitigated	1.9868	3.1427	11.8578	0.0283	1.7491	0.0520	1.8011	0.4811	0.0494	0.5305	0.0000	2,622.2877	2,622.2877	0.1767	0.1646	2,675.7413

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Automobile Care Center	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
Convenience Market (24 Hour)	0.00	0.00	0.00		
Fast Food Restaurant with Drive Thru	0.00	0.00	0.00		
Gasoline/Service Station	5,326.00	5,326.00	5326.00	3,528,368	3,528,368
Mobile Home Park	237.60	237.60	237.60	869,467	869,467
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	5,563.60	5,563.60	5,563.60	4,397,836	4,397,836

4.3 Trip Type Information

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Automobile Care Center	14.70	6.60	6.60	33.00	48.00	19.00	21	51	28
City Park	14.70	6.60	6.60	33.00	48.00	19.00	66	28	6
Convenience Market (24 Hour)	14.70	6.60	6.60	0.90	80.10	19.00	24	15	61
Fast Food Restaurant with Drive	14.70	6.60	6.60	2.20	78.80	19.00	29	21	50
Gasoline/Service Station	0.00	1.82	0.00	0.00	100.00	0.00	100	0	0
Mobile Home Park	16.80	7.10	7.90	40.20	19.20	40.60	86	11	3
Other Asphalt Surfaces	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
Parking Lot	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Automobile Care Center	0.537785	0.055838	0.172353	0.139003	0.027005	0.007196	0.011392	0.017285	0.000559	0.000254	0.025303	0.000954	0.005071
City Park	0.537785	0.055838	0.172353	0.139003	0.027005	0.007196	0.011392	0.017285	0.000559	0.000254	0.025303	0.000954	0.005071
Convenience Market (24 Hour)	0.537785	0.055838	0.172353	0.139003	0.027005	0.007196	0.011392	0.017285	0.000559	0.000254	0.025303	0.000954	0.005071
Fast Food Restaurant with Drive Thru	0.167000	0.167000	0.166000	0.000000	0.000000	0.000000	0.500000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Gasoline/Service Station	0.537785	0.055838	0.172353	0.139003	0.027005	0.007196	0.011392	0.017285	0.000559	0.000254	0.025303	0.000954	0.005071
Mobile Home Park	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.000000
Other Asphalt Surfaces	0.537785	0.055838	0.172353	0.139003	0.027005	0.007196	0.011392	0.017285	0.000559	0.000254	0.025303	0.000954	0.005071
Parking Lot	0.537785	0.055838	0.172353	0.139003	0.027005	0.007196	0.011392	0.017285	0.000559	0.000254	0.025303	0.000954	0.005071

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	151.6970	151.6970	0.0000	0.0000	151.6970
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	151.6970	151.6970	0.0000	0.0000	151.6970
NaturalGas Mitigated	0.0183	0.1602	0.0970	1.0000e-003		0.0126	0.0126		0.0126	0.0126	0.0000	180.6685	180.6685	3.4600e-003	3.3100e-003	181.7421
NaturalGas Unmitigated	0.0183	0.1602	0.0970	1.0000e-003		0.0126	0.0126		0.0126	0.0126	0.0000	180.6685	180.6685	3.4600e-003	3.3100e-003	181.7421

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Automobile Care Center	445831	2.4000e-003	0.0219	0.0184	1.3000e-004		1.6600e-003	1.6600e-003		1.6600e-003	1.6600e-003	0.0000	23.7912	23.7912	4.6000e-004	4.4000e-004	23.9326
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Convenience Market (24 Hour)	28402	1.5000e-004	1.3900e-003	1.1700e-003	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	1.5156	1.5156	3.0000e-005	3.0000e-005	1.5247
Fast Food Restaurant with Drive Thru	828886	4.4700e-003	0.0406	0.0341	2.4000e-004		3.0900e-003	3.0900e-003		3.0900e-003	3.0900e-003	0.0000	44.2325	44.2325	8.5000e-004	8.1000e-004	44.4954
Gasoline/Service Station	114105	6.2000e-004	5.5900e-003	4.7000e-003	3.0000e-005		4.3000e-004	4.3000e-004		4.3000e-004	4.3000e-004	0.0000	6.0891	6.0891	1.2000e-004	1.1000e-004	6.1252
Mobile Home Park	1.96838e+006	0.0106	0.0907	0.0386	5.8000e-004		7.3300e-003	7.3300e-003		7.3300e-003	7.3300e-003	0.0000	105.0400	105.0400	2.0100e-003	1.9300e-003	105.6642
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0183**	**0.1602**	**0.0970**	**9.9000e-004**		**0.0126**	**0.0126**		**0.0126**	**0.0126**	**0.0000**	**180.6685**	**180.6685**	**3.4700e-003**	**3.3200e-003**	**181.7421**

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5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Automobile Care Center	445831	2.4000e-003	0.0219	0.0184	1.3000e-004		1.6600e-003	1.6600e-003		1.6600e-003	1.6600e-003	0.0000	23.7912	23.7912	4.6000e-004	4.4000e-004	23.9326
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Convenience Market (24 Hour)	28402	1.5000e-004	1.3900e-003	1.1700e-003	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	1.5156	1.5156	3.0000e-005	3.0000e-005	1.5247
Fast Food Restaurant with Drive Thru	828886	4.4700e-003	0.0406	0.0341	2.4000e-004		3.0900e-003	3.0900e-003		3.0900e-003	3.0900e-003	0.0000	44.2325	44.2325	8.5000e-004	8.1000e-004	44.4954
Gasoline/Service Station	114105	6.2000e-004	5.5900e-003	4.7000e-003	3.0000e-005		4.3000e-004	4.3000e-004		4.3000e-004	4.3000e-004	0.0000	6.0891	6.0891	1.2000e-004	1.1000e-004	6.1252
Mobile Home Park	1.96838e+006	0.0106	0.0907	0.0386	5.8000e-004		7.3300e-003	7.3300e-003		7.3300e-003	7.3300e-003	0.0000	105.0400	105.0400	2.0100e-003	1.9300e-003	105.6642
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0183**	**0.1602**	**0.0970**	**9.9000e-004**		**0.0126**	**0.0126**		**0.0126**	**0.0126**	**0.0000**	**180.6685**	**180.6685**	**3.4700e-003**	**3.3200e-003**	**181.7421**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Automobile Care Center	136797	21.7795	0.0000	0.0000	21.7795
City Park	0	0.0000	0.0000	0.0000	0.0000
Convenience Market (24 Hour)	156727	24.9527	0.0000	0.0000	24.9527
Fast Food Restaurant with Drive Thru	140326	22.3415	0.0000	0.0000	22.3415
Gasoline/Service Station	35011.4	5.5742	0.0000	0.0000	5.5742
Mobile Home Park	458323	72.9701	0.0000	0.0000	72.9701
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	25620	4.0790	0.0000	0.0000	4.0790
Total		**151.6970**	**0.0000**	**0.0000**	**151.6970**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Automobile Care Center	136797	21.7795	0.0000	0.0000	21.7795
City Park	0	0.0000	0.0000	0.0000	0.0000
Convenience Market (24 Hour)	156727	24.9527	0.0000	0.0000	24.9527
Fast Food Restaurant with Drive Thru	140326	22.3415	0.0000	0.0000	22.3415
Gasoline/Service Station	35011.4	5.5742	0.0000	0.0000	5.5742
Mobile Home Park	458323	72.9701	0.0000	0.0000	72.9701
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	25620	4.0790	0.0000	0.0000	4.0790
Total		**151.6970**	**0.0000**	**0.0000**	**151.6970**

6.0 Area Detail

6.1 Mitigation Measures Area

Love's Truck Stop Apple Valley - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.7837	7.5500e-003	0.6559	3.0000e-005		3.6300e-003	3.6300e-003		3.6300e-003	3.6300e-003	0.0000	1.0718	1.0718	1.0400e-003	0.0000	1.0978
Unmitigated	0.7837	7.5500e-003	0.6559	3.0000e-005		3.6300e-003	3.6300e-003		3.6300e-003	3.6300e-003	0.0000	1.0718	1.0718	1.0400e-003	0.0000	1.0978

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2083					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5555					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0199	7.5500e-003	0.6559	3.0000e-005		3.6300e-003	3.6300e-003		3.6300e-003	3.6300e-003	0.0000	1.0718	1.0718	1.0400e-003	0.0000	1.0978
Total	**0.7837**	**7.5500e-003**	**0.6559**	**3.0000e-005**		**3.6300e-003**	**3.6300e-003**		**3.6300e-003**	**3.6300e-003**	**0.0000**	**1.0718**	**1.0718**	**1.0400e-003**	**0.0000**	**1.0978**

Love's Truck Stop Apple Valley - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2083					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5555					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0199	7.5500e-003	0.6559	3.0000e-005		3.6300e-003	3.6300e-003		3.6300e-003	3.6300e-003	0.0000	1.0718	1.0718	1.0400e-003	0.0000	1.0978
Total	**0.7837**	**7.5500e-003**	**0.6559**	**3.0000e-005**		**3.6300e-003**	**3.6300e-003**		**3.6300e-003**	**3.6300e-003**	**0.0000**	**1.0718**	**1.0718**	**1.0400e-003**	**0.0000**	**1.0978**

7.0 Water Detail

7.1 Mitigation Measures Water

Love's Truck Stop Apple Valley - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	19.5084	0.1427	3.3700e-003	24.0807
Unmitigated	19.5084	0.1427	3.3700e-003	24.0807

Love's Truck Stop Apple Valley - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Automobile Care Center	0 / 0	0.0000	0.0000	0.0000	0.0000
City Park	0 / 0	0.0000	0.0000	0.0000	0.0000
Convenience Market (24 Hour)	0 / 0	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant with Drive Thru	0 / 0	0.0000	0.0000	0.0000	0.0000
Gasoline/Service Station	3.285 / 1.095	9.7891	0.1070	2.5300e-003	13.2184
Mobile Home Park	1.095 / 4.015	9.7193	0.0357	8.4000e-004	10.8624
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**19.5084**	**0.1427**	**3.3700e-003**	**24.0807**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Automobile Care Center	0 / 0	0.0000	0.0000	0.0000	0.0000
City Park	0 / 0	0.0000	0.0000	0.0000	0.0000
Convenience Market (24 Hour)	0 / 0	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant with Drive Thru	0 / 0	0.0000	0.0000	0.0000	0.0000
Gasoline/Service Station	3.285 / 1.095	9.7891	0.1070	2.5300e-003	13.2184
Mobile Home Park	1.095 / 4.015	9.7193	0.0357	8.4000e-004	10.8624
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**19.5084**	**0.1427**	**3.3700e-003**	**24.0807**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Love's Truck Stop Apple Valley - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	36.8246	2.1763	0.0000	91.2314
Unmitigated	36.8246	2.1763	0.0000	91.2314

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Automobile Care Center	52.68	10.6936	0.6320	0.0000	26.4929
City Park	0.96	0.1949	0.0115	0.0000	0.4828
Convenience Market (24 Hour)	38.8	7.8761	0.4655	0.0000	19.5126
Fast Food Restaurant with Drive Thru	35.02	7.1087	0.4201	0.0000	17.6116
Gasoline/Service Station	13.47	2.7343	0.1616	0.0000	6.7741
Mobile Home Park	40.48	8.2171	0.4856	0.0000	20.3575
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**36.8246**	**2.1763**	**0.0000**	**91.2314**

Love's Truck Stop Apple Valley - San Bernardino-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Automobile Care Center	52.68	10.6936	0.6320	0.0000	26.4929
City Park	0.96	0.1949	0.0115	0.0000	0.4828
Convenience Market (24 Hour)	38.8	7.8761	0.4655	0.0000	19.5126
Fast Food Restaurant with Drive Thru	35.02	7.1087	0.4201	0.0000	17.6116
Gasoline/Service Station	13.47	2.7343	0.1616	0.0000	6.7741
Mobile Home Park	40.48	8.2171	0.4856	0.0000	20.3575
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**36.8246**	**2.1763**	**0.0000**	**91.2314**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

2022 CARB & CAPCOA Gasoline Service Station Industrywide Risk Assessment Look-up Tool
Version 1.0 - February 18, 2022

Required Value	User Defined Input	Instructions
Annual Throughput (gallons/year)	14,000,000	Enter your gas station's annual throughput in gallons of gasoline dispensed per year.
Hourly Dispensing Throughput (gallons/hour)	4000	The tool will calculate the maximum hourly vehicle fueling throughput based on annual throughput as defined by Table 10 of the 2020 Gasoline Service Station Industrywide Risk Assessment Technical Guidance Document (Technical Guidance). If a different value is desired please enter it into cell L4.
Hourly Loading Throughput (gallons/hour)	8800	The tool will calculate the maximum hourly loading throughput based on annual throughput as defined by Table 10 of the Technical Guidance. If a different value is desired please enter it into cell L5.
Meteorological Data	Lancaster	Select appropriate meteorological data. Met sets provided include 2 rural (Redding and Lancaster) and 4 urban (Fresno, Ontario, San Diego, and San Jose) locations. Use whichever best correlates to your location. If you would like to use site-specific meteorological data please refer to the Variable Met Tool.
Distance to Nearest Resident (meters)	1000	Enter the distance to the nearest residential receptor in meters as measured from the edge of the station canopy. Please note that the value must be between 10 and 1000 meters. The distance you input will round down to the nearest receptor distance used in the Technical Guidance (e.g., 19m will return value at 10m distance).
Distance to Nearest Business (meters)	1000	Enter the distance to the nearest worker receptor in meters as measured from the edge of the station canopy. Please note that the value must be between 10 and 1000 meters. The distance you input will round down to the nearest receptor distance used in the Technical Guidance (e.g., 19m will return value at 10m distance).
Distance to Acute Receptor (meters)	1000	Enter the distance where acute impacts are expected in meters as measured from the edge of the station canopy. This can be the distance to the property boundary, nearest resident, nearest worker, or any other user defined location. Please note that the value must be between 10 and 1000 meters. The distance you input will round down to the nearest receptor distance used in the Technical Guidance (e.g., 19m will return value at 10m distance).
Control Scenario	EVR Phase I & EVR Phase II	Select the appropriate control scenario for your gas station. Please refer to technical Guidance for an explanation of the different control scenarios. Almost all gas stations in California are equipped with EVR Phase I and EVR Phase II controls.
Include Building Downwash Adjustments	no	Building downwash may over estimate risk results. High results should be investigated further through site-specific health risk assessment.

Risk Value	Results
Max Residential Cancer Risk (chances/million)	0.14
Max Worker Cancer Risk (chances/million)	0.01
Chronic HI	0.00
Acute HI	0.02

Title 24 Solar Calc
Final 2022 Nonresidential and Multifamily Compliance Manual
Prescriptive Requirements for Photovoltaic System, Page 9-5

Equation 9-1		calc for project		
kWPV required = (CFA x A)/1000		kwPV	77.1	calc
WHERE:				
kWPV = kWdc size of the PV system				
CFA = Conditioned floor area		CFA	26,488	see below
A = Capacity factor from Table 9-1		A	2.91	Apple Valley is Zone 14, Project is retail.

EZ Building Climate Zone Finder (arcgis.com): https://caenergy.maps.arcgis.com/apps/webappviewer/index.html?id=5cfefd9798214bea91cc4fdda a7e643f

Table 9-1: PV Capacity Factors

Climate Zone	,3,5,6	2,4,6-14	15
Grocery	2.62	2.91	3.53
High Rise Multifamily	1.82	2.21	2.77
Office, Financial Institutions, Unleased Tenant Space	2.59	3.13	3.8
Retail	2.62	2.91	3.53
School	1.27	1.63	2.46
Warehouse	0.39	0.44	0.58
Auditorium, Convention Center, Hotel/Motel, Library, Medical Office Building/Clinic, Restaurant, Theater	0.39	0.44	0.58

project building square footage (for CFA)

9,659	convenience store
3,043	fast food
13,786	maint bay
26,488	sum ft2

Construction Energy Calculations

Construction Fuel Usage Summary (gallons)

	Diesel			Gasoline
Construction Phase	**Off-road Equipment**	**On-road**	**Total**	**On-road**
Demolition	3,844	0	3,844	227
Site Preparation	3,872	0	3,872	273
Grading	6,333	0	6,333	303
Building Construction	15,264	17,299	32,563	22,101
er Main Trenching / Undergrour	12,666	0	12,666	606
Paving	2,332	0	2,332	227
Architectural Coating	247	0	247	1,016
TOTAL	**44,558**	**17,299**	**61,857**	**24,753**

Total Gasoline	**24,753**	**gallons**
Total Diesel	**61,857**	**gallons**

Construction Offroad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	Number of days	Diesel Fuel Usage
Demolition	Concrete/Industrial Saws	1	8	81	0.73	22	**520**
Demolition	Excavators	3	8	158	0.38	22	**1,585**
Demolition	Rubber Tired Dozers	2	8.00	247	0.40	22	**1,739**
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40	22	**2,608**
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37	22	**1,263**
Grading	Excavators	2	8.00	158	0.38	22	**1,057**
Grading	Graders	1	8.00	187	0.41	22	**675**
Grading	Rubber Tired Dozers	1	8.00	247	0.40	22	**869**
Grading	Scrapers	2	8.00	367	0.48	22	**3,100**
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37	22	**632**
Building Construction	Cranes	1	7.00	231	0.29	132	**3,095**
Building Construction	Forklifts	3	8.00	89	0.20	132	**2,820**
Building Construction	Generator Sets	1	8.00	84	0.74	132	**3,282**
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37	132	**4,974**
Building Construction	Welders	1	8.00	46	0.45	132	**1,093**
Water Main Trenching / Undergrounding	Excavators	2	8.00	158	0.38	44	**2,113**
Water Main Trenching / Undergrounding	Graders	1	8.00	187	0.41	44	**1,349**
Water Main Trenching / Undergrounding	Rubber Tired Dozers	1	8.00	247	0.40	44	**1,739**
Water Main Trenching / Undergrounding	Scrapers	2	8.00	367	0.48	44	**6,201**
Water Main Trenching / Undergrounding	Tractors/Loaders/Backhoes	2	8.00	97	0.37	44	**1,263**
Paving	Air Compressors	0	6.00	78	0.48	22	-
Paving	Pavers	2	8.00	130	0.42	22	**961**
Paving	Paving Equipment	2	8.00	132	0.36	22	**836**
Paving	Rollers	2	8.00	80	0.38	22	**535**
Architectural Coating	Air Compressors	1	6.00	78	0.48	22	**247**
						TOTAL	**44,558** **=offroad diesel**

Notes: Equipment assumptions are consistent with CalEEMod. Fuel usage average of 0.05 gallons of diesel fuel per horsepower-hour is from the SCAQMD CEQA Air Quality Handbook, Table A9-3E.

Trips and VMT

Phase Name	Daily Worker Trip	Daily Vendor Trip	Daily Hauling Trip	Days in Phase	Total Worker Trips	Total Vendor Trips	Total Haul Trips	Worker Trip Length (miles)	Vendor Trip Length (miles)	Haul Trip Length (miles)	Total Worker Trip Length (miles)	Total Vendor Trip Length (miles)	Total Haul Trip Length (miles)	**Total gallons of gasoline**	**Total gallons of diesel**
Demolition	15	0	0	22	330	0	0	16.80	6.60	20.00	5544	0	-	227	0
Site Preparation	18	0	0	22	396	0	0	16.80	6.60	20.00	6652.8	0	-	273	0
Grading	20	0	0	22	440	0	0	16.80	6.60	20.00	7392	0	-	303	0
Building Construction	243	116	0	132	32,076	15,312	0	16.80	6.60	20.00	538876.8	101059.2	-	22,101	17,299
Water Main Trenching / Undergrounding	20	0	0	44	880	0	0	16.80	6.60	20.00	14784	0	-	606	0
Paving	15	0	0	22	330	0	0	16.80	6.60	20.00	5544	0	-	227	0
Architectural Coating	67	0	0	22	1,474	0	0	16.80	6.60	20.00	24763.2	0	-	1,016	0
													TOTAL	**24,753**	**17,299**

Operational Energy Calc

CalEEMod Output

		kwbtu	kwh	MMBTU	kwh
Automobile Care Center	truck maintenance building	445,831.00	136,797.00	445.83	137
City Park	Dog Park and Retention Basin	-	-	-	-
Convenience Market (24 Hour)	Convenience Store	28,402.00	156,727.00	28.40	157
Fast Food Restaurant with Drive Thru	Fast Food Restaurant	828,886.00	140,326.00	828.89	140
Gasoline/Service Station	Gasoline Station	114,105.00	35,011.40	114.11	35
Mobile Home Park	RV Park	1,968,380.00	458,323.00	1,968.38	458
Other Asphalt Surfaces		-	-	-	-
Parking Lot	Parking Areas	-	25,620.00	-	26
		3,385,604.00	952,804.40	3,385.60	952.80

Summary

truck maintenance building			
	Electricity	137	MWh/year
	Natural Gas	446	MMBtu/year
Convenience Store			
	Electricity	157	MWh/year
	Natural Gas	28	MMBtu/year
Fast Food Restaurant			
	Electricity	140	MWh/year
	Natural Gas	829	MMBtu/year
Gasoline Station			
	Electricity	35	MWh/year
	Natural Gas	114	MMBtu/year
RV Park			
	Electricity	458	MWh/year
	Natural Gas	1,968	MMBtu/year
Parking Areas			
	Electricity	26	MWh/year
	Natural Gas	-	MMBtu/year
Total			
	Electricity	953	MWh/year
	Natural Gas	3,386	MMBtu/year

Summary for EIR Section

	Energy Demand	PV Production	Natural Gas
truck maintenance bui	137		446
Convenience Store	157		28
Fast Food Restaurant	140		829
Gasoline Station	35		114
RV Park	458		1,968
Parking Areas	26		-
Total	953	140	3,386

Operational Transportation Energy Calc

EMFAC2014 (v1.0.7) Emissions Inventory
Region Type: Air Basin
Region: Mojave Desert
Calendar Year: 2024
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	CalYr	VehClass	MdlYr	Speed	Fuel	Population	VMT (mi/day)	% of vehicle class EM	% CalEEMod vehicle	% project vehicle cla	VMT by project vehicle class (mi,	Gallons of fuel	Fuel_Consumption (1000 gal/day)	Fuel (gal/day)	mi/gal	Class
Mojave Desert	2024	HHDT	Aggreg	Aggreg	GAS	66.26869	12286.44426	0.002747829	0.017285	4.74962E-05	2261.240796	432.962961	2.352502793	2352.502793	5.222711871	Truck
Mojave Desert	2024	HHDT	Aggreg	Aggreg	DSL	21214.09	4459041.306	0.997252171	0.017285	0.017237504	820657.7833	119598.7858	649.8396003	649839.6003	6.861756815	Truck
Mojave Desert	2024	LDA	Aggreg	Aggreg	GAS	592213.9	22692621.71	0.920179023	0.537785	0.494858476	23559644.42	714651.6198	688.3515971	688351.5971	32.96661446	Passenger
Mojave Desert	2024	LDA	Aggreg	Aggreg	DSL	6885.635	273325.8077	0.01108328	0.537785	0.005960422	283768.8357	6565.621109	6.323998506	6323.998506	43.22040991	Passenger
Mojave Desert	2024	LDA	Aggreg	Aggreg	ELEC	34044.54	1695146.849	0.068737698	0.537785	0.036966103	1759913.751	#DIV/0!	0	0	#DIV/0!	Passenger
Mojave Desert	2024	LDT1	Aggreg	Aggreg	GAS	44252.84	1519888.45	0.998671461	0.055838	0.055763817	2654851.367	95436.29014	54.63677434	54636.77434	27.8180487	Truck
Mojave Desert	2024	LDT1	Aggreg	Aggreg	DSL	59.87612	1309.126237	0.000860186	0.055838	4.80311E-05	2286.704384	74.67125289	0.0427489	42.74889969	30.62362415	Truck
Mojave Desert	2024	LDT1	Aggreg	Aggreg	ELEC	20.86969	712.7916298	0.000468353	0.055838	2.61519E-05	1245.062316	#DIV/0!	0	0	#DIV/0!	Truck
Mojave Desert	2024	LDT2	Aggreg	Aggreg	GAS	201601.8	7708313.572	0.997973819	0.172353	0.172003782	8188902.754	325101.8411	306.0223097	306022.3097	25.18873078	Truck
Mojave Desert	2024	LDT2	Aggreg	Aggreg	DSL	382.2774	15650.14937	0.002026181	0.172353	0.000349218	16625.88711	492.1169398	0.463235649	463.2356495	33.78442351	Truck
Mojave Desert	2024	LHDT1	Aggreg	Aggreg	GAS	10641.29	280840.0185	0.409425525	0.027005	0.011056536	526389.0121	49749.95809	26.54268769	26542.68769	10.58069257	Truck
Mojave Desert	2024	LHDT1	Aggreg	Aggreg	DSL	13660.17	405096.7418	0.590574475	0.027005	0.015948464	759288.0632	38125.25294	20.34065396	20340.65396	19.91562035	Truck
Mojave Desert	2024	LHDT2	Aggreg	Aggreg	GAS	1748.792	60658.26917	0.274605417	0.007196	0.001976061	94077.97786	9169.12728	5.91194032	5911.94032	10.26029795	Truck
Mojave Desert	2024	LHDT2	Aggreg	Aggreg	DSL	4642.614	160234.2017	0.725394583	0.007196	0.005219939	248515.3283	13245.13343	8.540009966	8540.009966	18.76276518	Truck
Mojave Desert	2024	MCY	Aggreg	Aggreg	GAS	32348.72	356687.4187	1	0.025303	0.025303	1204646.807	31206.12582	9.239913638	9239.913638	38.60289529	Passenger
Mojave Desert	2024	MDV	Aggreg	Aggreg	GAS	135759.1	4437776.562	0.97873604	0.139003	0.136047246	6477053.322	359410.481	246.2513939	246251.3939	18.02132565	Truck
Mojave Desert	2024	MDV	Aggreg	Aggreg	DSL	2525.367	96414.8674	0.02126396	0.139003	0.002955754	140720.072	5498.863245	3.767566085	3767.566085	25.5907568	Truck
Mojave Desert	2024	MH	Aggreg	Aggreg	GAS	4304.639	32209.98259	0.777850648	0.005071	0.003944481	187792.1988	23433.91738	4.01936862	4019.36862	8.013692107	Motorhome
Mojave Desert	2024	MH	Aggreg	Aggreg	DSL	1193.815	9198.972546	0.222149352	0.005071	0.001126519	53632.29478	5083.402524	0.871901537	871.9015371	10.55047176	Motorhome
Mojave Desert	2024	MHDT	Aggreg	Aggreg	GAS	1276.666	95403.48595	0.20311145	0.011392	0.002313846	110159.5368	13637.2678	11.81053338	11810.53338	8.07783043	Truck
Mojave Desert	2024	MHDT	Aggreg	Aggreg	DSL	7115.801	374306.5475	0.79688855	0.011392	0.009078154	432200.5165	46743.17463	40.48184962	40481.84962	9.246280766	Truck
Mojave Desert	2024	OBUS	Aggreg	Aggreg	GAS	687.841	51071.86263	0.702470766	0.000559	0.000392681	18695.09955	2292.875549	6.263749748	6263.749748	8.153560517	Bus
Mojave Desert	2024	OBUS	Aggreg	Aggreg	DSL	259.8527	21631.32314	0.297529234	0.000559	0.000166319	7918.24928	1051.625969	2.872864993	2872.864993	7.529529997	Bus
Mojave Desert	2024	SBUS	Aggreg	Aggreg	GAS	189.1327	11998.70085	0.309903886	0.000954	0.000295648	14075.47682	1163.564491	0.991885563	991.8855634	12.09686006	Bus
Mojave Desert	2024	SBUS	Aggreg	Aggreg	DSL	710.6313	26718.78989	0.690096114	0.000954	0.000658352	31343.36894	4308.2726	3.672605539	3672.605539	7.275159176	Bus
Mojave Desert	2024	UBUS	Aggreg	Aggreg	GAS	202.0422	39351.87648	0.459630839	0.000254	0.000116746	5558.154252	1082.385653	7.663318543	7663.318543	5.135096011	Bus
Mojave Desert	2024	UBUS	Aggreg	Aggreg	DSL	253.8133	46264.39017	0.540369161	0.000254	0.000137254	6534.49441	1294.350631	9.164036092	9164.036092	5.048473151	Bus

Gasoline Sum	1,626,768
Diesel Sum	242,081

Project VMT (mi/yr)	47,608,853
Project Mobile Emissions (MT	14,776

	Gas (gal)	Diesel (gal)
Passenger	745,858	6,566
Truck	852,505	223,778
Bus	4,539	6,654
Motorhome	23,434	5,083
Total	1,626,335	242,081

	caleemod	Class
HHDT	0.017285	Truck
LDA	0.537785	Passenger
LDT1	0.055838	Truck
LDT2	0.172353	Truck
LHDT1	0.027005	Truck
LHDT2	0.007196	Truck
MCY	0.025303	Passenger
MDV	0.139003	Truck
MH	0.005071	Motorhome
MHDT	0.011392	Truck
OBUS	0.000559	Bus
SBUS	0.000954	Bus
UBUS	0.000254	Bus

Apple Valley CAP Measure Summary

Type	Measure #	Measure Description	Loves Apple Valley Project Consistency
Town Municipal Operational Measures	MO-1	Encourage the development of residential projects at a density of at least 15 units per acre in the Medium Density Residential zone along Bear Valley Road, Highway 18, Dale Evans Parkway, Apple Valley Road, Navajo Road, Central Road, and Kiowa Road.	NA - not a residential project
Town Municipal Operational Measures	MO-2	Encourage the development of mixed-use projects in the Mixed Use zone along Bear Valley Road, Highway 18, Dale Evans Parkway, Apple Valley Road, Navajo Road, Central Road, and Kiowa Road.	NA - not in a mixed use zone
Town Municipal Operational Measures	MO-3	Encourage the development of residential projects at a density of at least 15 units per acre in the Medium Density Residential zone along the High Desert Corridor.	NA - not a residential project
Town Municipal Operational Measures	MO-4	Encourage the development of mixed-use projects in the Mixed Use zone along the High Desert Corridor.	NA - not in a mixed use zone
Town Municipal Operational Measures	MO-5	Encourage the development of new infill or reconstruction projects along Bear Valley Road, near its intersections with Apple Valley Road, Kiowa Road and Navajo Road; or along Highway 18.	NA - not in these areas
Town Municipal Operational Measures	MO-6	Plant a minimum of 25 trees annually in Town parks, and on other Town properties.	NA - Town-lead measure
Town Municipal Operational Measures	MO-7	Partner with the Apple Valley Unified School District to establish an “adopt a tree” education and maintenance program whereby school classes adopt and maintain specific trees in Town parks and other Town properties.	NA - Town-lead measure
Town Municipal Operational Measures	MO-8	Install advanced technology systems and implement effective management strategies in order to improve the operational efficiency of transportation systems and the movement of people, goods, and services, including synchronization of traffic lights and signals.	NA - Town-lead measure
Town Municipal Operational Measures	MO-9	Expand bikeways, walking paths and trails connecting residential neighborhoods to commercial projects, schools and other institutions, and transit.	NA - Town-lead measure
Town Municipal Operational Measures	MO-10	Prioritize roadway improvements for areas experiencing Level of Service D or worse.	NA - Town-lead measure
Town Municipal Operational Measures	MO-11	Replace gasoline or diesel fleet vehicles with hybrid or alternative fuel vehicles when they are scheduled for replacement, if available for the use intended.	NA - Town-lead measure
Town Municipal Operational Measures	MO-12	A minimum of 50% of the Town’s additional new vehicle purchases (not replacement vehicles) shall be hybrid or alternative fuel vehicles (if available for the use intended).	NA - Town-lead measure
Town Municipal Operational Measures	MO-13	Encourage Victor Valley Transit Authority to install bicycle racks on all buses, and to operate an all-alternative fuel fleet.	NA - Town-lead measure
Town Municipal Operational Measures	MO-14	Encourage Apple Valley Unified School District to replace traditional fueled school buses with CNG fueled school buses upon new bus purchases.	NA - Town-lead measure
Town Municipal Operational Measures	MO-15	Encourage CalTrans to install carpool lanes on the High Desert Corridor.	NA - Town-lead measure
Town Municipal Operational Measures	MO-16	Specify rubberized and/or recycled asphalt in Town-initiated road pavement projects to the extent economically viable.	NA - Town-lead measure
Town Municipal Operational Measures	MO-17	When feasible, Town staff is encouraged to carpool when traveling out of Town for official functions, meetings, and events.	NA - Town-lead measure
Town Municipal Operational Measures	MO-18	Provide employees with free public transit passes.	NA - Town-lead measure
Town Municipal Operational Measures	MO-19	Provide secure bicycle racks at all Town facilities.	NA - Town-lead measure
Town Municipal Operational Measures	MO-20	Reduce energy use at all Town facilities by 15% by 2030.	NA - Town-lead measure
Town Municipal Operational Measures	MO-21	Replace all failing or failed fixtures and appliances in Town facilities with energy efficient fixtures and appliances. Light bulbs shall be replaced with CFL or LED bulbs. Appliances shall be Energy Star rated.	NA - Town-lead measure
Town Municipal Operational Measures	MO-22	Encourage Liberty Utilities Apple Valley, Golden State, and other water purveyors to replace water systems with energy efficient motors, pumps and other equipment.	NA - Town-lead measure
Town Municipal Operational Measures	MO-23	Encourage VVWRA to replace wastewater systems with energy efficient motors, pumps and other equipment.	NA - Town-lead measure
Town Municipal Operational Measures	MO-24	Encourage the County of San Bernardino to capture and utilize landfill gas for use as an energy source including fuel for vehicles, operating equipment, and heating buildings	NA - Town-lead measure
Town Municipal Operational Measures	MO-25	Consider the installation of green roofs on Town facilities.	NA - Town-lead measure
Town Municipal Operational Measures	MO-26	Consider the installation of cool roofs on Town facilities.	NA - Town-lead measure
Town Municipal Operational Measures	MO-27	Reduce turf areas at Town facilities by 20% overall.	NA - Town-lead measure
Town Municipal Operational Measures	MO-28	Modernize facilities and equipment at the golf course when financially feasible, including the well pumps.	NA - Town-lead measure
Town Municipal Operational Measures	MO-29	Install semi-pervious surfaces which allow water to percolate at Town facilities to the extent economically feasible.	NA - Town-lead measure
Town Municipal Operational Measures	MO-30	Install timers for all ball field lighting on Town facilities.	NA - Town-lead measure
Town Municipal Operational Measures	MO-31	Consider a home weatherization and energy efficient appliance replacement grant program for existing residents including extremely low, very low and low-income households	NA - Town-lead measure
Town Municipal Operational Measures	MO-32	Continue to require that improvements made under the Residential Rehabilitation Loan Program be energy efficient.	NA - Town-lead measure
Town Municipal Operational Measures	MO-33	Promote third-party energy efficiency programs, including the Energy Upgrade California program.	NA - Town-lead measure
Town Municipal Operational Measures	MO-34	Consider an Energy Savings Performance Contract with a private entity to retrofit public buildings, which will allow the private entity to fund all energy improvements in exchange for a share of the energy savings over a period of time.	NA - Town-lead measure

Apple Valley CAP Measure Summary

Type	Measure #	Measure Description	Loves Apple Valley Project Consistency
Town Municipal Operational Measures	MO-35	Consider partnership with Southern California Edison in establishing a rebate/incentive/refund program for the installation of Energy Star appliances or alternative energy systems on private projects, including single family homes.	NA - Town-lead measure
Town Municipal Operational Measures	MO-36	Install photovoltaic systems on the buildings and carports located at the Public Works facility and Town Hall/Police Department, which will provide electricity for the Civic Center and the Public Works/Animal Control facilities. And consider installing wind energy resources on properties greater than 2 acres.	NA - Town-lead measure
Town Municipal Operational Measures	MO-37	Consider installing a CNG fueling station and establish a public access program for same.	NA - Town-lead measure
Town Municipal Operational Measures	MO-38	Consider replacing failing or failed traditional water heaters in Town facilities with solar water heaters	NA - Town-lead measure
Town Municipal Operational Measures	MO-39	When it fails, consider replacing the municipal pool heater with a solar pool heating system.	NA - Town-lead measure
Town Municipal Operational Measures	MO-40	Require composting of all landscaping waste from Town facilities.	NA - Town-lead measure
Town Municipal Operational Measures	MO-41	Encourage two-sided printing and electronic document submittals to reduce paper waste.	NA - Town-lead measure
Town Municipal Operational Measures	MO-42	Provide recycling bins for all offices, and at all employee gathering points (lunch room, conference rooms, etc.).	NA - Town-lead measure
Town Municipal Operational Measures	MO-43	Reuse and replace transport packaging including the reuse of cardboard boxes, and the recycling of plastic film, cardboard, and paper. Utilize reusable plastic transport packaging in place of limited-use wood pallets or cardboard boxes. For every 1-ton of corrugated cardboard boxes that is kept from entering the landfill, about 3.87 tons of CO_2e are avoided. • For every ton of plastic film (in the form of Low Density Polyethylene LDPE) that is recycled, about 1.9 tons of CO_2e are avoided annually. • For every ton of mixed general paper recycled about 4.3 tons of CO_2e are avoided.	NA - Town-lead measure
Community Operational Measures	CO-1	Encourage replacement of personal vehicles with hybrid or alternative fuel vehicle.	Applicable - Project would include EV charger(s)
Community Operational Measures	CO-2	Establish and enforce idling time limits for delivery vehicles. Idling shall not be permitted for more than 5 minutes.	NA, deliveries very rate (meant more for busy commercial areas)
Community Operational Measures	CO-3	Encourage the replacement of gasoline or diesel fleet vehicles with hybrid or alternative fuel vehicles, if available for intended use.	Applicable - Project would include EV charger(s)
Community Operational Measures	CO-4	Establish an employee carpooling program, including incentives (preferred parking, flex time incentives, etc.) for participating employees.	NA not a job center
Community Operational Measures	CO-5	(Encourage) Provide employees with free or discounted public transit passes	NA tranit not very accesible given the rural project location
Community Operational Measures	CO-6	Replace failing or failed fixtures and appliances with energy efficient fixtures and appliances. Light bulbs shall be replaced with CFL or LED bulbs. Appliances shall be Energy Star rated	NA meant more for existing uses
Community Operational Measures	CO-7	Replace traditional water heater with an instant water heating system.	NA meant more for existing uses
Community Operational Measures	CO-8	Replace traditional roofing with a cool roof.	NA meant more for existing uses
Community Operational Measures	CO-9	Increase insulation in walls and roof to a minimum R-30.	Applicable but part of Title 24
Community Operational Measures	CO-10	Install weather-stripping on all doors and windows.	Applicable but part of Title 24
Community Operational Measures	CO-11	Replace grass/turf areas with drought tolerant or native plants, or with decorative rock or gravel.	NA there are is no existing vegetation to replace
Community Operational Measures	CO-12	Replace water fixtures (faucets, toilets, etc.) with high efficiency fixtures.	Applicable but part of Title 24
Community Operational Measures	CO-13	Replace water heater and/or pool heater with a solar water heating system.	Applicable but part of Title 24 - plus no existing water heater to replace
Community Operational Measures	CO-14	Install solar panels or photovoltaic system	Using AVCE
Community Operational Measures	CO-15	For apartment or condominium projects, install solar or photovoltaic systems on carport roofs.	NA not a residential project
Community Operational Measures	CO-16	Install a home composting system	NA measure meant more for residential project
Community Operational Measures	CO-17	Increase recycling by 20%. Currently, recycling is mandatory for businesses that generate four cubic yards or more of commercial solid waste per week and for multifamily residential dwellings of five units or more (Senate Bill 1018).	Applicable. Mitigation 3.7-1 requires recycling, plus SB 1018 compliance is required
Community Operational Measures	CO-18	For businesses, encourage two-sided printing and electronic document submittals to reduce paper waste.	NA, not a project with uses that print much
New Development Measures	ND-1	Develop a residential project at a density of at least 15 units per acre in the Medium Density Residential zone along Bear Valley Road, Highway 18, Dale Evans Parkway, Apple Valley Road, Navajo Road, Central Road, and Kiowa Road.	NA not residential
New Development Measures	ND-2	Develop a mixed-use project in the Mixed-Use zone along Bear Valley Road, Highway 18, Dale Evans Parkway, Apple Valley Road, Navajo Road, Central Road, and Kiowa Road	NA - not in a mixed use zone
New Development Measures	ND-3	Develop a residential project at a density of at least 15 units per acre in the Medium Density Residential zone along the High Desert Corridor.	NA - a residential project
New Development Measures	ND-4	Develop a mixed-use project in the Mixed-Use zone along the High Desert Corridor.	NA - not in a mixed use zone
New Development Measures	ND-5	Develop a new infill or redevelopment project along Bear Valley Road, near its intersections with Apple Valley Road, Kiowa Road and Navajo Road; or along Highway 18.	NA - not in a mixed use zone
New Development Measures	ND-6	For projects within the North Apple Valley Industrial Specific Plan, develop employee housing within one mile of the industrial project.	NA

Apple Valley CAP Measure Summary

Type	Measure #	Measure Description	Loves Apple Valley Project Consistency
New Development Measures	ND-7	Preserve trees occurring on-site either through in situ protection during and after construction, or through transplant and relocation within landscaped areas.	NA site is disturbed with little vegetation
New Development Measures	ND-8	Utilize the Collaborative for High Performance Schools (CHPS) best practices for school design, building, and operation.	Applicable but part of Title 24
New Development Measures	ND-9	During project construction, encourage on-site and off-road construction equipment to utilize biodiesel fuel (a minimum of B20), except for equipment where use of biodiesel fuel would void the equipment warranty. As a conservative measure, no reduction in GHG emissions was taken for the implementation of this measure as it is unknown if biodiesel can be readily applied to the various pieces of construction equipment that will be necessary for the project.	Applicable
New Development Measures	ND-10	Install bus stop(s) and secure scheduled transit service from Victor Valley Transit Authority.	
New Development Measures	ND-11	Install pedestrian, bicycle and/or equestrian trails connecting project to school(s), commercial project(s) or transit.	Applicable, and mitigation adds a Class II bike lane
New Development Measures	ND-12	Building and site plan designs shall ensure that the project energy efficiencies meet applicable California Title 24 Energy Efficiency Standards. Verification of increased energy efficiencies shall be documented in Title 24 Compliance Reports provided by the applicant, and reviewed and approved by the Town prior to the issuance of the first building permit. Any combination of the following design features may be used to fulfill this measure provided that the total increase in efficiency meets or exceeds Title 24 standards: • Buildings shall meet or exceed California Title 24 Energy Efficiency performance standards for water heating and space heating and cooling. • Increase in insulation such that heat transfer and thermal bridging is minimized. • Limit air leakage through the structure or within the heating and cooling distribution system to minimize energy consumption. • Incorporate dual-paned or other energy efficient windows. • Incorporate energy efficient space heating and cooling equipment. • Incorporate the use of tankless water heaters in all residential units and community buildings. • Promote building design that will incorporate solar control in an effort to minimize direct sunlight upon windows. A combination of design features including roof eaves, recessed windows, “eyebrow” shades and shade trees shall be considered. • Interior and exterior energy efficient lighting which exceeds the California Title 24 Energy Efficiency performance standards shall be installed, as deemed acceptable by Town. Automatic devices to turn off lights when they are not needed shall be implemented. • To the extent that they are compatible with landscaping guidelines established by the Town, shade producing trees, particularly those that shade paved surfaces such as streets and parking lots and buildings shall be planted at the Project site. • Paint and surface color palette for the Project shall emphasize light and off-white colors which will reflect heat away from the buildings. • All buildings shall be designed to accommodate renewable energy sources, such as photovoltaic solar electricity systems, and wind energy systems on properties greater than 2 acres, appropriate to their architectural design. • Consideration shall be given to using LED lighting for all outdoor uses (i.e. buildings, pathways, landscaping, carports).	Applicable but part of Title 24
New Development Measures	ND-13	For residential projects, implement Green Building practices and document GHG reduction.	NA not residential
New Development Measures	ND-14	Use passive solar design by orienting buildings and incorporating landscaping to maximize passive solar heating during the winter, and minimize solar heating during the summer	Applicable but part of Title 24, plus mitigation requires solar or use of the Town's CCA
New Development Measures	ND-15	To reduce energy demand associated with potable water conveyance: • Landscaping palette emphasizing drought tolerant plants and exceeding Town standards for water conservation. • For residential uses, limit turf areas to no more than 25% of all landscaped areas. •Encourage limiting turf areas to no more than 20% for added water/energy savings. •Turf is prohibited in public rights-of-way, including parkways, and in non-residential uses with the exception of Special Landscaping Areas. (Town Municipal Code Chapter 9.75 Water Conservation/Landscaping). • Use of water-efficient irrigation techniques exceeding Town standards for water conservation. • U.S. EPA Certified WaterSense labeled or equivalent faucets, high-efficiency toilets (HETs), and water-conserving shower heads. • Consider use of artificial turf.	Applicable but part of Title 24
New Development Measures	ND-16	Install Energy Star appliances and energy efficient fixtures.	Applicable but part of Title 24
New Development Measures	ND-17	Install all CFL or LED light bulbs.	Applicable but already part of project design
New Development Measures	ND-18	Install common area electric vehicle charging station(s) and secure bicycle racks.	Applicable but already part of project design
New Development Measures	ND-19	To reduce the project’s energy use from the grid: • Install solar panels/photovoltaic systems sufficient to provide electric power and heat water within the project, and/or • Install other clean energy system sufficient to provide electric power and heat water within the project, and/or	Applicable but part of Title 24, plus mitigation requires solar or use of the Town's CCA
New Development Measures	ND-20	Install solar or photovoltaic systems on new roofs whether on residential, commercial or industrial buildings.	Applicable but part of Title 24, plus mitigation requires solar or use of the Town's CCA
New Development Measures	ND-21	Use on-site generated bio-gas in appropriate applications.	NA
New Development Measures	ND-22	Install combined heat and power facilities in appropriate applications.	NA
New Development Measures	ND-23	Specify rubberized and/or recycled asphalt for roads and driveways to the extent economically viable.	NA

Apple Valley CAP Measure Summary

Type	Measure #	Measure Description	Loves Apple Valley Project Consistency
New Development Measures	ND-24	Recycle and/or salvage non-hazardous construction and demolition waste, and develop and implement a construction waste management plan quantifying the reduction in the waste stream.	no real demo activities
New Development Measures	ND-25	Reuse construction waste in project features (e.g. shattered concrete or asphalt can be ground and used in walkways and parking lots).	no real demo activities
New Development Measures	ND-26	Facilitate the reduction of waste generated by building occupants that is hauled to and disposed of in landfills by providing easily accessible areas that serve each building and are dedicated to the collection and storage of paper, cardboard, glass, plastics, and metals.	Applicable
New Development Measures	ND-27	Provide educational information to residents addressing energy efficiency, solid waste reduction, and water conservation measures.	NA

Appendix C

Biological Resources Assessment and Special-Status Species Lists

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Carlsbad Fish And Wildlife Office
2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385
Phone: (760) 431-9440 Fax: (760) 431-5901

In Reply Refer To:
Project Code: 2022-0067390
Project Name: Love's Travel Apple Valley

July 25, 2022

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A biological assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a biological assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a biological assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found at the Fish and Wildlife Service's Endangered Species Consultation website at:

https://www.fws.gov/endangered/what-we-do/faq.html

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Carlsbad Fish And Wildlife Office
2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385
(760) 431-9440

Project Summary

Project Code: 2022-0067390
Project Name: Love's Travel Apple Valley
Project Type: Commercial Development
Project Description: Gas and Travel stop with amenities
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@34.5962524,-117.2385545906716,14z



Counties: San Bernardino County, California

Endangered Species Act Species

There is a total of 7 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
California Condor *Gymnogyps californianus* Population: U.S.A. only, except where listed as an experimental population There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/8193	Endangered
Least Bell's Vireo *Vireo bellii pusillus* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5945	Endangered
Southwestern Willow Flycatcher *Empidonax traillii extimus* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/6749	Endangered

Reptiles

NAME	STATUS
Desert Tortoise *Gopherus agassizii* Population: Wherever found, except AZ south and east of Colorado R., and Mexico There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/4481	Threatened

Amphibians

NAME	STATUS
Arroyo (=arroyo Southwestern) Toad *Anaxyrus californicus*	Endangered

There is **final** critical habitat for this species. The location of the critical habitat is not available.
Species profile: https://ecos.fws.gov/ecp/species/3762

Fishes

NAME	STATUS
Mohave Tui Chub *Gila bicolor ssp. mohavensis*	Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/8466

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus*	Candidate

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9743

Critical habitats

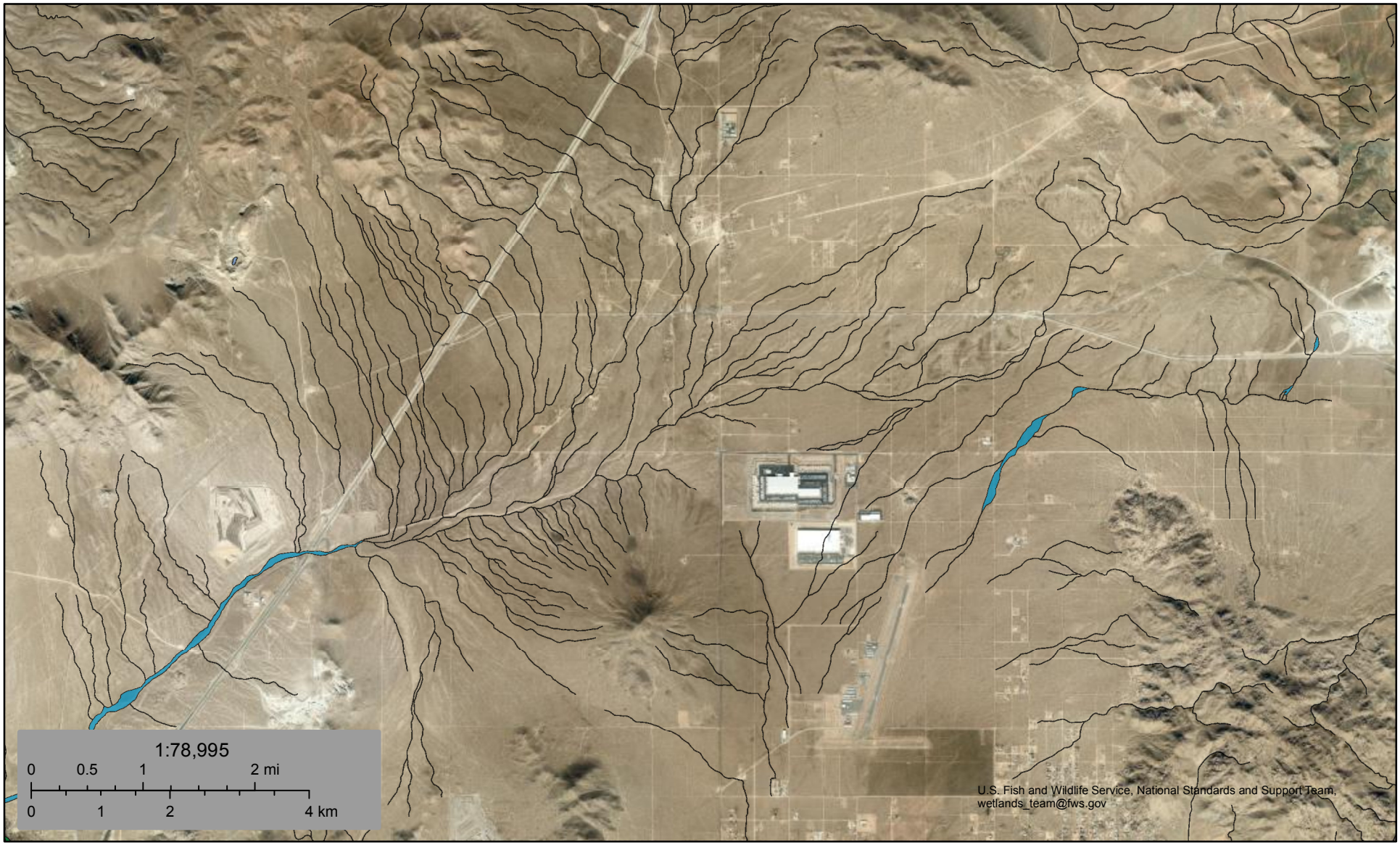
THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

IPaC User Contact Information

Agency: Ascent Environmental
Name: Carlos Alvarado
Address: 455 Capitol Mall Suite 300
City: Sacramento
State: CA
Zip: 95814
Email cal.alvarado@gmail.com
Phone: 9168423172

U.S. Fish and Wildlife Service
National Wetlands Inventory

Wetlands



July 25, 2022

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Selected Elements by Element Code

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Victorville NW (3411764) OR Helendale (3411763) OR Turtle Valley (3411762) OR Apple Valley North (3411752) OR Victorville (3411753) OR Adelanto (3411754) OR Apple Valley South (3411742) OR Hesperia (3411743) OR Baldy Mesa (3411744))

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
AAABB01230	***Anaxyrus californicus*** arroyo toad	Endangered	None	G2G3	S2S3	SSC
AAABH01022	***Rana draytonii*** California red-legged frog	Threatened	None	G2G3	S2S3	SSC
ABNKC12040	***Accipiter cooperii*** Cooper's hawk	None	None	G5	S4	WL
ABNKC19070	***Buteo swainsoni*** Swainson's hawk	None	Threatened	G5	S3	
ABNKC22010	***Aquila chrysaetos*** golden eagle	None	None	G5	S3	FP
ABNKD06090	***Falco mexicanus*** prairie falcon	None	None	G5	S4	WL
ABNRB02022	***Coccyzus americanus occidentalis*** western yellow-billed cuckoo	Threatened	Endangered	G5T2T3	S1	
ABNSB10010	***Athene cunicularia*** burrowing owl	None	None	G4	S3	SSC
ABNSB13010	***Asio otus*** long-eared owl	None	None	G5	S3?	SSC
ABPAE33043	***Empidonax traillii extimus*** southwestern willow flycatcher	Endangered	Endangered	G5T2	S1	
ABPBK06100	***Toxostoma lecontei*** Le Conte's thrasher	None	None	G4	S3	SSC
ABPBR01030	***Lanius ludovicianus*** loggerhead shrike	None	None	G4	S4	SSC
ABPBW01114	***Vireo bellii pusillus*** least Bell's vireo	Endangered	Endangered	G5T2	S2	
ABPBW01140	***Vireo vicinior*** gray vireo	None	None	G5	S2	SSC
ABPBX03010	***Setophaga petechia*** yellow warbler	None	None	G5	S3S4	SSC
ABPBX24010	***Icteria virens*** yellow-breasted chat	None	None	G5	S3	SSC
ABPBX45030	***Piranga rubra*** summer tanager	None	None	G5	S1	SSC
ABPBXB0020	***Agelaius tricolor*** tricolored blackbird	None	Threatened	G1G2	S1S2	SSC
AFCJB1303H	***Siphateles bicolor mohavensis*** Mohave tui chub	Endangered	Endangered	G4T1	S1	FP

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
AMACC02010	***Lasionycteris noctivagans*** silver-haired bat	None	None	G3G4	S3S4	
AMACC05030	***Lasiurus cinereus*** hoary bat	None	None	G3G4	S4	
AMACC08010	***Corynorhinus townsendii*** Townsend's big-eared bat	None	None	G4	S2	SSC
AMACC10010	***Antrozous pallidus*** pallid bat	None	None	G4	S3	SSC
AMAFB05150	***Xerospermophilus mohavensis*** Mohave ground squirrel	None	Threatened	G2G3	S2S3	
AMAFD05032	***Chaetodipus fallax pallidus*** pallid San Diego pocket mouse	None	None	G5T3T4	S3S4	SSC
AMAFF11031	***Microtus californicus mohavensis*** Mohave river vole	None	None	G5T1	S1	SSC
ARAAD02030	***Emys marmorata*** western pond turtle	None	None	G3G4	S3	SSC
ARAAF01012	***Gopherus agassizii*** desert tortoise	Threatened	Threatened	G3	S2S3	
ARACF12100	***Phrynosoma blainvillii*** coast horned lizard	None	None	G3G4	S3S4	SSC
IIHYM24480	***Bombus crotchii*** Crotch bumble bee	None	None	G2	S1S2	
IILEPG7010	***Plebulina emigdionis*** San Emigdio blue butterfly	None	None	G1G2	S1S2	
IMGASC2340	***Helminthoglypta mohaveana*** Victorville shoulderband	None	None	G1	S1	
PDAPI0U090	***Cymopterus deserticola*** desert cymopterus	None	None	G2	S2	1B.2
PDASTE80C0	***Symphyotrichum defoliatum*** San Bernardino aster	None	None	G2	S2	1B.2
PDBRA060F0	***Boechera dispar*** pinyon rockcress	None	None	G3	S3	2B.3
PDCAC0D053	***Opuntia basilaris var. brachyclada*** short-joint beavertail	None	None	G5T3	S3	1B.2
PDCAR0E011	***Loeflingia squarrosa var. artemisiarum*** sagebrush loeflingia	None	None	G5T3	S2	2B.2
PDCRA04013	***Dudleya abramsii ssp. affinis*** San Bernardino Mountains dudleya	None	None	G4T2	S2	1B.2
PDFAB5L050	***Pediomelum castoreum*** Beaver Dam breadroot	None	None	G3	S2	1B.2
PDLAM1U0A1	***Scutellaria bolanderi ssp. austromontana*** southern mountains skullcap	None	None	G4T3	S3	1B.2

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
PDONA03052	***Eremothera boothii ssp. boothii*** Booth's evening-primrose	None	None	G5T4	S3	2B.3
PDPAP05020	***Canbya candida*** white pygmy-poppy	None	None	G3G4	S3S4	4.2
PDSCR1B1V0	***Diplacus mohavensis*** Mojave monkeyflower	None	None	G2	S2	1B.2

Record Count: 43

California Native Plant Society

Search Results

27 matches found. Click on scientific name for details

Search Criteria: 9-Quad include [**3411752:3411751:3411761:3411762:3411743:3411742:3411741:3411753:3411763**]

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	CA RARE PLANT RANK	GENERAL HABITATS	MICRO HABITATS	LOWEST ELEVATION (FT)	HIGHEST ELEVATION (FT)
Acanthoscyphus parishii var. *goodmaniana*	Cushenbury oxytheca	Polygonaceae	annual herb	May-Oct	FE	None	1B.1	Pinyon and juniper woodland	Carbonate, Sandy	4000	7800
Androsace elongata ssp. *acuta*	California androsace	Primulaceae	annual herb	Mar-Jun	None	None	4.2	Chaparral, Cismontane woodland, Coastal scrub, Meadows and seeps, Pinyon and juniper woodland, Valley and foothill grassland		490	4280
Boechera dispar	pinyon rockcress	Brassicaceae	perennial herb	Mar-Jun	None	None	2B.3	Joshua tree "woodland", Mojavean desert scrub, Pinyon and juniper woodland	Granitic, Gravelly	3935	8335
Canbya candida	white pygmy-poppy	Papaveraceae	annual herb	Mar-Jun	None	None	4.2	Joshua tree "woodland", Mojavean desert scrub, Pinyon and juniper woodland	Granitic, Gravelly, Sandy	1970	4790
Castilleja plagiotoma	Mojave paintbrush	Orobanchaceae	perennial herb (hemiparasitic)	Apr-Jun	None	None	4.3	Great Basin scrub, Joshua tree "woodland", Lower montane coniferous forest, Pinyon and juniper woodland		985	8205

Chorizanthe spinosa	Mojave spineflower	Polygonaceae	annual herb	Mar-Jul	None	None	4.2	Chenopod scrub, Joshua tree "woodland", Mojavean desert scrub, Playas	Alkaline (sometimes)	20	4265
Cryptantha clokeyi	Clokey's cryptantha	Boraginaceae	annual herb	Apr	None	None	1B.2	Mojavean desert scrub		2380	4480
Cymopterus deserticola	desert cymopterus	Apiaceae	perennial herb	Mar-May	None	None	1B.2	Joshua tree "woodland", Mojavean desert scrub	Sandy	2065	4920
Cymopterus multinervatus	purple-nerve cymopterus	Apiaceae	perennial herb	Mar-Apr	None	None	2B.2	Mojavean desert scrub, Pinyon and juniper woodland	Gravelly (sometimes), Sandy (sometimes)	2590	5905
Diplacus johnstonii	Johnston's monkeyflower	Phrymaceae	annual herb	May-Aug	None	None	4.3	Lower montane coniferous forest		3200	9580
Diplacus mohavensis	Mojave monkeyflower	Phrymaceae	annual herb	Apr-Jun	None	None	1B.2	Joshua tree "woodland", Mojavean desert scrub	Gravelly (sometimes), Sandy (sometimes), Washes (often)	1970	3935
Dudleya abramsii ssp. *affinis*	San Bernardino Mountains dudleya	Crassulaceae	perennial herb	Apr-Jul	None	None	1B.2	Pebble (Pavement) plain, Pinyon and juniper woodland, Upper montane coniferous forest	Carbonate (sometimes), Granitic (sometimes)	4100	8530
Eremothera boothii ssp. *boothii*	Booth's evening-primrose	Onagraceae	annual herb	Apr-Sep	None	None	2B.3	Joshua tree "woodland", Pinyon and juniper woodland		2675	7875
Eriophyllum mohavense	Barstow woolly sunflower	Asteraceae	annual herb	Mar-May	None	None	1B.2	Chenopod scrub, Mojavean desert scrub, Playas		1640	3150
Johnstonella costata	ribbed cryptantha	Boraginaceae	annual herb	Feb-May	None	None	4.3	Desert dunes, Mojavean desert scrub,	Sandy	-195	1640

								Sonoran desert scrub			
Loeflingia squarrosa var. *artemisiarum*	sagebrush loeflingia	Caryophyllaceae	annual herb	Apr-May	None	None	2B.2	Desert dunes, Great Basin scrub, Sonoran desert scrub	Sandy	2295	5300
Lycium torreyi	Torrey's box-thorn	Solanaceae	perennial shrub	(Jan-Feb)Mar-Jun(Sep-Nov)	None	None	4.2	Mojavean desert scrub, Sonoran desert scrub	Rocky, Sandy, Streambanks, Washes	-165	4005
Mentzelia eremophila	solitary blazing star	Loasaceae	annual herb	Mar-May	None	None	4.2	Mojavean desert scrub		2295	4005
Muilla coronata	crowned muilla	Themidaceae	perennial bulbiferous herb	Mar-Apr(May)	None	None	4.2	Chenopod scrub, Joshua tree "woodland", Mojavean desert scrub, Pinyon and juniper woodland		2200	6430
Opuntia basilaris var. *brachyclada*	short-joint beavertail	Cactaceae	perennial stem	Apr-Jun(Aug)	None	None	1B.2	Chaparral, Joshua tree "woodland", Mojavean desert scrub, Pinyon and juniper woodland		1395	5905
Pediomelum castoreum	Beaver Dam breadroot	Fabaceae	perennial herb	Apr-May	None	None	1B.2	Joshua tree "woodland", Mojavean desert scrub	Roadsides, Sandy, Washes	2000	5005
Saltugilia latimeri	Latimer's woodland-gilia	Polemoniaceae	annual herb	Mar-Jun	None	None	1B.2	Chaparral, Mojavean desert scrub, Pinyon and juniper woodland	Granitic (often), Rocky (sometimes), Sandy (sometimes), Washes (sometimes)	1310	6235
Sclerocactus polyancistrus	Mojave fish-hook cactus	Cactaceae	perennial stem	Apr-Jul	None	None	4.2	Great Basin scrub, Joshua tree "woodland", Mojavean desert scrub	Carbonate (usually)	2100	7610
Scutellaria bolanderi ssp. *austromontana*	southern mountains skullcap	Lamiaceae	perennial rhizomatous herb	Jun-Aug	None	None	1B.2	Chaparral, Cismontane woodland, Lower montane coniferous		1395	6560

								forest				
Selaginella asprella	bluish spike-moss	Selaginellaceae	perennial rhizomatous herb	Jul	None	None	4.3	Cismontane woodland, Lower montane coniferous forest, Pinyon and juniper woodland, Subalpine coniferous forest, Upper montane coniferous forest	Granitic, Rocky	5250	8860
Symphyotrichum defoliatum	San Bernardino aster	Asteraceae	perennial rhizomatous herb	Jul-Nov	None	None	1B.2	Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Marshes and swamps, Meadows and seeps, Valley and foothill grassland	Streambanks	5	6695
Yucca brevifolia							CBR				

Showing 1 to 27 of 27 entries

Suggested Citation:

California Native Plant Society, Rare Plant Program. 2022. Rare Plant Inventory (online edition, v9-01 1.5). Website https://www.rareplants.cnps.org [accessed 25 July 2022].

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Special-Status Plants Known to Occur in the Project Region and their Potential to Occur on the Project Site

Name	Federal Status[1]	State Status[1]	CRPR[1]	Habitat	Potential to Occur in the Project Site[2]
Cushenbury oxytheca *Acanthoscyphus parishii* var. *goodmaniana*	FE	None	1B.1	Typically in carbonate or sandy soils within pinyon and juniper woodland (carbonate, talus) at elevations ranging from 4,000-7,800 feet in elevations. Blooms May-October.	**Not expected to occur:** The project site is outside of the current known elevational range of this species.
Pinyon rockcress *Boechera dispar*	None	None	2B.3	Joshua tree woodland, pinyon and juniper woodland, Mojavean desert scrub. Granitic, gravelly slopes and mesas. Often under desert shrubs which support it as it grows. 3,297–9,203 feet in elevation. Blooms March–June.	**Not expected to occur:** The project site is outside of the current known elevational range of this species.
Clokey's cryptantha *Cryptantha clokeyi*	None	None	1B.2	Mojavean desert scrub at elevations between 2,380-4,480 feet in elevations. Blooms in April.	**May occur:** Mojavean desert scrub is present in numerous areas, which could provide suitable habitat for this species.
Desert cymopterus *Cymopterus deserticola*	None	None	1B.2	Joshua tree woodland, Mojavean desert scrub. On fine to coarse, loose, sandy soil of flats in old dune areas with well-drained sand. 2,067–4,921 feet in elevation. Blooms March–May.	**Not expected to occur:** The project site is not in an old dune area.
Purple-nerve cymopterus *Cymopterus multinervatus*	None	None	2B.2	Gravelly or sandy soils within Mojavean desert scrub or Pinyon and juniper woodland at elevations ranging from 2,590-5,905 feet in elevation. Blooms March-May.	**Not expected to occur:** The project site is outside of the current known range of this species.
Mojave monkeyflower *Diplacus mohavensis*	None	None	1B.2	Desert wash. Joshua tree woodland, Mojavean desert scrub. Dry sandy or rocky washes along the Mojave River. 1,969–3,937 feet in elevation. Blooms April–June.	**May occur:** Desert washes along the proposed water main may provide suitable habitat for this species.
San Bernardino Mountains dudleya *Dudleya abramsii* ssp. *affinis*	None	None	1B.2	Limestone. Pebble (pavement) plain, upper montane coniferous forest, pinyon and juniper woodland. Outcrops, granite or quartzite, rarely limestone. 4,101–8,530 feet in elevation. Blooms April–July.	**Not expected to occur:** The project site is outside of the current known elevational range of this species.
Booth's evening-primrose *Eremothera boothii* ssp. *boothii*	None	None	2B.3	Joshua tree woodland, pinyon and juniper woodland. 951–7,907 feet in elevation. Blooms April–September.	**Not expected to occur:** The project site does not provide Joshua tree woodland habitat suitable for this species.
Barstow woolly sunflower *Eriophyllum mohavense*	None	None	1B.2	Alkali playa. Chenopod scrub, Mojavean desert scrub, desert playas. Mostly in open, silty or sandy areas w/saltbush scrub, or creosote bush scrub. Barren ridges or margins of playas. 1,985–6,562 feet in elevation. Blooms March–May.	**May occur:** Mojavean desert scrub is present in numerous areas, which could provide suitable habitat for this species.
Sagebrush loeflingia *Loeflingia squarrosa* var. *artemisiarum*	None	None	2B.2	Great Basin scrub, Sonoran desert scrub, desert dunes. Sandy flats and dunes. Sandy areas around clay slicks w/ *Sarcobatus*, *Atriplex*, *Tetradymia*, etc. 2,297–5,299 feet in elevation. Blooms April–May.	**Not expected to occur:** The project site does not support Great Basin or Sonoran Desert scrub, or desert dune habitat suitable for this species.
Mojave menodora *Menodora spinescens* var. *mohavensis*	None	None	1B.2	Mojavean desert scrub. Rocky hillsides, canyons. Andesite gravel. 2,297–4,610 feet in elevation. Blooms April–May.	**Not expected to occur:** This species was not observed during surveys in March 25-26 2021.
Creamy blazing star *Mentzelia tridentata*	None	None	1B.3	Mojavean desert scrub. 2,297–3,806 feet in elevation. Blooms March–May.	**Not expected to occur:** This species was not observed during March 25-26 2021 surveys.

Name	Federal Status[1]	State Status[1]	CRPR[1]	Habitat	Potential to Occur in the Project Site[2]
Short-joint beavertail *Opuntia basilaris* var. *brachyclada*	None	None	1B.2	Chaparral, Joshua tree woodland, Mojavean desert scrub, pinyon-juniper woodland. Sandy soil or coarse, granitic loam. 1,394–5,906 feet in elevation. Blooms April–June (August).	**May occur:** Mojavean desert scrub is present in numerous areas, which could provide suitable habitat for this species.
Beaver Dam breadroot *Pediomelum castoreum*	None	None	1B.2	Desert wash. Joshua tree woodland, Mojavean desert scrub. Sandy soils; washes and roadcuts. 2,001–3,494 feet in elevation. Blooms April–May.	**Not expected to occur:** Sandy washes along the water main may provide suitable habitat for this species.
Latimer's woodland-gilia *Saltugilia latimeri*	None	None	1B.2	Sometimes in rocky, sandy, washes, often in granitic soils within chaparral, Mojavean desert scrub, pinyon and juniper woodland. 1,310-6,235 feet in elevation. Blooms March-June.	**May occur:** Sandy washes along the water main may provide suitable habitat for this species.
Southern mountains skullcap *Scutellaria bolanderi* ssp. *austromontana*	None	None	1B.2	Chaparral, cismontane woodland, lower montane coniferous forest. In gravelly soils on streambanks or in mesic sites in oak or pine woodland. 1,394–6,562 feet in elevation. Blooms June–August.	**Not expected to occur:** The project site does not provide chaparral, cismontane woodland or lower montane coniferous forest habitat suitable for this species.
San Bernardino aster *Symphyotrichum defoliatum*	None	None	1B.2	Meadows and seeps, cismontane woodland, coastal scrub, lower montane coniferous forest, marshes and swamps, valley and foothill grassland. Vernally mesic grassland or near ditches, streams and springs; disturbed areas. 7–6,693 feet in elevation. Blooms July–November.	**May occur:** Gravelly banks of desert washes may provide suitable habitat for this species.
Joshua tree Yucca brevifolia	None	SC	CBR	Desert grasslands and shrublands in hot, dry sites on flats, mesas, bajadas, and gentle slopes in the Mojave Desert. Soils in Joshua tree habitats are silts, loams, and/or sands and variously described as fine, loose, well drained, and/or gravelly, while the plants can reportedly tolerate alkaline and saline soils. 2,461-7,218 feet in elevation. Blooms March-June.	**May occur:** Although this species was observed in the survey area, no Joshua trees were observed within the project site.

Notes: CRPR = California Rare Plant Rank; CNDDB = California Natural Diversity Database

[1&2] Legal Status Definitions

State:
SC Candidate (legally protected)

California Rare Plant Ranks:
1B Plant species considered rare or endangered in California and elsewhere (protected under CEQA, but not legally protected under ESA or CESA)
2B Plant species considered rare or endangered in California but more common elsewhere (protected under CEQA, but not legally protected under ESA or CESA)

Threat Ranks:
0.1 Seriously threatened in California (over 80% of occurrences threatened; high degree and immediacy of threat)
0.2 Moderately threatened in California (20-80% occurrences threatened; moderate degree and immediacy of threat)
0.3 Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

[2] Potential for Occurrence Definitions

Not expected to occur: Species is unlikely to be present within the project area due to poor habitat quality, lack of suitable habitat features, or restricted current distribution of the species.

May occur: Suitable habitat is available within the project area; however, there are little to no other indicators that the species might be present.

Likely to occur: All of the species life history requirements can be met by habitat present on the site, and populations/occurrences are known to occur in the immediate vicinity.

Sources: CNDDB 2022; CNPS 2022.

Special-Status Wildlife Known to Occur in the Project Region and their Potential to Occur on the Project Site

Name	Federal Status[1]	State Status[1]	Habitat	Potential to Occur in the Project Site
Invertebrates				
Crotch bumble bee *Bombus crotchii*	None	SC	Coastal California east to the Sierra-Cascade crest and south into Mexico. Food plant genera include *Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia*, and *Eriogonum*.	**Not expected to Occur:** The project site does not support the food plants associated with this species.
Fish				
Mohave tui chub *Siphateles bicolor mohavensis*	FE	SE/FP	Aquatic, artificial flowing waters, artificial standing waters. Endemic to the Mojave River basin, adapted to alkaline, mineralized waters. Needs deep pools, ponds, or slough-like areas. Needs vegetation for spawning.	**Not expected to Occur:** The project site does not support aquatic habitat suitable for this species.
Amphibians				
Arroyo toad *Anaxyrus californicus*	FE	SSC	Desert wash, riparian scrub, riparian woodland, south coast flowing waters, and south coast standing waters. Semi-arid regions near washes or intermittent streams, including valley-foothill and desert riparian, and desert wash. Rivers with sandy banks, willows, cottonwoods, and sycamores; loose, gravelly areas of streams in drier parts of range.	**Not expected to Occur:** The project site does not support aquatic habitat suitable for this species.
California red-legged frog *Rana draytonii*	FT	SSC	Aquatic, artificial flowing waters, artificial standing waters, freshwater marsh, marsh & swamp, riparian forest, riparian scrub, riparian woodland, Sacramento/San Joaquin flowing waters, Sacramento/San Joaquin standing waters, south coast flowing waters. Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat.	**Not expected to Occur:** The project site does not support aquatic habitat suitable for this species.
Reptiles				
Western pond turtle *Actinemys marmorata*	None	SSC	Aquatic, artificial flowing waters, Klamath/north coast flowing waters, Klamath/north coast standing waters, marsh and swamp, Sacramento/San Joaquin flowing waters, Sacramento/San Joaquin standing waters, South coast flowing and standing waters. A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6,000 feet elevation. Need basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	**Not expected to Occur:** The project site does not support aquatic habitat suitable for this species
Desert tortoise *Gopherus agassizii*	FT	ST	Joshua tree woodland, Mojavean desert scrub, Sonoran desert scrub. Most common in desert scrub, desert wash, and Joshua tree habitats; occurs in almost every desert habitat. Require friable soil for burrow and nest construction. Creosote bush habitat with large annual wildflower blooms preferred.	**May occur:** Creosote bush scrub provides suitable habitat for this species. The nearest occurrence is approximately 2 miles southeast of the project site.
Coast (=Blainville's) horned lizard *Phrynosoma blainvillii*		SSC	Chaparral, cismontane woodland, coastal bluff scrub, coastal scrub, desert wash, pinyon and juniper woodlands, riparian scrub, riparian woodland, valley and foothill grassland. Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Open areas for sunning, bushes for cover, patches of loose soil for burial, and abundant supply of ants and other insects.	**May occur:** Creosote bush scrub provides suitable habitat for this species. The nearest recorded occurrence is approximately 5 miles west of the project site.

Name	Federal Status[1]	State Status[1]	Habitat	Potential to Occur in the Project Site
Birds				
Tricolored blackbird *Agelaius tricolor*	None	ST/SSC	Freshwater marsh, marsh and swamp, swamp, wetland. Highly colonial species, most numerous in Central Valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony.	**Not expected to Occur:** The project site does not support marsh habitat suitable for this species.
Long-eared owl *Aio otus*	None	SSC	Riparian or other thickets with small, densely canopied trees required for roosting and nesting.	**Not expected to Occur:** The project site does not support densely canopied trees suitable for this species.
Burrowing owl *Athene cunicularia*	None	SSC	Coastal prairie, coastal scrub, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Sonoran desert scrub, and valley and foothill grassland. Open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	**Likely to Occur**: Burrowing owl sign was found immediately adjacent to the project site. Nearest documented occurrence is 3 miles east of the project site.
Golden eagle *Aquila chrysaetos*	None	FP	Broadleaved upland forest, cismontane woodland, coastal prairie, Great Basin grassland, Great Basin scrub, lower montane coniferous forest, pinyon and juniper woodlands, upper montane coniferous forest, and valley and foothill grassland. Rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	**Not expected to Occur:** The project site does not support nesting habitat suitable for this species.
Swainson's hawk *Buteo swainsoni*	None	ST	Great Basin grassland, riparian forest, riparian woodland, valley and foothill grassland. Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	**Not expected to Occur:** The project site does not support nesting habitat suitable for this species.
Western yellow-billed cuckoo *Coccyzus americanus occidentalis*	FT	SE	Riparian forest. Riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	**Not expected to Occur:** The project site does not support riparian habitat suitable for this species.
Southwestern willow flycatcher *Empidonax traillii extimus*	FE	SE	Riparian woodland. Riparian woodlands in Southern California.	**Not expected to Occur:** The project site does not support riparian habitat suitable for this species.
California condor *Gymnogyps californicus*	FE	FP	Require vast expanses of open savannah, grasslands, and foothill chaparral in mountain ranges of moderate altitude. Deep canyons containing clefts in the rocky walls provide nesting sites. Forages up to 100 miles from roost/nest.	**Not expected to Occur:** The project site does not support suitable foraging or nesting habitat for this species.
Yellow-breasted chat *Icteria virens*	None	SSC	Riparian forest, riparian scrub, riparian woodland. Summer resident; inhabits riparian thickets of willow and other brushy tangles near watercourses. Nests in low, dense riparian, consisting of willow, blackberry, wild grape; forages and nests within 10 feet of ground.	**Not expected to Occur:** The project site does not support riparian habitat suitable for this species.

Name	Federal Status[1]	State Status[1]	Habitat	Potential to Occur in the Project Site
Loggerhead shrike *Lanius ludovicianus*	None	SSC	Broadleaved upland forest, desert wash, Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodlands, riparian woodland, Sonoran desert scrub. Broken woodlands, savannah, pinyon-juniper, Joshua tree, and riparian woodlands, desert oases, scrub and washes. Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.	**Likely to Occur:** Creosote bush scrub provides suitable foraging and nesting habitat for this species. This species has been observed 0.5 mile to the west of the project site (eBird 2021).
Summer tanager *Piranga rubra*	None	SSC	Riparian forest. Summer resident of desert riparian along lower Colorado River, and locally elsewhere in California deserts. Requires cottonwood-willow riparian for nesting and foraging; prefers older, dense stands along streams.	**Not expected to Occur:** The project site does not support riparian habitat suitable for this species.
Bendire's thrasher *Toxostoma bendirei*	None	SSC	Joshua tree woodland, Mojavean desert scrub. Migratory; local spring/summer resident in flat areas of desert succulent shrub/Joshua tree habitats in Mojave Desert. Nests in cholla, yucca, paloverde, thorny shrub, or small tree, usually 0.5 to 20 feet above ground.	**May occur:** Creosote bush scrub provides suitable foraging and nesting habitat for this species. Nearest occurrence is 9 miles east.
LeConte's trasher *Toxostoma lecontei*	None	SSC	Desert wash, Mojavean desert scrub, Sonoran desert scrub. Desert resident; primarily of open desert wash, desert scrub, alkali desert scrub, and desert succulent scrub habitats. Commonly nests in a dense, spiny shrub or densely branched cactus in desert wash habitat, usually 2-8 feet above ground. This species is very secretive and sensitive to human disturbance. Specific threats include off-road vehicle activity and clearing of shrubs for agriculture and other development.	**Not expected to Occur:** Although potentially suitable habitat is present, ongoing off-road vehicle activities likely preclude the presence of this species.
Yellow warbler *Setophaga petechia*	None	SSC	Riparian forest, riparian scrub, riparian woodland. Riparian plant associations in close proximity to water. Also nests in montane shrubbery in open conifer forests in Cascades and Sierra Nevada. Frequently found nesting and foraging in willow shrubs and thickets, and in other riparian plants including cottonwoods, sycamores, ash, and alders.	**Not expected to Occur:** The project site does not support riparian habitat suitable for this species.
Least Bell's vireo *Vireo bellii pusillus*	FE	SE	Riparian forest, riparian scrub, riparian woodland. Summer resident of Southern California in low riparian in vicinity of water or in dry river bottoms; below 2,000 feet. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, Baccharis, mesquite.	**Not expected to Occur:** The project site does not support riparian habitat suitable for this species.
Gray vireo *Vireo vicinior*	None	SSC	Gray vireos nest in pinyon pine-juniper, mesquite scrub, oak scrub, and chaparral habitats of the Southwest, from lowlands into foothills and mountains as high as 7,800 feet elevation.	**Not expected to Occur:** Although potentially suitable habitat is present, this species is not typically observed in the area, recent observations in the vicinity are from the east foothills of the San Bernardino Mtns. This species was not observed during field surveys of the project site.

Name	Federal Status[1]	State Status[1]	Habitat	Potential to Occur in the Project Site
Mammals				
Pallid bat *Antrozous pallidus*	None	SSC	Inhabits deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting. Very sensitive to disturbance of hibernation roost sites, which must protect bats from high temperatures, including buildings, caves, or cracks in rocks.	**Not expected to Occur (Roost):** Although this species may forage in the area, there is no suitable roosting habitat present and thus this species not expected to roost in the project site.
Pallid San Diego pocket mouse *Chaetodipus fallax pallidus*	None	SSC	Desert wash, pinyon and juniper woodlands, Sonoran desert scrub. Desert border areas in eastern San Diego County in desert wash, desert scrub, desert succulent scrub, and pinyon-juniper. Sandy herbaceous areas, usually in association with rocks or coarse gravel.	**Not expected to Occur:** The project site does not support sandy herbaceous habitat suitable for this species.
Townsend's big-eared bat *Corynorhinus townsendii*	None	SSC	Broadleaved upland forest, chaparral, chenopod scrub, Great Basin grassland, Great Basin scrub, Joshua tree woodland, lower montane coniferous forest, meadow & seep, Mojavean desert scrub, riparian forest, riparian woodland, Sonoran desert scrub. Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	**Not expected to Occur (Roost):** Although this species may forage in the area, there is no suitable roosting habitat present and thus this specie is not expected to roost in the project site.
Mohave river vole *Microtus californicus mohavensis*	None	SSC	Riparian scrub. Occurs only in weedy herbaceous growth in wet areas along the Mojave River. May be found in some irrigated pastures. Burrows into soft soil. Feeds on leafy parts of grasses, sedges and herbs. Clips grasses to form runways from burrow.	**Not expected to Occur:** The project site does not support riparian habitat suitable for this species.
Mohave ground squirrel *Xerospermophilus mohavensis*	None	ST	Chenopod scrub, Joshua tree woodland, Mojavean desert scrub. Open desert scrub, alkali scrub and Joshua tree woodland. Also feeds in annual grasslands. Restricted to Mojave Desert. Prefers sandy to gravelly soils, avoids rocky areas. Uses burrows at base of shrubs for cover. Nests are in burrows.	**May occur:** Creosote bush scrub provides suitable foraging and burrow habitat for this species. Nearest known occurrence is 1.8 miles to the southwest.

General references: Unless otherwise noted all habitat and distribution data provided by CNDDB.

Note: CNDDB = California Natural Diversity Database

[1] Legal Status Definitions

Federal:
FE Endangered (legally protected)
FT Threatened (legally protected)

State:
FP Fully protected (legally protected)
SSC Species of special concern (no formal protection other than CEQA consideration)
SE Endangered (legally protected)
ST Threatened (legally protected)

[2] Potential for Occurrence Definitions

Not expected to occur: Species is unlikely to be present in the plan area due to poor habitat quality, lack of suitable habitat features, or restricted current distribution of the species.

May occur: Suitable habitat is available in the plan area; however, there are little to no other indicators that the species might be present.

Likely to occur: All of the species life history requirements can be met by habitat present on the site, and populations/occurrences are known to occur in the immediate vicinity.

Source: CNDDB 2022; USFWS 2022a.

Appendix D

Geotechnical Engineering Report

Geotechnical Engineering Report

Love's Travel Stop-Apple Valley
Apple Valley, San Bernardino County, CA
February 10, 2021
Terracon Project No. CB205149

Prepared for:
Love's Travel Stops & Country Stores, Inc.
Oklahoma City, Oklahoma

Prepared by:
Terracon Consultants, Inc.
Colton, CA

February 10, 2021

Terracon GeoReport

Love's Travel Stops & Country Stores, Inc.
10601 North Pennsylvania Ave.
Oklahoma City, Oklahoma 73120

Attn: Mr. Rick Shuffield
P: (405) 302 6646
E: Rick.Shuffield@ loves.com

Re: Geotechnical Engineering Report
Love's Travel Stop-Apple Valley
NEC of Stoddard Wells Road and I-5 North
Apple Valley, San Bernardino County, CA
Terracon Project No. CB205149

Dear Mr. Shuffield:

We have completed the Geotechnical Engineering services for the above referenced project. This study was performed in general accordance with Terracon Proposal No. PCB205149 dated November 20, 2020. This report presents the findings of the subsurface exploration and provides geotechnical recommendations concerning earthwork, pavements, foundations, and floor slabs for the proposed structures.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further service, please contact us.

Sincerely,
Terracon Consultants, Inc.

Keith P. Askew, P.E., G.E.
Department Manager

REGISTERED PROFESSIONAL ENGINEER
KEITH P. ASKEW
No. 2946
Exp. 6/30/21
GEOTECHNICAL
STATE OF CALIFORNIA

Jay J. Martin, E.G.
Principal Geologist

PROFESSIONAL GEOLOGIST
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Note: This report was originally delivered in a web-based format. For more interactive features, please view your project online at client.terracon.com.

ATTACHMENTS

EXPLORATION AND TESTING PROCEDURES
PHOTOGRAPHY LOG
SITE LOCATION AND EXPLORATION PLANS
EXPLORATION RESULTS
SUPPORTING INFORMATION

Note: Refer to each individual Attachment for a listing of contents.

Geotechnical Engineering Report

Love's Travel Stop-Apple Valley
NEC of Stoddard Wells Road and I-5 North
Apple Valley, San Bernardino County, CA

Terracon Project No. CB205149
February 10, 2021

INTRODUCTION

This report presents the results of our subsurface exploration and geotechnical engineering services performed for the proposed Love's Travel Stop to be located at NEC of Stoddard Wells Road and I-5 North in Apple Valley, San Bernardino County, CA. The purpose of these services is to provide information and geotechnical engineering recommendations relative to:

- Subsurface soil conditions
- Groundwater conditions
- Site preparation and earthwork
- Excavation considerations
- Pavement design and construction
- Foundation design and construction
- Floor slab design and construction
- Seismic site classification per CBC
- Lateral earth pressures

The geotechnical engineering Scope of Services for this project included drilling 22 test borings (B-1 through B-16, and B-18 through B-23) to depths ranging from approximately 5 to 51½ feet below the existing ground surface (bgs), excavating 11 test pits (T-1 though T-11) ranging from 3½ to 11 feet bgs, 7 field percolation tests, field resistivity testing, laboratory testing, and preparation of this report.

Maps showing the site and boring locations are shown in the **Site Location** and **Exploration Plan** sections, respectively. The results of the laboratory testing performed on soil samples obtained from the site during the field exploration are included on the boring logs and as separate graphs in the **Exploration Results** section.

SITE CONDITIONS

The following description of site conditions is derived from our site visit in association with the field exploration and our review of publicly available geologic and topographic maps.

Item	Description
Parcel Information	The project is located at the NEC of Stoddard Wells Road and I-15 North in Apple Valley, San Bernardino County, CA. The site is approximately 19.6 acres. 34.5928°N/117.2560°W (approximate). See **Site Location**
Existing Improvements	The site appears to have been graded for a previously proposed development. Based on Google Earth, materials were excavated from the northern portions and fill has been placed within the southern areas. A cut slope is apparent along the northern boundary, and we estimate that fill soils in the south could be on the order of 20 feet thick. Building pads were previously developed and underground utility lines appear to have been installed and abandoned. The elevations and dimensions of the previously graded pads vary across the site. There is an unpaved and unimproved roadway visible as street cuts extending through the central portion of the site. Significant erosion along with off-road vehicular traffic has occurred, and end dumped piles of debris are present.
Current Ground Cover	Earthen, light to moderate desert vegetation.
Existing Topography	Grades vary greatly due to the previous development. Elevations range from 2,925 feet in the north to 2,900 feet in the south.

We also collected photographs at the time of our field exploration program. Representative photos are provided in our **Photography Log**.

PROJECT DESCRIPTION

Our initial understanding of the project was provided in our proposal and was discussed during project planning.

Item	Description
Information Provided	Project information provided by Lane Engineers including site plan titled *Preliminary Grading Plan, New Travel Stop, Stoddard Wells Road*, undated.

Item	Description
Project Description	The proposed Love's Travel Stop will include the following: ■ A single-story convenience store/restaurant building ■ Canopies over the car and truck fuel dispensing islands ■ A high-rise sign ■ Above and below ground fuel tanks ■ Concrete and asphalt pavement ■ Retention basins
Proposed Structures	The project includes a single-story convenience store (Country Store) building and an attached drive through (fast food) restaurant with a combined footprint of about 12,000 square feet. The building will be slab-on-grade with no below-grade structures. Fuel island canopies are planned.
Building Construction	■ The Country Store will have isolated steel columns, load bearing masonry walls and a concrete slab-on-grade floor. ■ Fuel island canopies will be steel column and frame construction ■ High-rise sign will be supported on a deep foundation system (drilled pier)
Finished Floor Elevation	Proposed grades are anticipated to be near elevation 2,925 feet in the north to 2,902 feet in the southwest. Cuts and fills to achieve design grades are anticipated to be on the order of 5 and 15 feet, respectively, excluding requirements for remedial grading. Finish floor elevation for the Country Store is anticipated to be approximately 2,913 feet. Fuel stations are proposed to be approximately 2,910 feet for autos and 2,920 for trucks.
Maximum Loads (provided by Love's)	Country Store: ■ Columns: 25 kips ■ Walls: 1 kip per linear foot (klf) ■ Floor Slab: assumed 150 pounds per square foot (psf) Auto Fuel Canopy (40' by 80' in plan dimensions) foundations: ■ Axial compression: 23.07 kips (dead and live loads) ■ Axial uplift: 14.99 kips ■ Moment: 22.58 kip-feet Truck Fuel Canopy (25' height) foundations: ■ Axial compression: 22.59 kips (dead and live loads) ■ Axial uplift: 13.73 kips ■ Moment: 54.61 kip-feet

Item	Description
Grading/Slopes	Up to 5 feet of cut and 15 feet of fill may be required to develop final grade, excluding requirements for remedial grading. Slopes are proposed with a maximum of 5 feet in vertical height and inclinations of 2:1 (h:v) or flatter. An existing ascending cut slope with a vertical height on the order of 20 feet and inclination of approximately 2:1 (h:v) is adjacent to the northern property line.
Below-Grade Structures	Other than two underground storage tank (USTs) installations, no below grade structures are anticipated. Excavations for the fuel storage tanks are anticipated to extend to a depth of about 12 to 15 feet below final grade.
Free-Standing Retaining Walls	Retaining walls are not expected to be constructed as part of site development to achieve final grades.
Pavements	The Love's Travel Stop will include light-duty, medium-duty, heavy-duty, and extra heavy-duty pavement areas. The pavement design criteria are noted below (Tier 1/Tier 2): ■ Light-duty auto area: 1,000 cars per day ■ Medium-duty truck parking area: 150 trucks per day ■ Heavy-duty truck drives: 600 trucks per day ■ Extra heavy-duty truck drives: 1,000 trucks per day ■ 20-year design life
High-Rise Sign Access Road	An unpaved access road will extend to the high-rise sign. Vehicles expected to operate on the access road include concrete trucks and other construction equipment during construction of the sign foundation. Additionally, truck-mounted cranes used to erect and maintain the sign are expected to use the road. Cranes typically used vary in size and weight depending on the height of the sign and monopole weight. Vehicles operating on this road include: ■ Crane, large (350-ton capacity): 140-kip load, 6 axles, 50 ft. long by 9 ft. wide; ■ Crane, medium: 72-kip load, 4 or 6 axles, 40 ft. long by 9 ft. wide; ■ Tractor trailers, 80-kip load, 5 axles, 18 wheels, 70 ft. long by 9 ft. wide ■ Concrete trucks, 72-kip load, 10 wheels, 30 ft. long by 8 ft. wide.
Infiltration Systems	Based on information provided by Lane Engineers, Inc., on-site infiltration systems consisting of bioretention basins at six locations are proposed.

GEOTECHNICAL CHARACTERIZATION

Site Geology

The site is located within the Mojave Desert Geomorphic Province of California. The Mojave Desert is bounded on the southwest by the San Andreas fault and the Transverse Ranges and on the northeast by the Garlock fault. The Mojave Desert is an ancient feature formed in response to the inception of movement on the San Andreas and Garlock faults. Broad alluviated basins burying the previous mountainous topography characterize the region.

The site is located on a large, southeast-sloping alluvial fan derived from erosion of Quartzite Mountain, located northwest of the site. These alluvial deposits are generally very old, mapped as Pleistocene-age alluvium by Dibblee (1960). The older alluvium is well exposed in the existing south-facing cut slope along the northern site boundary. The older alluvium on the site consists of silty sands with gravel in a hard, consolidated condition. Pedogenic soil horizons observed include petrocalcic (carbonate) layers. Formation of such horizons require tens of thousands of years of subaerial exposure and are evidence of a late Pleistocene age. Bedding exposed in the cut slope dips gently to the southeast (slightly out of slope) with no evidence of deformation observed. No fine-grained beds were observed.

The older alluvium has been locally incised and reworked by a drainage known as Bell Mountain Wash, which flows to the southwest overall and eventually to the Mojave River to the southwest of the site. The wash includes very young alluvium of late Holocene age. The younger alluvium consists of silty sand with gravel. Stoddard Wells Road generally follows the alignment of the wash in the vicinity of the site.

In an effort to clarify the past use of the site, aerial photographic imagery available from Google Earth and from the Fairchild Collection at U.C. Santa Barbara was reviewed. The September 1994 Google Earth imagery shows the site and the adjacent parcel to the east as graded. Most of the existing site features including the pads, street cuts and "bin outlines" (see Subsurface Profile section below) are visible on this imagery.

The pre-grading imagery shows the older alluvial fan emanating from the northwest truncated at the surface by southwest-flowing Bell Mountain Wash.

Subsurface Profile

We have developed a general characterization of the subsurface soil and groundwater conditions based upon our review of the data and our understanding of the geologic setting and planned construction. The site is underlain with undocumented fill soils with thicknesses ranging from 1 to 11 feet. The fill is generally classified as silty sand with varying amounts of gravel and considered unsuitable for support of the proposed development in the current condition. The fill

overlies alluvium consisting of sand with varying amounts of silt and gravel, and relative density of loose to very dense.

The site currently contains underground utilities that have been abandoned. These utilities are remnants of the previous site development attempt and include an uncapped well, PVC water mains (fire mains?), and at least one stickup for a fire hydrant. These items, where noted in the field, are shown on the **Exploration Plan** with their approximate locations. In the area of trench T-5, ground features denote the outlines of bins or similar structures. Short sections of electrical conduit in the area of these outlines are present. We excavated one of these and found the conduits to consist of short, partially buried sections. It appears that they were intended to serve future electrical panels.

The geotechnical characterization forms the basis of our geotechnical calculations and evaluation of site preparation, foundation options and pavement options. As noted in **General Comments**, the characterization is based upon widely spaced exploration points across the site, and variations are likely. Conditions encountered at each boring location are indicated on the individual boring logs shown in the **Exploration Results** section and are attached to this report. Stratification boundaries on the boring logs represent the approximate location of changes in native soil types; in situ, the transition between materials may be gradual.

Groundwater

The borings were advanced using continuous flight auger drilling techniques that allow short-term groundwater observations to be made while drilling. Groundwater seepage was not observed within the maximum depths of 51 ½ feet during or at the completion of drilling. We do not anticipate groundwater will affect construction at this project site. Groundwater level fluctuations occur due to seasonal variations in the amount of rainfall, runoff and other factors not evident at the time the borings were performed.

According to data collected from the Water Data Library of California Department of Water Resources (DWR) from a nearby wells, historic groundwater levels are deeper than 100 feet. We attempted to measure the depth to water in the uncapped well on the site (southwest portion of the site) on December 30, 2020. The depth to water in the well was deeper than the length of cable on the sounder (200 feet), so no depth to water could be obtained.

Hydroconsolidation

To evaluate the potential deformation that may be caused by the addition of water to the subsurface soils, hydro-consolidation testing was performed on selected, relatively undisturbed samples. The results are presented in the Exploration Results section and indicate collapse potentials of 1.6% (B-1, 15 – 16.5 ft), 2.1% (B-2, 10 – 11.5 ft), 2.0% (B-3, 10 – 11.5 ft), 4.2% (B-

7, 15 – 16.5 ft) and 0.9% (B-8, 10 – 11.5 ft). The samples were saturated under a confining pressure of 2,000 psf.

SEISMIC CONSIDERATIONS

Based on the soil properties encountered at the site and as described on the exploration logs and results, it is our opinion that the Seismic Site Classification is D. The 2019 California Building Code (CBC) Seismic Design Parameters have been generated using the SEAOC/OSHPD Seismic Design Maps Tool. This web-based software application calculates seismic design parameters in accordance with ASCE 7-16 and 2019 CBC. The 2019 CBC requires that a site-specific ground motion study be performed in accordance with Section 11.4.8 of ASCE 7-16 for Site Class D sites with a mapped S_1 value greater than or equal 0.2.

However, Section 11.4.8 of ASCE 7-16 includes an exception from such analysis for specific structures on Site Class D sites. The commentary for Section 11 of ASCE 7-16 (Page 534 of Section C11 of ASCE 7-16) states that "In general, this exception effectively limits the requirements for site-specific hazard analysis to very tall and or flexible structures at Site Class D sites." Based on our understanding of the proposed structures, it is our assumption that the exception in Section 11.4.8 applies to the proposed structure. However, the structural engineer should verify the applicability of this exception.

Based on this exception, the spectral response accelerations presented below were calculated using the site coefficients (F_a and F_v) from Tables 1613.2.3(1) and 1613.2.3(2) presented in Section 16.4.4 of the 2019 CBC.

Description	Value
Site Classification (CBC) [1]	D [2]
Site Latitude (°N)	34.5928
Site Longitude (°W)	117.2560
S_s Spectral Acceleration for a 0.2-Second Period	1.014
S_1 Spectral Acceleration for a 1-Second Period	0.392
F_a Site Coefficient for a 0.2-Second Period	1.094
F_v Site Coefficient for a 1-Second Period	1.9
Site Modified Peak Ground Acceleration	0.508g
De-aggregated Mean Magnitude [3]	6.92

Description	Value
1. Seismic site classification in general accordance with the *2019 California Building Code*. 2. The 2019 California Building Code (CBC) requires a site soil profile determination extending to a depth of 100 feet for seismic site classification. The current scope does not include the required 100-foot soil profile determination. Our borings were extended to a maximum depth of 51 ½ feet. This seismic site class definition considers that similar or denser soils continue below the maximum depth of the subsurface exploration. Additional exploration to deeper depths would be required to confirm the conditions below the current depth of exploration. 3. These values were obtained using on-line Unified Hazard Tool by the USGS (https://earthquake.usgs.gov/hazards/interactive/) for return period of 2% in 50 years accessed	

A site-specific ground motion study may reduce design values and consequently construction costs. We recommend consulting with a structural engineer to evaluate the need for such study and its potential impact on construction costs. Terracon should be contacted if a site-specific ground motion study is desired.

Faulting and Estimated Ground Motions

The site is located in the seismically active southern California area. The type and magnitude of seismic hazards affecting the site are dependent on the distance to causative faults, the intensity, and the magnitude of the seismic event. As calculated using the USGS Unified Hazard Tool, the San Andreas (San Bernardino N) Fault, which is considered to have the most significant effect at the site from a design standpoint, has a maximum magnitude of 8.00 and is located approximately 39.97 kilometers from the site.

Based on the USGS Design Maps Summary Report, using the American Society of Civil Engineers (ASCE 7-16) standard, the peak ground acceleration (PGA_M) at the project site is expected to be 0.508 g. Based on the USGS Unified Hazard Tool, the project site has a de-aggregated mean magnitude of 6.92. Furthermore, the site is not located within an Alquist-Priolo Earthquake Fault Zone based on our review of the State Fault Hazard Maps.

LIQUEFACTION AND SEISMIC SETTLEMENT

Liquefaction Potential

Liquefaction is a mode of ground failure that results from the generation of high pore-water pressures during earthquake ground shaking, causing loss of shear strength, and is typically a hazard where loose sandy soils exist below groundwater. County of San Bernardino has designated certain areas as potential liquefaction hazard zones. These are areas considered at a risk of liquefaction-related ground failure during a seismic event, based upon mapped surficial deposits and the presence of a relatively shallow water table.

The subsurface materials generally consist of loose previously placed fill materials comprised of silty sand with gravel within the upper approximately 1 to 11 feet of existing grades, underlain by loose to very dense sand with varying amounts of silt and gravel extending to the depth of the borings. Groundwater was not encountered within the maximum depths of exploration during or at the completion of drilling. As measured in the well encountered on the site during the field investigation, groundwater was at least 200 feet below the ground surface.

According to the County of San Bernardino general plan, the site is located within an area having a low liquefaction potential. Based on this mapping, and the anticipated depth of groundwater, it is our opinion that the liquefaction potential at the site is low.

Seismic Settlement

To determine the amount of settlement of unsaturated sand during seismic shaking, we utilized the software "LiquefyPro" by CivilTech Software, using soil data combined from borings B-1, B-2, B-4, B-7, and B-8. A Peak Ground Acceleration (PGA) of 0.508g and the de-aggregated mean magnitude of 6.92 for the project site were used. Settlement analysis used the Ishihara / Yoshimine method and the fines percentage were corrected for liquefaction using the Modify Stark/Olson method.

Based on the calculation results, seismically induced settlement (dry sand settlement) is estimated to be less than 1 inch. We expect that the maximum differential seismic settlement could be at the order of half of total seismic settlement over a distance of 40 feet. Therefore, in our opinion, seismic settlement is not considered a significant geologic hazard at this site.

CORROSIVITY

The table below lists the results of laboratory soluble sulfate, soluble chloride, electrical resistivity, and pH testing. In addition, a field resistivity survey was performed at the Tank Pad location using the Wenner Array (4-pin) method per ASTM G57 and a digital ground resistance tester. The results of the field survey are provided in **Exploration and Testing Procedure** attachment.

The following values may be used to estimate potential corrosive characteristics of the on-site soils with respect to contact with the various underground materials which will be used for project construction.

Corrosivity Test Results Summary						
Boring	**Depth (feet)**	**Soluble Sulfate (mg/kg)**	**Soluble Chloride (mg/kg)**	**Electrical Resistivity (as-received) (Ω-cm)**	**Electrical Resistivity (saturated) (Ω-cm)**	**pH**
B-1	10.0-11.5	58	30	24,400	1,800	8.0
B-4	2.5-4.0	131	168	10,800	880	8.0

Results of soluble sulfate testing indicate samples of the on-site soils tested possess negligible sulfate concentrations when classified in accordance with Table 4.3.1 of the ACI Design Manual. Concrete should be designed in accordance with the provisions of the ACI Design Manual, Section 318, Chapter 4.

For protection against corrosion to buried metals, Terracon recommends that an experienced corrosion engineer be retained to design a suitable corrosion protection system for underground metal structures or components.

If corrosion of buried metal is critical, it should be protected using a non-corrosive backfill, wrapping, coating, sacrificial anodes, or a combination of these methods, as designed by a qualified corrosion engineer.

STORMWATER MANAGEMENT

Seven in-situ percolation tests were performed at approximate depths of 5 to 15 feet bgs. A 2-inch thick layer of 3/8 inch gravel was placed in the bottom of each boring after the borings were drilled to investigate the soil profile. A 3-inch diameter perforated pipe was installed on top of the gravel layer in each boring. Gravel was used to backfill between the perforated pipes and the boring sidewall. The borings were then filled with water for a pre-soak period. Testing began after a pre-soak period. At the beginning of the test, the pipes were refilled with water and readings were taken at standardized time intervals. Percolation rates are provided in the following table:

Test Location	Test Depth (ft.) [1]	Soil Type	Percolation Rate Average (in./hr.) [2]	Infiltration Rate Average (in./hr.) [3]
B-16	5	SM	13.0	0.5
B-18	10	SM	19.2	0.7
B-19	5	SP-SM	37.0	1.4
B-20	15	SW-SM	43.2	1.5
B-21	10	SW-SM	195.6	8.3
B-22	8	SM	52.8	2.0

Test Location	Test Depth (ft.) [1]	Soil Type	Percolation Rate Average (in./hr.) [2]	Infiltration Rate Average (in./hr.) [3]
B-23	5	SW-SM	139.5	7.3

1. Below existing ground surface.
2. Our percolation tests were performed generally following the well permeater test method described in the "Guidelines for Geotechnical Investigation and Reporting Low Impact Development Stormwater Infiltration", San Bernardino County Department of Public Works, 2017.
3. If proposed infiltration system will mainly rely on vertical downward seepage, the correlated infiltration rates should be used.

The above infiltration rates determined by the shallow percolation test method are based on field test results utilizing clear water. Infiltration rates can be affected by silt buildup, debris, degree of soil saturation, site variability and other factors. The rate obtained at specific location and depth is representative of the location and depth tested and may not be representative of the entire site. Application of an appropriate safety factor is prudent to account for subsoil inconsistencies, possible compaction related to site grading, and potential silting of the percolating soils, depending on the application.

The design engineer should also check with the local agency for the limitation of the infiltration rate allowed in the design. If the maximum allowable design infiltration rate is lower than the above recommended rate, the maximum allowable design infiltration rate should be used. The designer of the basins should also consider other possible site variability in the design.

Based on the soils encountered in our borings, we expect the percolation rates of the soils could be different than measured in the field due to variations in fines and gravel content. The design elevation and size of the proposed infiltration system should account for this expected variability in infiltration rates.

Infiltration testing should be performed after construction of the infiltration system to verify the design infiltration rates. It should be noted that siltation and vegetation growth along with other factors may affect the infiltration rates of the infiltration areas. The actual infiltration rate may vary from the values reported here. Infiltration systems should be located at least 10 feet from any existing or proposed foundation system.

GEOTECHNICAL OVERVIEW

The site is suitable for the proposed construction based upon geotechnical conditions encountered in the test borings and pits, provided that the recommendations provided in this report are implemented in the design and construction phases of this project.

Based on our field investigation and laboratory test results, it is our opinion that the site will be safe against hazards from landslide, settlement, or slippage provided that the recommendations presented in our report are followed. Also, provided that the recommendations presented in our report are followed, we find that the proposed grading will not adversely affect the geologic stability of the properties adjacent to the site. The existing cut slope along the northern boundary of the site consists of coarse-grained, dense to very dense, older alluvium with a slight out-of-slope bedding component. No fine-grained beds were observed and this slope exhibits satisfactory stability against failure.

Geotechnical engineering recommendations for foundation systems and other earth connected phases of the project are outlined below. The recommendations contained in this report are based upon the results of field and laboratory testing, engineering analyses, and our current understanding of the proposed project.

Based on the conditions encountered, we believe the proposed buildings can be supported on shallow foundations, such as spread footings. The recommendations contained in this report are based upon the results of field and laboratory testing (presented in the **Exploration Results** section), engineering analyses, and our current understanding of the proposed project.

The **General Comments** section provides an understanding of the report limitations.

EARTHWORK

The following recommendations include site preparation, excavation, subgrade preparation and placement of engineered fills on the project. The recommendations presented for design and construction of earth supported elements including foundations, slabs, and pavements are contingent upon following the recommendations outlined in this section.

Earthwork on the project should be observed and evaluated by Terracon. The evaluation of earthwork should include observation and testing of engineered fill, subgrade preparation, foundation bearing soils, and other geotechnical conditions exposed during the construction of the project.

Site Preparation

Strip and remove existing vegetation, debris and other deleterious materials from proposed building and pavement areas. Exposed surfaces should be free of mounds and depressions which could prevent uniform compaction. The site should be initially graded to create a relatively level surface to receive fill and provide for a relatively uniform thickness of fill beneath proposed building structures.

The ground surface of the site is generally earthen and bare; however, there are some native grasses and bushes. We recommend stripping vegetation to depths that exposed soils with less than 3 percent organics and no roots having a diameter greater than 1/8 inch. While the depth of the unsuitable soils should be expected to vary, the thickness of the topsoil layer may be estimated to be approximately 3 to 6 inches for construction budgeting purposes. The thickness of the vegetation layer was not determined during our field exploration; therefore, the actual depth of stripping should be verified by engineering observations made during the grading operations at the project. Exposed surfaces should be free of mounds and depressions which could prevent uniform compaction.

Stripped materials consisting of vegetation and organic materials should be removed from the site or used to revegetate landscaped areas or exposed slopes after completion of grading operations. If it is necessary to dispose of organic materials on site, they should be placed in non-structural areas, and in fill sections not exceeding 5 feet in height.

Our explorations indicate the site has undocumented fill soils with thicknesses varying and up to 11 feet in some areas, and we anticipate the fill may be on the order of 15 to 20 feet thick in some areas. Documentation to show if the grading operations were monitored or the fill materials have been compacted and tested are not available. We recommend that all fill soils be removed within the proposed building area and the excavation thoroughly cleaned prior to backfill placement and/or construction. If such documentation exists, Terracon should be notified and the recommendations in this report may be appropriately modified.

Although no evidence for underground facilities such as septic tanks, cesspools, or basements was observed during the site reconnaissance, such features could be encountered during construction. Buried utility lines and associated trenches are known to exist on the site. The full extent of these and other buried features will not be known until grading. All of the on-site fills, utility lines and associated trenches should be traced out and completely removed during grading. The resulting excavations should be thoroughly cleaned prior to backfill placement and/or construction.

One well with a steel casing was observed in the southwest portion of the site (see **Exploration Plan**). This well was uncapped at the time of our field investigation. This well should be abandoned in accordance with State and County requirements.

Subgrade Preparation

To provide a uniform compacted fill pad for the proposed structures, we recommend a shallow foundation system be supported on engineered compacted fill extending to a minimum depth of 2 feet below the bottom of foundations, or 3 feet beyond the thickness of existing undocumented fill soils and into the native alluvium, whichever is greater. Grading for each structure should include the footprint of the structure plus extend laterally a distance as projected by a 1:1

(horizontal:vertical) from the bottom outside edge of the perimeter footings to the depth of the fill soils.

Exposed areas which will receive fill, once properly cleared and benched where necessary, should be scarified to a minimum depth of 10 inches, moisture conditioned, and compacted per the compaction requirements in this report. The moisture content and compaction of subgrade soils should be maintained until the placement of compacted structural fill.

Based upon the subsurface conditions determined from the geotechnical exploration, subgrade soils exposed during construction are anticipated to be relatively workable. However, the workability of the subgrade may be affected by precipitation, repetitive construction traffic or other factors. If unworkable conditions develop, workability may be improved by scarifying and drying.

Excavation

We anticipate that excavations for the proposed construction can be accomplished with conventional earthmoving equipment.

Soils may consist of cohesionless sandy soils. Such soils have the tendency to cave and slough during excavations. Therefore, formwork may be needed for foundation excavations. The bottom of excavations should be thoroughly cleaned of loose soils and disturbed materials prior to backfill placement and/or construction.

We recommend that the underground storage tank excavations be over-excavated by about 2 feet in plan area to provide adequate access around the excavation for tank placement construction. The walls of the proposed excavation should be shored or sloped in conformance with OSHA excavation and trench safety standards. If any excavation is extended to a depth of more than 20 feet, it will be necessary to have the side slopes designed by a professional engineer.

Soils from the excavation should not be stockpiled higher than six 6 feet or within ten 10 feet of the edge of an open trench. Construction of open cuts adjacent to existing structures, including underground pipes, is not recommended within a 1½ H:1V plane extending beyond and down from the perimeter of the structure. Cuts that are proposed within five 5 feet of light standards, other utilities, underground structures, and pavement should be provided with temporary shoring.

It may be necessary for the contractor to retain the geotechnical engineer to monitor the soils exposed in all excavations and provide engineering services for slopes. This will provide an opportunity to monitor the soils encountered and to modify the excavation slopes as necessary. It also offers an opportunity to verify the stability of the excavation slopes during construction.

Individual contractors are responsible for designing and constructing stable, temporary excavations. Excavations should be sloped or shored in the interest of safety following local, and federal regulations, including current OSHA excavation and trench safety standards.

Fill Materials and Placement

All fill materials should be inorganic soils free of vegetation, debris, and fragments larger than 3 inches in size. Pea gravel or other similar non-cementitious, poorly-graded materials should not be used as fill or backfill without the prior approval of the geotechnical engineer.

Clean on-site soils or approved imported materials may be used as fill material for the following:

- general site grading
- foundation areas
- interior floor slab areas
- foundation backfill
- pavement areas
- exterior slab areas

Imported soils for use as fill material within proposed building and structure areas should conform to low volume change materials as indicated in the following specifications:

Gradation	Percent Finer by Weight (ASTM C 136)
3"	100
No. 4 Sieve	50-100
No. 200 Sieve	10-40

- Liquid Limit ..... 30 (max)
- Plasticity Index ..... 15 (max)
- Maximum expansion index* ..... 20 (max)

*ASTM D 4829

The contractor shall notify the Geotechnical Engineer of import sources sufficiently ahead of their use so that the sources can be observed and approved as to the physical characteristic of the import material. For all import material, the contractor shall also submit current verified reports from a recognized analytical laboratory indicating that the import has a "not applicable" (Class S0) potential for sulfate attack based upon current ACI criteria and is "mildly corrosive" to ferrous metal and copper. The reports shall be accompanied by a written statement from the contractor that the laboratory test results are representative of all import material that will be brought to the job.

Engineered fill should be placed and compacted in horizontal lifts, using equipment and procedures that will produce recommended moisture contents and densities throughout the lift. Fill lifts should not exceed 10 inches loose thickness.

Compaction Requirements

Recommended compaction and moisture content criteria for engineered fill materials are as follows:

Material Type and Location	Per the Modified Proctor Test (ASTM D 1557)		
	Minimum Compaction Requirement (%)	Range of Moisture Contents for Compaction Above Optimum	
		Minimum	Maximum
On-site soils and low volume change imported fill: Beneath foundations:	90	0%	+3%
Beneath interior slabs:	90	0%	+3%
Miscellaneous backfill and behind retain walls:	90	0%	+3%
Beneath pavements:	95	0%	+3%
Utility Trenches*:	90	0%	+3%
Bottom of excavation receiving fill:	90	0%	+3%
Aggregate base (beneath pavements):	95	0%	+3%

* Upper 12 inches should be compacted to 95% within pavement and structural areas.

Utility Trench Backfill

It is anticipated that the on-site soils and fill materials will provide suitable support for underground utilities and piping that may be installed. Any soft and/or unsuitable material encountered at the bottom of excavations should be removed and be replaced with an adequate bedding material. A non-expansive granular material with a sand equivalent greater than 30 should be used for bedding and shading of utilities, unless allowed or specified otherwise by the utility manufacturer.

On-site materials are considered suitable for backfill of utility and pipe trenches from one foot above the top of the pipe to the final ground surface, provided the material is free of organic matter and deleterious substances.

Trench backfill should be mechanically placed and compacted as discussed earlier in this report. Compaction of initial lifts should be accomplished with hand-operated tampers or other lightweight compactors. Where trenches are placed beneath slabs or footings, the backfill should satisfy the gradation and expansion index requirements of engineered fill discussed in this report. Flooding or jetting for placement and compaction of backfill is not recommended.

Grading and Drainage

All grades must provide effective drainage away from the building during and after construction and should be maintained throughout the life of the structure. Water retained next to the building can result in soil movements greater than those discussed in this report. Greater movements can

result in unacceptable differential floor slab and/or foundation movements, cracked slabs and walls, and roof leaks. The roof should have gutters/drains with downspouts that discharge onto splash blocks at a distance of at least 10 feet from the building.

Exposed ground should be sloped and maintained at a minimum 5% away from the building for at least 10 feet beyond the perimeter of the building. Locally, flatter grades may be necessary to transition ADA access requirements for flatwork. After building construction and landscaping have been completed, final grades should be verified to document effective drainage has been achieved. Grades around the structure should also be periodically inspected and adjusted, as necessary, as part of the structure's maintenance program. Where paving or flatwork abuts the structure, a maintenance program should be established to effectively seal and maintain joints and prevent surface water infiltration.

We recommend a minimum horizontal setback distance of 10 feet from the perimeter of any building and the high-water elevation of the nearest storm-water retention basin.

Roof drainage should discharge into splash blocks or extensions when the ground surface beneath such features is not protected by exterior slabs or paving. Sprinkler systems and landscaped irrigation should not be installed within 5 feet of foundation walls.

Earthwork Construction Considerations

Upon completion of placement of fill and grading, care should be taken to maintain the subgrade water content prior to construction of floor slabs. Construction traffic over the completed subgrades should be avoided. The site should also be graded to prevent ponding of surface water on the prepared subgrades or in excavations. Water collecting over or adjacent to construction areas should be removed. If the subgrade freezes, desiccates, saturates, or is disturbed, the affected material should be removed, or the materials should be scarified, moisture conditioned, and recompacted prior to floor slab construction.

As a minimum, excavations should be performed in accordance with OSHA 29 CFR, Part 1926, Subpart P, "Excavations" and its appendices, and in accordance with any applicable local, and/or state regulations.

Construction site safety is the sole responsibility of the contractor who controls the means, methods, and sequencing of construction operations. Under no circumstances shall the information provided herein be interpreted to mean Terracon is assuming responsibility for construction site safety, or the contractor's activities; such responsibility shall neither be implied nor inferred.

Construction Observation and Testing

The geotechnical engineer should be retained during the construction phase of the project to observe earthwork and to perform necessary tests and observations during subgrade preparation, proof-rolling, placement and compaction of controlled compacted fills, backfilling of excavations to the completed subgrade.

Each lift of compacted fill should be tested, evaluated, and reworked, as necessary, until approved by the Geotechnical Engineer prior to placement of additional lifts. Each lift of fill should be tested for density and water content at a frequency of at least one test for every 2,500 square feet of compacted fill in the building areas and 5,000 square feet in pavement areas. One density and water content test should be performed for every 50 linear feet of compacted utility trench backfill.

In areas of foundation excavations, the bearing subgrade should be evaluated under the direction of the Geotechnical Engineer. If unanticipated conditions are encountered, the Geotechnical Engineer should prescribe mitigation options.

In addition to the documentation of the essential parameters necessary for construction, the continuation of the Geotechnical Engineer into the construction phase of the project provides the continuity to maintain the Geotechnical Engineer's evaluation of subsurface conditions, including assessing variations and associated design changes.

SHALLOW FOUNDATIONS

If the site has been prepared in accordance with the requirements noted in **Earthwork**, the following design parameters are applicable for shallow foundations.

Design Parameters – Compressive Loads

DESCRIPTION	RECOMENDATION
Foundation Type	Spread footing foundations
Bearing Material	A minimum of 24 inches of compacted structural fill
Allowable Bearing Pressure	2,500 psf
Minimum Dimensions	Columns: 24 inches
Minimum Embedment Depth Below Finished Grade	18 inches
Total Estimated Static Settlement	1 inch
Estimated Differential Static Settlement	½ inch across 40 feet

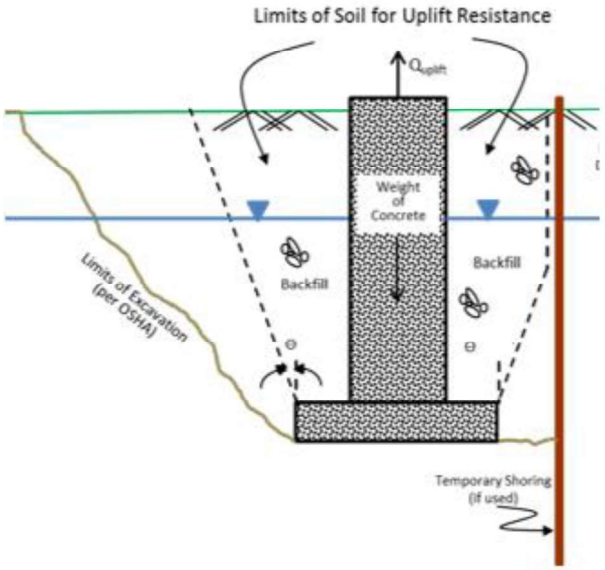
Finished grade is defined as the lowest adjacent grade within five feet of the foundation for perimeter (or exterior) footings.

The allowable foundation bearing pressure applies to dead loads plus design live load conditions. The design bearing pressure may be increased by one-third when considering total loads that include wind or seismic conditions. The weight of the foundation concrete below grade may be neglected in dead load computations.

Foundations should be reinforced as necessary to reduce the potential for distress caused by differential foundation movement. Foundation excavations should be observed by the geotechnical engineer. If the soil conditions encountered differ significantly from those presented in this report, supplemental recommendations will be required.

Design Parameters - Uplift Loads

Uplift resistance of spread footings can be developed from the effective weight of the footing and the overlying soils. As illustrated on the subsequent figure, the effective weight of the soil prism defined by diagonal planes extending up from the top of the perimeter of the foundation to the ground surface at an angle, θ, of 20 degrees from the vertical can be included in uplift resistance. The maximum allowable uplift capacity should be taken as a sum of the effective weight of soil plus the dead weight of the foundation, divided by an appropriate factor of safety. A maximum total unit weight of 130 pcf should be used for the backfill.



DEEP FOUNDATIONS

Drilled Shaft Design Recommendations

The proposed high-rise sign and canopy structures may be supported on drilled shafts. Total required embedment of the drilled shaft should be determined by the structural engineer based on structural loading and parameters provided in this report.

Based on our review of the subsurface conditions within the proposed location of the high-rise sign, canopies, and the Standard Penetration Test (SPT) results, engineering properties have been estimated for the anticipated soils conditions.

The allowable uplift capacities should only be based on the side friction of the shaft; however, the weight of the foundation should be added to these values to obtain the actual allowable uplift capacities for drilled shafts. Tensile reinforcement should extend to the bottom of shafts subjected to uplift loading. Buoyant unit weights of the soil and concrete should be used in the calculations below the highest anticipated groundwater elevation.

Recommended soil parameters for lateral analysis and axial load design of drilled shaft foundations are provided in the table below. Based on our review of the boring logs and the Standard Penetration Test (SPT) results, engineering properties have been estimated for the soil conditions as shown in the following table. Lateral and axial capacity of soils within the upper 2 feet should be neglected. We recommend that Terracon review the final drilled shaft design to verify that sufficient embedment is achieved.

L-Pile Design Input Parameters					Axial Design Parameters	
Layer	Bottom Depth of Layer (feet)	L-PILE Soil Types	Effective Unit Weight (pcf)	Friction Angle (degrees)	Allowable End Bearing Pressure (ksf)[4]	Allowable Compressive Side Shear (psf)
1	2	Sand	105	----	----	----
2	5	Sand	110	32	6	50
3	10	Sand	110	30	4	150
4	15	Sand	110		3.5	250
5	20	Sand	115		3.5	350
6	25	Sand	120		4	500
7	30	Sand	120	36	15	600
8	35	Sand	120		15	700
9	40	Sand	125	38	20	850
10	45	Sand	125		20	900
11	50	Sand	125		20	1,000

1. Design depth to subsurface water is greater than 50 feet.

L-Pile Design Input Parameters					Axial Design Parameters	
Layer	Bottom Depth of Layer (feet)	L-PILE Soil Types	Effective Unit Weight (pcf)	Friction Angle (degrees)	Allowable End Bearing Pressure (ksf)[4]	Allowable Compressive Side Shear (psf)

2. Factors of safety of 3.0 for end bearing pressure, 2.0 for compressive side shear were utilized.
3. For uplift conditions, allowable compressive side shear should be multiplied by 0.60.
4. Stratigraphy shown above is based on our interpretation of soil strength and may not correspond with the descriptive classifications shown on the boring logs. To make drilled shaft design simple, the cohesion values of sandy clayey soils are neglected and treated as sandy soils by increasing friction-angle values to compensate cohesion values.

The depth below ground surface indicated in the table above is referenced from the existing site surface at the time of the field exploration. If fill is placed to raise the site grades, the depths shown in the charts must be increased by the thickness of fill placed. The required depths of shaft embedment should also be determined for design lateral loads and overturning moments to determine the most critical design condition.

It should be noted that the loaded capacities provided herein are based on the stresses induced in the supporting soils. The structural capacity of the shafts should be checked to assure that they can safely accommodate the combined stresses induced by axial and lateral forces. Furthermore, the response of the drilled shaft foundations to lateral loads is dependent upon the soil/structure interaction as well as the shaft's actual diameter, length, stiffness and "fixity" (fixed or freehead condition).

Drilled Shaft Construction Considerations

Drilling to design depths should be possible with conventional single flight power augers. As lenses of cohesionless sands are expected, temporary steel casing will likely be required to properly drill and clean shafts prior to concrete placement, or the use of slurry drilling methods with polymers to keep the solids in suspension during the drilling may be needed.

Drilled shaft foundation concrete should be placed immediately after completion of drilling and cleaning. If foundation concrete cannot be placed in dry conditions, a tremie should be used for concrete placement. Due to potential sloughing and raveling, foundation concrete quantities may exceed calculated geometric volumes.

If casing is used for drilled shaft construction, it should be withdrawn in a slow continuous manner maintaining a sufficient head of concrete to prevent infiltration of water or the creation of voids in shaft concrete. Shaft concrete should have a relatively high fluidity when placed in cased shaft holes or through a tremie. Shaft concrete with slump in the range of 6 to 8 inches is recommended.

We recommend that all drilled shaft installations be observed on a full-time basis by an experienced geotechnical engineer in order to evaluate that the soils encountered are consistent with the recommended design parameters. If the subsurface soil conditions encountered differ significantly from those presented in this report, supplemental recommendations will be required.

The contractor should check for gas and/or oxygen deficiency prior to any workers entering the excavation for observation and manual cleanup. All necessary monitoring and safety precautions as required by OSHA, State or local codes should be strictly enforced by the owner and the EPC.

The drilled shaft installation process should be performed under the direction of the Geotechnical Engineer. The Geotechnical Engineer should document the shaft installation process including soil/rock and groundwater conditions encountered, consistency with expected conditions, and details of the installed shaft.

FLOOR SLABS

DESCRIPTION	RECOMMENDATION
Interior floor system	Slab-on-grade concrete
Floor slab support	Engineered fill extending to a minimum depth of 24 inches below the bottom of building footings.
Subbase	Minimum 4-inches of Aggregate Base
Modulus of subgrade reaction	200 pounds per square inch per inch (psi/in) (The modulus was obtained based on estimates obtained from NAVFAC 7.1 design charts). This value is for a small loaded area (1 Sq. ft or less) such as for forklift wheel loads or point loads and should be adjusted for larger loaded areas.

The use of a vapor retarder should be considered beneath concrete slabs on grade covered with wood, tile, carpet, or other moisture sensitive or impervious coverings, or when the slab will support equipment sensitive to moisture. When conditions warrant the use of a vapor retarder, the slab designer should refer to ACI 302 and/or ACI 360 for procedures and cautions regarding the use and placement of a vapor retarder.

Saw-cut control joints should be placed in the slab to help control the location and extent of cracking. For additional recommendations refer to the ACI Design Manual. Joints or cracks should be sealed with a water-proof, non-extruding compressible compound specifically recommended for heavy duty concrete pavement and wet environments.

Where floor slabs are tied to perimeter walls or turn-down slabs to meet structural or other construction objectives, our experience indicates differential movement between the walls and slabs will likely be observed in adjacent slab expansion joints or floor slab cracks beyond the length of the structural dowels. The Structural Engineer should account for potential differential settlement through use of sufficient control joints, appropriate reinforcing or other means.

LATERAL EARTH PRESSURES

Design Parameters

For engineered fill comprised of on-site soils above any free water surface, recommended equivalent fluid pressures for unrestrained foundation elements are:

ITEM	VALUE[a, b]
Active Case	40 psf/ft
Passive Case	390 psf/ft
At-Rest Case	60 psf/ft
Coefficient of Friction	0.35

[a]Note: The values are based on on-site soils used as backfill.
[b]Note: Uniform, horizontal backfill, compacted to at least 90% of the ASTM D 1557 maximum dry density, rendering a maximum unit weight of 125 pcf.

The lateral earth pressures herein do not include any factor of safety and are not applicable for submerged soils/hydrostatic loading. Additional recommendations may be necessary if such conditions are to be included in the design.

Fill against foundation and retaining walls should be compacted to densities specified in the Earthwork section of this report. Compaction of each lift adjacent to walls should be accomplished with hand-operated tampers or other lightweight compactors.

PAVEMENTS

General Pavement Comments

Both concrete and asphalt pavement design sections are requested for the proposed project. As noted in **Project Description**, pavement thickness design is dependent upon:

- the anticipated traffic conditions during the life of the pavement,
- subgrade and paving material characteristics, and
- climatic conditions of the region.

A critical aspect of pavement performance is site preparation. Pavement designs noted in this section must be applied to the site which has been prepared as recommended in the **Earthwork** section.

The pavement sections were designed using the American Association of State and Highway Transportation Officials (AASHTO) Guide for Design of Pavement Structures (1993).

Development of layer thicknesses, including the asphalt thickness for the geogrid reinforced alternatives, were determined using the layered elastic design methodology as outlined in the AASHTO 93 Design Guide, Part II, Section 3.1.5 Layered Design Analysis

Design Traffic Analysis

Traffic levels provided by the client were converted into flexible AASHTO pavement 18-kip equivalent single axle loads (ESALs) for use in Asphalt Concrete (AC) pavement thickness design, and into rigid AASHTO pavement 18-kip ESALs for Portland Cement Concrete (PCC) design, as noted in the following table. We understand that Love's Tier I traffic is experienced at this facility. Our office should be contacted if there are any changes in the reported traffic patterns or frequency to review the enclosed values.

Love's Tier 1 / Tier 2 Traffic Volumes	Light Duty	Medium Duty	Heavy Duty	Extra Heavy Duty
Traffic Level, vehicles per day [1]	1,000 cars	150 trucks	600 trucks	1,000 trucks
Flexible (AC) Pavement 18-Kip ESAL [2]	< 30,000	2.6 million	10.2 million	17 million
Rigid (PCC) Pavement 18 Kip ESAL [3]	< 30,000	4.2 million	17 million	29 million

1. Client provided values, based on a Tier 1 and 2 sites in accordance with Love's Travel Stops.
2. Assumes 20-year design life, 100% of traffic consisting of fully loaded 80-kip semi-tractor trailers with two 34-kips tandem axles and one 12-kip single front axle.
3. ESAL's for PCC design are not equivalent to ESAL's used for AC sections.

Pavement Subgrade Parameters

Based on the proposed grading as previously discussed in this report, pavement subgrades are expected to consist of native on-site soils at elevations roughly equivalent to existing grades. Accordingly, bulk samples of near surface soils were collected at depths of approximately 5 to 10 feet below existing grades for laboratory testing. B-12 bulk sample were selected for R-value testing resulting in value of 63. As such, a design R-value of 50 was used as the basis for pavement design taking into consideration the effects of seasonal and other climatic conditions at this site. This value corresponds to a subgrade Resilient Modulus (Mr) of 28,750 psi (pounds per square inch) for use for flexible pavement design, and an Effective Modulus of Subgrade Reaction (k) of 372 pci (pounds per cubic inch) for use in designing the rigid pavement sections with six inches of aggregate base.

Note that if actual subgrade conditions differ from the soil conditions and characteristics described here, we should be contacted to assess the construction conditions and review the pavement design recommendations.

Pavement Design Parameters

Analyses for the pavement design of the project have been based on the procedures of the AASHTO Guide for Design of Pavement Structures (1993). The following design parameters were utilized for pavement engineering analyses and the determination of design alternatives for the project:

Pavement Design Parameters		
Reliability	Level of Reliability	85%
	Flexible Overall Standard Deviation	0.45
	Rigid Overall Standard Deviation	0.35
Serviceability	Flexible Initial PSI	4.2
	Flexible Terminal PSI	2.0
	Rigid Initial PSI	4.5
	Rigid Terminal PSI	2.3
Subgrade Conditions	R-value	50
	Correlated Resilient Modulus, M_r	28,750 psi
	Effective Modulus of Subgrade Reaction, k	372 pci
Layer Properties	Asphalt Concrete (AC) Layer Coefficient	0.44
	Aggregate Base (ABC) Layer Coefficient	0.14
	Aggregate Base (ABC) Drainage Coefficient	1.0
	Aggregate Base (ABC) Resilient Modulus[1]	36,000 psi
	Reinforced Aggregate Base (ABC) Resilient Modulus[1]	50,000 psi
	Load Transfer Coefficient J[2]	2.8
	Compressive Strength of Concrete f'_c	4,000 psi

1. Reinforced AB Resilient Modulus values are limited to 5x the subgrade Resilient Modulus for the purposes of layered design analysis for flexible pavements.
2. Load transfer coefficient of 2.8 for dowel reinforced concrete joints.

The design period is considered the interval over which, with proper maintenance, the pavement will not require major repairs. We recommend a continuing regular maintenance program be implemented to maintain satisfactory serviceability over the design life. Please refer to **Pavement Maintenance** for additional information.

Asphalt Concrete Pavement Recommendations

Due to heavy truck traffic loading, Love's routinely uses geogrid reinforced flexible pavement designs in heavy traffic areas. Based on the site conditions and anticipated pavement subgrade, we believe that geogrids offer a cost-savings over unreinforced pavements. Accordingly, we have

designed the asphalt pavements to include BX2525 geogrid, using LEpave software provided by L.E. Geosolutions (LEGeo). The following table provides our recommended pavement sections for this project:

LAYER	Materials[2] (CalTrans)	Light Duty	Medium Duty	Heavy Duty	Extra Heavy Duty
		Thickness (in) [1]			
Surface[2]	1/2-inch HMA Type A PG 76-22 M	4	2½	2 ½	2 ½
Base[2]	3/4-inch HMA Type A PG 70-10	0	2½	2 ½	2 ½
Aggregate[3]	Class 2 Aggregate Base	6	6	6	6
Geogrid[4]	**LeGeo** BX2525 or equivalent	No[5]	No[5]	Yes	Yes
Total Pavement Section (in.)		**10**	**11**	**11 ½**	**12**
Design Traffic (ESALs)		< 30,000	2.6 million	10.2 million	17 million

1. The individual and total material thickness values presented herein represent minimum thickness values, not averages.
2. Refer to Section 39 Asphalt Concrete of the California Department of Transportation (Caltrans) "Standard Specifications" for Asphalt Concrete use and construction.
3. Refer to Section 26 Aggregate Bases of the California Department of Transportation (Caltrans) "Standard Specifications" for Aggregate Base Course use and construction.
4. Aggregate base reinforced with 1 layer of LEGeo BX-2525 geogrid or equivalent located at the bottom of the aggregate base. Alternative grid materials are not acceptable unless documented with applicable design procedure and appropriate performance-based specification and/or post construction validation.
5. Geogrid optional.

Reinforced pavement design procedures developed by LEGeo and others rely on product specific field and laboratory research. Alternate geogrids can be considered but will require independent design and should not be specified or accepted based on engineering properties, as these do not necessarily define reinforced pavement performance.

Asphalt Binder Selection

Terracon considered the weather conditions and traffic to determine the appropriate asphalt binder for this project. This was accomplished using the LTPPBind Version 3.1 Beta, dated September 15, 2015 software provided by the Federal Highway Administration (FHWA). This software utilizes historical temperature data from the 5 weather stations nearest the project and considers traffic speed and traffic loading to establish a recommended Performance Graded (PG)

binder grade of asphalt concrete. Terracon then compared the software output to the binders that were indicated to be locally available, based on the Caltrans website, to determine the recommended binder selection for the project. The number of binders selected was limited to two for this recommendation to reduce the number of mix designs needed to construct the pavements.

Aggregate Base Requirements

Aggregate Base shall comply with Section 26 Aggregate Base of the 2018 Caltrans Specifications. The Aggregate Base shall be Type 2 and shall meet the Caltrans Specifications. Aggregate Base or pavement materials should not be placed when the surface is wet. Surface drainage should be provided away from the edge of paved areas to minimize lateral moisture transmission into the subgrade.

Portland Cement Concrete Pavement Recommendations

It is our understanding that Love's prefers to use asphalt concrete for the majority of pavements at a Travel Stop site; however, Portland cement concrete (PCC) is occasionally selected as an alternate. Accordingly, we have included the following thickness recommendations for Jointed Plain Concrete Pavement (JPCP) with dowels:

LAYER	MATERIAL	LIGHT DUTY	MEDIUM DUTY	HEAVY DUTY	EXTRA HEAVY DUTY
		Thickness (in)[1]			
Surface	Portland Cement Concrete[2, 3]	5	8	10	11
Aggregate	Class 2 Aggregate Base[4]	0	6	6	6
Subgrade	Minimum 10 inches of properly prepared native soils				
Total Pavement Section[1]		**5**	**14**	**16**	**17**

1. The individual and total material thickness values presented herein represent minimum thickness values, not averages.
2. Refer to Section 40 Concrete Pavement and Section 90 Concrete of the California Department of Transportation (Caltrans) "Standard Specifications for concrete mixture requirements.
3. Medium duty concrete pavements should include 1 ¼ inch diameter by 15-inch long dowel bars spaced at 12 inches center to center in all longitudinal and transverse contraction joints. Heavy and extra heavy-duty concrete pavements should include 1 ½ inch diameter by 18-inch long dowel bars spaced at 12 inches center to center in all longitudinal and transverse contraction joints.
4. Refer to Section 26 Aggregate Bases of the California Department of Transportation (Caltrans) "Standard Specifications" for Aggregate Base Course use and construction.

The recommendations presented above require dowel reinforcement in longitudinal and transverse contraction joints as shown in ACI 330.2R-17. In locations where concrete slabs are used in isolated areas such as dumpster pads and short apron slabs approaching the tire shop, joint reinforcement is not required. In these locations however, an additional two inches should be added to the thicknesses presented in the table above to alleviate cracking of unsupported edges.

If Portland cement concrete is selected for use in general pavement areas, proper design and detailing of longitudinal and transverse control joints, tie bars and joint dowels will be required. In this situation, we should be contacted to provide more detailed recommendations and to review final jointing plans and details for the project. The following general recommendations are presented for doweled PCC pavements:

Item	Description
Contraction Joints	■ Joints should be reinforced with dowels in accordance with ACI 330.2R-17[1]. ■ Alternate joint reinforcement devices such as plate dowels will be considered if the device manufacturers recommendations showing they are equivalent to the dowel bar size and spacing presented in the concrete pavement section table above is submitted and approved by the engineer. ■ Joint cuts should be 1/5 of the depth of the concrete and should be cut as soon as the slab can support the weight of a man and the saw and can be cut without dislodging coarse aggregate particles from the surface. ■ Joints should have a maximum spacing no greater than 15 feet, as described in ACI 330.2R-17

Item	Description
Expansion (Isolation) Joints	■ Expansion joints are recommended to isolate fixed objects abutting or within the paved area, such as around light poles and drainage inlet structures. ■ Joints should be full depth and filled with pre-molded materials per ACI 330.2R-17. ■ Pavement edges at expansion joints located in areas that encounter wheel loads should be thickened by two inches wherever practical; the transition in thickness should occur over a minimum distance of five feet.
Construction Joints	■ Joints dowels should be provided at the same size and spacing as required for Contraction Joints as noted above. ■ For a butt end construction joint, an adequate number of ½ inch diameter (#4 bar) deformed steel tie bars, 30 inches in length and spaced no greater than 36 inches apart, are also recommended to tie the exterior curb and gutter to the outer concrete pavement edge to keep the outside slab from separating from the curb and gutter.

[1] *Guide for the Design and Construction of Concrete Site Paving for Industrial and Trucking Facilities, American Concrete Institute, ACI 330.2R-17.*

Pavement Drainage

Pavements should be sloped to provide rapid drainage of surface water. Water allowed to pond on or adjacent to the pavements could saturate the subgrade and contribute to premature pavement deterioration. In addition, the pavement subgrade should be graded to provide positive drainage within the granular base section. Appropriate sub-drainage or connection to a suitable daylight outlet should be provided to remove water from the granular subbase.

Pavement Maintenance

The pavement sections represent minimum recommended thicknesses and, as such, periodic maintenance should be anticipated. Therefore, preventive maintenance should be planned and provided for through an on-going pavement management program. Maintenance activities are intended to slow the rate of pavement deterioration and to preserve the pavement investment. Maintenance consists of both localized maintenance (e.g., crack and joint sealing and patching) and global maintenance (e.g., surface sealing). Preventive maintenance is usually the priority when implementing a pavement maintenance program. Additional engineering observation is

recommended to determine the type and extent of a cost-effective program. Even with periodic maintenance, some movements and related cracking may still occur and repairs may be required.

Pavement performance is affected by its surroundings. In addition to providing preventive maintenance, the civil engineer should consider the following recommendations in the design and layout of pavements:

1. Final grade adjacent to paved areas should slope down from the edges at a minimum 2%.
2. Subgrade and pavement surfaces should have a minimum 2% slope to promote proper surface drainage.
3. Install below pavement drainage systems surrounding areas anticipated for frequent wetting.
4. Install joint sealant and seal cracks immediately.
5. Seal all landscaped areas in or adjacent to pavements to reduce moisture migration to subgrade soils.
6. Place compacted, low permeability backfill against the exterior side of curb and gutter.
7. Place curb, gutter and/or sidewalk directly on clay subgrade soils rather than on unbound granular base course materials.

Unpaved Access Road

We understand that an unpaved access road will be constructed extending to the high-rise sign. Traffic on the access road will include the drilled shaft rig and concrete trucks during construction of the sign foundation and truck-mounted cranes used to erect and maintain the sign. Based on the relative strength characteristics of the subgrade soils and expected traffic loading, we recommend construction traffic bear on a minimum of 10 inches of scarified, moisture conditioned, and recompacted native soils.

The recommendation was developed to support the construction and maintenance traffic as it travels along the access road. Terracon's current scope of services does not include analysis for construction of a pad suitable to support the crane as it lifts a load. To analyze the required aggregate thickness for a crane pad, the contractor should provide specific information about the crane model, counterweight, outrigger positions and sizes, boom/jib configurations, weight of the maximum planned lift, load radius, and swing angle.

GENERAL COMMENTS

Our analysis and opinions are based upon our understanding of the project, the geotechnical conditions in the area, and the data obtained from our site exploration. Natural variations will occur between exploration point locations or due to the modifying effects of construction or weather.

The nature and extent of such variations may not become evident until during or after construction. Terracon should be retained as the Geotechnical Engineer, where noted in this report, to provide observation and testing services during pertinent construction phases. If variations appear, we can provide further evaluation and supplemental recommendations. If variations are noted in the absence of our observation and testing services on-site, we should be immediately notified so that we can provide evaluation and supplemental recommendations.

Our Scope of Services does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, bacteria) assessment of the site or identification or prevention of pollutants, hazardous materials or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

Our services and any correspondence or collaboration through this system are intended for the sole benefit and exclusive use of our client for specific application to the project discussed and are accomplished in accordance with generally accepted geotechnical engineering practices with no third-party beneficiaries intended. Any third-party access to services or correspondence is solely for information purposes to support the services provided by Terracon to our client. Reliance upon the services and any work product is limited to our client and is not intended for third parties. Any use or reliance of the provided information by third parties is done solely at their own risk. No warranties, either express or implied, are intended or made.

Site characteristics as provided are for design purposes and not to estimate excavation cost. Any use of our report in that regard is done at the sole risk of the excavating cost estimator as there may be variations on the site that are not apparent in the data that could significantly impact excavation cost. Any parties charged with estimating excavation costs should seek their own site characterization for specific purposes to obtain the specific level of detail necessary for costing. Site safety, and cost estimating including, excavation support, and dewatering requirements/design are the responsibility of others. If changes in the nature, design, or location of the project are planned, our conclusions and recommendations shall not be considered valid unless we review the changes and either verify or modify our conclusions in writing.

REFERENCES

Geologic References

Dibblee, T.W., 1960, Preliminary geologic map of the Victorville Quadrangle, California: U.S. Geological Survey Mineral Investigations Field Studies Map MF-229. Scale: 1:62,500.

Fairchild Collection, Monoscopic aerial photographs as follows:

January 21, 1953, Frame No. AXL-29K-46
June 23, 1959, Frame No. AXL-2W-162
July 26, 1959, Frame No AXL-1W-91.
May 29, 1994, Frame No. 6855-34.

ATTACHMENTS

EXPLORATION AND TESTING PROCEDURES

Field Exploration

Terracon conducted a total of twenty-two borings (B-1 through B-16, and B-18 through B-23) and eleven exploratory test pits (T-1 through T-11) as tabulated in the table below. B-17 was planned within an infiltration area that was eliminated subsequent to the issuance of our proposal.

Number of Borings	Boring Depth (feet) [1]	Planned Location
B-1	26 ½	Underground Storage Tank area
B-2	26 ½	Automobile Fuel Canopy
B-3	26 ½	Truck Fuel Canopy
B-4	26 ½	Country Store
B-5	26 ½	Tire Shop/Truck Parking
B-6	51 ½	90' Tall High-Rise Sign
B-7 & B-8	26 ½	Above Ground Storage Tanks
B-9	26 ½	Truck Scale
B-10 through B-15	11 to 11 ½	Truck Parking and Drive Areas
B-16 and B-18 through B-23	5 to 15	Retention Basins
T-1 through T-11	3 ½ to 11	Miscellaneous Areas

1. Below ground surface

Boring Layout and Elevations: Unless otherwise noted, Terracon personnel provided the boring layout. Coordinates were obtained with a handheld GPS unit (estimated horizontal accuracy of about ±10 feet). If elevations and a more precise boring layout are desired, we recommend borings be surveyed following completion of fieldwork.

Subsurface Exploration Procedures: We advanced the borings with a truck-mounted rotary drill rig using continuous flight augers (solid stem and/or hollow stem, as necessary, depending on soil conditions). Four samples were obtained in the upper 10 feet of each boring and at intervals of 5 feet thereafter. In the thin-walled tube sampling procedure, a thin-walled, seamless steel tube with a sharp cutting edge was pushed hydraulically into the soil to obtain a relatively undisturbed sample. In the split-barrel sampling procedure, a standard 2-inch outer diameter split-barrel sampling spoon was driven into the ground by a 140-pound automatic hammer falling a distance of 30 inches. The number of blows required to advance the sampling spoon the last 12 inches of a normal 18-inch penetration is recorded as the Standard Penetration Test (SPT) resistance value. The SPT resistance values, also referred to as N-values, are indicated on the boring logs at the test depths. A 3-inch O.D. split-barrel sampling spoon with 2.5-inch I.D. ring lined sampler was used for sampling

in the upper XX feet. Ring-lined, split-barrel sampling procedures are similar to standard split spoon sampling procedure; however, blow counts are typically recorded for 6-inch intervals for a total of 12 inches of penetration. We observed and recorded groundwater levels during drilling and sampling. For safety purposes, all borings were backfilled with auger cuttings after their completion.

The sampling depths, penetration distances, and other sampling information was recorded on the field boring logs. The samples were placed in appropriate containers and taken to our soil laboratory for testing and classification by a Geotechnical Engineer. Our exploration team prepared field boring logs as part of the drilling operations. These field logs included visual classifications of the materials encountered during drilling and our interpretation of the subsurface conditions between samples. Final boring logs were prepared from the field logs. The final boring logs represent the Geotechnical Engineer's interpretation of the field logs and include modifications based on observations and tests of the samples in our laboratory.

Electrical Resisitivity Testing: A field electrical resistivity (ER) survey was performed at the Tank Pad location using the Wenner Array (4-pin) method per ASTM G57 and a digital ground resistance tester. The area of investigation included two shallow resistivity lines which were located approximately perpendicular to each other in north-south and east-west configurations. The resistivity probe arrays had spacing of 1, 2, 4, 6, 10, 15, 20, 40, 50, 60, 80, 100 and 150 feet. Results are shown in the following table and presented with a visual representation of the array locations and directions in Exploration Results section. The results of the electrical resistivity survey are shown in the following table.

Electrode Spacing (ft)	Line 1 Apparent Resistivity (ohm-cm)	Line 2 Apparent Resistivity (ohm-cm)
1	21,400	23,500
2	16,700	12,400
4	8,150	8,440
6	6,270	6,930
10	5,560	5,140
15	6,000	5,180
20	6,250	6,630
40	8,050	8,090

50	8,590	7,780
60	9,330	8,050
80	10,000	8,620
100	11,100	8,890
150	12,200	12,000

Laboratory Testing

The project engineer reviewed the field data and assigned laboratory tests to understand the engineering properties of the various soil strata, as necessary, for this project. Procedural standards noted below are for reference to methodology in general. In some cases, variations to methods were applied because of local practice or professional judgment. Standards noted below include reference to other, related standards. Such references are not necessarily applicable to describe the specific test performed.

- ASTM D2216 Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
- ASTM D7263 Standard Test Methods for Laboratory Determination of Dry Density (Unit Weight) of Soil Specimens
- ASTM D4318 Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
- ASTM D422 Standard Test Method for Particle-Size Analysis of Soils
- ASTM D1140 Standard Test Methods for Determining the Amount of Material Finer than 75-µm (No. 200) Sieve in Soils by Washing
- ASTM D4546 Standard Test Methods for One-Dimensional Consolidation Properties of Soils Using Incremental Loading
- ASTM D1557 Standard Test Methods for Laboratory Compaction Characteristics of Soil using Modified Effort
- ASTM D3080 Standard Test Methods for Direct Shear Test of Soils
- ASTM D2844 Standard Test Method for Resistance R-Value and Expansion Pressure of Compacted Soils
- Corrosivity Testing will include pH, chlorides, sulfates, sulfides, Redox potential, and electrical lab resistivity

The laboratory testing program often included examination of soil samples by an engineer. Based on the material's texture and plasticity, we described and classified the soil samples in accordance with the Unified Soil Classification System.

PHOTOGRAPHY LOG



Photo 1 Cut slope of dense older alluvium located immediately north of the northerly property boundary.



Photo 2 Trench 2, exposing dense older alluvium except for fill near the top. Note well defined carbonate horizons in the older alluvium.



Photo 3 "Bin" area near Trench 5. Shallow trenches outline possible bins. The purpose is unknown.



Photo 4 Electrical stub-outs near Trench 5.

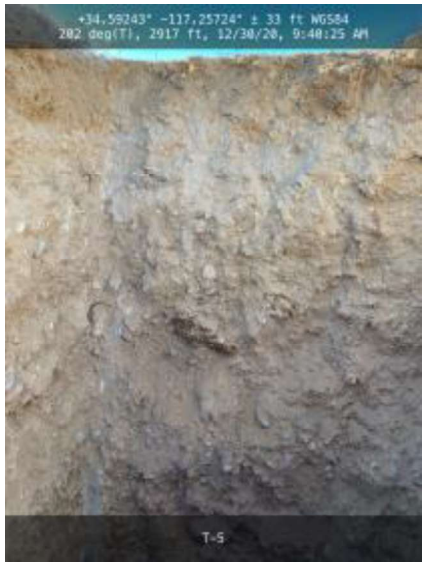


Photo 5 Gravelly fill in Trench 5. Note lack of visible lift boundaries and general lack of consolidation.



Photo 6 Trench 6. Fill lift boundaries are poor to not visible. Caving area near bottom is the native soil (wash deposits).



Photo 7 Approximate 8-inch diameter steel well near Boring 7. Water depth was greater than the length of the sounder cable (200 ft).



Photo 8 Suspected water main (fire?) valve located in the "road" north of Boring 8.



Photo 9 14-inch diameter (approximate) PVC water main located in the parkway near Trench 7.



Photo 10 Fill visible in the "borrow" area near Boring 1. Weathering enhances the lift boundaries.



Photo 11 Trench 8 with water main valve. Connects to 4" diameter PVC pipe.

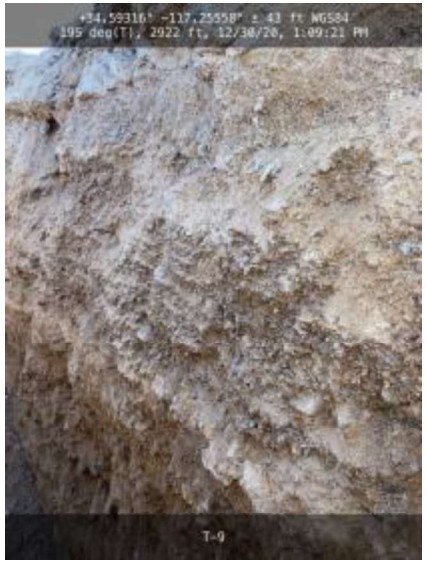


Photo 12 Trench 9. Thinly bedded older alluvium near the surface.

SITE LOCATION AND EXPLORATION PLANS

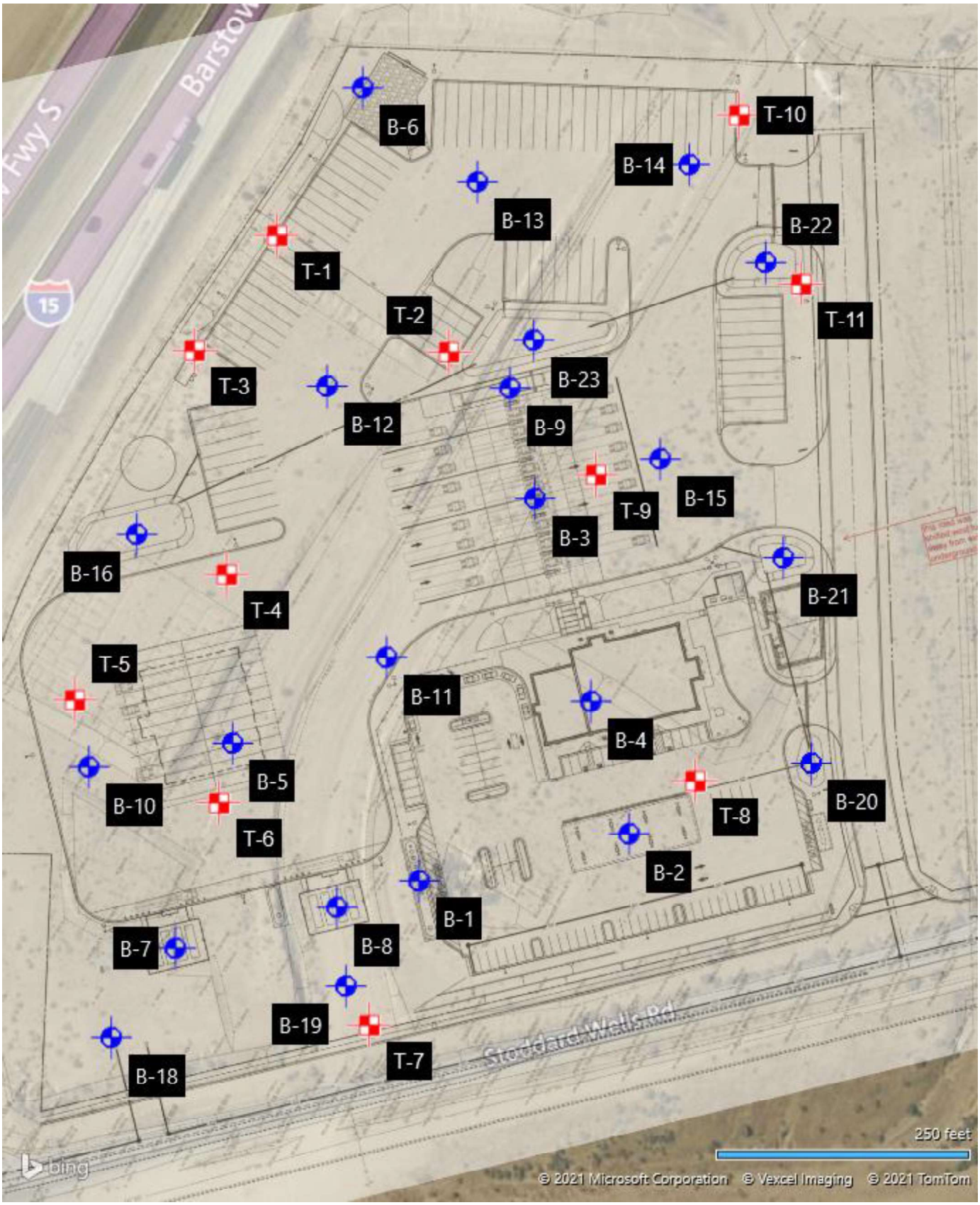
SITE LOCATION

Love's Travel Stop-Apple Valley ■ Apple Valley, San Bernardino County, CA
February 10, 2021 ■ Terracon Project No. CB205149



DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY MICROSOFT BING MAPS


B-6
T-10
B-14
B-13
B-22
T-1
T-2
T-11
T-3
B-23
B-12
B-9
B-15
T-9
B-3
B-16
B-21
T-4
T-5
B-11
B-4
B-5
B-10
B-20
T-8
T-6
B-2
B-1
B-7
B-8
B-19
T-7
B-18
Stoddard Wells Rd
250 feet
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N

EXPLORATION RESULTS

BORING LOG NO. B-1

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5919° Longitude: -117.2562°

Surface Elev.: 2905 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1												
			FILL - SILTY SAND WITH GRAVEL (SM), fine to medium grained, brown, dense									
						X	18	18-18-15 N=33				
			light brown	5		X	18	11-15-19 N=34				
							18	26-32-30	3.4	120		
		10.0	2895	10								
			SILTY SAND WITH GRAVEL (SM), fine to medium grained, light brown, medium dense				18	13-10-13	2.4	112		
			fine grained, brown, loose	15			18	5-7-11	1.8	108		
		18.0	2887									
2			**SILTY SAND (SM)**, trace gravel, fine grained, brown, loose	20		X	12	3-4-5 N=9				
		23.0	2882									
			SILTY SAND WITH GRAVEL (SM), fine to coarse grained, brown, medium dense	25		X	18	8-10-12 N=22				
		26.5	2878.5									
			Boring Terminated at 26.5 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow-Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Boring Started: 12-30-2020 | Boring Completed: 12-30-2020

Drill Rig: B-61 | Driller: California Pacific Drilling

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

BORING LOG NO. B-2

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5921° Longitude: -117.2555°

Surface Elev.: 2908 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1			**FILL - SILTY SAND WITH GRAVEL (SM)**, fine to medium grained, brown, very dense									
							18	29-42-50/6"				
			dense	5			18	22-30-30	4.1	117		
		7.5										
2			**SILTY SAND WITH GRAVEL (SM)**, fine to medium grained, brown, medium dense				18	12-22-18	3.3	117	NP	25
			brown, loose	10			18	9-9-8	2.7	111		
			medium dense	15			12	5-7-8 N=15				15
				20			18	3-5-6 N=11				
		23.0	2885									
			SILTY SAND (SM), brown, loose	25			18	3-3-3 N=6				
		26.5	2881.5									
			Boring Terminated at 26.5 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow-Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Boring Started: 12-30-2020 | Boring Completed: 12-30-2020

Drill Rig: B-61 | Driller: California Pacific Drilling

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

BORING LOG NO. B-3

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5930° Longitude: -117.2558°

Surface Elev.: 2913 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		0										
			FILL - SILTY SAND WITH GRAVEL (SM), fine to coarse grained, brown, medium dense									
		2.5	2910.5									
2			**WELL GRADED SAND WITH SILT AND GRAVEL (SW-SM)**, fine to coarse grained, brown, medium dense				18	9-15-15	4.3	112		
				5			18	10-11-13	3.2	120		
			loose				18	5-6-9	1.6	112	NP	6
			fine to medium grained	10			18	5-5-6	2.5	107		
			fine grained, medium dense	15			12	7-9-8 N=17				14
			fine to medium grained, very dense	20			18	18-22-32 N=54				
		26.5	2886.5	25			18	28-25-25 N=50				
			Boring Terminated at 26.5 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow-Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Boring Started: 12-30-2020 | Boring Completed: 12-30-2020

Drill Rig: B-61 | Driller: California Pacific Drilling

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

BORING LOG NO. B-4

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5924° Longitude: -117.2556°

Surface Elev.: 2913 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1												
			FILL - SILTY SAND WITH GRAVEL (SM), fine to medium grained, brown, medium dense									
							18	12-17-24				
			dense	5			18	15-31-37	5.7	116		
		7.0	2906									
			SILTY SAND WITH GRAVEL (SM), fine grained, brown, medium dense				18	9-11-17	5.3	112		
				10			18	21-29-21				20
		13.0	2900									
2			**SILTY SAND (SM)**, trace gravel, fine grained, brown, medium dense	15			18	4-6-7 N=13				18
			loose	20			12	4-3-3 N=6				
				25			12	6-4-4 N=8				
		26.5	2886.5									
			Boring Terminated at 26.5 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow-Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Boring Started: 12-30-2020 | Boring Completed: 12-30-2020

Drill Rig: B-61 | Driller: California Pacific Drilling

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

BORING LOG NO. B-5

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5923° Longitude: -117.2568°

Surface Elev.: 2907 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1			**FILL - SILTY SAND WITH GRAVEL (SM)**, fine to medium grained, brown, medium dense									
						X	14	9-14-14 N=28				
			dense	5		X	18	14-17-20 N=37				16
		7.5										
			2899.5									
			SILTY SAND WITH GRAVEL (SM), fine to medium grained, brown, medium dense									
						■	18	11-27-21	4.3	121		
			fine grained	10		■	18	13-13-13	3.3	113		
		13.0										
			2894									
2			**SILTY SAND (SM)**, fine grained, brown, loose									
				15		X	18	3-3-4 N=7				19
			trace gravel	20		X	18	3-4-4 N=8				
				25		X	18	3-3-4 N=7				
		26.5										
			2880.5									
			Boring Terminated at 26.5 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow-Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Boring Started: 12-30-2020 | Boring Completed: 12-30-2020

Drill Rig: B-61 | Driller: California Pacific Drilling

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

BORING LOG NO. B-6

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5941° Longitude: -117.2564°

Surface Elev.: 2922 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1			**FILL - SILTY SAND WITH GRAVEL (SM)**, light brown									
		2.0	2920									
2			**SILTY SAND WITH GRAVEL (SM)**, brown, dense				18	28-32-43	6.7	118		
				5			18	20-27-35	5.3	119		
			very dense				12	28-50/6"				
			dense	10			18	21-32-32				
			very dense	15			12	22-50/6"				
			dense	20			18	22-30-41				
		23.0	2899									
			SILTY SAND (SM), trace gravel, brown, very dense	25			12	27-50/6"				
		28.0	2894									
			SILTY SAND WITH GRAVEL (SM), brown, very dense	30								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow-Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Boring Started: 12-30-2020 | Boring Completed: 12-30-2020

Drill Rig: B-61 | Driller: California Pacific Drilling

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

BORING LOG NO. B-6

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5941° Longitude: -117.2564°

Surface Elev.: 2922 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
2			**SILTY SAND WITH GRAVEL (SM)**, brown, very dense *(continued)*				18	24-30-50/6"				
		38.0	2884	35			17	28-42-50/5"				
			POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), brown, very dense	40			18	25-40-50/6"				
		43.0	2879									
			SILTY SAND WITH GRAVEL (SM), reddish brown, very dense	45			6	50/6"				
		48.0	2874									
			POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), reddish brown, very dense	50			18	20-30-50/6"				
		51.5	2870.5									
			Boring Terminated at 51.5 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow-Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Boring Started: 12-30-2020 | Boring Completed: 12-30-2020

Drill Rig: B-61 | Driller: California Pacific Drilling

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

BORING LOG NO. B-7

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5918° Longitude: -117.2570°

Surface Elev.: 2905 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1												
			FILL - SILTY SAND (SM), trace gravel, fine to medium grained, light brown, dense									
							18	8-16-20 N=36				
			brown	5			18	12-13-17 N=30				18
			medium dense				18	5-4-13 N=17				
		10.0	2895	10								
			SILTY SAND WITH GRAVEL (SM), fine to medium grained, light brown, dense				18	15-39-45	5.0	127		
		13.0	2892									
2			**SILTY SAND (SM)**, trace gravel, fine grained, brown, loose	15			18	6-5-5	5.7	100		
											18-15-3	29
			medium dense	20			12	5-4-6 N=10				
		26.5	2878.5	25			6	9-8-9 N=17				
			Boring Terminated at 26.5 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow-Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Boring Started: 12-30-2020 | Boring Completed: 12-30-2020

Drill Rig: B-61 | Driller: California Pacific Drilling

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

BORING LOG NO. B-8

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5919° Longitude: -117.2565°

Surface Elev.: 2899 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1			**FILL - SILTY SAND WITH GRAVEL (SM)**, fine to medium grained, brown, very dense									
						X	17	30-32-50/5"	4.1	116		
		4.5	2894.5									
			SILTY SAND WITH GRAVEL (SM), fine grained, brown, medium dense	5		X	18	20-20-20	4.6	115		
			loose			X	18	4-5-5				
				10		X	18	5-5-7	2.7	109		
		15.0	2884									
2			**WELL GRADED SAND WITH SILT (SW-SM)**, trace gravel, medium dense	15			16	6-8-6 N=14				6
			fine to coarse grained, dense	20			18	11-17-17 N=34				
				25			18	12-14-17 N=31				
		26.5	2872.5									
			Boring Terminated at 26.5 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow-Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Boring Started: 12-30-2020 | Boring Completed: 12-30-2020

Drill Rig: B-61 | Driller: California Pacific Drilling

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

BORING LOG NO. B-9

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5933° Longitude: -117.2559°

Surface Elev.: 2917 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
2		0	2917									
							12	15-50/6"				
				5			18	14-15-25	3.0	123		
							18	17-27-35	3.1	125		
				10			18	21-25-36				
				15			18	14-21-21 N=42				
				20			18	17-21-21 N=42				
				25			18	13-18-17 N=35				
		26.5	2890.5									

SILTY SAND WITH GRAVEL (SM), fine to medium grained, brown, very dense

medium dense

dense

fine to coarse grained

Boring Terminated at 26.5 Feet

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow-Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Boring Started: 12-30-2020 | Boring Completed: 12-30-2020

Drill Rig: B-61 | Driller: California Pacific Drilling

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

BORING LOG NO. B-10

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5923° Longitude: -117.2573°

Surface Elev.: 2906 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		0	2906	5			18	20-30-32	7.1	118		
				10			12	30-50/6"	7.4	113		
		11.0	2895									

FILL - SILTY SAND WITH GRAVEL (SM), fine grained, light brown, dense

very dense

Boring Terminated at 11 Feet

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow-Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Boring Started: 12-29-2020 | Boring Completed: 12-29-2020

Drill Rig: B-61 | Driller: California Pacific Drilling

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

BORING LOG NO. B-11

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5925° Longitude: -117.2563°

Surface Elev.: 2907 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1			**FILL - SILTY SAND WITH GRAVEL (SM)**, fine grained, light brown, very dense									
		7.0	2900	5			18	20-32-50/6"	5.2	124		
2			**SILTY SAND WITH GRAVEL (SM)**, fine grained, light brown, loose									
		11.5	2895.5	10			18	6-6-7	3.3	106		
			Boring Terminated at 11.5 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow-Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Boring Started: 12-29-2020 | Boring Completed: 12-29-2020

Drill Rig: B-61 | Driller: California Pacific Drilling

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

BORING LOG NO. B-12

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5933° Longitude: -117.2565°

Surface Elev.: 2914 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		0.5	2913.5									
			FILL - SILTY SAND WITH GRAVEL (SM), light brown									
2			**SILTY SAND (SM)**, trace gravel, light brown, dense	5			18	23-27-37				16
			very dense	10			12	18-50/6"	10.1	112		
		11.0	2903									
			Boring Terminated at 11 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow-Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Boring Started: 12-29-2020 | Boring Completed: 12-29-2020

Drill Rig: B-61 | Driller: California Pacific Drilling

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

BORING LOG NO. B-13

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5938° Longitude: -117.2560°

Surface Elev.: 2922 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		0	2922									
		1.0	2921									
2				5			18	16-20-32	2.9			
				10			18	16-25-41				21
		11.5	2910.5									

FILL - SILTY SAND WITH GRAVEL (SM), light brown

SILTY SAND (SM), trace gravel, light brown, medium dense

dense

Boring Terminated at 11.5 Feet

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow-Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Boring Started: 12-29-2020 | Boring Completed: 12-29-2020

Drill Rig: B-61 | Driller: California Pacific Drilling

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

BORING LOG NO. B-14

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5939° Longitude: -117.2553°

Surface Elev.: 2924 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		0.5	2923.5									
			FILL - SILTY SAND WITH GRAVEL (SM), light brown									
2			**POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM)**, light brown, dense	5			18	22-29-33	5.0	123		
				10			18	21-30-35				14
		11.5	2912.5									
			Boring Terminated at 11.5 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow-Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Boring Started: 12-29-2020 | Boring Completed: 12-29-2020

Drill Rig: B-61 | Driller: California Pacific Drilling

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

BORING LOG NO. B-15

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5931° Longitude: -117.2554°

Surface Elev.: 2917 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		0.5	2916.5									
			FILL - SILTY SAND WITH GRAVEL (SM), light brown									
2			**SILTY SAND WITH GRAVEL (SM)**, light brown, very dense	5			12	22-50/6"				
				10			18	24-38-50/6"				
		11.5	2905.5									
			Boring Terminated at 11.5 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow-Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Boring Started: 12-29-2020 | Boring Completed: 12-29-2020

Drill Rig: B-61 | Driller: California Pacific Drilling

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

BORING LOG NO. B-16

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan
Latitude: 34.5929° Longitude: -117.2570°
Surface Elev.: 2914 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	INSTALLATION DETAILS	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1			**FILL - SILTY SAND (SM)**, trace gravel, brown	3/4" gravel									19
		5.0	2909		5								
			Boring Terminated at 5 Feet										

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow-Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Boring Started: 12-31-2020 | Boring Completed: 12-31-2020

Drill Rig: B-61 | Driller: California Pacific Drilling

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

BORING LOG NO. B-18

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan
Latitude: 34.5915° Longitude: -117.2572°
Surface Elev.: 2905 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	INSTALLATION DETAILS	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		0.0	2905										
					5								
1		5.0	2900										
2				3/4" gravel									20
					10								
		10.0	2895										

FILL - SILTY SAND WITH GRAVEL (SM), light brown

SILTY SAND (SM), trace gravel, brown

Boring Terminated at 10 Feet

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow-Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Boring Started: 12-31-2020 | Boring Completed: 12-31-2020

Drill Rig: B-61 | Driller: California Pacific Drilling

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

BORING LOG NO. B-19

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan
Latitude: 34.5917° Longitude: -117.2564°
Surface Elev.: 2896 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	INSTALLATION DETAILS	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1			**FILL - POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM)**, brown	3/4" gravel									13
		5.0	2891		5								
			Boring Terminated at 5 Feet										

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow-Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Boring Started: 12-31-2020 | Boring Completed: 12-31-2020
Drill Rig: B-61 | Driller: California Pacific Drilling
Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

BORING LOG NO. B-20

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan
Latitude: 34.5923° Longitude: -117.2549°
Surface Elev.: 2909 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	INSTALLATION DETAILS
1		0.0	2909	
				FILL - SILTY SAND WITH GRAVEL (SM), light brown
		5.0	2904	
2				**SILTY SAND (SM)**, trace gravel, brown
		10.0	2899	
				WELL GRADED SAND WITH SILT AND GRAVEL (SW-SM), light brown
				3/4" gravel
		15.0	2894	
				Boring Terminated at 15 Feet

DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
5								
10								9
15								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow-Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Boring Started: 12-31-2020
Boring Completed: 12-31-2020
Drill Rig: B-61
Driller: California Pacific Drilling
Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

BORING LOG NO. B-21

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan
Latitude: 34.5928° Longitude: -117.2550°
Surface Elev.: 2915 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	INSTALLATION DETAILS	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		1.0	2914										
2		10.0	2905	3/4" gravel	5								12
					10								

FILL - SILTY SAND WITH GRAVEL (SM), light brown

WELL GRADED SAND WITH SILT AND GRAVEL (SW-SM), light brown

Boring Terminated at 10 Feet

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow-Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Boring Started: 12-31-2020 | Boring Completed: 12-31-2020

Drill Rig: B-61 | Driller: California Pacific Drilling

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

BORING LOG NO. B-22

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan
Latitude: 34.5936° Longitude: -117.2550°
Surface Elev.: 2921 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	INSTALLATION DETAILS	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
2			**SILTY SAND (SM)**, trace gravel, brown	3/4" gravel	5								17
		8.0	2913										
			Boring Terminated at 8 Feet										

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow-Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Boring Started: 12-31-2020 | Boring Completed: 12-31-2020
Drill Rig: B-61 | Driller: California Pacific Drilling
Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

BORING LOG NO. B-23

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 34.5934° Longitude: -117.2557° Surface Elev.: 2917 (Ft.) DEPTH / ELEVATION (Ft.)	INSTALLATION DETAILS	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
2		**WELL GRADED SAND WITH SILT (SW-SM)**, trace gravel, brown 5.0 2912	3/4" gravel	5								7
		Boring Terminated at 5 Feet										

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow-Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Boring Started: 12-31-2020 | Boring Completed: 12-31-2020

Drill Rig: B-61 | Driller: California Pacific Drilling

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

TEST PIT LOG NO. T-1

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5937° Longitude: -117.2567°

Surface Elev.: 2921 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1			**FILL - SILTY SAND WITH GRAVEL (SM)**, fine to medium grained, light brown, with gravel up to 3"									
		2.0	2919									
2			**SILTY SAND (SM)**, fine to coarse grained, light brown									
		4.5	2916.5									
			fine to medium grained, carbonate cement ***Test Pit Terminated at 4.5 Feet***									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Backhoe

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Test Pit Started: 12-30-2020 | Test Pit Completed: 12-30-2020

Excavator: | Operator:

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

TEST PIT LOG NO. T-2

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5934° Longitude: -117.2560°

Surface Elev.: 2920 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DESCRIPTION
1		0	2920	**FILL - SILTY SAND WITH GRAVEL (SM)**, fine to medium grained, light brown, with gravel up to 3"
		1.0	2919	
2		1.0	2919	**SILTY SAND WITH GRAVEL (SM)**, fine to coarse grained, light brown, wit gravel up to 2", carbonate cemented lenses
		3.8	2916.5	
				Test Pit Terminated at 3.75 Feet

DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Backhoe

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Test Pit Started: 12-30-2021 | Test Pit Completed: 12-30-2021

Excavator: | Operator:

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

TEST PIT LOG NO. T-3

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5933° Longitude: -117.2569°

Surface Elev.: 2915 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DESCRIPTION
1		0.5	2914.5	**FILL - SILTY SAND WITH GRAVEL (SM)**, fine to coarse grained, light brown, with gravel up to 2", few small brick pieces
2		3.5	2911.5	**SILTY SAND WITH GRAVEL (SM)**, fine to medium grained, light brown, with gravel up to 3", hard, poorly bedded
				Test Pit Terminated at 3.5 Feet

DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Backhoe

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Test Pit Started: 12-30-2021	Test Pit Completed: 12-30-2021
Excavator:	Operator:
Project No.: CB205149	

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

TEST PIT LOG NO. T-4

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5928° Longitude: -117.2568°

Surface Elev.: 2914 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DESCRIPTION
1		0.0	2914	**FILL - SILTY SAND WITH GRAVEL (SM)**, fine to medium grained, light brown, with gravel up to 3", small brick pieces
		2.5	2911.5	
2		2.5	2911.5	**POORLY GRADED SAND WITH GRAVEL (SP)**, fine to coarse grained, light brown, lift boundary at 4.5'
		10.0	2904	
		10.0	2904	**SILTY SAND (SM)**, trace gravel, fine to medium grained, brown
		11.0	2903	
		11.0	2903	***Test Pit Terminated at 11 Feet***

DEPTH (Ft.): 5, 10

WATER LEVEL OBSERVATIONS | SAMPLE TYPE | RECOVERY (In.) | FIELD TEST RESULTS | WATER CONTENT (%) | DRY UNIT WEIGHT (pcf) | ATTERBERG LIMITS LL-PL-PI | PERCENT FINES

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Backhoe

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Test Pit Started: 12-30-2021 | Test Pit Completed: 12-30-2021

Excavator: | Operator:

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

TEST PIT LOG NO. T-5

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5924° Longitude: -117.2573°

Surface Elev.: 2914 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1			**FILL - SILTY SAND WITH GRAVEL (SM)**, fine to medium grained, light brown, with gravel up to 1"									
			fine to coarse grained, with gravel up to 2"	5								
		8.0	2906									
2			**SILTY SAND (SM)**, fine to medium grained, brown, loose	10								
		10.5	2903.5									
			Test Pit Terminated at 10.5 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Backhoe

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Test Pit Started: 12-30-2021

Test Pit Completed: 12-30-2021

Excavator:

Operator:

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

TEST PIT LOG NO. T-6

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5922° Longitude: -117.2568°

Surface Elev.: 2906 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DESCRIPTION
1		0.0	2906	**FILL - SILTY SAND WITH GRAVEL (SM)**, fine to medium grained, light brown, with gravel up to 1"
				gravel up to 2"
		7.5	2898.5	
2				**SILTY SAND (SM)**, fine to medium grained, brown
		10.0	2896	
				Test Pit Terminated at 10 Feet

DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
5								
10								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Backhoe

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Test Pit Started: 12-30-2021
Test Pit Completed: 12-30-2021
Excavator:
Operator:
Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

TEST PIT LOG NO. T-7

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5915° Longitude: -117.2564°

Surface Elev.: 2895 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		0.0	2895	5								
		5.0	2890									
2												
		8.8	2886									

FILL - SILTY SAND WITH GRAVEL (SM), fine to medium grained, light brown, with gravel up to 2"

SILTY SAND (SM), fine to medium grained, brown

Test Pit Terminated at 8.8 Feet

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Backhoe

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Test Pit Started: 12-30-2021
Test Pit Completed: 12-30-2021
Excavator:
Operator:
Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

TEST PIT LOG NO. T-8

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5922° Longitude: -117.2553°

Surface Elev.: 2910 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DESCRIPTION
1		0.0	2910	**FILL - SILTY SAND WITH GRAVEL (SM)**, fine to medium grained, light brown, with gravel up to 2"
2		8.0	2902	**SILTY SAND (SM)**, fine to medium grained, brown
		10.0	2900	***Test Pit Terminated at 10 Feet***

DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
5								
10								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Backhoe

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Test Pit Started: 12-30-2021 | Test Pit Completed: 12-30-2021

Excavator: | Operator:

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

TEST PIT LOG NO. T-9

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5931° Longitude: -117.2556°

Surface Elev.: 2917 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DESCRIPTION
1		0.8	2916.5	**FILL - SILTY SAND WITH GRAVEL (SM)**, fine to coarse grained, light brown, with gravel up to 2"
2		6.0	2911	**SILTY SAND WITH GRAVEL (SM)**, fine to coarse grained, light brown, bedded/laminated in upper 2 feet
				Test Pit Terminated at 6 Feet

DEPTH (Ft.) 5

WATER LEVEL OBSERVATIONS | SAMPLE TYPE | RECOVERY (In.) | FIELD TEST RESULTS | WATER CONTENT (%) | DRY UNIT WEIGHT (pcf) | ATTERBERG LIMITS LL-PL-PI | PERCENT FINES

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Backhoe

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Test Pit Started: 12-30-2021 | Test Pit Completed: 12-30-2021

Excavator: | Operator:

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

TEST PIT LOG NO. T-10

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5940° Longitude: -117.2551°

Surface Elev.: 2925 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		0.4	2924.5									
2			**FILL - SILTY SAND (SM)**, fine to coarse grained, light brown **SILTY SAND (SM)**, fine to medium grained, light brown, bedded									
		4.6	2920.5									
			Test Pit Terminated at 4.6 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Backhoe

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Test Pit Started: 12-30-2021 | Test Pit Completed: 12-30-2021

Excavator: | Operator:

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

TEST PIT LOG NO. T-11

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5936° Longitude: -117.2549°

Surface Elev.: 2920 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1			**FILL - SILTY SAND (SM)**, trace gravel, fine to coarse grained, light brown									
		2.5	2917.5									
2			**SILTY SAND (SM)**, fine grained, interbedded with fine to coarse sand									
		4.4	2915.5									
			Test Pit Terminated at 4.4 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Backhoe

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Test Pit Started: 12-30-2021

Test Pit Completed: 12-30-2021

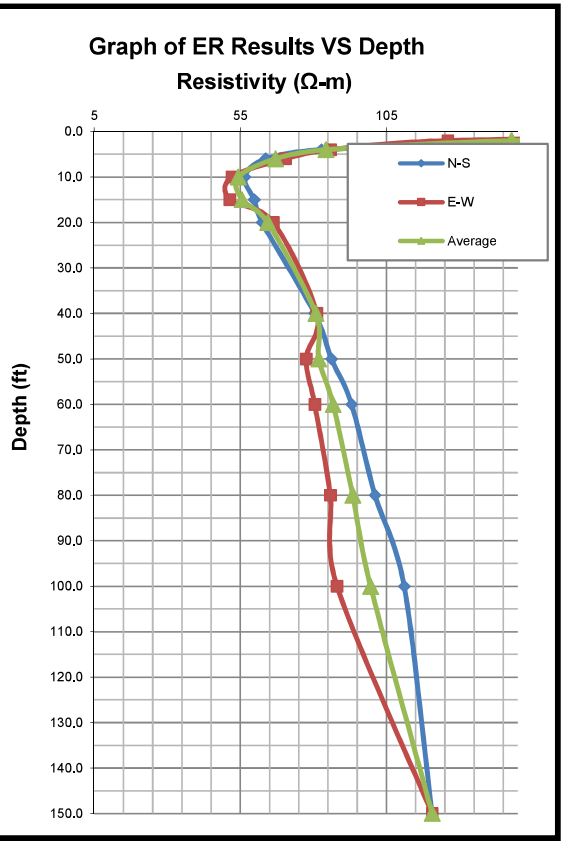
Excavator:

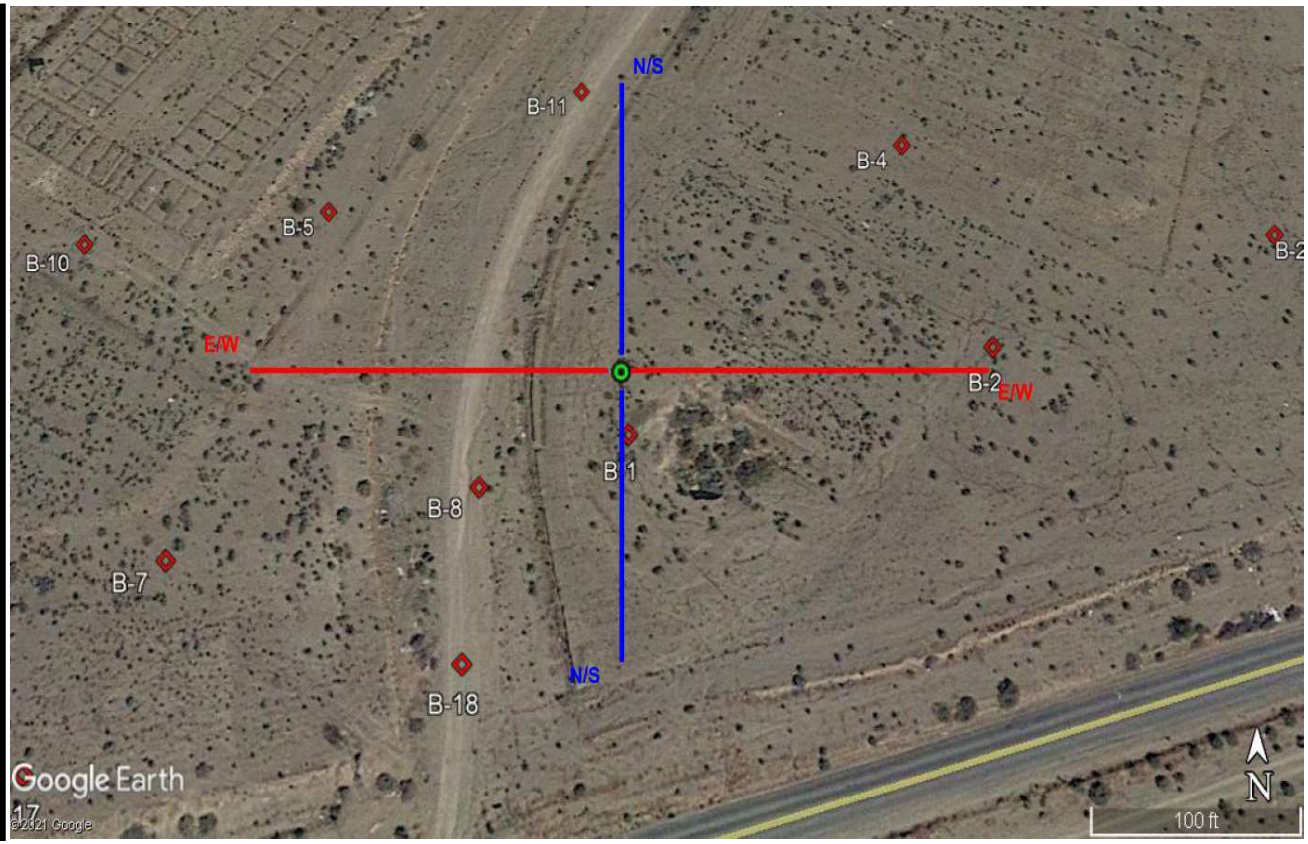
Operator:

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

34.5923°N, 117.2562°W	ARRAY	PARAMETER	SPACING (feet)											
			1.0	2.0	4.0	6.0	10.0	15.0	20.0	40.0	50.0	60.0	80.0	100.0	150.0
	N-S	Measured resistance (Ω)	114	44.3	10.8	5.54	2.95	2.08	1.63	1.05	0.9	0.81	0.66	0.58	0.42
		Calculated resistivity (Ω-m)	218	170	83	64	56	60	62	80	86	93	101	111	121
		Average resistivity (Ω-m)	**229**	**148**	**84**	**67**	**54**	**56**	**64**	**81**	**82**	**87**	**93**	**100**	**121**
	E-W	Measured resistance (Ω)	125	32.9	11.2	6.13	2.72	1.79	1.73	1.06	0.81	0.7	0.56	0.46	0.42
		Calculated resistivity (Ω-m)	239	126	86	70	52	51	66	81	78	80	86	88	121





Project Mgr:	AT	Project Number	Terracon	FIELD ELECTRICAL RESISTIVITY TESTING RESULTS
Prepared by:	SP	CB205149	Consulting Engineers and Scientists Texas Registration 3272	Love's Travel Stop - Apple Valley
Checked by:	KA	Date: 2/4/2021	1355 E. Cooley Drive, Suite C Colton, CA 92324 PH: (909) 824-7311 Fax. (909) 301-6016	Apple Valley San Bernardino County, California
Approved by:	KA			

Job No.: CB205149

PERCOLATION TEST DATA

BORING NUMBER: B-16
LOT No: N/A
TRACT No: N/A

CLIENT: Love's Travel Stops
PROJECT: Love's Travel Apple Valley

DATE OF DRILLING: December 30, 2020
DATE OF PRESOAK: December 30, 2020
DATE OF TEST: January 4, 2021
TESTED BY: SP

DEPTH BEFORE (ft.): 5.0
DEPTH AFTER (ft.): 4.7
PVC PIPE DIA. (in.): 3.0
PERC HOLE DIA. (in.): 8.0

Time Interval (min.)	Total Elapsed Time (min.)	Initial Water Level (in.)	Final Water Level (in.)	Change in Water Level (in.)	Initial Hole Depth (in.)	Final Hole Depth (in.)	Percolation Rate (in/hr)	Infiltration rate (Porchet Method) (in/hr)
287	287	5.0	53.4	48.4	60.0	56.4	10.1	0.62
10	297	7.0	10.0	3.0	60.0	56.4	18.0	0.67
10	307	10.0	12.0	2.0	60.0	56.4	12.0	0.47
10	317	12.0	14.0	2.0	60.0	56.4	12.0	0.49
10	327	14.0	16.5	2.5	60.0	56.4	15.0	0.64
10	337	6.0	8.0	2.0	60.0	56.4	12.0	0.44
10	347	8.0	10.0	2.0	60.0	56.4	12.0	0.45
				Average of last 3 readings:			13.0	0.5

Job No.: CB205149

PERCOLATION TEST DATA

BORING NUMBER: B-18
LOT No: N/A
TRACT No: N/A

CLIENT: Love's Travel Stops
PROJECT: Love's Travel Apple Valley

DATE OF DRILLING: December 30, 2020
DATE OF PRESOAK: December 30, 2020
DATE OF TEST: January 4, 2021
TESTED BY: SP

DEPTH BEFORE (ft.): 10.0
DEPTH AFTER (ft.): 9.4
PVC PIPE DIA. (in.): 3.0
PERC HOLE DIA. (in.): 8.0

Time Interval (min.)	Total Elapsed Time (min.)	Initial Water Level (in.)	Final Water Level (in.)	Change in Water Level (in.)	Initial Hole Depth (in.)	Final Hole Depth (in.)	Percolation Rate (in/hr)	Infiltration rate (Porchet Method) (in/hr)
172	172	60.0	112.8	52.8	120.0	112.8	18.4	1.03
10	182	62.4	64.8	2.4	120.0	112.8	14.4	0.49
10	192	64.8	69.6	4.8	120.0	112.8	28.8	1.05
10	202	69.6	72.0	2.4	120.0	112.8	14.4	0.56
10	212	62.4	65.4	3.0	120.0	112.8	18.0	0.62
10	222	65.4	69.0	3.6	120.0	112.8	21.6	0.79
10	232	69.0	72.0	3.0	120.0	112.8	18.0	0.70
				Average of last 3 readings:			19.2	0.7

Job No.: CB205149

PERCOLATION TEST DATA

BORING NUMBER: B-19
LOT No: N/A
TRACT No: N/A

CLIENT: Love's Travel Stops
PROJECT: Love's Travel Apple Valley

DATE OF DRILLING: December 30, 2020
DATE OF PRESOAK: December 30, 2020
DATE OF TEST: December 30, 2020
TESTED BY: SP

DEPTH BEFORE (ft.): 5.0
DEPTH AFTER (ft.): 4.9
PVC PIPE DIA. (in.): 3.0
PERC HOLE DIA. (in.): 8.0

Time Interval (min.)	Total Elapsed Time (min.)	Initial Water Level (in.)	Final Water Level (in.)	Change in Water Level (in.)	Initial Hole Depth (in.)	Final Hole Depth (in.)	Percolation Rate (in/hr)	Infiltration rate (Porchet Method) (in/hr)
183	183	4.0	58.8	54.8	60.0	58.8	18.0	1.17
10	193	4.0	11.5	7.5	60.0	58.8	45.0	1.66
10	203	4.5	11.5	7.0	60.0	58.8	42.0	1.56
10	213	5.0	10.5	5.5	60.0	58.8	33.0	1.22
10	223	4.0	11.0	7.0	60.0	58.8	42.0	1.54
10	233	5.5	11.0	5.5	60.0	58.8	33.0	1.23
10	243	4.5	10.5	6.0	60.0	58.8	36.0	1.32
				Average of last 3 readings:			37.0	1.4

Job No.: CB205149

PERCOLATION TEST DATA

BORING NUMBER: B-20
LOT No: N/A
TRACT No: N/A

CLIENT: Love's Travel Stops
PROJECT: Love's Travel Apple Valley

DATE OF DRILLING: December 30, 2020
DATE OF PRESOAK: December 30, 2020
DATE OF TEST: January 4, 2021
TESTED BY: SP

DEPTH BEFORE (ft.): 15.0
DEPTH AFTER (ft.): 13.8
PVC PIPE DIA. (in.): 3.0
PERC HOLE DIA. (in.): 8.0

Time Interval (min.)	Total Elapsed Time (min.)	Initial Water Level (in.)	Final Water Level (in.)	Change in Water Level (in.)	Initial Hole Depth (in.)	Final Hole Depth (in.)	Percolation Rate (in/hr)	Infiltration rate (Porchet Method) (in/hr)
118	118	84.0	165.6	81.6	180.0	165.6	41.5	1.45
10	128	121.2	132.0	10.8	180.0	165.6	64.8	2.34
10	138	122.4	133.2	10.8	180.0	165.6	64.8	2.39
10	148	120.6	129.0	8.4	180.0	165.6	50.4	1.76
10	158	121.2	129.6	8.4	180.0	165.6	50.4	1.78
10	168	120.6	127.8	7.2	180.0	165.6	43.2	1.49
10	178	121.2	127.2	6.0	180.0	165.6	36.0	1.25
				Average of last 3 readings:			43.2	1.5

Job No.: CB205149

PERCOLATION TEST DATA

BORING NUMBER: B-21
LOT No: N/A
TRACT No: N/A

CLIENT: Love's Travel Stops
PROJECT: Love's Travel Apple Valley

DATE OF DRILLING: December 30, 2020
DATE OF PRESOAK: December 30, 2020
DATE OF TEST: December 30, 2020
TESTED BY: SP

DEPTH BEFORE (ft.): 10.0
DEPTH AFTER (ft.): 9.3
PVC PIPE DIA. (in.): 3.0
PERC HOLE DIA. (in.): 8.0

Time Interval (min.)	Total Elapsed Time (min.)	Initial Water Level (in.)	Final Water Level (in.)	Change in Water Level (in.)	Initial Hole Depth (in.)	Final Hole Depth (in.)	Percolation Rate (in/hr)	Infiltration rate (Porchet Method) (in/hr)
210	210	54.0	111.6	57.6	120.0	111.6	16.5	0.84
10	220	51.6	92.4	40.8	120.0	111.6	244.8	9.79
10	230	52.8	93.0	40.2	120.0	111.6	241.2	9.82
10	240	64.8	98.4	33.6	120.0	111.6	201.6	9.98
10	250	57.6	91.8	34.2	120.0	111.6	205.2	8.68
10	260	57.0	89.4	32.4	120.0	111.6	194.4	7.97
10	270	61.2	92.4	31.2	120.0	111.6	187.2	8.28
						Average of last 3 readings:	195.6	8.3

Job No.: CB205149

PERCOLATION TEST DATA

BORING NUMBER: B-22
LOT No: N/A
TRACT No: N/A

CLIENT: Love's Travel Stops
PROJECT: Love's Travel Apple Valley

DATE OF DRILLING: December 30, 2020
DATE OF PRESOAK: December 30, 2020
DATE OF TEST: December 30, 2020
TESTED BY: SP

DEPTH BEFORE (ft.): 8.0
DEPTH AFTER (ft.): 7.6
PVC PIPE DIA. (in.): 3.0
PERC HOLE DIA. (in.): 8.0

Time Interval (min.)	Total Elapsed Time (min.)	Initial Water Level (in.)	Final Water Level (in.)	Change in Water Level (in.)	Initial Hole Depth (in.)	Final Hole Depth (in.)	Percolation Rate (in/hr)	Infiltration rate (Porchet Method) (in/hr)
230	230	42.0	90.6	48.6	96.0	90.6	12.7	0.80
10	240	30.6	43.2	12.6	96.0	90.6	75.6	2.47
10	250	35.4	45.6	10.2	96.0	90.6	61.2	2.13
10	260	35.4	46.2	10.8	96.0	90.6	64.8	2.27
10	270	39.6	49.2	9.6	96.0	90.6	57.6	2.15
10	280	43.2	51.6	8.4	96.0	90.6	50.4	1.99
10	290	43.2	51.6	8.4	96.0	90.6	50.4	1.99

Average of last 3 readings: 52.8 2.0

Job No.: CB205149

PERCOLATION TEST DATA

BORING NUMBER: B-23
LOT No: N/A
TRACT No: N/A

CLIENT: Love's Travel Stops
PROJECT: Love's Travel Apple Valley

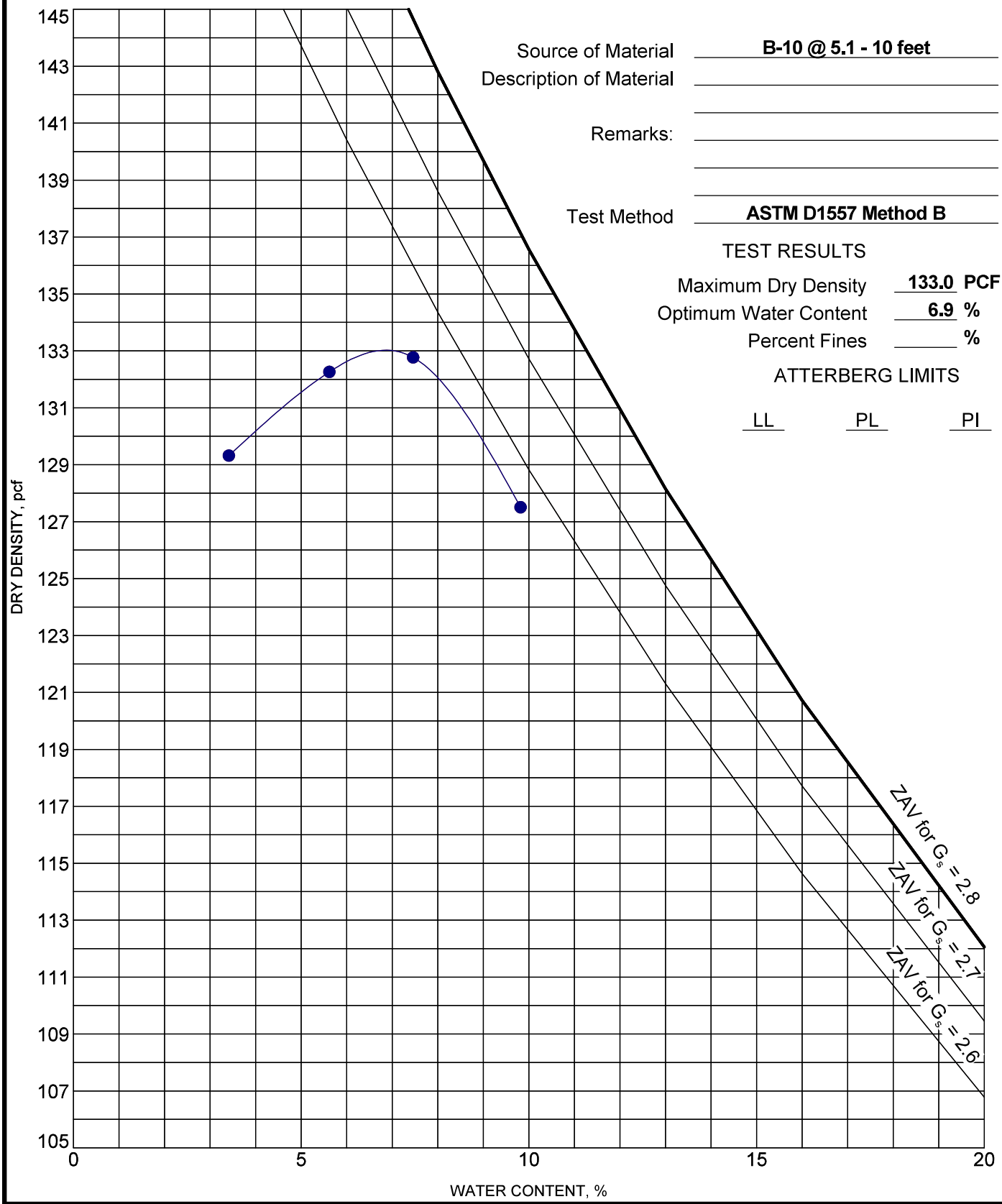
DATE OF DRILLING: December 30, 2020
DATE OF PRESOAK: December 30, 2020
DATE OF TEST: December 30, 2020
TESTED BY: SP

DEPTH BEFORE (ft.): 5.0
DEPTH AFTER (ft.): 4.7
PVC PIPE DIA. (in.): 3.0
PERC HOLE DIA. (in.): 8.0

Time Interval (min.)	Total Elapsed Time (min.)	Initial Water Level (in.)	Final Water Level (in.)	Change in Water Level (in.)	Initial Hole Depth (in.)	Final Hole Depth (in.)	Percolation Rate (in/hr)	Infiltration rate (Porchet Method) (in/hr)
231	231	6.0	56.4	50.4	60.0	56.4	13.1	0.85
10	241	13.0	37.2	24.2	60.0	56.4	145.2	7.87
10	251	13.5	37.2	23.7	60.0	56.4	142.2	7.76
10	261	12.8	36.0	23.3	60.0	56.4	139.5	7.42
10	271	10.3	36.0	25.8	60.0	56.4	154.5	7.95
10	281	13.8	35.4	21.6	60.0	56.4	129.6	6.93
10	291	13.0	35.4	22.4	60.0	56.4	134.4	7.11
				Average of last 3 readings:			139.5	7.3

MOISTURE-DENSITY RELATIONSHIP

ASTM D698/D1557



Source of Material: B-10 @ 5.1 - 10 feet

Description of Material:

Remarks:

Test Method: ASTM D1557 Method B

TEST RESULTS

Maximum Dry Density	133.0	PCF
Optimum Water Content	6.9	%
Percent Fines		%

ATTERBERG LIMITS

LL	PL	PI

PROJECT: Love's Travel Apple Valley

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

PROJECT NUMBER: CB205149

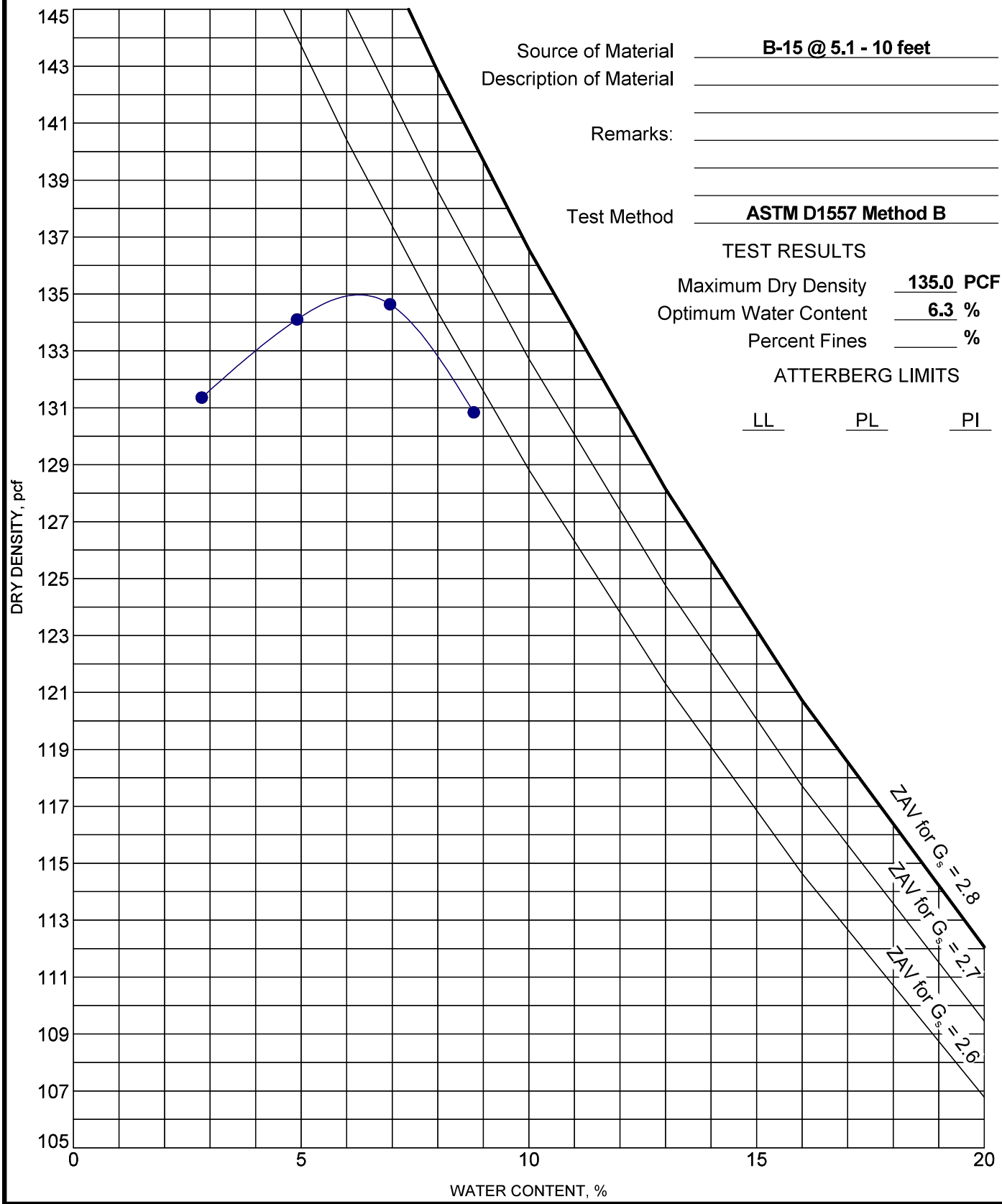
CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

EXHIBIT: B-1

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. COMPACTION - V1 CB205149 LOVE'S TRAVEL APP.GPJ 02195238 US 50 AND CHIPMAN.GPJ 1/26/21

MOISTURE-DENSITY RELATIONSHIP

ASTM D698/D1557



Source of Material: B-15 @ 5.1 - 10 feet

Description of Material:

Remarks:

Test Method: ASTM D1557 Method B

TEST RESULTS

Maximum Dry Density	135.0	PCF
Optimum Water Content	6.3	%
Percent Fines		%

ATTERBERG LIMITS

LL	PL	PI

PROJECT: Love's Travel Apple Valley

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

PROJECT NUMBER: CB205149

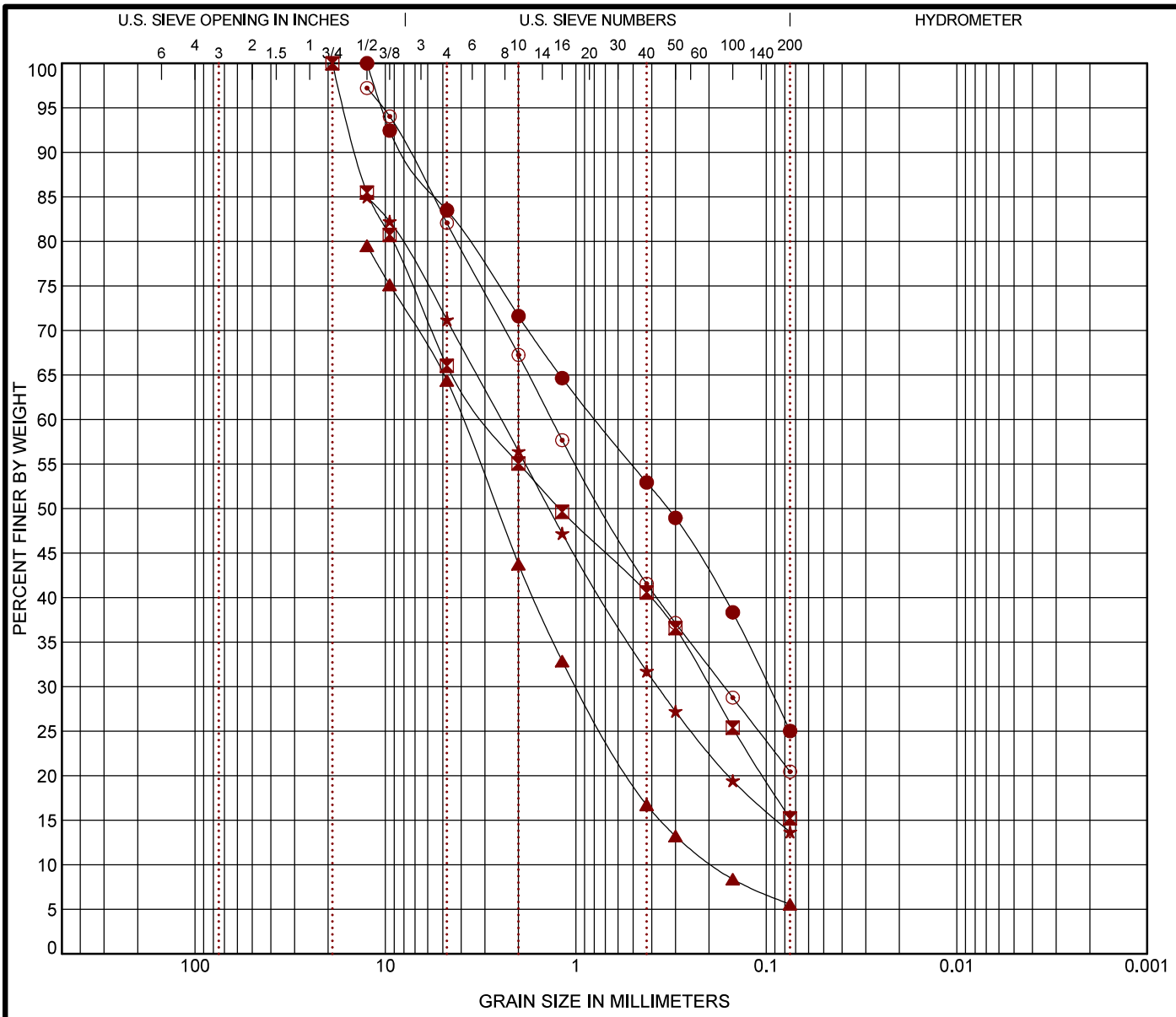
CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

EXHIBIT: B-1

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. COMPACTION - V1 CB205149 LOVE'S TRAVEL APP.GPJ 02195238 US 50 AND CHIPMAN.GPJ 1/26/21

GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136



Boring ID	Depth	USCS Classification	WC (%)	LL	PL	PI	Cc	Cu
● B-2	7.5 - 9	SILTY SAND with GRAVEL (SM)	3.3	NP	NP	NP		
⊠ B-2	15 - 16.5							
▲ B-3	7.5 - 9	WELL-GRADED SAND with SILT and GRAVEL (SW-SM)	1.6	NP	NP	NP	1.30	20.91
★ B-3	15 - 16.5							
⊙ B-4	10 - 11.5							

Boring ID	Depth	D_{100}	D_{60}	D_{30}	D_{10}	%Cobbles	%Gravel	%Sand	%Silt	%Fines	%Clay
● B-2	7.5 - 9	12.5	0.787	0.097		0.0	16.5	58.5		25.0	
⊠ B-2	15 - 16.5	19	2.953	0.2		0.0	34.0	50.8		15.2	
▲ B-3	7.5 - 9	12.5	3.953	0.984	0.189		15.1	58.8		5.6	
★ B-3	15 - 16.5	12.5	2.465	0.372			13.8	57.5		13.7	
⊙ B-4	10 - 11.5	12.5	1.342	0.166			15.1	61.6		20.5	

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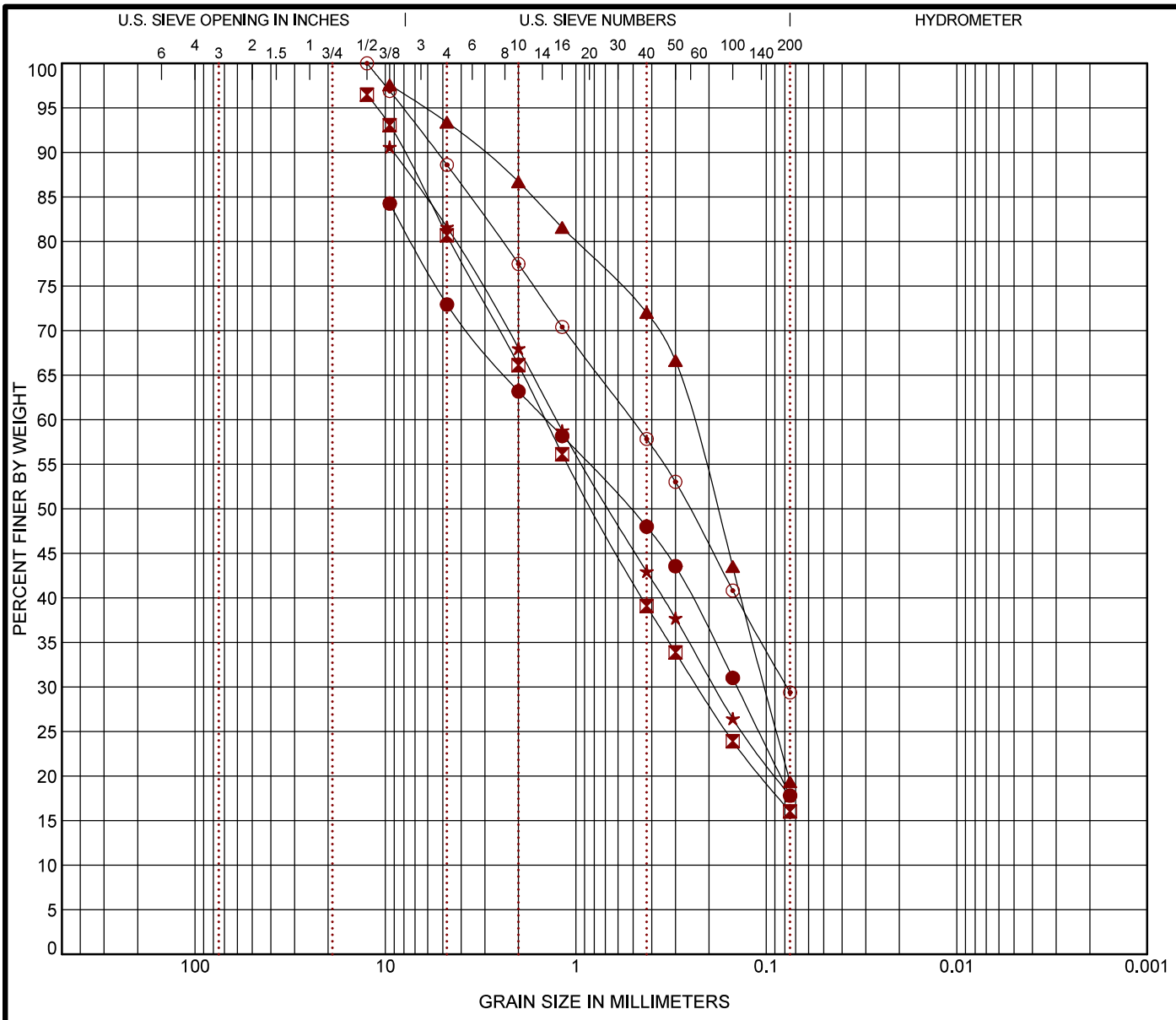
CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

EXHIBIT: B-1

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS-2 CB205149 LOVE'S TRAVEL APP.GPJ 02195238 US 50 AND CHIPMAN.GPJ 1/26/21

GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136



Boring ID	Depth	USCS Classification	WC (%)	LL	PL	PI	Cc	Cu
B-4	15 - 16.5							
B-5	5 - 6.5							
B-5	15 - 16.5							
B-7	5 - 6.5							
B-7	15.1 - 20	SILTY SAND (SM)		18	15	3		

Boring ID	Depth	D_{100}	D_{60}	D_{30}	D_{10}	%Cobbles	%Gravel	%Sand	%Silt	%Fines	%Clay
B-4	15 - 16.5	9.5	1.431	0.142			11.3	55.1		17.8	
B-5	5 - 6.5	12.5	1.448	0.229			15.8	64.7		16.0	
B-5	15 - 16.5	9.5	0.246	0.102			4.2	74.0		19.3	
B-7	5 - 6.5	9.5	1.265	0.187			9.0	63.8		17.8	
B-7	15.1 - 20	12.5	0.507	0.078		0.0	11.4	59.2		29.4	

PROJECT: Love's Travel Apple Valley

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

Terracon
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PROJECT NUMBER: CB205149

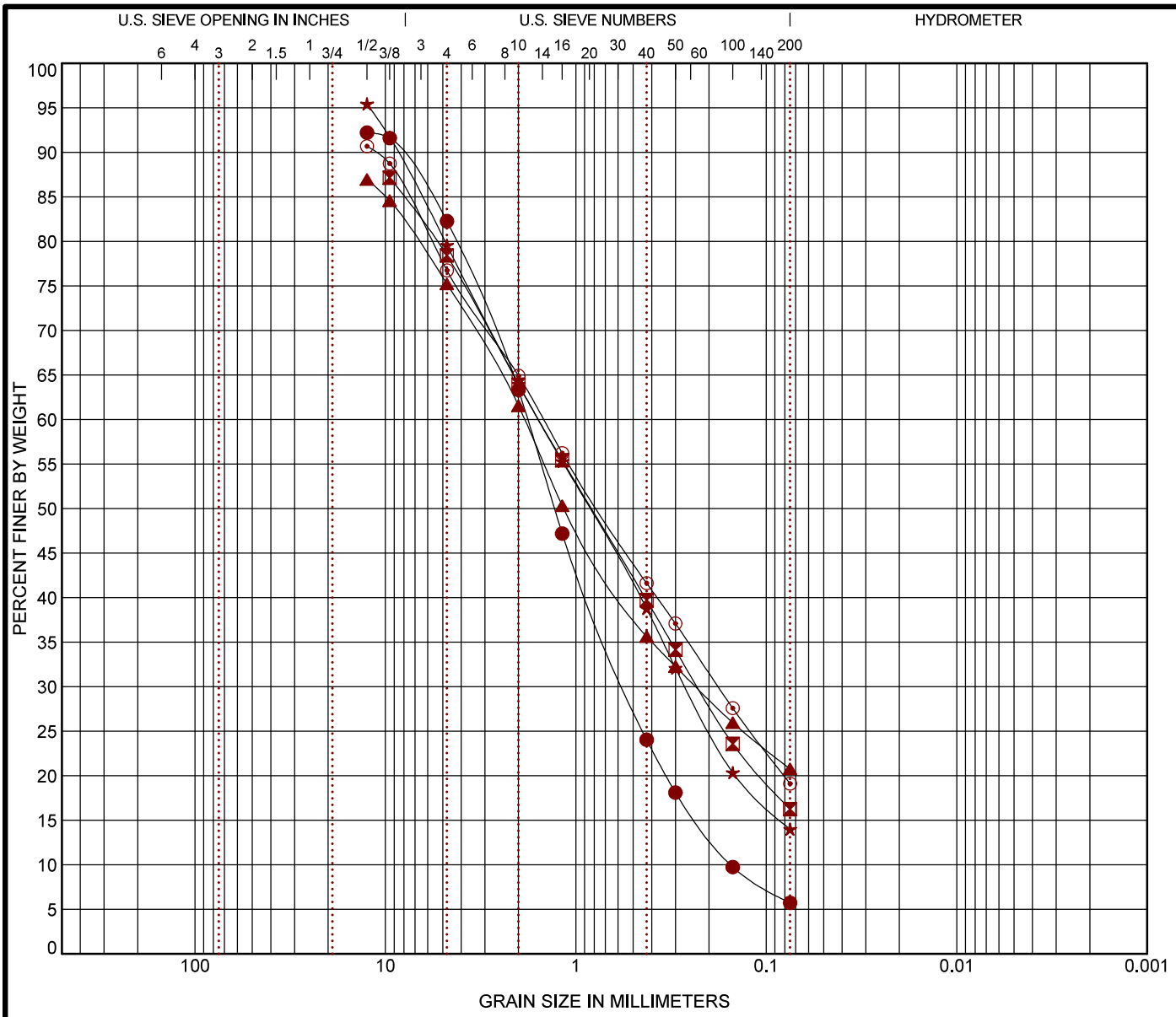
CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

EXHIBIT: B-2

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS-2 CB205149 LOVE'S TRAVEL APP.GPJ 02195238 US 50 AND CHIPMAN.GPJ 1/26/21

GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136



Boring ID	Depth	USCS Classification	WC (%)	LL	PL	PI	Cc	Cu
● B-8	15 - 16.5						1.11	11.71
⊠ B-12	5 - 6.5							
▲ B-13	10 - 11.5							
★ B-14	10 - 11.5							
⊙ B-16	0 - 5							

Boring ID	Depth	D_{100}	D_{60}	D_{30}	D_{10}	%Cobbles	%Gravel	%Sand	%Silt	%Fines	%Clay
● B-8	15 - 16.5	12.5	1.794	0.553	0.153		9.9	76.6		5.7	
⊠ B-12	5 - 6.5	9.5	1.568	0.229			8.7	62.2		16.2	
▲ B-13	10 - 11.5	12.5	1.86	0.234			11.7	54.5		20.8	
★ B-14	10 - 11.5	12.5	1.571	0.265			15.9	65.6		14.0	
⊙ B-16	0 - 5	12.5	1.484	0.179			13.9	57.6		19.1	

PROJECT: Love's Travel Apple Valley

SITE: Stoddard Wells Road at I-15
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PROJECT NUMBER: CB205149

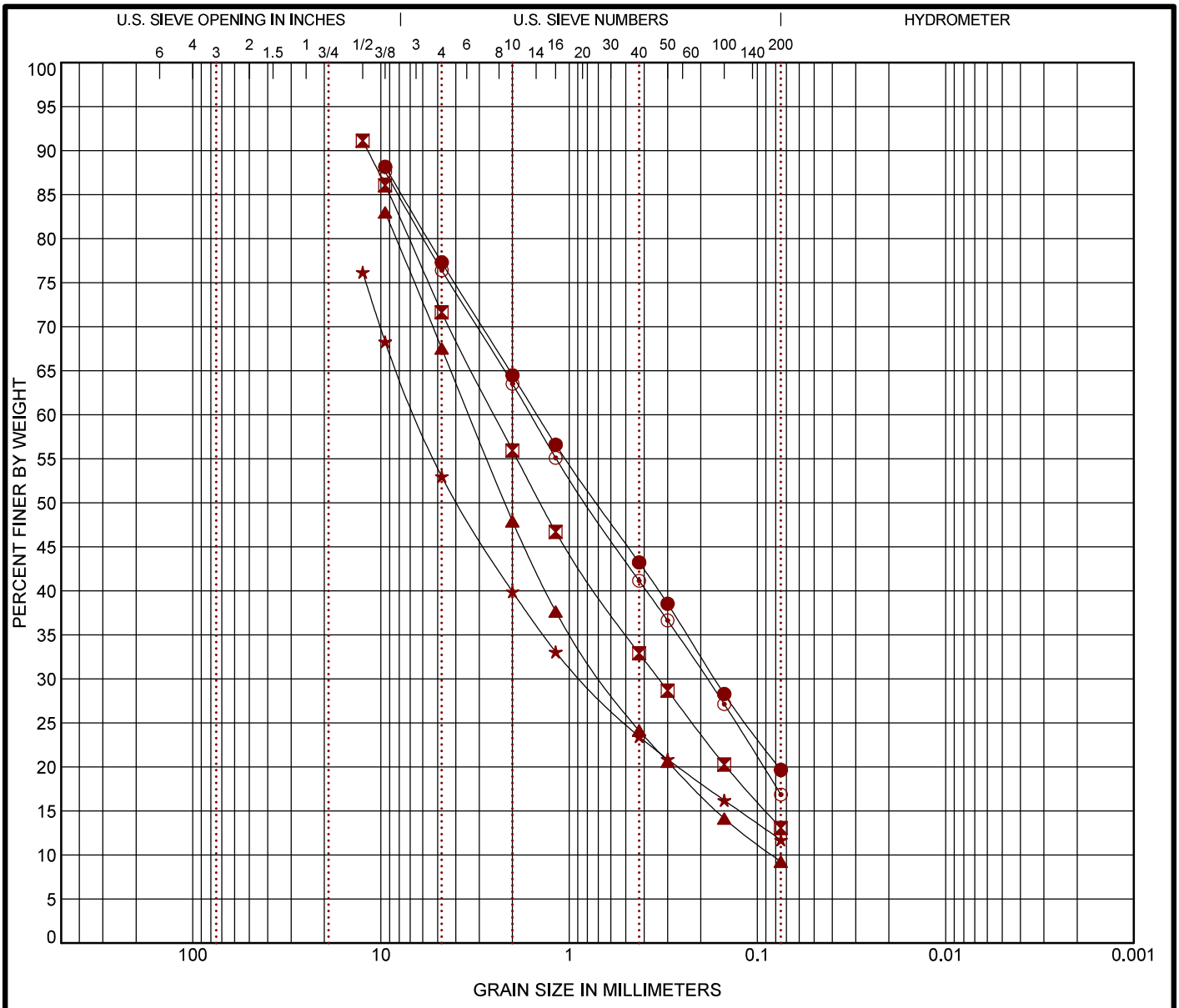
CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

EXHIBIT: B-3

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS-2 CB205149 LOVE'S TRAVEL APP.GPJ 02195238 US 50 AND CHIPMAN.GPJ 1/26/21

GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136



Boring ID		Depth	USCS Classification	WC (%)	LL	PL	PI	Cc	Cu
●	B-18	5 - 10							
⊠	B-19	0 - 5							
▲	B-20	10 - 15						1.54	40.80
★	B-21	5 - 10						1.93	113.08
⊙	B-22	3 - 8							

Boring ID		Depth	D_{100}	D_{60}	D_{30}	D_{10}	%Cobbles	%Gravel	%Sand	%Silt	%Fines	%Clay
●	B-18	5 - 10	9.5	1.482	0.169			10.9	57.6		19.7	
⊠	B-19	0 - 5	12.5	2.501	0.335			19.5	58.6		13.1	
▲	B-20	10 - 15	9.5	3.408	0.662	0.084		15.4	58.3		9.2	
★	B-21	5 - 10	12.5	6.525	0.852			23.2	41.3		11.7	
⊙	B-22	3 - 8	9.5	1.604	0.185			11.2	59.5		16.9	

PROJECT: Love's Travel Apple Valley

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

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Colton, CA

PROJECT NUMBER: CB205149

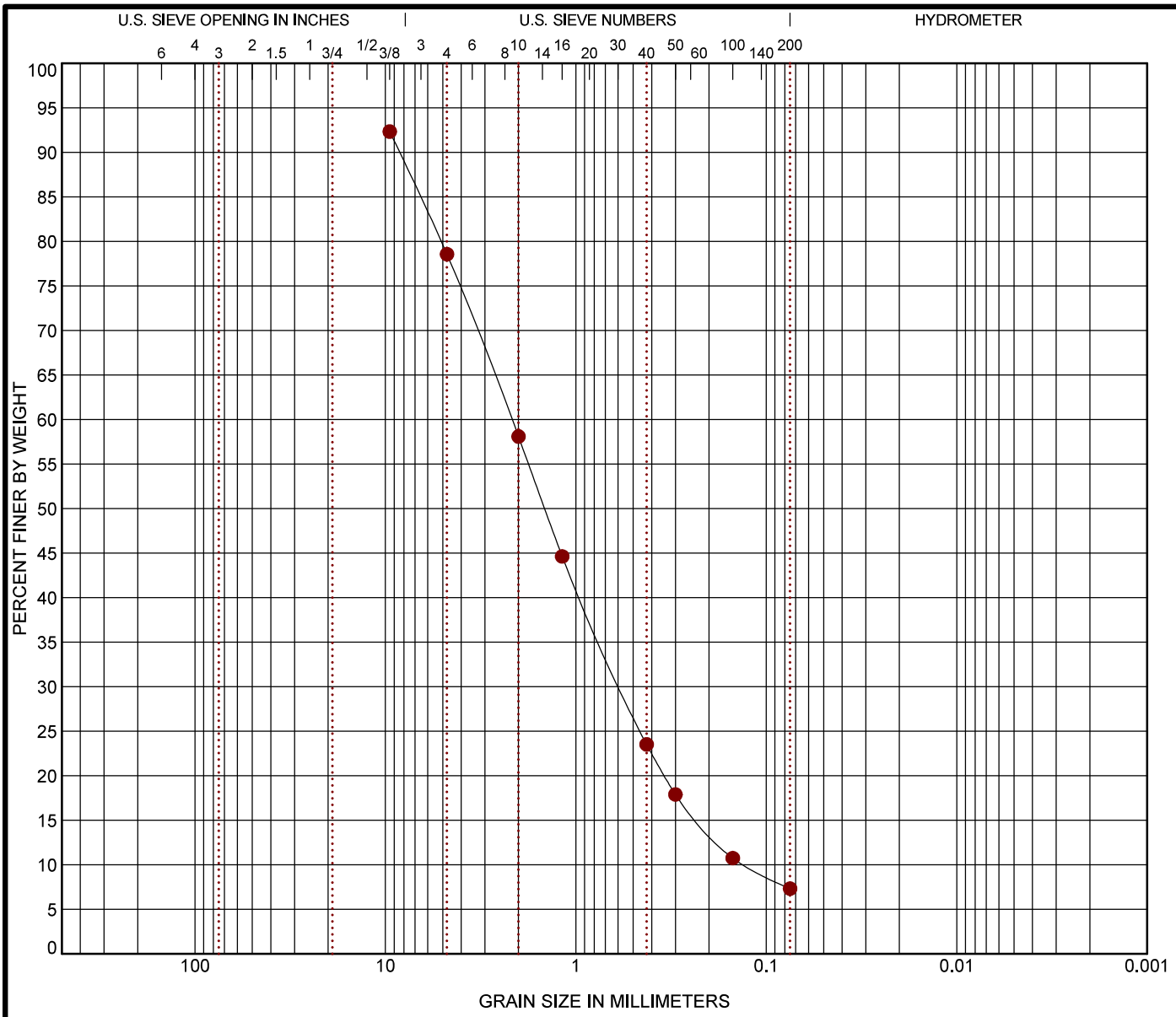
CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

EXHIBIT: B-4

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS-2 CB205149 LOVE'S TRAVEL APP.GPJ 02195238 US 50 AND CHIPMAN.GPJ 1/26/21

GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136



Boring ID	Depth	USCS Classification	WC (%)	LL	PL	PI	Cc	Cu
B-23	0 - 5						1.21	16.81

Boring ID	Depth	D_{100}	D_{60}	D_{30}	D_{10}	%Cobbles	%Gravel	%Sand	%Silt	%Fines	%Clay
B-23	0 - 5	9.5	2.168	0.582	0.129		13.8	71.2		7.3	

PROJECT: Love's Travel Apple Valley

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

PROJECT NUMBER: CB205149

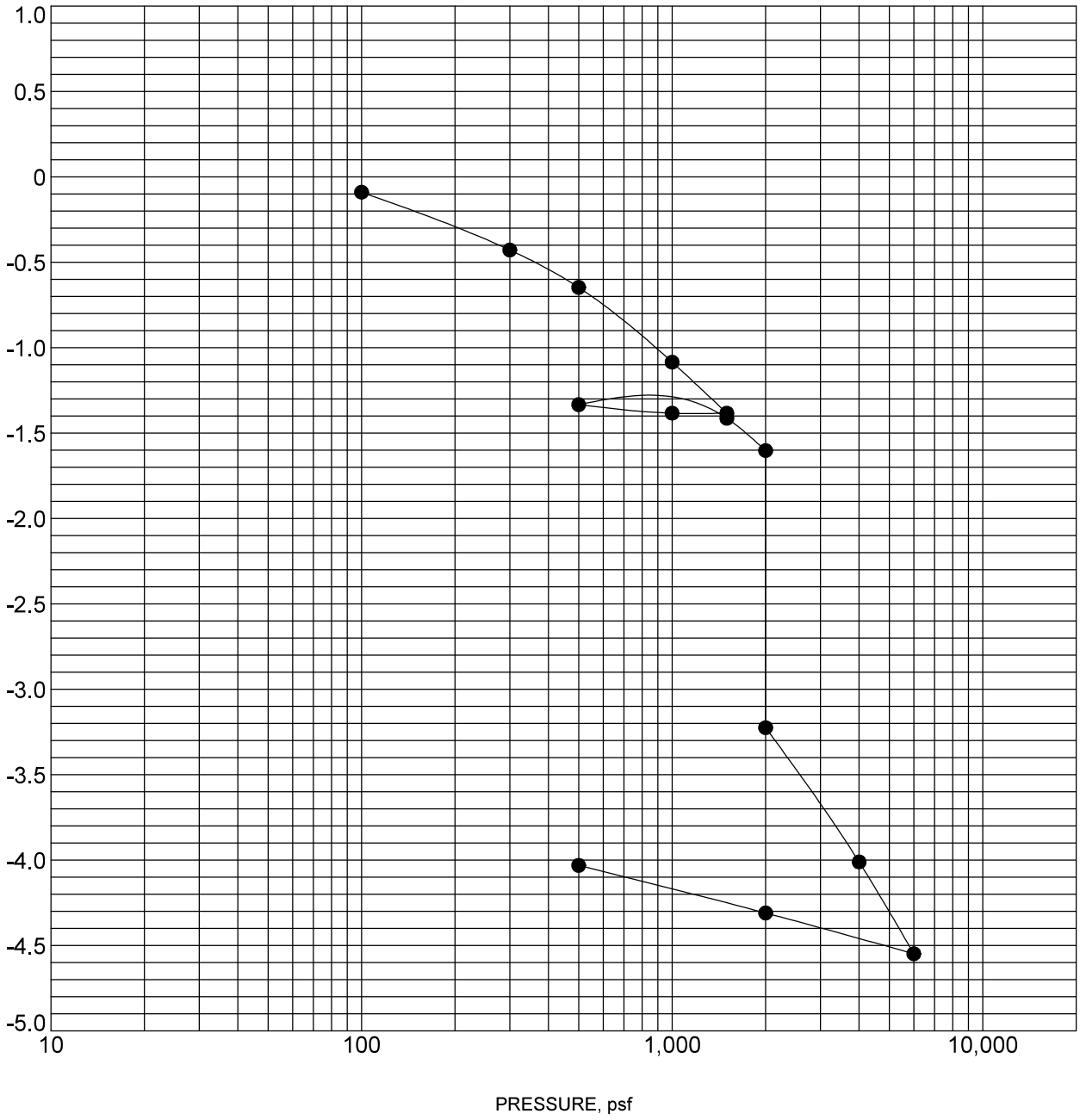
CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

EXHIBIT: B-5

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS-2 CB205149 LOVE'S TRAVEL APP.GPJ 02195238 US 50 AND CHIPMAN.GPJ 1/26/21

SWELL CONSOLIDATION TEST

ASTM D2435



Specimen Identification			Classification	γ_d, pcf	WC, %
●	B-1	15 - 16.5 ft		108	1.8

NOTES: Sample was saturated at 2,000 psf surcharge

PROJECT: Love's Travel Apple Valley

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

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Colton, CA

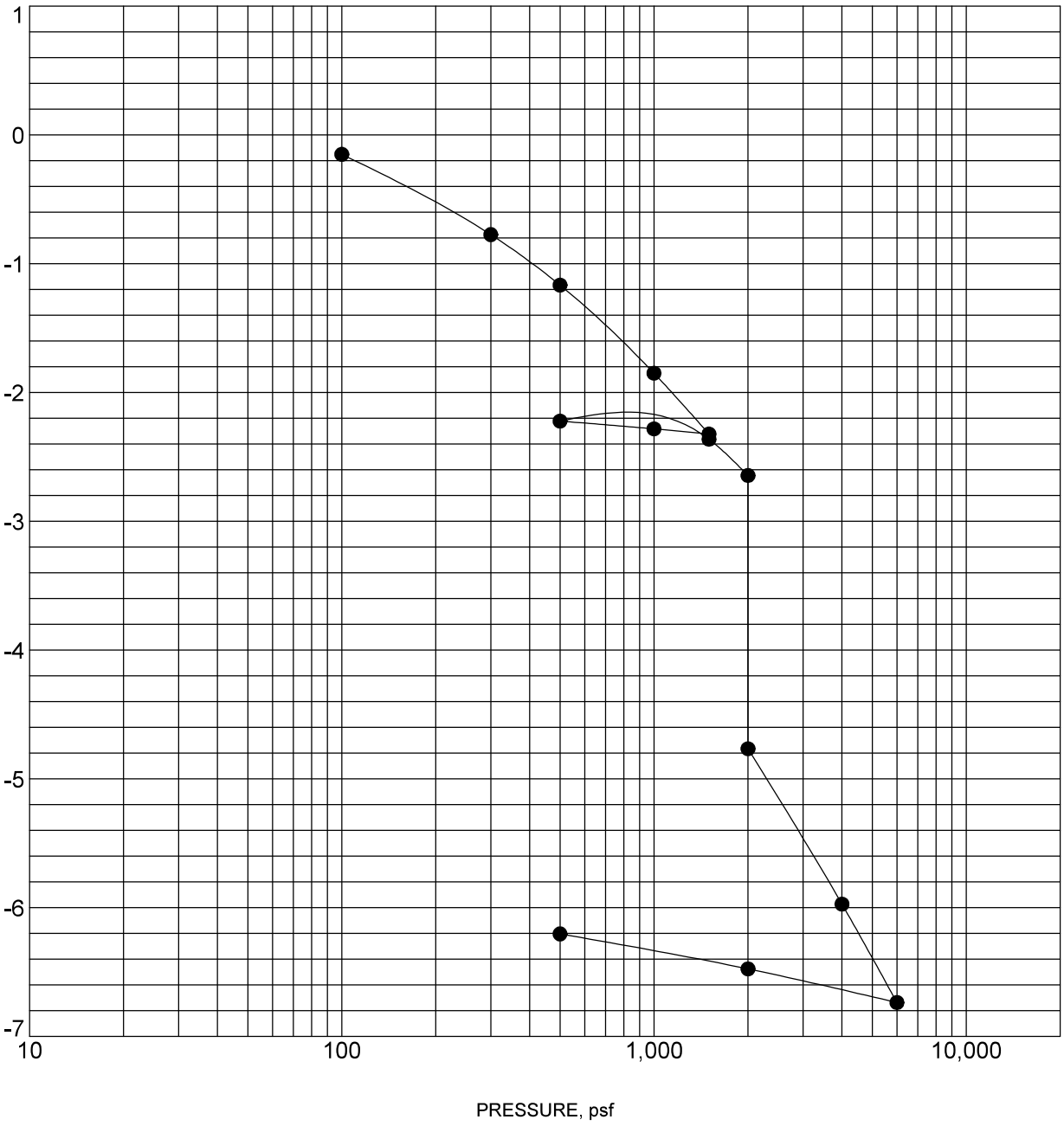
PROJECT NUMBER: CB205149

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. TC_CONSOL_STRAIN-USCS CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

SWELL CONSOLIDATION TEST

ASTM D2435



Specimen Identification		Classification	γ_d, pcf	WC, %
●	B-2 10 - 11.5 ft		111	2.7

NOTES: Sample was saturated at 2,000 psf surcharge

PROJECT: Love's Travel Apple Valley

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

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Colton, CA

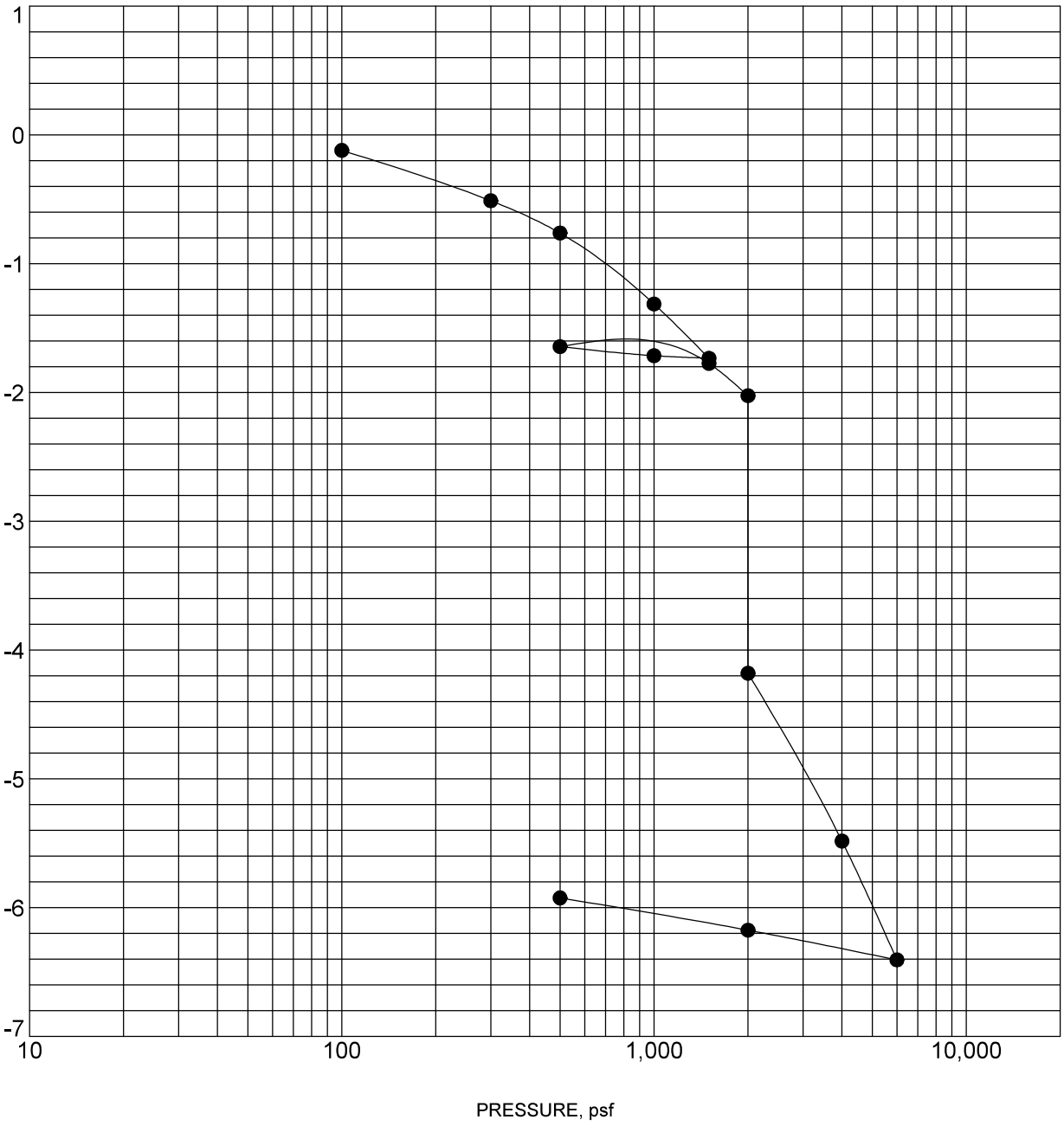
PROJECT NUMBER: CB205149

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. TC_CONSOL_STRAIN-USCS CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

SWELL CONSOLIDATION TEST

ASTM D2435



Specimen Identification		Classification	γ_d, pcf	WC, %
●	B-3 10 - 11.5 ft		107	2.5

NOTES: Sample was saturated at 2,000 psf surcharge

PROJECT: Love's Travel Apple Valley

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

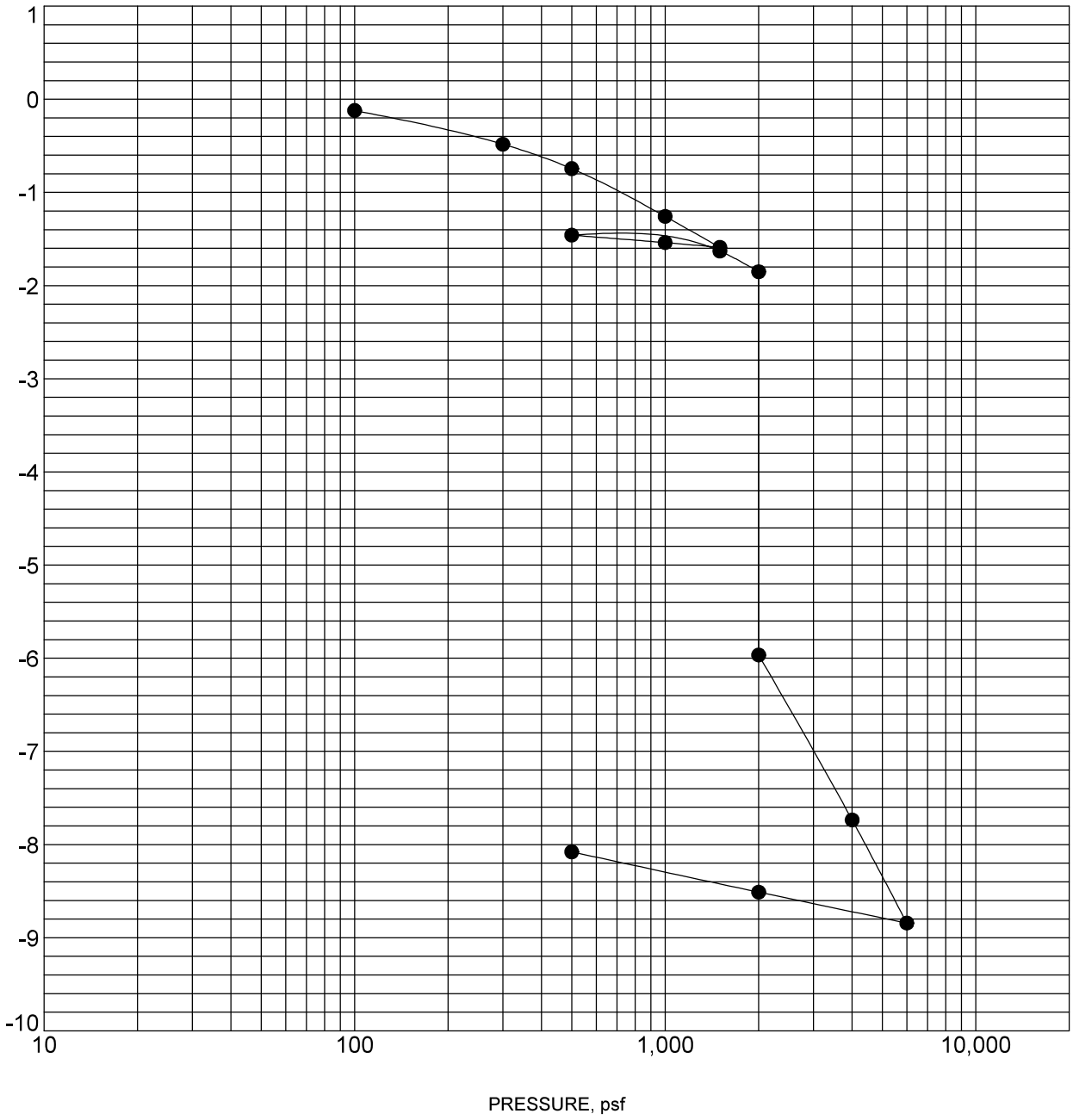
PROJECT NUMBER: CB205149

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. TC_CONSOL_STRAIN-USCS CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

SWELL CONSOLIDATION TEST

ASTM D2435



Specimen Identification			Classification	γ_d, pcf	WC, %
●	B-7	15 - 16.5 ft		100	5.7

NOTES: Sample was saturated at 2,000 psf surcharge

PROJECT: Love's Travel Apple Valley

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

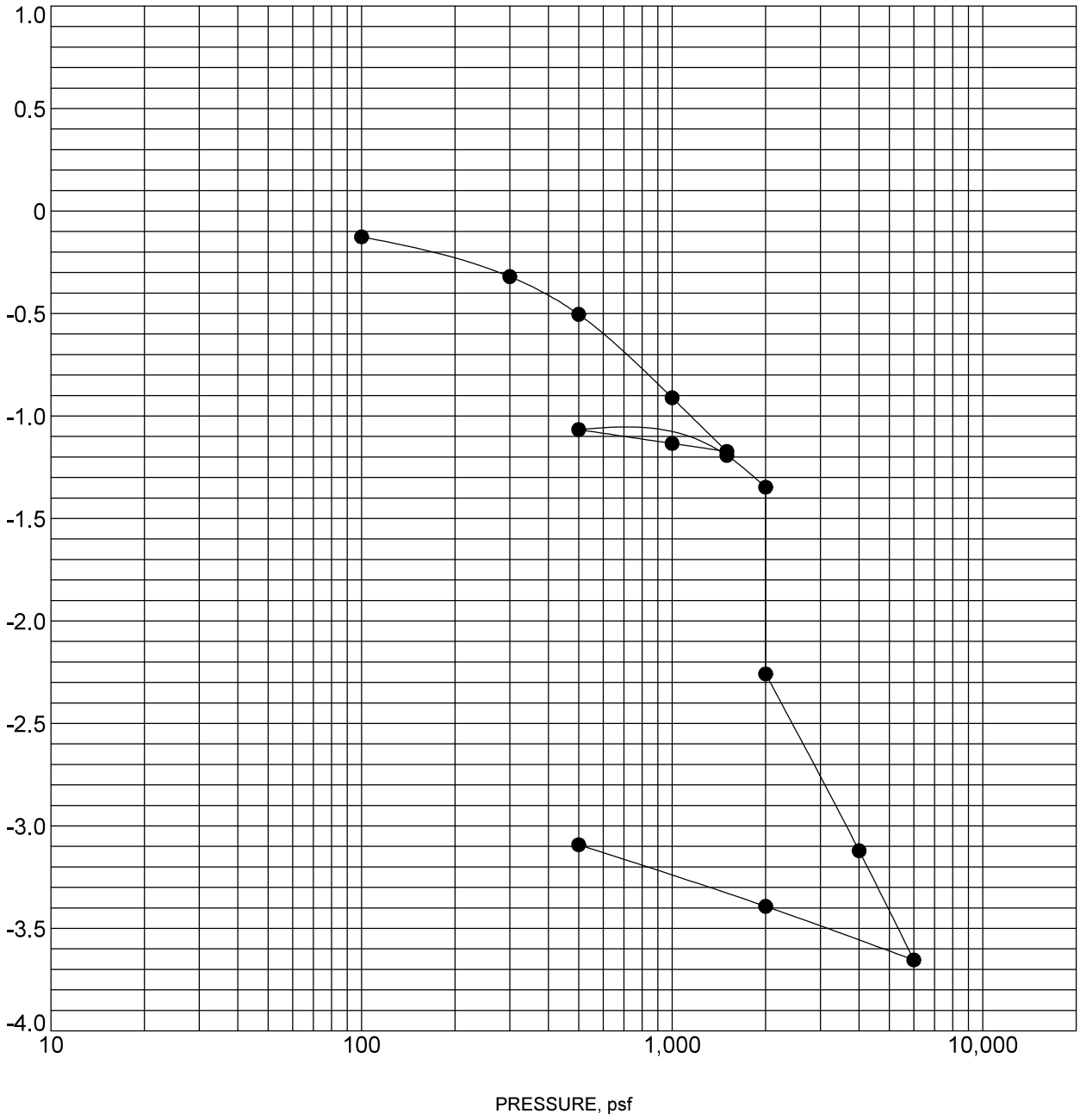
PROJECT NUMBER: CB205149

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

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SWELL CONSOLIDATION TEST

ASTM D2435



Specimen Identification		Classification	γ_d, pcf	WC, %
●	B-8 10 - 11.5 ft		109	2.7

NOTES: Sample was saturated at 2,000 psf surcharge

PROJECT: Love's Travel Apple Valley

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Colton, CA

PROJECT NUMBER: CB205149

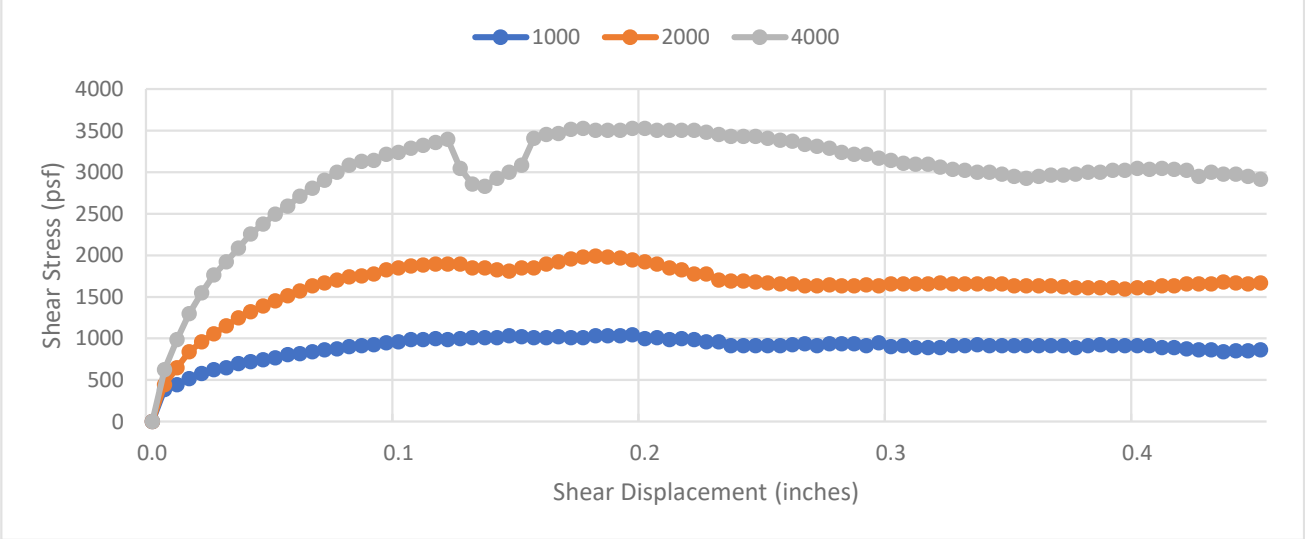
CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

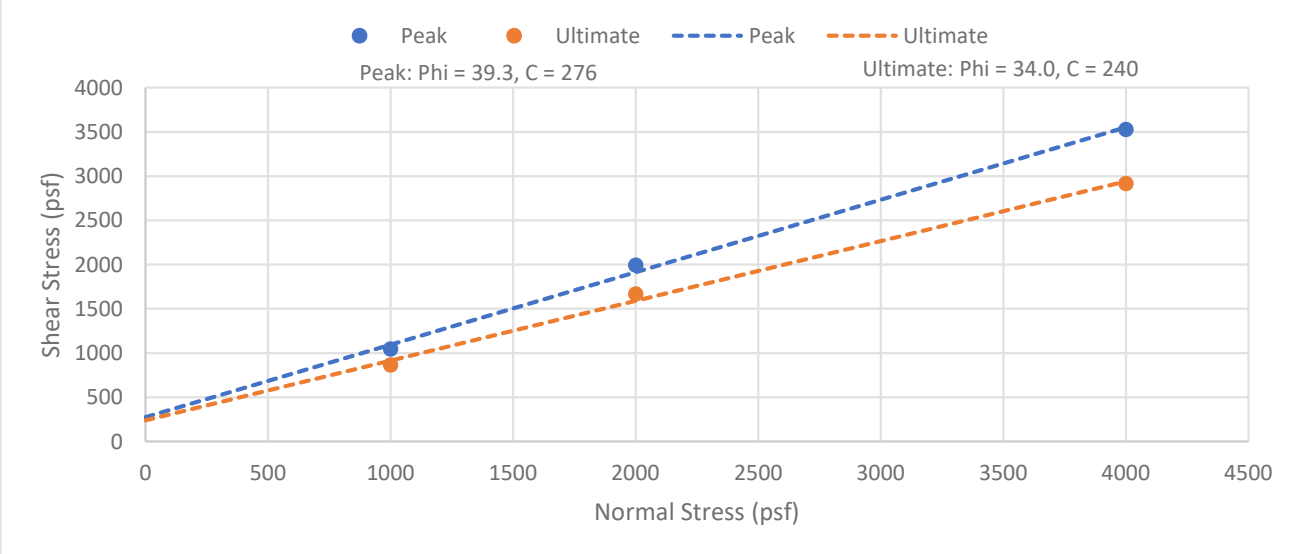
LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. TC_CONSOL_STRAIN-USCS CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

Direct Shear Test Results
ASTM D3080

Client: Love's Travel Stops
Project Name: Love's Travel Stop Apple Valley
Project No.: CB205149
Boring No.: B-6
Sample No.: 4-Jun **Depth:** 10 ft
Soil Description: Silty Sand with Gravel (SM)
Test Date: 1/22/2021

Wet Unit Weight (pcf)	Dry Unit Weight (pcf)	Moisture (%)	Normal Stress (psf)	Peak Shear Stress (psf)	Ultimate Shear Stress (psf)
			1000	1044	864
			2000	1992	1668
			4000	3528	2916

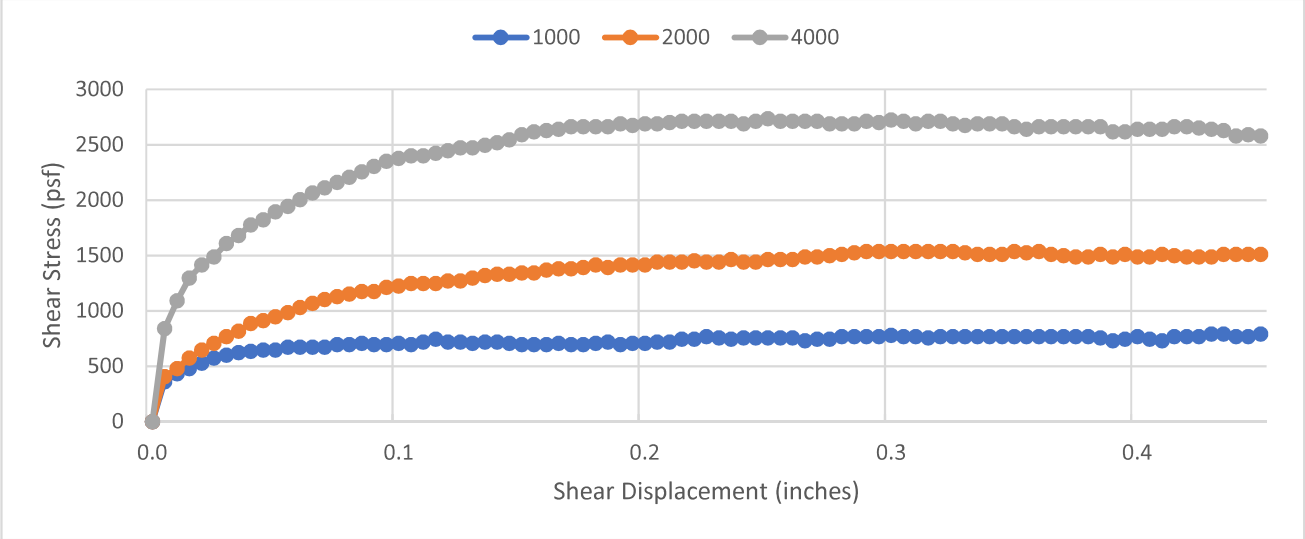


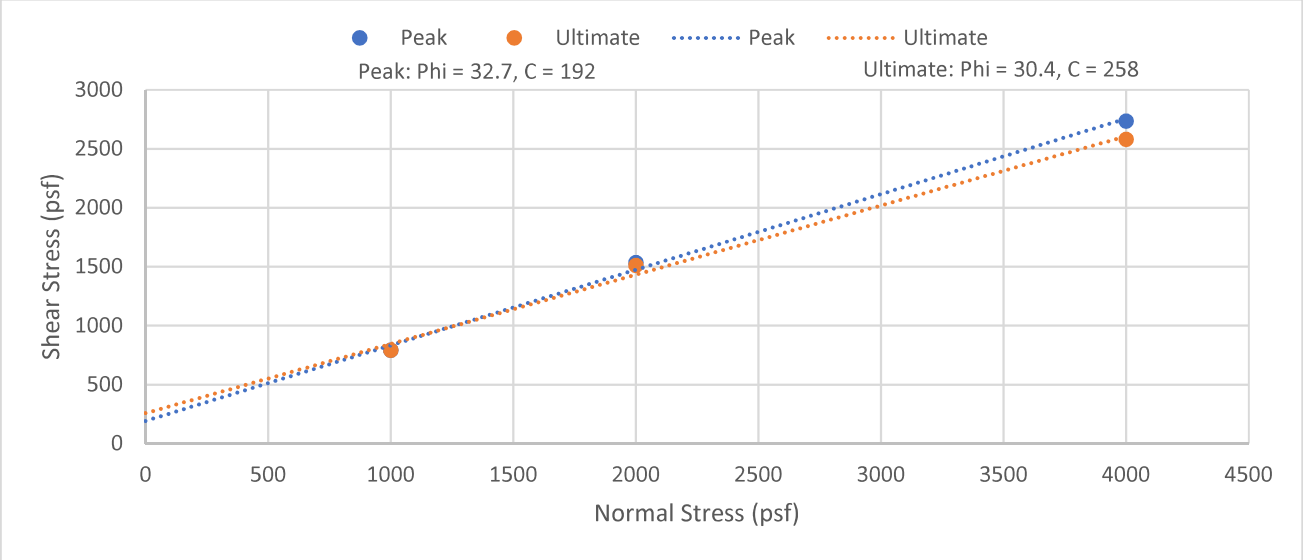


Direct Shear Test Results
ASTM D3080

Client: Love's Travel Stops
Project Name: Love's Travel Stop Apple Valley
Project No.: CB205149
Boring No.: B-15
Sample No.: 15-A **Depth:** 5 ft
Soil Description: Silty Sand with Gravel (SM) **Test Date:** 1/22/2021

Wet Unit Weight (pcf)	Dry Unit Weight (pcf)	Moisture (%)	Normal Stress (psf)	Peak Shear Stress (psf)	Ultimate Shear Stress (psf)
155.7	121.5	6.5	1000	792	792
			2000	1536	1512
			4000	2736	2580





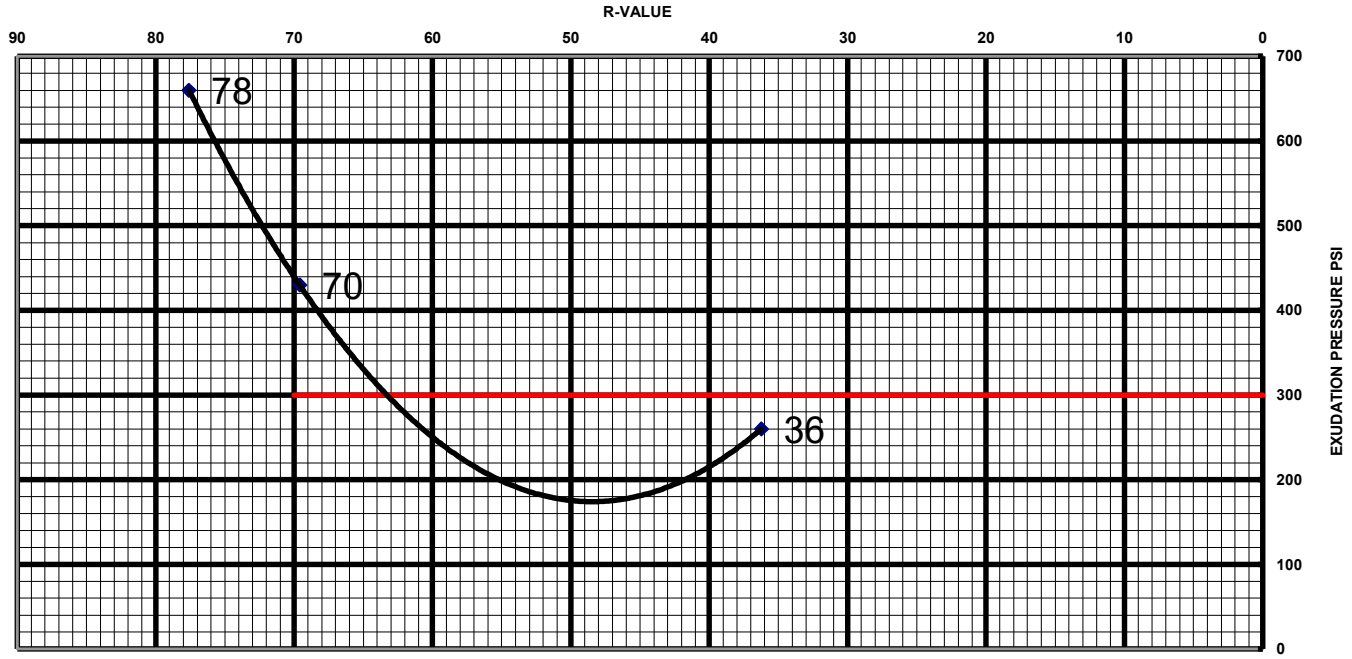
Job No. CB205149
Date. 1/26/2021

LABORATORY RECORD OF TESTS MADE ON BASE, SUBBASE, AND BASEMENT SOILS

CLIENT: **Love's Travel Stop and Country Store**
PROJECT **Love's Travel Apple Valley**
LOCATION: **Apple Valley, CA**
R-VALUE # : **B-12 (5' to 10')**
T.I. :

	A	B	C	D
COMPACTOR AIR PRESSURE P.S.I.	150	225	350	
INITIAL MOISTURE %	4.9	4.9	4.9	
WATER ADDED, ML	45	35	25	
WATER ADDED %	4.0	3.1	2.2	
MOISTURE AT COMPACTION %	8.9	8.0	7.1	
HEIGHT OF BRIQUETTE	2.47	2.45	2.47	
WET WEIGHT OF BRIQUETTE	1184	1178	1183	
DENSITY LB. PER CU.FT.	133.4	134.9	135.5	
STABILOMETER PH AT 1000 LBS.	35	20	16	
2000 LBS.	80	35	25	
DISPLACEMENT	4.40	3.90	3.90	
R-VALUE	36	70	78	
EXUDATION PRESSURE	260	430	660	
THICK. INDICATED BY STAB.	0.00	0.00	0.00	
EXPANSION PRESSURE	0	18	25	
THICK. INDICATED BY E.P.	0.00	0.60	0.83	

EXUDATION CHART



R-Value: **63**

Table 1 - Laboratory Tests on Soil Samples

Terracon
Love's Travel Stop
Your #CB205149, HDR Lab #21-0041LAB
20-Jan-21

Sample ID			B-1 1-4 @ 10-11.5'	B-4 4-1 @ 2.5-4'
Resistivity		**Units**		
as-received		ohm-cm	24,400	10,800
saturated		ohm-cm	1,800	880
pH			8.0	8.0
Electrical Conductivity		mS/cm	0.17	0.32
Chemical Analyses				
Cations				
calcium	Ca^{2+}	mg/kg	80	64
magnesium	Mg^{2+}	mg/kg	9.9	16
sodium	Na^{1+}	mg/kg	24	224
potassium	K^{1+}	mg/kg	40	6.5
ammonium	NH_4^{1+}	mg/kg	ND	ND
Anions				
carbonate	CO_3^{2-}	mg/kg	38	74
bicarbonate	HCO_3^{1-}	mg/kg	168	70
fluoride	F^{1-}	mg/kg	4.1	6.2
chloride	Cl^{1-}	mg/kg	30	168
sulfate	SO_4^{2-}	mg/kg	58	131
nitrate	NO_3^{1-}	mg/kg	175	231
phosphate	PO_4^{3-}	mg/kg	ND	ND
Other Tests				
sulfide	S^{2-}	qual	na	na
Redox		mV	na	na

Resistivity per ASTM G187, pH per ASTM G51, Cations per ASTM D6919, Anions per ASTM D4327, and Alkalinity per APHA 2320-B.

Electrical conductivity in millisiemens/cm and chemical analyses were made on a 1:5 soil-to-water extract.

mg/kg = milligrams per kilogram (parts per million) of dry soil.

Redox = oxidation-reduction potential in millivolts

ND = not detected

na = not analyzed

SUPPORTING INFORMATION

Contents:

General Notes
Unified Soil Classification System

UNIFIED SOIL CLASSIFICATION SYSTEM

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests [A]					Soil Classification	
					Group Symbol	Group Name [B]
Coarse-Grained Soils: More than 50% retained on No. 200 sieve	**Gravels:** More than 50% of coarse fraction retained on No. 4 sieve	**Clean Gravels:** Less than 5% fines [C]	$Cu \geq 4$ and $1 \leq Cc \leq 3$ [E]		GW	Well-graded gravel [F]
			$Cu < 4$ and/or [$Cc<1$ or $Cc>3.0$] [E]		GP	Poorly graded gravel [F]
		Gravels with Fines: More than 12% fines [C]	Fines classify as ML or MH		GM	Silty gravel [F, G, H]
			Fines classify as CL or CH		GC	Clayey gravel [F, G, H]
	Sands: 50% or more of coarse fraction passes No. 4 sieve	**Clean Sands:** Less than 5% fines [D]	$Cu \geq 6$ and $1 \leq Cc \leq 3$ [E]		SW	Well-graded sand [I]
			$Cu < 6$ and/or [$Cc<1$ or $Cc>3.0$] [E]		SP	Poorly graded sand [I]
		Sands with Fines: More than 12% fines [D]	Fines classify as ML or MH		SM	Silty sand [G, H, I]
			Fines classify as CL or CH		SC	Clayey sand [G, H, I]
Fine-Grained Soils: 50% or more passes the No. 200 sieve	**Silts and Clays:** Liquid limit less than 50	**Inorganic:**	PI > 7 and plots on or above "A"		CL	Lean clay [K, L, M]
			PI < 4 or plots below "A" line [J]		ML	Silt [K, L, M]
		Organic:	Liquid limit - oven dried	< 0.75	OL	Organic clay [K, L, M, N]
			Liquid limit - not dried			Organic silt [K, L, M, O]
	Silts and Clays: Liquid limit 50 or more	**Inorganic:**	PI plots on or above "A" line		CH	Fat clay [K, L, M]
			PI plots below "A" line		MH	Elastic Silt [K, L, M]
		Organic:	Liquid limit - oven dried	< 0.75	OH	Organic clay [K, L, M, P]
			Liquid limit - not dried			Organic silt [K, L, M, Q]
Highly organic soils:	Primarily organic matter, dark in color, and organic odor				PT	Peat

[A] Based on the material passing the 3-inch (75-mm) sieve.

[B] If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.

[C] Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.

[D] Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay.

[E] $Cu = D_{60}/D_{10}$ $\quad Cc = \dfrac{(D_{30})^2}{D_{10} \times D_{60}}$

[F] If soil contains ≥ 15% sand, add "with sand" to group name.

[G] If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

[H] If fines are organic, add "with organic fines" to group name.

[I] If soil contains ≥ 15% gravel, add "with gravel" to group name.

[J] If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.

[K] If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.

[L] If soil contains ≥ 30% plus No. 200 predominantly sand, add "sandy" to group name.

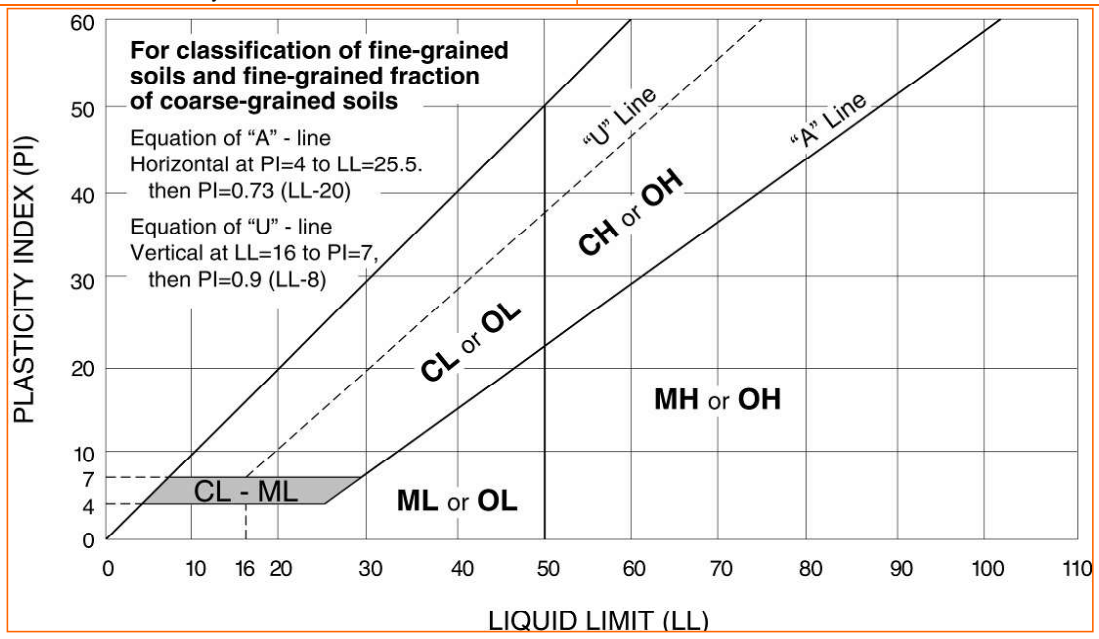
[M] If soil contains ≥ 30% plus No. 200, predominantly gravel, add "gravelly" to group name.

[N] PI ≥ 4 and plots on or above "A" line.

[O] PI < 4 or plots below "A" line.

[P] PI plots on or above "A" line.

[Q] PI plots below "A" line.



Appendix E

Phase I Environmental
Site Assessment

Phase I Environmental Site Assessment

Proposed Love's Travel Stop – Apple Valley

Northeast Corner of Interstate 15 and Stoddard Wells Road

Apple Valley, San Bernardino County, CA 92307

November 2, 2020

Terracon Project No. CB207107



Prepared for:

Love's Travel Stops & Country Stores, Inc.
Oklahoma City, Oklahoma

Prepared by:

Terracon Consultants, Inc.
Colton, California

November 2, 2020

Love's Travel Stops & Country Stores, Inc.
10601 North Pennsylvania Avenue
Oklahoma City, Oklahoma 73120-4108

Attn: Mr. Rick Shuffield
P: (405)-302-6646
E: Rick.Shuffield@loves.com

Re: Phase I Environmental Site Assessment
Proposed Love's Travel Stop – Apple Valley
Northeast Corner of Interstate 15 and Stoddard Wells Road
Apple Valley, San Bernadino County, California 93534
Terracon Project No. CB207107

Dear Mr. Shuffield:

Terracon Consultants, Inc. (Terracon) is pleased to submit the enclosed Phase I Environmental Site Assessment (ESA) report for the above-referenced site. This assessment was performed in accordance with Terracon Proposal No. PCB207107, dated September 30, 2020.

We appreciate the opportunity to be of service to you on this project. In addition to Phase I services, our professionals provide geotechnical, environmental, construction materials, and facilities services on a wide variety of projects locally, regionally and nationally. For more detailed information on all of Terracon's services please visit our website at www.terracon.com. If there are any questions regarding this report or if we may be of further assistance, please do not hesitate to contact us.

Sincerely,
Terracon Consultants, Inc.

Steven Claar
Field Scientist

Carl A. Parten
Senior Principal / Office Manager III

Todd G. McFarland, PG #7685, CHG #979
Senior Geologist / Department Manager I

Attachments

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APPENDICES

APPENDIX A Exhibit 1 - Topographic Map, Exhibit 2 - Site Diagram

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APPENDIX C Historical Documentation and User Questionnaire

APPENDIX D Environmental Database Information

APPENDIX E Credentials

APPENDIX F Description of Terms and Acronyms

EXECUTIVE SUMMARY

This Phase I Environmental Site Assessment (ESA) was performed in accordance with Terracon Proposal No. PCB207107, dated September 30, 2020 and was conducted consistent with the procedures included in ASTM E1527-13, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*. The ESA was conducted under the supervision or responsible charge of Carl A. Parten, Environmental Professional. Carl A. Parten performed the site reconnaissance on October 27, 2020.

Findings and Opinions

A summary of findings is provided below. It should be recognized that details were not included or fully developed in this section, and the report must be read in its entirety for a comprehensive understanding of the items contained herein.

Site Description and Use

The site is located at the northeast corner of Interstate 15 and Stoddard Wells Road, in Apple Valley, San Bernardino County, California. The property consists of an approximately 34.5-acre parcel of generally undeveloped land, identified by the San Bernardino County assessor's parcel number (APN) 0472-222-10. During the site reconnaissance, the site was observed to be unoccupied.

Historical Information

Based on a review of the historical information, the site consisted of undeveloped land with an intermittent stream and water well from the early 1930s through the early 1950s. By the mid-1950s, the intermittent stream and water well were no longer observed. An unimproved road was visible on the site from the late 1950s through the early 1990s, followed by apparent grading activities in the late-1980s to early 1990s. The observed grading was depicted across the entire site, including what appear to be rectangular building pads on the western portion of the site, along with a graded dirt road entering from the southern portion of the site and extending northeasterly across the western portion of the site, and is generally consistent through the present.

The northern adjoining property consisted of undeveloped land from the early 1930s through the early 1950s, followed by Interstate 15 by the mid-1950s. The eastern adjoining property consists of undeveloped land and an intermittent stream from the early 1930s through the early 1950s, followed by undeveloped land from the mid-1950s through present day. The southern adjoining consisted of a road followed by undeveloped land as early as the early 1930s and has remained relatively unchanged through the present. The western adjoining property consisted of undeveloped land followed by a road from the early 1930s through the early 1950s, followed by

the development of the existing Interstate 15 by the mid-1950s. Recognized Environmental Conditions (RECs) were not identified during the review of the historical information.

Records Review
Selected federal and state environmental regulatory databases as well as responses from state and local regulatory agencies were reviewed. The site was not identified in the regulatory database and no mapped sites were identified that represent a REC in connection with the site, based on distance, topographic gradient, and/or regulatory status.

Site Reconnaissance
During the site reconnaissance, Terracon observed apparent electrical conduit riser pipes, graded areas with apparent former building pads, approximately three cubic yards (cy) of asphalt, concrete, and ceramic/clay tile debris, and several 8-inch cast iron/steel pipes from apparent abandoned water wells and/or utility pipes.

Adjoining Properties
The northern adjoining property consists of vacant land followed by Interstate 15. The eastern adjoining property consists of vacant land. The southern adjoining property consists of Stoddard Wells Road followed by vacant land. The western adjoining property consists of Interstate 15. RECs were not identified with the adjoining properties.

Significant Data Gaps

No significant data gaps were identified.

Conclusions

We have performed a Phase I ESA consistent with the procedures included in ASTM Practice E 1527-13 at the northeast corner of Interstate 15 and Stoddard Wells Road in Apple Valley, San Bernardino County, California, the site. Recognized Environmental Conditions (RECs) or Controlled RECs (CRECs) were not identified in connection with the site.

Recommendations

Based on the scope of services, limitations, and conclusions of this assessment, Terracon did not identify RECs or CRECs. As such, no additional investigation is warranted at this time.

Several 8-inch cast iron/steel pipes from apparent abandoned water wells and/or utility pipes were identified on the site. Although not a REC, Terracon recommends that if the features are groundwater wells, and they are no longer to be used, they should be abandoned in accordance with regulatory guidelines prior to site development activities.

1.0 INTRODUCTION

1.1 Site Description

Site Name	Proposed Love's Travel Stop – Apple Valley
Site Location/Address	Northeast corner of Interstate 15 and Stoddard Wells Road in Apple Valley, San Bernardino County, California San Bernardino County assessor parcel number (APN) 0472-222-10
Land Area	Approximately 34.5-acres
Site Improvements	The site consisted of vacant land with apparent utility conduit pipes, possible water well(s), graded areas across the site, and apparent building pads
Anticipated Future Site Use	Redevelopment into Love's Truck Stop
Purpose of the ESA	Site Acquisition

The location of the site is depicted on Exhibit 1 of Appendix A, which was reproduced from a portion of the USGS Rosamond, California 7.5-minute series topographic map. The site and adjoining properties are depicted on the Site Diagram, which is included as Exhibit 2 of Appendix A. Acronyms and terms used in this report are described in Appendix F.

1.2 Scope of Services

This Phase I Environmental Site Assessment (ESA) was performed in accordance with Terracon Proposal No. PCB207107, dated September 30, 2020, and was conducted consistent with the procedures included in ASTM E1527-13, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*. The purpose of this ESA was to assist the client in developing information to identify RECs in connection with the site as reflected by the scope of this report. This purpose was undertaken through user-provided information, a regulatory database review, historical and physical records review, interviews, including local government inquiries, as applicable, and a visual noninvasive reconnaissance of the site and adjoining properties. Limitations, ASTM deviations, and significant data gaps (if identified) are noted in the applicable sections of the report.

ASTM E1527-13 contains a new definition of "migrate/migration," which refers to "the movement of hazardous substances or petroleum products in any form, including, for example, solid and liquid at the surface or subsurface, and vapor in the subsurface." By including this explicit reference to migration in ASTM E1527-13, the Standard clarifies that the potential for vapor migration should be addressed as part of a Phase I ESA. This Phase I ESA has considered vapor migration in evaluation of RECs associated with the site.

1.3 Standard of Care

This ESA was performed in accordance with generally accepted practices of this profession, undertaken in similar studies at the same time and in the same geographical area. We have endeavored to meet this standard of care, but may be limited by conditions encountered during performance, a client-driven scope of work, or inability to review information not received by the report date. Where appropriate, these limitations are discussed in the text of the report, and an evaluation of their significance with respect to our findings has been conducted.

Phase I ESAs, such as the one performed at this site, are of limited scope, are noninvasive, and cannot eliminate the potential that hazardous, toxic, or petroleum substances are present or have been released at the site beyond what is identified by the limited scope of this ESA. In conducting the limited scope of services described herein, certain sources of information and public records were not reviewed. It should be recognized that environmental concerns may be documented in public records that were not reviewed. No ESA can wholly eliminate uncertainty regarding the potential for RECs in connection with a property. Performance of this practice is intended to reduce, but not eliminate, uncertainty regarding the potential for RECs. No warranties, express or implied, are intended or made. The limitations herein must be considered when the user of this report formulates opinions as to risks associated with the site or otherwise uses the report for any other purpose. These risks may be further evaluated – but not eliminated – through additional research or assessment. We will, upon request, advise you of additional research or assessment options that may be available and associated costs.

1.4 Additional Scope Limitations, ASTM Deviations and Data Gaps

Based upon the agreed-on scope of services, this ESA did not include subsurface or other invasive assessments, vapor intrusion assessments or indoor air quality assessments (i.e. evaluation of the presence of vapors within a building structure), business environmental risk evaluations, or other services not particularly identified and discussed herein. Credentials of the company (Statement of Qualifications) have not been included in this report but are available upon request. Pertinent documents are referred to in the text of this report, and a separate reference section has not been included. Reasonable attempts were made to obtain information within the scope and time constraints set forth by the client; however, in some instances, information requested is not, or was not, received by the issuance date of the report. Information obtained for this ESA was received from several sources that we believe to be reliable; nonetheless, the authenticity or reliability of these sources cannot and is not warranted hereunder. This ESA was further limited by the following:

- Reasonable attempts were made to contact the local and state government agencies; however, at the issuance of this report, responses from the South Coast Air Quality Management District (SCAQMD), San Bernardino County Public Health Department (SBCPHD), City Clerk of Apple Valley, and San Bernardino County Community Department (SBCCD) have not been received. Based on the historical and environmental

regulatory database reviews, the absence of responses from the agencies does not appear to represent a significant data gap.

An evaluation of the significance of limitations and missing information with respect to our findings has been conducted, and where appropriate, significant data gaps are identified and discussed in the text of the report. However, it should be recognized that an evaluation of significant data gaps is based on the information available at the time of report issuance, and an evaluation of information received after the report issuance date may result in an alteration of our conclusions, recommendations, or opinions. We have no obligation to provide information obtained or discovered by us after the issuance date of the report, or to perform any additional services, regardless of whether the information would affect any conclusions, recommendations, or opinions in the report. This disclaimer specifically applies to any information that has not been provided by the client.

This report represents our service to you as of the report date and constitutes our final document; its text may not be altered after final issuance. Findings in this report are based upon the site's current utilization, information derived from the most recent reconnaissance and from other activities described herein; such information is subject to change. Certain indicators of the presence of hazardous substances or petroleum products may have been latent, inaccessible, unobservable, or not present during the most recent reconnaissance and may subsequently become observable (such as after site renovation or development). Further, these services are not to be construed as legal interpretation or advice.

1.5 Reliance

This ESA report is prepared for the exclusive use and reliance of Love's Travel Stops & Country Stores, Inc. Use or reliance by any other party is prohibited without the written authorization of Love's Travel Stops & Country Stores, Inc. and Terracon.

Reliance on the ESA by the client and all authorized parties will be subject to the terms, conditions and limitations stated in the proposal, ESA report, and Terracon's Master Services Agreement. The limitation of liability defined in the Master Services Agreement is the aggregate limit of Terracon's liability to the client and all relying parties.

Continued viability of this report is subject to ASTM E1527-13 Sections 4.6 and 4.8. If the ESA will be used by a different user (third party) than the user for whom the ESA was originally prepared, the third party must also satisfy the user's responsibilities in Section 6 of ASTM E1527-13.

1.6 Client Provided Information

Prior to the site visit, Chris Weldon, client's representative, was asked to provide the following user questionnaire information as described in ASTM E1527-13 Section 6.

Client Questionnaire Responses

Client Questionnaire Item	Client Did Not Respond	Client's Response	
		Yes	No
Specialized Knowledge or Experience that is material to a REC in connection with the site.			X
Actual Knowledge of Environmental Liens or Activity Use Limitations (AULs) that may encumber the site.			X
Actual Knowledge of a Lower Purchase Price because contamination is known or believed to be present at the site.			X
Commonly Known or Reasonably Ascertainable Information that is material to a REC in connection with the site.			X
Obvious Indicators of Contamination at the site.			X

Terracon's consideration of the client provided information did not identify RECs. A copy of the questionnaire is included in Appendix C.

2.0 PHYSICAL SETTING

Physical Setting Information		Source
Topography		
Site Elevation	Approximately 2,900 to 2,950 feet above mean sea level.	See Exhibit 1 in Appendix A – USGS Topographic Map Victorville (1993) and Apple Valley North (1993), California USGS 7.5-minute series
Topographic Gradient	Variable with a general gradient toward the south-southwest.	
Closest Surface Water	Bell Mountain Wash, dry, is located approximately 400 feet south of the site.	
Soil Characteristics		
Soil Type & Description	Cajon-Arizo Complex (62 %) Located on the southern portion of the site, these soils are somewhat excessively drained with 2 to 15 percent slopes. Parent material consists of alluvium derived from granite sources. Typical soil profile consists of gravelly sand down to a total depth of 60 inches below ground surface (bgs). Nebona-Cuddeback Complex (38%)	San Bernardino County, California USDA-NRCS Web Soil Survey issued May 27, 2020 https://websoilsurvey.sc.egov.usda.gov

Physical Setting Information		Source
	Located on the northern portion of the site, these soils are well drained with 2 to 9 percent slopes. Parent material consists of alluvium derived from mixed sources. Typical soil profile consists of sandy loam in the upper two inches, fine sandy loam to sandy loam down to 8 inches bgs, followed by stratified gravelly sand to loam to a total depth of 65 inches bgs.	
Geology/Hydrogeology		
Formation	Quaternary alluvium (Qa)	California Department of Conservation, Geologic Map of California, 2010
Description	Alluvial gravel and sand.	
Estimated Depth to First Occurrence of Groundwater	Site: Unknown, no data readily available. Apparent on-site well(s) were not gauged. Vicinity: Approximately 110 feet bgs as measured in monitoring well BMWP-2, located approximately 1,400 feet west-southwest of the site (last measured 01/22/2019).	California Water Resources Control Board, GeoTracker Victorville Class III Landfill Stoddard Wells Road Victorville, CA 92392 Lahontan RWQCB, Case #: 6B360304025 Global ID: L10004389991 www.geotracker.waterboards.ca.gov
*Hydrogeologic Gradient	May be inferred to be parallel to topographic gradient (primarily to the south-southwesterly).	

* The groundwater flow direction and the depth to shallow, unconfined groundwater, if present, would likely vary depending upon seasonal variations in rainfall and other hydrogeological features. Without the benefit of on-site groundwater monitoring wells surveyed to a datum, groundwater depth and flow direction beneath the site cannot be directly ascertained.

3.0 HISTORICAL USE INFORMATION

Terracon reviewed the following historical sources to develop a history of the previous uses of the site and surrounding area, in order to help identify RECs associated with past uses. Copies of selected historical documents are included in Appendix C.

3.1 Historical Topographic Maps, Aerial Photographs, Sanborn Maps

Readily available historical USGS topographic maps, selected historical aerial photographs (at approximately 5 to 10-year intervals) and historical fire insurance maps produced by the Sanborn Map Company were reviewed (if available) to evaluate land development and obtain information concerning the history of development on and near the site. Reviewed historical topographic maps, aerial photographs and Sanborn maps are summarized below.

Historical fire insurance maps produced by the Sanborn Map Company were requested from EDR to evaluate past uses and relevant characteristics of the site and surrounding properties. Based upon inquiries to the above-listed Sanborn provider, Sanborn maps were not available for the site.

- Topographic map:
  - Barstow, California, published in **1932** and **1934** (1:125,000)
  - Victorville, California, published in **1956**, **1968**, **1993**, and **2012** (1:24,000)
  - Apple Valley North, California, published in **1970**, **1993**, and **2012** (1:24,000)
- Aerial photograph:
  - USDA, **1953**, **1959**, **1968**, and **1984** (1"=500')
  - USGS, **1973** (1"=500')
  - USGS/DOQQ, **1994** (1"=500')
  - USDA/NAIP, **2005**, **2009**, **2012**, and **2016** (1"=500')

Historical Maps and Aerial Photographs

Direction	Description
Site	Undeveloped land with an intermittent stream and water well (1932-1953); well and intermittent stream no longer depicted on topographic maps (1956); undeveloped land with an unimproved road transecting the site from south to north (1959-1993); apparent grading activities and rectangular building pads on the western portions of the site, and a graded dirt road entering the southern portion of the site and extending northeasterly across the western portion of the site (1994-2016).
North	Undeveloped land (1932-1953); undeveloped land followed by Interstate 15 (1956-2016).
East	Undeveloped land and intermittent stream (1932-1953); undeveloped land (1956-2016).
South	Developed with a road followed by undeveloped land (1932-2016).
West	Undeveloped land followed by a road (1932-1953); developed with the existing Interstate 15 (1956-2016).

3.2 Historical City Directories

EDR Digital Archive, Haines Criss-Cross, and Luskey city directories used in this study were made available through EDR (selected years reviewed: 1964 through 2017) and were reviewed at approximate five-year intervals, if readily available. Street listings not available prior to 1964. The site is unaddressed, and identified as northeast corner of Interstate 15 and Stoddard Wells Road in Apple Valley, California.

Historical City Directories

Direction	Description
Site	No address – vacant land
North	No address – vacant land
East	No address – vacant land

Direction	Description
South	No address – vacant land
West	Interstate 15

Based on a review of the San Bernardino County Parcel Viewer, the site and adjoining properties are unaddressed. Based on the undeveloped nature of the site and adjoining properties, the absence of address and city directory listings does not represent a significant data gap or REC.

3.3 Site Ownership

Based on a review of the San Bernardino County Assessor-Recorder-Clerk's online Property Information Management System, the current site owner is listed as Deaguiar Family Trust since January 21, 2011. Previous owners were not identified.

3.4 Title Search

At the direction of the client, a title search was not included as part of the scope of services. Unless notified otherwise, we assume that the client is evaluating this information outside the scope of this report.

3.5 Environmental Liens and Activity and Use Limitations

The EDR regulatory database report included a review of both Federal and State Engineering Control (EC) and Institutional Control (IC) databases. Based on a review of the database report, the site was not listed on the EC or IC databases. Please note that in addition to these federal and state listings, AULs can be recorded at the county and municipal level that may not be listed in the regulatory database report. Environmental lien and activity and use limitation records recorded against the site were not provided by the client. At the direction of the client, performance of a review of these records was not included as part of the scope of services and unless notified otherwise, we assume that the client is evaluating this information outside the scope of this report.

3.6 Interviews Regarding Current and Historical Site Uses

The following individual was interviewed regarding the current and historical use of the site.

Interviews

Interviewer	Name / Phone #	Title	Date/Time
Mr. Steve Claar	Mr. Mike Harrison / (909) 989-7771	Vice President / Lee & Associates	October 29, 2020 / 9:00 AM

Terracon interviewed Mr. Mike Harrison regarding current and historical use of the site. Mr. Harrison has been associated with the site for approximately 15 years. He indicated the site was

partially graded during the 1990s, but has remained vacant and unoccupied through the present. He was not familiar with the apparent water well(s) observed during the site reconnaissance. Mr. Harrison was not aware of current or historical on-site septic systems, oil/water separators, grease traps, aboveground storage tanks (ASTs), or underground storage tanks (USTs). Additionally, Mr. Harrison was not aware of pending, threatened or past environmental litigation, proceedings or notices of possible violations of environmental laws or liability or potential environmental concerns in connection with the site.

3.7 Prior Report Review

Terracon requested the client provide any previous environmental reports they are aware of for the site. Previous reports were not provided by the client to Terracon for review.

4.0 RECORDS REVIEW

Regulatory database information was provided by EDR, a contract information services company. The purpose of the records review was to identify RECs in connection with the site. Information in this section is subject to the accuracy of the data provided by the information services company and the date at which the information is updated. The scope herein did not include confirmation of facilities listed as "unmappable" by regulatory databases.

In some of the following subsections, the words up-gradient, cross-gradient and down-gradient refer to the topographic gradient in relation to the site. As stated previously, the groundwater flow direction and the depth to shallow groundwater, if present, would likely vary depending upon seasonal variations in rainfall and the depth to the soil/bedrock interface. Without the benefit of viable on-site groundwater monitoring wells surveyed to a datum, groundwater depth and flow direction beneath the site cannot be directly ascertained.

4.1 Federal and State/Tribal Databases

Listed below are the facility listings identified on federal and state/tribal databases within the ASTM-required search distances from the approximate site boundaries. Database definition, descriptions, and the database search report are included in Appendix D.

Federal Databases

Database	Description	Distance (miles)	Listings
ABANDONED MINES	Abandoned Mines	0.25	0
CERCLIS	Comprehensive Environmental Response, Compensation, & Liability Information System	0.5	0

Database	Description	Distance (miles)	Listings
CERCLIS / NFRAP	Comprehensive Environmental Response, Compensation, & Liability Information System/No Further Remedial Action Planned	0.5	0
ECHO	Enforcement & Compliance History Information	TP	0
EDR Hist Auto	EDR Exclusive Historical Auto Stations	0.125	0
ERNS	Emergency Response Notification System	Site	0
FINDS	Facility Index System/Facility Registry System	Site	0
FUDS	Formerly Used Defense Sites	1.0	0
HMIRS	Hazardous Materials Information Reporting System	Site	0
NPL	National Priorities List	1	0
NPL (Delisted)	National Priorities Delisted List	0.5	0
RCRA CORRACTS/ TSD	RCRA Corrective Action Activity	1	0
RCRA Generators	Resource Conservation and Recovery Act	0.25	0
RCRA-LQG	RCRA – Large Quantity Generators	0.25	0
RCRA-SQG	RCRA – Small Quantity Generators	0.25	0
RCRA Non-CORRACTS/ TSD	RCRA Non-Corrective Action Activity	0.5	0
RCRA NonGen / NLR	RCRA – Non-Generators / No Longer Regulated	0.25	0
SEMS	Superfund Enterprise Management System	0.50	0
US MINES	Mines Master Index File	0.25	0

State/Tribal Databases

Database	Description	Distance (miles)	Listings
AOCONCERN	San Gabriel Valleys Area of Concern	1.0	0
AST	Aboveground Petroleum Storage Tank Facilities	0.25	0
CA FID UST	Facility Inventory Database	0.25	0
CALSITES	CalSites Database	1.0	0
CALSITES (AWP)	Active Annual Workplan Sites	1.0	0
CERS	CalEPA Regulated Site Portal Data	Site	0
CERS HAZ WASTE	California Environmental Reporting System (CERS) HAZ WASTE	0.25	0

Database	Description	Distance (miles)	Listings
CERS TANKS	California Environmental Reporting System (CERS) Tanks	0.25	0
CIWQS	California Integrated Water Quality System	Site	0
CORTESE	"Cortese" Hazardous Waste & Substances Sites List	0.5	0
CPS-SLIC	Statewide SLIC Cases (GEOTRACKER)	0.5	0
EMI	Emissions Inventory Data	Site	0
ENF	Enforcement Action Listing	Site	0
ENVIROSTOR	Envirostor Database	1.0	0
Financial Assurance	Financial Assurance Information Listing	Site	0
HAZNET	Facility and Manifest Data	Site	0
HIST Cal-Sites	Calsites Database	1.0	0
HIST CORTESE	Hazardous Waste & Substance Site List	0.5	0
HIST UST	Hazardous Substance Storage Container Database	0.25	0
HWP	EnviroStor Permitted Facilities Listing	1.0	0
ICE	ICE	Site	0
LUST	Leaking Underground Storage Tanks	0.5	0
MINES	Mines Site Location Listing	0.25	0
NOTIFY 65	Proposition 65 Records	1.0	0
NPDES	NPDES Permit Listing	Site	0
RESPONSE	State Response Sites	1.0	0
SAN BERN. CO. PERMIT	San Bernardino County Permit	0.25	0
SWEEPS UST	SWEEPS UST Listing	0.25	0
SWF/LF	Solid Waste Facilities/Landfills	0.5	0
UST	Underground Storage Tank Facilities	0.25	0
WDS	Waste Discharge System	Site	0
WIP	Well Investigation Program Case List	0.25	0
WMUDS/SWAT	Waste Management Unit Database	0.50	0

In addition to the above ASTM-required listings, Terracon reviewed other federal, state, local, and proprietary databases provided by the database firm. A list of the additional reviewed databases is included in the regulatory database report included in Appendix D.

The site was not identified in the regulatory database and no mapped sites were identified that represent a REC in connection with the site, based on distance, topographic gradient, and/or regulatory status.

Unmapped facilities are those that do not contain sufficient address or location information to evaluate the facility listing locations relative to the site. The report listed six facilities in the

unmapped section. Determining the location of unmapped facilities is beyond the scope of this assessment; however, none of these facilities were identified as the site or adjacent properties. These facilities are listed in the database report in Appendix D.

4.2 Local Agency Inquiries

Agency Contacted/ Contact Method	Response
Department of Toxic Substance Control / Email: pubreqact@dtsc.ca.gov	On October 12, 2020, Terracon received a response from the agency indicating records were not identified for the site.
South Coast Air Quality Management District / Online: www.aqmd.gov	At the issuance of this report, a response has yet to be received from this agency.
Lahontan Regional Water Quality Control Board / by e-mail rb4-publicrecords@waterboards.ca.gov	According to the Angelica Soto, Office Technician for the LRWQCB, no records were found associated with the site, because they are unable to search database using APNs.
San Bernardino County Public Health Department / Fax: (909) 387-4323	At the issuance of this report, a response has yet to be received from this agency.
City of Apple Valley – City Clerk	At the issuance of this report, a response has yet to be received from this agency.
San Bernardino County Community Development / Fax: (909) 387-8306	At the issuance of this report, a response has yet to be received from this agency.

Written and/or verbal requests were submitted to certain local governmental agencies regarding potential RECs at the site. At the issuance of this report, responses had not been received from the Department of Toxic Substances Control and LA County Department of Public Health. This lack of information is considered a data gap; however, based on the other sources of information reviewed, it does not appear to be significant.

4.3 Local Area Knowledge

Based on a review of the California Geologic Energy management Division (CalGEM), https://www.conservation.ca.gov/calgem, there are no active or plugged oil production wells located at the site or adjoining properties.

5.0 SITE RECONNAISSANCE

5.1 General Site Information

Information contained in this section is based on a visual reconnaissance conducted while walking through the site and the accessible interior areas of structures, if any, located on the site. The site and adjoining properties are depicted on the Site Diagram, which is included in Exhibit 2 of

Appendix A. Photo documentation of the site at the time of the visual reconnaissance is provided in Appendix B. Credentials of the individuals planning and conducting the site visit are included in Appendix E.

General Site Information

Site Reconnaissance	
Field Personnel	Carl Parten
Reconnaissance Date	October 27, 2020
Weather Conditions	Sunny / 75°
Site Contact/Title	None

Site Utilities	
Drinking Water	N/A
Wastewater	N/A
Electric	N/A
Natural Gas	N/A

5.2 Overview of Current Site Occupants and Operations

The site is located at the northeast corner of Interstate 15 and Stoddard Wells Road, in Apple Valley, San Bernardino County, California. The property consists of an approximately 34.5-acre parcel of generally undeveloped land, identified by the San Bernardino County assessor parcel number (APN) 0472-222-10. During the site reconnaissance, the site was observed to be unoccupied. In addition to the features discussed further below the table, Terracon observed apparent electrical conduit pipes and graded areas with apparent former building pads.

5.3 Site Observations

The following table summarizes site observations and interviews. Affirmative responses (designated by an “X”) are discussed in more detail following the table.

Site Characteristics

Category	Item or Feature	Observed or Identified
Site Operations, Processes, and Equipment	Emergency generators	
	Elevators	
	Air compressors	
	Hydraulic lifts	
	Dry cleaning	

Category	Item or Feature	Observed or Identified
	Photo processing	
	Ventilation hoods and/or incinerators	
	Waste treatment systems and/or water treatment systems	
	Heating and/or cooling systems	
	Paint booths	
	Sub-grade mechanic pits	
	Wash-down areas or carwashes	
	Pesticide/herbicide production or storage	
	Printing operations	
	Metal finishing (e.g., electroplating, chrome plating, galvanizing, etc.)	
	Salvage operations	
	Oil, gas or mineral production	
	Other processes or equipment	
Aboveground Chemical or Waste Storage	Aboveground storage tanks	
	Drums, barrels and/or containers ³ 5 gallons	
	MSDS or SDS	
Underground Chemical or Waste Storage, Drainage or Collection Systems	Underground storage tanks or ancillary UST equipment	
	Sumps, cisterns, French drains, catch basins and/or dry wells	
	Grease traps	
	Septic tanks and/or leach fields	
	Oil/water separators, clarifiers, sand traps, triple traps, interceptors	
	Pipeline markers	
	Interior floor drains	
Electrical Transformers/ PCBs	Transformers and/or capacitors	
	Other equipment	

Category	Item or Feature	Observed or Identified
Releases or Potential Releases	Stressed vegetation	
	Stained soil	
	Stained pavement or similar surface	
	Leachate and/or waste seeps	
	Trash, debris and/or other waste materials	X
	Dumping or disposal areas	
	Construction/demolition debris and/or dumped fill dirt	
	Surface water discoloration, odor, sheen, and/or free-floating product	
	Strong, pungent or noxious odors	
	Exterior pipe discharges and/or other effluent discharges	
Other Notable Site Features	Surface water bodies	
	Quarries or pits	
	Wastewater lagoons	
	Wells	X

Releases or Potential Releases

Trash, debris and/or other waste materials

During the reconnaissance, Terracon observed approximately three cubic yards (cy) of debris along the dirt road near the southwestern portion of the site. The debris piles consisted of asphalt, concrete, and ceramic/clay tile, plywood and miscellaneous plastic, glass and metal. Hazardous materials or evidence of a release was not observed. Based on site observations, the debris piles do not represent a REC to the site.

Other Notable Site Features

Wells

Several 8-inch cast iron/steel pipes from apparent abandoned water wells and/or utility pipes were observed on the southwestern and west-central portions of the site. Based on site observations, the well(s)/utility pipes do not represent a REC to the site; however, Terracon recommends that if the features are groundwater wells, and they are no longer to be used, they should be abandoned in accordance with regulatory guidelines prior to site development activities.

6.0 ADJOINING PROPERTY RECONNAISSANCE

Visual observations of adjoining properties (from site boundaries) are summarized below.

Adjoining Properties

Direction	Description
North	The northern adjoining property consists of vacant land followed by Interstate 15.
East	The eastern adjoining property consists of vacant land.
South	The southern adjoining property consists of Stoddard Wells Road followed by vacant land.
West	The western adjoining property consists of Interstate 15.

RECs were not observed with the adjoining properties.

7.0 ADDITIONAL SERVICES

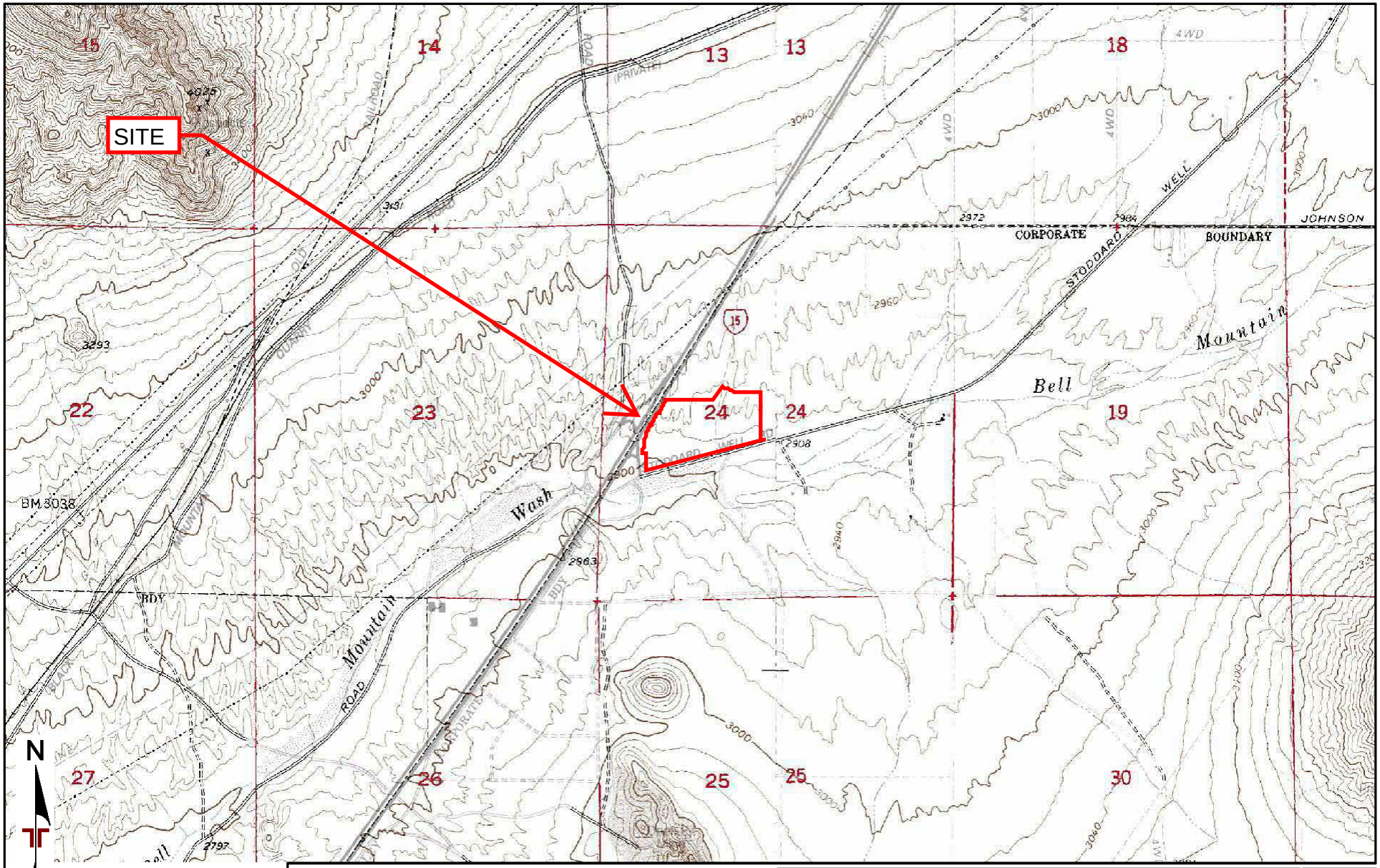
Per the agreed scope of services specified in the proposal, additional services (e.g. asbestos sampling, lead-based paint sampling, wetlands evaluation, lead in drinking water testing, radon testing, vapor encroachment screening, etc.) were not conducted.

8.0 DECLARATION

I, Carl A. Parten, declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in Section 312.10 of 40 CFR 312; and I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the site. I have developed and performed the All Appropriate Inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Carl A. Parten
Senior Principal / Office Manager III

APPENDIX A
EXHIBIT 1 – TOPOGRAPHIC MAP
EXHIBIT 2 – SITE DIAGRAM



TOPOGRAPHIC MAP IMAGE COURTESY OF THE U.S. GEOLOGICAL SURVEY QUADRANGLES INCLUDE: VICTORVILLE, CA (1/1/1993) and APPLE VALLEY NORTH, CA (1/1/1993).

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Manager:	TGM
Drawn by:	SNC
Checked by:	TGM
Approved by:	CAP

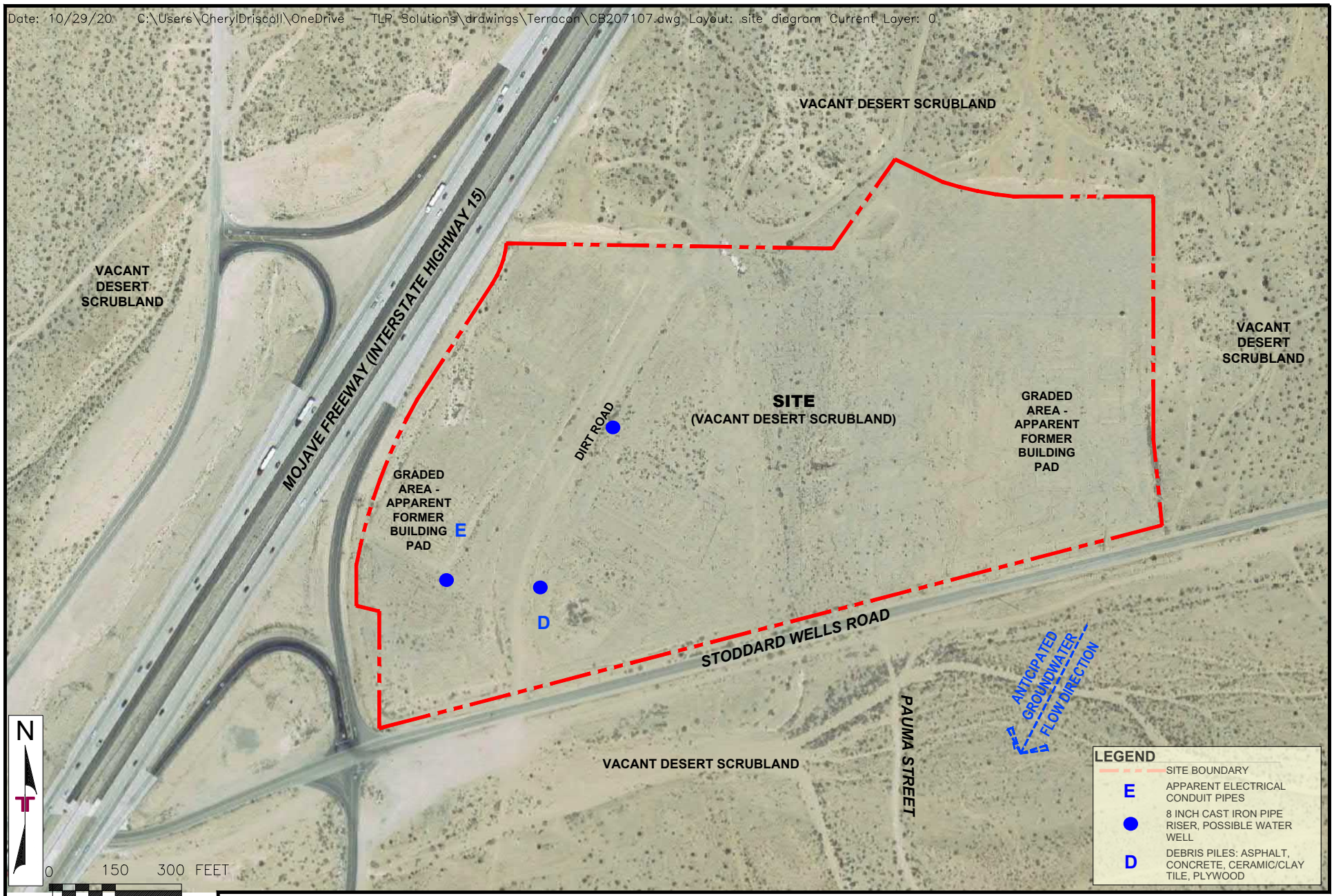
Project No.	CB207107
Scale:	1"=2,000'
File Name:	TOPO
Date:	OCT 2020

Terracon
1355 E Cooley Dr, Ste C
Colton, CA 92324-3954

TOPOGRAPHIC MAP

PROPOSED LOVE'S TRAVEL STOP - APPLE VALLEY
NORTHEAST CORNER OF INTERSTATE 15
AND STODDARD WELLS ROAD
APPLE VALLEY, SAN BERNARDINO COUNTY, CALIFORNIA

Exhibit
1



APPROXIMATE SCALE

THIS DRAWING SHOULD NOT BE USED SEPARATELY FROM ORIGINAL REPORT.

SOURCE: GOOGLE EARTH, 2020; IMAGERY DATE: 8/25/2018

Project Mngr:	TGM
Drawn By:	CDD
Checked By:	CAP
Approved By:	

Project No.	CB207107
Scale:	AS SHOWN
Date:	10/29/20

Terracon
Consulting Engineers and Scientists
1355 E. Cooley Dr., Ste. C
Colton, CA 92324-3954

SITE DIAGRAM

PROPOSED LOVE'S TRAVEL STOP - APPLE VALLEY
NORTHEAST CORNER OF INTERSTATE 15 AND STODDARD WELLS ROAD
APPLE VALLEY, SAN BERNARDINO COUNTY, CALIFORNIA 92307

EXHIBIT

2

APPENDIX B
SITE PHOTOGRAPHS



Photo #1 View of northwestern portion of site, looking east.



Photo #2 View of northwestern portion of site, looking north.



Photo #3 View of a gravel pile located near the north-central portion of the site.



Photo #4 View of a survey marker near the north-central portion of the site.



Photo #5 View of the northern portion of the site looking west.



Photo #6 View along the northern portion of the site looking east.



Photo #7 View along the eastern portion of the site looking southeast toward Stoddard Wells Road.



Photo #8 View of along the eastern portion of the site looking northeasterly.



Photo #9 View along the southern portion of the site looking southwesterly.



Photo #10 View of Stoddard Wells Road, looking south.



Photo #11 View across the site looking west toward I-15 Freeway.



Photo #12 View of a survey marker located near the central portion of the site.



Photo #13 View of a gravel road entrance at the southwestern portion of the site, accessed from Stoddard Wells Road.



Photo #14 View of approximately one cubic yard of asphalt and concrete debris located near the southwestern portion of the site.



Photo #15 View of miscellaneous debris along the gravel road near the southwestern portion of the site.



Photo #16 View of approximately 2 cubic yards of ceramic and clay tile dumped material along the southwestern portion of the site.



Photo #17 View of plywood debris on the southwestern portion of the site.



Photo #18 View of an apparent 8-inch diameter cast iron pipe, possible abandoned water well on the southwestern portion of the site.



Photo #19 View of the southwestern adjoining property, access ramp to I-15 Freeway.



Photo #20 View of the southern adjoining property, a gravel parking area near I-15 Freeway access ramp.



Photo #21 View of the northern adjoining property, with an apparent stockpiled area.



Photo #22 View looking east toward the eastern adjoining property.

APPENDIX C
HISTORICAL DOCUMENTATION AND USER QUESTIONNAIRE

Client/User Required Questionnaire

Terracon

Person Completing Questionnaire	Name: Chris Weldon Company: Love's	Phone: 405.302.6673 Email: Chris.Weldon@loves.com
Site Name	Proposed Love's Travel Stop – Apple Valley	
Site Address	Northeast corner of Interstate 15 and Stoddard Wells Road, in Apple Valley, San Bernardino County, California (APN: 0472-222-10)	
Point of Contact for Access	Name: Mike Harrison Company: Lee & Associates	Phone: 909-989-7771 Email: MHarrison@lee-Assoc.com
Access Restrictions or Special Site Requirements?	X No ___Yes (If yes, please explain)	
Confidentiality Requirements?	X No ___Yes (If yes, please explain)	
Current Site Owner	Name: DeAguiar Family Trust Company:	Phone: Email:
Current Site Operator	Name: Company: —	Phone: Email:
Reasons for ESA (e.g., financing, acquisition, lease, etc.)	Property Purchase	
Anticipated Future Site Use	Truck Stop	
Relevant Documents?	Please provide Terracon copies of prior Phase I or II ESAs, Asbestos Surveys, Environmental Permits or Audit documents, Underground Storage Tank documents, Geotechnical Investigations, Site Surveys, Diagrams or Maps, or other relevant reports or documents.	

ASTM User Questionnaire

In order to qualify for one of the Landowner Liability Protections (LLPs) offered by the Small Business Relief and Brownfields Revitalization Act of 2001 (the "Brownfields Amendments"), the user must respond to the following questions. Failure to provide this information to the environmental professional may result in significant data gaps, which may limit our ability to identify recognized environmental conditions resulting in a determination that "all appropriate inquiry" is not complete. This form represents a type of interview and as such, the user has an obligation to answer all questions in good faith, to the extent of their actual knowledge.

1) Did a search of recorded land title records (or judicial records where appropriate) identify any environmental liens filed or recorded against the property under federal, tribal, state, or local law (40 CFR 312.25)?
X No ___Yes (If yes, explain below and send Terracon a copy of the title records or judicial records reviewed.)

2) Did a search of recorded land title records (or judicial records where appropriate) identify any activity and use limitations (AULs), such as engineering controls, land use restrictions, or institutional controls that are in place at the property and/or have been filed or recorded against the property under federal, tribal, state, or local law (40 CFR 312.26)?
X No ___Yes (If yes, explain below and send Terracon a copy of the title records or judicial records reviewed.)

3) Do you have any specialized knowledge or experience related to the site or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the site or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business (40 CFR 312-28)?
X No ___Yes (If yes, explain below)

4) Do you have actual knowledge of a lower purchase price because contamination is known or believed to be present at the site (40 CFR 312.29)?
X No ___Yes ___Not applicable (If yes or Not applicable, explain below)

5) Are you aware of commonly known or reasonably ascertainable information about the site that would help the environmental professional to identify conditions indicative of releases or threatened releases (40 CFR 312.30)?
X No ___Yes (If yes, explain below)

6) Based on your knowledge and experience related to the site, are there any obvious indicators that point to the presence or likely presence of contamination at the site (40 CFR 312.31)?
X No ___Yes (If yes, explain below)

Comments or explanations:

Please return this form with the signed authorization to proceed. Proposal No. PCB207107

Proposed Loves Travel Stop-Apple Valley

Interstate 15 and Stoddard Wells Road

Apple Valley, CA 92307

Inquiry Number: 6222597.8

October 12, 2020

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

10/12/20

Site Name:

Proposed Loves Travel Stop-A
Interstate 15 and Stoddard We
Apple Valley, CA 92307
EDR Inquiry # 6222597.8

Client Name:

Terracon
1355 East Cooley Drive
Colton, CA 92324
Contact: Laura Hedman

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

Year	Scale	Details	Source
2016	1"=500'	Flight Year: 2016	USDA/NAIP
2012	1"=500'	Flight Year: 2012	USDA/NAIP
2009	1"=500'	Flight Year: 2009	USDA/NAIP
2005	1"=500'	Flight Year: 2005	USDA/NAIP
1994	1"=500'	Acquisition Date: May 29, 1994	USGS/DOQQ
1984	1"=500'	Flight Date: October 07, 1984	USDA
1973	1"=500'	Flight Date: June 04, 1973	USGS
1968	1"=500'	Flight Date: May 28, 1968	USDA
1959	1"=500'	Flight Date: June 22, 1959	USDA
1953	1"=500'	Flight Date: January 21, 1953	USDA

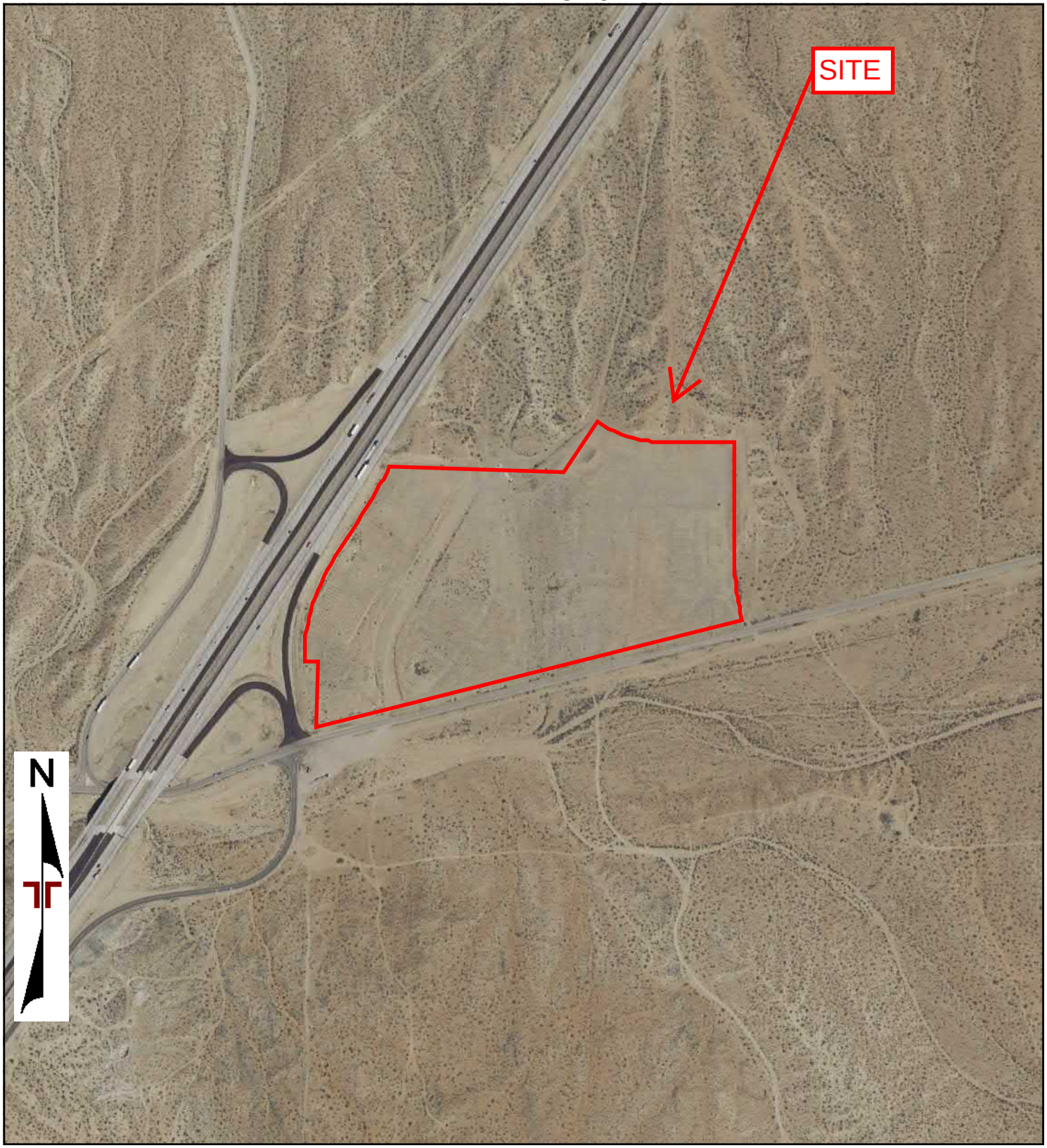
When delivered electronically by EDR, the aerial photo images included with this report are for ONE TIME USE ONLY. Further reproduction of these aerial photo images is prohibited without permission from EDR. For more information contact your EDR Account Executive.

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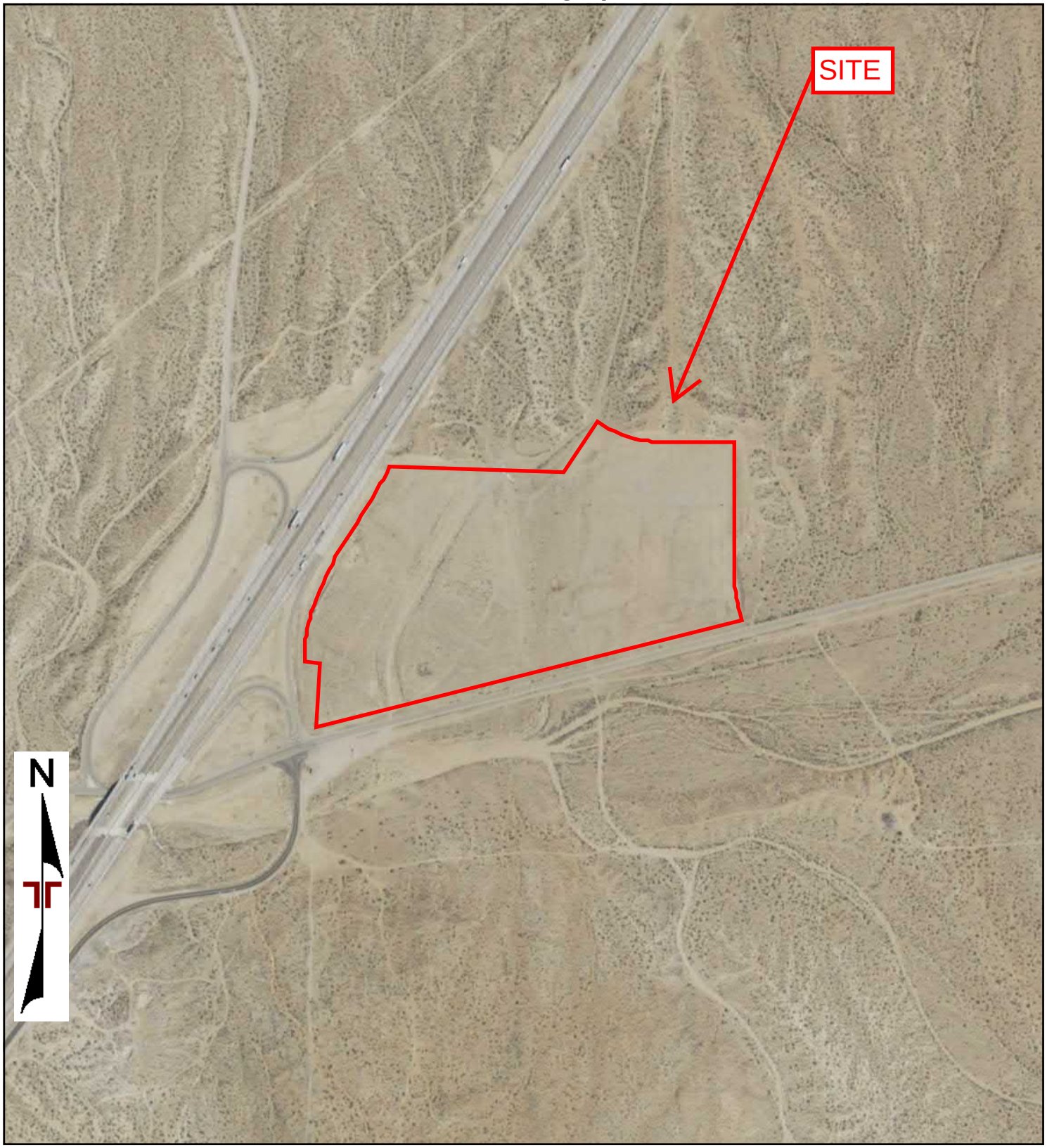
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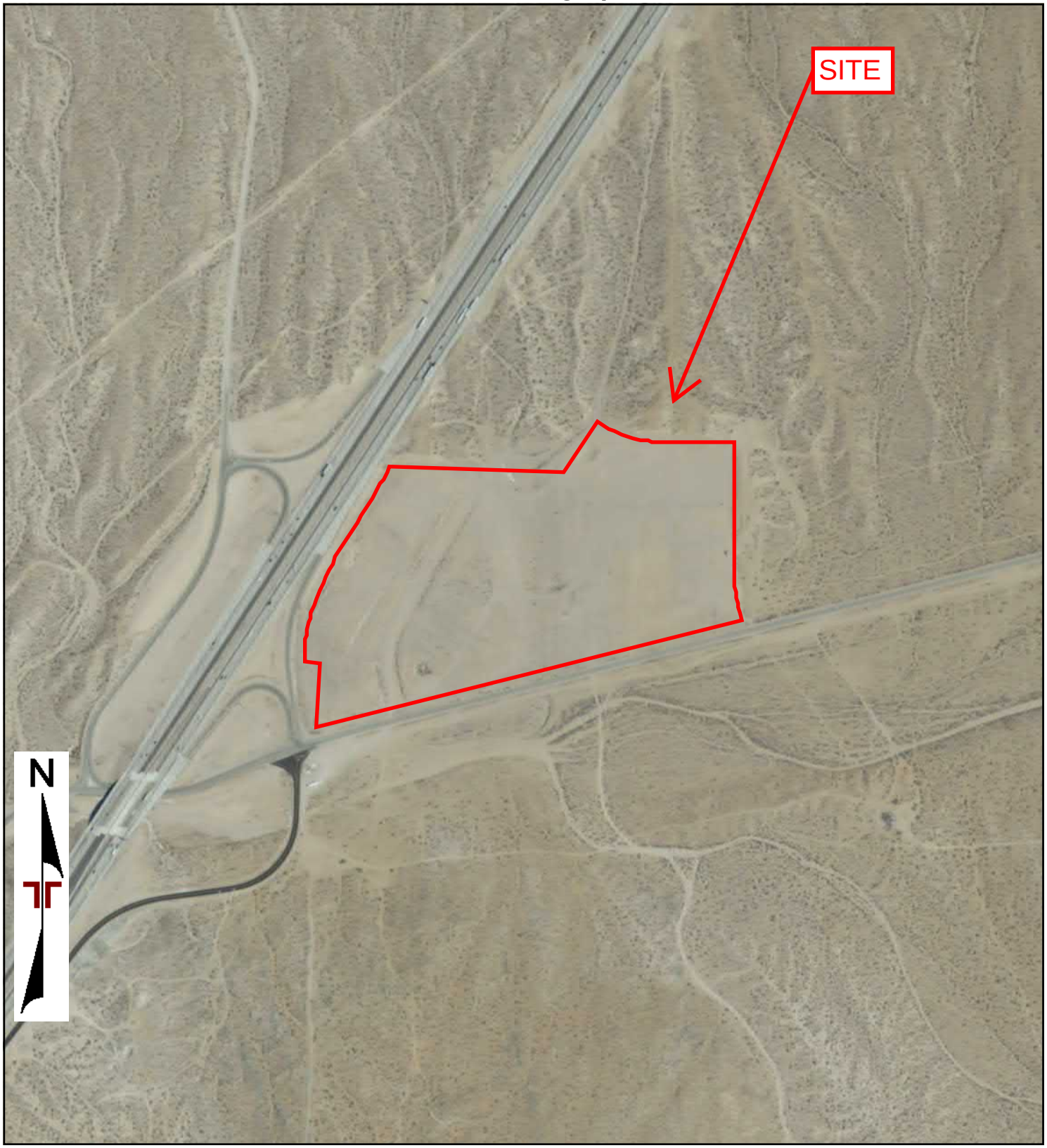
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Project Manager: TGM	Project No: CB207107	Terracon 1355 East Cooley Drive Colton, CA 92324	2016 AERIAL PHOTOGRAPH **PROPOSED LOVE'S TRAVEL STOP - APPLE VALLEY** NORTHEAST CORNER OF INTERSTATE 15 AND STODDARD WELLS ROAD APPLE VALLEY, SAN BERNARDINO COUNTY, CALIFORNIA	Appendix C
Drawn By: SNC	Scale: As Shown			
Checked By: TGM	File Name:			
Approved By: CAP	Date: 2016			



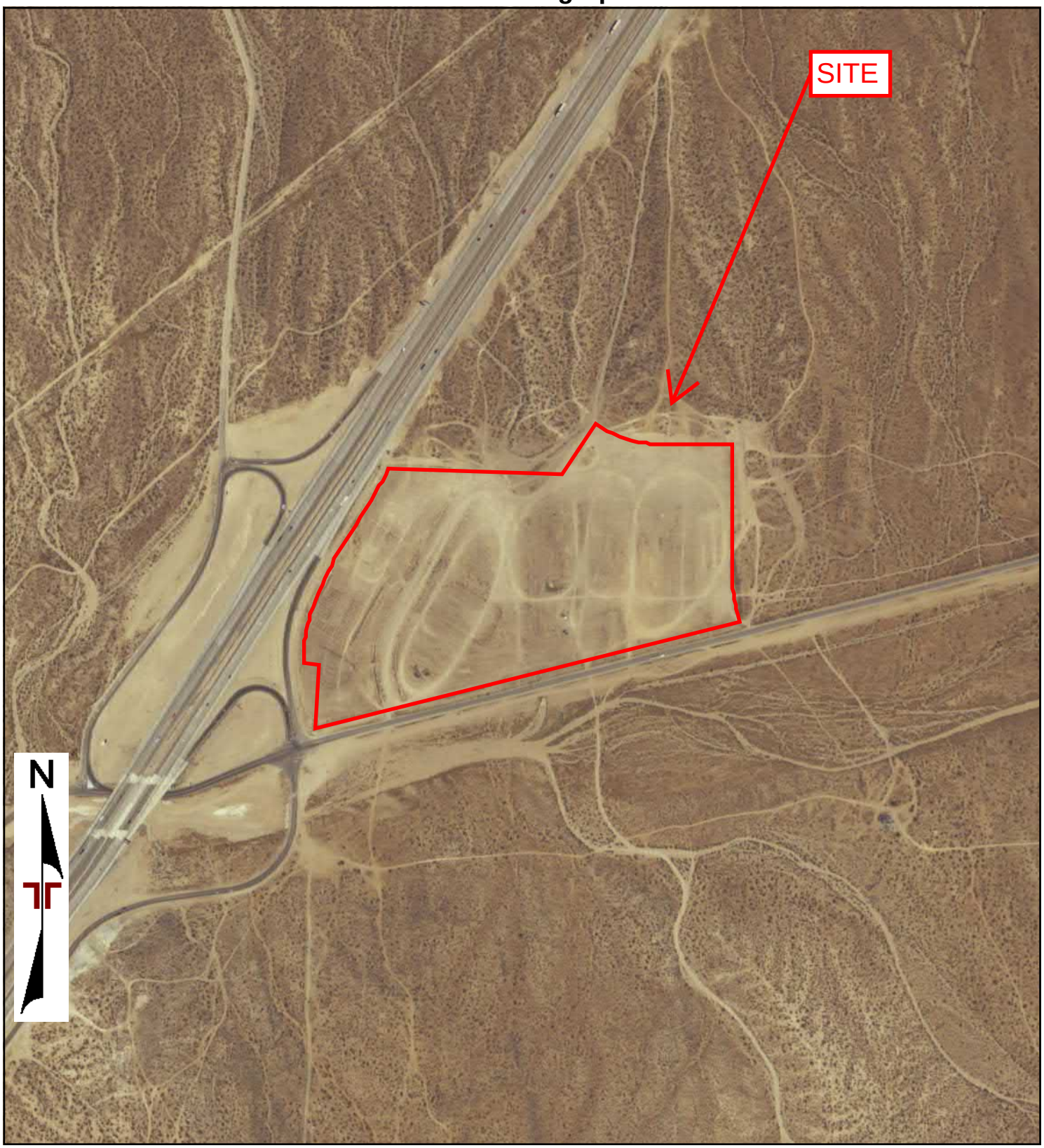
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Project Manager: TGM	Project No: CB207107	Terracon 1355 East Cooley Drive Colton, CA 92324	2012 AERIAL PHOTOGRAPH **PROPOSED LOVE'S TRAVEL STOP - APPLE VALLEY** NORTHEAST CORNER OF INTERSTATE 15 AND STODDARD WELLS ROAD APPLE VALLEY, SAN BERNARDINO COUNTY, CALIFORNIA	Appendix C
Drawn By: SNC	Scale: As Shown			
Checked By: TGM	File Name:			
Approved By: CAP	Date: 2012			



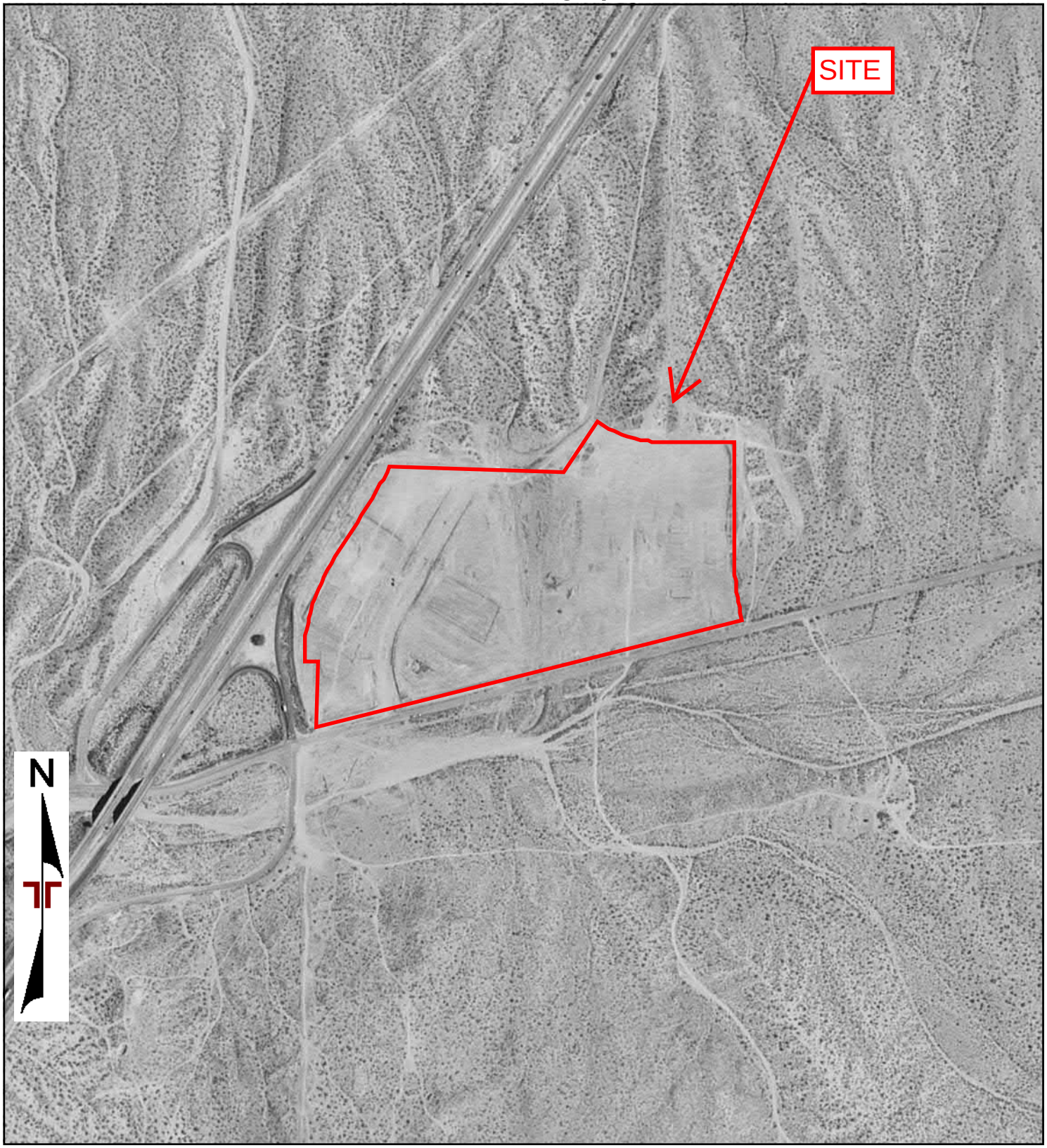
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Project Manager: TGM	Project No: CB207107	Terracon 1355 East Cooley Drive Colton, CA 92324	2009 AERIAL PHOTOGRAPH	Appendix
Drawn By: SNC	Scale: As Shown		**PROPOSED LOVE'S TRAVEL STOP - APPLE VALLEY** NORTHEAST CORNER OF INTERSTATE 15 AND STODDARD WELLS ROAD APPLE VALLEY, SAN BERNARDINO COUNTY, CALIFORNIA	C
Checked By: TGM	File Name:			
Approved By: CAP	Date: 2009			



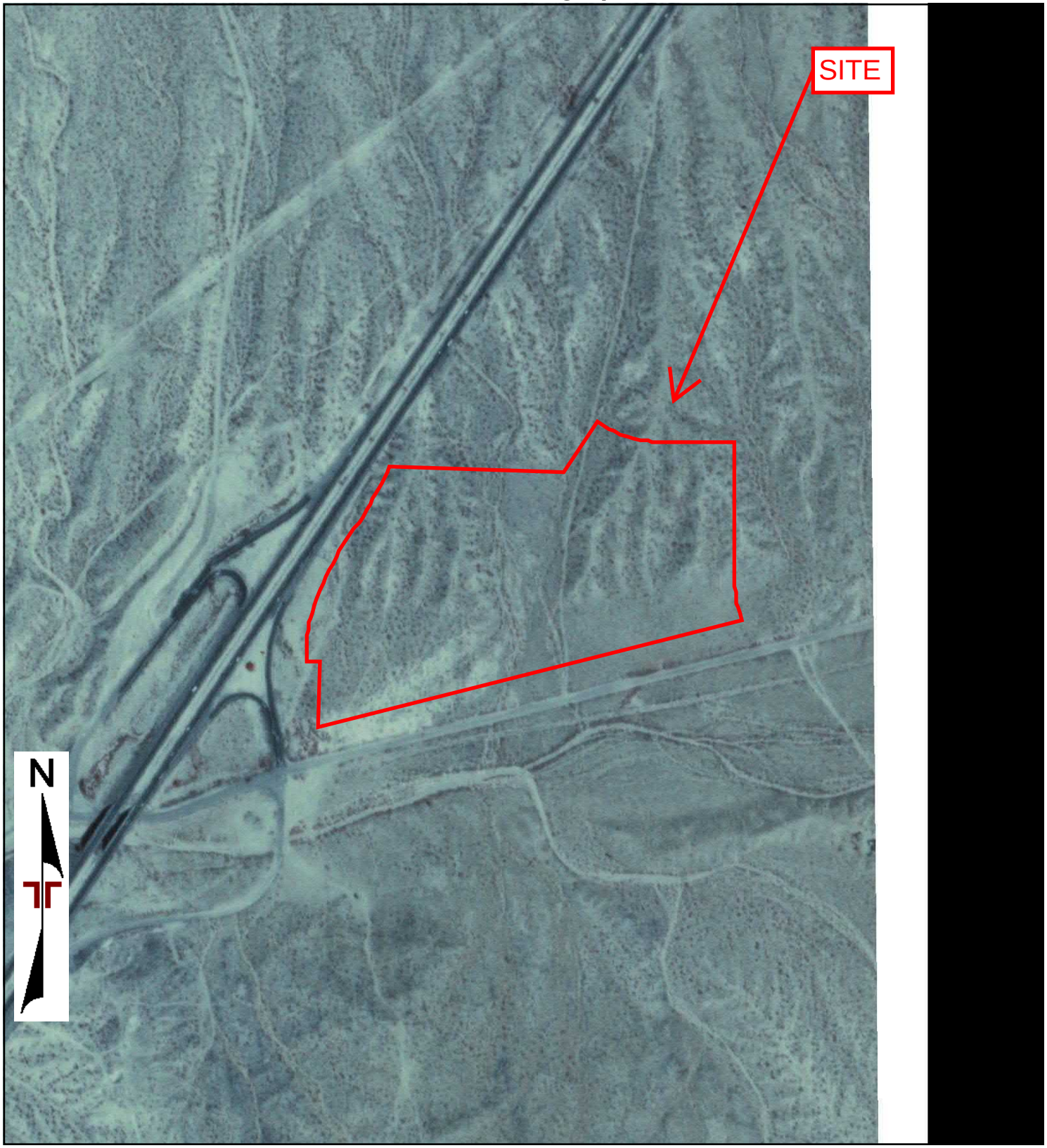
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Project Manager: TGM	Project No: CB207107	Terracon 1355 East Cooley Drive Colton, CA 92324	2005 AERIAL PHOTOGRAPH	Appendix
Drawn By: SNC	Scale: As Shown		**PROPOSED LOVE'S TRAVEL STOP - APPLE VALLEY** NORTHEAST CORNER OF INTERSTATE 15 AND STODDARD WELLS ROAD APPLE VALLEY, SAN BERNARDINO COUNTY, CALIFORNIA	C
Checked By: TGM	File Name:			
Approved By: CAP	Date: 2005			



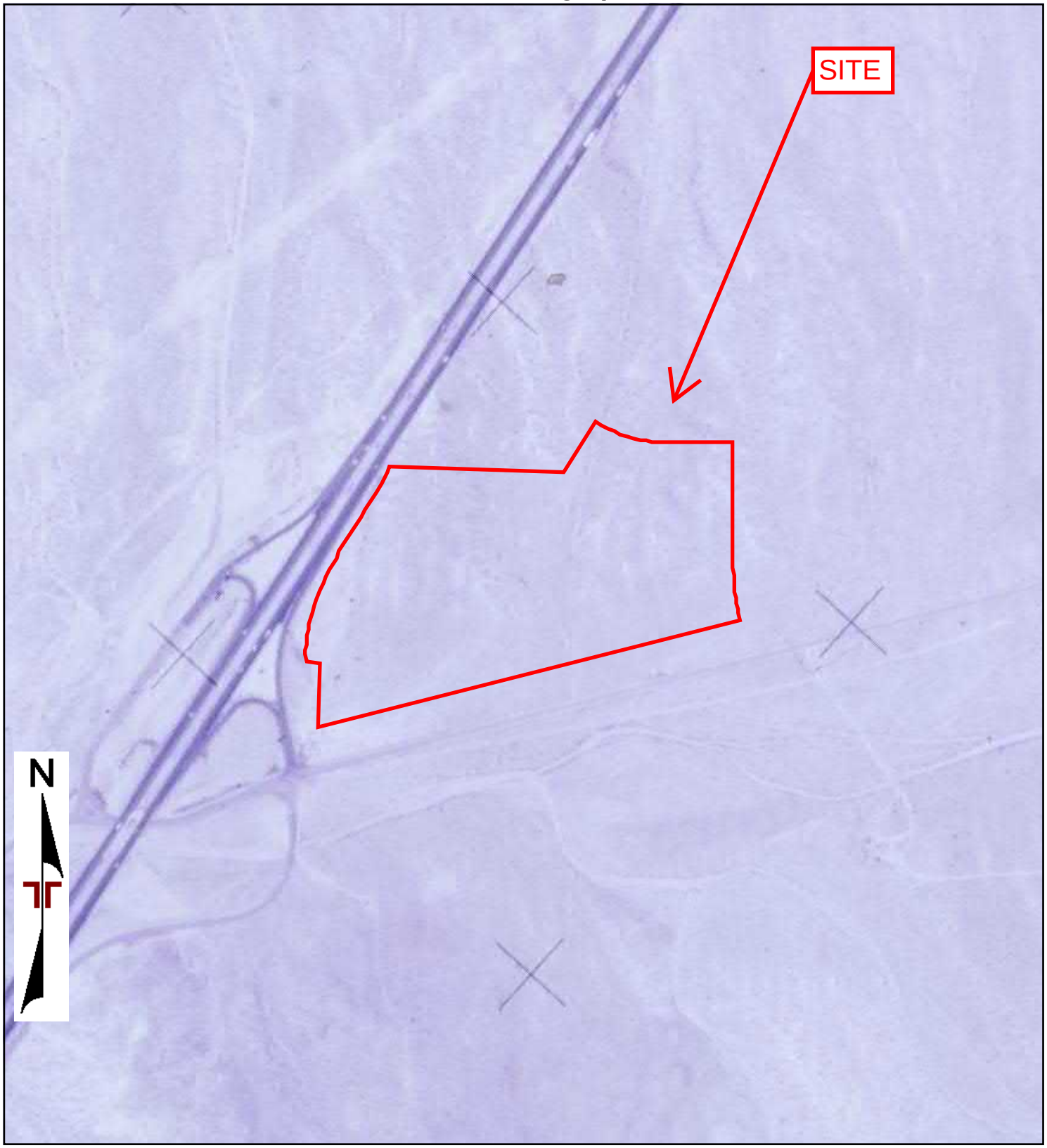
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Project Manager: TGM	Project No: CB207107	Terracon 1355 East Cooley Drive Colton, CA 92324	1994 AERIAL PHOTOGRAPH	Appendix
Drawn By: SNC	Scale: As Shown		**PROPOSED LOVE'S TRAVEL STOP - APPLE VALLEY** NORTHEAST CORNER OF INTERSTATE 15 AND STODDARD WELLS ROAD APPLE VALLEY, SAN BERNARDINO COUNTY, CALIFORNIA	C
Checked By: TGM	File Name:			
Approved By: CAP	Date: 1994			



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Project Manager: TGM	Project No: CB207107	Terracon 1355 East Cooley Drive Colton, CA 92324	1984 AERIAL PHOTOGRAPH	Appendix
Drawn By: SNC	Scale: As Shown		**PROPOSED LOVE'S TRAVEL STOP - APPLE VALLEY** NORTHEAST CORNER OF INTERSTATE 15 AND STODDARD WELLS ROAD APPLE VALLEY, SAN BERNARDINO COUNTY, CALIFORNIA	C
Checked By: TGM	File Name:			
Approved By: CAP	Date: 1984			



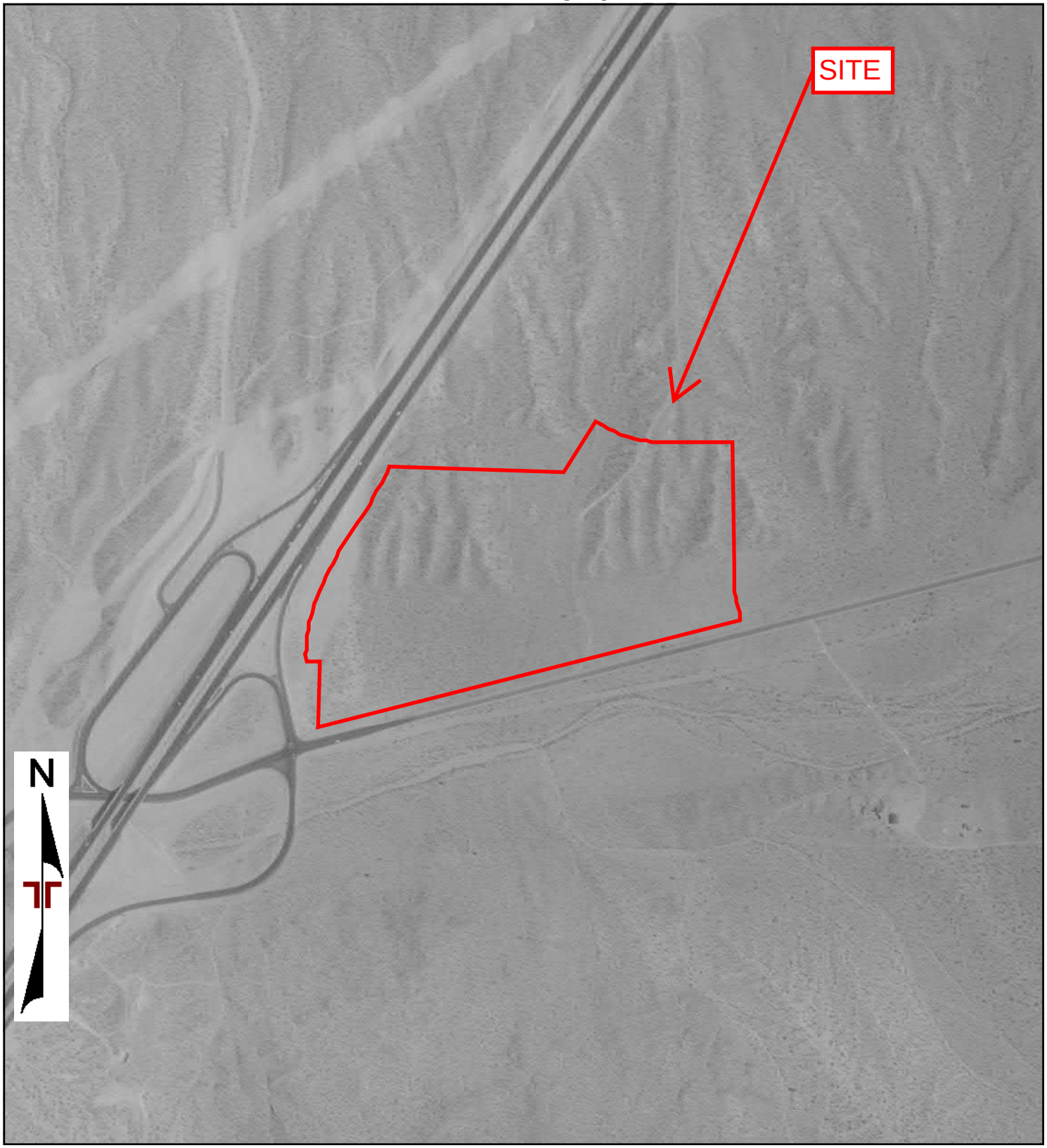
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Project Manager: TGM	Project No: CB207107	Terracon 1355 East Cooley Drive Colton, CA 92324	1973 AERIAL PHOTOGRAPH **PROPOSED LOVE'S TRAVEL STOP - APPLE VALLEY** NORTHEAST CORNER OF INTERSTATE 15 AND STODDARD WELLS ROAD APPLE VALLEY, SAN BERNARDINO COUNTY, CALIFORNIA	Appendix
Drawn By: SNC	Scale: As Shown			C
Checked By: TGM	File Name:			
Approved By: CAP	Date: 1973			



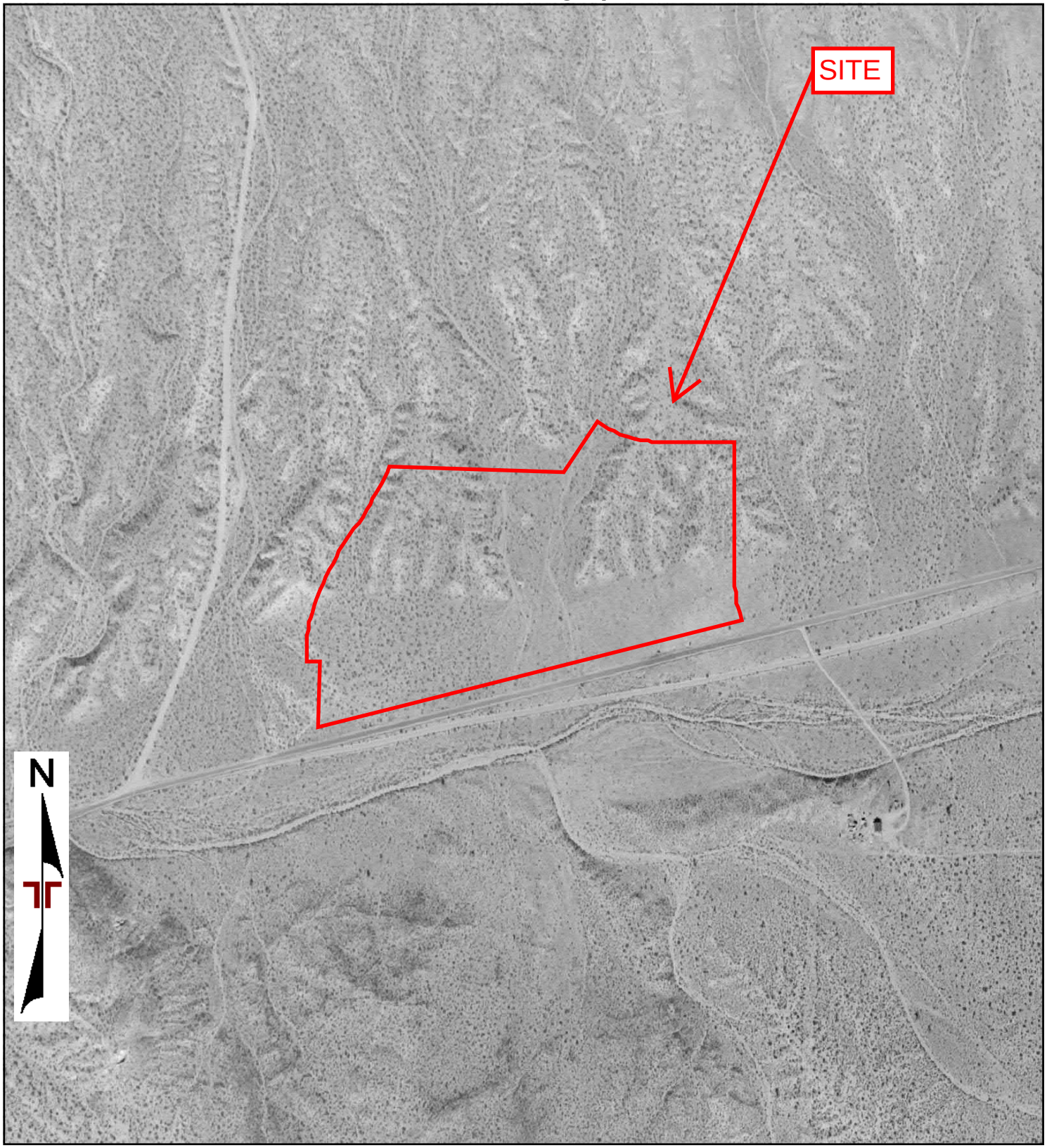
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Project Manager: TGM	Project No: CB207107	Terracon 1355 East Cooley Drive Colton, CA 92324	1968 AERIAL PHOTOGRAPH **PROPOSED LOVE'S TRAVEL STOP - APPLE VALLEY** NORTHEAST CORNER OF INTERSTATE 15 AND STODDARD WELLS ROAD APPLE VALLEY, SAN BERNARDINO COUNTY, CALIFORNIA	Appendix C
Drawn By: SNC	Scale: As Shown			
Checked By: TGM	File Name:			
Approved By: CAP	Date: 1968			



0 Feet 500 1000 2000

Project Manager: TGM	Project No: CB207107	Terracon 1355 East Cooley Drive Colton, CA 92324	1959 AERIAL PHOTOGRAPH **PROPOSED LOVE'S TRAVEL STOP - APPLE VALLEY** NORTHEAST CORNER OF INTERSTATE 15 AND STODDARD WELLS ROAD APPLE VALLEY, SAN BERNARDINO COUNTY, CALIFORNIA	Appendix C
Drawn By: SNC	Scale: As Shown			
Checked By: TGM	File Name:			
Approved By: CAP	Date: 1959			



0 Feet 500 1000 2000

Project Manager: TGM	Project No: CB207107	Terracon 1355 East Cooley Drive Colton, CA 92324	1953 AERIAL PHOTOGRAPH **PROPOSED LOVE'S TRAVEL STOP - APPLE VALLEY** NORTHEAST CORNER OF INTERSTATE 15 AND STODDARD WELLS ROAD APPLE VALLEY, SAN BERNARDINO COUNTY, CALIFORNIA	Appendix C
Drawn By: SNC	Scale: As Shown			
Checked By: TGM	File Name:			
Approved By: CAP	Date: 1953			

Proposed Loves Travel Stop-Apple Valley
Interstate 15 and Stoddard Wells Road
Apple Valley, CA 92307

Inquiry Number: 6222597.4
October 09, 2020

EDR Historical Topo Map Report

with QuadMatch™

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topo Map Report

10/09/20

Site Name:	Client Name:
Proposed Loves Travel Stop-A	Terracon
Interstate 15 and Stoddard We	1355 East Cooley Drive
Apple Valley, CA 92307	Colton, CA 92324
EDR Inquiry # 6222597.4	Contact: Laura Hedman

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Terracon were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:		*Coordinates:*	
P.O.#	CB207107	**Latitude:**	34.593049 34° 35' 35" North
Project:	CB207107	**Longitude:**	-117.254634 -117° 15' 17" West
		UTM Zone:	Zone 11 North
		UTM X Meters:	476649.75
		UTM Y Meters:	3827944.72
		Elevation:	2931.07' above sea level

Maps Provided:

2012
1993
1970
1968
1956
1934
1932

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Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2012 Source Sheets



Apple Valley North
2012
7.5-minute, 24000



Victorville
2012
7.5-minute, 24000

1993 Source Sheets



Victorville
1993
7.5-minute, 24000
Aerial Photo Revised 1989



Apple Valley North
1993
7.5-minute, 24000
Aerial Photo Revised 1989

1970 Source Sheets



Apple Valley North
1970
7.5-minute, 24000
Aerial Photo Revised 1969

1968 Source Sheets



Victorville
1968
7.5-minute, 24000
Aerial Photo Revised 1968

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1956 Source Sheets



Victorville
1956
7.5-minute, 24000
Aerial Photo Revised 1952

1934 Source Sheets

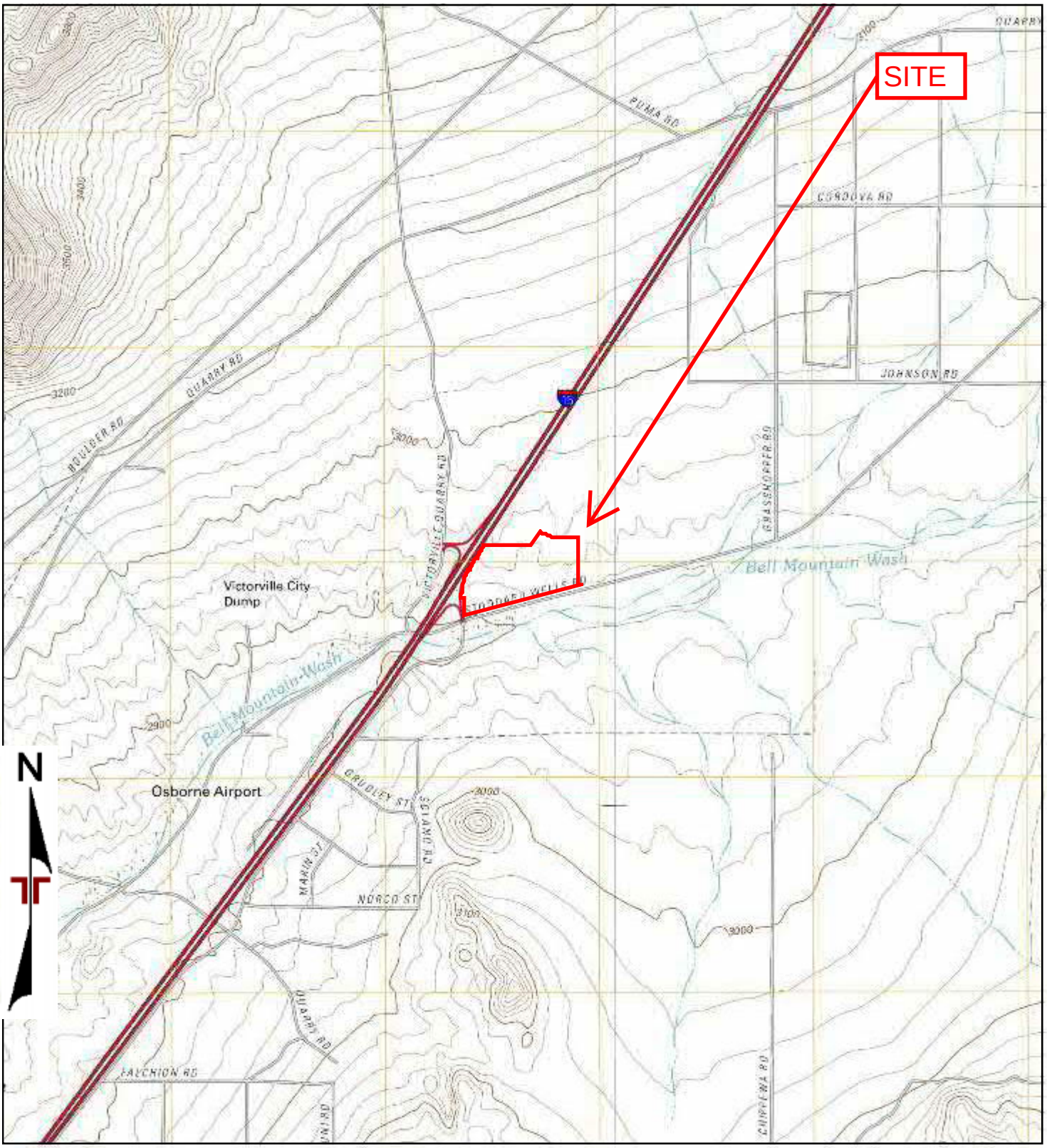


Barstow
1934
30-minute, 125000

1932 Source Sheets



Barstow
1932
30-minute, 125000



N

TP, Victorville, 2012, 7.5-minute
SE, Apple Valley North, 2012, 7.5-minute

0 Miles 0.25 0.5 1 1.5

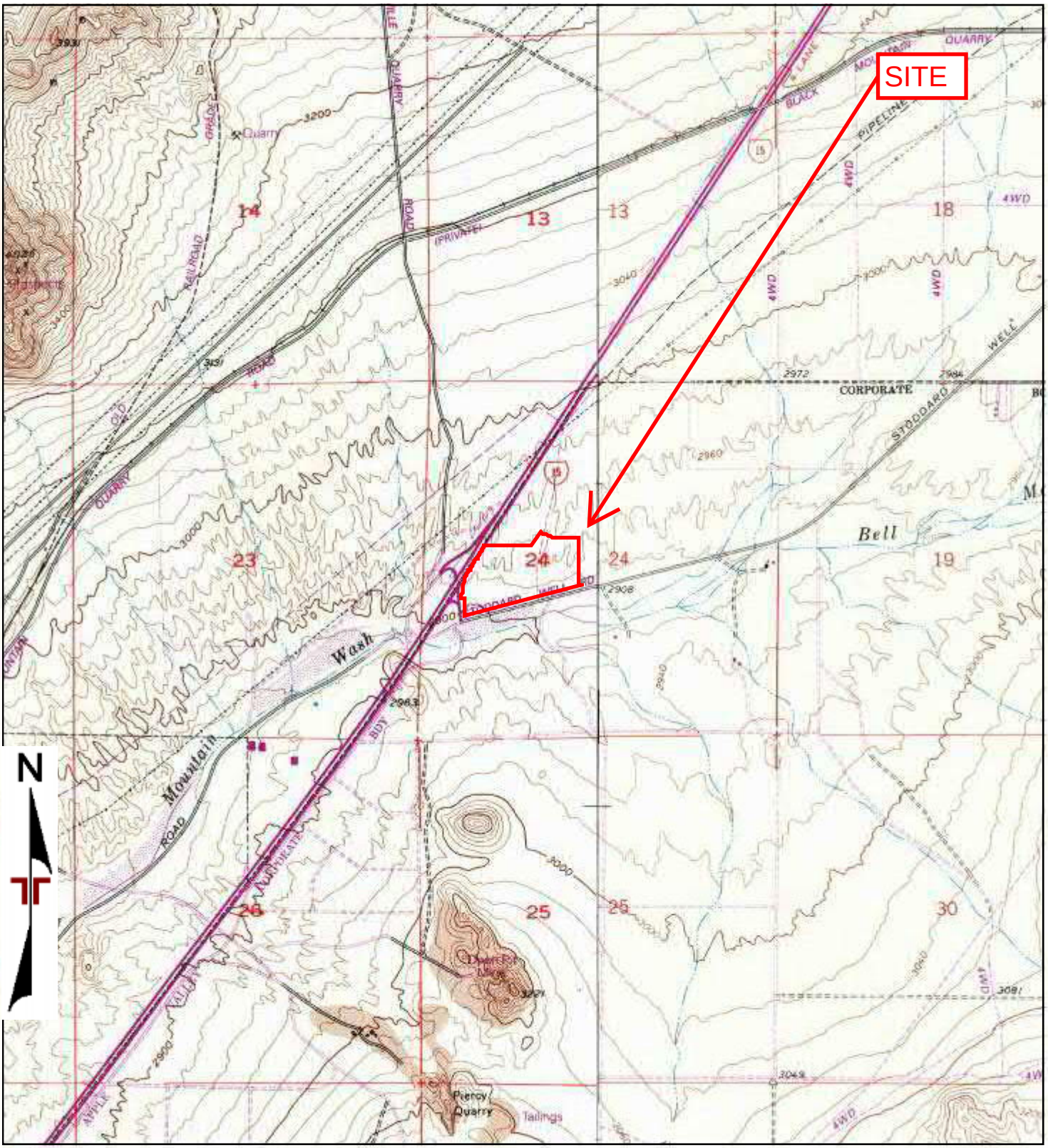
Project Manager: TGM	Project No. CB207107
Drawn by: SNC	Scale: As Shown
Checked by: TGM	File Name:
Approved by: CAP	Date: 2012

Terracon
1355 East Cooley Drive
Colton, CA 92324

2012 TOPOGRAPHIC MAP

PROPOSED LOVE'S TRAVEL STOP - APPLE VALLEY
NORTHEAST CORNER OF INTERSTATE 15
AND STODDARD WELLS ROAD
APPLE VALLEY, SAN BERNARDINO COUNTY, CALIFORNIA

Appendix C



TP, Victorville, 1993, 7.5-minute
SE, Apple Valley North, 1993, 7.5-minute

0 Miles 0.25 0.5 1 1.5

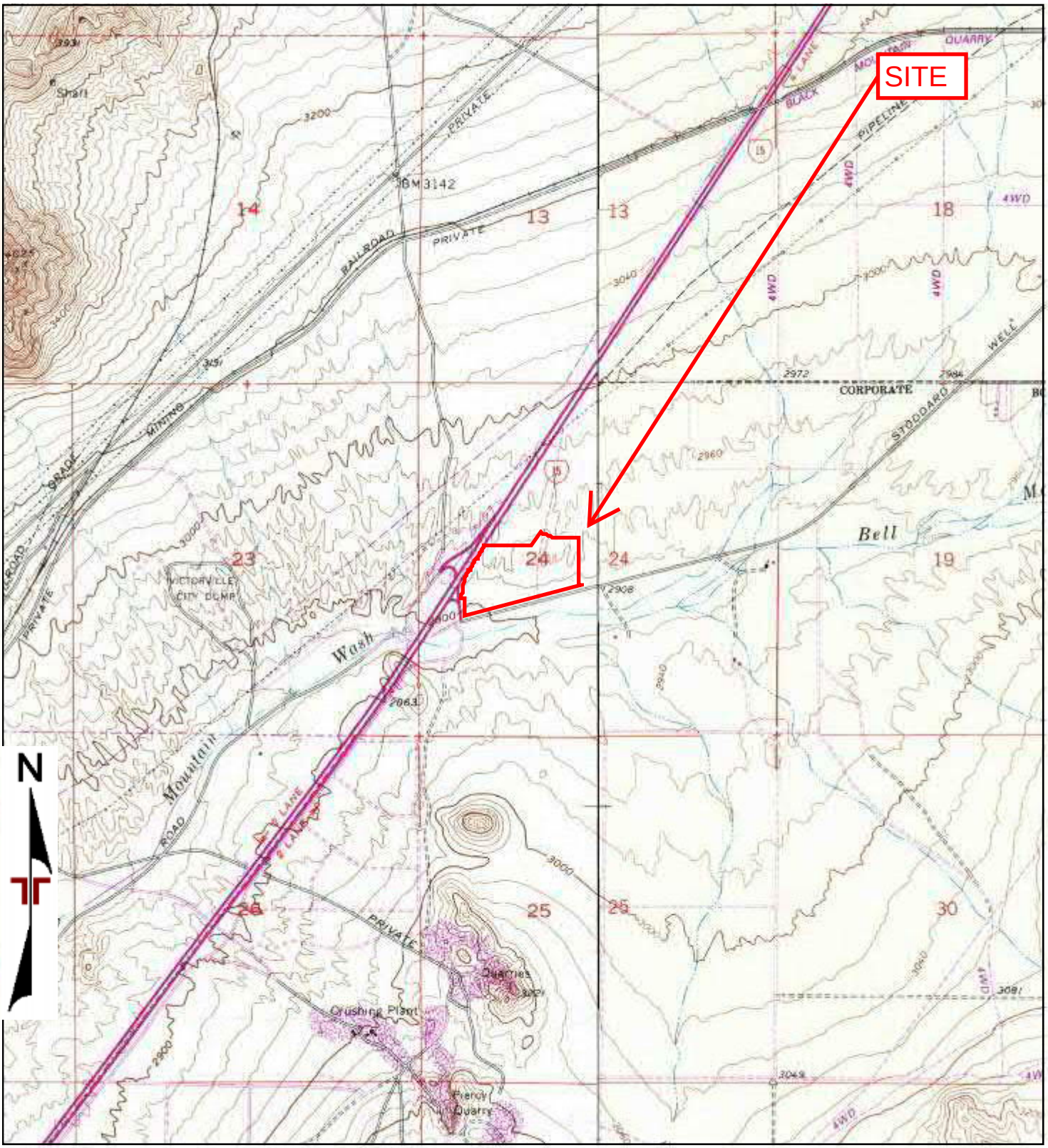
Project Manager: TGM	Project No. CB207107
Drawn by: SNC	Scale: As Shown
Checked by: TGM	File Name:
Approved by: CAP	Date: 1993

Terracon
1355 East Cooley Drive
Colton, CA 92324

1993 TOPOGRAPHIC MAP

PROPOSED LOVE'S TRAVEL STOP - APPLE VALLEY
NORTHEAST CORNER OF INTERSTATE 15
AND STODDARD WELLS ROAD
APPLE VALLEY, SAN BERNARDINO COUNTY, CALIFORNIA

Appendix C



SE, Apple Valley North, 1970, 7.5-minute

0 Miles 0.25 0.5 1 1.5

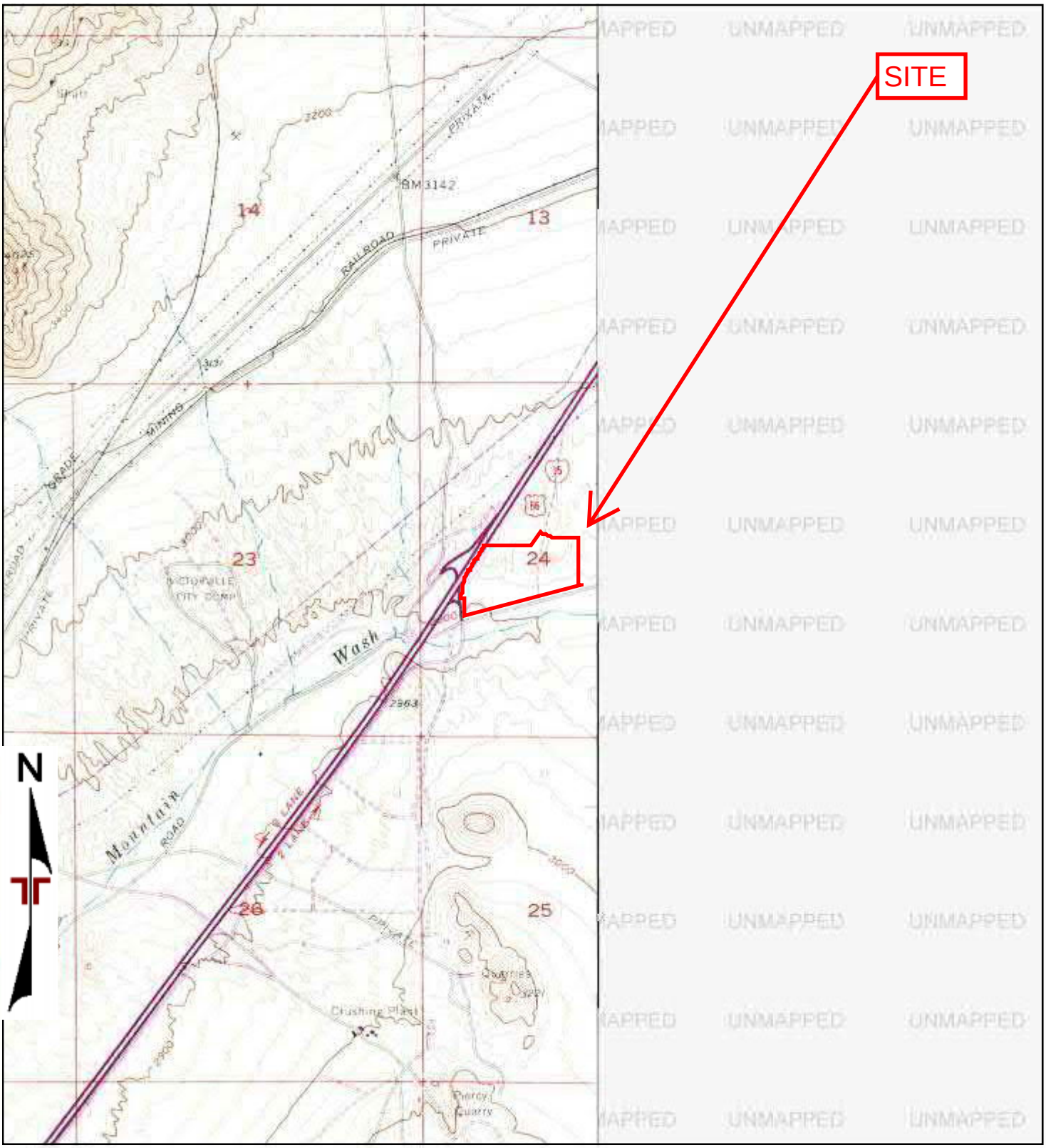
Project Manager: TGM	Project No. CB207107
Drawn by: SNC	Scale: As Shown
Checked by: TGM	File Name:
Approved by: CAP	Date: 1970

Terracon
1355 East Cooley Drive
Colton, CA 92324

1970 TOPOGRAPHIC MAP

PROPOSED LOVE'S TRAVEL STOP - APPLE VALLEY
NORTHEAST CORNER OF INTERSTATE 15
AND STODDARD WELLS ROAD
APPLE VALLEY, SAN BERNARDINO COUNTY, CALIFORNIA

Appendix C



TP, Victorville, 1968, 7.5-minute

0 Miles 0.25 0.5 1 1.5

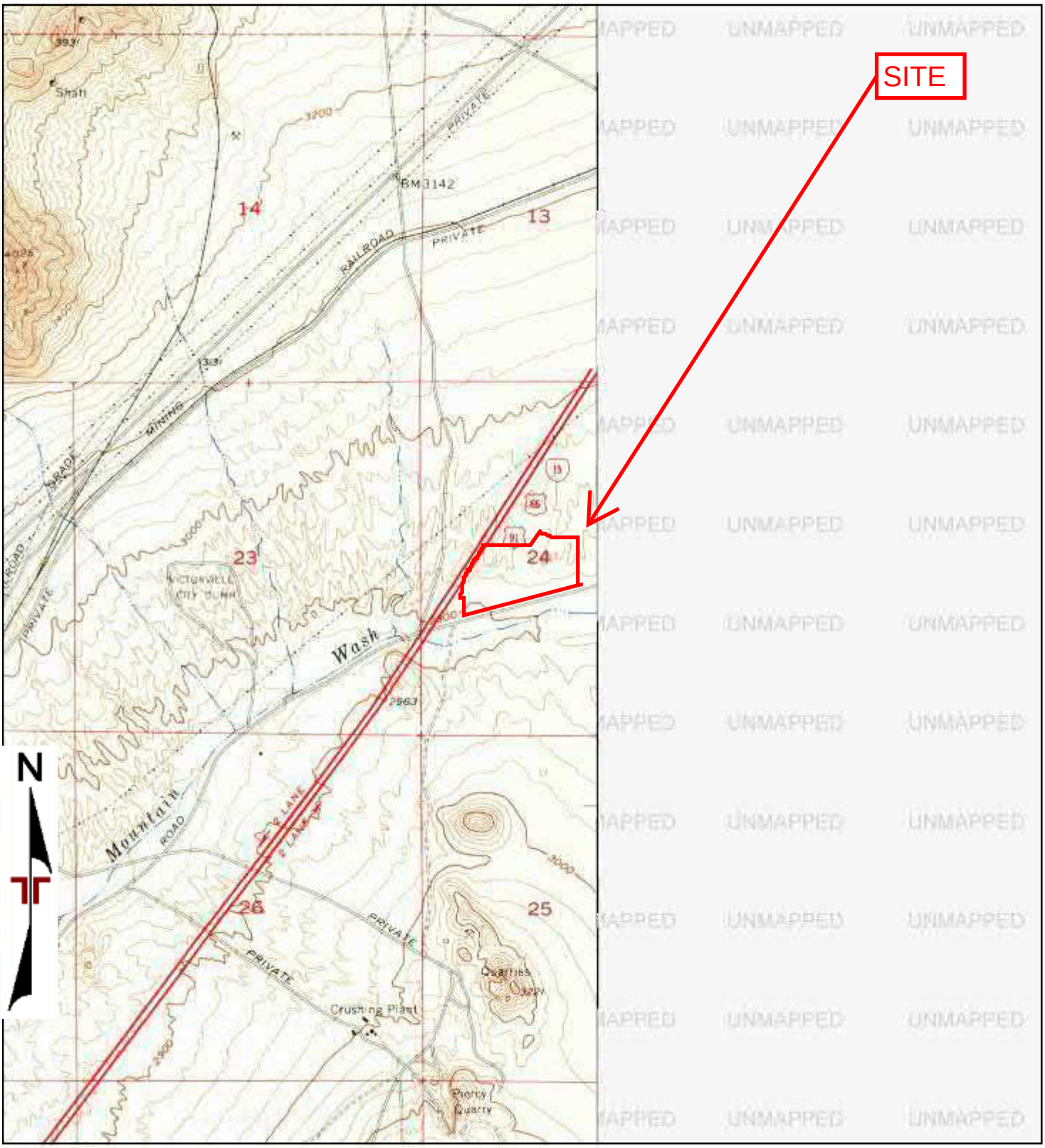
Project Manager: TGM	Project No. CB207107
Drawn by: SNC	Scale: As Shown
Checked by: TGM	File Name:
Approved by: CAP	Date: 1968

Terracon
1355 East Cooley Drive
Colton, CA 92324

1968 TOPOGRAPHIC MAP

PROPOSED LOVE'S TRAVEL STOP - APPLE VALLEY
NORTHEAST CORNER OF INTERSTATE 15
AND STODDARD WELLS ROAD
APPLE VALLEY, SAN BERNARDINO COUNTY, CALIFORNIA

Appendix C



TP, Victorville, 1956, 7.5-minute

0 Miles 0.25 0.5 1 1.5

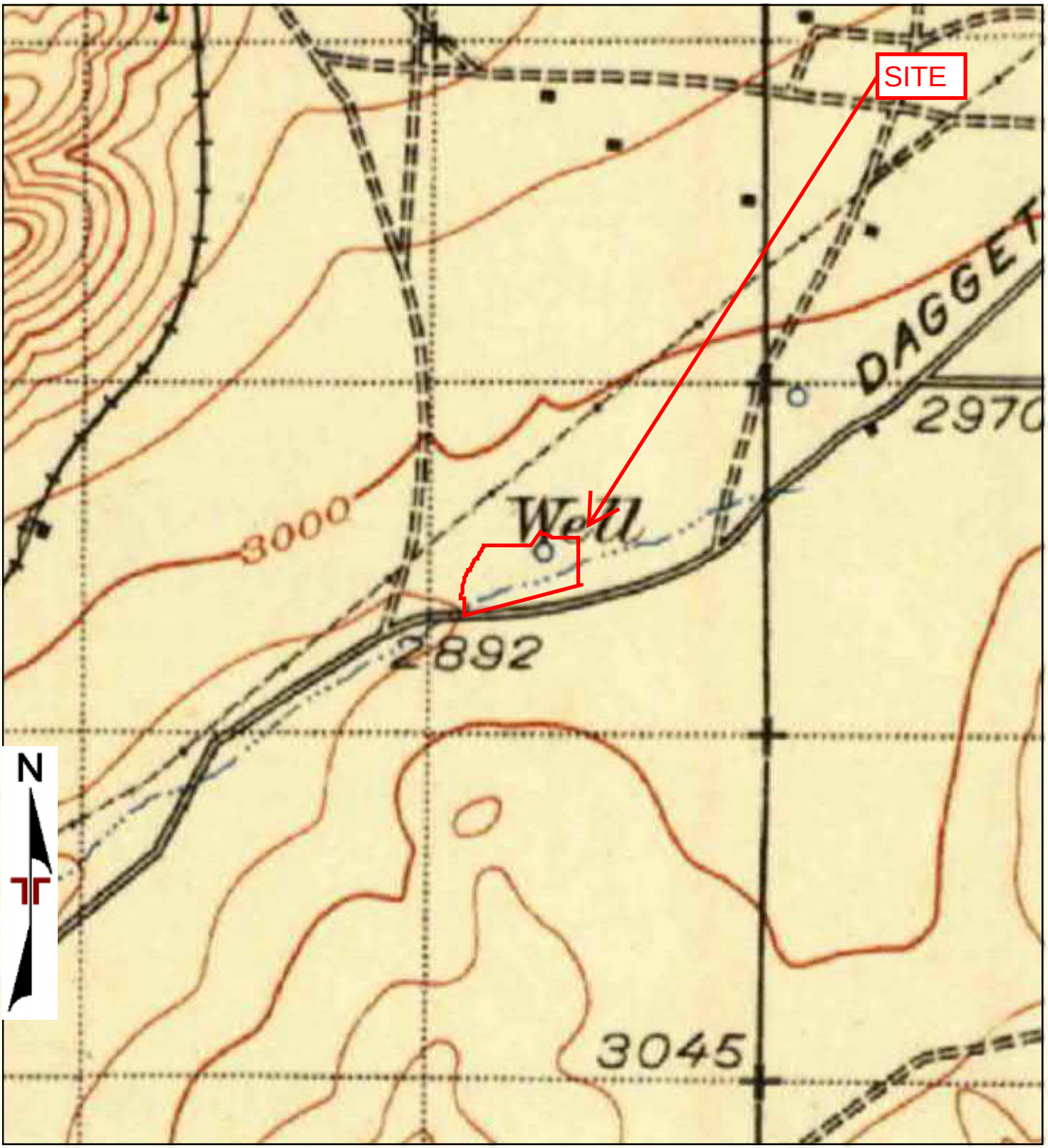
Project Manager: TGM	Project No. CB207107
Drawn by: SNC	Scale: As Shown
Checked by: TGM	File Name:
Approved by: CAP	Date: 1956

Terracon
1355 East Cooley Drive
Colton, CA 92324

1956 TOPOGRAPHIC MAP

PROPOSED LOVE'S TRAVEL STOP - APPLE VALLEY
NORTHEAST CORNER OF INTERSTATE 15
AND STODDARD WELLS ROAD
APPLE VALLEY, SAN BERNARDINO COUNTY, CALIFORNIA

Appendix C



TP, Barstow, 1934, 30-minute

0 Miles 0.25 0.5 1 1.5

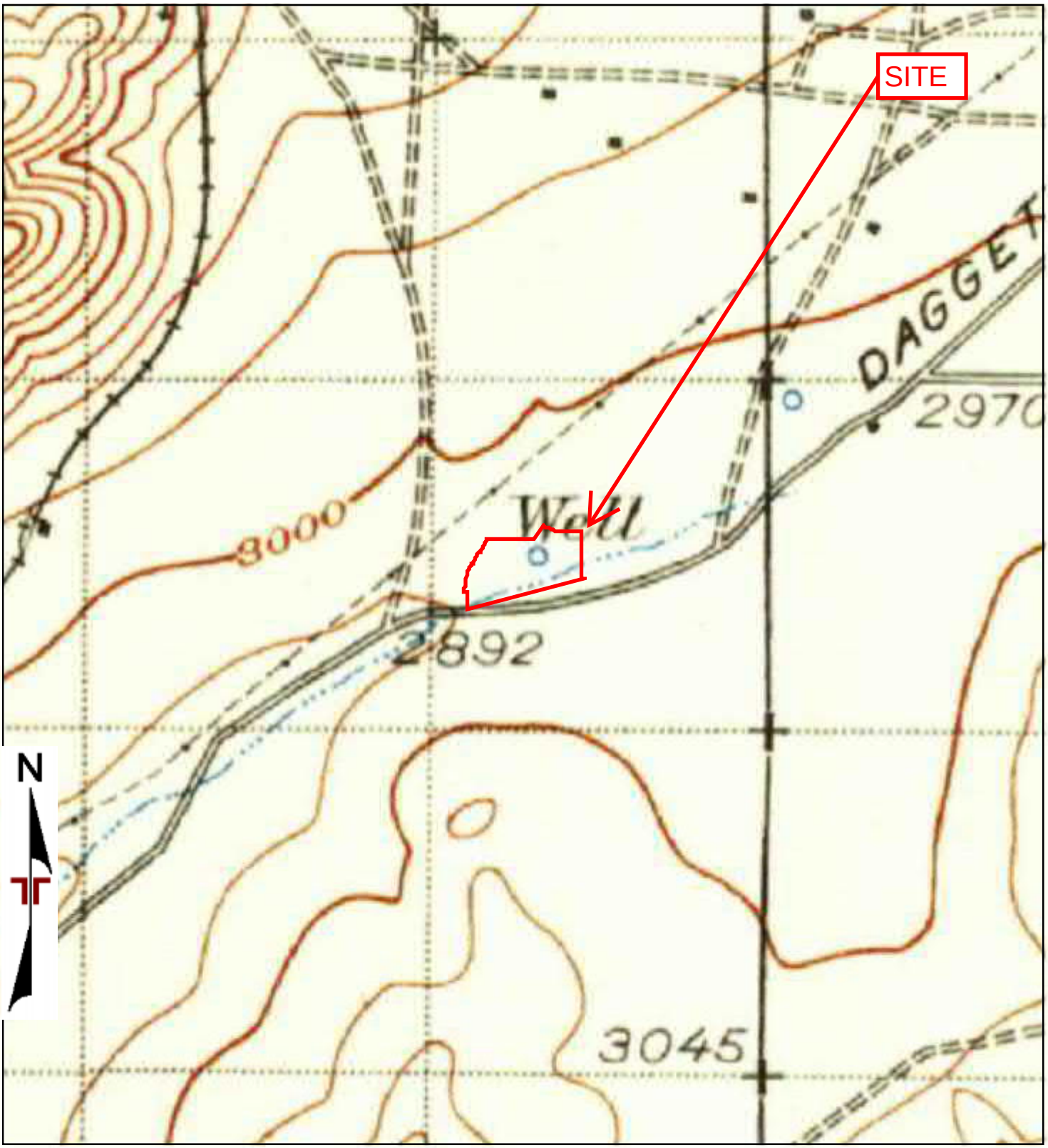
Project Manager: TGM	Project No. CB207107
Drawn by: SNC	Scale: As Shown
Checked by: TGM	File Name:
Approved by: CAP	Date: 1934

Terracon
1355 East Cooley Drive
Colton, CA 92324

1934 TOPOGRAPHIC MAP

PROPOSED LOVE'S TRAVEL STOP - APPLE VALLEY
NORTHEAST CORNER OF INTERSTATE 15
AND STODDARD WELLS ROAD
APPLE VALLEY, SAN BERNARDINO COUNTY, CALIFORNIA

Appendix C



TP, Barstow, 1932, 30-minute

0 Miles 0.25 0.5 1 1.5

Project Manager: TGM	Project No. CB207107
Drawn by: SNC	Scale: As Shown
Checked by: TGM	File Name:
Approved by: CAP	Date: 1932

Terracon
1355 East Cooley Drive
Colton, CA 92324

1932 TOPOGRAPHIC MAP

PROPOSED LOVE'S TRAVEL STOP - APPLE VALLEY
NORTHEAST CORNER OF INTERSTATE 15
AND STODDARD WELLS ROAD
APPLE VALLEY, SAN BERNARDINO COUNTY, CALIFORNIA

Appendix C

Proposed Loves Travel Stop-Apple Valley

Interstate 15 and Stoddard Wells Road

Apple Valley, CA 92307

Inquiry Number: 6222597.3

October 09, 2020

Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

10/09/20

Site Name:	Client Name:
Proposed Loves Travel Stop-A	Terracon
Interstate 15 and Stoddard Wel	1355 East Cooley Drive
Apple Valley, CA 92307	Colton, CA 92324
EDR Inquiry # 6222597.3	Contact: Laura Hedman

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The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

Certified Sanborn Results:

Certification # 4087-4833-BCB1

PO # CB207107

Project CB207107

UNMAPPED PROPERTY

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Sanborn® Library search results

Certification #: 4087-4833-BCB1

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- ☑ Library of Congress
- ☑ University Publications of America
- ☑ EDR Private Collection

The Sanborn Library LLC Since 1866™

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Proposed Loves Travel Stop-Apple Valley
Interstate 15 and Stoddard Wells Road
Apple Valley, CA 92307

Inquiry Number: 6222597.5
October 15, 2020

The EDR-City Directory Image Report

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

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Executive Summary

Findings

City Directory Images

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with any questions or comments.

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EXECUTIVE SUMMARY

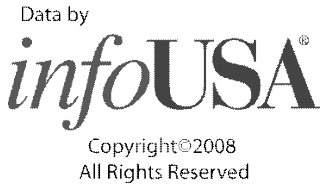
DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available city directory data at 5 year intervals.

RECORD SOURCES

EDR's Digital Archive combines historical directory listings from sources such as Cole Information and Dun & Bradstreet. These standard sources of property information complement and enhance each other to provide a more comprehensive report.

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RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

Year	Target Street	Cross Street	Source
2017	☐	☑	EDR Digital Archive
2014	☐	☑	EDR Digital Archive
2010	☐	☑	EDR Digital Archive
2005	☐	☑	EDR Digital Archive
2000	☐	☑	EDR Digital Archive
1995	☐	☑	EDR Digital Archive
1992	☐	☑	EDR Digital Archive
1985	☐	☑	Haines Criss-Cross Directory
1980	☐	☑	Haines Criss-Cross Directory
1976	☐	☑	Haines Criss-Cross Directory
1971	☐	☑	Haines Criss-Cross Directory
1964	☐	☑	Luskey City Directory

FINDINGS

TARGET PROPERTY STREET

Interstate 15 and Stoddard Wells Road
Apple Valley, CA 92307

Year	CD Image	Source	
INTERSTATE 15			
2017	-	EDR Digital Archive	Street not listed in Source
2014	-	EDR Digital Archive	Street not listed in Source
2010	-	EDR Digital Archive	Street not listed in Source
2005	-	EDR Digital Archive	Street not listed in Source
2000	-	EDR Digital Archive	Street not listed in Source
1995	-	EDR Digital Archive	Street not listed in Source
1992	-	EDR Digital Archive	Street not listed in Source
1985	-	Haines Criss-Cross Directory	Street not listed in Source
1980	-	Haines Criss-Cross Directory	Street not listed in Source
1976	-	Haines Criss-Cross Directory	Street not listed in Source
1971	-	Haines Criss-Cross Directory	Street not listed in Source
1964	-	Luskey City Directory	Street not listed in Source

FINDINGS

CROSS STREETS

Year	*CD Image*	*Source*

STODDARD WELLS RD

2017	pg. A2	EDR Digital Archive
2014	pg. A6	EDR Digital Archive
2010	pg. A10	EDR Digital Archive
2005	pg. A13	EDR Digital Archive
2000	pg. A17	EDR Digital Archive
1995	pg. A20	EDR Digital Archive
1992	pg. A21	EDR Digital Archive
1985	pg. A22	Haines Criss-Cross Directory
1985	pg. A23	Haines Criss-Cross Directory
1980	pg. A24	Haines Criss-Cross Directory
1980	pg. A25	Haines Criss-Cross Directory
1976	pg. A26	Haines Criss-Cross Directory
1976	pg. A27	Haines Criss-Cross Directory
1971	pg. A28	Haines Criss-Cross Directory
1964	pg. A29	Luskey City Directory

City Directory Images

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

STODDARD WELLS RD 2017

15669	BASCOM, JOHN A
	BASCOM, LISA
	GRIFFITHS, LINDA
	HESTER, TOM
	RESIDENTIAL SECURITY SYSTEMS
15760	DOLCH, BRANDON
	WARREN, LAWRENCE D
	WARREN, MARY E
15819	WARREN, LARRY W
15940	ACKLEY, ELLEN K
	ALFORD, JOHN A
	ALLAMAN, ANDREW B
	ANDERSON, BRANDY
	ARCHER, EUNICE M
	BAKER, RICKY E
	BATES, DELORES M
	BAXTER, NANCY J
	BEARD, DANIEL C
	BENNETT, LEIGH J
	BLINN, KAREN K
	BRADSHAW, JANE A
	BREEDING, SANDRA
	BROMBY, SHERROLYN
	BROOKS, JOSEPH E
	CAIN, JOYCE I
	CARROLL, ANNE M
	CARROLL, PATRICIA C
	CASTILLO, IRMA P
	CHASE, ROB A
	CHISM, CORA
	COGDILL, MICHELE R
	COPENHAVER, DOROTHY
	CORTEZ, JOYCE E
	COWAN, LESLIE A
	CROWLEY, SHARON K
	CUNAMAY, CHRISTINA M
	CUNNINGHAM, TERRY D
	CUTTS, JUANITA F
	DAVIS, CANDACE C
	DELGADILLO, JOSE L
	ECK, FRED J
	ERICKSON, MARTHA L
	ESCALAS, MONICA
	FIGUEROA, ROBERT L
	GARTIN, ROSALEE L
	GERARD, JENNIFER L
	GOMEZ, RE
	GONZALEZ, BENJAMIN B
	GRAY, JOANNE M
	GRAYSON, WILLIAM

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

STODDARD WELLS RD 2017 (Cont'd)

15940 GREEN, CHRIS
GUARDADO, FERNANDO
GUERRERO, JOSEFINA B
HERNANDEZ, DAVID H
HOBERG, ROBERT A
HOGAN, PATRICK W
HOWARD, ADELA G
HUFF, KEITH M
HUGHES, GARY
HURST, JAMES E
INDINGARO, THOMAS
JACKSON, BARBI A
JOHNSON, JANICE L
KATICH, KIMBERLY A
KECK, DIANNE M
KOOHNS, LORETTA J
LAMB, HELEN E
LANE, DARYL
LANGLEY, JAMES
LARSEN, WENDI L
LAVERTU, TONIETTE M
LLAMAS, RAUL R
LYNCH, WYATT R
MACGILLIVRAY, MARTHA
MARKS, NANCY A
MARROQUIN, SEBASTIAN
MATTHEWS, VICK
MCCOY, KIMBERLY L
MCCOY, RUDY D
MERCADO, HOMER
MORRIS, MONIQUE D
NEDDERMAN, CHARLES R
NELSON, BONNIE J
NIELSON, MATTHEW R
ORR, GORDON L
OXNER, LEONARD C
PARKS, JANET R
PARSONS, LEROY
PEREDA, ALLAN C
PEREDA, FRANK
PIELE, EDWARD G
PIJL, MARION A
PISARCZYK, BEVERLY J
PISCIOTTA, KANDY L
PULLEN, CHRIS
QUARTUCY, DEEDRA S
RIVER RANCH MOBILE
ROBINSON, RAYMOND C
RODRIGUEZ, C
RODRIGUEZ, CARYL R

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

STODDARD WELLS RD 2017 (Cont'd)

15940	ROHRER, PEARL M
	RUSSELL, ROSALEE K
	SALAS, MARIO A
	SCHMIDT, KATHRYN M
	SCHULTES, MELVIN
	SMITH, LINDA
	SMITH, SYLVIA D
	SWAYZE, JOHN
	TATUM, RUBEN R
	TRACY, PHYLLIS M
	TRAINER, LES G
	TURNER, VIRGINIA A
	VILLA, PAULINA V
	WARKENTIN, JAMES D
	WEEKS, GEORGE E
	WEIMER, NORAM G
	WEINBERG, CAROL A
	WEST, CHRIS
	WOODS, WILLIAM T
	WOODY, FLOYD E
	WORTHEN, CALVIN
15975	BELL, FRANK L
16281	ANDERSON, EUGENE H
16530	CHOI, CHUNG
	DIXON, TIM A
	GASKILL, LOIS
	KENNEDY, STEPHEN M
	KOA
	MARTIN, CAROL J
	MINISCALCO, JACQUELINE S
	SCHMITT, GARY N
16610	KOERNER, EDNA M
16699	APPLE VALLEY GUN CLUB
16850	MOBIL
16868	MOTEL 6
16881	76
16901	MOTEL 6
	RODEWAY INNS
17080	AVCO DISPOSAL INC
	BURRTEC
17111	SPIRIT OF CHRIST TABERNACLE
17288	EMMANUEL TEMPLE CHRISTIAN METHODIST
	EMMANUEL TEMPLECME
18485	OSBORNE G A PIPE & SUPPLY INC
19414	PARKS, LOUIS J
19591	MOORE, ROBIN L
19876	WILSON, ALLISON
20204	HANSEN, ROY E
20280	HERRICK, CHARLES F
20951	CURTIS, DANA L

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

STODDARD WELLS RD 2017 (Cont'd)

20980 BAILEY, DEBORAH K
21098 SMITH, DANIEL
21211 DELAP, JOHN M
21475 GOODIE, JULIA
21564 VARGAS, JULIO
22673 ROBLES, MARIA E

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

STODDARD WELLS RD 2014

15669	BASCOM, JOHN A
	GRIFFITHS, LINDA
	JENSEN, MARY L
15760	DOLCH, ROBERT L
15819	WARREN, LARRY W
15940	ACKLEY, ELLEN K
	ALFORD, JOHN A
	ALLMAN, W L
	ANDERSON, ELIZABETH A
	ARCHER, EUNICE M
	BAKER, JIM K
	BECK, CLARENCE V
	BENNETT, JOANNE
	BETTIS, LYNDA G
	BRADSHAW, JANE A
	BREEDING, SANDRA
	BROMBY, SHERROLYN
	BROOKS, JOSEPH E
	BRUMETT, JOHN R
	CAIN, JOYCE I
	CASTILLO, IRMA P
	CHASE, ROB A
	COPENHAVER, DOROTHY
	CORTEZ, JOYCE E
	COWAN, LESLIE A
	CREASON, JOAN O
	CUNNINGHAM, TERRY D
	CUTTS, JUANITA F
	DAVIS, CANDACE
	DELGADILLO, JOSE L
	DEVEAU, EDWARD J
	DICKERSON, KAREN L
	ECK, FREDRICK J
	ERICKSON, MARTHA L
	FIGUEROA, ROBERT L
	FRANKS, HAROLD N
	GAMBLE, DENNIS R
	GARTIN, ROSALEE L
	GERARD, JENNIFER L
	GOMEZ, RE
	GONZALEZ, BENJAMIN B
	GRAY, JOANNE M
	GRAYSON, JOHN C
	GREEN, HOWARD P
	HAY, GREGORY P
	HERNANDEZ, ISAAC R
	HILLMAN, HERBERT W
	HOBERG, ROBERT A
	HOGAN, PATRICK W
	HORN, GAYLE K

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

STODDARD WELLS RD 2014 (Cont'd)

15940 HOWARD, ADELA
HUGHES, GARY
HURST, JAMES E
INDINGARO, THOMAS
JACKSON, BARBI A
JOHNSON, JAN K
KATICH, KIMBERLY A
KECK, DIANNE M
KOOHNS, LORETTA J
LAMB, HELEN E
LANE, DARYL
LANGLEY, JAMES
LARSEN, WENDI L
LARSON, SHAWN A
LAVERTU, TONIETTE M
LEJK, AMANDA R
LOGUE, LOLA D
LONG, BILL
LUCIANI, JOSEPH
LYNCH, WYATT R
MARKS, NANCY A
MATHEWS, VALERIE A
MATTHEWS, VICK
MORRIS, MONIQUE D
NEDDERMAN, DAVID C
NESTE, DALE K
NICKERSON, JEAN
NICKESON, BENTLEY J
ORR, GORDON L
OXNER, LEONARD C
PIELE, EDWARD G
PISARCZYK, BEVERLY J
RAINES, DEBRA
RIVER RANCH MOBILE
ROBINSON, RAYMOND C
RODRIGUEZ, CARYL R
ROHRER, PEARL M
RUSSELL, ROSALEE K
SAFLEY, WALLACE L
SALAS, MARIO A
SCHMIDT, KATHRYN M
SCHNEIDER, ALFRED
SHADDOX, HAROLD L
SHAFFER, CHARLES L
SHIVELY, MAMIE L
SMITH, CELIA
SWAYZE, JOHN B
TANNER, BERNARD M
TATUM, RUBEN R
TRACY, PHYLLIS M

STODDARD WELLS RD 2014 (Cont'd)

15940	TRAINER, AUDREY M
	TUCKER, FREDA M
	TURNER, VIRGINIA A
	WARKENTIN, JAMES D
	WEEKS, GEORGE E
	WEIMER, NORAM G
	WHITE, MICHELE E
	WOODS, WILLIAM T
	WOODY, FLOYD E
	WORTHEN, CALVIN
15975	WARREN, LARRY E
16011	ROMERO, SHERIE
16281	ANDERSON, EUGENE H
16530	CHAMPION, ADAM S
	COOLEY, MARGARET E
	DIEDE, CHRISTIAN B
	GASKILL, LOIS
	KAMPGROUNDS OF CALIFORNIA KOC
	KENNEDY, STEPHEN M
	MINISCALCO, JOSEPH A
	SCHMITT, GARY N
	SMITH, LORI
	SUAZO, LORI M
	SYMMES, RICHARD L
	VICTORVILLE KAMPGROUNDS OF CALIFORNI
	VICTORVILLE SHADY OASIS
16610	KOERNER, EDNA M
16699	APPLE VALLEY GUN CLUB
16850	SELIMS MOBIL SERVICE
16868	MOTEL 6
16881	UNOCAL 76
16901	MOTEL 6
	RODEWAY INNS
16959	QUEENS MOTEL
17080	BURRTEC WASTE
17111	SPIRIT OF CHRIST TABERNACLE
17288	EMMANUEL TEMPLE CHRISTIAN METHODIST
	EMMANUEL TEMPLECME PRAY
18231	OSBORNE ENTERPRISES
18485	OSBORNE G A PIPE & SUPPLY INC
18600	ATHENS SERVICES
19414	PARKS, LOUIS J
19591	STERLING, BRIAN D
19756	OCCUPANT UNKNOWN,
19876	GRINER, JAMES L
20204	HANSEN, ROY E
20280	HERRICK, CHARLES F
20715	CARVER, T
	CAVINESS, VONTRAE
	WILSON, VALEETA M

STODDARD WELLS RD 2014 (Cont'd)

20951 CAMPBELL, PATRICIA
20980 BAILEY, DEBORAH K
21098 HUTCHINS, CATHERINE S
21211 DELAP, JOHN M
21226 ARNOLD, MELISSA B
21475 GOODIE, JULIA
LEETCH, DENNIS D
WALKER, CHRISTOPHER
21564 VARGAS, JULIO
22673 ROBLES, MARIA E

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

STODDARD WELLS RD 2010

15669	BASCOM, S
	GRIFFITHS, LISA
15760	DOLCH, ROBERT L
	WINDMILL RANCH PEACHES
15819	WARREN, LARRY W
15940	ALFORD, JOHN A
	ALLAMAN, ALICIA B
	AXELL, ELKE L
	BARBA, ELBA D
	BAXTER, NANCY J
	BECK, CLARENCE V
	BENNETT, LEIGH J
	BETTIS, CARL V
	BONNIE, EVA M
	BRADSHAW, JANE M
	CARROLL, ANNE M
	CASTILLO, IRMA P
	CHASE, ROB A
	COFFMAN, SUSAN E
	CORDOVA, ELOG
	CORRIVEAU, LILLIAN L
	CORTEZ, JOYCE E
	COWAN, LESLIE A
	CREW, PHYLLIS K
	DESERT FOX REALTY
	DEVEAU, EDWARD J
	DOMINGUEZ, CELIA G
	DOUTHIT, LOIS O
	EUBANK, HARLAND W
	EVENSON, JOANNE
	FANT, WILLIAM E
	FIGUEROA, ROBERT L
	FRANKS, HAROLD N
	FUTCH, WILLIE
	GAMBLE, DENNIS R
	GARTIN, ROSALEE L
	GERARD, JENNIFER L
	GERMANY, WILLIAM E
	GLENN, LINDA
	GRAY, JOANNE M
	GRAYSON, JOHN C
	GREGORY, LINDAL
	HENDERSON, DOROTHY V
	HERNANDEZ, BEATRIZ H
	HOBERG, ROBERT C
	HOGAN, PATRICK H
	HOOK, LARRY
	HORN, G K
	HOWARD, ADELA G
	HUGHES, VIRGINIA M

STODDARD WELLS RD 2010 (Cont'd)

15940 HUMPHREY, HOWARD
HURST, JAMES
INDINGARO, THOMAS
JOHNSON, JACQUELINE A
KATICH, KIMBERLY A
KECK, DIANNE M
LANE, DONNA M
LAY, ARLENE L
LLAMAS, RAUL R
LONG, VIRGINIA L
LOOMIS, ROBERT L
LUCIANI, VIVIAN E
MASCHETTA, NICHOLAS J
MOORE, DALLAS T
MRYGLOD, WILLIAM
MYERS, MICHAEL J
NEDDERMAN, DAVID C
NEIMAN, DANA J
NESTE, DALE K
NEWMAN, JUSTIN M
NICKESON, MARVIN D
NIELSON, MATTHEW R
ORR, GORDON L
OXNER, LEONARD C
PARKS, JANET R
PAXTON, PAT
PEREZ, AUDREY M
PIELE, EDWARD G
PROCTOR, EVERETTE P
PUCKETT, DAVID L
QUARTUCY, DEEDRA
RICH, VERNA
RIVER RANCH MOBILE PARK
ROBINSON, RAYMOND C
ROHRER, PEARL M
RUSSELL, R
SAFLEY, WALLACE L
SALAS, MARIO A
SHADDOX, BETTY L
SHAFFER, CHARLES L
SHAFFOLD, MERLE M
SHIVELY, MAMIE L
SMITH, MELISSA L
SWAYZE, JOHN B
TATUM, RUBEN R
TRACY, PHYLLIS M
TUCKER, FREDA M
TURNER, VIRGINIA A
VERSO, JAMES A
WALLACE, HARRY R

STODDARD WELLS RD 2010 (Cont'd)

15940	WARKENTIN, SHIRLEY M
	WEIMER, NORMA G
	WHITE, MICHELE N
	WILLIAMS, MARY J
	WOODY, BILLIE J
15975	WARREN, LARRY W
16011	VARGAS, JOSEPH R
16281	ANDERSON, JR
16350	SWANSON, ROGER
16530	BROOKS, PAUL
	CEBALLOS, MERCADO M
	COOLEY, MARGARET E
	DIEDE, CHRISTIAN B
	DOPHER, DONALD
	FERRAND, STEVE
	GARZA, RICK
	LARNER, THOMAS J
	RABOIN, MICHAEL N
	RECTOR, DIANA A
	SCHMITT, GARY
	SQUIRE, CAROL
	TOMSICH, STEVEN
	VICTORVILLE SHADY OASIS
16610	NUMBER 1 HANDYMAN
16850	SELIMS MOBIL SVC
16868	HOWARD JOHNSON
	WESTSIDE 15
16881	76
16901	MOTEL 6
16959	QUEENS MOTEL
17113	ADVANCED HOME BUILDERS
17184	GRADY TRAMMEL PARK
19414	OCCUPANT UNKNOWN,
	TOTAL CONTROL TRAINING INC
19591	MOORE, ROBIN L
19756	OCCUPANT UNKNOWN,
19757	OCCUPANT UNKNOWN,
19876	GRINER, JAMES L
20204	OCCUPANT UNKNOWN,
20280	HOLMES, DENNIS J
20715	FULLER, MELISSA A
	WILSON, VALEETA M
20951	JARRARD, JARED
20980	BAZILE, THOMAS D
21098	OCCUPANT UNKNOWN,
21211	DELAP, JOHN M
21226	OCCUPANT UNKNOWN,
21475	LEETCH, DENNIS D
21564	VARGAS, JULIO
22673	ROBLES, MARIA E

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

STODDARD WELLS RD 2005

15669 BASCOM RANCH
GRIFFITHS, LISA
15819 WARREN, LARRY
15940 ALFORD, JOHN A
ALLEN, ZELMA D
AMES, CHESTER J
ARCHER, EUNICE M
ARMITAGE, EVA A
BAKER, ESTELLA M
BARBA, ELBA D
BAXTER, NANCY J
BEATTY, HELEN B
BECK, VICTOR C
BIRDSONG, LORI
BISHOP, CHARLES C
BITTNER, ROBERT H
BONNIE, EVA M
BOWSER, LEROY F
BRADSHAW, JANE A
BROWN, IRENE
CANUTI, MARY E
CARROLL, ANNE M
CASTILLO, IRMA P
CELAK, HENRY
CHAMBERS, LEIGH J
COFFMAN, KENNETH W
COLEMAN, T
COOPER, GEORGE L
CREW, PHYLLIS K
DEVEAU, EDWARD J
DEWOODY, BETTIE G
DOLCH, ROBERT L
EUBANK, HARLAND W
GARTIN, ROSALEE
GARZA, PAUL S
GOATS, HAROLD H
GRAMIGNA, ROSE A
HELLAND, CURTISS P
HOGAN, PATRICK H
HORN, G K
HOWARD, ADELA G
HUMPHREY, HOWARD
HUNT, HELEN
HURST, SUE E
IVEY, KENNETH E
JOHNSON, JACQUELINE A
KNIGHT, BREALON C
LANCE, JAMES R
LANE, DARYL G
LAY, ARLENE L

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

STODDARD WELLS RD 2005 (Cont'd)

15940	LONG, VIRGINIA L
	LOOMIS, ROBERT L
	LUCIANI, JOSEPH M
	MORELLO, JOANN M
	MYERS, CECIL R
	NEIMAN, DANA J
	NICKERSON, OLA C
	NICKESON, MARVIN D
	ORR, GORDON L
	OXNER, LONNEY
	PANGBURN, OWEN
	PARKS, JANET R
	PAXTON, PAT
	PETERSON, RAYMOND H
	PIELE, EDWARD G
	PROCTOR, CHESTER L
	PUCKETT, DAVID L
	RICH, VERNA
	RIVER RANCH MOBILE HOME PARK
	RODRIGUEZ, EDMUND G
	ROHRER, PEARL M
	SHADDOX, BETTY L
	SHAFFER, CHARLES
	SHAFFOLD, MERLE M
	STANLEY, JAKE M
	STODDARD, WALTER J
	TATUM, RUBEN R
	TORRANCE, NEIL J
	TRACY, PHYLLIS M
	TRAYNOR, RONALD
	TUCKER, FREDA M
	TURRILL, BARBARA B
	VERSO, JAMES A
	VILLALOBOS, CRUZ O
	WALLACE, HARRY R
	WEIMER, NORMA G
	WILLIAMS, MARY J
	WILSON, LEROY D
	WOODY, BILLIE J
	WORTHEN, CALVIN J
16011	PEREZ, BENJAMIN
16350	SWANSON, ROGER
16530	BELLES, HAL
	BOHATY, EDWARD
	BUNTING, G
	COUP, HENRY C
	DICKERSON, KAREN L
	DOPHER, DONALD
	ERICKSON, MARK
	FERRAND, STEVE

STODDARD WELLS RD 2005 (Cont'd)

16530	GOETZ, PATRICK G
	GUARDADO, ISABEL
	HOPKINS, BILL H
	JOINER, CHARMAINE
	KAMPGROUNDS OF AMERICA KOA
	KAMPGROUNDS OF CA LLC
	KAMPGROUNDS OF CALIFORNIA LLC
	LLOYD, RONALD
	MCANDREWS, EDWARD
	MOON, CANDICE R
	OLDENBURG, ROBERT G
	REEVES, PAT M
	SALTZMAN, JON
	SCOTT, TOM G
	SERNA, MADELINE
	SMITH, BEVERLY E
	SPIT SHINE KLEAN
	WENTZEL, WALTER J
	WOOLLEY, DAVID M
16600	VICTORVILLE MOTOCROSS COMPLEX
16610	KOERNER, EDNA M
16699	APPLE VALLEY GUN CLUB
16827	US GAS AND MINI MART
16828	DAVE G ENTERPRISES
16850	SELIMS MOBILE
16868	HOWARD JOHNSON EXPRESS INN
	PATEL KOBASH
	WESTSIDE 15
16881	UNOCAL 76
16901	MOTEL 6
16937	DENNYS
	DENNYS RESTAURANTS
16941	JJ AUTO REPAIR
16959	QUEENS MOTEL
17000	CHECKMATE STAFFING SOLUTION
17070	A 1 BACK HOE SERVICE
17080	BURRTEC WASTE INDUSTRIES INC
	VICTORVILLE DISPOSAL INC
17184	VICTORVILLE CITY OF PARKS AN
18231	OSBORNE ENTERPRISES INC
	OSBORNE TANK & SUPPLY AIRCRAFT INC
18485	GA OSBORNE PIPE AND SUPPLY INC
19277	WEST, BART
19414	OCCUPANT UNKNOWN,
19591	MOORE, ROBIN L
19756	OCCUPANT UNKNOWN,
19757	DRUMMOND, RONALD L
19876	GRINER, JAMES L
20204	HANSEN, ROY E
20280	HERRICK, CHARLES F

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

STODDARD WELLS RD 2005 (Cont'd)

20715 OCCUPANT UNKNOWN,
WILSON, JIMMIE L
20716 WILSON, VAL
20951 OCCUPANT UNKNOWN,
20980 BAZILE, THOMAS D
21098 HUTCHINS, CATHERINE S
21211 SMALLEY, LARRY G
21226 OCCUPANT UNKNOWN,
21475 KESSLER, JEFF
21564 HULL, ALBERT F
22673 ROBLES, MARIA

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

STODDARD WELLS RD 2000

15669 BASCOM RANCH
GONZALEZ, MIGUEL
15760 HANSEN, JOEL B
15819 OCCUPANT UNKNOWN,
15940 BECK, VICTOR
BISHOP, CHARLES
BITTNER, ROBERT H
BONNIE, EVA M
BOURNE, C A
BOWSER, LEROY F
BRUMETT, RAYMOND A
BURING, JAMES A
CANUTI, MARY E
CARD, BUD
CELAK, HENRY
CORDER, ARTHUR B
CRANK, FLOYD
CREZEE, CURTIS
CRONK, RUSSELL G
DAYON, JANET
DEWOODY, ALBERT L
DOYON, WILSON A
DRISCOLL, DANIEL
DRYDEN, W
EASON, NICKI S
ELLISTON, NADINE E
EVANS, L R
FOX, BOBBY J
FRASER, ROBERT K
GARZA, S G
GAVITTE, SIDNEY H
GRAMIGNA, RICHARD F
GRIFFIN, EILER
GUEST, EDITH M
HENDERSON, LEONARD T
HERTZ, J N
HORN, G K
HOWARD, ADELA G
HUMPHREY, HOWARD
HURST, JAMES
IVEY, KENNETH
JAMESON, WILLIAM P
JOHNSON, P C
KEMMETER, ROSALIE
KLEIN, MATTHEW
KNAPP, JEANNE
KNIGHT, B C
LANE, DONNA
LEONARD, JOANN
LONG, BERNARD

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

STODDARD WELLS RD 2000 (Cont'd)

15940	LOOMIS, ROBERT L
	LUCIANI, JOE
	MOORE, DALLAS T
	MORELOCK, JOHN H
	MORITZ, LARRY
	NESTMAN, R W
	NICKESON, MARVIN D
	ONEAL, R L
	PALKOVIC, E
	PALMER, JEANNE B
	PANGBURN, OWEN
	PARKS, VICTOR W
	PARTCH, WILLARD S
	PAVELIN, JUNE E
	POWELL, WILLIAM E
	PUCKETT, DAVID L
	REED, LADONNA B
	RICH, VERNA
	RIVER RANCH MOBILE PARK
	ROBINSON, RAYMOND C
	SERRY, MARION L
	SHAFFOLD, MERLE M
	SHELDON, DICK
	SHULTZ, DONALD L
	SMITH, MELBA F
	SNODGRESS, LLOYD
	SPEETZEN, JOHN
	STANLEY, JAKE
	STJOHN, KENNETH C
	STODDARD, WALTER
	TAYLOR, TOM
	TERHUNE, MARILYN
	TUCKER, FREDA M
	VARELA, SAM G
	VERSO, JAMES
	WALLACE, HARRY R
	WARKENTIN, SHIRLEY
	WEINBERG, EDWARD J
	WILCOX, C
	WILLS, EDMUND L
	WILSON, LEROY D
15942	OCCUPANT UNKNOWN,
15975	OCCUPANT UNKNOWN,
16011	OCCUPANT UNKNOWN,
16281	ANDERSON, H E
16530	CAMPGROUNDS OF AMERICA KOA
	DUCKWORTH, JOHN M
	KAMPGROUNDS OF AMERICA KOA
	KOA VICTORVILLE
	LANCE, JAMES

STODDARD WELLS RD 2000 (Cont'd)

16530 OLDENBURG, ROBERT G
SMITH, BEVERLY E
WENTZEL, WALTER J
16610 KOERNER ALBERT H HANDY MAN
KOERNER, EDNA
16699 APPLE VALLEY GUN CLUB
16828 EDE TOWING
THRIFTY CAR RENTAL
U-HAUL COMPANY INDEPENDENT DEALERS (CONTD)
USGAS
16850 SELIM'S MOBILE SERVICE
SELIMS MOBIL SERVICE
16868 TRAVELODGE VICTORVILLE
VICTORVILLE APPLE VALLEY TRAVELODGE
WESTSIDE 15
16881 UNOCAL 76
16901 MOTEL 6
16937 DENNY'S RESTAURANT VICTORVILLE
16959 QUEENS MOTEL
17080 AVCO DISPOSAL INCORPORATED
AVCO SECURITY STORAGE
VICTORVILLE DISPOSAL INCORPORATED
17111 SPIRIT OF CHRIST TABERNACLE
17288 EMMANUEL TMPL CHRISTIAN METHDST EPISCPL CHURCH
18231 INTERSTATE EQUIPMENT
OSBORNE TANK & SUPPLY AIRCRAFT DIVISION ONLY
OSBORNE TANK & SUPPLY INDUSTRIAL TANK DIVISION
18485 OSBORNE G A PIPE & SUPPLY INCORPORATED
19414 BRUSSEL, FAYE J
19591 MOORE, ROBIN
19876 GRINER, JAMES L
20280 OCCUPANT UNKNOWN,
20715 WILSON, JIMMIE
20980 BAZILE, CHARLES
21012 BAZILE, CHARLES D
21098 HUTCHISON, SAONIA T
21226 OCCUPANT UNKNOWN,
21472 OCCUPANT UNKNOWN,
21475 LASH, P L
21564 HULL, ALBERT F

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

STODDARD WELLS RD 1995

15669	BASCOM RANCH
15940	RIVER RANCH MOBILE PARK
16530	DIAMOND AIRE
	KOA KAMPGROUNDS
16610	NUMBER 1 HANDYMAN
16699	APPLE VALLEY GUN CLUB
16828	AARCO HODHOD OIL
	FREEWAY TOWING & AUTOMOTIVE
16850	SELIMS MOBIL SVC
16868	TRAVELODGE
	VICTORVILLE APPLE VALLEY
	WESTSIDE 15
16881	UNOCAL 76
16901	MOTEL 6
16937	DENNYS
16959	QUEENS MOTEL
17070	A 1 BACKHOE SKIP & DUMP TRUCK
17080	AVCO SECURITY STORAGE
	VICTORVILLE DISPOSAL INC
17111	SPIRIT OF CHRIST TABERNACLE
17184	VICTORVILLE GRADY TRAMMEL
17288	EMMANUEL TEMPLE CHRISTIAN
18231	OSBORNE TANK & SUPPLY
19756	WEBB, LAVERNA
19876	GRINER, JAMES L
20715	BAILEY, JIM
21098	HUTCHINS, JAMES C

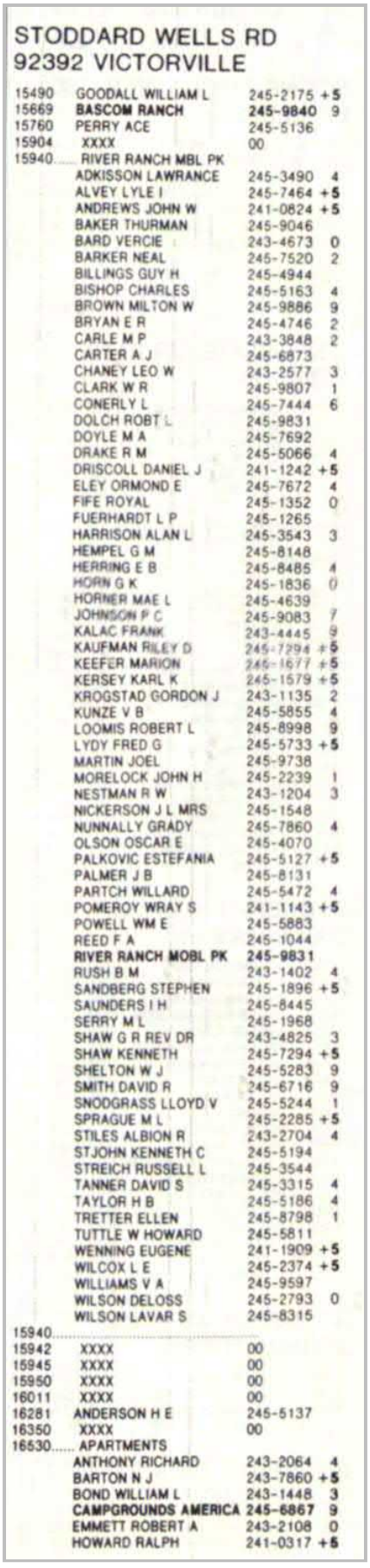
Target Street	Cross Street	Source
-	✓	EDR Digital Archive

STODDARD WELLS RD 1992

15490	GOODALL, WILLIAM L
15669	BASCOM RANCH
15760	PERRY, ACE
15940	DOLCH, ROBERT L
	GRIFFIN, EILER
	HORN, G K
	NICKESON, MARVIN D
	PARTCH, WILLARD
	QUAINTANCE, MERLE
	RIVER RANCH MBL PRK
	SPRAGUE, M L
	TRETTER, ELLEN
	VERSO, J
	WALLACE, HARRY R
16281	ANDERSON, H E
16530	CORDOVA, ELOY
	HALE, JAMES W
	HARMON, LISA L
	HARPER, JUNE L
	HARRIS, L E
	K O A
	LEDFORD, JAMES R
	VARELA, SAM G
	WOOD, WAYNE W
16610	KOERNER ALBERT H
	KOERNER, ALBERT H
16699	APPLE VLY GUN CLUB
16828	AARCO HODHOD OIL
16850	SELIMS MOBIL SERV
16868	VICTORVL TRAVELLDGE
	WESTSIDE 15
16881	UNOCAL 76
16885	JOES RESTAURANT
16901	MOTEL 6
16937	DENNYS RESTAURANT
16941	FREEWAY TOWNG&ATMTV
16959	QUEENS MOTEL
17070	MEDLOCK DAVID D
17080	A V C O DISPOSAL
	VICTORVL DISPOSAL
17111	SPIRIT OF CHRIST
17288	EMMANUEL TMPL CME
18231	INTRST EQUIPMENT
	OSBORNE TANK&SPLY
18485	OSBORNE G PIPE&SPLY
19876	GRINER, JAMES L

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

STODDARD WELLS RD 1985



STODDARD WELLS RD
92392 VICTORVILLE

15490	GOODALL WILLIAM L	245-2175	+5
15669	**BASCOM RANCH**	**245-9840**	9
15760	PERRY ACE	245-5136	
15904	XXXX	00	
15940	RIVER RANCH MBL PK		
	ADKISSON LAWRANCE	245-3490	4
	ALVEY LYLE I	245-7464	+5
	ANDREWS JOHN W	241-0824	+5
	BAKER THURMAN	245-9046	
	BARD VERCIE	243-4673	0
	BARKER NEAL	245-7520	2
	BILLINGS GUY H	245-4944	
	BISHOP CHARLES	245-5163	4
	BROWN MILTON W	245-9886	9
	BRYAN E R	245-4746	2
	CARLE M P	243-3848	2
	CARTER A J	245-6873	
	CHANEY LEO W	243-2577	3
	CLARK W R	245-9807	1
	CONERLY L	245-7444	6
	DOLCH ROBT L	245-9831	
	DOYLE M A	245-7692	
	DRAKE R M	245-5066	4
	DRISCOLL DANIEL J	241-1242	+5
	ELEY ORMOND E	245-7672	4
	FIFE ROYAL	245-1352	0
	FUERHARDT L P	245-1265	
	HARRISON ALAN L	245-3543	3
	HEMPEL G M	245-8148	
	HERRING E B	245-8485	4
	HORN G K	245-1836	0
	HORNER MAE L	245-4639	
	JOHNSON P C	245-9083	7
	KALAC FRANK	243-4445	9
	KAUFMAN RILEY D	245-7294	+5
	KEEFER MARION	245-1677	+5
	KERSEY KARL K	245-1579	+5
	KROGSTAD GORDON J	243-1135	2
	KUNZE V B	245-5855	4
	LOOMIS ROBERT L	245-8998	9
	LYDY FRED G	245-5733	+5
	MARTIN JOEL	245-9738	
	MORELOCK JOHN H	245-2239	1
	NESTMAN R W	243-1204	3
	NICKERSON J L MRS	245-1548	
	NUNNALLY GRADY	245-7860	4
	OLSON OSCAR E	245-4070	
	PALKOVIC ESTEFANIA	245-5127	+5
	PALMER J B	245-8131	
	PARTCH WILLARD	245-5472	4
	POMEROY WRAY S	241-1143	+5
	POWELL WM E	245-5883	
	REED F A	245-1044	
	RIVER RANCH MOBL PK	**245-9831**	
	RUSH B M	243-1402	4
	SANDBERG STEPHEN	245-1896	+5
	SAUNDERS I H	245-8445	
	SERRY M L	245-1968	
	SHAW G R REV DR	243-4825	3
	SHAW KENNETH	245-7294	+5
	SHELTON W J	245-5283	9
	SMITH DAVID R	245-6716	9
	SNODGRASS LLOYD V	245-5244	1
	SPRAGUE M L	245-2285	+5
	STILES ALBION R	243-2704	4
	STJOHN KENNETH C	245-5194	
	STREICH RUSSELL L	245-3544	
	TANNER DAVID S	245-3315	4
	TAYLOR H B	245-5186	4
	TRETTER ELLEN	245-8798	1
	TUTTLE W HOWARD	245-5811	
	WENNING EUGENE	241-1909	+5
	WILCOX L E	245-2374	+5
	WILLIAMS V A	245-9597	
	WILSON DELOSS	245-2793	0
	WILSON LAVAR S	245-8315	
15940			
15942	XXXX	00	
15945	XXXX	00	
15950	XXXX	00	
16011	XXXX	00	
16281	ANDERSON H E	245-5137	
16350	XXXX	00	
16530	APARTMENTS		
	ANTHONY RICHARD	243-2064	4
	BARTON N J	243-7860	+5
	BOND WILLIAM L	243-1448	3
	CAMPGROUNDS AMERICA	**245-6867**	9
	EMMETT ROBERT A	243-2108	0
	HOWARD RALPH	241-0317	+5

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

STODDARD WELLS RD 1985

STODDARD WELLS RD		92392 CONT.	
	K O A	**245-6867**	
	KAISER GLEN H	245-1085	0
	KAMPGROUNDS OF AMER	**245-6867**	
	MCGOWEN JOLENE	241-0035	+5
	MCNEER CLIFF	243-3069	4
	MONGER MICHAEL	245-5049	+5
	PORGES BETTY J	243-2108	0
	RAMSEY JAS R	245-7169	9
	RUMSEY WES G	243-2207	3
	TRAIL GARREL W	243-1282	3
	VALELA DAVID P	243-7163	+5
16530			
16610	BAILEY JACK	245-9197	
	KOERNER ALBERT H	245-3288	+5
16638	XXXX	00	
16698	XXXX	00	
16699	**APPLE VLY GUN CLUB**	**245-8702**	
16828	**STODDARD WELLS EXXN**	**245-9220**	4
16850	**SELIMS MOBIL SERV**	**245-9667**	2
16868	XXXX	00	
16879	XXXX	00	
16881	**AMIR FREEWAY CHEVRN**	**243-1117**	4
	CHEVRON STATIONS	**245-7525**	3
16901	**MOTEL 6**	**245-9548**	6
16916	XXXX	00	
16919	XXXX	00	
16937	XXXX	00	
16941	**A A AUTO PNT&BDY SH**	**243-2502**	4
16959	**QUEENS MOTEL**	**245-3371**	1
17070	**A 1 BACKHOE SKIP**	**245-7875**	7
	MEDLOCK DAVID D	**245-7875**	8
17078	XXXX	00	
17080	**AVCO DISPOSAL INC**	**245-8607**	3
	VICTORVL DISPOSAL	**245-8609**	2
17082	XXXX	00	
17085	XXXX	00	
17111	**SPIRIT CHRST TBRNCL**	**243-4154**	3
17288	**EMMANUEL TMPL CME**	**245-4973**	3
18231	OSBORNE JOHN L	245-5735	+5
	OSBORNE TANK&SUPPLY	**245-8477**	4
19235	XXXX	00	
19277	MORGAN ALMA	247-4650	6
19756	XXXX	00	
19757	XXXX	00	
19876	GRINER JAMES L	247-8795	
20245	XXXX	00	
20280	OWENS WILLIAM	247-9765	+5
20715	WILSON JIMMIE	247-5169	0
20951	KENNEDY W	247-6759	
20980	XXXX	00	
21011	XXXX	00	
21211	ANDREWS DOROTHY M	247-7813	6
21475	ROSS BEN	247-9376	+5
	VANKAMPEN EVERT	247-8959	+5
NO #	**JOES RESTAURANT**	**245-8301**	
*	21 BUS 120 RES	25 NEW	

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

STODDARD WELLS RD 1980

STODDARD WELLS RD
92392 VICTORVILLE

15440	MALONE L J	245-3634 8
15490	FRANKS A D	245-9438 +0
15669	BASCOM EARL W	245-9840 9
	GOULDING BURT	243-4636 +0
15760	PERRY ACE	245-5136 3
15904	CONCANNON T A	245-3665 6
15940	RIVER RANCH MBL PK	
	BAKER THURMAN	245-9046
	BARD VERCIE	243-4673 +0
	BILLINGS GUY H	245-4944 5
	BRICK HELEN	245-4634
	BROWN MILTON W	245-9886 9
	CARTER A J	245-6873
	CLEVENGER KYLE	245-7872 +0
	CONERLY L	245-7444 6
	DELFS GUS	245-9149
	DOLCH ROBT L	245-9831
	DOYLE M A	245-7692 4
	FAGG H M	245-7204 +0
*	**FIFE ROYAL**	**245-1352 +0**
	FUERHARDT L P	245-1265
	GALLOWAY M E	245-5749 6
	GOLSON WADE M	245-7526
	GRIGSBY JOHN W	245-7480 8
	HELTON JOHNNIE A	245-7852 9
	HEMPEL G M	245-8148
	HENDERSON LEONARD	245-7065 +0
	HEUER STACY C	245 6077 +0
	HORN G K	245-1836 +0
	HORNER MAE L	245-4639
	JOHNSON P C	245-9083 7
	KALAC FRANK	243-4445 9
	KIRKPATRICK WILLIAM	245-2354 +0
	LINDSEY C G	245-2414 +0
	LOOMIS ROBERT L	245-8998 9
	MARTIN JOEL	245-9738 5
	NICKERSON J L MRS	245-1548
	OLSON OSCAR E	245-4070
	PALMER J B	245-8131 4
	POPINEAU D L REV	245-5250 +0
	POWELL WM E	245-5883
	REED F A	245-1044 5
	REED H LYNN	245-5019 +0
*	**RIVER RANCH MOBL PK**	**245-9831**
	SAUNDERS I H	245-8445 4
	SERRY M L	245-1968 3
	SHADDOX HAROLD	245-9179 3
	SHELTON W J	245-5283 9
	SMITH DAVID R	245-6716 9
	SORENSEN ELMER L	245-2590 6
	STJOHN KENNETH C	245-5194 3
	STREICH RUSSELL L	245-3544 4
	TROY M A	245-3132 9
	TUTTLE W HOWARD	245-5811 5
	WAUGH WM W	245-6305 9
	WELCH H	245-6975 6
	WILLIAMS V A	245-9597
	WILSON DELOSS	245-2793 +0
	WILSON LAVAR S	245-8315
15940		
15942	XXXX	00
15945	MCLEOD JOHN	245-7884 +0
	NUNNALLY CRADY	245-7860 +0
15950	XXXX	00
16011	XXXX	00
16251	ANDERSON H E	245-5137 4
16350	STAFFORD ROBERT G	243-3159 +0

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

STODDARD WELLS RD 1980

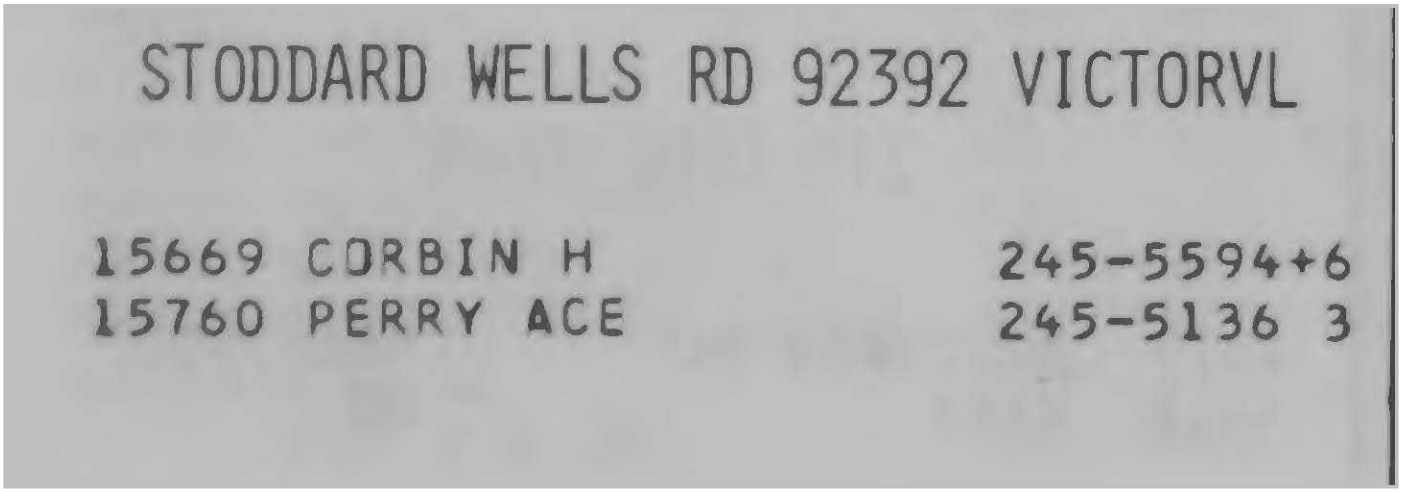


STODDARD WELLS RD 92392 CONT.

16530	APARTMENTS	
	BRINEGAR E T	243-2203 +0
	BRUTON C J	245-8954 9
★	CAMPGROUNDS AMERICA	245-6867 9
	CHENEY WM W JR	245-8340 +0
	EMMETT ROBERT A	243-2108 +0
	HUTSON WILLIAM	245-6923 +0
	JOHNSTONE JEFFREY	245-7165 9
★	K O A	245-6867 9
	KAISER GLEN H	245-1085 +0
★	KAMPGROUNDS OF AMER	245-6867
	PORGES BETTY J	243-2108 +0
	RAMSEY JAMES R	245-7169 9
	WOOD GORDON L	245-1893 9
16530		
16610	BAILEY JACK	245-9197
16638	ROBISON DENNIS N	245-1506 5
16696	BOWMAN RENEE	245-7626 +0
	GRETT STEVE	243-3462 +0
16699★	APPLE VLY GUN CLUB	245-8702
16828★	MATULIKS EXXON	245-4573 6
16868★	PAZZO CAFE	245-5545 +0
16879	XXXX	00
16881★	CHEVRON STN VCTRVL	245-7525 9
★	KIT STILL CHEVRON 1	245-7525 9
16901★	MOTEL 6	245-9548 6
16916	XXXX	00
16919★	WYCOFF CO INC SUPLY	245-9220 +0
16937★	DENNYS REST VCTRVL	245-4880 8
16941	XXXX	00
16959★	FUNN FROLIK MOTEL	245-3371 9
17070★	A 1 BACKHOE SKIP	245-7875 7
	MEDLOCK DAVID D	245-7875 8
17082	XXXX	00
17085	XXXX	00
17111	XXXX	00
17288★	EMMANUEL TEMPLE CH	245-4547 7
19235	XXXX	00
19277	MORGAN ALMA	247-4650 6
19756	NORRIS RACHEL	247-7014 7
19757	XXXX	00
19876	GRINER JAMES L	247-8795 5
20245	XXXX	00
20715	WILSON JIMMIE	247-5169 +0
20951	KENNEDY W	247-6759
20980	BAZILE THOMAS	247-5201 +0
21011	XXXX	00
21211	ANDREWS DOROTHY M	247-7813 6
NO #★	JOES RESTAURANT	245-8301
NO #	REMBOLD CLARENCE	245-6796 4
NO #★	STODDARD WLLS MOBIL	245-5079 4
★	18 BUS 96 RES	29 NEW

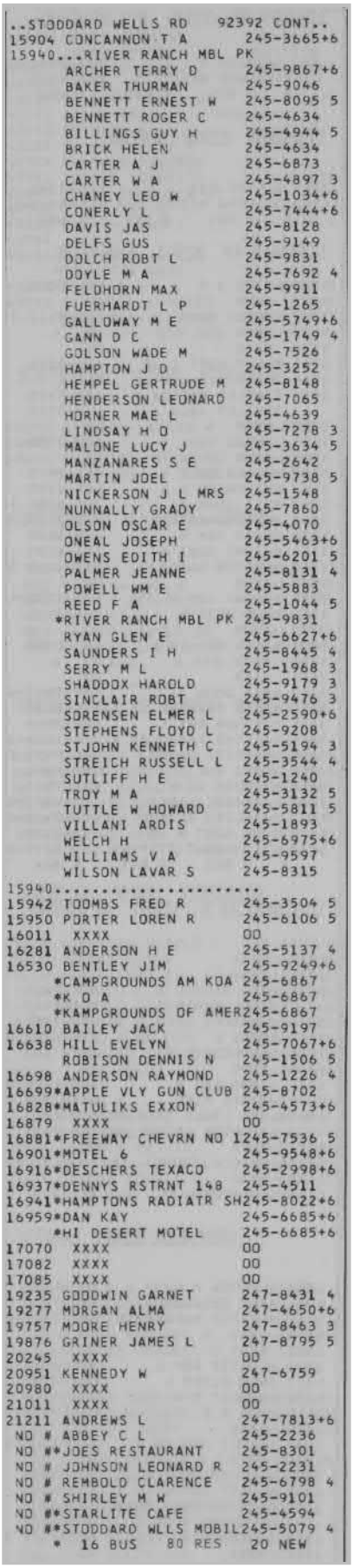
Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

STODDARD WELLS RD 1976



Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

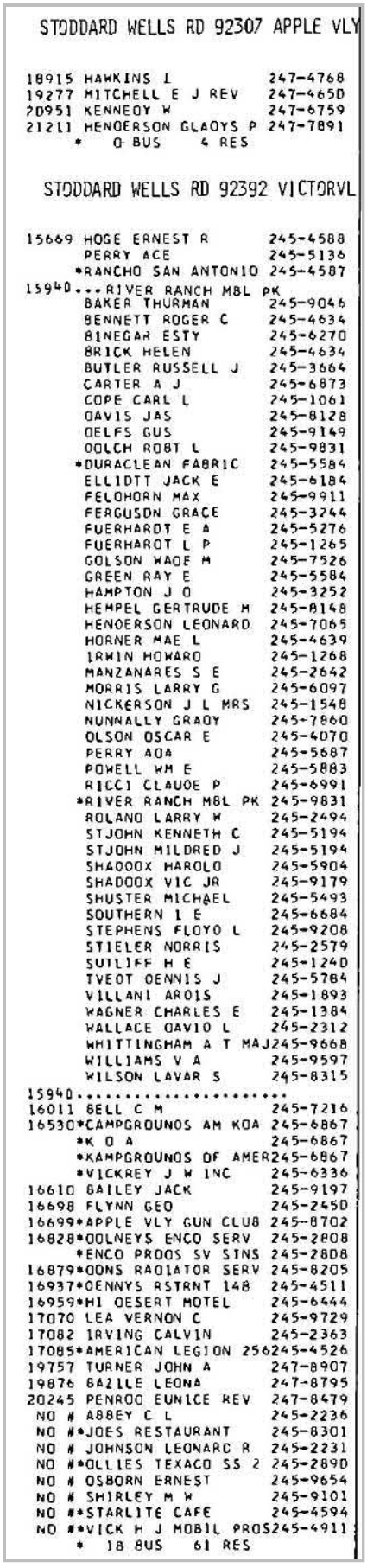
STODDARD WELLS RD 1976



```
..STODDARD WELLS RD   92392 CONT..
15904 CONCANNON T A          245-3665+6
15940...RIVER RANCH MBL PK
      ARCHER TERRY D         245-9867+6
      BAKER THURMAN          245-9046
      BENNETT ERNEST W       245-8095 5
      BENNETT ROGER C        245-4634
      BILLINGS GUY H         245-4944 5
      BRICK HELEN            245-4634
      CARTER A J             245-6873
      CARTER W A             245-4897 3
      CHANEY LEO W           245-1034+6
      CONERLY L              245-7444+6
      DAVIS JAS              245-8128
      DELFS GUS              245-9149
      DOLCH ROBT L           245-9831
      DOYLE M A              245-7692 4
      FELDHORN MAX           245-9911
      FUERHARDT L P          245-1265
      GALLOWAY M E           245-5749+6
      GANN D C               245-1749 4
      GOLSON WADE M          245-7526
      HAMPTON J D            245-3252
      HEMPEL GERTRUDE M      245-8148
      HENDERSON LEONARD      245-7065
      HORNER MAE L           245-4639
      LINDSAY H D            245-7278 3
      MALONE LUCY J          245-3634 5
      MANZANARES S E         245-2642
      MARTIN JOEL            245-9738 5
      NICKERSON J L MRS      245-1548
      NUNNALLY GRADY         245-7860
      OLSON OSCAR E          245-4070
      ONEAL JOSEPH           245-5463+6
      OWENS EDITH I          245-6201 5
      PALMER JEANNE          245-8131 4
      POWELL WM E            245-5883
      REED F A               245-1044 5
     *RIVER RANCH MBL PK     245-9831
      RYAN GLEN E            245-6627+6
      SAUNDERS I H           245-8445 4
      SERRY M L              245-1968 3
      SHADDOX HAROLD         245-9179 3
      SINCLAIR ROBT          245-9476 3
      SORENSEN ELMER L       245-2590+6
      STEPHENS FLOYD L       245-9208
      STJOHN KENNETH C       245-5194 3
      STREICH RUSSELL L      245-3544 4
      SUTLIFF H E            245-1240
      TROY M A               245-3132 5
      TUTTLE W HOWARD        245-5811 5
      VILLANI ARDIS          245-1893
      WELCH H                245-6975+6
      WILLIAMS V A           245-9597
      WILSON LAVAR S         245-8315
15940.....................
15942 TOOMBS FRED R          245-3504 5
15950 PORTER LOREN R         245-6106 5
16011  XXXX                  OO
16281 ANDERSON H E           245-5137 4
16530 BENTLEY JIM            245-9249+6
     *CAMPGROUNDS AM KOA     245-6867
     *K O A                  245-6867
     *KAMPGROUNDS OF AMER    245-6867
16610 BAILEY JACK            245-9197
16638 HILL EVELYN            245-7067+6
      ROBISON DENNIS N       245-1506 5
16698 ANDERSON RAYMOND       245-1226 4
16699*APPLE VLY GUN CLUB      245-8702
16828*MATULIKS EXXON          245-4573+6
16879  XXXX                  OO
16881*FREEWAY CHEVRN NO 1     245-7536 5
16901*MOTEL 6                245-9548+6
16916*DESCHERS TEXACO         245-2998+6
16937*DENNYS RSTRNT 148       245-4511
16941*HAMPTONS RADIATR SH     245-8022+6
16959*DAN KAY                245-6685+6
     *HI DESERT MOTEL        245-6685+6
17070  XXXX                  OO
17082  XXXX                  OO
17085  XXXX                  OO
19235 GOODWIN GARNET         247-8431 4
19277 MORGAN ALMA            247-4650+6
19757 MOORE HENRY            247-8463 3
19876 GRINER JAMES L         247-8795 5
20245  XXXX                  OO
20951 KENNEDY W              247-6759
20980  XXXX                  OO
21011  XXXX                  OO
21211 ANDREWS L              247-7813+6
 ND # ABBEY C L              245-2236
 ND #*JOES RESTAURANT        245-8301
 ND # JOHNSON LEONARD R      245-2231
 ND # REMBOLD CLARENCE       245-6798 4
 ND # SHIRLEY M W            245-9101
 ND #*STARLITE CAFE          245-4594
 ND #*STODDARD WLLS MOBIL    245-5079 4
     *  16 BUS   80 RES   20 NEW
```

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

STODDARD WELLS RD 1971



STODDARD WELLS RD 92307 APPLE VLY

18915 HAWKINS L 247-4768
19277 MITCHELL E J REV 247-4650
20951 KENNEDY W 247-6759
21211 HENDERSON GLADYS P 247-7891
* 0 BUS 4 RES

STODDARD WELLS RD 92392 VICTORVL

15669 HOGE ERNEST R 245-4588
PERRY ACE 245-5136
*RANCHO SAN ANTONIO 245-4587
15940...RIVER RANCH MBL PK
BAKER THURMAN 245-9046
BENNETT ROGER C 245-4634
BINEGAR ESTY 245-6270
BRICK HELEN 245-4634
BUTLER RUSSELL J 245-3664
CARTER A J 245-6873
COPE CARL L 245-1061
DAVIS JAS 245-8128
DELFS GUS 245-9149
DOLCH ROBT L 245-9831
*DURACLEAN FABRIC 245-5584
ELLIOTT JACK E 245-6184
FELDHORN MAX 245-9911
FERGUSON GRACE 245-3244
FUERHARDT E A 245-5276
FUERHAROT L P 245-1265
GOLSON WADE M 245-7526
GREEN RAY E 245-5584
HAMPTON J O 245-3252
HEMPEL GERTRUDE M 245-8148
HENDERSON LEONARD 245-7065
HORNER MAE L 245-4639
IRWIN HOWARD 245-1268
MANZANARES S E 245-2642
MORRIS LARRY G 245-6097
NICKERSON J L MRS 245-1548
NUNNALLY GRADY 245-7860
OLSON OSCAR E 245-4070
PERRY ADA 245-5687
POWELL WM E 245-5883
RICCI CLAUDE P 245-6991
*RIVER RANCH MBL PK 245-9831
ROLAND LARRY W 245-2494
STJOHN KENNETH C 245-5194
STJOHN MILDRED J 245-5194
SHADDOX HAROLD 245-5904
SHADDOX VIC JR 245-9179
SHUSTER MICHAEL 245-5493
SOUTHERN L E 245-6684
STEPHENS FLOYD L 245-9208
STIELER NORRIS 245-2579
SUTLIFF H E 245-1240
TVEDT DENNIS J 245-5784
VILLANI AROLS 245-1893
WAGNER CHARLES E 245-1384
WALLACE DAVID L 245-2312
WHITTINGHAM A T MAJ 245-9668
WILLIAMS V A 245-9597
WILSON LAVAR S 245-8315
15940.....
16011 BELL C M 245-7216
16530*CAMPGROUNDS AM KOA 245-6867
*K O A 245-6867
*KAMPGROUNDS OF AMER 245-6867
*VICKREY J W INC 245-6336
16610 BAILEY JACK 245-9197
16698 FLYNN GEO 245-2450
16699*APPLE VLY GUN CLUB 245-8702
16828*DOLNEYS ENCO SERV 245-2808
*ENCO PRODS SV SINS 245-2808
16879*DONS RADIATOR SERV 245-8205
16937*DENNYS RSTRNT 148 245-4511
16959*HI DESERT MOTEL 245-6444
17070 LEA VERNON C 245-9729
17082 IRVING CALVIN 245-2363
17085*AMERICAN LEGION 256 245-4526
19757 TURNER JOHN A 247-8907
19876 BAZILE LEONA 247-8795
20245 PENROD EUNICE REV 247-8479
NO # ABBEY C L 245-2236
NO #*JOES RESTAURANT 245-8301
NO # JOHNSON LEONARD R 245-2231
NO #*OLLIES TEXACO SS 2 245-2890
NO # OSBORN ERNEST 245-9654
NO # SHIRLEY M W 245-9101
NO #*STARLITE CAFE 245-4594
NO #*VICK H J MOBIL PROS 245-4911
* 18 BUS 61 RES

Target Street	Cross Street	Source
-	✓	Luskey City Directory

STODDARD WELLS RD 1964

STODDARD WELLS RD, E--FROM HWY-18, NORTH AT EAST END OF MOJAVE RIVER BRIDGE

*R MCELERESH. . . .CH 5-8723
15940 RIVER RANCH TRLR PK. . . . . .CH 5-9831
15940 RL DOLCH. . . . . .CH 5-9831
15940 VACANT APT 22
15940 VACANT APT 21
15940 LM HEBBLETHWAITE. .CH 5-3304
15940 RB FRIIS APT 15 . .CH 5-3505
15940 JD HAMPTON APT.6. .CH 5-3852
15940 CP RICCIS APT 18. .CH 5-4740
15940 RD HALL APT 8 . . .CH 5-5768
15940 RM GRONEWOLO APT 25. . . . . .CH 5-5878
15940 LS WILSON APT 7 . .CH 5-8315
15940 H WILLSON APT.1. .CH 5-8512
15940 M SHIRLEY APT 14. . . . . .CH 5-9101
15940 FL STEPHENS APT 26. . . . . .CH 5-9208
15940 ZJ SPICKELMIER APT 16. . . . . .CH 5-2134
15940 G HARTLEY SP 24
15940 HJ WHITE APT 11
15940 DR WHOW APT 12
15940 VACANT APT 19
15940 VACANT APT 17
15940 VACANT SP 32
15940 VACANT APT 4
15942 WL HARTMAN. . . . .CH 5-9059
15944*W HARTMAN. . . . .CH 5-5132
15950*HE ANDERSON . . . .CH 5-5137
16610*JL BAILEY . . . . .CH 5-9197
16638 HZ ROSSOR
16670 ML WALKER APT 3
16698 SAMS LUNCH (BX 745)
16871 DESERT FISH/GAME ASSOC RIFLE/PIS-TOL RNGE . . . .CH 5-8702
16871 F DOTY . . . . . .CH 5-8702
16873 JOES CAFE . . . . .CH 5-8301
16875 STEVENS C A CHEVRON SERV. . .CH 5-2314
16875 STEVENS C A CHEVRON SERV. . .CH 5-8203
16876 VICKS MOBIL SERV. .CH 5-4911
16877 STEVENS C A CHEVRON SERV. . .CH 5-8203
16879 FARLEYS INN . . . .CH 5-4616
17018 VACANT
17082*HJ GARRETT

##################

APPENDIX D
ENVIRONMENTAL DATABASE INFORMATION

Proposed Loves Travel Stop-Apple Valley
Interstate 15 and Stoddard Wells Road
Apple Valley, CA 92307

Inquiry Number: 6222597.2s
October 09, 2020

EDR Summary Radius Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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Detail Map	3
Map Findings Summary	4
Map Findings	9
Orphan Summary	10
Government Records Searched/Data Currency Tracking	GR-1

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Physical Setting Source Summary	A-2
Physical Setting SSURGO Soil Map	A-5
Physical Setting Source Map	A-9
Physical Setting Source Map Findings	A-11
Physical Setting Source Records Searched	PSGR-1

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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MAPPED SITES SUMMARY

Target Property Address:
INTERSTATE 15 AND STODDARD WELLS ROAD
APPLE VALLEY, CA 92307

Click on Map ID to see full detail.

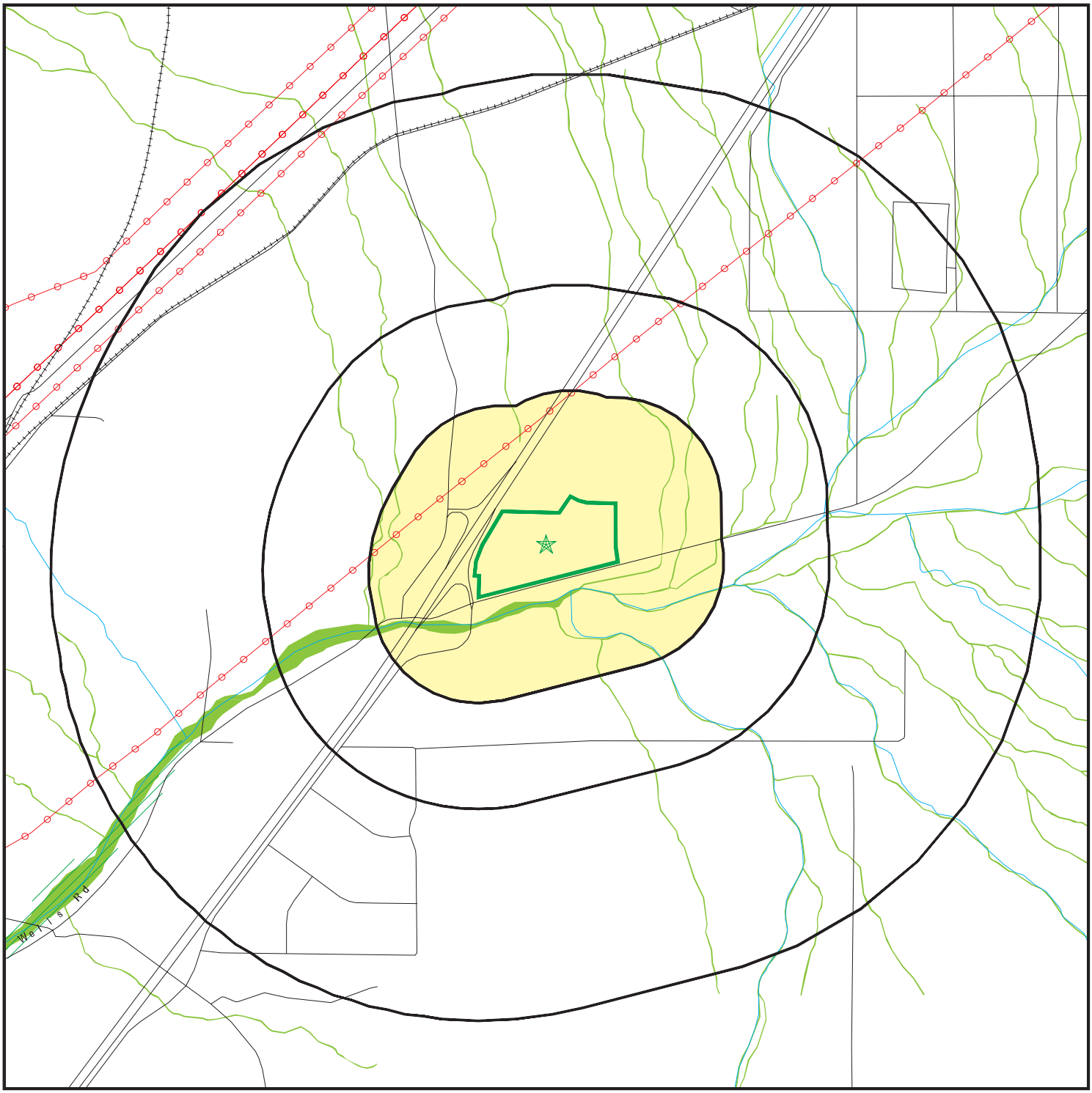
MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION

NO MAPPED SITES FOUND

Count: 6 records. ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
APPLE VALLEY	S107533644		4 MILES NE OF BOULDER RD. & HW	92307	CDL
APPLE VALLEY	S107539538		NEAR STODDARD WELLS & CENTRAL	92307	CDL
SAN BERNARDINO COUNT	S107537822		BELL ROAD, I-15		CDL
SAN BERNARDINO COUNT	S107538579		GLEN HELEN PARKWAY, 1 MI E OF		CDL
SAN BERNARDINO COUNT	S107539885		ON HWY 138, 1 1/2 MI W OF HWY		CDL
SAN BERNARDINO COUNT	1016139697	CIMA ROAD MINE WASTE SITE	1 MIL W OF INTE. 15 OFF CIMA R		SEMS

OVERVIEW MAP - 6222597.2S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites

0 1/4 1/2 1 Miles

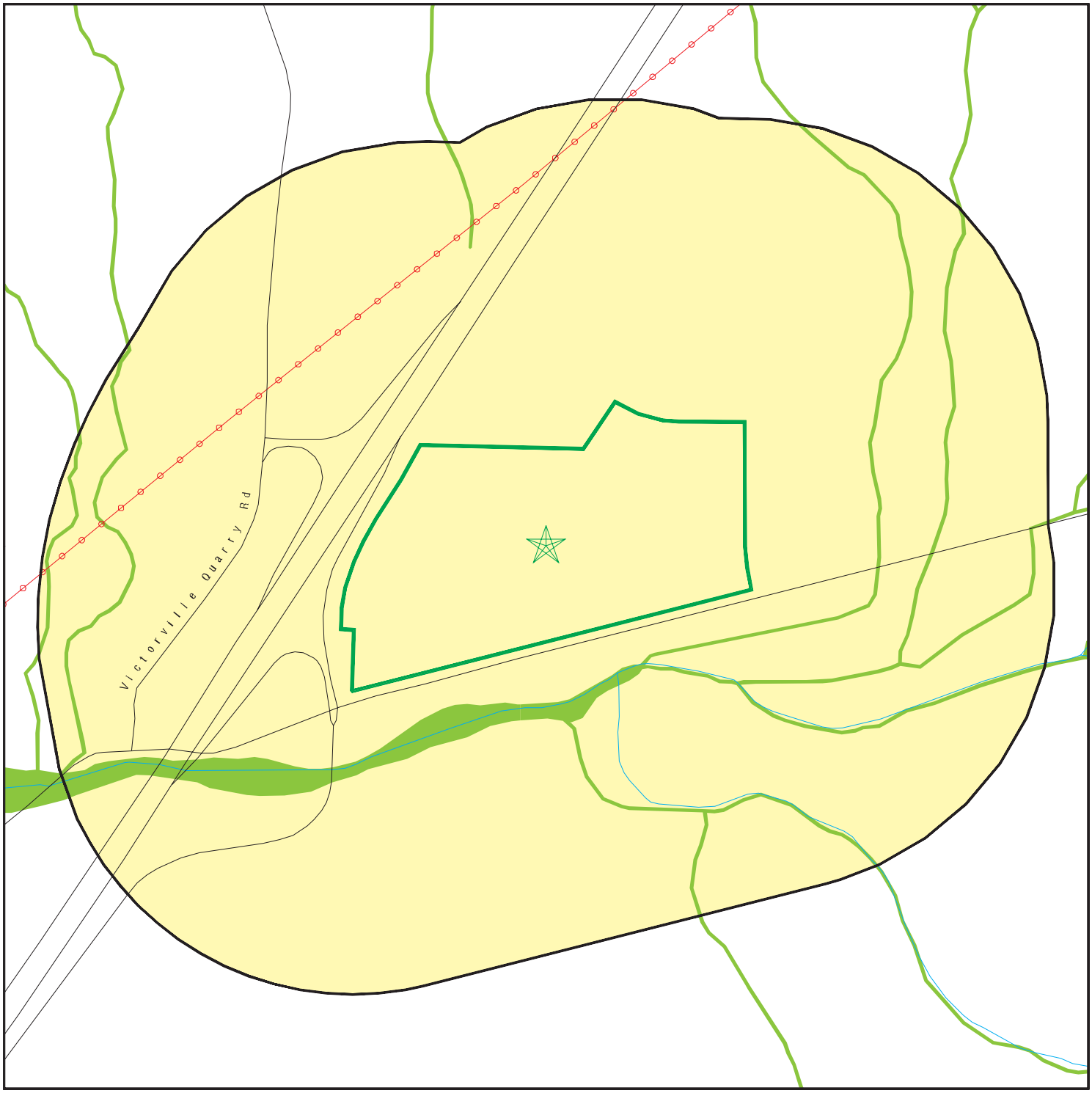
- Indian Reservations BIA
- Power transmission lines
- Special Flood Hazard Area (1%)
- 0.2% Annual Chance Flood Hazard
- National Wetland Inventory
- State Wetlands
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	Proposed Loves Travel Stop-Apple Valley	CLIENT:	Terracon
ADDRESS:	Interstate 15 and Stoddard Wells Road Apple Valley CA 92307	CONTACT:	Laura Hedman
LAT/LONG:	34.593049 / 117.254634	INQUIRY #:	6222597.2s
		DATE:	October 09, 2020 4:58 pm

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DETAIL MAP - 6222597.2S



0 1/16 1/8 1/4 Miles

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- Special Flood Hazard Area (1%)
- 0.2% Annual Chance Flood Hazard
- National Wetland Inventory
- State Wetlands
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	Proposed Loves Travel Stop-Apple Valley	CLIENT:	Terracon
ADDRESS:	Interstate 15 and Stoddard Wells Road Apple Valley CA 92307	CONTACT:	Laura Hedman
LAT/LONG:	34.593049 / 117.254634	INQUIRY #:	6222597.2s
		DATE:	October 09, 2020 4:59 pm

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MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	1.000		0	0	0	0	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
Federal CERCLIS NFRAP site list								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		0	0	0	0	NR	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-VSQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROLS	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	TP		NR	NR	NR	NR	NR	0
State- and tribal - equivalent NPL								
RESPONSE	1.000		0	0	0	0	NR	0
State- and tribal - equivalent CERCLIS								
ENVIROSTOR	1.000		0	0	0	0	NR	0
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.500		0	0	0	NR	NR	0
State and tribal leaking storage tank lists								
LUST	0.500		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
INDIAN LUST	0.500		0	0	0	NR	NR	0
CPS-SLIC	0.500		0	0	0	NR	NR	0
State and tribal registered storage tank lists								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250		0	0	NR	NR	NR	0
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
State and tribal voluntary cleanup sites								
VCP	0.500		0	0	0	NR	NR	0
INDIAN VCP	0.500		0	0	0	NR	NR	0
State and tribal Brownfields sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
WMUDS/SWAT	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	0	NR	NR	0
HAULERS	TP		NR	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	TP		NR	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		0	0	0	0	NR	0
SCH	0.250		0	0	NR	NR	NR	0
CDL	TP		NR	NR	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
CERS HAZ WASTE	0.250		0	0	NR	NR	NR	0
US CDL	TP		NR	NR	NR	NR	NR	0
PFAS	0.500		0	0	0	NR	NR	0
Local Lists of Registered Storage Tanks								
SWEEPS UST	0.250		0	0	NR	NR	NR	0
HIST UST	0.250		0	0	NR	NR	NR	0
CA FID UST	0.250		0	0	NR	NR	NR	0
CERS TANKS	0.250		0	0	NR	NR	NR	0
Local Land Records								
LIENS	TP		NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
LIENS 2	TP		NR	NR	NR	NR	NR	0
DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	TP		NR	NR	NR	NR	NR	0
CHMIRS	TP		NR	NR	NR	NR	NR	0
LDS	TP		NR	NR	NR	NR	NR	0
MCS	TP		NR	NR	NR	NR	NR	0
SPILLS 90	TP		NR	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.250		0	0	NR	NR	NR	0
FINDS	TP		NR	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	NR	0
DOCKET HWC	TP		NR	NR	NR	NR	NR	0
ECHO	TP		NR	NR	NR	NR	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
CA BOND EXP. PLAN	1.000		0	0	0	0	NR	0
Cortese	0.500		0	0	0	NR	NR	0
CUPA Listings	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
EMI	TP		NR	NR	NR	NR	NR	0
ENF	TP		NR	NR	NR	NR	NR	0
Financial Assurance	TP		NR	NR	NR	NR	NR	0
HAZNET	TP		NR	NR	NR	NR	NR	0
ICE	TP		NR	NR	NR	NR	NR	0
HIST CORTESE	0.500		0	0	0	NR	NR	0
HWP	1.000		0	0	0	0	NR	0
HWT	0.250		0	0	NR	NR	NR	0
MINES	0.250		0	0	NR	NR	NR	0
MWMP	0.250		0	0	NR	NR	NR	0
NPDES	TP		NR	NR	NR	NR	NR	0
San Bern. Co. Permit	0.250		0	0	NR	NR	NR	0
PEST LIC	TP		NR	NR	NR	NR	NR	0
PROC	0.500		0	0	0	NR	NR	0
Notify 65	1.000		0	0	0	0	NR	0
UIC	TP		NR	NR	NR	NR	NR	0
UIC GEO	TP		NR	NR	NR	NR	NR	0
WASTEWATER PITS	0.500		0	0	0	NR	NR	0
WDS	TP		NR	NR	NR	NR	NR	0
WIP	0.250		0	0	NR	NR	NR	0
MILITARY PRIV SITES	TP		NR	NR	NR	NR	NR	0
PROJECT	TP		NR	NR	NR	NR	NR	0
WDR	TP		NR	NR	NR	NR	NR	0
CIWQS	TP		NR	NR	NR	NR	NR	0
CERS	TP		NR	NR	NR	NR	NR	0
NON-CASE INFO	TP		NR	NR	NR	NR	NR	0
OTHER OIL GAS	TP		NR	NR	NR	NR	NR	0
PROD WATER PONDS	TP		NR	NR	NR	NR	NR	0
SAMPLING POINT	TP		NR	NR	NR	NR	NR	0
WELL STIM PROJ	TP		NR	NR	NR	NR	NR	0
HWTS	TP		NR	NR	NR	NR	NR	0
MINES MRDS	TP		NR	NR	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		0	NR	NR	NR	NR	0
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LF	TP		NR	NR	NR	NR	NR	0
RGA LUST	TP		NR	NR	NR	NR	NR	0
- Totals --		0	0	0	0	0	0	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

MAP FINDINGS

Map ID Direction Distance Elevation	Site	Database(s)	EDR ID Number EPA ID Number

NO SITES FOUND

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

St	Acronym	Full Name	Government Agency	Gov Date	Arvl. Date	Active Date
CA	AST	Aboveground Petroleum Storage Tank Facilities	California Environmental Protection Agency	07/06/2016	07/12/2016	09/19/2016
CA	BROWNFIELDS	Considered Brownfieds Sites Listing	State Water Resources Control Board	06/22/2020	06/22/2020	09/04/2020
CA	CA BOND EXP. PLAN	Bond Expenditure Plan	Department of Health Services	01/01/1989	07/27/1994	08/02/1994
CA	CA FID UST	Facility Inventory Database	California Environmental Protection Agency	10/31/1994	09/05/1995	09/29/1995
CA	CDL	Clandestine Drug Labs	Department of Toxic Substances Control	06/30/2019	05/28/2020	08/12/2020
CA	CERS	CalEPA Regulated Site Portal Data	California Environmental Protection Agency	07/20/2020	07/21/2020	10/07/2020
CA	CERS HAZ WASTE	CERS HAZ WASTE	CalEPA	07/20/2020	07/21/2020	10/07/2020
CA	CERS TANKS	California Environmental Reporting System (CERS) Tanks	California Environmental Protection Agency	07/20/2020	07/21/2020	10/07/2020
CA	CHMIRS	California Hazardous Material Incident Report System	Office of Emergency Services	06/30/2020	07/21/2020	10/07/2020
CA	CIWQS	California Integrated Water Quality System	State Water Resources Control Board	06/01/2020	06/02/2020	08/14/2020
CA	CORTESE	"Cortese" Hazardous Waste & Substances Sites List	CAL EPA/Office of Emergency Information	06/22/2020	06/22/2020	09/04/2020
CA	CPS-SLIC	Statewide SLIC Cases (GEOTRACKER)	State Water Resources Control Board	06/08/2020	06/09/2020	08/19/2020
CA	CUPA LIVERMORE-PLEASANTON	CUPA Facility Listing	Livermore-Pleasanton Fire Department	05/01/2019	05/14/2019	07/17/2019
CA	CUPA SAN FRANCISCO CO	CUPA Facility Listing	San Francisco County Department of Environmen	05/04/2020	05/06/2020	07/17/2020
CA	DEED	Deed Restriction Listing	DTSC and SWRCB	06/01/2020	06/02/2020	08/14/2020
CA	DRYCLEAN AVAQMD	Antelope Valley Air Quality Management District Drycleaner L	Antelope Valley Air Quality Management Distri	05/28/2020	05/29/2020	08/12/2020
CA	DRYCLEAN SOUTH COAST	South Coast Air Quality Management District Drycleaner Listi	South Coast Air Quality Management District	08/19/2020	08/21/2020	09/04/2020
CA	DRYCLEANERS	Cleaner Facilities	Department of Toxic Substance Control	06/04/2020	06/05/2020	08/17/2020
CA	EMI	Emissions Inventory Data	California Air Resources Board	12/31/2018	06/16/2020	08/28/2020
CA	ENF	Enforcement Action Listing	State Water Resoruces Control Board	07/20/2020	07/21/2020	10/07/2020
CA	ENVIROSTOR	EnviroStor Database	Department of Toxic Substances Control	07/27/2020	07/27/2020	10/08/2020
CA	Financial Assurance 1	Financial Assurance Information Listing	Department of Toxic Substances Control	07/13/2020	07/16/2020	09/29/2020
CA	Financial Assurance 2	Financial Assurance Information Listing	California Integrated Waste Management Board	05/14/2020	05/15/2020	07/27/2020
CA	HAULERS	Registered Waste Tire Haulers Listing	Integrated Waste Management Board	05/28/2020	05/29/2020	08/12/2020
CA	HAZNET	Facility and Manifest Data	California Environmental Protection Agency	12/31/2019	04/15/2020	07/02/2020
CA	HIST CAL-SITES	Calsites Database	Department of Toxic Substance Control	08/08/2005	08/03/2006	08/24/2006
CA	HIST CORTESE	Hazardous Waste & Substance Site List	Department of Toxic Substances Control	04/01/2001	01/22/2009	04/08/2009
CA	HIST UST	Hazardous Substance Storage Container Database	State Water Resources Control Board	10/15/1990	01/25/1991	02/12/1991
CA	HWP	EnviroStor Permitted Facilities Listing	Department of Toxic Substances Control	05/18/2020	05/18/2020	07/31/2020
CA	HWT	Registered Hazardous Waste Transporter Database	Department of Toxic Substances Control	07/06/2020	07/07/2020	09/17/2020
CA	HWTS	Hazardous Waste Tracking System	Department of Toxic Substances Control	04/08/2020	04/09/2020	07/01/2020
CA	ICE	ICE	Department of Toxic Subsances Control	05/18/2020	05/19/2020	07/31/2020
CA	LDS	Land Disposal Sites Listing (GEOTRACKER)	State Water Qualilty Control Board	06/08/2020	06/09/2020	08/19/2020
CA	LIENS	Environmental Liens Listing	Department of Toxic Substances Control	05/28/2020	05/29/2020	08/12/2020
CA	LUST	Leaking Underground Fuel Tank Report (GEOTRACKER)	State Water Resources Control Board	06/08/2020	06/09/2020	08/19/2020
CA	LUST REG 1	Active Toxic Site Investigation	California Regional Water Quality Control Boa	02/01/2001	02/28/2001	03/29/2001
CA	LUST REG 2	Fuel Leak List	California Regional Water Quality Control Boa	09/30/2004	10/20/2004	11/19/2004
CA	LUST REG 3	Leaking Underground Storage Tank Database	California Regional Water Quality Control Boa	05/19/2003	05/19/2003	06/02/2003
CA	LUST REG 4	Underground Storage Tank Leak List	California Regional Water Quality Control Boa	09/07/2004	09/07/2004	10/12/2004
CA	LUST REG 5	Leaking Underground Storage Tank Database	California Regional Water Quality Control Boa	07/01/2008	07/22/2008	07/31/2008
CA	LUST REG 6L	Leaking Underground Storage Tank Case Listing	California Regional Water Quality Control Boa	09/09/2003	09/10/2003	10/07/2003
CA	LUST REG 6V	Leaking Underground Storage Tank Case Listing	California Regional Water Quality Control Boa	06/07/2005	06/07/2005	06/29/2005
CA	LUST REG 7	Leaking Underground Storage Tank Case Listing	California Regional Water Quality Control Boa	02/26/2004	02/26/2004	03/24/2004
CA	LUST REG 8	Leaking Underground Storage Tanks	California Regional Water Quality Control Boa	02/14/2005	02/15/2005	03/28/2005
CA	LUST REG 9	Leaking Underground Storage Tank Report	California Regional Water Quality Control Boa	03/01/2001	04/23/2001	05/21/2001
CA	MCS	Military Cleanup Sites Listing (GEOTRACKER)	State Water Resources Control Board	06/08/2020	06/09/2020	08/19/2020
CA	MILITARY PRIV SITES	Military Privatized Sites (GEOTRACKER)	State Water Resources Control Board	06/08/2020	06/09/2020	08/19/2020

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

St	Acronym	Full Name	Government Agency	Gov Date	Arvl. Date	Active Date
CA	MILITARY UST SITES	Military UST Sites (GEOTRACKER)	State Water Resources Control Board	06/08/2020	06/09/2020	08/19/2020
CA	MINES	Mines Site Location Listing	Department of Conservation	06/08/2020	06/09/2020	08/19/2020
CA	MWMP	Medical Waste Management Program Listing	Department of Public Health	05/28/2020	06/02/2020	08/14/2020
CA	NON-CASE INFO	Non-Case Information Sites (GEOTRACKER)	State Water Resources Control Board	06/08/2020	06/09/2020	08/19/2020
CA	NOTIFY 65	Proposition 65 Records	State Water Resources Control Board	08/21/2020	08/21/2020	08/27/2020
CA	NPDES	NPDES Permits Listing	State Water Resources Control Board	05/12/2020	05/12/2020	07/28/2020
CA	OTHER OIL GAS	Other Oil & Gas Projects Sites (GEOTRACKER)	State Water Resources Control Board	06/08/2020	06/09/2020	08/19/2020
CA	PEST LIC	Pesticide Regulation Licenses Listing	Department of Pesticide Regulation	06/01/2020	06/02/2020	08/14/2020
CA	PFAS	PFAS Contamination Site Location Listing	State Water Resources Control Board	06/08/2020	06/09/2020	08/19/2020
CA	PROC	Certified Processors Database	Department of Conservation	06/08/2020	06/09/2020	08/19/2020
CA	PROD WATER PONDS	Produced Water Ponds Sites (GEOTRACKER)	State Water Resources Control Board	06/08/2020	06/09/2020	08/19/2020
CA	PROJECT	Project Sites (GEOTRACKER)	State Water Resources Control Board	06/08/2020	06/09/2020	08/19/2020
CA	RESPONSE	State Response Sites	Department of Toxic Substances Control	07/27/2020	07/27/2020	10/08/2020
CA	RGA LF	Recovered Government Archive Solid Waste Facilities List	Department of Resources Recycling and Recover		07/01/2013	01/13/2014
CA	RGA LUST	Recovered Government Archive Leaking Underground Storage Tan	State Water Resources Control Board		07/01/2013	12/30/2013
CA	SAMPLING POINT	Sampling Point ? Public Sites (GEOTRACKER)	State Water Resources Control Board	06/08/2020	06/09/2020	08/19/2020
CA	SAN FRANCISCO AST	Aboveground Storage Tank Site Listing	San Francisco County Department of Public Hea	05/04/2020	05/06/2020	07/17/2020
CA	SCH	School Property Evaluation Program	Department of Toxic Substances Control	07/27/2020	07/27/2020	10/08/2020
CA	SLIC REG 1	Active Toxic Site Investigations	California Regional Water Quality Control Boa	04/03/2003	04/07/2003	04/25/2003
CA	SLIC REG 2	Spills, Leaks, Investigation & Cleanup Cost Recovery Listing	Regional Water Quality Control Board San Fran	09/30/2004	10/20/2004	11/19/2004
CA	SLIC REG 3	Spills, Leaks, Investigation & Cleanup Cost Recovery Listing	California Regional Water Quality Control Boa	05/18/2006	05/18/2006	06/15/2006
CA	SLIC REG 4	Spills, Leaks, Investigation & Cleanup Cost Recovery Listing	Region Water Quality Control Board Los Angele	11/17/2004	11/18/2004	01/04/2005
CA	SLIC REG 5	Spills, Leaks, Investigation & Cleanup Cost Recovery Listing	Regional Water Quality Control Board Central	04/01/2005	04/05/2005	04/21/2005
CA	SLIC REG 6L	SLIC Sites	California Regional Water Quality Control Boa	09/07/2004	09/07/2004	10/12/2004
CA	SLIC REG 6V	Spills, Leaks, Investigation & Cleanup Cost Recovery Listing	Regional Water Quality Control Board, Victorv	05/24/2005	05/25/2005	06/16/2005
CA	SLIC REG 7	SLIC List	California Regional Quality Control Board, Co	11/24/2004	11/29/2004	01/04/2005
CA	SLIC REG 8	Spills, Leaks, Investigation & Cleanup Cost Recovery Listing	California Region Water Quality Control Board	04/03/2008	04/03/2008	04/14/2008
CA	SLIC REG 9	Spills, Leaks, Investigation & Cleanup Cost Recovery Listing	California Regional Water Quality Control Boa	09/10/2007	09/11/2007	09/28/2007
CA	SPILLS 90	SPILLS90 data from FirstSearch	FirstSearch	06/06/2012	01/03/2013	02/22/2013
CA	SWEEPS UST	SWEEPS UST Listing	State Water Resources Control Board	06/01/1994	07/07/2005	08/11/2005
CA	SWF/LF (SWIS)	Solid Waste Information System	Department of Resources Recycling and Recover	05/11/2020	05/12/2020	07/27/2020
CA	SWRCY	Recycler Database	Department of Conservation	06/08/2020	06/09/2020	08/19/2020
CA	TOXIC PITS	Toxic Pits Cleanup Act Sites	State Water Resources Control Board	07/01/1995	08/30/1995	09/26/1995
CA	UIC	UIC Listing	Deaprtment of Conservation	06/06/2020	06/09/2020	08/20/2020
CA	UIC GEO	Underground Injection Control Sites (GEOTRACKER)	State Water Resource Control Board	06/08/2020	06/09/2020	08/19/2020
CA	UST	Active UST Facilities	SWRCB	06/08/2020	06/09/2020	08/20/2020
CA	UST CLOSURE	Proposed Closure of Underground Storage Tank (UST) Cases	State Water Resources Control Board	05/26/2020	06/09/2020	08/20/2020
CA	UST MENDOCINO	Mendocino County UST Database	Department of Public Health	05/20/2020	05/20/2020	08/06/2020
CA	VCP	Voluntary Cleanup Program Properties	Department of Toxic Substances Control	07/27/2020	07/27/2020	10/08/2020
CA	WASTEWATER PITS	Oil Wastewater Pits Listing	RWQCB, Central Valley Region	11/19/2019	01/07/2020	03/09/2020
CA	WDR	Waste Discharge Requirements Listing	State Water Resources Control Board	06/08/2020	06/09/2020	08/20/2020
CA	WDS	Waste Discharge System	State Water Resources Control Board	06/19/2007	06/20/2007	06/29/2007
CA	WELL STIM PROJ	Well Stimulation Project (GEOTRACKER)	State Water Resources Control Board	06/08/2020	06/09/2020	08/19/2020
CA	WIP	Well Investigation Program Case List	Los Angeles Water Quality Control Board	07/03/2009	07/21/2009	08/03/2009
CA	WMUDS/SWAT	Waste Management Unit Database	State Water Resources Control Board	04/01/2000	04/10/2000	05/10/2000
US	2020 COR ACTION	2020 Corrective Action Program List	Environmental Protection Agency	09/30/2017	05/08/2018	07/20/2018
US	ABANDONED MINES	Abandoned Mines	Department of Interior	06/22/2020	06/22/2020	09/10/2020

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

St	Acronym	Full Name	Government Agency	Gov Date	Arvl. Date	Active Date
US	BRS	Biennial Reporting System	EPA/NTIS	12/31/2015	02/22/2017	09/28/2017
US	COAL ASH DOE	Steam-Electric Plant Operation Data	Department of Energy	12/31/2018	12/04/2019	01/15/2020
US	COAL ASH EPA	Coal Combustion Residues Surface Impoundments List	Environmental Protection Agency	01/12/2017	03/05/2019	11/11/2019
US	CONSENT	Superfund (CERCLA) Consent Decrees	Department of Justice, Consent Decree Library	06/30/2020	07/15/2020	07/21/2020
US	CORRACTS	Corrective Action Report	EPA	06/15/2020	06/22/2020	09/17/2020
US	DEBRIS REGION 9	Torres Martinez Reservation Illegal Dump Site Locations	EPA, Region 9	01/12/2009	05/07/2009	09/21/2009
US	DOCKET HWC	Hazardous Waste Compliance Docket Listing	Environmental Protection Agency	05/31/2018	07/26/2018	10/05/2018
US	DOD	Department of Defense Sites	USGS	12/31/2005	11/10/2006	01/11/2007
US	DOT OPS	Incident and Accident Data	Department of Transporation, Office of Pipeli	01/02/2020	01/28/2020	04/17/2020
US	Delisted NPL	National Priority List Deletions	EPA	07/29/2020	08/03/2020	08/25/2020
US	ECHO	Enforcement & Compliance History Information	Environmental Protection Agency	06/27/2020	07/02/2020	09/28/2020
US	EDR Hist Auto	EDR Exclusive Historical Auto Stations	EDR, Inc.			
US	EDR Hist Cleaner	EDR Exclusive Historical Cleaners	EDR, Inc.			
US	EDR MGP	EDR Proprietary Manufactured Gas Plants	EDR, Inc.			
US	EPA WATCH LIST	EPA WATCH LIST	Environmental Protection Agency	08/30/2013	03/21/2014	06/17/2014
US	ERNS	Emergency Response Notification System	National Response Center, United States Coast	06/15/2020	06/22/2020	09/17/2020
US	FEDERAL FACILITY	Federal Facility Site Information listing	Environmental Protection Agency	04/03/2019	04/05/2019	05/14/2019
US	FEDLAND	Federal and Indian Lands	U.S. Geological Survey	04/02/2018	04/11/2018	11/06/2019
US	FEMA UST	Underground Storage Tank Listing	FEMA	02/01/2020	03/19/2020	06/09/2020
US	FINDS	Facility Index System/Facility Registry System	EPA	02/03/2020	03/03/2020	05/28/2020
US	FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fu	EPA/Office of Prevention, Pesticides and Toxi	04/09/2009	04/16/2009	05/11/2009
US	FTTS INSP	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fu	EPA	04/09/2009	04/16/2009	05/11/2009
US	FUDS	Formerly Used Defense Sites	U.S. Army Corps of Engineers	05/13/2020	05/18/2020	08/12/2020
US	FUELS PROGRAM	EPA Fuels Program Registered Listing	EPA	05/18/2020	05/19/2020	08/03/2020
US	FUSRAP	Formerly Utilized Sites Remedial Action Program	Department of Energy	08/08/2017	09/11/2018	09/14/2018
US	HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing	Environmental Protection Agency	10/19/2006	03/01/2007	04/10/2007
US	HIST FTTS INSP	FIFRA/TSCA Tracking System Inspection & Enforcement Case Lis	Environmental Protection Agency	10/19/2006	03/01/2007	04/10/2007
US	HMIRS	Hazardous Materials Information Reporting System	U.S. Department of Transportation	06/22/2020	06/23/2020	09/17/2020
US	ICIS	Integrated Compliance Information System	Environmental Protection Agency	11/18/2016	11/23/2016	02/10/2017
US	IHS OPEN DUMPS	Open Dumps on Indian Land	Department of Health & Human Serivces, Indian	04/01/2014	08/06/2014	01/29/2015
US	INDIAN LUST R1	Leaking Underground Storage Tanks on Indian Land	EPA Region 1	04/29/2020	05/20/2020	08/12/2020
US	INDIAN LUST R10	Leaking Underground Storage Tanks on Indian Land	EPA Region 10	04/14/2020	05/20/2020	08/12/2020
US	INDIAN LUST R4	Leaking Underground Storage Tanks on Indian Land	EPA Region 4	04/14/2020	05/26/2020	08/12/2020
US	INDIAN LUST R5	Leaking Underground Storage Tanks on Indian Land	EPA, Region 5	04/14/2020	05/20/2020	08/12/2020
US	INDIAN LUST R6	Leaking Underground Storage Tanks on Indian Land	EPA Region 6	04/08/2020	05/20/2020	08/12/2020
US	INDIAN LUST R7	Leaking Underground Storage Tanks on Indian Land	EPA Region 7	04/15/2020	05/20/2020	08/12/2020
US	INDIAN LUST R8	Leaking Underground Storage Tanks on Indian Land	EPA Region 8	04/14/2020	05/20/2020	08/12/2020
US	INDIAN LUST R9	Leaking Underground Storage Tanks on Indian Land	Environmental Protection Agency	04/08/2020	05/20/2020	08/12/2020
US	INDIAN ODI	Report on the Status of Open Dumps on Indian Lands	Environmental Protection Agency	12/31/1998	12/03/2007	01/24/2008
US	INDIAN RESERV	Indian Reservations	USGS	12/31/2014	07/14/2015	01/10/2017
US	INDIAN UST R1	Underground Storage Tanks on Indian Land	EPA, Region 1	04/29/2020	05/20/2020	08/12/2020
US	INDIAN UST R10	Underground Storage Tanks on Indian Land	EPA Region 10	04/14/2020	05/20/2020	08/12/2020
US	INDIAN UST R4	Underground Storage Tanks on Indian Land	EPA Region 4	04/14/2020	05/26/2020	08/12/2020
US	INDIAN UST R5	Underground Storage Tanks on Indian Land	EPA Region 5	04/14/2020	05/20/2020	08/12/2020
US	INDIAN UST R6	Underground Storage Tanks on Indian Land	EPA Region 6	04/08/2020	05/20/2020	08/12/2020
US	INDIAN UST R7	Underground Storage Tanks on Indian Land	EPA Region 7	04/03/2020	05/20/2020	08/12/2020
US	INDIAN UST R8	Underground Storage Tanks on Indian Land	EPA Region 8	04/14/2020	05/20/2020	08/13/2020

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

St	Acronym	Full Name	Government Agency	Gov Date	Arvl. Date	Active Date
US	INDIAN UST R9	Underground Storage Tanks on Indian Land	EPA Region 9	04/08/2020	05/20/2020	08/12/2020
US	INDIAN VCP R1	Voluntary Cleanup Priority Listing	EPA, Region 1	07/27/2015	09/29/2015	02/18/2016
US	INDIAN VCP R7	Voluntary Cleanup Priority Lisitng	EPA, Region 7	03/20/2008	04/22/2008	05/19/2008
US	LEAD SMELTER 1	Lead Smelter Sites	Environmental Protection Agency	07/29/2020	08/03/2020	08/25/2020
US	LEAD SMELTER 2	Lead Smelter Sites	American Journal of Public Health	04/05/2001	10/27/2010	12/02/2010
US	LIENS 2	CERCLA Lien Information	Environmental Protection Agency	07/29/2020	08/03/2020	08/25/2020
US	LUCIS	Land Use Control Information System	Department of the Navy	05/15/2020	05/19/2020	06/18/2020
US	MINES MRDS	Mineral Resources Data System	USGS	04/06/2018	10/21/2019	10/24/2019
US	MINES VIOLATIONS	MSHA Violation Assessment Data	DOL, Mine Safety & Health Admi	05/28/2020	05/28/2020	08/13/2020
US	MLTS	Material Licensing Tracking System	Nuclear Regulatory Commission	08/05/2020	08/10/2020	10/08/2020
US	NPL	National Priority List	EPA	07/29/2020	08/03/2020	08/25/2020
US	NPL LIENS	Federal Superfund Liens	EPA	10/15/1991	02/02/1994	03/30/1994
US	ODI	Open Dump Inventory	Environmental Protection Agency	06/30/1985	08/09/2004	09/17/2004
US	PADS	PCB Activity Database System	EPA	10/09/2019	10/11/2019	12/20/2019
US	PCB TRANSFORMER	PCB Transformer Registration Database	Environmental Protection Agency	09/13/2019	11/06/2019	02/10/2020
US	PCS	Permit Compliance System	EPA, Office of Water	07/14/2011	08/05/2011	09/29/2011
US	PCS ENF	Enforcement data	EPA	12/31/2014	02/05/2015	03/06/2015
US	PCS INACTIVE	Listing of Inactive PCS Permits	EPA	11/05/2014	01/06/2015	05/06/2015
US	PRP	Potentially Responsible Parties	EPA	04/27/2020	05/06/2020	06/09/2020
US	Proposed NPL	Proposed National Priority List Sites	EPA	07/29/2020	08/03/2020	08/25/2020
US	RAATS	RCRA Administrative Action Tracking System	EPA	04/17/1995	07/03/1995	08/07/1995
US	RADINFO	Radiation Information Database	Environmental Protection Agency	07/01/2019	07/01/2019	09/23/2019
US	RCRA NonGen / NLR	RCRA - Non Generators / No Longer Regulated	Environmental Protection Agency	06/15/2020	06/22/2020	09/18/2020
US	RCRA-LQG	RCRA - Large Quantity Generators	Environmental Protection Agency	06/15/2020	06/22/2020	09/18/2020
US	RCRA-SQG	RCRA - Small Quantity Generators	Environmental Protection Agency	06/15/2020	06/22/2020	09/18/2020
US	RCRA-TSDF	RCRA - Treatment, Storage and Disposal	Environmental Protection Agency	06/15/2020	06/22/2020	09/18/2020
US	RCRA-VSQG	RCRA - Very Small Quantity Generators (Formerly Conditionall	Environmental Protection Agency	06/15/2020	06/22/2020	09/18/2020
US	RMP	Risk Management Plans	Environmental Protection Agency	01/31/2020	05/13/2020	08/03/2020
US	ROD	Records Of Decision	EPA	07/29/2020	08/03/2020	08/25/2020
US	SCRD DRYCLEANERS	State Coalition for Remediation of Drycleaners Listing	Environmental Protection Agency	01/01/2017	02/03/2017	04/07/2017
US	SEMS	Superfund Enterprise Management System	EPA	07/29/2020	08/03/2020	08/25/2020
US	SEMS-ARCHIVE	Superfund Enterprise Management System Archive	EPA	07/29/2020	08/03/2020	08/25/2020
US	SSTS	Section 7 Tracking Systems	EPA	07/20/2020	07/21/2020	10/08/2020
US	TRIS	Toxic Chemical Release Inventory System	EPA	12/31/2018	02/05/2020	04/24/2020
US	TSCA	Toxic Substances Control Act	EPA	12/31/2016	06/17/2020	09/10/2020
US	UMTRA	Uranium Mill Tailings Sites	Department of Energy	08/30/2019	11/15/2019	01/28/2020
US	US AIRS (AFS)	Aerometric Information Retrieval System Facility Subsystem (	EPA	10/12/2016	10/26/2016	02/03/2017
US	US AIRS MINOR	Air Facility System Data	EPA	10/12/2016	10/26/2016	02/03/2017
US	US BROWNFIELDS	A Listing of Brownfields Sites	Environmental Protection Agency	06/01/2020	06/02/2020	06/09/2020
US	US CDL	Clandestine Drug Labs	Drug Enforcement Administration	03/18/2020	03/19/2020	06/09/2020
US	US ENG CONTROLS	Engineering Controls Sites List	Environmental Protection Agency	02/13/2020	02/20/2020	05/15/2020
US	US FIN ASSUR	Financial Assurance Information	Environmental Protection Agency	06/15/2020	06/22/2020	09/10/2020
US	US HIST CDL	National Clandestine Laboratory Register	Drug Enforcement Administration	03/18/2020	03/19/2020	06/09/2020
US	US INST CONTROLS	Institutional Controls Sites List	Environmental Protection Agency	02/13/2020	02/20/2020	05/15/2020
US	US MINES	Mines Master Index File	Department of Labor, Mine Safety and Health A	05/01/2020	05/21/2020	08/13/2020
US	US MINES 2	Ferrous and Nonferrous Metal Mines Database Listing	USGS	05/06/2020	05/27/2020	08/13/2020
US	US MINES 3	Active Mines & Mineral Plants Database Listing	USGS	04/14/2011	06/08/2011	09/13/2011

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

St	Acronym	Full Name	Government Agency	Gov Date	Arvl. Date	Active Date
US	UXO	Unexploded Ordnance Sites	Department of Defense	12/31/2018	07/02/2020	09/17/2020
CT	CT MANIFEST	Hazardous Waste Manifest Data	Department of Energy & Environmental Protecti	05/12/2020	05/12/2020	07/27/2020
NJ	NJ MANIFEST	Manifest Information	Department of Environmental Protection	12/31/2018	04/10/2019	05/16/2019
NY	NY MANIFEST	Facility and Manifest Data	Department of Environmental Conservation	01/01/2019	04/29/2020	07/10/2020
PA	PA MANIFEST	Manifest Information	Department of Environmental Protection	06/30/2018	07/19/2019	09/10/2019
RI	RI MANIFEST	Manifest information	Department of Environmental Management	12/31/2018	10/02/2019	12/10/2019
WI	WI MANIFEST	Manifest Information	Department of Natural Resources	05/31/2018	06/19/2019	09/03/2019
US	AHA Hospitals	Sensitive Receptor: AHA Hospitals	American Hospital Association, Inc.			
US	Medical Centers	Sensitive Receptor: Medical Centers	Centers for Medicare & Medicaid Services			
US	Nursing Homes	Sensitive Receptor: Nursing Homes	National Institutes of Health			
US	Public Schools	Sensitive Receptor: Public Schools	National Center for Education Statistics			
US	Private Schools	Sensitive Receptor: Private Schools	National Center for Education Statistics			
CA	Daycare Centers	Sensitive Receptor: Licensed Facilities	Department of Social Services			
US	Flood Zones	100-year and 500-year flood zones	Emergency Management Agency (FEMA)			
US	NWI	National Wetlands Inventory	U.S. Fish and Wildlife Service			
CA	State Wetlands	Wetland Inventory	Department of Fish and Wildlife			
US	Topographic Map		U.S. Geological Survey			
US	Oil/Gas Pipelines		Endeavor Business Media			
US	Electric Power Transmission Line Data		Endeavor Business Media			

STREET AND ADDRESS INFORMATION

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GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

PROPOSED LOVES TRAVEL STOP-APPLE VALLEY
INTERSTATE 15 AND STODDARD WELLS ROAD
APPLE VALLEY, CA 92307

TARGET PROPERTY COORDINATES

Latitude (North):	34.593049 - 34° 35' 34.98''
Longitude (West):	117.254634 - 117° 15' 16.68''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	476649.2
UTM Y (Meters):	3827748.5
Elevation:	2932 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	5619088 VICTORVILLE, CA
Version Date:	2012
Southeast Map:	5619054 APPLE VALLEY NORTH, CA
Version Date:	2012

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

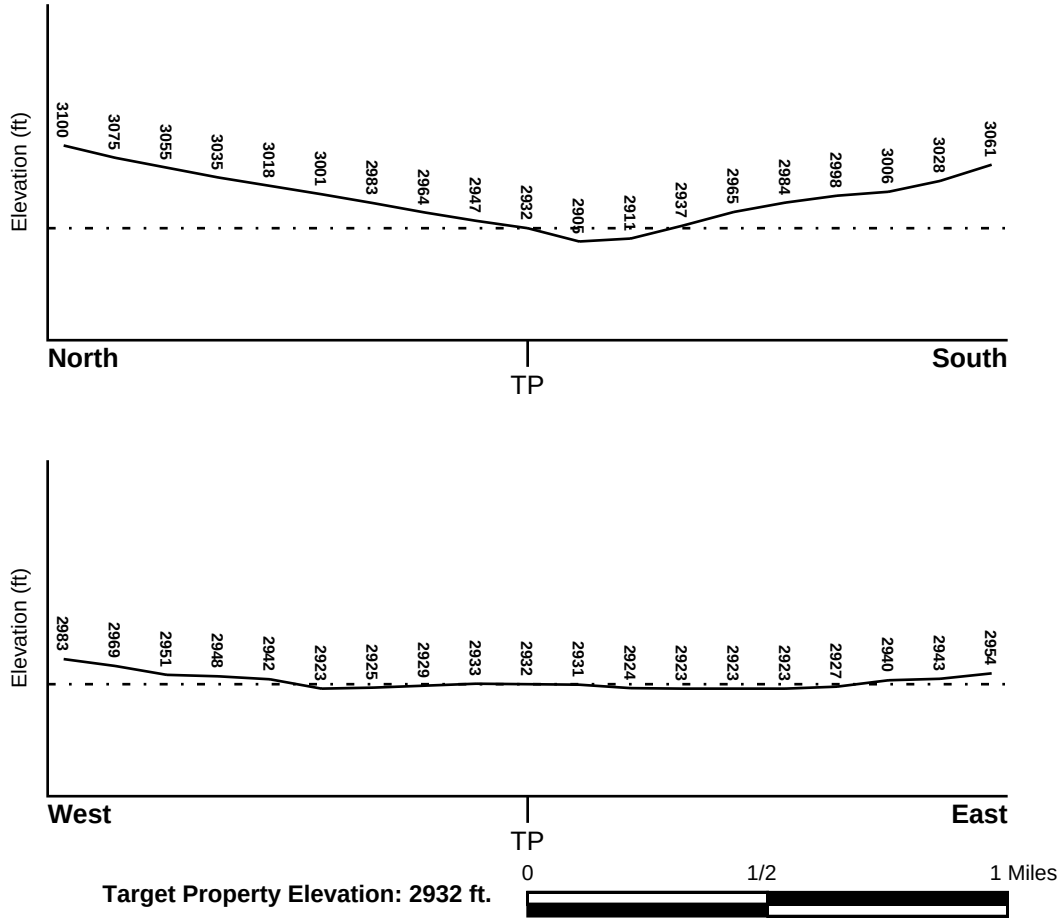
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General South

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Flood Plain Panel at Target Property	FEMA Source Type
06071C5810H	FEMA FIRM Flood data
Additional Panels in search area:	**FEMA Source Type**
06071C5850F	FEMA Q3 Flood data

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
VICTORVILLE	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius:	1.25 miles
Status:	Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

* ©1996 Site−specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

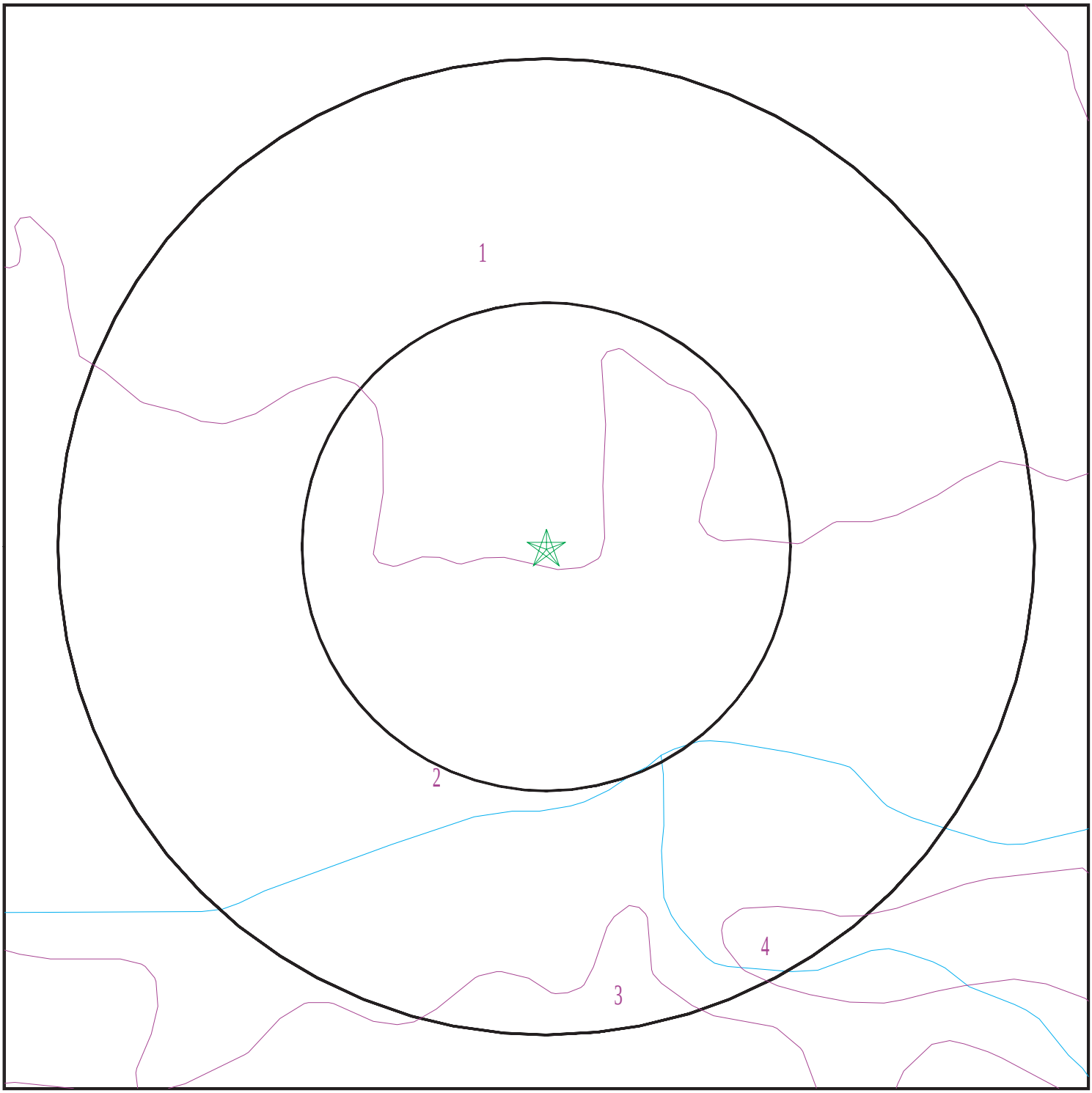
Era:	Paleozoic
System:	Pennsylvanian
Series:	Upper Paleozoic
Code:	uPz *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratified Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 6222597.2s



Target Property
SSURGO Soil
Water

SITE NAME:	Proposed Loves Travel Stop-Apple Valley	CLIENT:	Terracon
ADDRESS:	Interstate 15 and Stoddard Wells Road Apple Valley CA 92307	CONTACT:	Laura Hedman
		INQUIRY #:	6222597.2s
LAT/LONG:	34.593049 / 117.254634	DATE:	October 09, 2020 4:59 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: NEBONA

Soil Surface Texture:
Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	1 inches		Not reported	Not reported	Max: 42 Min: 14	Max: 9 Min: 7.9
2	1 inches	7 inches		Not reported	Not reported	Max: 42 Min: 14	Max: 9 Min: 7.9
3	7 inches	11 inches		Not reported	Not reported	Max: 42 Min: 14	Max: 9 Min: 7.9
4	11 inches	64 inches		Not reported	Not reported	Max: 42 Min: 14	Max: 9 Min: 7.9

Soil Map ID: 2

Soil Component Name: CAJON

Soil Surface Texture:
Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Somewhat excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	5 inches		Not reported	Not reported	Max: 141 Min: 42	Max: 8.4 Min: 7.4
2	5 inches	59 inches		Not reported	Not reported	Max: 141 Min: 42	Max: 8.4 Min: 7.4

Soil Map ID: 3

Soil Component Name: SPARKHULE

Soil Surface Texture:

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	1 inches		Not reported	Not reported	Max: Min:	Max: Min:
2	1 inches	18 inches		Not reported	Not reported	Max: Min:	Max: Min:
3	18 inches	22 inches		Not reported	Not reported	Max: Min:	Max: Min:

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Map ID: 4

Soil Component Name: MIRAGE

Soil Surface Texture:
Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	5 inches		Not reported	Not reported	Max: 141 Min: 42	Max: 8.4 Min: 7.4
2	5 inches	20 inches		Not reported	Not reported	Max: 141 Min: 42	Max: 8.4 Min: 7.4
3	20 inches	38 inches		Not reported	Not reported	Max: 141 Min: 42	Max: 8.4 Min: 7.4
4	38 inches	59 inches		Not reported	Not reported	Max: 141 Min: 42	Max: 8.4 Min: 7.4

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A3	USGS40000147665	1/2 - 1 Mile East
A4	USGS40000147660	1/2 - 1 Mile East
C6	USGS40000147502	1/2 - 1 Mile SW
B7	USGS40000147596	1/2 - 1 Mile ESE
9	USGS40000148179	1/2 - 1 Mile NNE

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

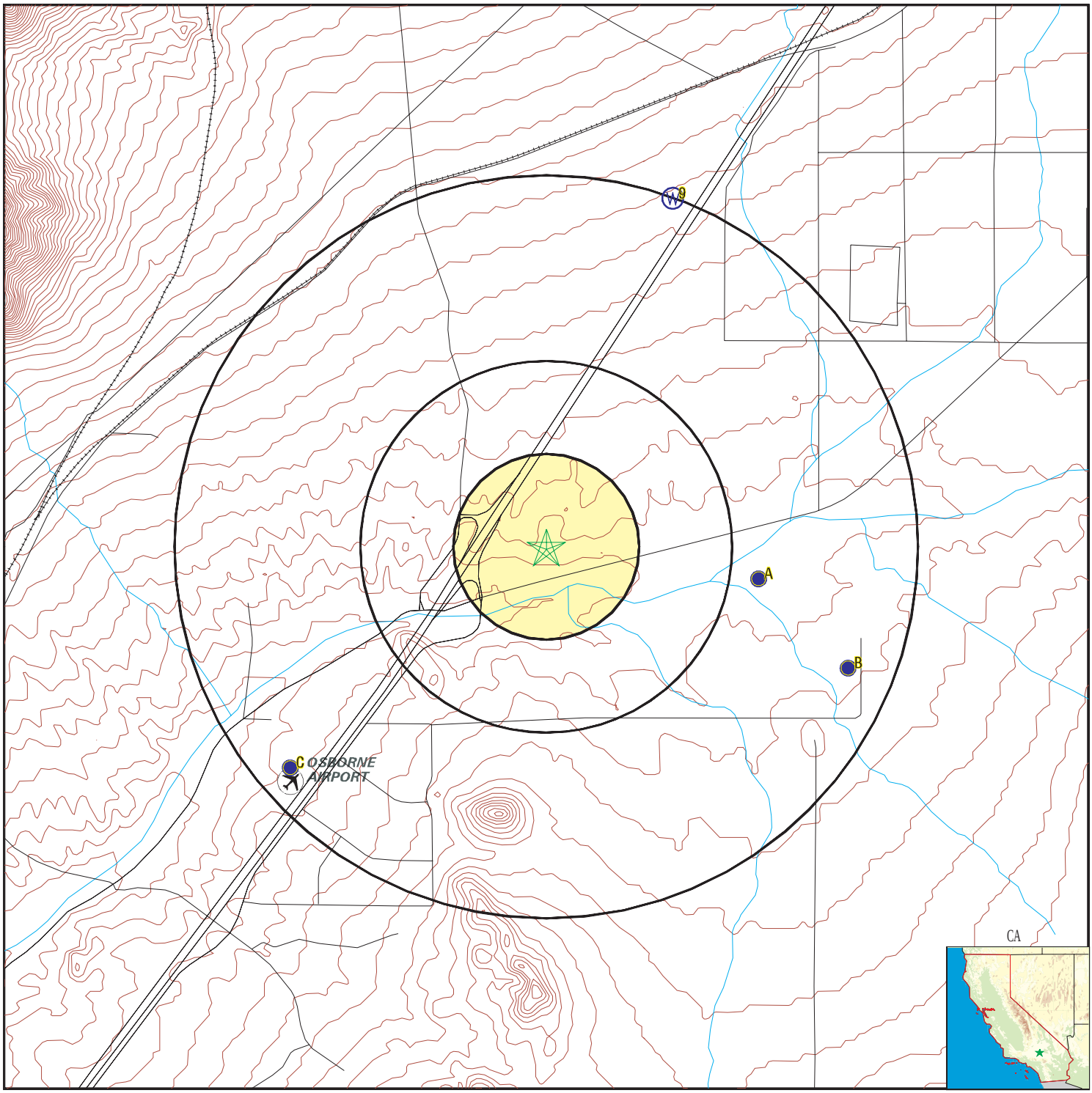
MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A1	CADWR8000010525	1/2 - 1 Mile East
A2	CADWR8000010522	1/2 - 1 Mile East
B5	CADWR8000010499	1/2 - 1 Mile ESE
C8	CADWR8000010458	1/2 - 1 Mile SW

PHYSICAL SETTING SOURCE MAP - 6222597.2s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Airports
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons

- Groundwater Flow Direction
- GI Indeterminate Groundwater Flow at Location
- GV Groundwater Flow Varies at Location
- HD Closest Hydrogeological Data
- Oil, gas or related wells

SITE NAME:	Proposed Loves Travel Stop-Apple Valley	CLIENT:	Terracon
ADDRESS:	Interstate 15 and Stoddard Wells Road Apple Valley CA 92307	CONTACT:	Laura Hedman
LAT/LONG:	34.593049 / 117.254634	INQUIRY #:	6222597.2s
		DATE:	October 09, 2020 4:59 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID Direction Distance Elevation		Database	EDR ID Number
A1 **East** **1/2 - 1 Mile** **Lower**	Click here for full text details	**CA WELLS**	**CADWR8000010525**
A2 **East** **1/2 - 1 Mile** **Lower**	Click here for full text details	**CA WELLS**	**CADWR8000010522**
A3 **East** **1/2 - 1 Mile** **Lower**	Click here for full text details	**FED USGS**	**USGS40000147665**
A4 **East** **1/2 - 1 Mile** **Lower**	Click here for full text details	**FED USGS**	**USGS40000147660**
B5 **ESE** **1/2 - 1 Mile** **Higher**	Click here for full text details	**CA WELLS**	**CADWR8000010499**
C6 **SW** **1/2 - 1 Mile** **Lower**	Click here for full text details	**FED USGS**	**USGS40000147502**
B7 **ESE** **1/2 - 1 Mile** **Higher**	Click here for full text details	**FED USGS**	**USGS40000147596**
C8 **SW** **1/2 - 1 Mile** **Lower**	Click here for full text details	**CA WELLS**	**CADWR8000010458**

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID Direction Distance Elevation		Database	EDR ID Number
9 NNE 1/2 - 1 Mile Higher	**Click here for full text details**	**FED USGS**	**USGS40000148179**

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
92307	30	1

Federal EPA Radon Zone for SAN BERNARDINO County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for SAN BERNARDINO COUNTY, CA

Number of sites tested: 18

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.678 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

HYDROGEOLOGIC INFORMATION

AQUIFLOW[R] Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Public Health
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

OTHER STATE DATABASE INFORMATION

California Oil and Gas Well Locations
Source: Dept of Conservation, Geologic Energy Management Division
Telephone: 916-323-1779
Oil and Gas well locations in the state.

California Earthquake Fault Lines
Source: California Division of Mines and Geology
The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

RADON

State Database: CA Radon
Source: Department of Public Health
Telephone: 916-210-8558
Radon Database for California

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

STREET AND ADDRESS INFORMATION

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APPENDIX E
CREDENTIALS

Steven Claar

FIELD SCIENTIST

Steven is a Field Scientist in Terracon's Sacramento office. He is responsible for creating reports and performing site reconnaissance for Phase I Environmental Site Assessments (ESAs). Steven has also assisted in the collection and sampling of soil, soil vapor, and groundwater for Limited Site Investigations (LSIs).

PROJECT EXPERIENCE

Automotive Facilities

Performed site reconnaissance, created reports, and reviewed environmental data and records for Phase I ESAs of various automotive maintenance, repair, and paint facilities.

Undeveloped/Vacant/Agricultural Land

Performed site reconnaissance, created reports, and reviewed environmental data and records for Phase I ESAs of various undeveloped, vacant, and agricultural land. Collected soil and groundwater samples to determine the presence of pesticides/herbicides, heavy metals, and volatile organic compounds (VOCs) in the subsurface.

Office/Retail/Commercial Facilities

Performed site reconnaissance, created reports, and reviewed environmental data and records for Phase I ESAs of various retail and commercial facilities. Facilities include clothing stores, office buildings, restaurants, and convenience stores.

Industrial/Distribution Facilities

Performed site reconnaissance, created reports, and reviewed environmental data and records for Phase I ESAs of various industrial facilities. Facilities include food production, warehouse and distribution centers, and food packaging.

Telecommunication/Transmission Towers

Performed site reconnaissance, created reports, and reviewed environmental data and records for Phase I ESAs of telecommunication towers and transmission stations.



EDUCATION

Bachelor of Science, Geology, California State University Sacramento, 2017

WORK HISTORY

Terracon Consultants, Inc., Field Scientist, 2018-Present

CERTIFICATIONS

40-Hour OSHA HAZWOPER

10-Hour OSHA CONSTRUCTION SAFETY

40-Hour Asbestos Abatement Contractor/Supervisor Course

24-Hour Asbestos Building Inspector Initial

Respirator Fit Tested

Todd G. McFarland, PG, CHG



DEPARTMENT MANAGER

PROFESSIONAL EXPERIENCE

Mr. McFarland has over 21 years of experience as a professional geologist and hydrogeologist, in over 200 site characterization and remediation projects throughout California. He is an environmental Department Manager for Terracon's Colton office. Mr. McFarland has been involved with environmental investigations, well design and construction, aquifer testing, Phase I and II ESAs, including agricultural, petroleum, and industrial properties; and remediation design and mitigation for commercial, industrial and LUST/LUFT projects.

Mr. McFarland's expertise includes hydrogeology, Phase I & II Environmental Assessments, Hazardous Waste Site Investigations, LUST/LUFT Site Investigation and Remediation (soil, vapor, and groundwater) Hydrogeology, Contaminant Fate & Transport, Well Design and Construction, Remedial Strategy and Design, California UST Cleanup Fund, Triad Approach Investigation Methods, and high resolution site characterization (HRSC).

PROJECT EXPERIENCE

Charis Corporation/US Army, Aquifer and Well Evaluation, Fort Irwin, California
Project Geologist for the identification, assessment and testing of domestic and agricultural wells associated with the expansion of Ft. Irwin military base. Responsible for field mapping, staff and logistics coordination, subcontractor management, well pumping, mine shaft mapping and collection of samples for heavy metal analytical testing.

Bechtel, Mountain View Power Plant Expansion Project, Loma Linda, California
Project Geologist support for pump test and analytical testing of new production well within the Bunker Hill Basin. Sampling and testing of water for Title 22, perchlorate and TCE to determine well viability, and ability to discharge surplus water to Santa Ana River.

Herzog, Rail Line Rehabilitation Project, San Bernardino, California
Project Geologist for compliance monitoring, soil sampling and remediation management of soils during rail line rehabilitation. Project work conducted for BNSF under their oversight and safety management guidelines. Managed daily soil screening, mobile laboratory analysis oversight and directed soil excavation and segregation for offsite disposal of hydrocarbon and solvent impacted soils.

Amtrak, 8th Street Amtrak Yard ROW Investigation, Los Angeles, California
Project Geologist for Phase I & II assessments along ROWs within the active rail yard for proposed ROW exchange. Project work included drilling and soil sampling adjacent to active rail lines associated with train maintenance and wash rack. Reporting and recommendations for soil remediation options.

EDUCATION

Bachelor of Science, Hydrogeology, Northern Arizona University, 1998

AA, Art/Architecture, Pasadena City College, 1992

REGISTRATIONS

California Professional Geologist, PG #7685

California Certified Hydrogeologist, CHG #979

CERTIFICATIONS

GIS Certification, University of California, Riverside, 2017

40-Hour OSHA Hazardous Materials Training

8-Hour OSHA Supervisory and Confined Space Training

8-Hour LPS/OSHA Refresher (current)

CPR/First Aid Certified (current)

LPS 8-Hour Training Certification, 5/2006

16-Hour Chevron EMC CSOC Training, 11/2007

Defensive Driving Course, 6/2006

DOT-Basic HazMat Training, 5/2007

Title 22 California-Hazardous Waste Generator Training, 5/2007

Lean Six Sigma Training, 3/2011

Cost Engineering and Cost Loaded Scheduling and Training, 4/2011 & 3/2012

WORK HISTORY

Terracon Consultants, Inc., Department Manager, 2018-Present

AECOM, Sr. Project Manager/Sr. Hydrogeologist, 2013-2018

HFA, Sr. Geologist/Sr. Project Manager, 2009-2013, Assoc. Geologist/Sr. Geologist/Project Manager/Office Manager, 2004-2009

Geo-Cal, Inc., Project Geologist, 2003 – 2004

CHJ, Inc., Staff Geologist, 1998-2003

Chevron and ExxonMobil, Service Station and Terminal Facility Management, Southern and Northern California
Project/Senior Geologist and Project Manager for portfolio of underground storage tank facilities. Managed schedule, costs and project work for numerous retail service station and bulk tank facilities. Scoped and executed assessment and remedial efforts targeted to model and remove contaminants. Geological logging and drilling oversight for the installation of numerous shallow and deep monitoring wells within unconsolidated and over-consolidated soils. Develop and execute aquifer, soil vapor extraction, and air sparge testing to determine feasibility of remedial options. Prepare conceptual site models to evaluate project data and develop remedial action plans and human health risk assessments. Collaborate with engineers to design, build and execute remedial systems for treatment of petroleum impacted soil and groundwater. Responsible for direct interaction with client and regulators to develop and execute strategies.

Chevron EMC, MTBE Groundwater Plume Investigation and Remediation, San Juan Capistrano California
Senior Geologist and Project Manager for two underground storage tank facilities that allegedly affected the City's water production supply. Scoped and executed assessment and remedial efforts targeted to model and remove benzene and MTBE. Installed and operated in-situ soil and groundwater remedial systems. Geological logging and drilling oversight for the installation of numerous shallow and deep monitoring and remediation wells. Testing and evaluation of City's production wells. Attend and participate in public hearings, plan and participate in planning and design review meetings. Conduct client meetings and provide project details to client's legal team.

Confidential Client, Crafton-Redlands Perchlorate Plume Investigation, Mentone, California
Project Geologist for underground storage tank facility. Geological logging and drilling oversight for the installation of deep monitoring wells within the Crafton-Redlands Plume using rotary casing hammer and sonic drilling rigs. Collection of soil and groundwater samples to evaluation aquifer for petroleum hydrocarbons, including MTBE and perchlorate. Conduct soil vapor extraction pilot testing for in-situ soil remediation of hydrocarbon impacts.

City of Rialto, Landfill Investigation and Post-Closure Monitoring, Rialto, California. Project Geologist for landfill closure and post-closure investigations and monitoring. On going monitoring of water quality beneath and surrounding the boundary limits of landfill. Statistical analysis and reporting of water quality data to determine trends and stability post-closure.

City of Los Angeles, Community Park Development, Lead Removal, California
Project Geologist for development of a community park. Planned, coordinated, and conducted assessment and remediation of aerial deposited lead within a residential community. Conducted lead dust monitoring, excavation activities and verification sampling and reporting.

City of Blythe, Citywide Commingled Plume Investigation, Blythe, California
Project Manager for city wide commingled plume assessment and remedial cleanup of 7 commingled plumes (over 30 individual sites) related to petroleum releases to groundwater. Conducted large-scale site assessment, well installation and remedial actions including soil vapor extraction, dual-phase extraction, free-product extraction and soil excavation. Managed complex financial contract and UST Cleanup Fund reimbursement. Responsible for direct interaction with client (City), UST Cleanup Fund and California's Water Board to develop and execute strategies.

AFCEC, Industrial Waste Line Removal and Vapor Intrusion Risk Assessment, Former Norton Air Force Base, San Bernardino, California
Senior hydrogeologist for evaluation of soil and soil vapor sampling. Conducted closure report review, human health risk assessment modeling and evaluation, and closure recommendations. Evaluation and reporting resulted in obtaining closure from DTSC.

Carl A. Parten

Office Manager, Senior Principal



PROFESSIONAL EXPERIENCE

Mr. Parten has 32 years of experience in environmental consulting in multiple regional regulatory districts throughout the United States. His professional experience includes comprehensive site investigations and remediation studies for Industrial and Hazardous Waste sites, municipal solid waste landfill sites and underground storage tank (UST) facilities.

He has successfully managed and obtained regulatory closure of over 30 Voluntary Cleanup Program (VCP) sites and leaking underground storage tank (LUST) facilities, and coordinated UST removal and closure for numerous facilities in multiple states throughout the United States. Mr. Parten continues to serve as a technical lead with Terracon and he possesses extensive experience in the installation of monitor wells, aquifer characterization, sensitive receptor surveys, risk-based assessments, vapor intrusion (VI) evaluations, and soil-gas assessments. Additionally, he has extensive experience in comprehensive soil and groundwater investigations on industrial facilities and municipal solid waste (MSW) landfill facilities, including evaluation of landfill gas/methane impacts. He has prepared and implemented corrective action work plans for remediation of chlorinated hydrocarbons at dry cleaner facilities and petroleum hydrocarbons at LUST facilities, MSW landfill facilities, and managed and implemented groundwater pump and treat, non-aqueous phase liquid (NAPL) recovery, and duel-phase vapor extraction systems for the recovery of petroleum hydrocarbons. Additionally, Mr. Parten developed work plans and implemented the remediation of heavy metals and poly-nuclear aromatic hydrocarbons (PAHs).

PROJECT EXPERIENCE

Kaiser Permanente, AV Behavioral Health, Lancaster, California
Provided QA/QC for the Phase I ESA for the potential Kaiser Permanente AV Behavioral Health Building that consisted of a 29,245-square-foot (SF) single-story building with a mezzanine, in a multi-tenant commercial/retail shopping center on an approximately 6.12-acre parent tract. Our scope of services included the site

EDUCATION

Bachelor of Science, Geology, Sul Ross State University, Alpine, Texas, 1994

Additional Courses:
University of Houston TCEQ Texas Risk Reduction Program: Mod. I, II, and III
Roadmap to Remediation
CAPM Refresher Course, Texas A&M University
TNRCC Hazardous Waste Seminar
TNRCC PST Risk Assessments Seminar
TNRCC Pollution Prevention Workshop
API Risk/Exposure Assessment
Contaminant Fate and Transport Modeling in Risk Assessment
Environmental Hydrology / Soil Science

REGISTRATIONS

Licensed Professional Geoscientist (P.G.), I.D. # 221, Texas Board of Professional Geoscientists 2003 (current)

Registered Professional Geologist (P.G.), I.D. # 004037; State of Tennessee, May 1996 (current)

TCEQ Corrective Action Project Manager, CAPM #01091 (current)

40 Hour OSHA Hazardous Waste Site & Waste Management Training

AFFILIATIONS

BDA/Orange County
Groundwater Resource Assoc.
Geological Society of America

reconnaissance and soil and soil vapor sampling. Provided QA/QC review of the report before we sent it to the client.

Kaiser Permanente, Primary Care Medical Office Building, Wildomar, California
Project Manager for the Phase I ESA for the potential Kaiser Permanente Primary Care Medical Office Building consisted of an approximately 36-acre tract of generally vacant land. Provided QA/QC review of the report before we sent it to the client.

Industrial Warehouse Facility – La Palma, California
Phase I ESA, comprehensive subsurface investigation and delineation of volatile organic compounds (VOCs), petroleum hydrocarbons TPH) in soil, groundwater and vapor to characterize environmental site conditions and development of response actions. Soil remediation, soil vapor extraction of VOCs, and waste characterization/disposal of impacted environmental media at a large warehouse facility. Active monitoring and additional response actions are on-going. Consulting services included preparation of investigation reports, response action work plans, client interaction and litigation support.

Industrial Warehouse Facility / Demolition / Soil Management – Los Angeles / Union Crossing - California
Phase I ESA, Limited Site Investigation, soil management plan / remediation of impacted soils, underground storage tank / structures management and support services, investigation and delineation of volatile organic compounds (VOCs), petroleum hydrocarbons TPH) in soil, and waste characterization and disposal of impacted environmental media. Consulting services included preparation of investigation reports, response action work plans, client interaction and construction management support.

Industrial Facility – Union City, California
Subsurface investigation and delineation of heavy metals and polynuclear aromatic hydrocarbons (PAHs) in soil to facilitate the development of response actions and waste characterization/disposal of impacted environmental media at a large industrial facility with over sixty years of operations. Consulting services included preparation of investigation reports, response action work plans, and client/regulatory interaction.

Industrial Facility – Land-use Change/Private School, Los Angeles, CA
Environmental consulting services including Phase I Environmental Site Assessments (ESA) due diligence support, subsurface investigation activities to evaluate environmental media including soil, groundwater, soil gas and indoor / outdoor air. Services included a land-use change from an industrial facility to a private school. Prepared environmental investigation reports, regulatory interaction, corrective action design and work plan for management of environmental media.

USARC Facility – Mare Island, California
Environmental team leader for evaluation of an existing 32-acre military facility, Mare Island in California. The teaming effort included the preparation of a Technical Assessment report on the facility to provide

USAR a decision making and programming tool to establish future restoration and replacement upgrades to the facility. The report included an evaluation of existing conditions of the site and facilities with respect to current mission and identified construction costs required to comply with USAR facility standards, Anti-Terrorism/Force Protection requirements, handicapped accessibility regulations, and current building codes. Conceptual costs for related improvements and environmental mitigation were presented.

Major Department Store Commercial Retail Portfolio
Environmental team lead for evaluating environmental site conditions and due diligence review, including overseeing Phase I Environmental Site Assessments and Phase II Environmental Site Investigations for over fifty retail facilities with automotive maintenance across California. Findings from subsurface investigations were used to support regulatory closure of select facilities to facilitate a real estate transaction across the United States.

Automated Fuel Dispensing Facilities – Camp Pendleton, California
Project scope included environmental and geotechnical investigations at six fueling existing/proposed facilities within Camp Pendleton, California. The project consisted of construction of new buildings, canopies, pavements, retaining walls, slopes, and installation of underground storage tanks (USTs), and other site facilities. Served as the primary client point of contact and environmental technical leader.

Mixed-Use High-rise Building, West Hollywood, California
Conducted comprehensive investigation and assisted the client through enrolling and interacting with the DTSC / VCP regarding chlorinated solvent and heavy metal-impacted soil and groundwater. Provided construction management oversight to manage impacted soils and assisted the client in waste disposition, permitting and regulatory compliance interaction. A total of 52,000 cubic yards of soil was removed from the site and disposed at an off-site facility, prior to the construction of a $170M high-rise multi-use complex. Terracon's support services allowed for significant savings in construction, on an expedited timeline in concert with the construction schedule.

Underground Storage Tank and Soil Remediation – Regional Water Board, Squaw Valley, CA
Terracon assisted a private developer with the regulatory closure of an underground storage tank (UST) site located in Squaw Valley, California. The abandoned 10,000-gallon UST was responsible for a release of heavy waste oils to the ground surface and banks of a creek. Following disposal of the UST, approximately 70 cubic yards of petroleum-impacted soils were excavated and properly disposed. Interaction with the Regional Water Board and Public Notification resulted in the issuance of case closure.

Retail Shopping Center – Former Dry Cleaners Facility – DTSC, Fremont, CA
Conducted extensive site investigation activities to evaluate the magnitude and extent of chlorinated solvents identified in the vicinity of a former dry cleaners' facility, including an evaluation of groundwater, soil, soil-gas and indoor vapors as a result of a chlorinated solvent plume. Mr. Parten provided direct support and interaction with client, client legal team and DTSC representatives to manage the closure

process, including the preparation of work plans and environmental investigation reports, risk-based human health evaluation, and response actions.

Soil Remediation – Riverside County Regulatory Oversight, Telecommunications Site, Perris, CA
Terracon assessed the magnitude and extent of a surficial release of petroleum hydrocarbons, developed a work plan, approved by overseeing agency, and conducted remediation, removal and legal disposal of 80 cubic yards of non-hazardous soil.

Municipal Landfill – VCP Site
Successfully oversaw and managed the engineering design and construction quality assurance for the closure and restoration of a high-profile MSW landfill in accordance with regulatory standards, subsequent to significant investigation activities. The remedy consisted of removal and consolidation of wastes and construction of LFG recovery trenches to prevent migration of landfill gas. The remedy utilized engineering controls and removal of impacted media. Project management responsibilities included coordination with Local, State and Federal officials, public/neighborhood communications, and interaction with attorneys, and management of project budgets that exceeded $4.5 million over seven years. Terracon continues to provide post closure care monitoring and O&M for the site.

Department of Transportation Contract - TX
Successfully managed a two-year environmental services contract with the Texas Department of Transportation (TxDOT) and coordinated multiple Terracon offices to provide geographic coverage of environmental consulting service throughout Texas. Mr. Parten was the liaison to TxDOT for the performance of environmental consulting services, and provided senior technical review of environmental investigations, Phase I ESAs, removal of underground storage tanks, remediation of affected media and waste management, asbestos and lead-based paint investigations, and management of financial metrics and budgets in strict conformance with negotiated fees and procedures under a $2,000,000 contract.

City-Operated LUST Facilities
Provided senior project management of 14 City operated LUST facilities through coordination of investigation, regulatory reporting and response actions in the pursuit of closure. Mr. Parten was responsible for managing all site activities, evaluation of data, reporting, communicating with local and state officials, and management of budget and schedule requirements.

Municipal Property
Provided senior project management and technical review of several properties, including the remediation of metals and PAH-impacted soils, using a combination of excavation and removal and in-place stabilization. Work was performed under the EPA Brownfields Program and the Voluntary Cleanup Program. The $1.2 million-dollar remediation project was part of a high-profile downtown parks and recreation redevelopment project that successfully established LEED Certified public parks in areas once occupied by commercial and industrial property. Mr. Parten was responsible for managing all site

activities, evaluation of data, reporting, communicating with local and state officials, and management of budget and schedule requirements.

Retail Shopping Center – VCP Site

Conducted extensive site investigation activities to evaluate the magnitude and extent of chlorinated solvents identified in the vicinity of a former dry cleaners' facility. The chlorinated solvent plume was defined to drinking water standards and was delineated to a creek channel nearly 1,200 feet from the source property. Based on site investigation results, assisted the property owner in entering the site into the VCP, and managed and implemented response actions and treatment of affected media utilizing a combination of source-removal/excavation (750 cubic yards) within the building interiors, hydrogen-releasing compound (HRC®) treatment of backfill, and HRC injection into the underlying soil and groundwater across the site. Treatment technology effectively remediated affected soils and significantly reduced contaminant levels within the on-site source areas. Additional response actions were conducted to reduce on-site groundwater contamination levels through HRC injection at over 250 locations. Monitored natural attenuation and groundwater monitoring was performed for a period of approximately four years. Mr. Parten assisted the client in the establishment of a deed restriction (Municipal Setting Designation) that restricted the use of groundwater on the site. Mr. Parten interacted with City and State officials and prepared and submitted multiple reports documenting site activities and managed a project budget totaling $1,200,000.

Additional Project Experience

Under the direction and senior technical review by Mr. Parten, final site closure has been obtained for over thirty VCP, Innocent Owner/Operator Program, LUST, and Industrial and Hazardous Waste facilities in multiple states across the United States. Additionally, Mr. Parten has coordinated and managed the removal of dozens of underground storage tank (UST) systems and remediation of contaminated soil and groundwater. Mr. Parten has provided expert testimony on multiple projects and is a primary point of contact interacting with environmental attorneys and regulatory agencies.

APPENDIX F
DESCRIPTION OF TERMS AND ACRONYMS

Description of Selected General Terms and Acronyms

Term/Acronym	*Description*
ACM	Asbestos Containing Material. Asbestos is a naturally occurring mineral, three varieties of which (chrysotile, amosite, crocidolite) have been commonly used as fireproofing or binding agents in construction materials. Exposure to asbestos, as well as ACM, has been documented to cause lung diseases including asbestosis (scarring of the lung), lung cancer and mesothelioma (a cancer of the lung lining). Regulatory agencies have generally defined ACM as a material containing greater that one (1) percent asbestos, however some states (e.g. California) define ACM as materials having 0.1% asbestos. In order to define a homogenous material as non-ACM, a minimum number of samples must be collected from the material dependent upon its type and quantity. Homogenous materials defined as non-ACM must either have 1) no asbestos identified in all of its samples or 2) an identified asbestos concentration below the appropriate regulatory threshold. Asbestos concentrations are generally determined using polarized light microscopy or transmission electron microscopy. Point counting is an analytical method to statistically quantify the percentage of asbestos in a sample. The asbestos component of ACM may either be friable or non-friable. Friable materials, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure and have a higher potential for a fiber release than non-friable ACM. Non-friable ACM are materials that are firmly bound in a matrix by plastic, cement, etc. and, if handled carefully, will not become friable. Federal and state regulations require that either all suspect building materials be presumed ACM or that an asbestos survey be performed prior to renovation, dismantling, demolition, or other activities that may disturb potential ACM. Notifications are required prior to demolition and/or renovation activities that may impact the condition of ACM in a building. ACM removal may be required if the ACM is likely to be disturbed or damaged during the demolition or renovation. Abatement of friable or potentially friable ACM must be performed by a licensed abatement contractor in accordance with state rules and NESHAP. Additionally, OSHA regulations for work classification, worker training and worker protection will apply.
AHERA	Asbestos Hazard Emergency Response Act
AST	Aboveground Storage Tanks. ASTs are generally described as storage tanks less than 10% of which are below ground (i.e., buried). Tanks located in a basement, but not buried, are also considered ASTs. Whether, and the extent to which, an AST is regulated, is determined on a case-by-case basis and depends upon tank size, its contents and the jurisdiction of its location.
BGS	Below Ground Surface
Brownfields	State and/or tribal listing of Brownfield properties addressed by Cooperative Agreement Recipients or Targeted Brownfields Assessments.
BTEX	Benzene, Toluene, Ethylbenzene, and Xylenes. BTEX are VOC components found in gasoline and commonly used as analytical indicators of a petroleum hydrocarbon release.
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act (a.k.a. Superfund). CERCLA is the federal act that regulates abandoned or uncontrolled hazardous waste sites. Under this Act, joint and several liability may be imposed on potentially responsible parties for cleanup-related costs.
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System. An EPA compilation of sites having suspected or actual releases of hazardous substances to the environment. CERCLIS also contains information onsite inspections, preliminary assessments and remediation of hazardous waste sites. These sites are typically reported to EPA by states and municipalities or by third parties pursuant to CERCLA Section 103.
CESQG	Conditionally Exempt Small Quantity Generators
CFR	Code of Federal Regulations

Description of Selected General Terms and Acronyms

Term/Acronym	*Description*
CREC	Controlled Recognized Environmental Condition is defined in ASTM E1527-13 as "a recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority) , with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls). A condition considered by the environmental professional to be a controlled recognized environmental condition shall be listed in the findings section of the Phase I Environmental Site Assessment report, and as a recognized environmental condition in the conclusions section of the Phase I Environmental Site Assessment report."
DOT	U.S. Department of Transportation
EPA	U.S. Environmental Protection Agency
ERNS	Emergency Response Notification System. An EPA-maintained federal database which stores information on notifications of oil discharges and hazardous substance releases in quantities greater than the applicable reportable quantity under CERCLA. ERNS is a cooperative data-sharing effort between EPA, DOT, and the National Response Center.
ESA	Environmental Site Assessment
FRP	Fiberglass Reinforced Plastic
Hazardous Substance	As defined under CERCLA, this is (A) any substance designated pursuant to section 1321(b)(2)(A) of Title 33, (B) any element, compound, mixture, solution, or substance designated pursuant to section 9602 of this title; (C) any hazardous waste having characteristics identified under or listed pursuant to section 3001 of the Solid Waste Disposal Act (with some exclusions); (D) any toxic pollutant listed under section 1317(a) of Title 33; (E) any hazardous air pollutant listed under section 112 of the Clean Air Act; and (F) any imminently hazardous chemical substance or mixture with respect to which the EPA Administrator has taken action under section 2606 of Title 15. This term does not include petroleum, including crude oil or any fraction thereof which is not otherwise listed as a hazardous substance under subparagraphs (A) through (F) above, and the term include natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas).
Hazardous Waste	This is defined as having characteristics identified or listed under section 3001 of the Solid Waste Disposal Act (with some exceptions). RCRA, as amended by the Solid Waste Disposal Act of 1980, defines this term as a "solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may (A) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness; or (B) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed."
HREC	Historical Recognized Environmental Condition is defined in ASTM E1527-13 as "a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted residential use criteria established by a regulatory authority, without subjecting the property to any required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls). Before calling the past release a historical recognized environmental condition, the environmental professional must determine whether the past release is a recognized environmental condition at the time of the Phase I Environmental Site Assessment is conducted (for example, if there has been a change in the regulatory criteria). If the EP considers the past release to be a recognized environmental condition at the time the Phase I ESA is conducted, the condition shall be included in the conclusions section of the report as a recognized environmental condition."
IC/EC	A listing of sites with institutional and/or engineering controls in place. IC include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls. EC include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.
ILP	Innocent Landowner/Operator Program
LQG	Large Quantity Generators
LUST	Leaking Underground Storage Tank. This is a federal term set forth under RCRA for leaking USTs. Some states also utilize this term.

Description of Selected General Terms and Acronyms

Term/Acronym	*Description*
MCL	Maximum Contaminant Level. This Safe Drinking Water concept (and also used by many states as a ground water cleanup criteria) refers to the limit on drinking water contamination that determines whether a supplier can deliver water from a specific source without treatment.
MSDS	Material Safety Data Sheets. Written/printed forms prepared by chemical manufacturers, importers and employers which identify the physical and chemical traits of hazardous chemicals under OSHA's Hazard Communication Standard.
NESHAP	National Emissions Standard for Hazardous Air Pollutants (Federal Clean Air Act). This part of the Clean Air Act regulates emissions of hazardous air pollutants.
NFRAP	Facilities where there is "No Further Remedial Action Planned," as more particularly described under the Records Review section of this report.
NOV	Notice of Violation. A notice of violation or similar citation issued to an entity, company or individual by a state or federal regulatory body indicating a violation of applicable rule or regulations has been identified.
NPDES	National Pollutant Discharge Elimination System (Clean Water Act). The federal permit system for discharges of polluted water.
NPL	The NPL is the EPA's database of uncontrolled or abandoned hazardous waste facilities that have been listed for priority remedial actions under the Superfund Program.
OSHA	Occupational Safety and Health Administration or Occupational Safety and Health Act
PACM	Presumed Asbestos-Containing Material. A material that is suspected of containing or presumed to contain asbestos but which has not been analyzed to confirm the presence or absence of asbestos.
PCB	Polychlorinated Biphenyl. A halogenated organic compound commonly in the form of a viscous liquid or resin, a flowing yellow oil, or a waxy solid. This compound was historically used as dielectric fluid in electrical equipment (such as electrical transformers and capacitors, electrical ballasts, hydraulic and heat transfer fluids), and for numerous heat and fire sensitive applications. PCB was preferred due to its durability, stability (even at high temperatures), good chemical resistance, low volatility, flammability, and conductivity. PCBs, however, do not break down in the environment and are classified by the EPA as a suspected carcinogen. 1978 regulations, under the Toxic Substances Control Act, prohibit manufacturing of PCB-containing equipment; however, some of this equipment may still be in use today.
pCi/L	picoCuries per Liter of Air. Unit of measurement for Radon and similar radioactive materials.
PLM	Polarized Light Microscopy (see ACM section of the report, if included in the scope of services)
PST	Petroleum Storage Tank. An AST or UST that contains a petroleum product.
Radon	A radioactive gas resulting from radioactive decay of naturally-occurring radioactive materials in rocks and soils containing uranium, granite, shale, phosphate, and pitchblende. Radon concentrations are measured in picoCuries per Liter of Air. Exposure to elevated levels of radon creates a risk of lung cancer; this risk generally increases as the level of radon and the duration of exposure increases. Outdoors, radon is diluted to such low concentrations that it usually does not present a health concern. However, radon can accumulate in building basements or similar enclosed spaces to levels that can pose a risk to human health. Indoor radon concentrations depend primarily upon the building's construction, design and the concentration of radon in the underlying soil and ground water. The EPA recommended annual average indoor "action level" concentration for residential structures is 4.0 pCi/l.
RCRA	Resource Conservation and Recovery Act. Federal act regulating solid and hazardous wastes from point of generation to time of disposal ('cradle to grave"). 42 U.S.C. 6901 et seq.
RCRA Generators	The RCRA Generators database, maintained by the EPA, lists facilities that generate hazardous waste as part of their normal business practices. Generators are listed as either large (LQG), small (SQG), or conditionally exempt (CESQG). LQG produce at least 1000 kg/month of non-acutely hazardous waste or 1 kg/month of acutely hazardous waste. SQG produce 100-1000 kg/month of non-acutely hazardous waste. CESQG are those that generate less than 100 kg/month of non-acutely hazardous waste.
RCRA CORRACTS/TSDs	The USEPA maintains a database of RCRA facilities associated with treatment, storage, and disposal (TSD) of hazardous materials which are undergoing "corrective action". A "corrective action" order is issued when there is a release of hazardous waste or constituents into the environment from a RCRA facility.
RCRA Non-CORRACTS/TSDs	The RCRA Non-CORRACTS/TSD Database is a compilation by the USEPA of facilities which report storage, transportation, treatment, or disposal of hazardous waste. Unlike the RCRA CORRACTS/TSD database, the RCRA Non-CORRACTS/TSD database does not include RCRA facilities where corrective action is required.

Description of Selected General Terms and Acronyms

Term/Acronym	*Description*
RCRA Violators List	RAATS. RCRA Administrative Actions Taken. RAATS information is now contained in the RCRIS database and includes records of administrative enforcement actions against facilities for noncompliance.
RCRIS	Resource Conservation and Recovery Information System, as defined in the Records Review section of this report.
REC	Recognized Environmental Conditions are defined by ASTM E1527-13 as "the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: 1) due to any release to the environment; 2) under conditions indicative of a release to the environment. *De minimis* conditions are not recognized environmental conditions."
SCL	State "CERCLIS" List (see SPL /State Priority List, below).
SPCC	Spill Prevention, Control and Countermeasures. SPCC plans are required under federal law (Clean Water Act and Oil Pollution Act) for any facility storing petroleum in tanks and/or containers of 55-gallons or more that when taken in aggregate exceed 1,320 gallons. SPCC plans are also required for facilities with underground petroleum storage tanks with capacities of over 42,000 gallons. Many states have similar spill prevention programs, which may have additional requirements.
SPL	State Priority List. State list of confirmed sites having contamination in which the state is actively involved in clean up activities or is actively pursuing potentially responsible parties for clean up. Sometimes referred to as a State "CERCLIS" List.
SQG	Small Quantity Generator
SWF/LF	State and/or Tribal database of Solid Waste/Landfill facilities. The database information may include the facility name, class, operation type, area, estimated operational life, and owner.
TPH	Total Petroleum Hydrocarbons
TRI	Toxic Release Inventory. Routine EPA report on releases of toxic chemicals to the environment based upon information submitted by entities subject to reporting under the Emergency Planning and Community Right to Know Act.
TSCA	Toxic Substances Control Act. A federal law regulating manufacture, import, processing and distribution of chemical substances not specifically regulated by other federal laws (such as asbestos, PCBs, lead-based paint and radon). 15 U.S.C 2601 et seq.
USACE	United States Army Corps of Engineers
USC	United States Code
USGS	United States Geological Survey
USNRCS	United States Department of Agriculture-Natural Resource Conservation Service
UST	Underground Storage Tank. Most federal and state regulations, as well as ASTM E1527-13, define this as any tank, incl., underground piping connected to the tank, that is or has been used to contain hazardous substances or petroleum products and the volume of which is 10% or more beneath the surface of the ground (i.e., buried).
VCP	State and/or Tribal facilities included as Voluntary Cleanup Program sites.
VOC	Volatile Organic Compound

Description of Selected General Terms and Acronyms

Term/Acronym	*Description*
Wetlands	Areas that are typically saturated with surface or ground water that creates an environment supportive of wetland vegetation (i.e., swamps, marshes, bogs). The Corps of Engineers Wetlands Delineation Manual (Technical Report Y-87-1) defines wetlands as areas inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. For an area to be considered a jurisdictional wetland, it must meet the following criteria: more than 50 percent of the dominant plant species must be categorized as Obligate, Facultative Wetland, or Facultative on lists of plant species that occur in wetlands; the soil must be hydric; and, wetland hydrology must be present. The federal Clean Water Act which regulates "waters of the US," also regulates wetlands, a program jointly administered by the USACE and the EPA. Waters of the U.S. are defined as: (1) waters used in interstate or foreign commerce, including all waters subject to the ebb and flow of tides; (2) all interstate waters including interstate wetlands; (3) all other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, etc., which the use, degradation, or destruction could affect interstate/ foreign commerce; (4) all impoundments of waters otherwise defined as waters of the U. S., (5) tributaries of waters identified in 1 through 4 above; (6) the territorial seas; and (7) wetlands adjacent to waters identified in 1 through 6 above. Only the USACE has the authority to make a final wetlands jurisdictional determination.

Appendix F

Hydrology Report

HYDROLOGY REPORT

New Travel Center

STODDARD WELLS ROAD, EAST OF INTERSTATE 15
APPLE VALLEY, CA 92307

Prepared For:

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5486 Industrial Parkway
San Bernardino, CA 92407

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LANE PROJECT NO. 20230

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Executive Summary

This storm drainage modeling, analysis, and report has been completed to document and support of the proposed design and storm drain system which shows that there is more than a 10% reduction of storm water runoff in the post-development condition, compared to the pre-development condition.

The reduced runoff is accomplished by incorporating several bioretention areas throughout the entire development, which are underlain by a bioretention soil media and gravel layer. A representative cross-section of a bioretention area is shown in Figure 3-1.

The proposed project was modeled in Autodesk Storm and Sanitary Analysis with multiple rainfall events simulated. The hydrology model utilized was NRCS (SCS) TR-55, which is appropriate for small urban watersheds.

The storm simulations reveal an overall net decrease of more than 10% in both the volume of runoff and peak discharge when comparing the predevelopment condition to the post-development condition, and the storm simulations reveal that the site is capable of storing and infiltrating (within 72 hours) the runoff resulting from a 100-yr / 1-hour rainfall event. Therefore, the overall post development impacts to downstream drainage facilities and drainage ways will be less than the impacts in the predevelopment condition. The analysis and findings are more thoroughly detailed in Section 3 of this report.

Section 1.0 – Introduction

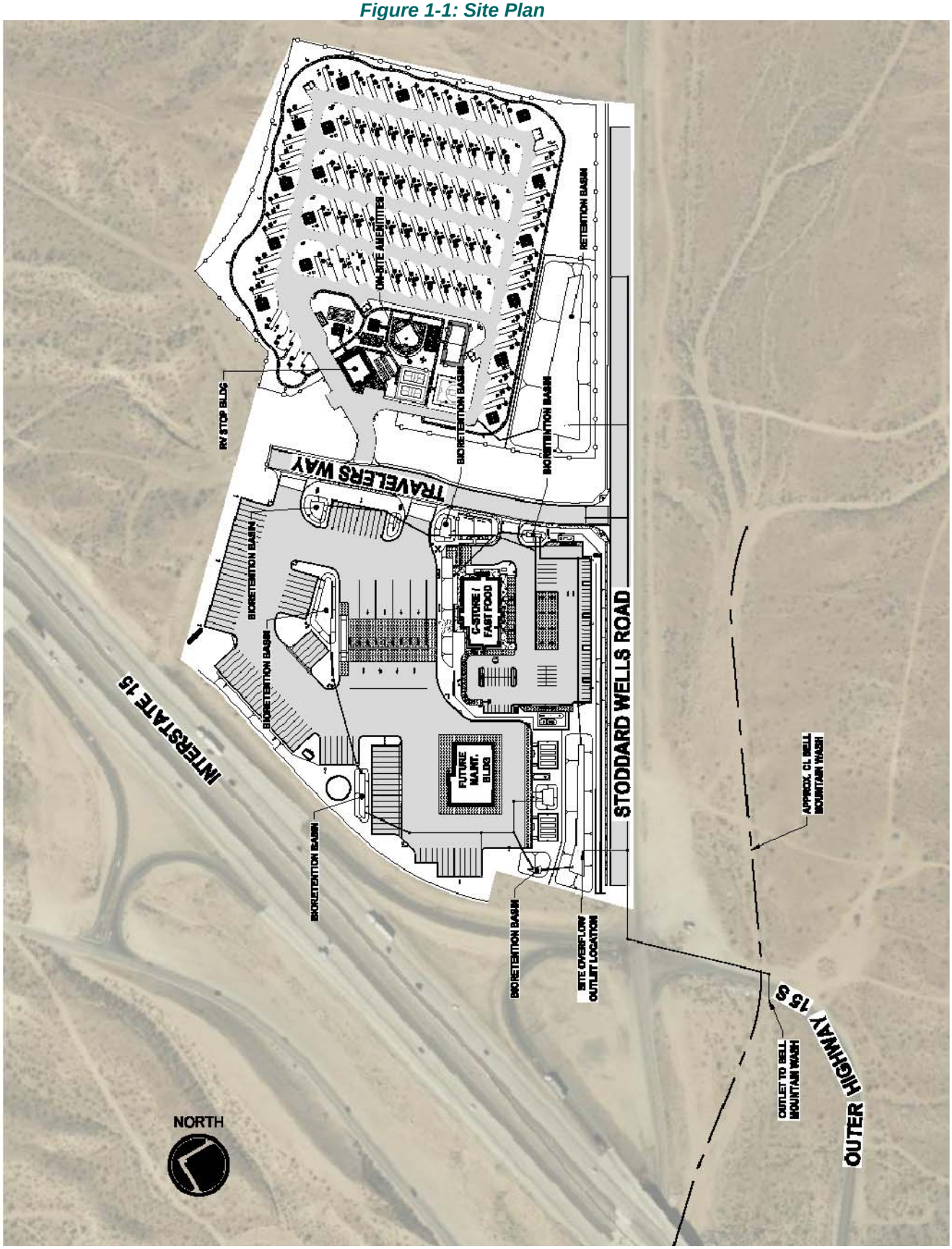
1.1 - Project Description

The proposed project is a travel stop which will sell fuel to the motoring public including cars, motorcycles, recreation vehicles and trucks. It will consist of multiple uses including fueling (27 total fueling positions; 16 auto fueling positions and 9 truck fueling positions), a 9,659 square foot convenience store, a 3,043 square foot fast food restaurant with a drive-thru, and a 10,226 square foot, 3-bay truck maintenance and tire care building. East of the travel stop, an RV Stop is proposed, which will have 80 overnight parking spaces for RVs and will also have an approximately 3,500 SF building which will contain the main office, along with restrooms, showers, and vending machines. The RV stop development may also contain various recreational amenities for customers, including but not limited to, a dog park, basketball courts, pickleball courts, splash pad, etc. The travel stop project will develop approximately 15.33 acres, and approximately 16.37 acres will be developed for the RV Stop project. Approximately 7.07 acres will be considered as improved roadway. Of the onsite developed areas, approximately 65% to 75% of the site is expected to consist of impervious surfaces. Refer to Figure 1-1 for site plan.

1.2 - Report Purpose

The purpose of this report is to provide analysis and documentation that the site in the post-development condition is capable of storing and infiltrating, within 72 hours, the runoff from a 100-year / 1-hour event, and that runoff is at least 10% less than the pre-development runoff for the 100-year/24-hour event, 50-year/24-hour event, 25-year/24-hour event, 10-year/24-hour event, 5-year/24-hour event, and 2-year/24-hour event. It should be noted that the proposed design ultimately reduces the peak runoff in each storm event analyzed. The discharge will not be delayed and pumped off later, but rather infiltrated in the respective bioretention basins they are being stored in.

Figure 1-1: Site Plan



Section 2.0 - Existing Conditions

2.1 - Regional Conditions

The project site is in the northern portion of incorporated limits of the Town of Apple Valley and in an area in the Mojave Desert known as Victor Valley, which is in the southwest part of San Bernardino County. Victor Valley is bounded Antelope Valley to the West, the San Gabriel Mountains to the South and the San Bernardino Mountains to the north. The Mojave River runs along the west side of Apple Valley from the San Gabriel Mountains to the south. The Town of Apple Valley has a semi-arid Climate with cool winters and hot summers.

2.2 - Site Conditions

The project site is located just east of Interstate 15, and just north of Stoddard Wells Road. The site has been disturbed and mass graded in sometime in the late 1980's or early 1990's. A drainage wash previously ran through the site, from north to south, but this drainage path was rerouted and replaced with three 60" diameter pipes, that run through the site, east of the proposed Traveler's Way road. The three 60" diameter pipes convey run-on to the property through the underground pipes, and discharge on the south side of Stoddard Wells Road, into the Bell Mountain Wash. It is assumed these pipes were installed coincident with the mass grading that previously occurred on the site, presumably under the jurisdiction of San Bernardino County. The subject project is not proposing to modify these pipes in any form.

The site has very sparse vegetation on a very uneven hillside. The historical drainage pattern flowing from the northeast corner of the project towards the southwest at approximately 2%. It is at the downstream edge of a watershed that drains into Bell Mountain Wash, which eventually discharges into the Mojave River.

A project specific geotechnical investigation and report by Terracon Consultants, dated February 10, 2021, revealed the site consists of mostly silty sand. Groundwater was not observed during the site investigation within the uppermost 50 feet below the existing ground surface.

Percolation tests were conducted during the course of the investigation. The percolation rates at various locations ranged between 13 inches per hour and 196 inches per hour. These rates were correlated to an infiltration rate using the Porchet Method, resulting in infiltration rates ranging between 0.5 inches per hour and 8.3 inches per hour. Refer to the Table 2-1 for the percolation test results.

Table 2-1: Percolation Rate Test Results

TEST RESULTS			
Test Location (depth, ft)	Soil Classification	Average Measured Percolation Rate (in/hr)	Correlated Infiltration Rate (in/hr)
B-16 (5)	SM	13.0	0.5
B-18 (10)	SM	19.2	0.7
B-19 (5)	SP-SM	37.0	1.4
B-20 (15)	SW-SM	43.2	1.5
B-21 (10)	SW-SM	195.6	8.3
B-22 (8)	SM	52.8	2.0
B-23 (5)	SW-SM	139.5	7.3

Section 3.0 – Hydrologic and Storm Drain Analysis

3.1 – Hydrologic and Storm Drain Model

Autodesk Storm and Sanitary Analysis (SSA) was used to model and simulate various storm events for the proposed project. SSA, originally known as StormNET, and developed by BOSS International, is an advanced, powerful, and comprehensive stormwater and wastewater modeling software used for modeling urban drainage systems amongst other storm water and sanitary sewer systems modeling capabilities.

The software is capable of simultaneously modeling complex hydrology, hydraulics, and water quality. SSA is used throughout the world in many applications, once of which is the design and sizing of drainage systems and detention facilities for flood control.

SSA additionally contains a site-specific storm distribution database with over 3,500 up-to-date rainfall recording stations across North America.

3.2 – Methodology

SSA has over a dozen hydrology modeling capabilities, but in the particular case of this project, NRCS (SCS) TR-55 was selected as the hydrology model. The Soil Conservation Service (SCS), which is now known as Natural Resources Conservation Service (NRCS) published Technical Release 55 (TR-55), entitled "Urban Hydrology for Small Watersheds". TR-55 presents simplified procedures to calculate storm runoff volume, peak rate of discharge, hydrographs and storage volumes. These procedures are applicable in small watersheds, especially urbanized watersheds.

An SCS Type 1 24-hr rainfall distribution was selected as the design rainfall for the project. A continuous simulation was performed for a 24-hr duration for the 2-year, 5-year, 10-year, 25-year, 50-year, and 100-year, and 100-year / 1-hour recurrence intervals for both pre-development (existing) and post-development conditions. The cumulative rainfall depth for each recurrence interval was conservatively overwritten in the software using the rainfall depths from NOAA's precipitation frequency data server. NOAA has long been considered a reliable and authoritative source of precipitation frequency estimates and associated information. The comparison of rainfall depths is provided in Table 3-1, immediately below. The original source of the NOAA rainfall depths is provided in Appendix A for reference.

Table 3-1: Rainfall Depths

Rainfall Event	NOAA Rainfall Depths	SSA Rainfall Depths
2-Year / 24-Hour	1.33 inches	1.00 inches
5-Year / 24-Hour	1.78 inches	1.60 inches
10-Year / 24-Hour	2.15 inches	1.80 inches
25-Year / 24-Hour	2.67 inches	2.45 inches
50-Year / 24-Hour	3.07 inches	2.85 inches
100-Year / 24-Hour	3.48 inches	3.00 inches
100-Year / 1-Hour	1.08 inches	N/A

For the predevelopment condition, an area roughly equivalent in shape and size to the proposed post-development area was analyzed. For the pre-development condition, the time of concentration was

calculated using the method and formula outlined in TR-55. The total time of concentration was 107.18 minutes for the travel stop parcel and 100.79 minutes for the RV Stop parcel, both calculations are based on the sheet flow, diagonally and following existing contours across the site. To simulate the rainfall events for the predevelopment condition, a curve number of 88 and 63 were established respectively based on the Hydrologic Soils Group of 'A' and Hydrologic Soils Group 'D', and a site classification of "Desert Shrub Range with Poor Ground Cover". A hydrologic soils group of 'A' is described as soils having a high infiltration rate when thoroughly wet. A hydrologic soils group 'D' is defined as soils having a very slow infiltration rate when thoroughly wet. The basis for the selection of these soils groups was an online soils report through NCRS, which is included as Appendix D for reference.

Each bioretention area was assigned an infiltration rate based on nearby test results. A factor of safety of 2 was applied to the final correlated infiltration rates presented in Table 2-1 above, to account for reduced performance due to silt building, debris, and other factors. The infiltration rates were based on measured percolation rates at the site which were correlated to infiltration rates using the Porchet Method. The correlated infiltration rates varied from 7.3 in/hr to 0.5 in/hr. The test percolation test results are included in Appendix E of this report as part of the larger and project-specific geotechnical report.

The time of concentration for each post-development tributary area was conservatively assumed to be 10 minutes.

3.3 – Proposed Design

A detailed grading plan & drainage plans was first developed for each respective project site in order to ensure accurate elevations and storage volumes for detention facilities, discharges structures, etc. The site was design to surface flow to depressed planter areas around the perimeter of the site, and overflow into and underground storm drain system during larger storm events. The entire onsite storm drain system of each site discharges into a proposed offsite storm drain system in Stoddard Wells Road, which eventually discharges into Bell Mountain Wash, located just southwest of the entire development.

Based on the grading design, a total of 11 tributary areas were developed for the travel stop site and 1 tributary area was developed for the RV Stop site to represent the runoff towards the respective onsite storage areas. Each bioretention area was designed to store a maximum of 18" of water, if the area is unfenced. Terminal bioretention areas (BR 7 and BR8) for the travel stop and RV Stop, were designed to store 4 feet of water and 3 feet of water respectively. Because of the increased depth of water storage at each of these areas, both areas will be fenced for safety reasons.

The free open storage of the bioretention areas were modeled by adding surface areas of contours by the corresponding incremental depth. The resultant of the data is depth vs. area curve, for which the area beneath the curve represents the total storage volume. Bioretention areas that were designed with flat bottom areas also had pervious sublayers consisting of crushed rock and bioretention soil media (BSM). The pervious subgrade for most bioretention areas is capable of storing an equivalent water depth of 1.06 feet in most instances, but this varies somewhat throughout the site. This additional subgrade storage was incorporated appropriately in the storage curves. A typical bioretention section is shown in Figure 3-1, depicting the storage capabilities of the bioretention areas, and a table showing the respective storage capability of each bioretention area is shown In Table 3-1.

With the exception of the bioretention area (BR8) which captures the runoff from the RV Stop, all bioretention areas will consist of several layers of porous material (mulch bioretention soil media, and drain rock), which will achieve the proper volumetric control to reduce runoff to less than predevelopment levels. The bioretention area (BR8) will not contain any underlying engineered soil mix, because it was not necessary to achieve the volume control and runoff reduction. The report will show that infiltration of all bioretention areas is feasible within a 72-hr period, however terminal downstream bioretention areas will include drywells to assist in rapid infiltration. The drywells weRE conservatively not considered in the storm drain model and this analysis. Refer to Appendix B for the Modeling Keymap

Figure 3-1: Typical Bioretention Cross-Section

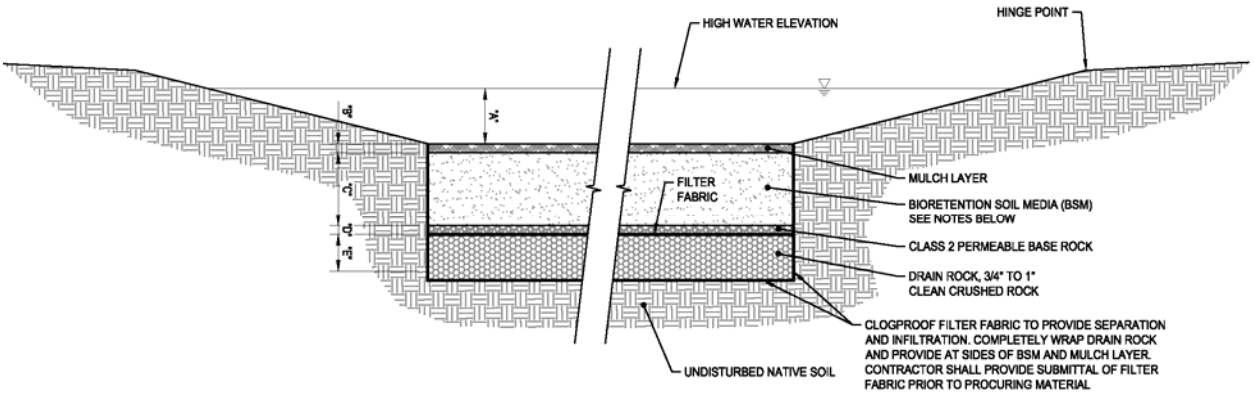


Table 3-1: Bioretention Depths

Bioretention ID	Water Storage Height "A"	Mulch Depth "B"	BSM Depth "C"	Caltrans Permeable Base "D"	Gravel Depth "E"	Equivalent Storage Depth in Subgrade
BR1	1.5'	0.25'	2.0'	0.25'	1.0'	1.06'
BR2	1.5'	0.25'	2.0'	0.25'	1.0'	1.06'
BR3A	1.5'	0.25'	2.0'	0.25'	1.0'	1.06'
BR3B	1.5'	0.25'	2.0'	0.25'	1.0'	1.06'
BR3C	1.5'	0.25'	2.0'	0.25'	1.0'	1.06'
BR4	1.0'	0.25'	2.0'	0.25'	1.0'	1.06'
BR5	1.5'	0.25'	2.0'	0.25'	1.0'	1.06'
BR6	1.5'	0.25'	2.0'	0.25'	1.0'	1.06'
BR7	4.0'	0.25'	2.0'	0.25'	2.0'	1.46'
BR8	3.0'	0'	0'	0'	0'	0'

The bioretention areas, upon reaching their maximum water storage height, will be allowed to overflow into drain inlets which lead to an underground storm drain systems, and in some cases to another down stream bioretention area. The overflow structures were conservatively modeled as 24" diameter bottom-opening orifices, which allows a higher discharge rate into the underground storm drain system and ultimately a higher discharge from the site. The underground storm drain system will drain to a proposed storm drain system in Stoddard Wells Road, and will eventually discharge into the Bell Mountain Wash.

3.4 – Findings

The proposed design using shallow bioretention areas around the site serves the purpose of capturing storm water runoff and reducing runoff at all times, by at least 10% compared to predevelopment for a 100-year storm event, and fully captures and infiltrates 100% of a 100-year / 1-hour storm (1.08 inches). Table 3-2 Shows the characteristics of each bioretention area relative to depth of storage and demonstrates that each bioretention area is free from standing water in less than 72 hours, with the maximum infiltration time taking 38.8 hours.

Table 3-2
Peak Discharge Rates Various Rainfall Events at the Travel Stop Site

Bio-retention ID	Max. Water Storage Height Available	Max. Water Storage Height Incl. Freeboard	Max. Water Head Attained (Elev.)	Bottom Elev. of Bio-retention Area (Elev.)	Maximum Water Storage Height Attained (FT)	Factored Infiltration Rate (IN/HR)	Total Time to Infiltrate (HRS)
BR1	1.5’	2.0’	918.25	919.08	-0.83’	3.65	0
BR2	1.5’	2.0’	913.63	912.85	0.78’	0.25	38.8
BR3A	1.5’	2.0’	919.69	919.60	0.09’	1.0	2.4
BR3B	1.0’	1.5’	916.31	915.22	1.06’	1.0	13.4
BR3C	1.5’	2.0’	911.21	910.45	0.76’	4.15	3.5
BR4	1.0’	1.5’	906.34	905.23	1.11’	0.75	17.5
BR5	1.5’	2.0’	910.84	910.12	0.72’	0.70	13.7
BR6	1.0’	1.5’	905.17	903.98	1.19’	0.35	36.0
BR7	4.0’	4.5’	897.00	897.23	-0.23’	0.35	0
BR8	3.0’	3.5’	900.54	900.16	0.38’	0.25	19.5

Notes:

1. Bioretention No. 7 (BR7) is located downstream and hydraulically connected to all other upstream bioretention areas on the travel stop site. If some smaller bioretention areas overflow, that overflow will be captured by other downstream bioretention area(s). The lack of discharge from bioretention No. 7 (BR) indicates that there is zero discharge from the entire developed site.
2. A negative value for maximum water storage height attained, indicates that the engineered soil mix of the bioretention area did not fill up and fully saturate during the rainfall simulation.

This report also seeks to demonstrate that runoff peak runoff reduction for the 24-hour rainfall event 2-, 5-, 10-, 25-, 50-, and 100-year recurrence intervals has been achieved from the post development compared to predevelopment condition, and the runoff reduction

The peak discharge rates for each storm event at the Travel Stop Site is summarized in Table 3-3.

Table 3-3
Peak Discharge Rates Various Rainfall Events at the Travel Stop Site

Recurrence Interval	Pre-Development Peak Discharge Rate	Post-Development Peak Discharge Rate	Net Change in Runoff Rate
2-Year / 24-Hour	0.04 CFS	0.00 CFS	-0.04 CFS
5-Year / 24-Hour	0.16 CFS	0.00 CFS	-0.16 CFS
10-Year / 24-Hour	0.33 CFS	0.00 CFS	-0.33 CFS
25-Year / 24-Hour	0.78 CFS	0.00 CFS	-0.78 CFS
50-Year / 24-Hour	1.42 CFS	0.44 CFS	-0.98 CFS
100-Year / 24-Hour	2.25 CFS	0.84 CFS	-1.41 CFS
100-Year / 1-Hour	0.00 CFS	0.00 CFS	0.00 CFS

Since the site is located at the downstream end of a watershed, the post-development discharge cannot exceed the pre-development discharge at any time, even if the maximum discharge in the post-development condition is less than the maximum discharge in the predevelopment condition. The hydrographs comparing the predevelopment to post development runoff for the 100-Year and 50-Year events for the travel stop, demonstrate that all times during the storm events, the post-development discharge is less than the pre-development condition. The hydrographs for the 100-YR event and 50-Yr event are shown in Figure 3-1 & Figure 3-2, respectively.

Figure 3-1
Travel Stop 100-Yr Hydrograph for Pre-development & Post-development Conditions

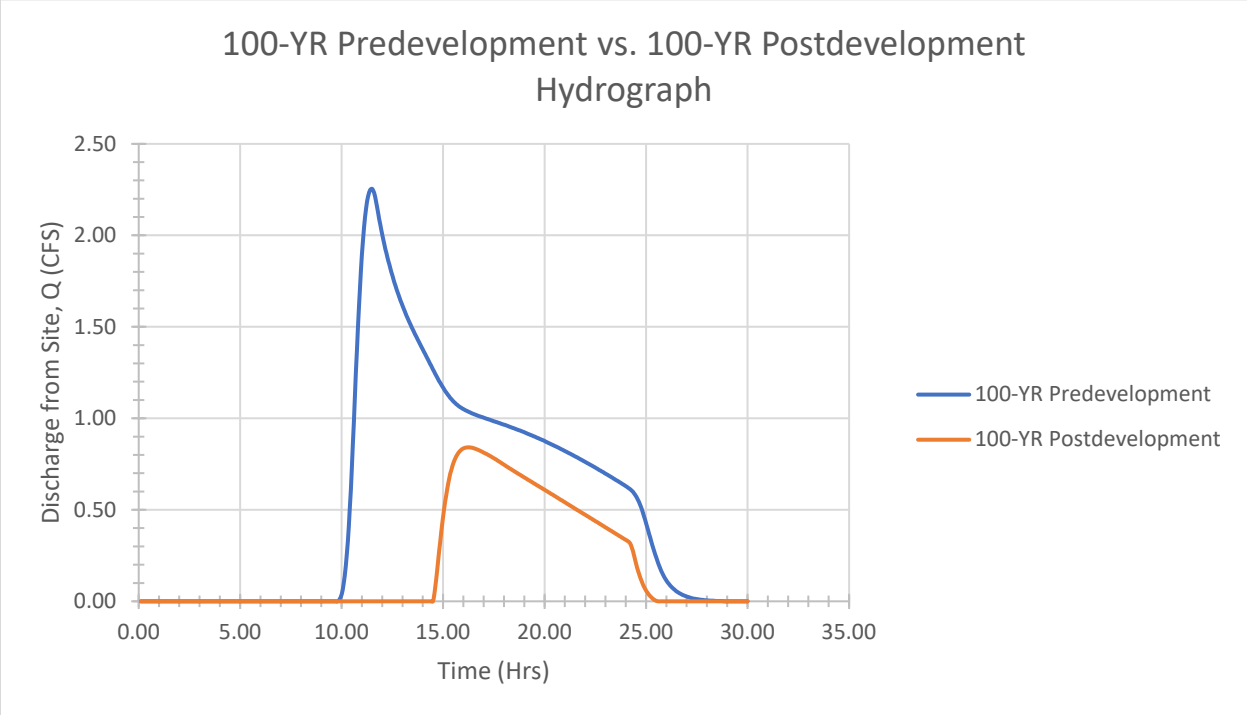
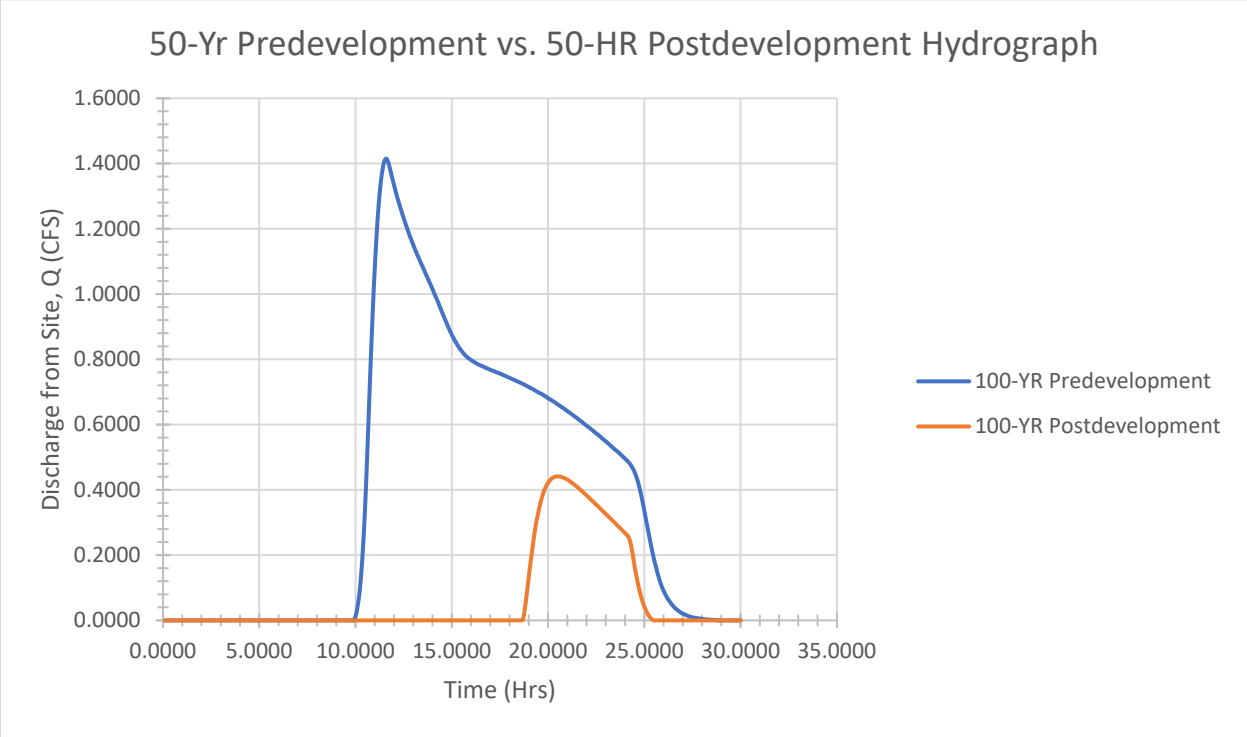


Figure 3-2
Travel Stop 50-Yr Hydrograph for Pre-development & Post-development Conditions



The peak discharge rates for each storm event at the RV Stop Site is summarized in Table 3-4. There is no discharge from the site at any of the simulated storm events, including the 100-YR / 24-Hour event.

Table 3-4
Peak Discharge Rates for Various Rainfall Events at the RV Stop Site

Recurrence Interval	Pre-Development Peak Discharge Rate	Post-Development Peak Discharge Rate	Net Change in Runoff Rate
2-Year / 24-Hour	0.08 CFS	0.00 CFS	-0.08 CFS
5-Year / 24-Hour	0.25 CFS	0.00 CFS	-0.25 CFS
10-Year / 24-Hour	0.56 CFS	0.00 CFS	-0.56 CFS
25-Year / 24-Hour	1.33 CFS	0.00 CFS	-1.33 CFS
50-Year / 24-Hour	2.11 CFS	0.00 CFS	-2.11 CFS
100-Year / 24-Hour	3.03 CFS	0.00 CFS	-3.03 CFS
100-Year / 1-Hour	0.17 CFS	0.00 CFS	-0.17 CFS

3.4 – Conclusion

The hydrology report shows that the developed project will be capable of retaining and infiltrating the 100-year, 1-hour storm per City requirements.

The travel stop site will not discharge any storm water for the 2-, 5-, 10-, and 25-year rainfall events. The travel stop site will discharge during the 50-year and 100-year rainfall events; however, the hydrographs show the runoff is substantially reduced all time periods compared to the pre-developed condition.

The RV Stop will be capable of capturing, storing and retaining 100% of the runoff for the 2-, 5-, 10-, 25-, 50-, and 100-year rainfall events.

Appendix A

NOAA Atlas 14, Volume 6, Version 2
Location name: Apple Valley, California, USA*
Latitude: 34.5943°, Longitude: -117.2537°
Elevation: 2941.06 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**0.088** (0.072-0.108)	**0.123** (0.101-0.150)	**0.171** (0.140-0.210)	**0.213** (0.173-0.264)	**0.274** (0.216-0.351)	**0.323** (0.250-0.423)	**0.377** (0.284-0.505)	**0.435** (0.319-0.600)	**0.520** (0.366-0.746)	**0.590** (0.401-0.876)
10-min	**0.126** (0.104-0.155)	**0.176** (0.145-0.216)	**0.245** (0.201-0.302)	**0.305** (0.248-0.378)	**0.392** (0.309-0.503)	**0.464** (0.358-0.607)	**0.541** (0.407-0.724)	**0.624** (0.458-0.860)	**0.745** (0.525-1.07)	**0.846** (0.575-1.25)
15-min	**0.152** (0.126-0.187)	**0.212** (0.175-0.261)	**0.296** (0.243-0.365)	**0.369** (0.300-0.458)	**0.474** (0.374-0.608)	**0.561** (0.433-0.734)	**0.654** (0.493-0.876)	**0.755** (0.554-1.04)	**0.901** (0.634-1.29)	**1.02** (0.696-1.52)
30-min	**0.206** (0.170-0.252)	**0.287** (0.236-0.352)	**0.400** (0.329-0.493)	**0.498** (0.406-0.618)	**0.641** (0.505-0.821)	**0.757** (0.585-0.991)	**0.883** (0.666-1.18)	**1.02** (0.748-1.41)	**1.22** (0.857-1.75)	**1.38** (0.940-2.05)
60-min	**0.252** (0.207-0.309)	**0.351** (0.289-0.431)	**0.489** (0.402-0.602)	**0.609** (0.496-0.756)	**0.783** (0.617-1.00)	**0.926** (0.715-1.21)	**1.08** (0.814-1.45)	**1.25** (0.914-1.72)	**1.49** (1.05-2.14)	**1.69** (1.15-2.51)
2-hr	**0.356** (0.293-0.436)	**0.480** (0.395-0.589)	**0.652** (0.535-0.802)	**0.799** (0.651-0.991)	**1.01** (0.796-1.29)	**1.18** (0.912-1.55)	**1.36** (1.03-1.83)	**1.56** (1.14-2.15)	**1.84** (1.30-2.64)	**2.07** (1.41-3.07)
3-hr	**0.429** (0.354-0.526)	**0.573** (0.472-0.703)	**0.770** (0.632-0.948)	**0.938** (0.764-1.16)	**1.18** (0.928-1.51)	**1.37** (1.06-1.79)	**1.58** (1.19-2.11)	**1.79** (1.32-2.47)	**2.10** (1.48-3.02)	**2.36** (1.60-3.50)
6-hr	**0.584** (0.482-0.716)	**0.773** (0.637-0.949)	**1.03** (0.846-1.27)	**1.25** (1.01-1.55)	**1.55** (1.22-1.99)	**1.79** (1.39-2.35)	**2.05** (1.54-2.75)	**2.32** (1.70-3.19)	**2.70** (1.90-3.87)	**3.00** (2.04-4.46)
12-hr	**0.751** (0.619-0.921)	**1.00** (0.824-1.23)	**1.34** (1.10-1.64)	**1.61** (1.31-2.00)	**2.00** (1.58-2.56)	**2.30** (1.78-3.01)	**2.62** (1.97-3.51)	**2.95** (2.16-4.06)	**3.40** (2.40-4.88)	**3.77** (2.56-5.59)
24-hr	**0.983** (0.872-1.13)	**1.33** (1.18-1.53)	**1.78** (1.57-2.06)	**2.15** (1.89-2.51)	**2.67** (2.26-3.21)	**3.07** (2.55-3.77)	**3.48** (2.82-4.39)	**3.91** (3.08-5.06)	**4.50** (3.40-6.07)	**4.96** (3.62-6.93)
2-day	**1.15** (1.02-1.33)	**1.58** (1.40-1.82)	**2.14** (1.89-2.48)	**2.61** (2.29-3.04)	**3.24** (2.75-3.91)	**3.74** (3.10-4.60)	**4.25** (3.44-5.35)	**4.77** (3.76-6.18)	**5.49** (4.15-7.42)	**6.06** (4.43-8.47)
3-day	**1.25** (1.11-1.44)	**1.73** (1.54-2.00)	**2.37** (2.09-2.74)	**2.89** (2.53-3.37)	**3.61** (3.06-4.34)	**4.16** (3.45-5.12)	**4.73** (3.83-5.96)	**5.32** (4.19-6.89)	**6.13** (4.64-8.28)	**6.77** (4.95-9.46)
4-day	**1.33** (1.18-1.53)	**1.85** (1.64-2.13)	**2.53** (2.23-2.92)	**3.08** (2.70-3.59)	**3.85** (3.26-4.63)	**4.44** (3.68-5.46)	**5.04** (4.09-6.35)	**5.67** (4.47-7.35)	**6.53** (4.94-8.82)	**7.21** (5.26-10.1)
7-day	**1.45** (1.29-1.67)	**1.99** (1.76-2.29)	**2.71** (2.39-3.13)	**3.30** (2.89-3.84)	**4.10** (3.48-4.93)	**4.72** (3.92-5.81)	**5.36** (4.34-6.75)	**6.02** (4.74-7.80)	**6.93** (5.24-9.35)	**7.63** (5.58-10.7)
10-day	**1.53** (1.36-1.76)	**2.10** (1.86-2.41)	**2.84** (2.51-3.28)	**3.45** (3.03-4.02)	**4.29** (3.64-5.17)	**4.94** (4.10-6.07)	**5.61** (4.54-7.06)	**6.30** (4.96-8.15)	**7.24** (5.47-9.78)	**7.98** (5.83-11.2)
20-day	**1.76** (1.56-2.02)	**2.41** (2.14-2.78)	**3.29** (2.90-3.80)	**4.01** (3.51-4.67)	**5.01** (4.24-6.03)	**5.79** (4.80-7.11)	**6.59** (5.34-8.30)	**7.43** (5.85-9.62)	**8.58** (6.48-11.6)	**9.48** (6.93-13.3)
30-day	**1.98** (1.76-2.28)	**2.74** (2.42-3.15)	**3.76** (3.32-4.34)	**4.61** (4.04-5.36)	**5.79** (4.91-6.98)	**6.73** (5.59-8.27)	**7.70** (6.24-9.70)	**8.72** (6.87-11.3)	**10.1** (7.66-13.7)	**11.3** (8.22-15.7)
45-day	**2.32** (2.06-2.67)	**3.22** (2.86-3.71)	**4.46** (3.94-5.15)	**5.51** (4.82-6.41)	**6.99** (5.93-8.42)	**8.18** (6.79-10.1)	**9.43** (7.64-11.9)	**10.8** (8.48-13.9)	**12.6** (9.55-17.1)	**14.1** (10.3-19.7)
60-day	**2.54** (2.25-2.92)	**3.52** (3.12-4.05)	**4.89** (4.32-5.65)	**6.06** (5.31-7.06)	**7.76** (6.58-9.34)	**9.14** (7.59-11.2)	**10.6** (8.59-13.4)	**12.2** (9.60-15.8)	**14.5** (10.9-19.5)	**16.3** (11.9-22.8)

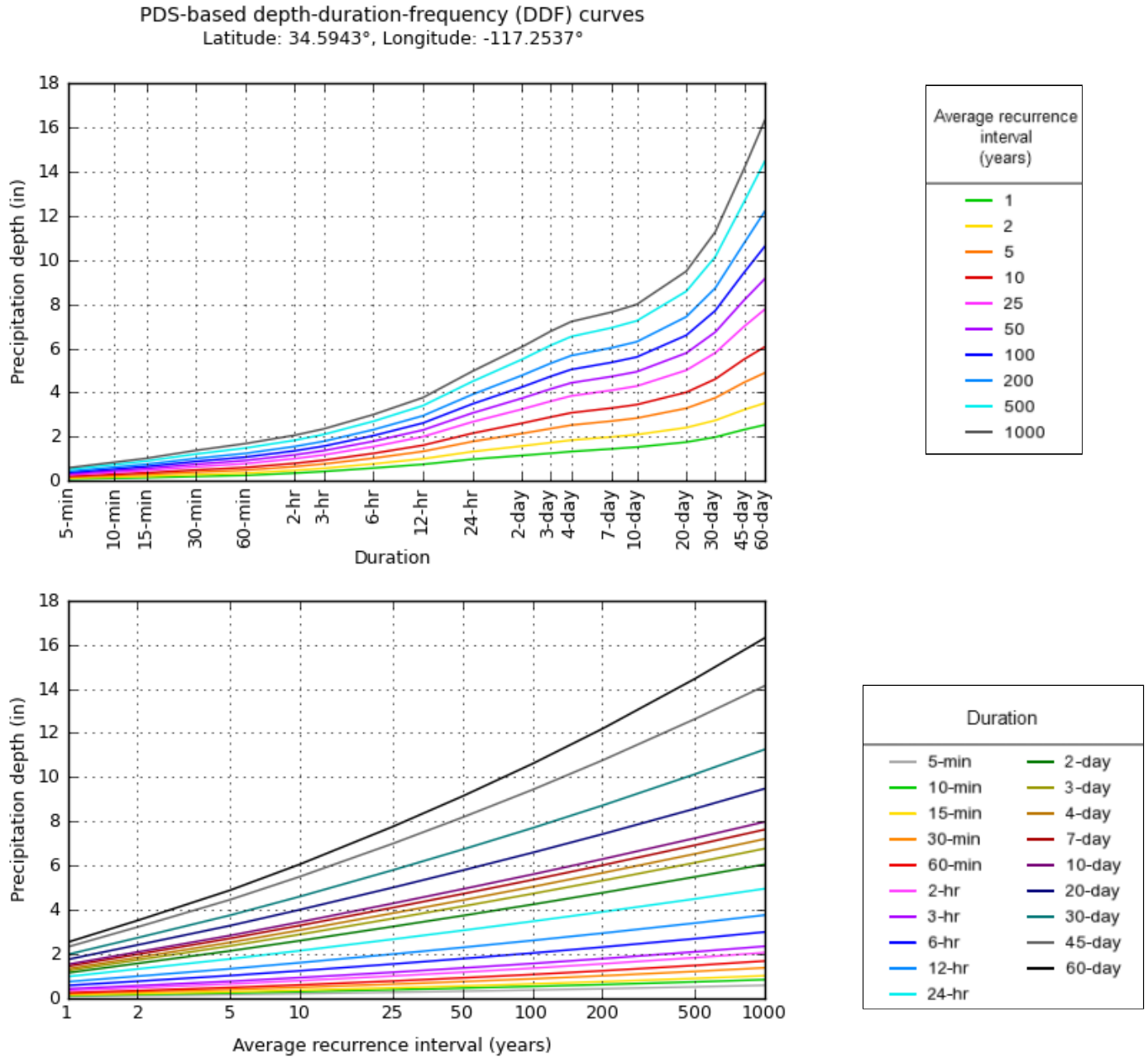
[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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PF graphical



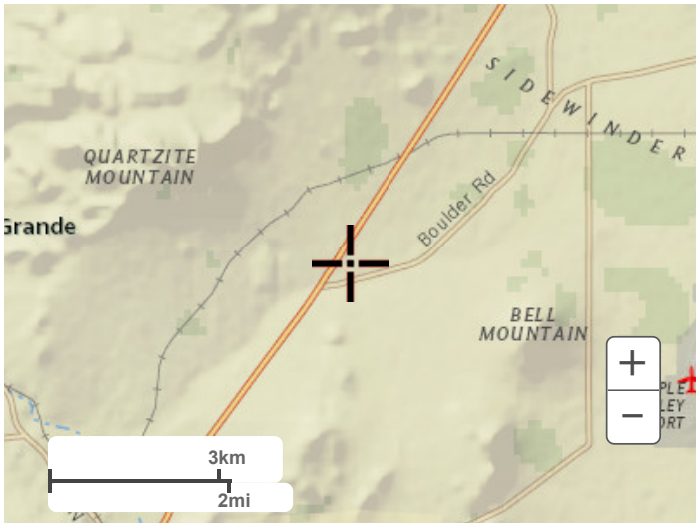
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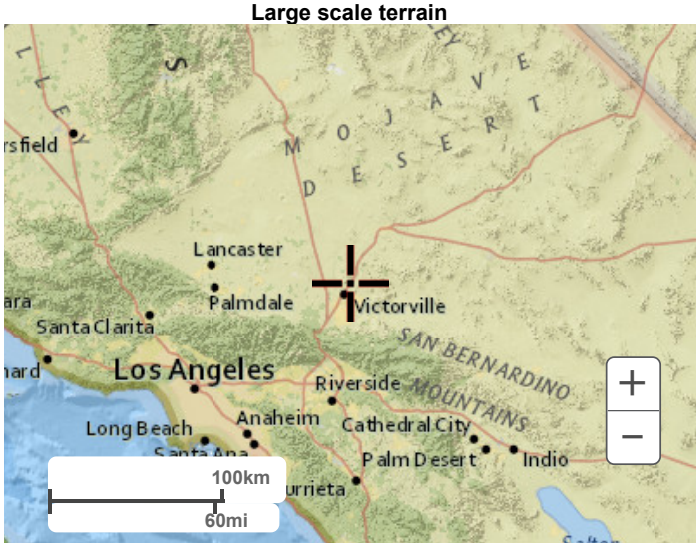
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Maps & aerials

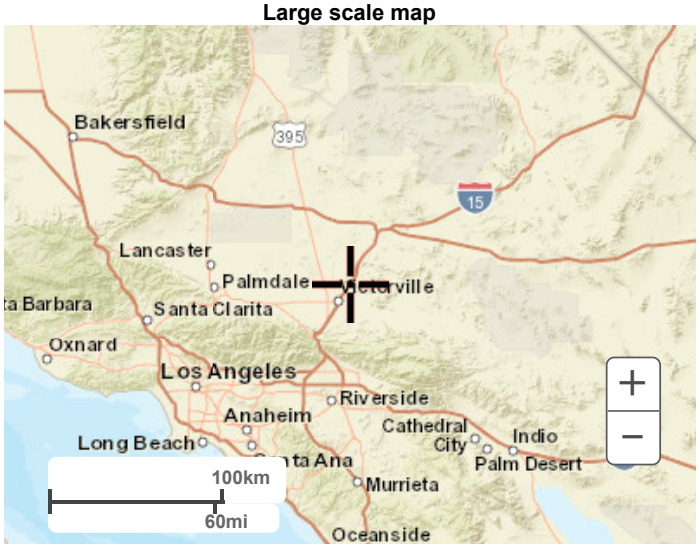
Small scale terrain



Large scale terrain



Large scale map



Large scale aerial



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National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

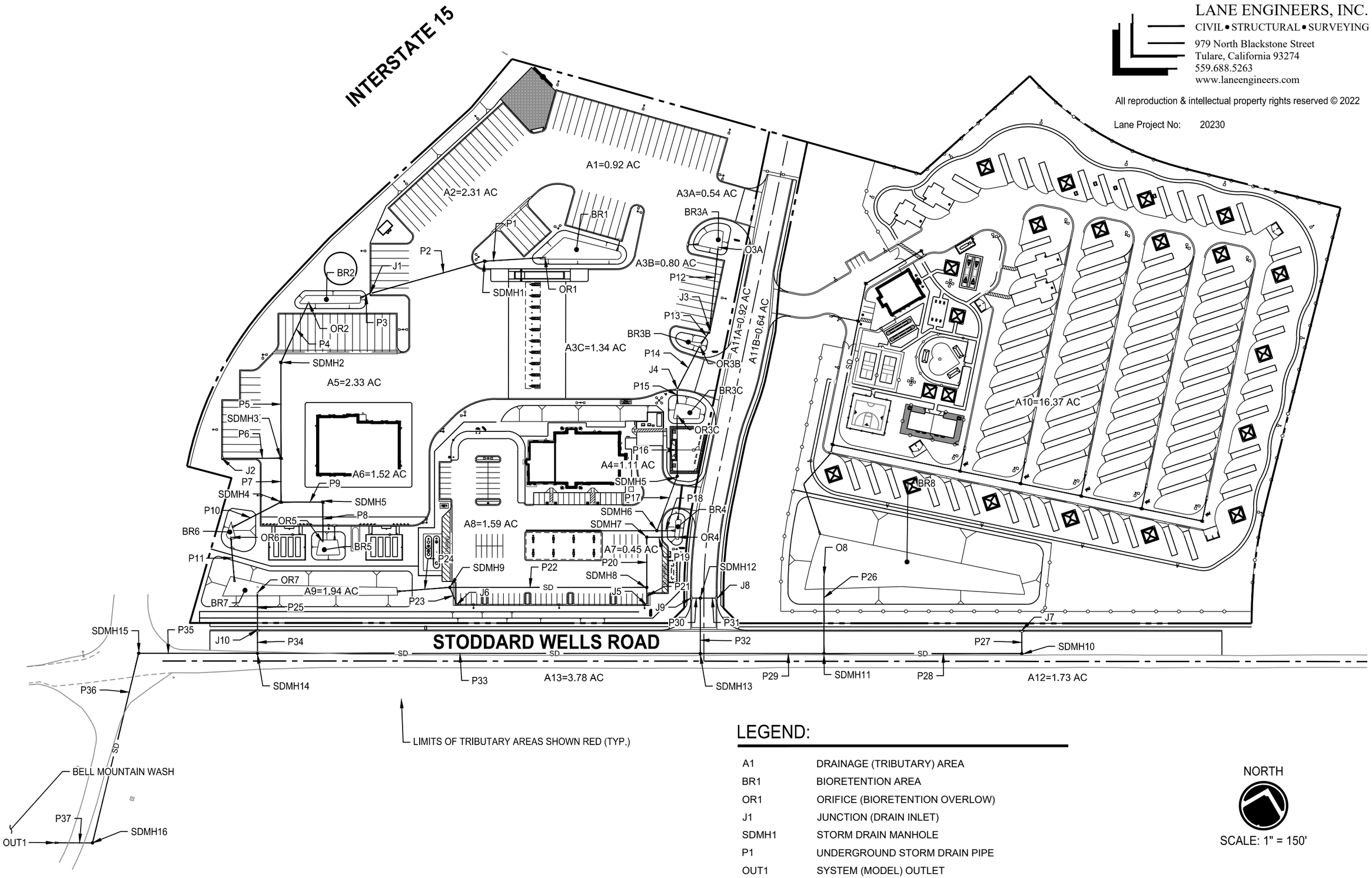
Disclaimer

Appendix B

LANE ENGINEERS, INC.
CIVIL • STRUCTURAL • SURVEYING
979 North Blackstone Street
Tulare, California 93274
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www.laneengineers.com

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Lane Project No: 20230



LEGEND:

A1	DRAINAGE (TRIBUTARY) AREA
BR1	BIORETENTION AREA
OR1	ORIFICE (BIORETENTION OVERLOW)
J1	JUNCTION (DRAIN INLET)
SDMH1	STORM DRAIN MANHOLE
P1	UNDERGROUND STORM DRAIN PIPE
OUT1	SYSTEM (MODEL) OUTLET

NORTH

SCALE: 1" = 150'

5/2/2022 1:36 PM

J:\Jobs\20202020230\Dwg\EXHIBIT-SSA.dwg

Appendix C

100-year/1-hour Rainfall Event Simulation Results

Project Description

File Name 20230.SPF

Project Options

Flow Units	CFS
Elevation Type	Elevation
Hydrology Method	SCS TR-55
Time of Concentration (TOC) Method	SCS TR-55
Link Routing Method	Kinematic Wave
Enable Overflow Ponding at Nodes	YES
Skip Steady State Analysis Time Periods	YES

Analysis Options

Start Analysis On	Oct 27, 2020	00:00:00
End Analysis On	Oct 30, 2020	00:00:00
Start Reporting On	Oct 27, 2020	00:00:00
Antecedent Dry Days	0	days
Runoff (Dry Weather) Time Step	0 01:00:00	days hh:mm:ss
Runoff (Wet Weather) Time Step	0 00:05:00	days hh:mm:ss
Reporting Time Step	0 00:06:00	days hh:mm:ss
Routing Time Step	30	seconds

Number of Elements

	Qty
Rain Gages	1
Subbasins	18
Nodes	50
Junctions	37
Outfalls	3
Flow Diversions	0
Inlets	0
Storage Nodes	10
Links	47
Channels	0
Pipes	37
Pumps	0
Orifices	10
Weirs	0
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1	Project	Time Series	100YR1HR	Cumulative	inches	California	San Bernardino (Barstow)	100	1.08	Florida DOT 1-hr

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Subbasin Summary

SN	Subbasin ID	Area (ac)	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	A01	0.92	90.57	1.08	0.40	0.37	0.96	0 00:10:00
2	A02	2.31	89.00	1.08	0.34	0.77	2.08	0 00:10:00
3	A04	1.11	89.00	1.08	0.34	0.37	1.00	0 00:10:00
4	A05	2.33	89.00	1.08	0.34	0.78	2.09	0 00:10:00
5	A06	1.52	89.00	1.08	0.34	0.51	1.37	0 00:10:00
6	A07	0.45	89.00	1.08	0.34	0.15	0.40	0 00:10:00
7	A08	1.59	89.00	1.08	0.34	0.53	1.43	0 00:10:00
8	A09	1.94	89.00	1.08	0.34	0.65	1.74	0 00:10:00
9	A10	16.37	84.72	1.08	0.21	3.36	9.43	0 00:10:00
10	A11a	0.92	98.00	1.08	0.87	0.80	1.84	0 00:10:00
11	A11b	0.64	98.00	1.08	0.87	0.56	1.27	0 00:10:00
12	A12	1.73	98.00	1.08	0.87	1.50	3.44	0 00:10:00
13	A13	3.78	98.00	1.08	0.87	3.28	7.53	0 00:10:00
14	A3A	0.54	95.00	1.08	0.63	0.34	0.83	0 00:10:00
15	A3B	0.80	91.77	1.08	0.45	0.36	0.93	0 00:10:00
16	A3C	1.34	89.00	1.08	0.34	0.45	1.20	0 00:10:00
17	RVPREDEV	16.37	70.76	1.08	0.02	0.25	0.17	0 01:40:47
18	TS-PREDEV	21.91	65.01	1.08	0.00	0.00	0.00	0 01:47:10

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Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft²)	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	J01	Junction	913.15	914.89	913.15	0.00	0.00	0.00	913.15	0.00	1.74	0 00:00	0.00	0.00
2	J02	Junction	907.89	912.64	907.89	0.00	0.00	2.00	912.64	0.00	0.00	0 00:48	0.02	10.00
3	J03	Junction	914.78	917.97	914.78	0.00	0.00	0.89	915.29	0.00	2.68	0 00:00	0.00	0.00
4	J04	Junction	910.56	914.38	910.56	0.00	0.00	1.41	911.15	0.00	3.23	0 00:00	0.00	0.00
5	J05	Junction	902.68	907.43	902.68	0.00	0.00	0.39	902.99	0.00	4.44	0 00:00	0.00	0.00
6	J06	Junction	902.12	906.87	902.12	0.00	0.00	1.37	902.40	0.00	4.47	0 00:00	0.00	0.00
7	J07	Junction	895.73	900.98	895.73	0.00	0.00	3.42	896.33	0.00	4.65	0 00:00	0.00	0.00
8	J08	Junction	898.06	902.31	898.06	0.00	0.00	1.27	898.40	0.00	3.91	0 00:00	0.00	0.00
9	J09	Junction	898.06	902.31	898.06	0.00	0.00	1.82	898.48	0.00	3.83	0 00:00	0.00	0.00
10	J10	Junction	886.32	890.92	886.32	0.00	0.00	7.48	887.54	0.00	3.38	0 00:00	0.00	0.00
11	O1	Junction	916.83	921.08	916.83	0.00	0.00	0.00	916.83	0.00	4.25	0 00:00	0.00	0.00
12	O2	Junction	909.85	914.85	909.85	0.00	0.00	0.00	909.85	0.00	5.00	0 00:00	0.00	0.00
13	O3A	Junction	915.23	921.60	915.23	0.00	0.00	0.00	915.23	0.00	6.37	0 00:00	0.00	0.00
14	O3B	Junction	911.08	916.72	911.08	0.00	0.00	0.59	911.41	0.00	5.31	0 00:00	0.00	0.00
15	O3C	Junction	906.09	912.24	906.09	0.00	0.00	0.00	906.09	0.00	6.15	0 00:00	0.00	0.00
16	O4	Junction	902.98	906.80	902.98	0.00	0.00	0.75	903.36	0.00	3.44	0 00:00	0.00	0.00
17	O5	Junction	907.79	912.12	907.79	0.00	0.00	0.00	907.79	0.00	4.33	0 00:00	0.00	0.00
18	O6	Junction	901.23	905.48	901.23	0.00	0.00	1.80	901.55	0.00	3.93	0 00:00	0.00	0.00
19	O7	Junction	888.27	901.23	888.27	0.00	0.00	0.00	888.27	0.00	12.96	0 00:00	0.00	0.00
20	O8A	Junction	894.34	903.66	894.34	0.00	0.00	0.00	894.34	0.00	9.32	0 00:00	0.00	0.00
21	SDMH01	Junction	916.48	921.15	916.48	0.00	0.00	0.00	916.58	0.00	4.57	0 00:00	0.00	0.00
22	SDMH02	Junction	909.48	914.04	909.48	0.00	0.00	0.00	909.58	0.00	4.46	0 00:00	0.00	0.00
23	SDMH03	Junction	907.54	914.70	907.54	0.00	0.00	1.91	914.70	0.00	0.00	0 00:48	0.02	11.00
24	SDMH04	Junction	907.26	914.39	907.26	0.00	0.00	1.85	908.24	0.00	6.15	0 00:00	0.00	0.00
25	SDMH05	Junction	907.53	914.79	907.53	0.00	0.00	0.00	907.63	0.00	7.16	0 00:00	0.00	0.00
26	SDMH06	Junction	905.75	910.18	905.75	0.00	0.00	0.00	905.75	0.00	4.43	0 00:00	0.00	0.00
27	SDMH07	Junction	905.33	909.05	905.33	0.00	0.00	0.00	905.43	0.00	3.62	0 00:00	0.00	0.00
28	SDMH08	Junction	902.75	909.14	902.75	0.00	0.00	0.75	903.23	0.00	5.91	0 00:00	0.00	0.00
29	SDMH09	Junction	901.44	907.96	901.44	0.00	0.00	1.04	902.92	0.00	5.04	0 00:00	0.00	0.00
30	SDMH10	Junction	900.51	907.70	900.51	0.00	0.00	1.95	901.05	0.00	6.65	0 00:00	0.00	0.00
31	SDMH11	Junction	894.85	901.92	894.85	0.00	0.00	3.41	895.68	0.00	6.24	0 00:00	0.00	0.00
32	SDMH12	Junction	893.85	903.70	893.85	0.00	0.00	3.39	894.68	0.00	9.02	0 00:00	0.00	0.00
33	SDMH13	Junction	897.40	902.76	897.40	0.00	0.00	3.09	898.16	0.00	4.60	0 00:00	0.00	0.00
34	SDMH14	Junction	893.13	902.49	893.13	0.00	0.00	6.40	895.51	0.00	6.98	0 00:00	0.00	0.00
35	SDMH15	Junction	886.12	891.87	886.12	0.00	0.00	13.69	891.87	0.00	0.00	0 00:42	0.64	18.00
36	SDMH16	Junction	885.50	893.01	885.50	0.00	0.00	10.87	887.72	0.00	5.29	0 00:00	0.00	0.00
37	SDMH17	Junction	884.58	889.78	884.58	0.00	0.00	10.57	886.21	0.00	3.57	0 00:00	0.00	0.00
38	OUT1	Outfall	884.42					10.57	885.94					
39	RVPRE	Outfall	0.00					0.17	0.00					
40	TSPRE	Outfall	0.00					0.00	0.00					
41	BR1	Storage Node	918.02	922.46	0.00		0.00	0.90	918.25				0.00	0.00
42	BR2	Storage Node	911.79	915.12	0.00		0.00	1.98	913.63				0.00	0.00
43	BR3A	Storage Node	918.54	922.87	0.00		0.00	0.83	919.69				0.00	0.00
44	BR3B	Storage Node	914.16	917.97	0.00		0.00	0.89	916.31				0.00	0.00
45	BR3C	Storage Node	909.39	912.45	0.00		0.00	1.41	911.21				0.00	0.00
46	BR4	Storage Node	904.17	908.79	0.00		0.00	0.95	906.34				0.00	0.00
47	BR5	Storage Node	909.06	912.12	0.00		0.00	1.31	910.84				0.00	0.00
48	BR6	Storage Node	902.92	913.75	0.00		0.00	1.85	905.18				0.00	0.00
49	BR7	Storage Node	895.77	901.73	0.00		0.00	4.94	897.00				0.00	0.00
50	BR8	Storage Node	900.16	910.55	0.00		0.00	9.34	900.54				0.00	0.00

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Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	(ft)		(min)	
1	P01	Pipe	O1	SDMH01	102.69	916.83	916.58	0.2400	12.000	0.0130	0.00	1.76	0.00	0.00	0.00	0.00	0.00	Calculated
2	P02	Pipe	SDMH01	J01	198.58	916.48	913.15	1.6800	12.000	0.0130	0.00	4.61	0.00	0.00	0.00	0.00	0.00	Calculated
3	P03	Pipe	J01	BR2	18.00	913.15	912.85	1.6700	12.000	0.0130	0.00	4.60	0.00	0.00	0.00	0.00	0.00	Calculated
4	P04	Pipe	O2	SDMH02	111.00	909.85	909.58	0.2400	12.000	0.0130	0.00	1.76	0.00	0.00	0.00	0.00	0.00	Calculated
5	P05	Pipe	SDMH02	SDMH03	160.94	909.48	909.08	0.2500	12.000	0.0130	0.00	1.78	0.00	0.00	0.00	0.00	0.00	Calculated
6	P06	Pipe	J02	SDMH03	99.00	907.89	907.64	0.2500	12.000	0.0130	1.91	1.79	1.07	2.67	0.95	0.95	0.00	> CAPACITY
7	P07	Pipe	SDMH03	SDMH04	74.09	907.54	907.36	0.2400	12.000	0.0130	1.85	1.76	1.05	2.61	0.94	0.94	0.00	> CAPACITY
8	P08	Pipe	O5	SDMH05	66.52	907.79	907.63	0.2400	12.000	0.0130	0.00	1.75	0.00	0.00	0.00	0.00	0.00	Calculated
9	P09	Pipe	SDMH05	SDMH04	70.26	907.53	907.36	0.2400	12.000	0.0130	0.00	1.75	0.00	0.00	0.00	0.00	0.00	Calculated
10	P10	Pipe	SDMH04	BR6	92.00	907.26	903.48	4.1100	12.000	0.0130	1.85	7.22	0.26	7.69	0.34	0.34	0.00	Calculated
11	P11	Pipe	O6	BR7	74.00	901.23	897.49	5.0500	12.000	0.0130	1.80	8.01	0.22	8.22	0.31	0.32	0.00	Calculated
12	P12	Pipe	O3A	J03	141.00	915.23	914.88	0.2500	12.000	0.0130	0.00	1.78	0.00	0.00	0.00	0.00	0.00	Calculated
13	P13	Pipe	J03	BR3B	25.00	914.78	914.72	0.2400	12.000	0.0130	0.89	1.75	0.51	2.23	0.51	0.51	0.00	Calculated
14	P14	Pipe	O3B	J04	83.00	911.08	910.66	0.5100	12.000	0.0130	0.58	2.53	0.23	2.63	0.32	0.33	0.00	Calculated
15	P15	Pipe	J04	BR3C	23.00	910.56	910.45	0.4800	12.000	0.0150	1.41	2.14	0.66	2.91	0.59	0.59	0.00	Calculated
16	P16	Pipe	O3C	SDMH06	102.00	906.09	905.75	0.3300	12.000	0.0130	0.00	2.06	0.00	0.00	0.00	0.00	0.00	Calculated
17	P17	Pipe	SDMH06	SDMH07	99.00	905.75	905.43	0.3200	12.000	0.0130	0.00	2.03	0.00	0.00	0.00	0.00	0.00	Calculated
18	P18	Pipe	SDMH07	BR4	31.00	905.33	905.23	0.3200	12.000	0.0130	0.00	2.02	0.00	0.00	0.00	0.00	0.00	Calculated
19	P19	Pipe	O4	SDMH08	50.02	902.98	902.85	0.2600	18.000	0.0130	0.75	5.36	0.14	2.13	0.38	0.25	0.00	Calculated
20	P20	Pipe	SDMH08	SDMH09	83.99	902.75	902.54	0.2500	18.000	0.0130	0.74	5.25	0.14	2.11	0.38	0.25	0.00	Calculated
21	P21	Pipe	J05	SDMH09	30.00	902.68	902.60	0.2700	12.000	0.0130	0.39	1.84	0.21	1.85	0.31	0.31	0.00	Calculated
22	P22	Pipe	SDMH09	SDMH10	331.00	901.44	900.61	0.2500	18.000	0.0130	1.00	5.26	0.19	2.34	0.43	0.29	0.00	Calculated
23	P23	Pipe	J06	SDMH10	32.00	902.12	900.61	4.7200	12.000	0.0130	1.37	7.74	0.18	7.41	0.28	0.28	0.00	Calculated
24	P24	Pipe	SDMH10	BR7	89.00	900.51	897.23	3.6900	18.000	0.0130	1.95	20.17	0.10	7.24	0.31	0.21	0.00	Calculated
25	P25	Pipe	O7	J10	62.00	888.27	887.17	1.7700	12.000	0.0130	0.00	4.75	0.00	0.00	0.00	0.00	0.00	Calculated
26	P26	Pipe	O8A	SDMH12	130.00	894.34	893.85	0.3800	12.000	0.0130	0.00	2.19	0.00	0.00	0.00	0.00	0.00	Calculated
27	P27	Pipe	J07	SDMH11	39.00	895.73	894.95	2.0000	12.000	0.0130	3.41	5.04	0.68	6.88	0.60	0.60	0.00	Calculated
28	P28	Pipe	SDMH11	SDMH12	333.48	894.85	893.85	0.3000	18.000	0.0130	3.39	5.75	0.59	3.42	0.83	0.55	0.00	Calculated
29	P29	Pipe	SDMH12	SDMH14	208.00	893.85	893.23	0.3000	18.000	0.0130	3.38	5.73	0.59	3.39	0.82	0.55	0.00	Calculated
30	P30	Pipe	J09	SDMH13	16.00	898.06	897.74	2.0000	12.000	0.0130	1.82	5.04	0.36	5.89	0.42	0.42	0.00	Calculated
31	P31	Pipe	J08	SDMH13	28.00	898.06	897.50	2.0000	12.000	0.0130	1.26	5.04	0.25	5.34	0.34	0.34	0.00	Calculated
32	P32	Pipe	SDMH13	SDMH14	93.00	897.40	895.07	2.5100	18.000	0.0130	3.08	16.63	0.19	7.18	0.44	0.29	0.00	Calculated
33	P33	Pipe	SDMH14	SDMH15	745.00	893.13	886.22	0.9300	18.000	0.0130	6.37	10.12	0.63	6.10	0.86	0.57	0.00	Calculated
34	P34	Pipe	J10	SDMH15	39.00	886.32	886.12	0.5100	18.000	0.0130	7.47	7.52	0.99	4.86	1.22	0.81	0.00	Calculated
35	P35	Pipe	SDMH15	SDMH16	200.04	886.12	885.72	0.2000	24.000	0.0130	10.87	10.12	1.07	3.85	2.00	1.00	15.00	SURCHARGED
36	P36	Pipe	SDMH16	SDMH17	328.00	885.50	884.68	0.2500	24.000	0.0130	10.57	11.31	0.93	4.22	1.48	0.76	0.00	Calculated
37	P37	Pipe	SDMH17	OUT1	63.00	884.58	884.42	0.2500	24.000	0.0130	10.57	11.40	0.93	4.14	1.48	0.76	0.00	Calculated
38	OR1	Orifice	BR1	O1		918.02	916.83		24.000		0.00							
39	OR2	Orifice	BR2	O2		911.79	909.85		24.000		0.00							
40	OR3A	Orifice	BR3A	O3A		918.54	915.23		24.000		0.00							
41	OR3B	Orifice	BR3B	O3B		914.16	911.08		24.000		0.59							
42	OR3C	Orifice	BR3C	O3C		909.39	906.09		24.000		0.00							
43	OR4	Orifice	BR4	O4		904.17	902.98		24.000		0.75							
44	OR5	Orifice	BR5	O5		909.06	907.79		24.000		0.00							
45	OR6	Orifice	BR6	O6		902.92	901.23		24.000		1.80							
46	OR7B	Orifice	BR7	O7		895.77	888.27		24.000		0.00							
47	OR8A	Orifice	BR8	O8A		900.16	894.34		24.000		0.00							

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Subbasin Hydrology

Subbasin : A01

Input Data

Area (ac) 0.92
Weighted Curve Number 90.57
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	0.24	D	95.00
Urban commercial, 85% imp	0.68	A	89.00
Composite Area & Weighted CN	0.92		90.57

Time of Concentration

TOC Method : SCS TR-55

Sheet Flow Equation :

Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))

Where :

Tc = Time of Concentration (hr)
n = Manning's roughness
Lf = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation :

V = 16.1345 * (Sf^0.5) (unpaved surface)
V = 20.3282 * (Sf^0.5) (paved surface)
V = 15.0 * (Sf^0.5) (grassed waterway surface)
V = 10.0 * (Sf^0.5) (nearly bare & untilled surface)
V = 9.0 * (Sf^0.5) (cultivated straight rows surface)
V = 7.0 * (Sf^0.5) (short grass pasture surface)
V = 5.0 * (Sf^0.5) (woodland surface)
V = 2.5 * (Sf^0.5) (forest w/heavy litter surface)
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hr)
Lf = Flow Length (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)

Channel Flow Equation :

V = (1.49 * (R^(2/3)) * (Sf^0.5)) / n
R = Aq / Wp
Tc = (Lf / V) / (3600 sec/hr)

Where :

Tc = Time of Concentration (hr)
Lf = Flow Length (ft)
R = Hydraulic Radius (ft)
Aq = Flow Area (ft²)
Wp = Wetted Perimeter (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)
n = Manning's roughness

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

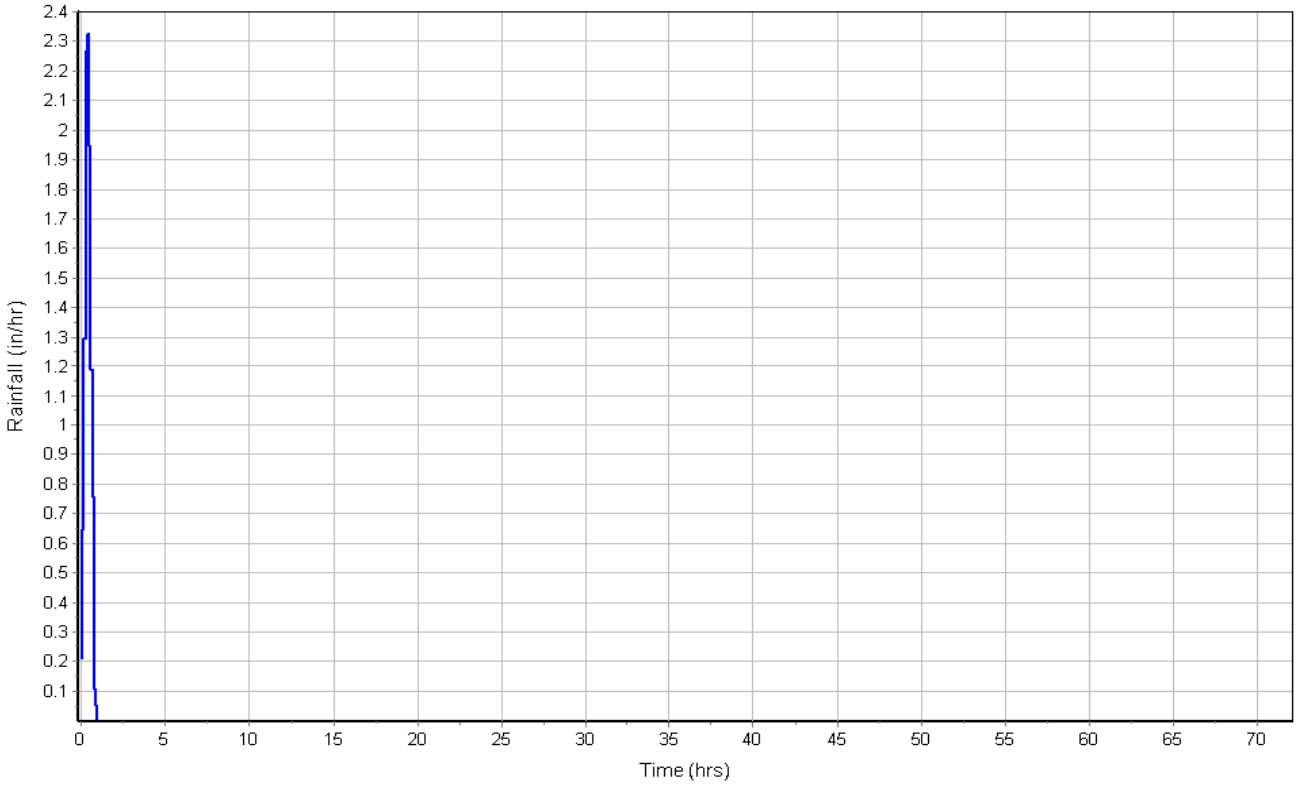
Total Rainfall (in) 1.08
Total Runoff (in) 0.40
Peak Runoff (cfs) 0.96
Weighted Curve Number 90.57
Time of Concentration (days hh:mm:ss) 0 00:10:00

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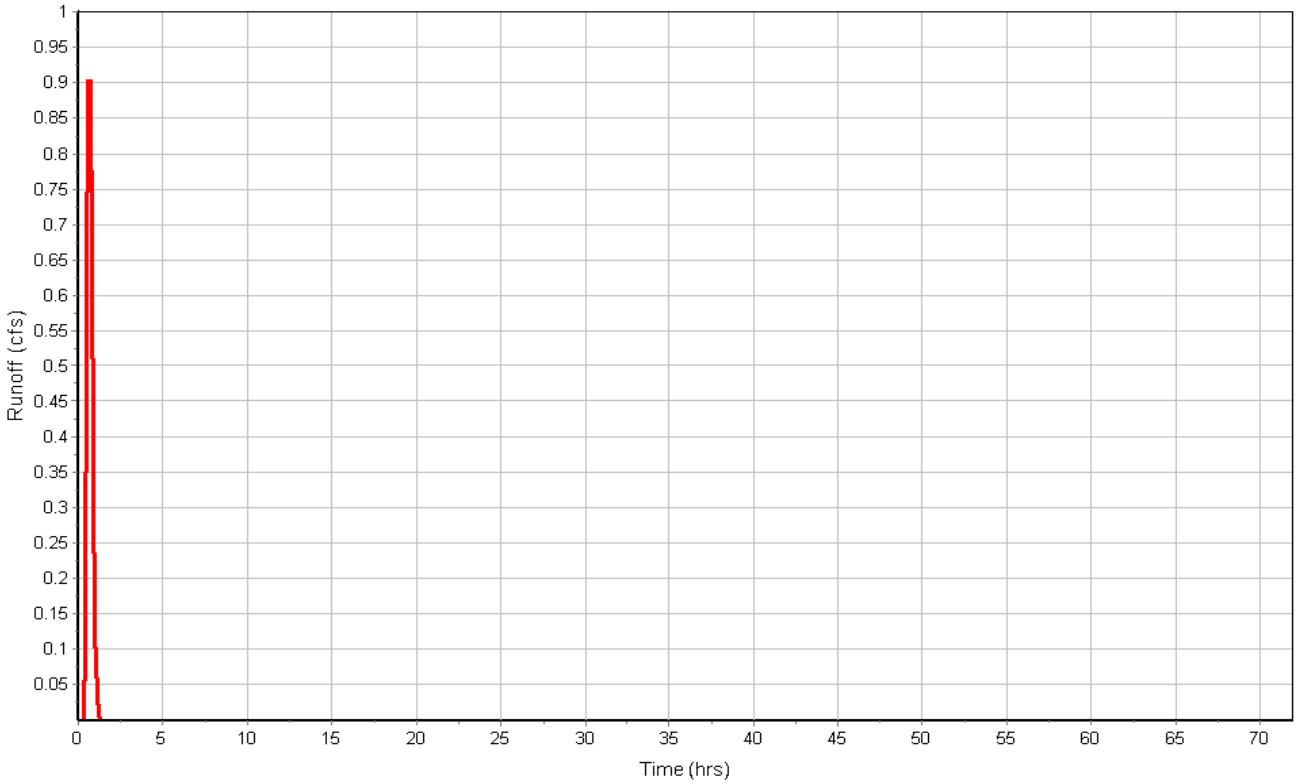
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Subbasin : A01

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A02

Input Data

Area (ac) 2.31
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	2.31	A	89.00
Composite Area & Weighted CN	2.31		89.00

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

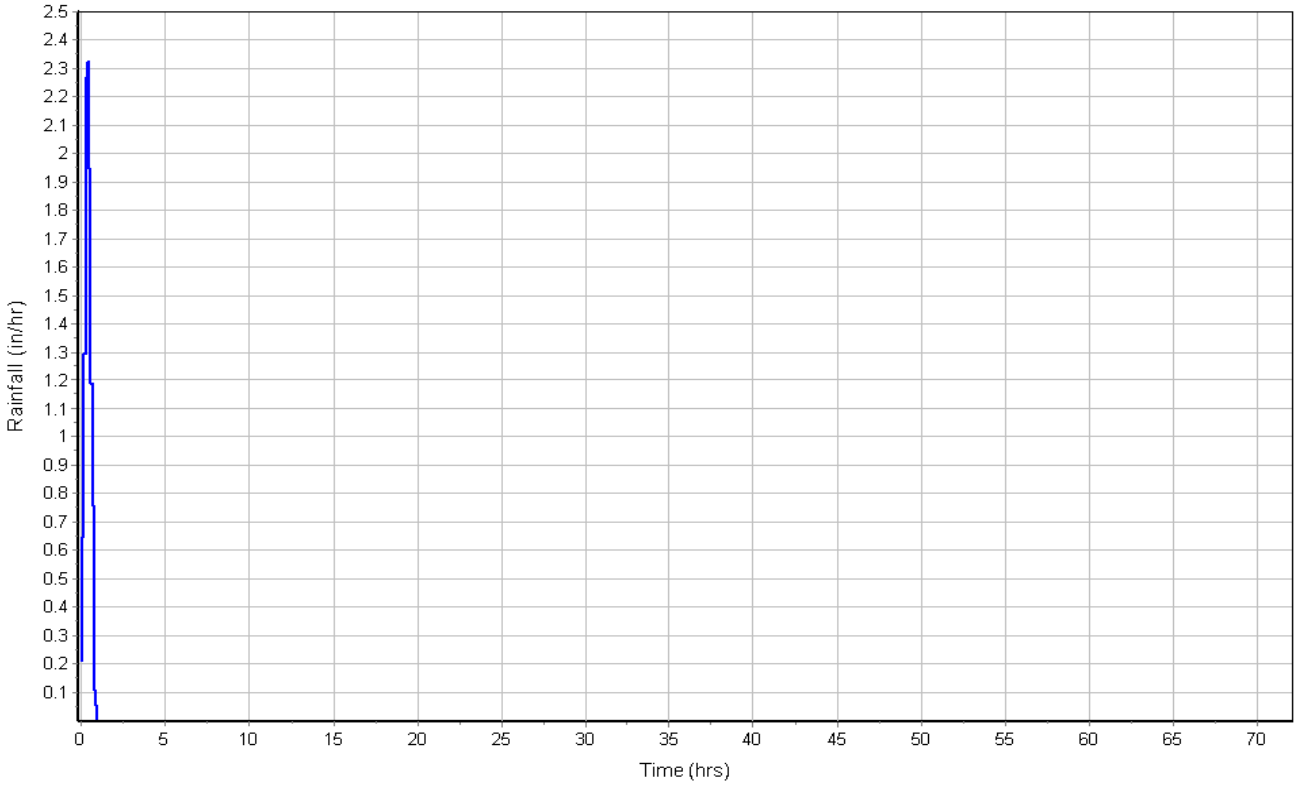
Total Rainfall (in) 1.08
Total Runoff (in) 0.34
Peak Runoff (cfs) 2.08
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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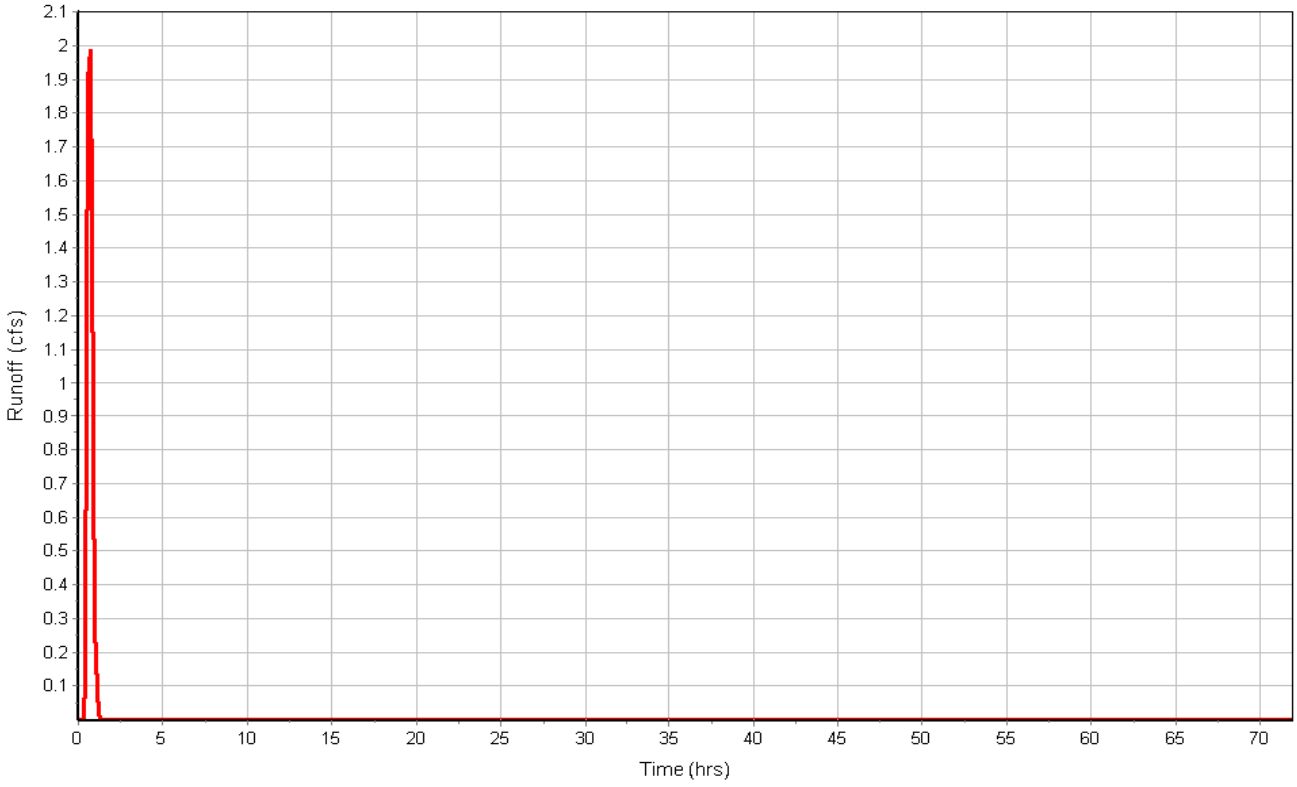
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Subbasin : A02

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A04

Input Data

Area (ac) 1.11
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	1.11	A	89.00
Composite Area & Weighted CN	1.11		89.00

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

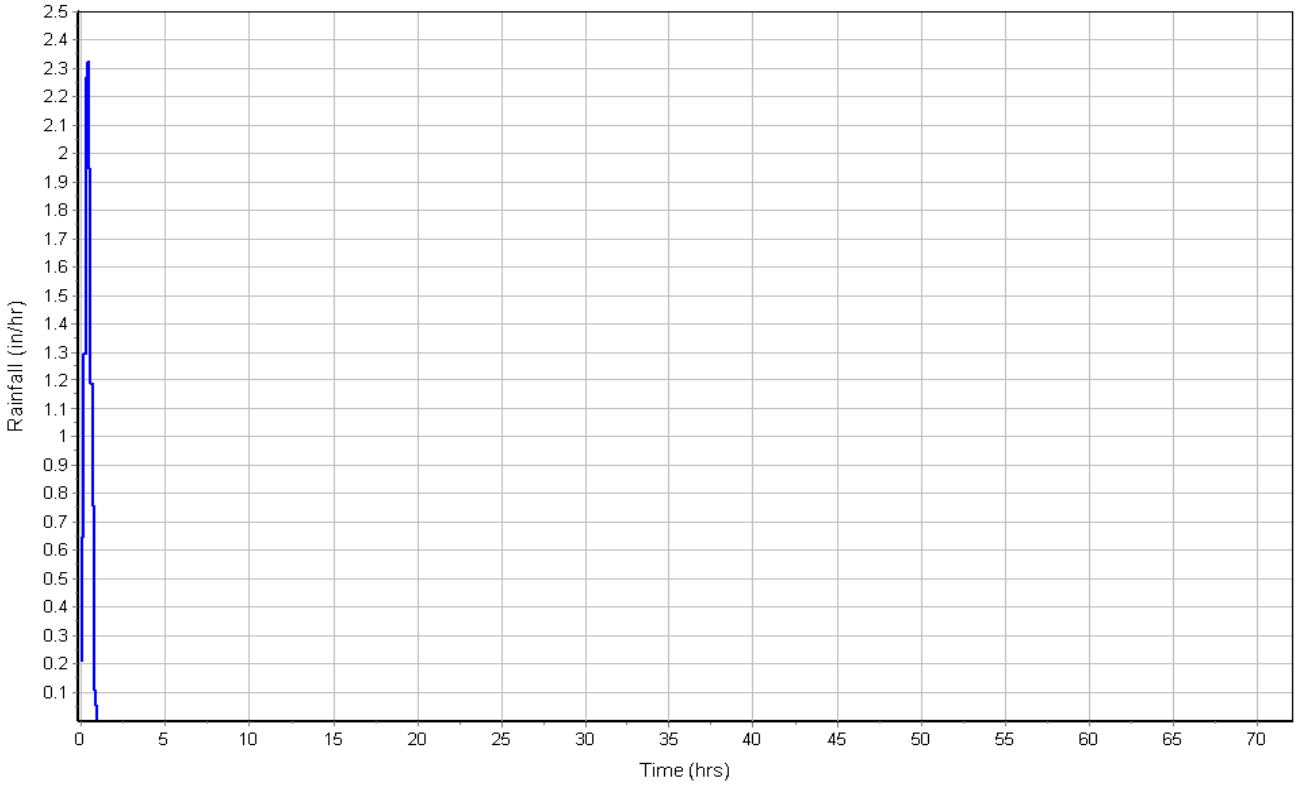
Total Rainfall (in) 1.08
Total Runoff (in) 0.34
Peak Runoff (cfs) 1.00
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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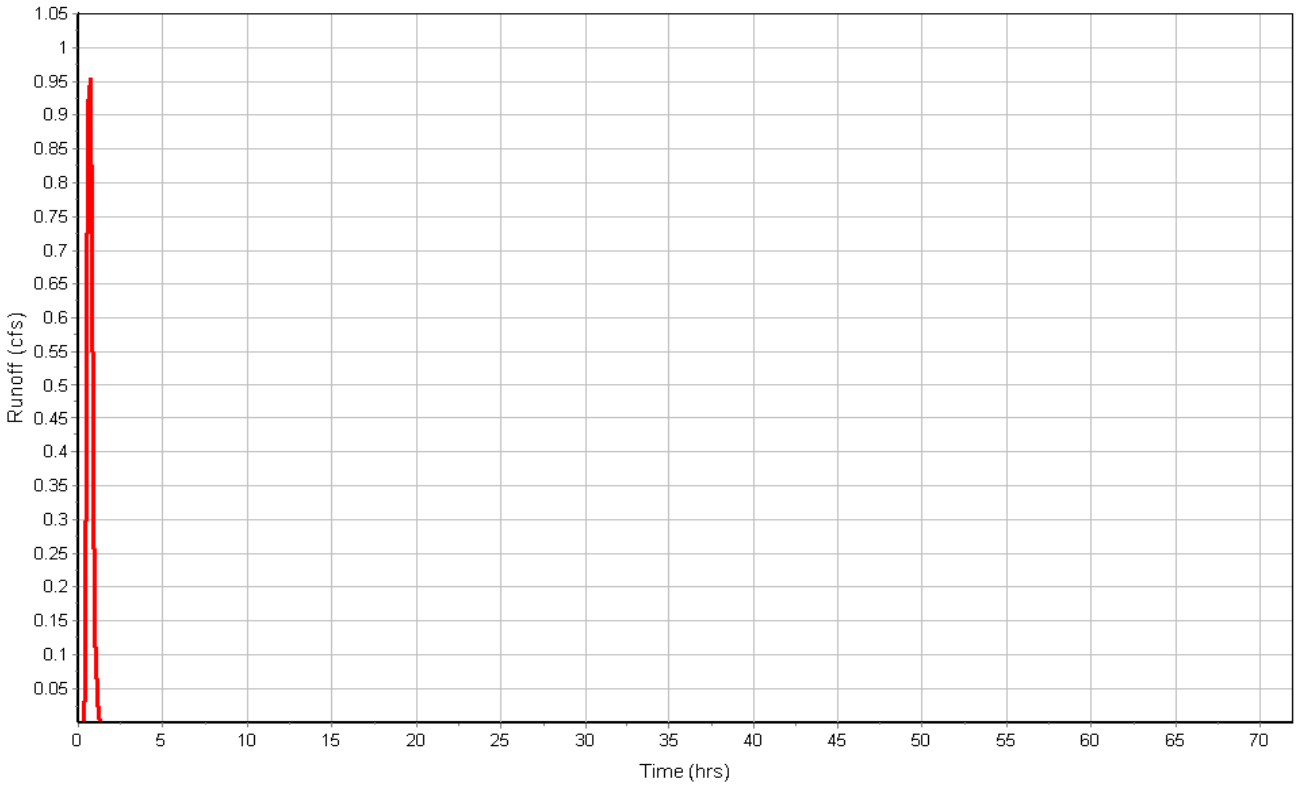
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Subbasin : A04

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A05

Input Data

Area (ac)	2.33
Weighted Curve Number	89.00
Rain Gage ID	Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	2.33	A	89.00
Composite Area & Weighted CN	2.33		89.00

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

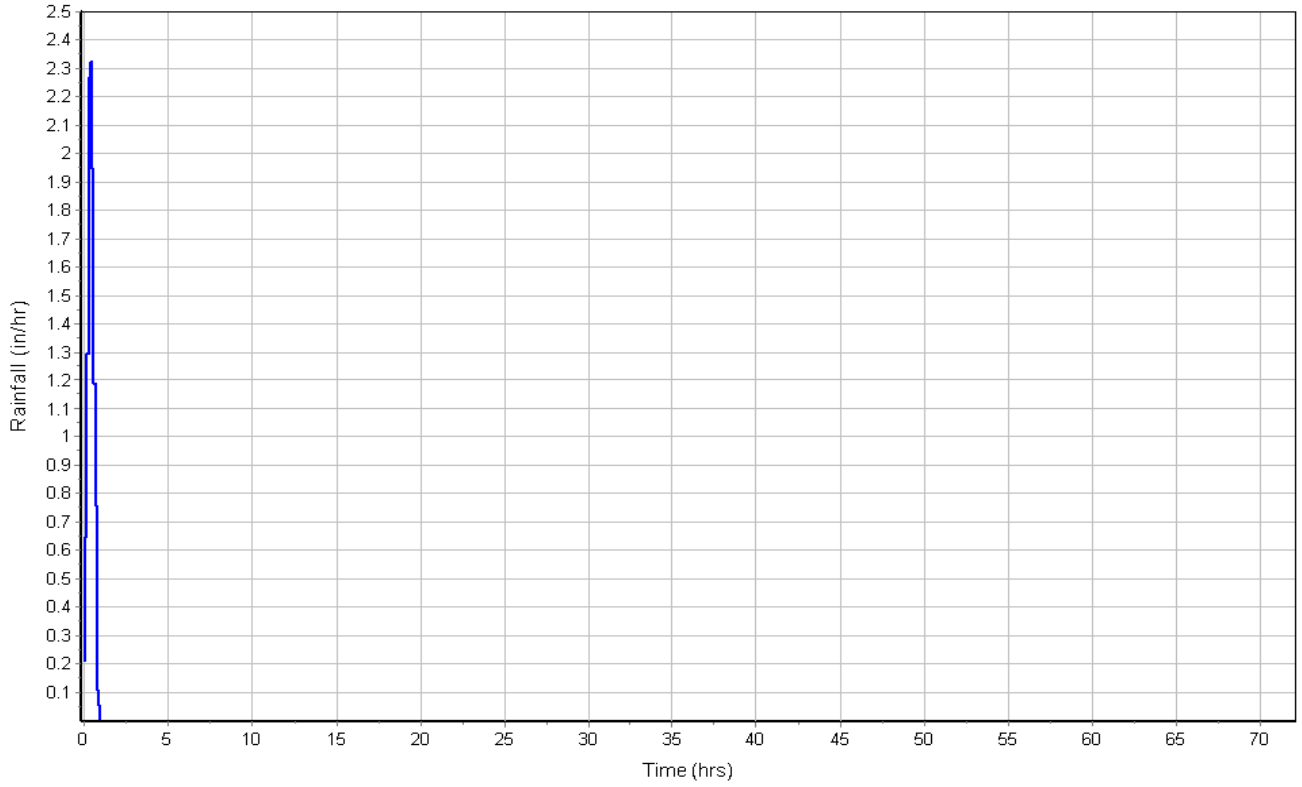
Total Rainfall (in)	1.08
Total Runoff (in)	0.34
Peak Runoff (cfs)	2.09
Weighted Curve Number	89.00
Time of Concentration (days hh:mm:ss)	0 00:10:00

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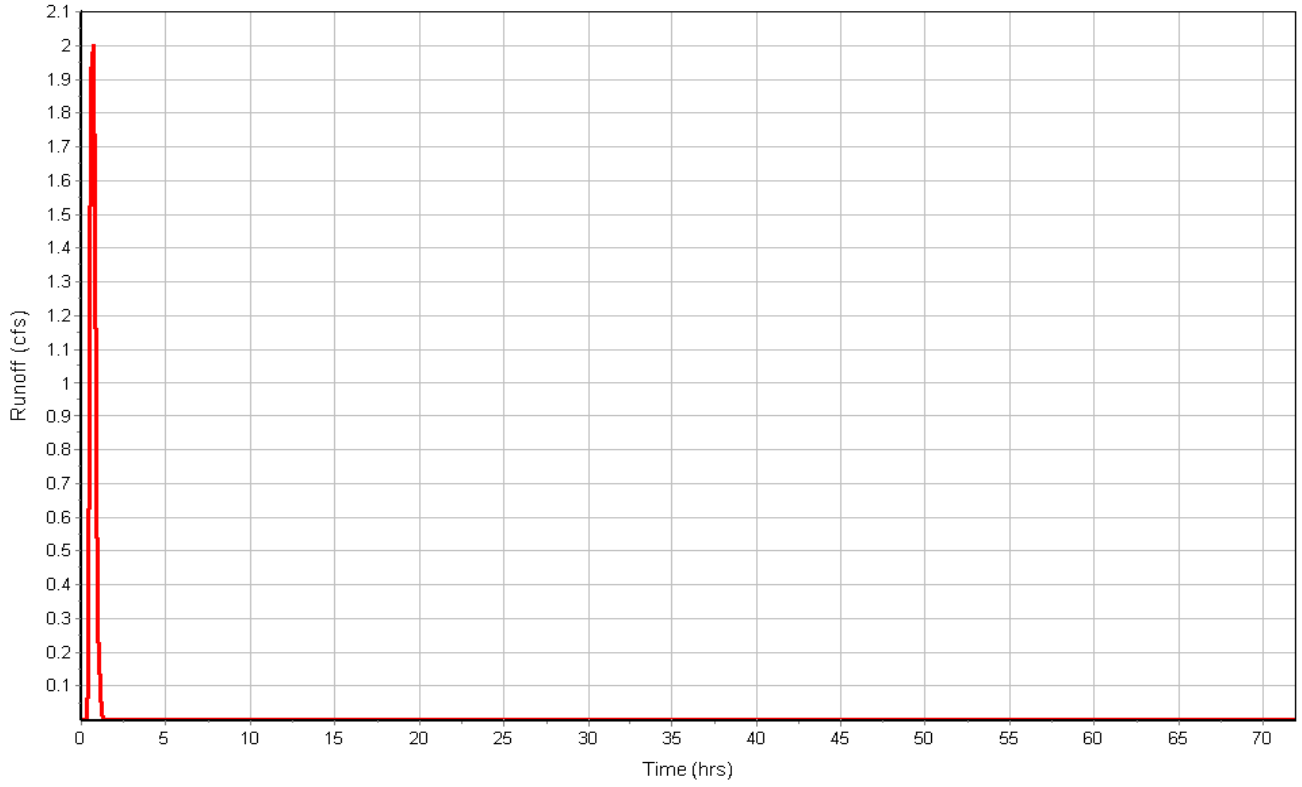
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Subbasin : A05

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A06

Input Data

Area (ac) 1.52
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	1.52	A	89.00
Composite Area & Weighted CN	1.52		89.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

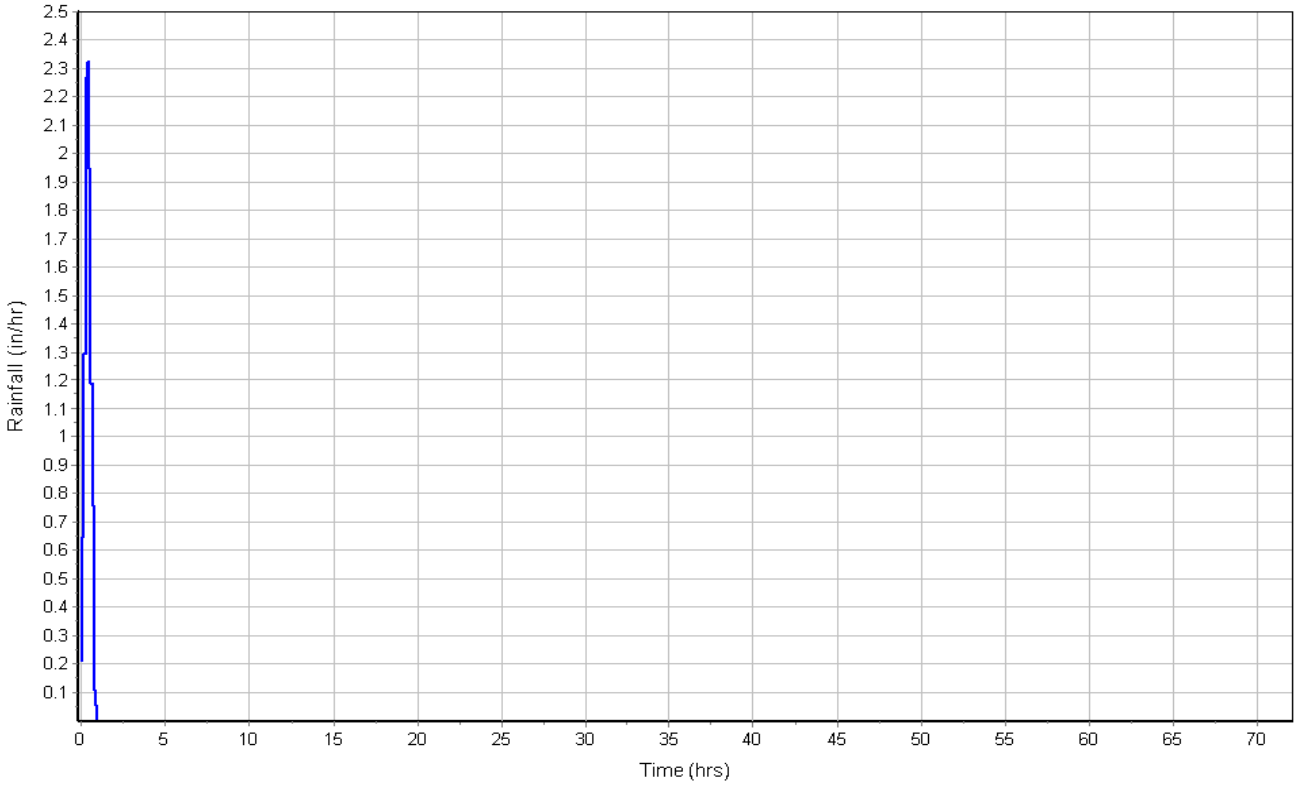
Total Rainfall (in) 1.08
Total Runoff (in) 0.34
Peak Runoff (cfs) 1.37
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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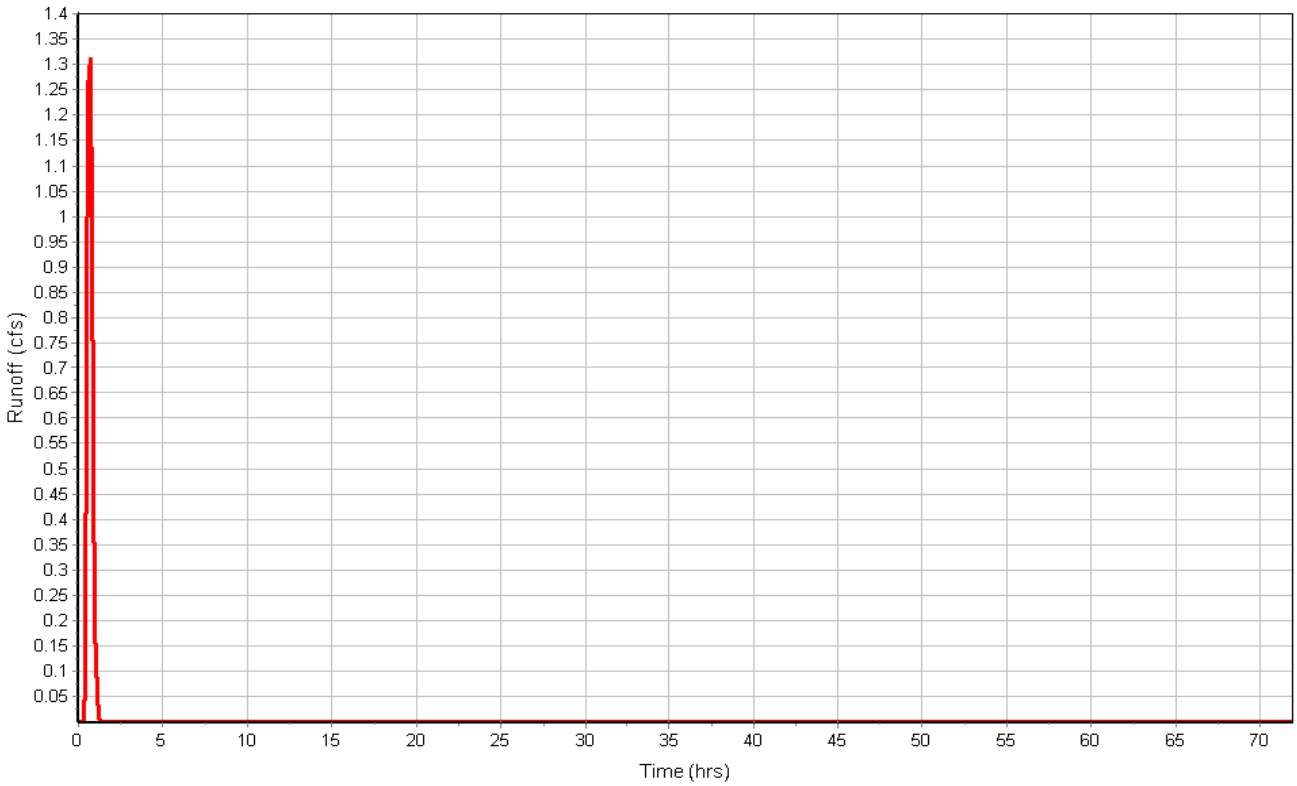
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Subbasin : A06

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A07

Input Data

Area (ac) 0.45
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	0.45	A	89.00
Composite Area & Weighted CN	0.45		89.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

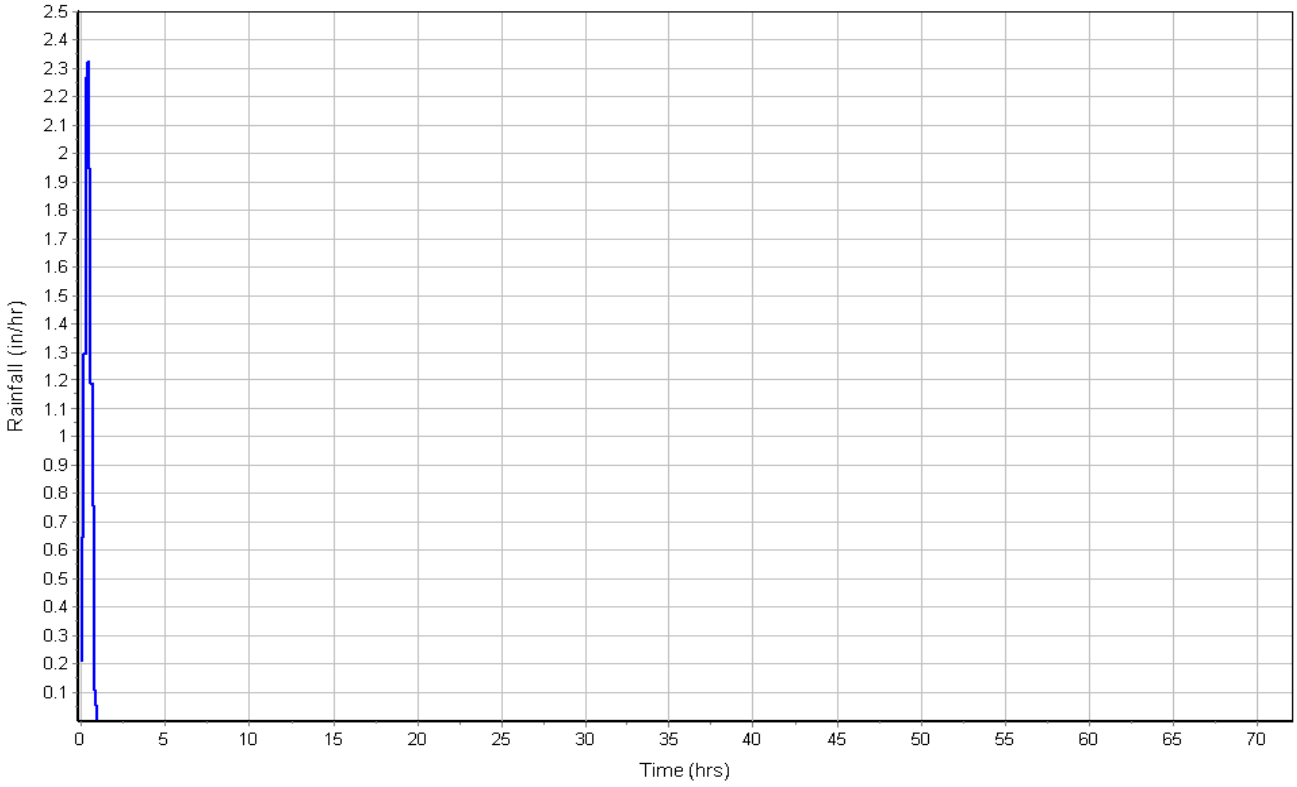
Total Rainfall (in) 1.08
Total Runoff (in) 0.34
Peak Runoff (cfs) 0.40
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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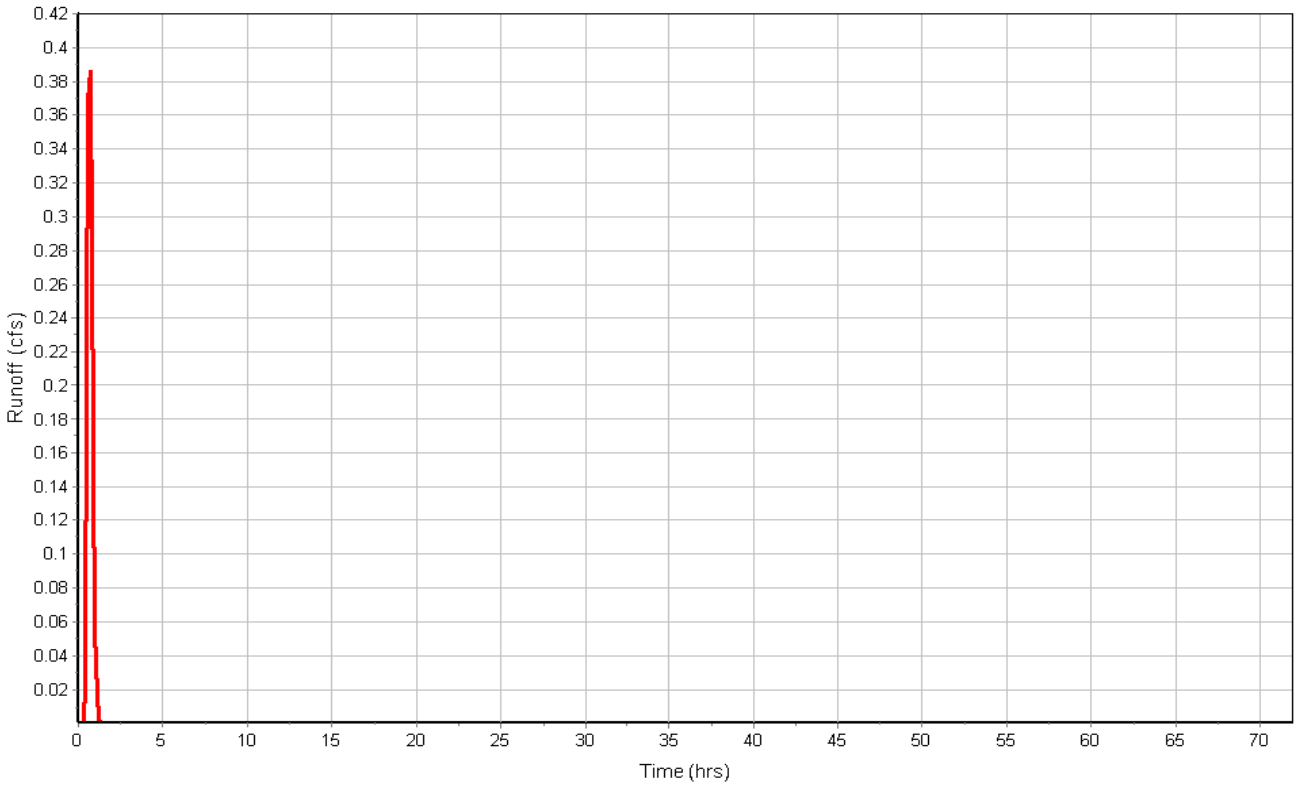
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Subbasin : A07

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A08

Input Data

Area (ac) 1.59
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	1.59	A	89.00
Composite Area & Weighted CN	1.59		89.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

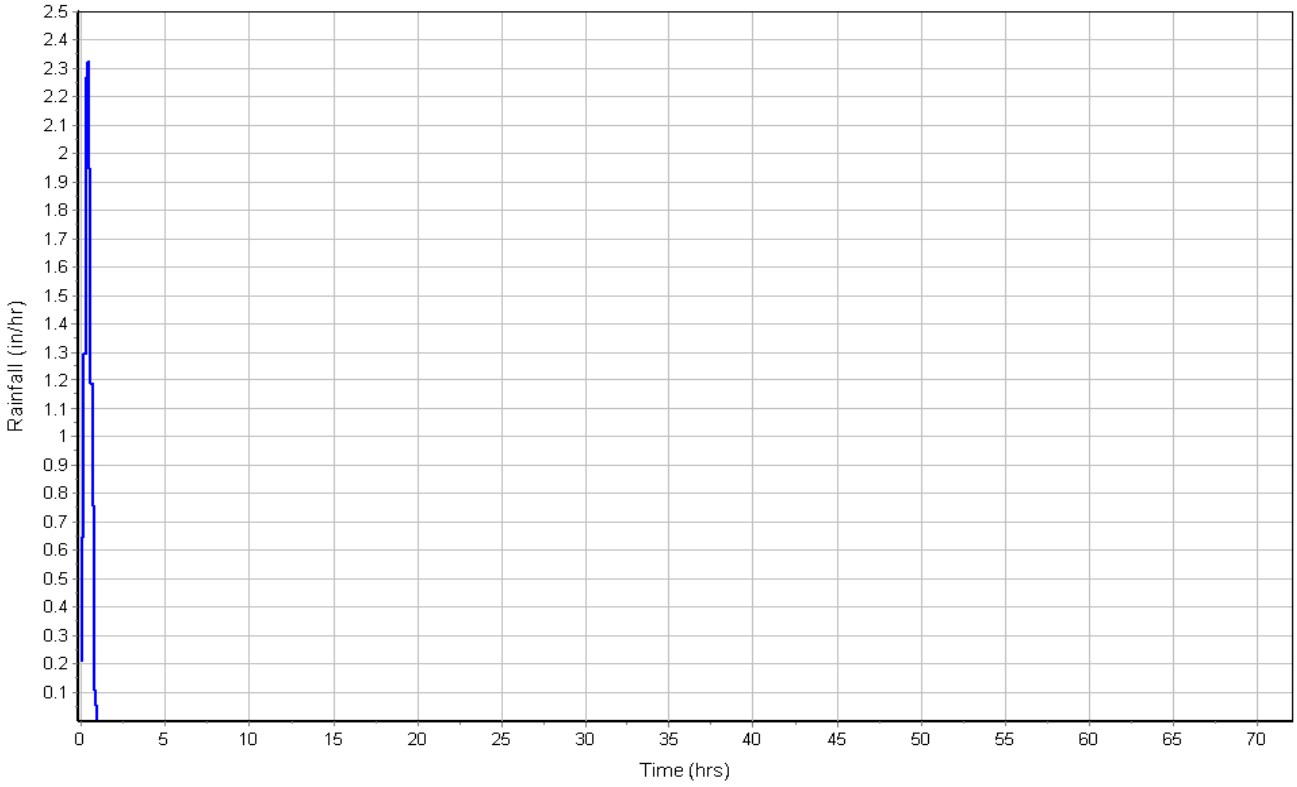
Total Rainfall (in) 1.08
Total Runoff (in) 0.34
Peak Runoff (cfs) 1.43
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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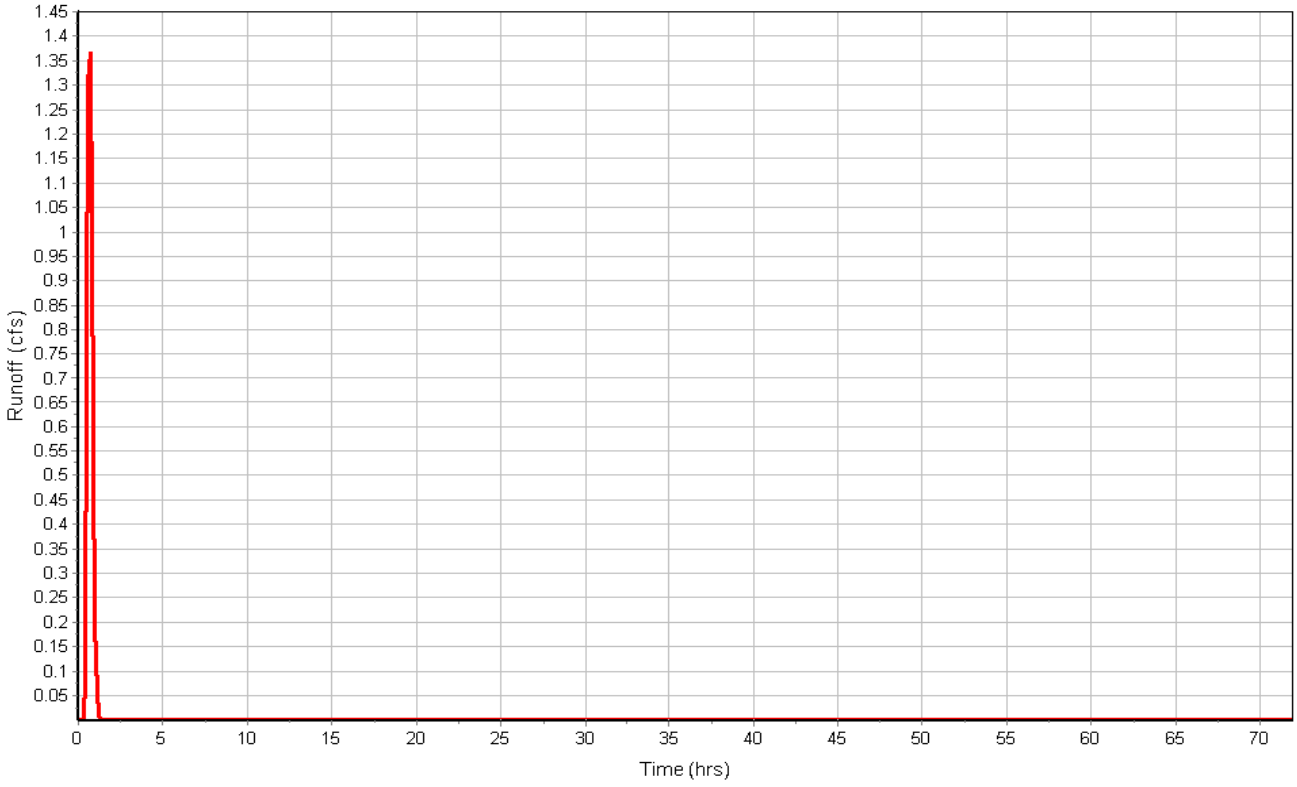
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Subbasin : A08

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A09

Input Data

Area (ac) 1.94
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	1.94	A	89.00
Composite Area & Weighted CN	1.94		89.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

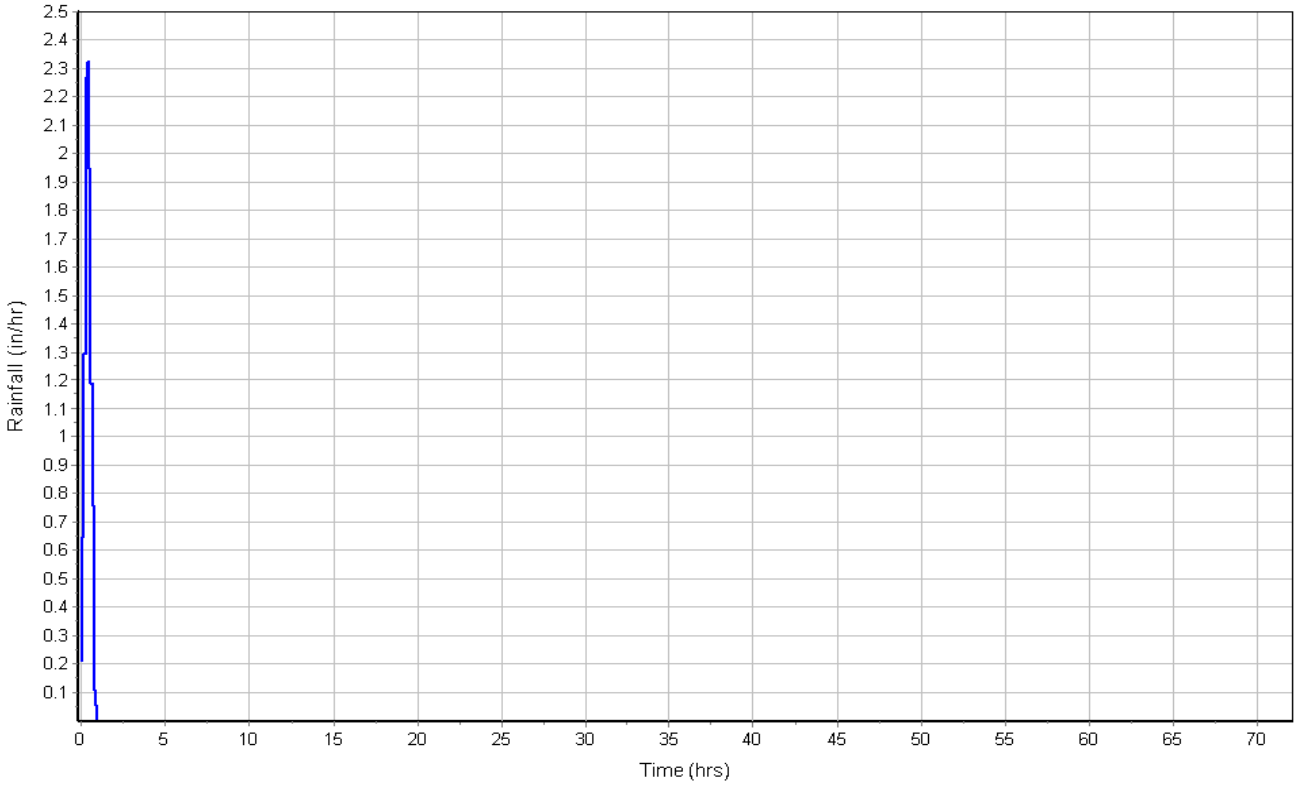
Total Rainfall (in) 1.08
Total Runoff (in) 0.34
Peak Runoff (cfs) 1.74
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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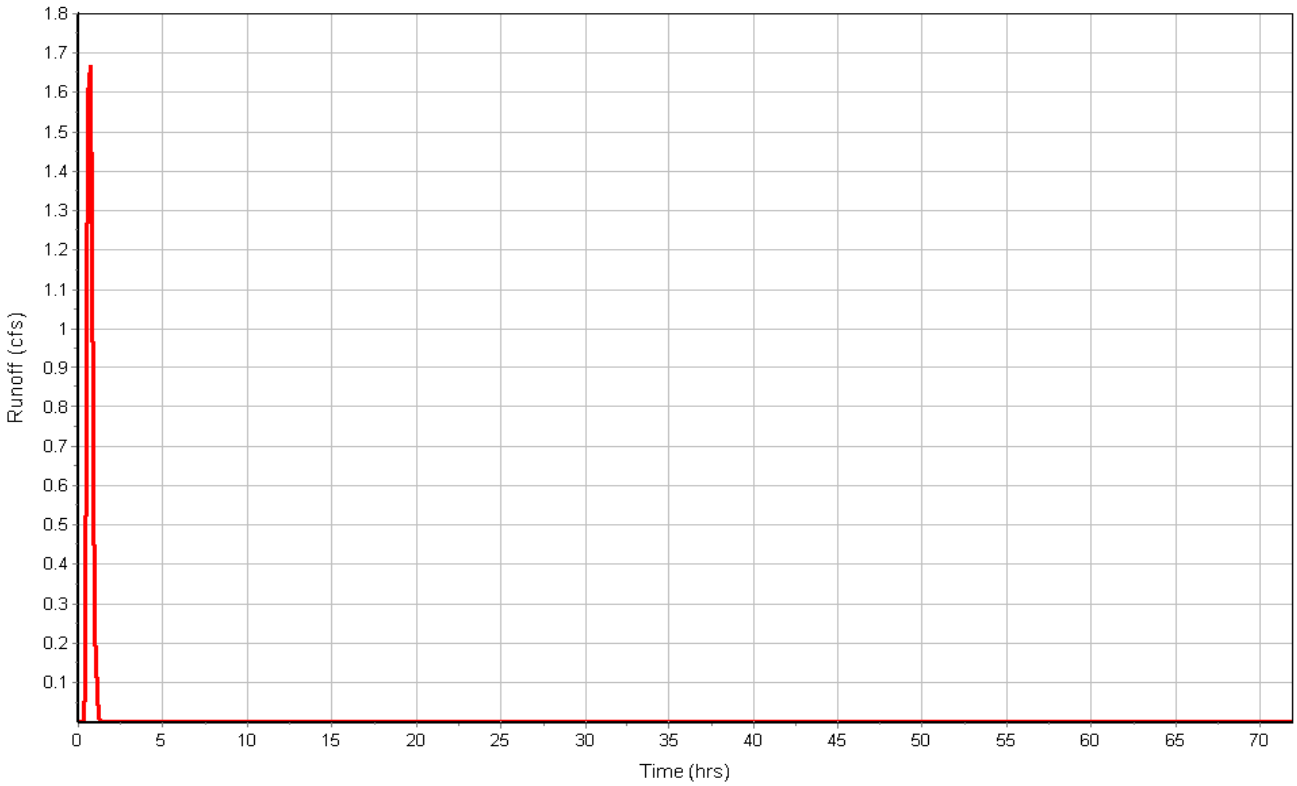
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Subbasin : A10

Input Data

Area (ac) 16.37
Weighted Curve Number 84.72
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban industrial, 72% imp	11.29	A	81.00
Urban industrial, 72% imp	5.08	D	93.00
Composite Area & Weighted CN	16.37		84.72

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

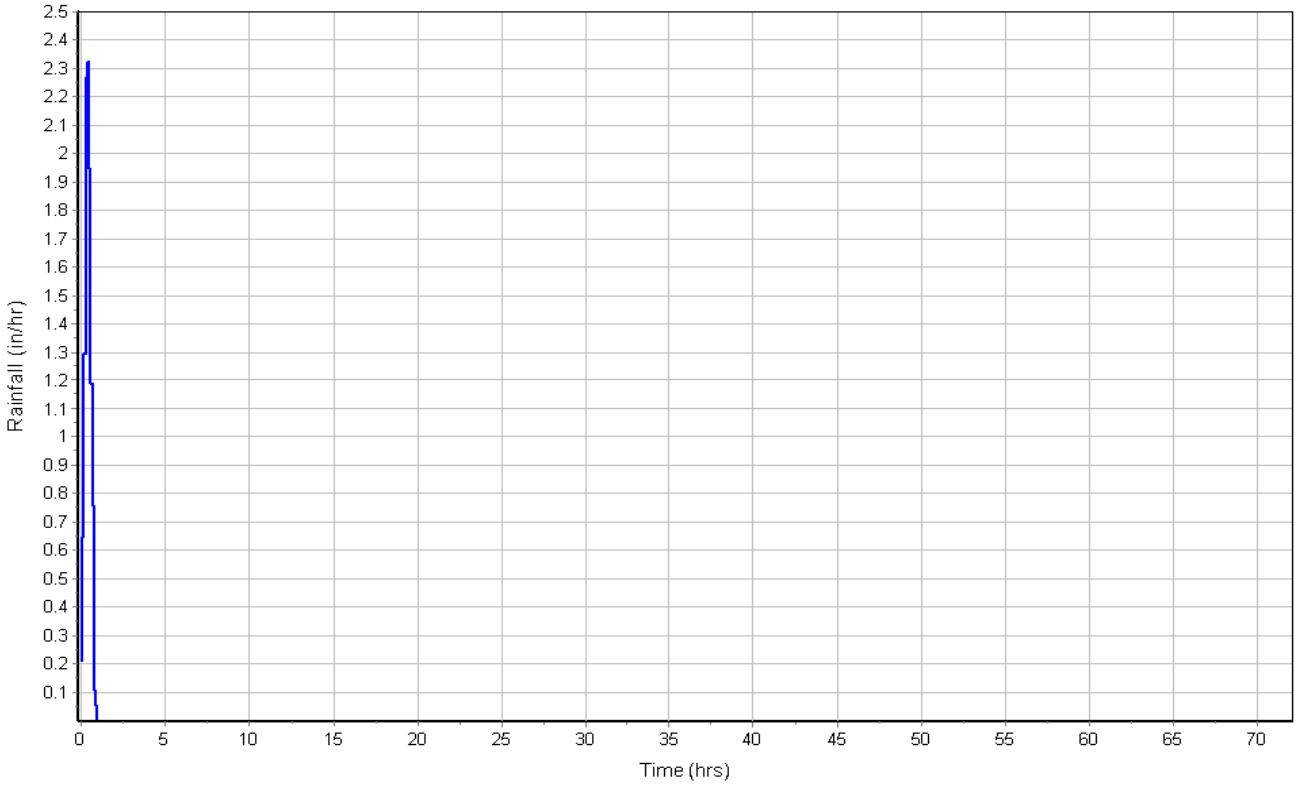
Total Rainfall (in) 1.08
Total Runoff (in) 0.21
Peak Runoff (cfs) 9.43
Weighted Curve Number 84.72
Time of Concentration (days hh:mm:ss) 0 00:10:00

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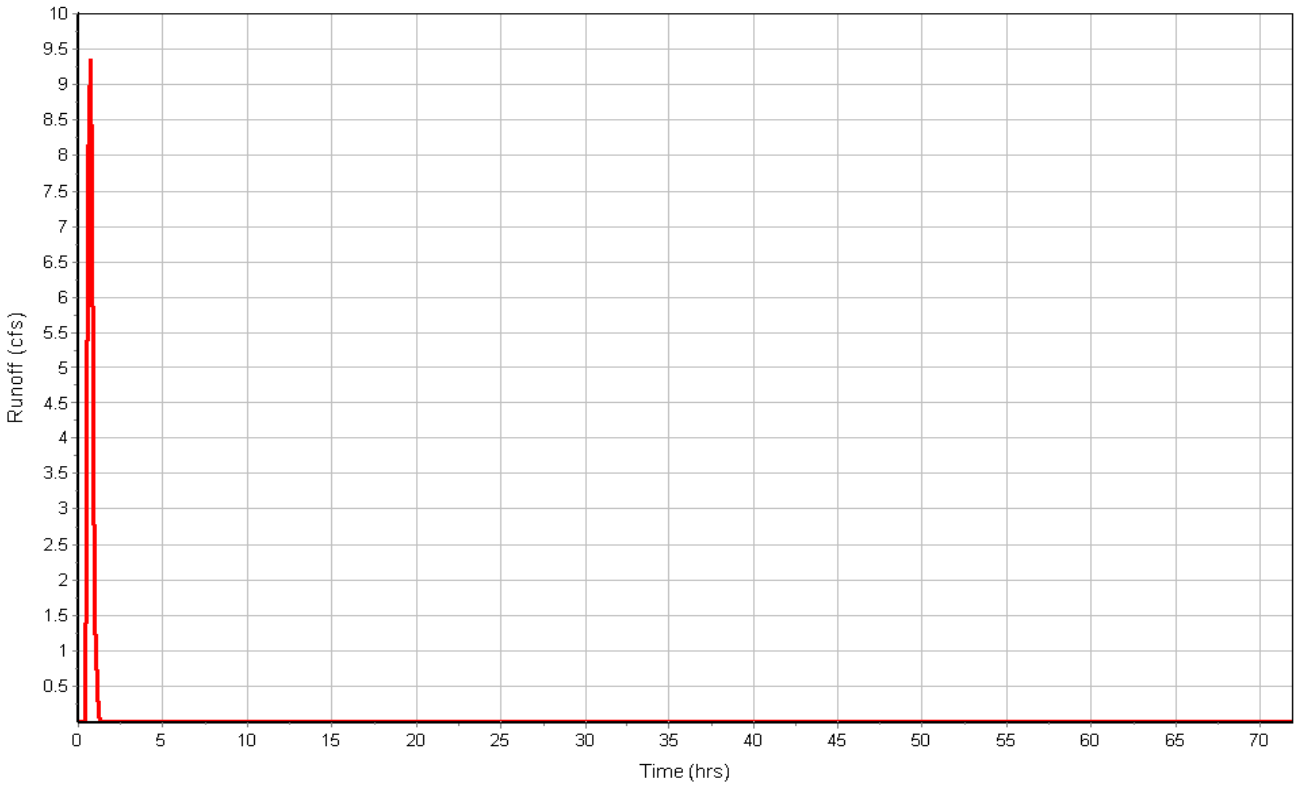
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Subbasin : A10

Rainfall Intensity Graph



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Subbasin : A11a

Input Data

Area (ac) 0.92
Weighted Curve Number 98.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	0.52	A	98.00
Paved parking & roofs	0.40	D	98.00
Composite Area & Weighted CN	0.92		98.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

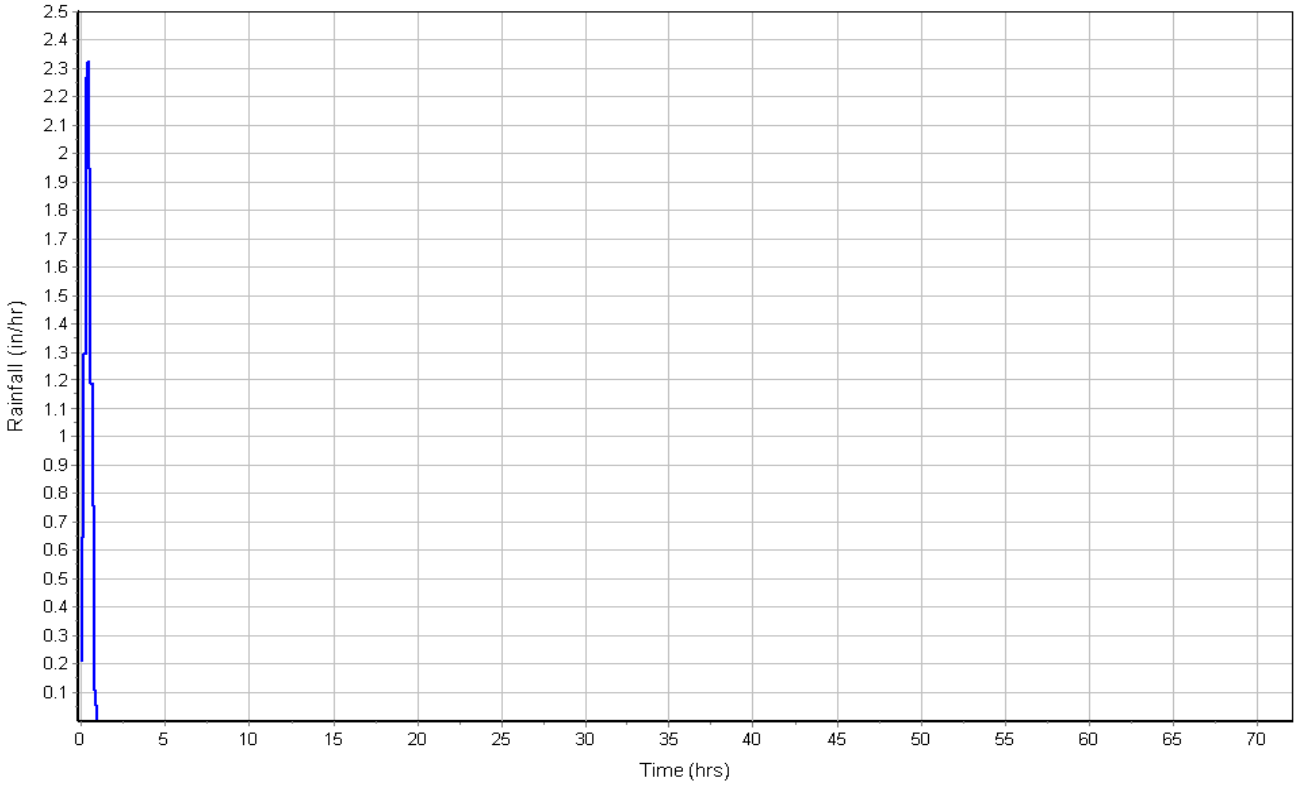
Total Rainfall (in) 1.08
Total Runoff (in) 0.87
Peak Runoff (cfs) 1.84
Weighted Curve Number 98.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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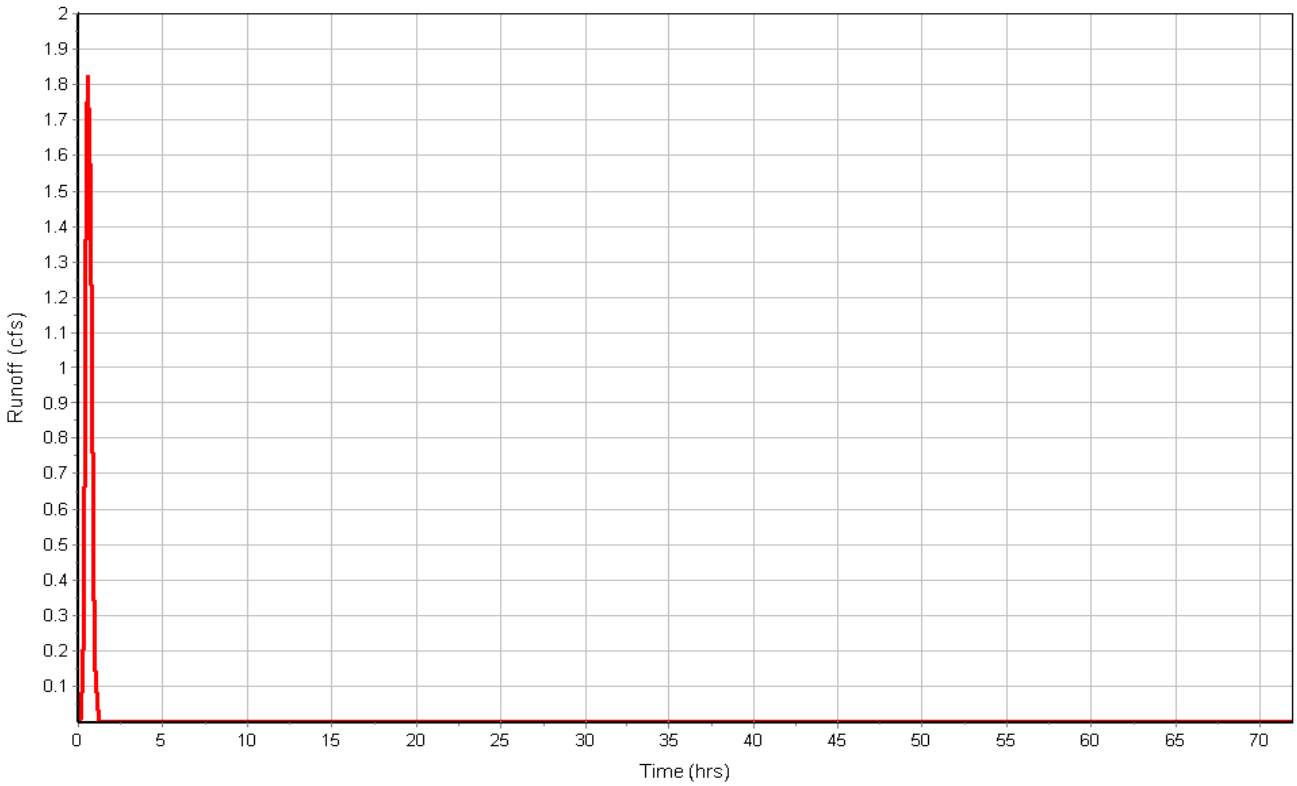
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Subbasin : A11a

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A11b

Input Data

Area (ac) 0.64
Weighted Curve Number 98.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	0.43	A	98.00
Paved parking & roofs	0.21	D	98.00
Composite Area & Weighted CN	0.64		98.00

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

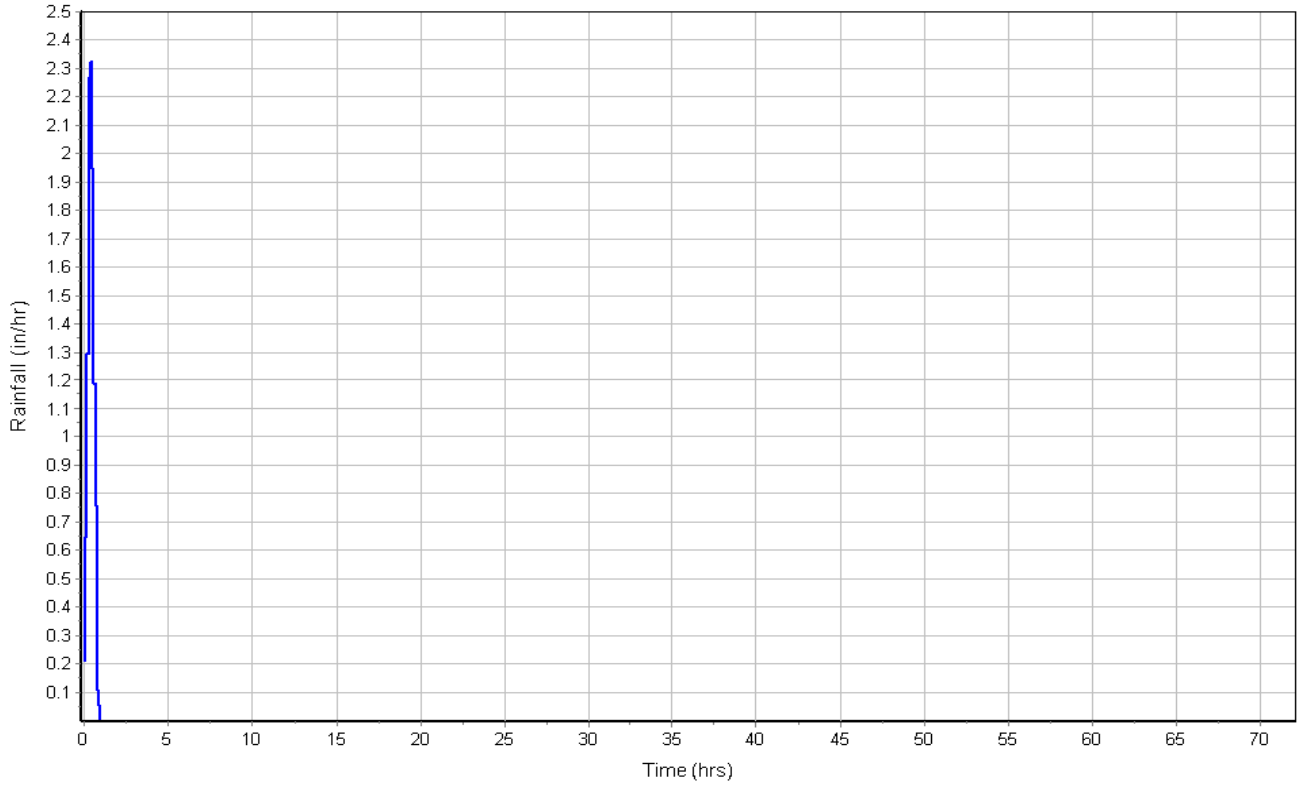
Total Rainfall (in) 1.08
Total Runoff (in) 0.87
Peak Runoff (cfs) 1.27
Weighted Curve Number 98.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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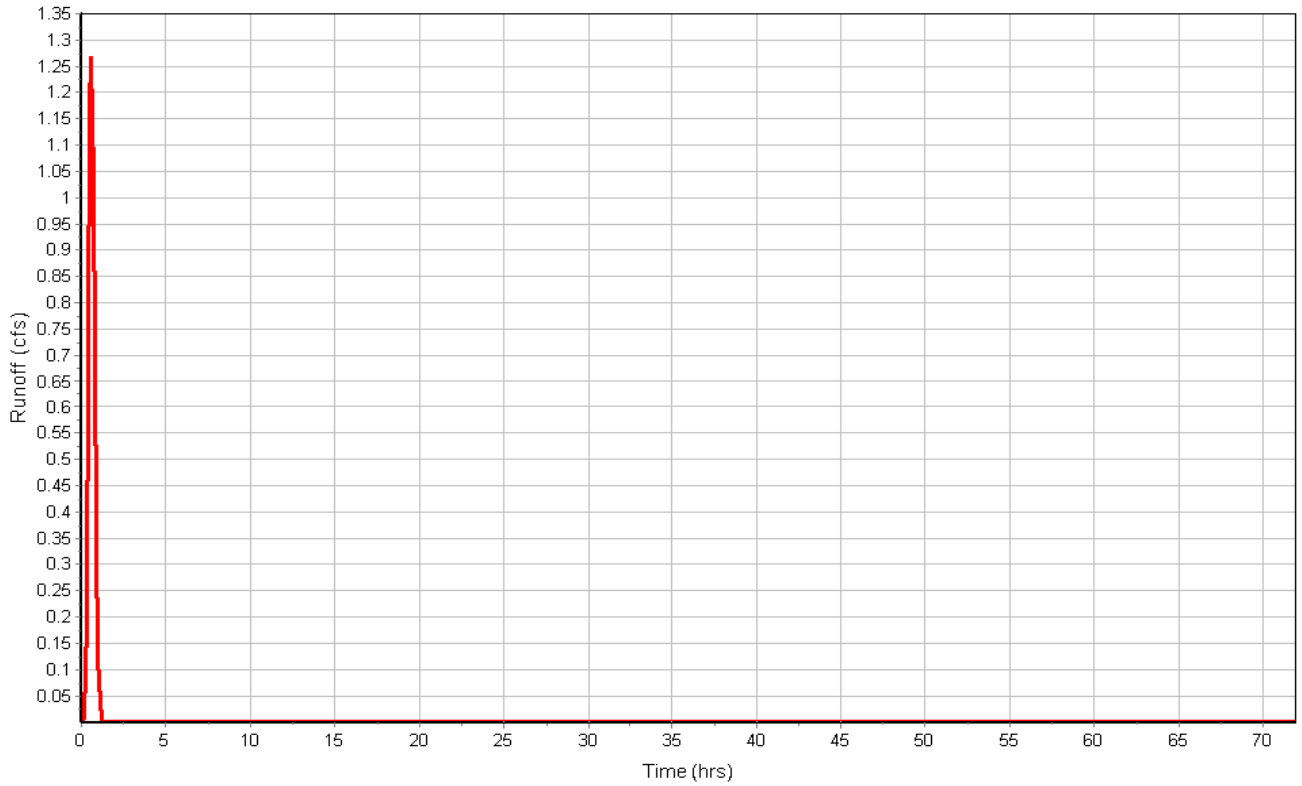
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Subbasin : A11b

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A12

Input Data

Area (ac)	1.73
Weighted Curve Number	98.00
Rain Gage ID	Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	1.73	A	98.00
Composite Area & Weighted CN	1.73		98.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

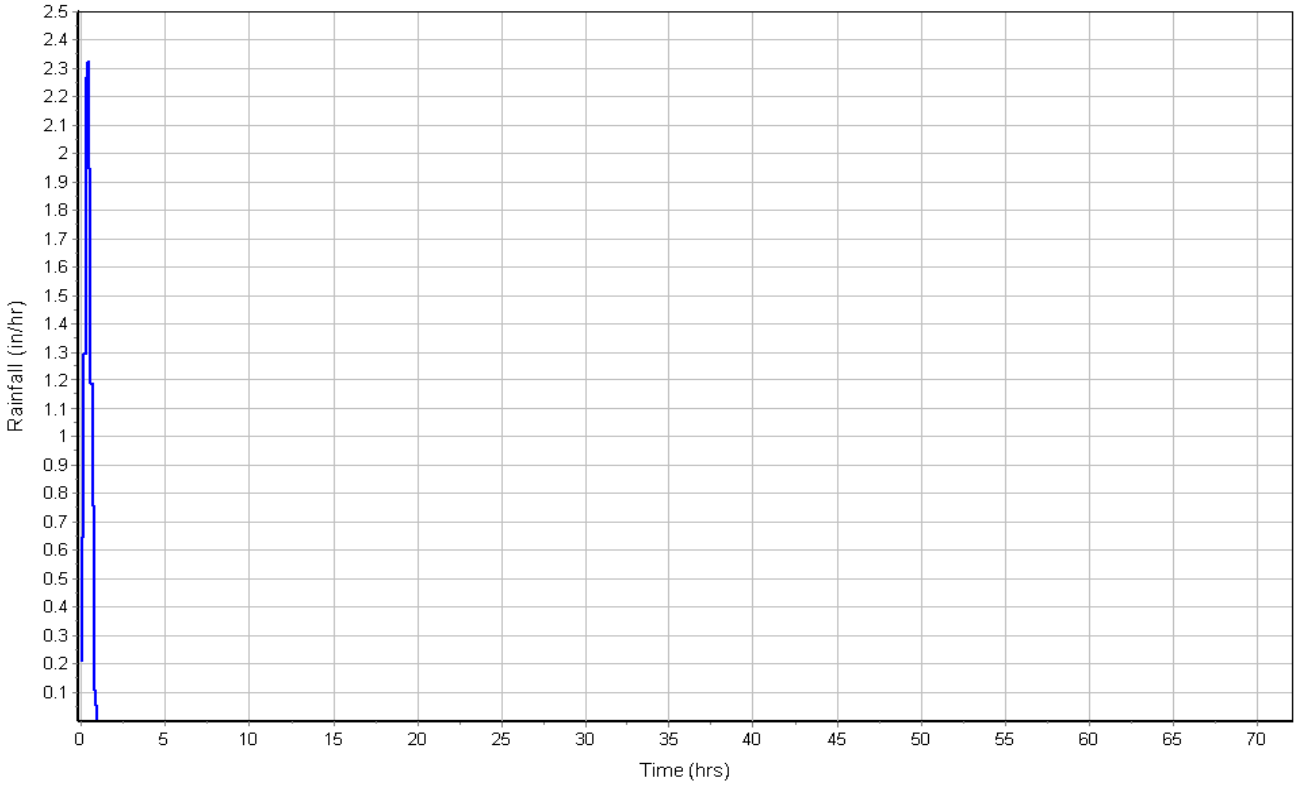
Total Rainfall (in)	1.08
Total Runoff (in)	0.87
Peak Runoff (cfs)	3.44
Weighted Curve Number	98.00
Time of Concentration (days hh:mm:ss)	0 00:10:00

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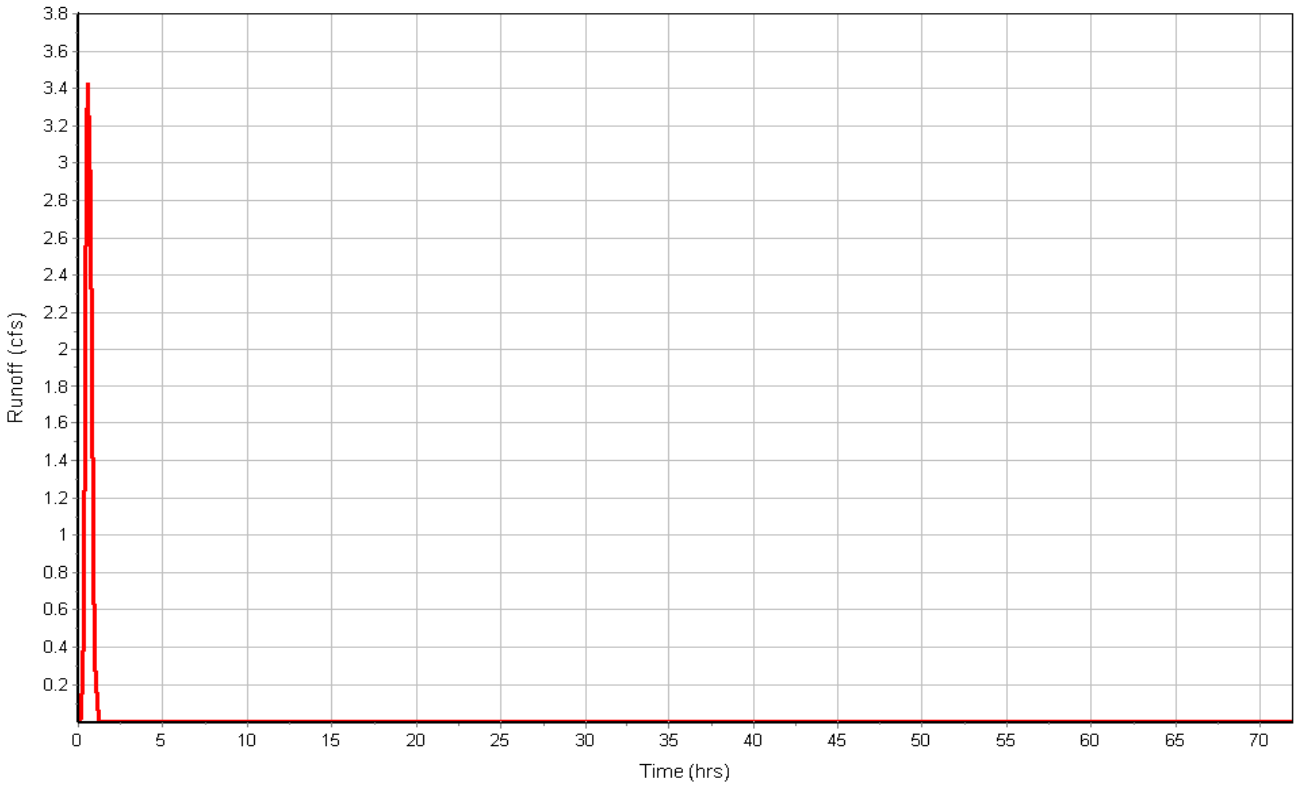
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Subbasin : A12

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A13

Input Data

Area (ac) 3.78
Weighted Curve Number 98.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved roads with curbs & sewers	3.78	A	98.00
Composite Area & Weighted CN	3.78		98.00

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

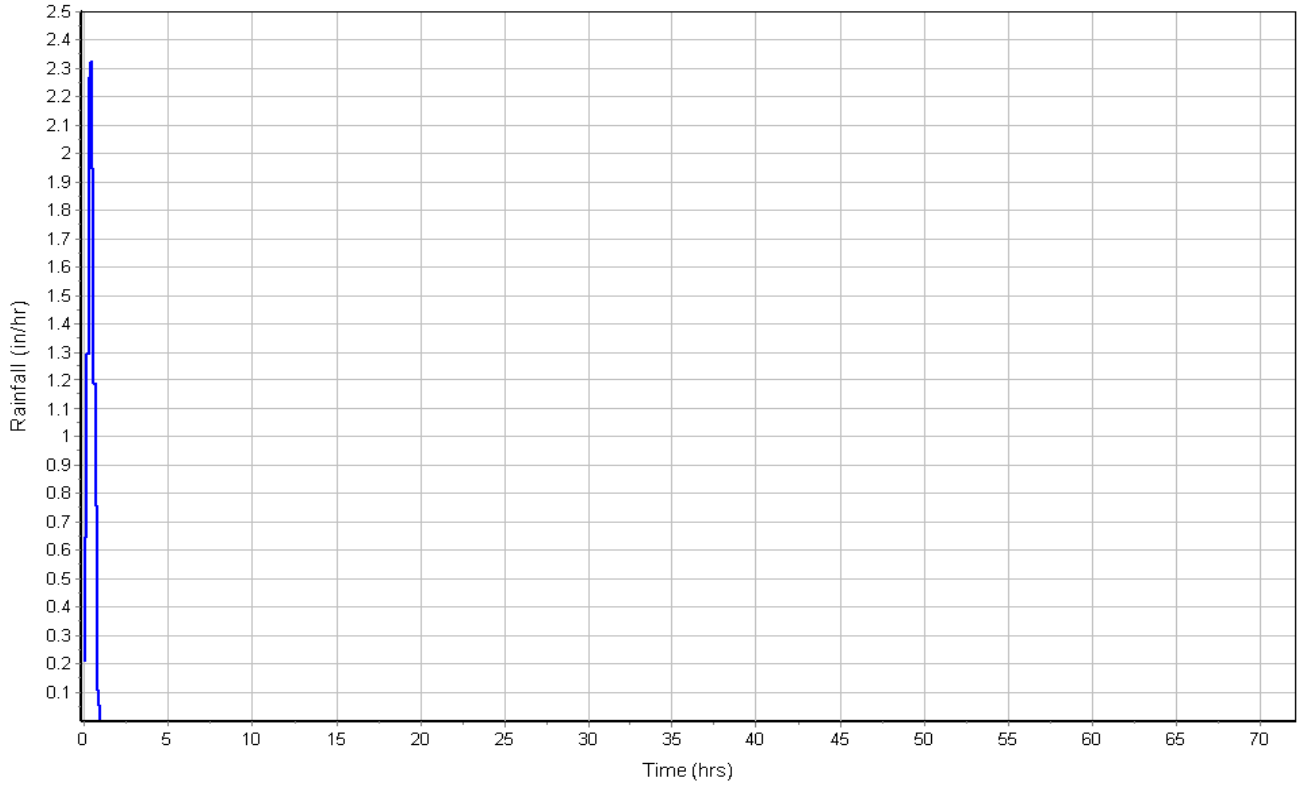
Total Rainfall (in) 1.08
Total Runoff (in) 0.87
Peak Runoff (cfs) 7.53
Weighted Curve Number 98.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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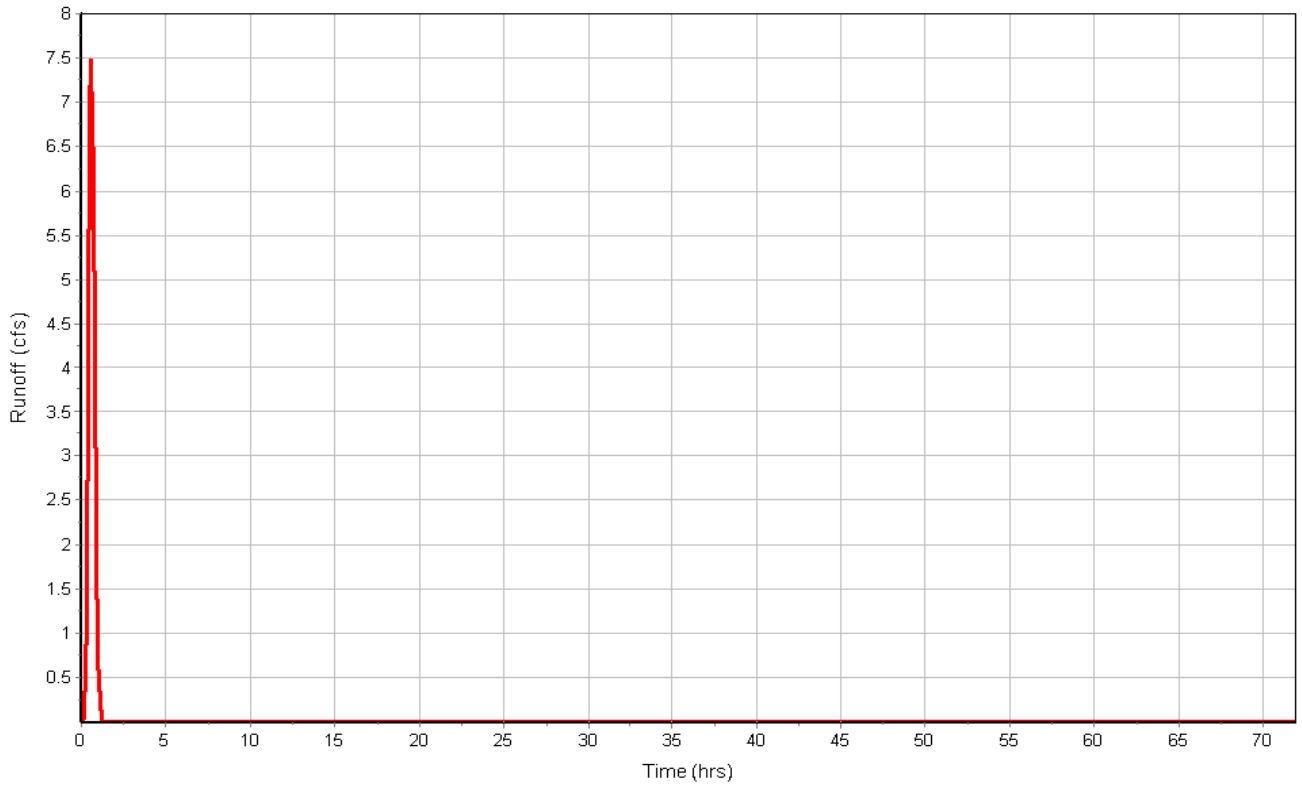
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Subbasin : A13

Rainfall Intensity Graph



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Subbasin : A3A

Input Data

Area (ac) 0.54
Weighted Curve Number 95.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	0.54	D	95.00
Composite Area & Weighted CN	0.54		95.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

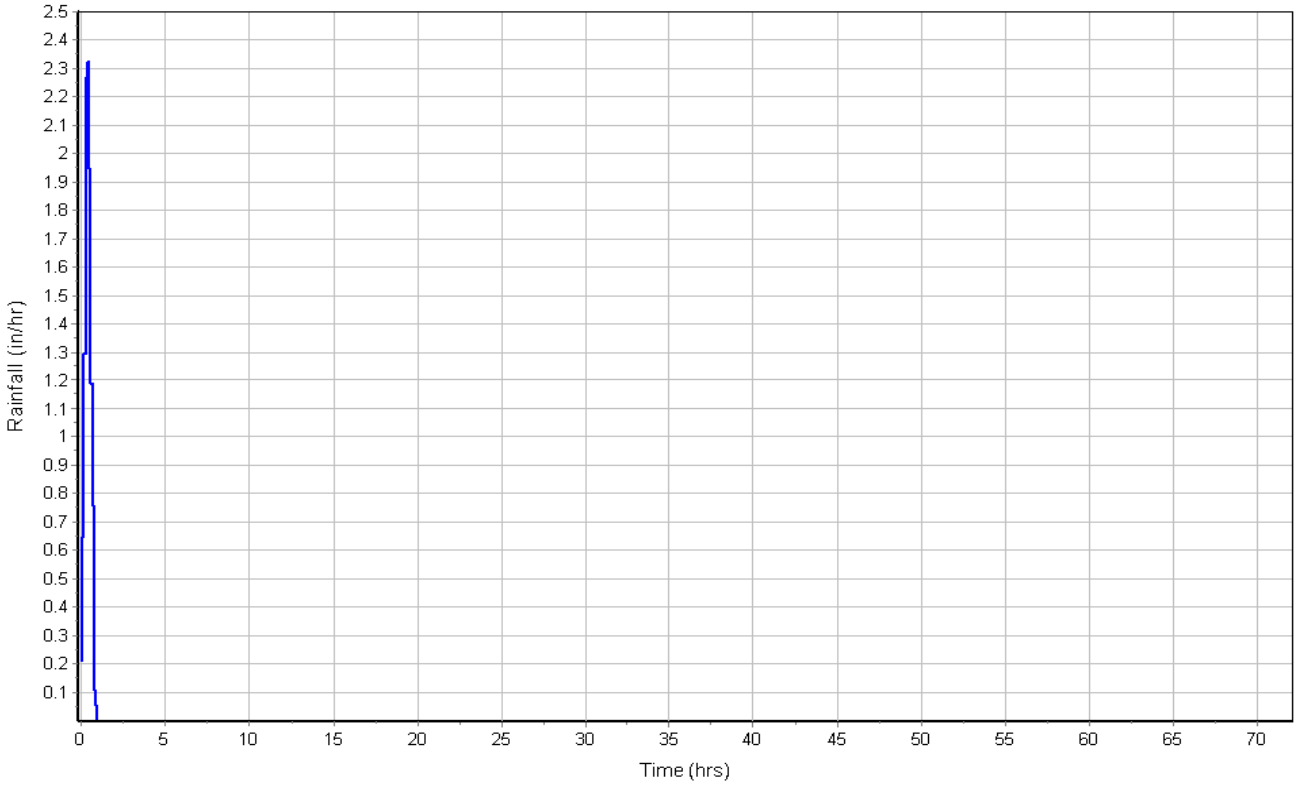
Total Rainfall (in) 1.08
Total Runoff (in) 0.63
Peak Runoff (cfs) 0.83
Weighted Curve Number 95.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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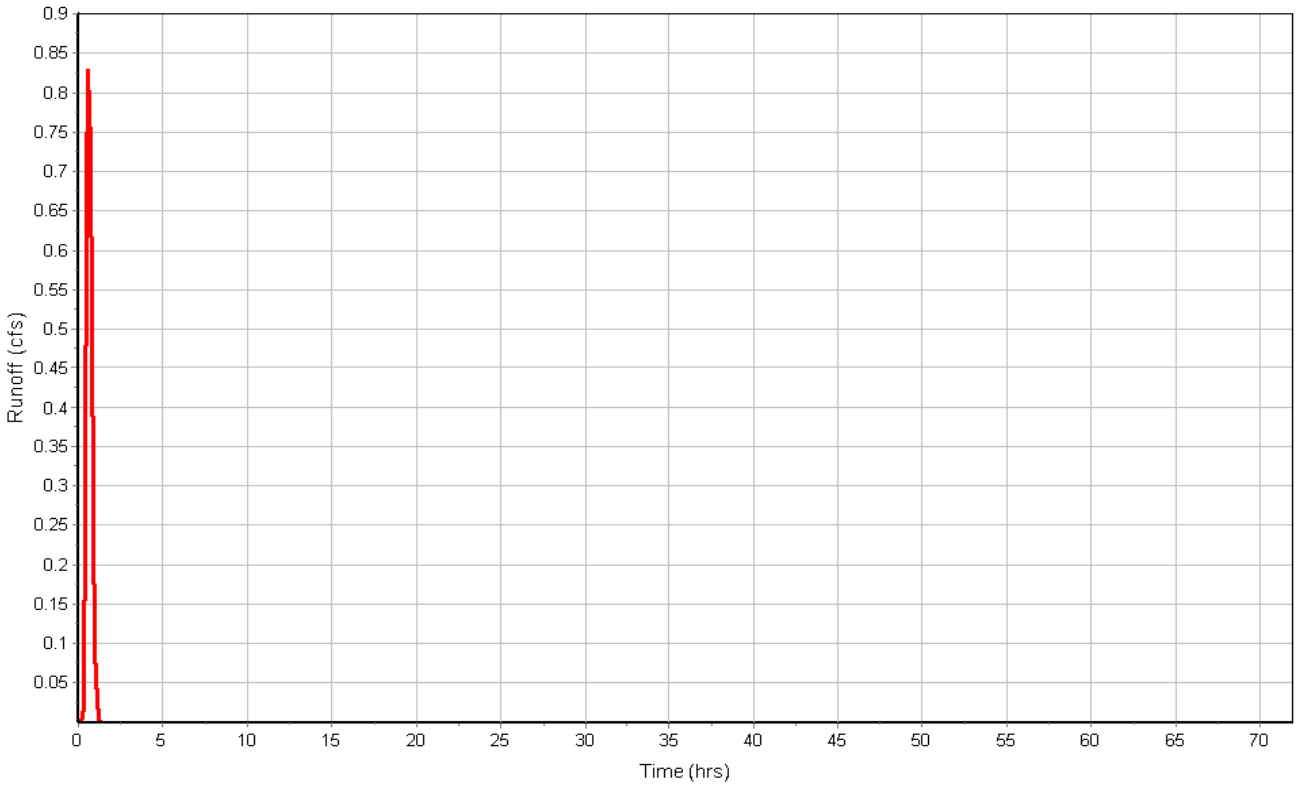
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Subbasin : A3A

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Subbasin : A3B

Input Data

Area (ac) 0.80
Weighted Curve Number 91.77
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	0.43	A	89.00
Urban commercial, 85% imp	0.37	D	95.00
Composite Area & Weighted CN	0.80		91.77

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

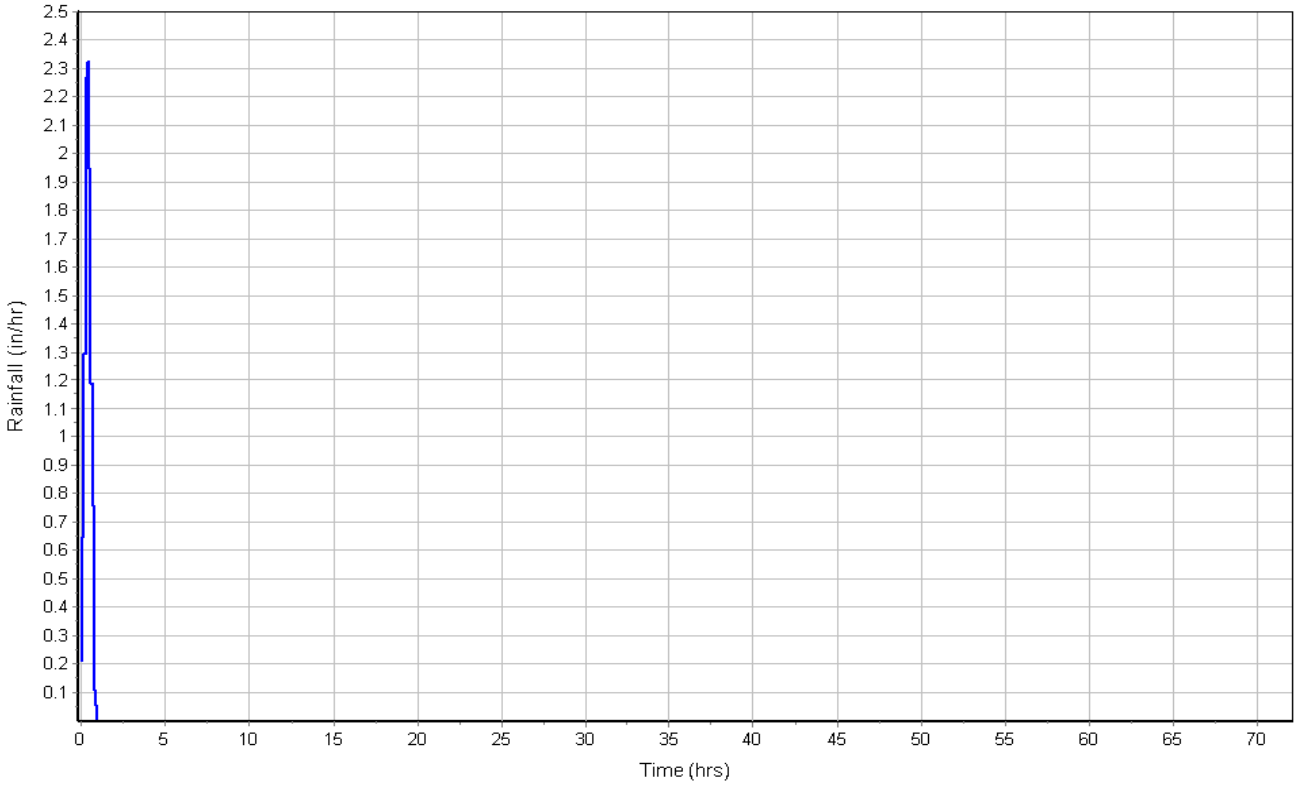
Total Rainfall (in) 1.08
Total Runoff (in) 0.45
Peak Runoff (cfs) 0.93
Weighted Curve Number 91.77
Time of Concentration (days hh:mm:ss) 0 00:10:00

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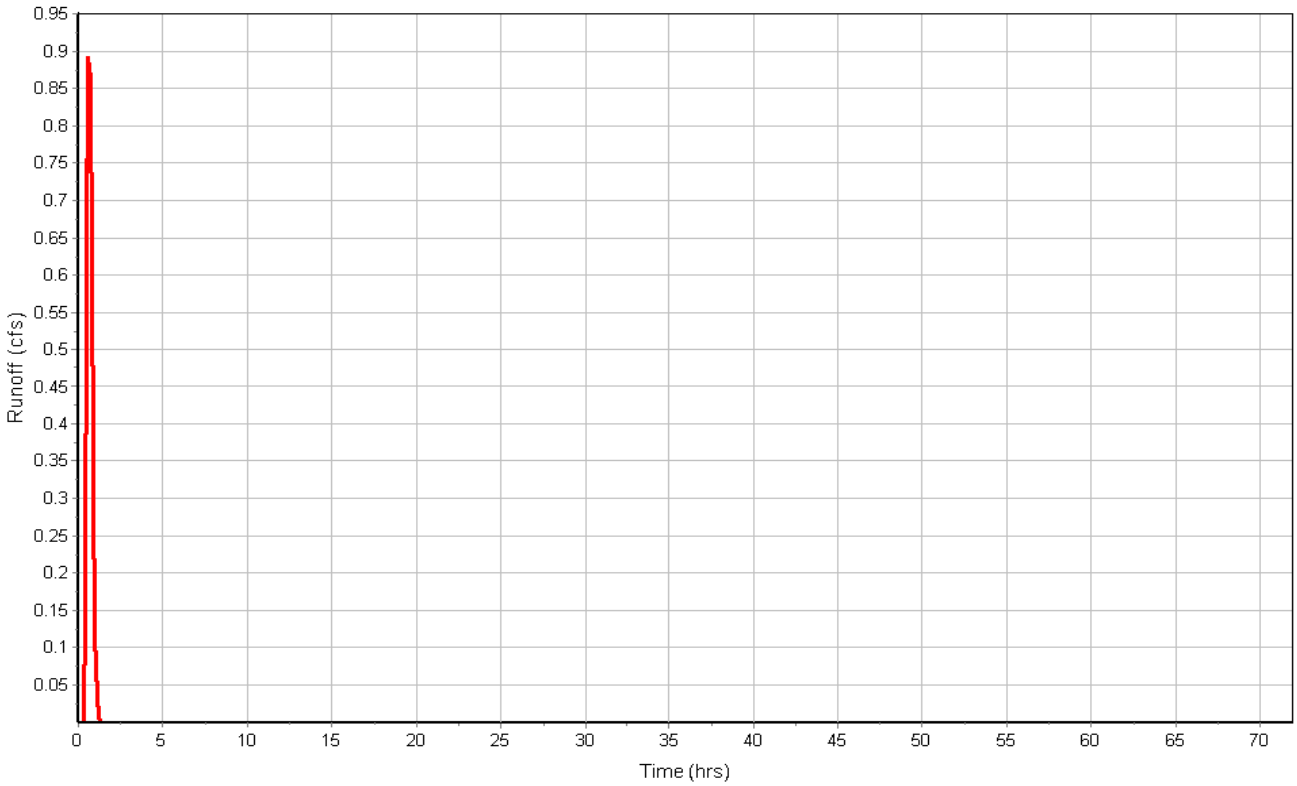
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Subbasin : A3B

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A3C

Input Data

Area (ac) 1.34
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	1.34	A	89.00
Composite Area & Weighted CN	1.34		89.00

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

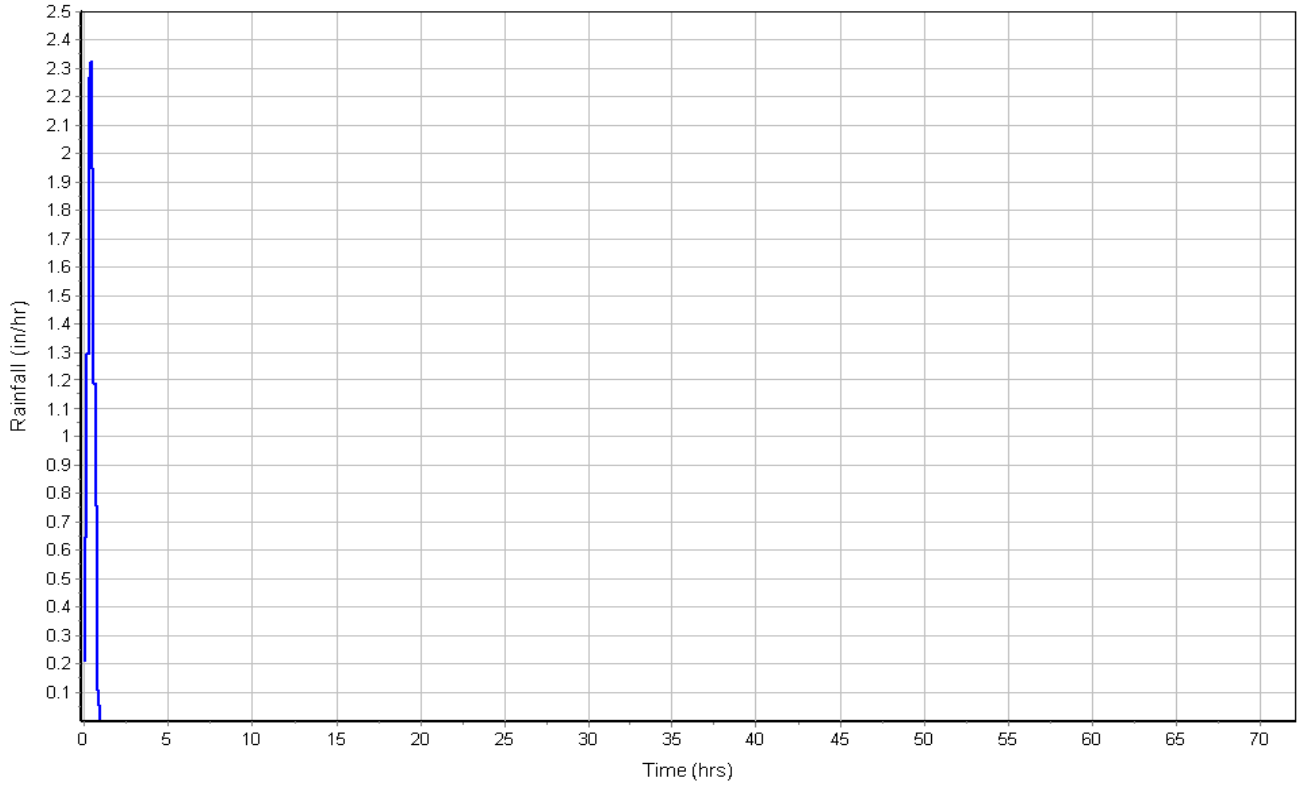
Total Rainfall (in) 1.08
Total Runoff (in) 0.34
Peak Runoff (cfs) 1.20
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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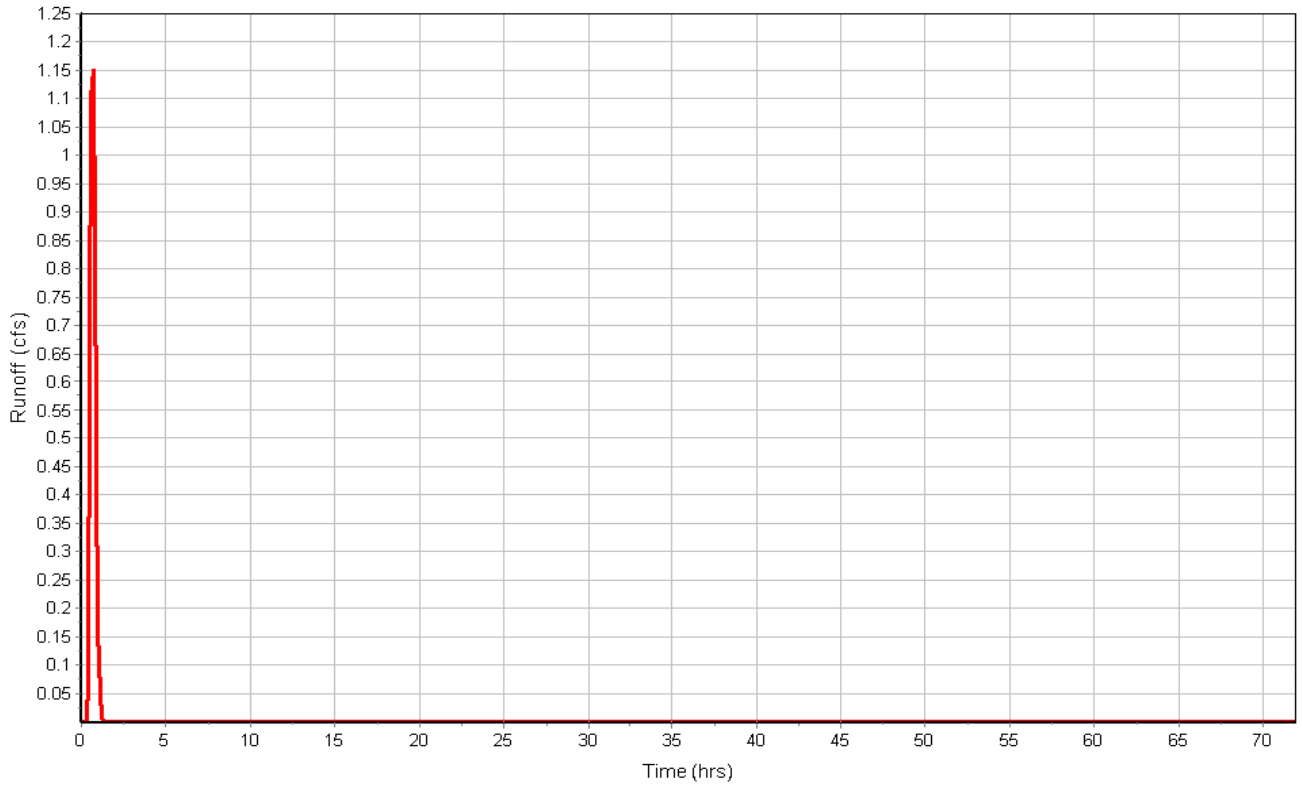
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Subbasin : A3C

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : RVPREDEV

Input Data

Area (ac) 16.37
Weighted Curve Number 70.76
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Desert shrub range, Poor	11.29	A	63.00
Desert shrub range, Poor	5.08	D	88.00
Composite Area & Weighted CN	16.37		70.76

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.13	0.00	0.00
Flow Length (ft) :	1228	0.00	0.00
Slope (%) :	2.0	0.00	0.00
2 yr, 24 hr Rainfall (in) :	1.33	0.00	0.00
Velocity (ft/sec) :	0.20	0.00	0.00
Computed Flow Time (min) :	100.79	0.00	0.00

Total TOC (min) 100.79

Subbasin Runoff Results

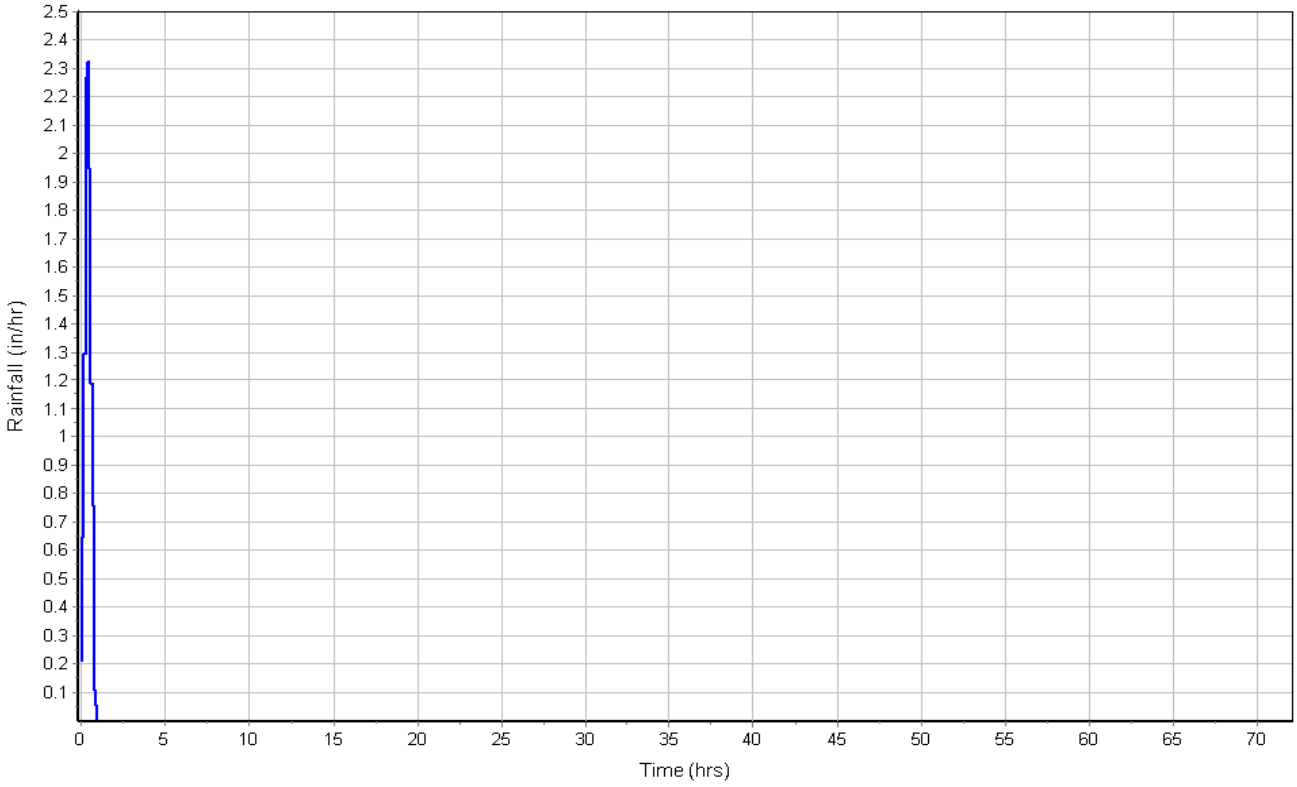
Total Rainfall (in) 1.08
Total Runoff (in) 0.02
Peak Runoff (cfs) 0.17
Weighted Curve Number 70.76
Time of Concentration (days hh:mm:ss) 0 01:40:47

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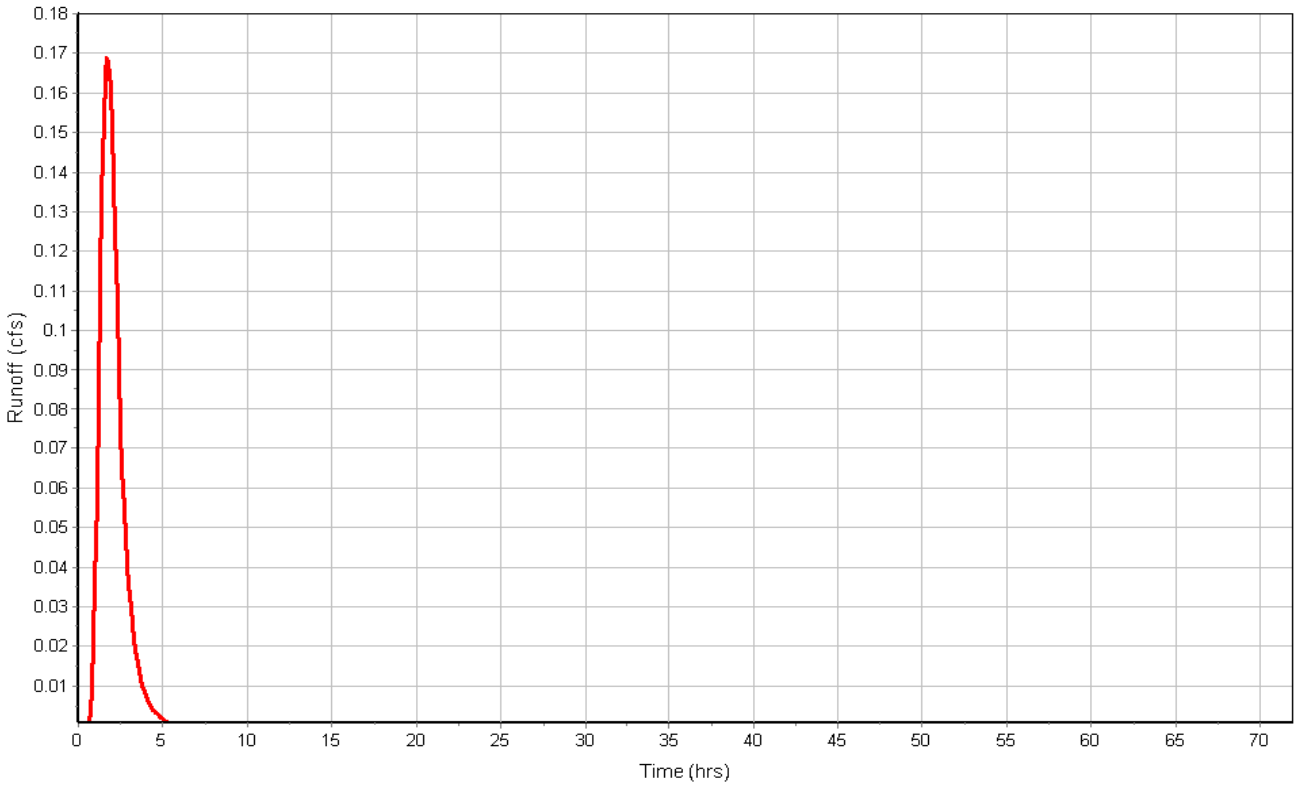
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Subbasin : RVPREDEV

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : TS-PREDEV

Input Data

Area (ac) 21.91
Weighted Curve Number 65.01
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Desert shrub range, Poor	1.76	D	88.00
Desert shrub range, Poor	20.14	A	63.00
Composite Area & Weighted CN	21.90		65.01

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.13	0.00	0.00
Flow Length (ft) :	1326	0.00	0.00
Slope (%) :	2.0	0.00	0.00
2 yr, 24 hr Rainfall (in) :	1.33	0.00	0.00
Velocity (ft/sec) :	0.21	0.00	0.00
Computed Flow Time (min) :	107.18	0.00	0.00

Total TOC (min) 107.18

Subbasin Runoff Results

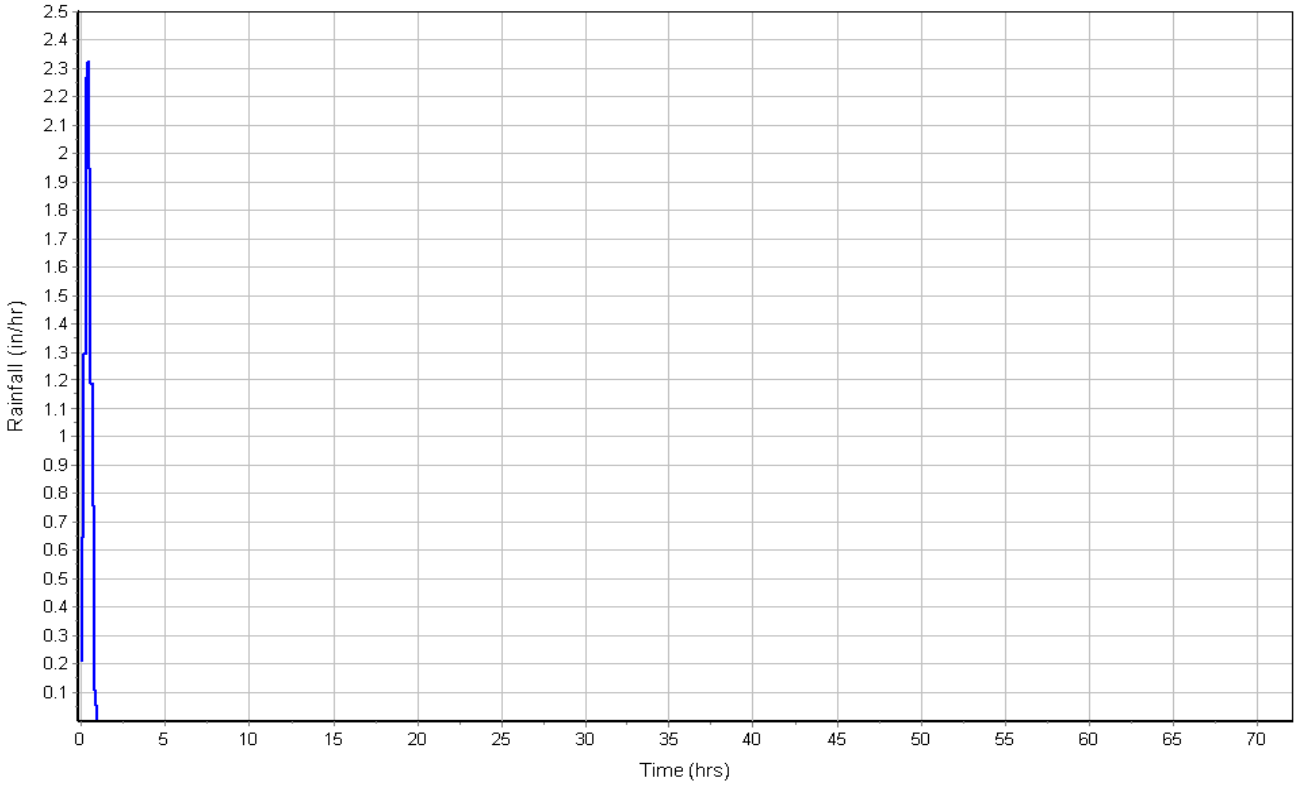
Total Rainfall (in) 1.08
Total Runoff (in) 0.00
Peak Runoff (cfs) 0.00
Weighted Curve Number 65.01
Time of Concentration (days hh:mm:ss) 0 01:47:11

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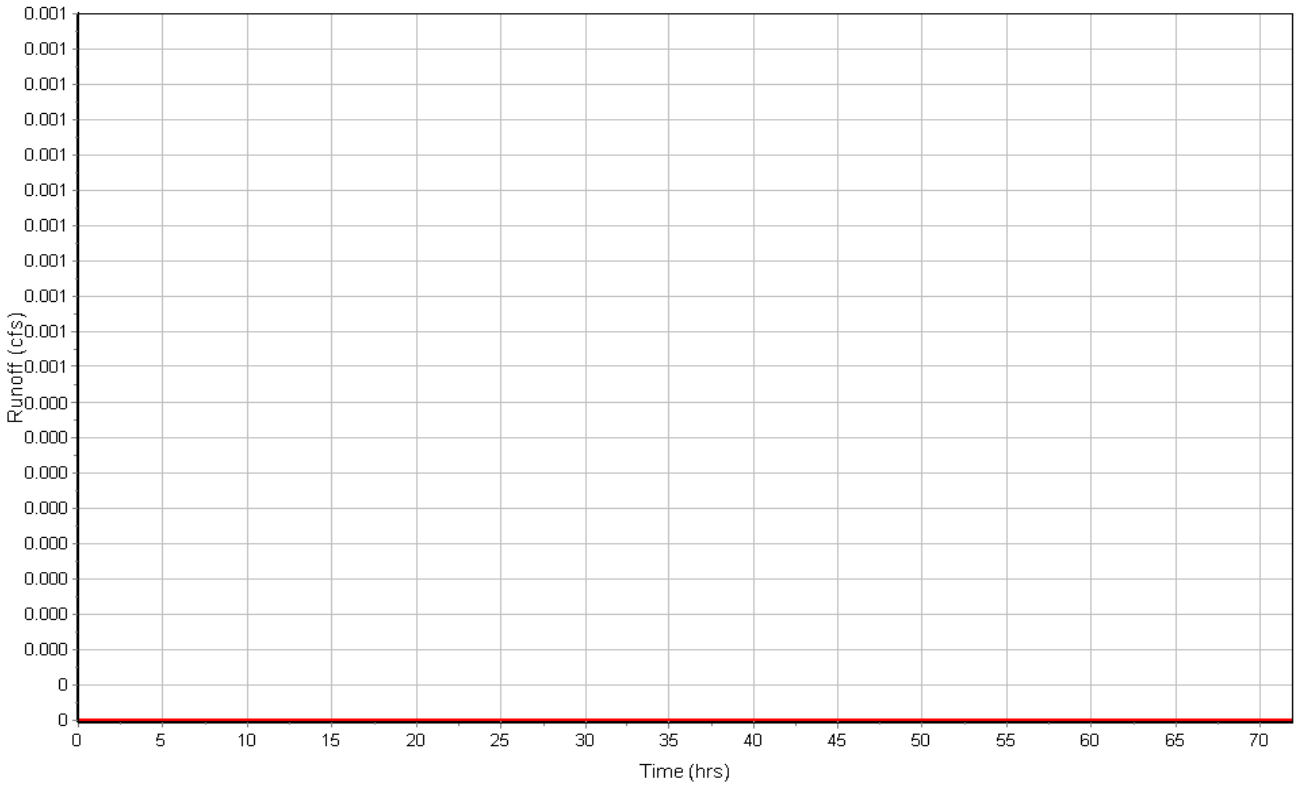
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Subbasin : TS-PREDEV

Rainfall Intensity Graph



Runoff Hydrograph



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Junction Input

SN	Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft²)	Minimum Pipe Cover (in)
1	J01	913.15	914.89	1.74	913.15	0.00	0.00	-914.89	0.00	0.00
2	J02	907.89	912.64	4.75	907.89	0.00	0.00	-912.64	0.00	0.00
3	J03	914.78	917.97	3.19	914.78	0.00	0.00	-917.97	0.00	0.00
4	J04	910.56	914.38	3.82	910.56	0.00	0.00	-914.38	0.00	0.00
5	J05	902.68	907.43	4.75	902.68	0.00	0.00	-907.43	0.00	0.00
6	J06	902.12	906.87	4.75	902.12	0.00	0.00	-906.87	0.00	0.00
7	J07	895.73	900.98	5.25	895.73	0.00	0.00	-900.98	0.00	0.00
8	J08	898.06	902.31	4.25	898.06	0.00	0.00	-902.31	0.00	0.00
9	J09	898.06	902.31	4.25	898.06	0.00	0.00	-902.31	0.00	0.00
10	J10	886.32	890.92	4.60	886.32	0.00	0.00	-890.92	0.00	0.00
11	O1	916.83	921.08	4.25	916.83	0.00	0.00	-921.08	0.00	0.00
12	O2	909.85	914.85	5.00	909.85	0.00	0.00	-914.85	0.00	0.00
13	O3A	915.23	921.60	6.37	915.23	0.00	0.00	-921.60	0.00	0.00
14	O3B	911.08	916.72	5.64	911.08	0.00	0.00	-916.72	0.00	0.00
15	O3C	906.09	912.24	6.15	906.09	0.00	0.00	-912.24	0.00	0.00
16	O4	902.98	906.80	3.82	902.98	0.00	0.00	-906.80	0.00	0.00
17	O5	907.79	912.12	4.33	907.79	0.00	0.00	-912.12	0.00	0.00
18	O6	901.23	905.48	4.25	901.23	0.00	0.00	-905.48	0.00	0.00
19	O7	888.27	901.23	12.96	888.27	0.00	0.00	-901.23	0.00	0.00
20	O8A	894.34	903.66	9.32	894.34	0.00	0.00	-903.66	0.00	0.00
21	SDMH01	916.48	921.15	4.67	916.48	0.00	0.00	-921.15	0.00	0.00
22	SDMH02	909.48	914.04	4.56	909.48	0.00	0.00	-914.04	0.00	0.00
23	SDMH03	907.54	914.70	7.16	907.54	0.00	0.00	-914.70	0.00	0.00
24	SDMH04	907.26	914.39	7.13	907.26	0.00	0.00	-914.39	0.00	0.00
25	SDMH05	907.53	914.79	7.26	907.53	0.00	0.00	-914.79	0.00	0.00
26	SDMH06	905.75	910.18	4.43	905.75	0.00	0.00	-910.18	0.00	0.00
27	SDMH07	905.33	909.05	3.72	905.33	0.00	0.00	-909.05	0.00	0.00
28	SDMH08	902.75	909.14	6.39	902.75	0.00	0.00	-909.14	0.00	0.00
29	SDMH09	901.44	907.96	6.52	901.44	0.00	0.00	-907.96	0.00	0.00
30	SDMH10	900.51	907.70	7.19	900.51	0.00	0.00	-907.70	0.00	0.00
31	SDMH11	894.85	901.92	7.07	894.85	0.00	0.00	-901.92	0.00	0.00
32	SDMH12	893.85	903.70	9.85	893.85	0.00	0.00	-903.70	0.00	0.00
33	SDMH13	897.40	902.76	5.36	897.40	0.00	0.00	-902.76	0.00	0.00
34	SDMH14	893.13	902.49	9.36	893.13	0.00	0.00	-902.49	0.00	0.00
35	SDMH15	886.12	891.87	5.75	886.12	0.00	0.00	-891.87	0.00	0.00
36	SDMH16	885.50	893.01	7.51	885.50	0.00	0.00	-893.01	0.00	0.00
37	SDMH17	884.58	889.78	5.20	884.58	0.00	0.00	-889.78	0.00	0.00

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Junction Results

SN	Element ID	Peak Inflow (cfs)	Peak Lateral Inflow (cfs)	Max HGL Elevation Attained (ft)	Max HGL Depth Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Average HGL Elevation Attained (ft)	Average HGL Depth Attained (ft)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	J01	0.00	0.00	913.15	0.00	0.00	1.74	913.15	0.00	0 00:00	0 00:00	0.00	0.00
2	J02	2.00	2.00	912.64	4.75	0.00	0.00	907.90	0.01	0 00:41	0 00:48	0.02	10.00
3	J03	0.89	0.89	915.29	0.51	0.00	2.68	914.88	0.10	0 00:42	0 00:00	0.00	0.00
4	J04	1.41	1.15	911.15	0.59	0.00	3.23	910.66	0.10	0 00:54	0 00:00	0.00	0.00
5	J05	0.39	0.39	902.99	0.31	0.00	4.44	902.68	0.00	0 00:48	0 00:00	0.00	0.00
6	J06	1.37	1.37	902.40	0.28	0.00	4.47	902.12	0.00	0 00:48	0 00:00	0.00	0.00
7	J07	3.42	3.42	896.33	0.60	0.00	4.65	895.73	0.00	0 00:42	0 00:00	0.00	0.00
8	J08	1.27	1.27	898.40	0.34	0.00	3.91	898.06	0.00	0 00:42	0 00:00	0.00	0.00
9	J09	1.82	1.82	898.48	0.42	0.00	3.83	898.06	0.00	0 00:42	0 00:00	0.00	0.00
10	J10	7.48	7.48	887.54	1.22	0.00	3.38	887.17	0.85	0 00:42	0 00:00	0.00	0.00
11	O1	0.00	0.00	916.83	0.00	0.00	4.25	916.83	0.00	0 00:00	0 00:00	0.00	0.00
12	O2	0.00	0.00	909.85	0.00	0.00	5.00	909.85	0.00	0 00:00	0 00:00	0.00	0.00
13	O3A	0.00	0.00	915.23	0.00	0.00	6.37	915.23	0.00	0 00:00	0 00:00	0.00	0.00
14	O3B	0.59	0.00	911.41	0.33	0.00	5.31	911.08	0.00	0 00:55	0 00:00	0.00	0.00
15	O3C	0.00	0.00	906.09	0.00	0.00	6.15	906.09	0.00	0 00:00	0 00:00	0.00	0.00
16	O4	0.75	0.00	903.36	0.38	0.00	3.44	902.98	0.00	0 00:53	0 00:00	0.00	0.00
17	O5	0.00	0.00	907.79	0.00	0.00	4.33	907.79	0.00	0 00:00	0 00:00	0.00	0.00
18	O6	1.80	0.00	901.55	0.32	0.00	3.93	901.23	0.00	0 00:52	0 00:00	0.00	0.00
19	O7	0.00	0.00	888.27	0.00	0.00	12.96	888.27	0.00	0 00:00	0 00:00	0.00	0.00
20	O8A	0.00	0.00	894.34	0.00	0.00	9.32	894.34	0.00	0 00:00	0 00:00	0.00	0.00
21	SDMH01	0.00	0.00	916.58	0.10	0.00	4.57	916.58	0.10	0 00:00	0 00:00	0.00	0.00
22	SDMH02	0.00	0.00	909.58	0.10	0.00	4.46	909.58	0.10	0 00:00	0 00:00	0.00	0.00
23	SDMH03	1.91	0.00	914.70	7.16	0.00	0.00	909.09	1.55	0 00:42	0 00:48	0.02	11.00
24	SDMH04	1.85	0.00	908.24	0.98	0.00	6.15	907.37	0.11	0 00:48	0 00:00	0.00	0.00
25	SDMH05	0.00	0.00	907.63	0.10	0.00	7.16	907.63	0.10	0 00:00	0 00:00	0.00	0.00
26	SDMH06	0.00	0.00	905.75	0.00	0.00	4.43	905.75	0.00	0 00:00	0 00:00	0.00	0.00
27	SDMH07	0.00	0.00	905.43	0.10	0.00	3.62	905.43	0.10	0 00:00	0 00:00	0.00	0.00
28	SDMH08	0.75	0.00	903.23	0.48	0.00	5.91	902.85	0.10	0 00:53	0 00:00	0.00	0.00
29	SDMH09	1.04	0.00	902.92	1.48	0.00	5.04	902.60	1.16	0 00:54	0 00:00	0.00	0.00
30	SDMH10	1.95	0.00	901.05	0.54	0.00	6.65	900.61	0.10	0 00:56	0 00:00	0.00	0.00
31	SDMH11	3.41	0.00	895.68	0.83	0.00	6.24	894.96	0.11	0 00:42	0 00:00	0.00	0.00
32	SDMH12	3.39	0.00	894.68	0.83	0.00	9.02	893.86	0.01	0 00:43	0 00:00	0.00	0.00
33	SDMH13	3.09	0.00	898.16	0.76	0.00	4.60	897.74	0.34	0 00:42	0 00:00	0.00	0.00
34	SDMH14	6.40	0.00	895.51	2.38	0.00	6.98	895.07	1.94	0 00:42	0 00:00	0.00	0.00
35	SDMH15	13.69	0.00	891.87	5.75	0.00	0.00	886.25	0.13	0 00:35	0 00:42	0.64	18.00
36	SDMH16	10.87	0.00	887.72	2.22	0.00	5.29	885.74	0.24	0 00:37	0 00:00	0.00	0.00
37	SDMH17	10.57	0.00	886.21	1.63	0.00	3.57	884.69	0.11	0 00:53	0 00:00	0.00	0.00

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Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
1	P01	102.69	916.83	0.00	916.58	0.10	0.25	0.2400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
2	P02	198.58	916.48	0.00	913.15	0.00	3.33	1.6800	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
3	P03	18.00	913.15	0.00	912.85	1.06	0.30	1.6700	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
4	P04	111.00	909.85	0.00	909.58	0.10	0.27	0.2400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
5	P05	160.94	909.48	0.00	909.08	1.54	0.40	0.2500	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
6	P06	99.00	907.89	0.00	907.64	0.10	0.25	0.2500	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
7	P07	74.09	907.54	0.00	907.36	0.10	0.18	0.2400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
8	P08	66.52	907.79	0.00	907.63	0.10	0.16	0.2400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
9	P09	70.26	907.53	0.00	907.36	0.10	0.17	0.2400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
10	P10	92.00	907.26	0.00	903.48	0.56	3.78	4.1100	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
11	P11	74.00	901.23	0.00	897.49	1.72	3.74	5.0500	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
12	P12	141.00	915.23	0.00	914.88	0.10	0.35	0.2500	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
13	P13	25.00	914.78	0.00	914.72	0.56	0.06	0.2400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
14	P14	83.00	911.08	0.00	910.66	0.10	0.42	0.5100	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
15	P15	23.00	910.56	0.00	910.45	1.06	0.11	0.4800	CIRCULAR	12.000	12.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
16	P16	102.00	906.09	0.00	905.75	0.00	0.34	0.3300	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
17	P17	99.00	905.75	0.00	905.43	0.10	0.32	0.3200	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
18	P18	31.00	905.33	0.00	905.23	1.06	0.10	0.3200	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
19	P19	50.02	902.98	0.00	902.85	0.10	0.13	0.2600	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
20	P20	83.99	902.75	0.00	902.54	1.10	0.21	0.2500	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
21	P21	30.00	902.68	0.00	902.60	1.16	0.08	0.2700	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
22	P22	331.00	901.44	0.00	900.61	0.10	0.83	0.2500	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
23	P23	32.00	902.12	0.00	900.61	0.10	1.51	4.7200	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
24	P24	89.00	900.51	0.00	897.23	1.46	3.28	3.6900	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
25	P25	62.00	888.27	0.00	887.17	0.85	1.10	1.7700	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
26	P26	130.00	894.34	0.00	893.85	0.00	0.49	0.3800	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
27	P27	39.00	895.73	0.00	894.95	0.10	0.78	2.0000	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
28	P28	333.48	894.85	0.00	893.85	0.00	1.00	0.3000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
29	P29	208.00	893.85	0.00	893.23	0.10	0.62	0.3000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
30	P30	16.00	898.06	0.00	897.74	0.34	0.32	2.0000	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
31	P31	28.00	898.06	0.00	897.50	0.10	0.56	2.0000	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
32	P32	93.00	897.40	0.00	895.07	1.94	2.33	2.5100	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
33	P33	745.00	893.13	0.00	886.22	0.10	6.91	0.9300	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
34	P34	39.00	886.32	0.00	886.12	0.00	0.20	0.5100	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
35	P35	200.04	886.12	0.00	885.72	0.22	0.40	0.2000	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
36	P36	328.00	885.50	0.00	884.68	0.10	0.82	0.2500	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
37	P37	63.00	884.58	0.00	884.42	0.00	0.16	0.2500	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1

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Pipe Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	P01	0.00	0 00:00	1.76	0.00	0.00		0.00	0.00	0.00		Calculated
2	P02	0.00	0 00:00	4.61	0.00	0.00		0.00	0.00	0.00		Calculated
3	P03	0.00	0 00:00	4.60	0.00	0.00		0.00	0.00	0.00		Calculated
4	P04	0.00	0 00:00	1.76	0.00	0.00		0.00	0.00	0.00		Calculated
5	P05	0.00	0 00:00	1.78	0.00	0.00		0.00	0.00	0.00		Calculated
6	P06	1.91	0 00:48	1.79	1.07	2.67	0.62	0.95	0.95	0.00		> CAPACITY
7	P07	1.85	0 00:48	1.76	1.05	2.61	0.47	0.94	0.94	0.00		> CAPACITY
8	P08	0.00	0 00:00	1.75	0.00	0.00		0.00	0.00	0.00		Calculated
9	P09	0.00	0 00:00	1.75	0.00	0.00		0.00	0.00	0.00		Calculated
10	P10	1.85	0 00:48	7.22	0.26	7.69	0.20	0.34	0.34	0.00		Calculated
11	P11	1.80	0 00:52	8.01	0.22	8.22	0.15	0.31	0.32	0.00		Calculated
12	P12	0.00	0 00:00	1.78	0.00	0.00		0.00	0.00	0.00		Calculated
13	P13	0.89	0 00:42	1.75	0.51	2.23	0.19	0.51	0.51	0.00		Calculated
14	P14	0.58	0 00:55	2.53	0.23	2.63	0.53	0.32	0.33	0.00		Calculated
15	P15	1.41	0 00:54	2.14	0.66	2.91	0.13	0.59	0.59	0.00		Calculated
16	P16	0.00	0 00:00	2.06	0.00	0.00		0.00	0.00	0.00		Calculated
17	P17	0.00	0 00:00	2.03	0.00	0.00		0.00	0.00	0.00		Calculated
18	P18	0.00	0 00:00	2.02	0.00	0.00		0.00	0.00	0.00		Calculated
19	P19	0.75	0 00:53	5.36	0.14	2.13	0.39	0.38	0.25	0.00		Calculated
20	P20	0.74	0 00:54	5.25	0.14	2.11	0.66	0.38	0.25	0.00		Calculated
21	P21	0.39	0 00:48	1.84	0.21	1.85	0.27	0.31	0.31	0.00		Calculated
22	P22	1.00	0 00:56	5.26	0.19	2.34	2.36	0.43	0.29	0.00		Calculated
23	P23	1.37	0 00:48	7.74	0.18	7.41	0.07	0.28	0.28	0.00		Calculated
24	P24	1.95	0 00:55	20.17	0.10	7.24	0.20	0.31	0.21	0.00		Calculated
25	P25	0.00	0 00:00	4.75	0.00	0.00		0.00	0.00	0.00		Calculated
26	P26	0.00	0 00:00	2.19	0.00	0.00		0.00	0.00	0.00		Calculated
27	P27	3.41	0 00:42	5.04	0.68	6.88	0.09	0.60	0.60	0.00		Calculated
28	P28	3.39	0 00:43	5.75	0.59	3.42	1.63	0.83	0.55	0.00		Calculated
29	P29	3.38	0 00:43	5.73	0.59	3.39	1.02	0.82	0.55	0.00		Calculated
30	P30	1.82	0 00:42	5.04	0.36	5.89	0.05	0.42	0.42	0.00		Calculated
31	P31	1.26	0 00:42	5.04	0.25	5.34	0.09	0.34	0.34	0.00		Calculated
32	P32	3.08	0 00:42	16.63	0.19	7.18	0.22	0.44	0.29	0.00		Calculated
33	P33	6.37	0 00:44	10.12	0.63	6.10	2.04	0.86	0.57	0.00		Calculated
34	P34	7.47	0 00:42	7.52	0.99	4.86	0.13	1.22	0.81	0.00		Calculated
35	P35	10.87	0 00:36	10.12	1.07	3.85	0.87	2.00	1.00	15.00		SURCHARGED
36	P36	10.57	0 00:53	11.31	0.93	4.22	1.30	1.48	0.76	0.00		Calculated
37	P37	10.57	0 00:53	11.40	0.93	4.14	0.25	1.48	0.76	0.00		Calculated

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Storage Nodes

Storage Node : BR1

Input Data

Invert Elevation (ft)	918.02
Max (Rim) Elevation (ft)	922.46
Max (Rim) Offset (ft)	4.44
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-918.02
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

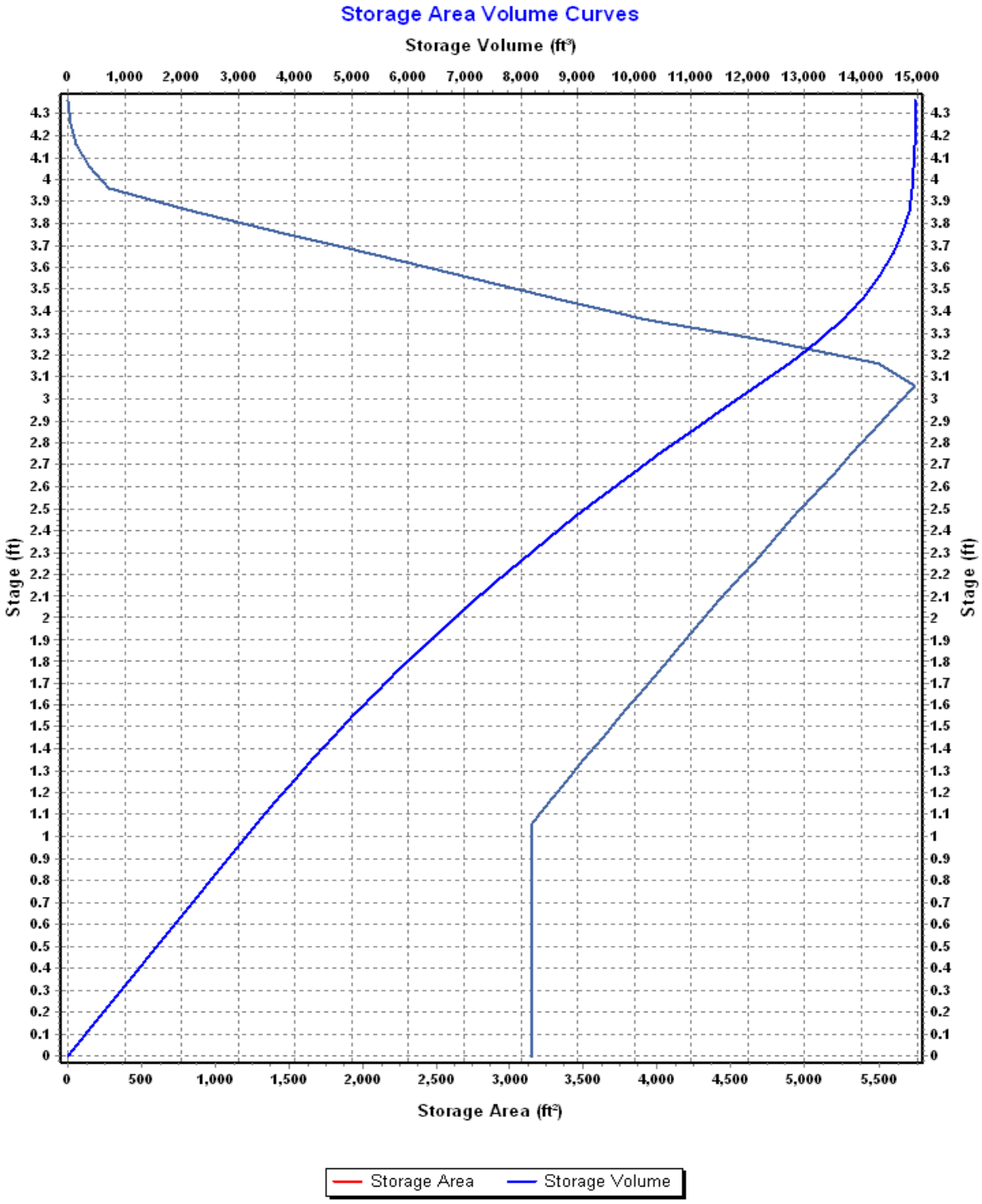
Exfiltration Rate (in/hr)	3.6500

Storage Area Volume Curves

Storage Curve : BR1

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	3141	0.000
1.06	3141.89	3329.93
1.16	3262.83	3650.17
1.26	3385.2	3982.57
1.36	3508.5	4327.26
1.46	3632.69	4684.32
1.56	3757.77	5053.84
1.66	3883.75	5435.92
1.76	4010.63	5830.64
1.86	4138.42	6238.09
1.96	4267.16	6658.37
2.06	4396.87	7091.57
2.16	4527.56	7537.79
2.26	4659.22	7997.13
2.36	4791.85	8469.68
2.46	4925.44	8955.54
2.56	5060	9454.81
2.66	5195.53	9967.59
2.76	5332.02	10493.97
2.86	5469.48	11034.05
2.96	5607.91	11587.92
3.06	5744.57	12155.54
3.16	5498	12717.67
3.26	4752.13	13230.18
3.36	3925.58	13664.07
3.46	3303.77	14025.54
3.56	2676.06	14324.53
3.66	2043.84	14560.53
3.76	1427.82	14734.11
3.86	837.63	14847.38
3.96	281.34	14903.33
4.06	149.84	14924.89
4.16	60.48	14935.41
4.26	15.53	14939.21
4.36	0.9	14940.03

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Storage Node : BR1 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR1	Bottom	CIRCULAR	No	24.00			920.58	0.61

Output Summary Results

Peak Inflow (cfs)	0.90
Peak Lateral Inflow (cfs)	0.90
Peak Outflow (cfs)	0.00
Peak Exfiltration Flow Rate (cfm)	15.92
Max HGL Elevation Attained (ft)	918.25
Max HGL Depth Attained (ft)	0.23
Average HGL Elevation Attained (ft)	918.02
Average HGL Depth Attained (ft)	0
Time of Max HGL Occurrence (days hh:mm)	0 01:03
Total Exfiltration Volume (1000-ft³)	1.242
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR2

Input Data

Invert Elevation (ft)	911.79
Max (Rim) Elevation (ft)	915.12
Max (Rim) Offset (ft)	3.33
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-911.79
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

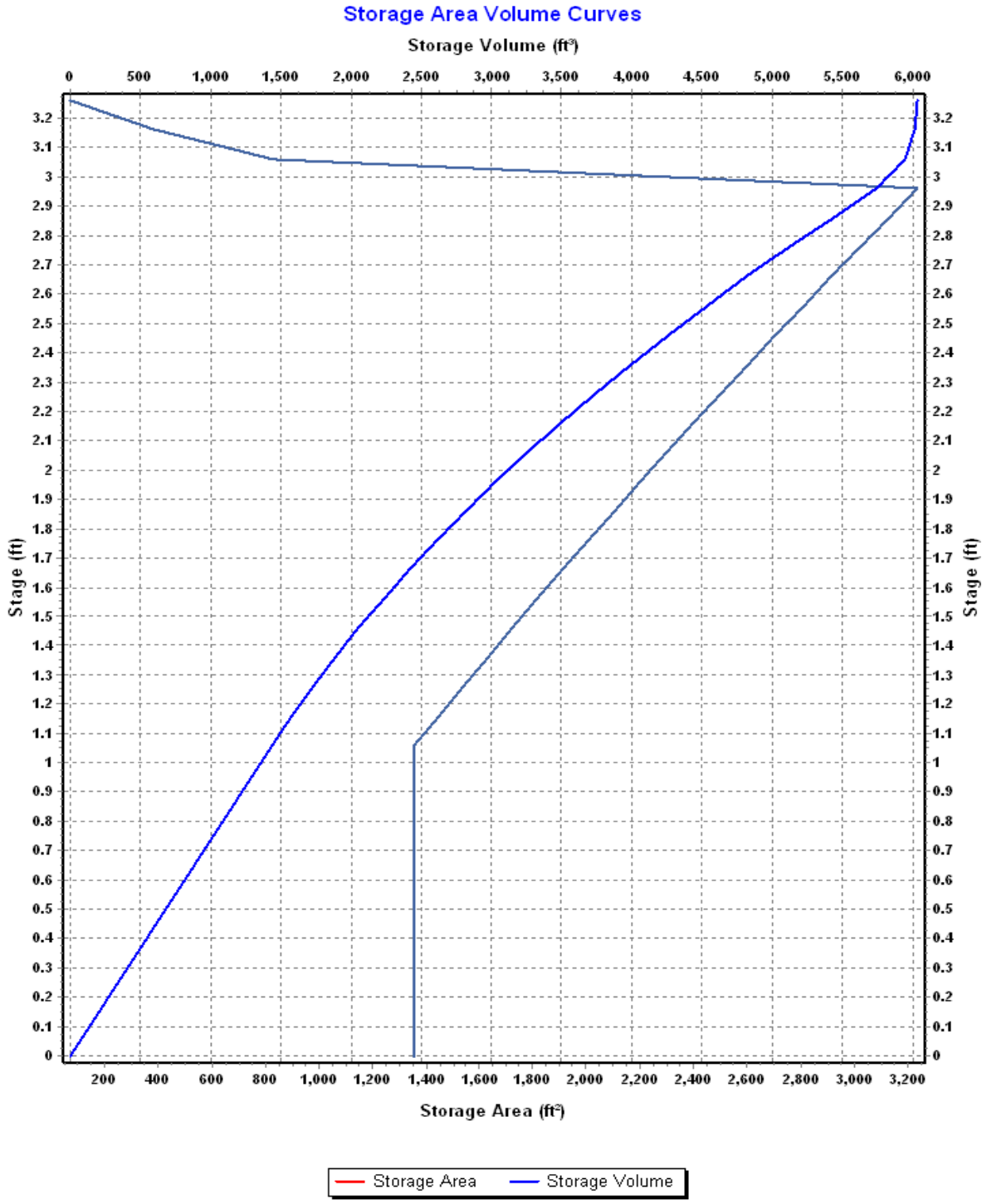
Exfiltration Rate (in/hr)	0.2500

Storage Area Volume Curves

Storage Curve : BR2

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	1355	0.000
1.06	1355.93	1436.79
1.16	1445.99	1576.89
1.26	1537.04	1726.04
1.36	1629.07	1884.35
1.46	1722.08	2051.91
1.56	1816.08	2228.82
1.66	1911.06	2415.18
1.76	2007.02	2611.08
1.86	2103.96	2816.63
1.96	2201.89	3031.92
2.06	2300.8	3257.05
2.16	2400.7	3492.13
2.26	2501.57	3737.24
2.36	2603.43	3992.49
2.46	2706.28	4257.98
2.56	2810.1	4533.80
2.66	2914.91	4820.05
2.76	3020.7	5116.83
2.86	3127.48	5424.24
2.96	3235.24	5742.38
3.06	833.86	5945.84
3.16	385.92	6006.83
3.26	72.94	6029.77

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Storage Node : BR2 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR2	Bottom	CIRCULAR	No	24.00			914.35	0.61

Output Summary Results

Peak Inflow (cfs)	1.98
Peak Lateral Inflow (cfs)	1.98
Peak Outflow (cfs)	0.00
Peak Exfiltration Flow Rate (cfm)	0.72
Max HGL Elevation Attained (ft)	913.63
Max HGL Depth Attained (ft)	1.84
Average HGL Elevation Attained (ft)	912.89
Average HGL Depth Attained (ft)	1.1
Time of Max HGL Occurrence (days hh:mm)	0 01:21
Total Exfiltration Volume (1000-ft³)	2.308
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR3A

Input Data

Invert Elevation (ft)	918.54
Max (Rim) Elevation (ft)	922.87
Max (Rim) Offset (ft)	4.33
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-918.54
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

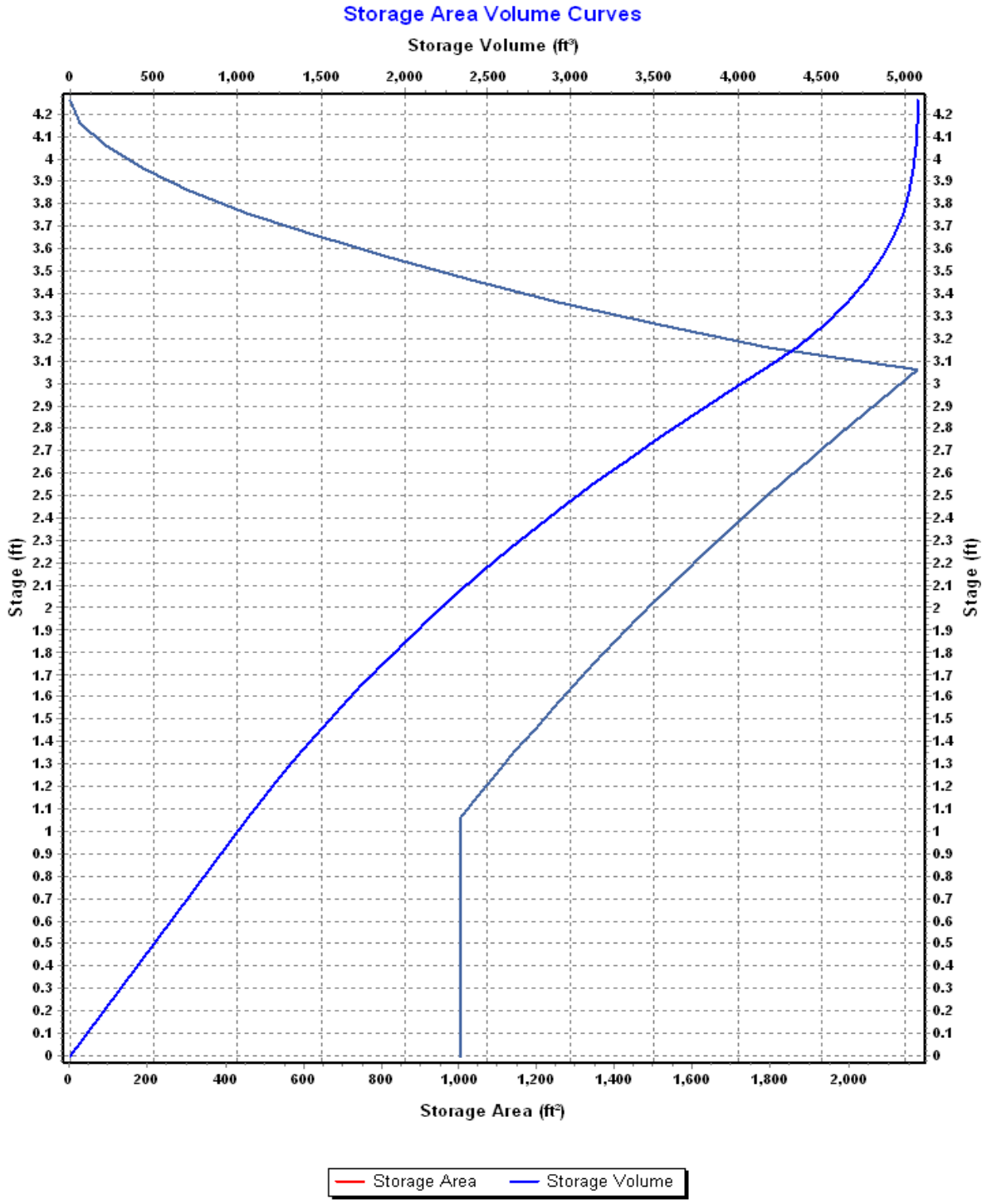
Exfiltration Rate (in/hr)	1.0000

Storage Area Volume Curves

Storage Curve : BR3A

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	1003	0.000
1.06	1003.24	1063.31
1.16	1049.23	1165.93
1.26	1096.69	1273.23
1.36	1145.31	1385.33
1.46	1195.09	1502.35
1.56	1246.03	1624.41
1.66	1298.19	1751.62
1.76	1351.67	1884.11
1.86	1406.49	2022.02
1.96	1462.89	2165.49
2.06	1520.96	2314.68
2.16	1580.66	2469.76
2.26	1641.67	2630.88
2.36	1704.02	2798.16
2.46	1767.77	2971.75
2.56	1832.91	3151.78
2.66	1899.44	3338.40
2.76	1967.37	3531.74
2.86	2036.69	3731.94
2.96	2107.4	3939.14
3.06	2176.53	4153.34
3.16	1787.16	4351.52
3.26	1515.95	4516.68
3.36	1252.64	4655.11
3.46	1029.78	4769.23
3.56	818.92	4861.67
3.66	625.41	4933.89
3.76	455.66	4987.94
3.86	307.6	5026.10
3.96	187.02	5050.83
4.06	94.69	5064.92
4.16	26.99	5071.00
4.26	2.5	5072.47

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Storage Node : BR3A (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR3A	Bottom	CIRCULAR	No	24.00			921.10	0.61

Output Summary Results

Peak Inflow (cfs)	0.83
Peak Lateral Inflow (cfs)	0.83
Peak Outflow (cfs)	0.00
Peak Exfiltration Flow Rate (cfm)	1.45
Max HGL Elevation Attained (ft)	919.69
Max HGL Depth Attained (ft)	1.15
Average HGL Elevation Attained (ft)	918.66
Average HGL Depth Attained (ft)	0.12
Time of Max HGL Occurrence (days hh:mm)	0 01:14
Total Exfiltration Volume (1000-ft³)	1.223
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR3B

Input Data

Invert Elevation (ft)	914.16
Max (Rim) Elevation (ft)	917.97
Max (Rim) Offset (ft)	3.81
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-914.16
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

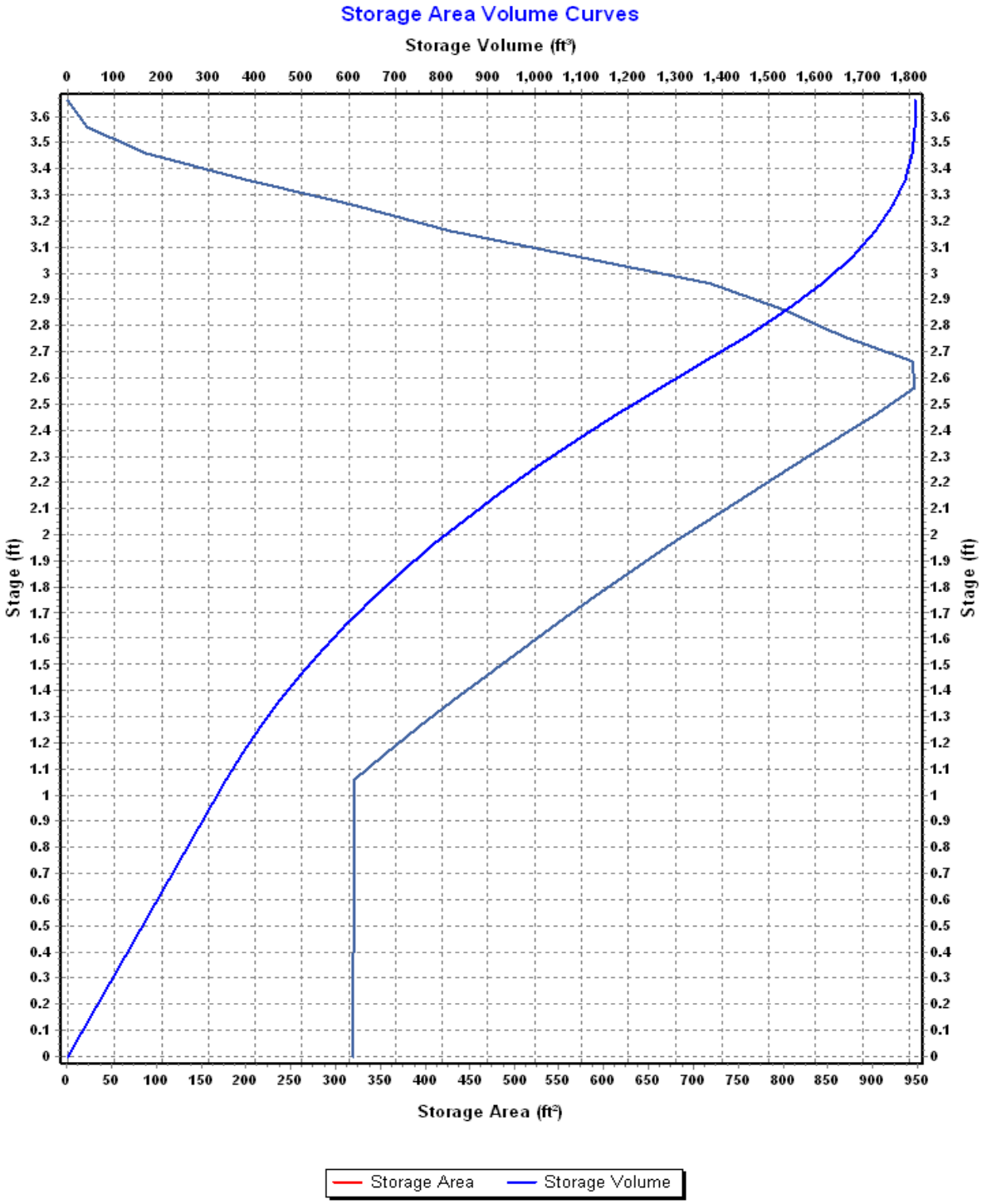
Exfiltration Rate (in/hr)	1.0000

Storage Area Volume Curves

Storage Curve : BR3B

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	320	0.000
1.06	320.79	339.62
1.16	356.4	373.48
1.26	392.93	410.95
1.36	430.38	452.12
1.46	468.77	497.08
1.56	508.1	545.92
1.66	548.38	598.74
1.76	589.6	655.64
1.86	631.77	716.71
1.96	674.88	782.04
2.06	718.94	851.73
2.16	763.94	925.87
2.26	809.88	1004.56
2.36	856.77	1087.89
2.46	904.6	1175.96
2.56	946.68	1268.52
2.66	943.54	1363.03
2.76	865.89	1453.50
2.86	800.8	1536.83
2.96	718.52	1612.80
3.06	573.23	1677.39
3.16	427.46	1727.42
3.26	317.49	1764.67
3.36	199.57	1790.52
3.46	88.48	1804.92
3.56	23.36	1810.51
3.66	1.54	1811.76

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Storage Node : BR3B (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR3B	Bottom	CIRCULAR	No	24.00			916.22	0.61

Output Summary Results

Peak Inflow (cfs)	0.89
Peak Lateral Inflow (cfs)	0.00
Peak Outflow (cfs)	0.59
Peak Exfiltration Flow Rate (cfm)	1.06
Max HGL Elevation Attained (ft)	916.31
Max HGL Depth Attained (ft)	2.15
Average HGL Elevation Attained (ft)	914.53
Average HGL Depth Attained (ft)	0.37
Time of Max HGL Occurrence (days hh:mm)	0 00:55
Total Exfiltration Volume (1000-ft³)	0.900
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR3C

Input Data

Invert Elevation (ft)	909.39
Max (Rim) Elevation (ft)	912.45
Max (Rim) Offset (ft)	3.06
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-909.39
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

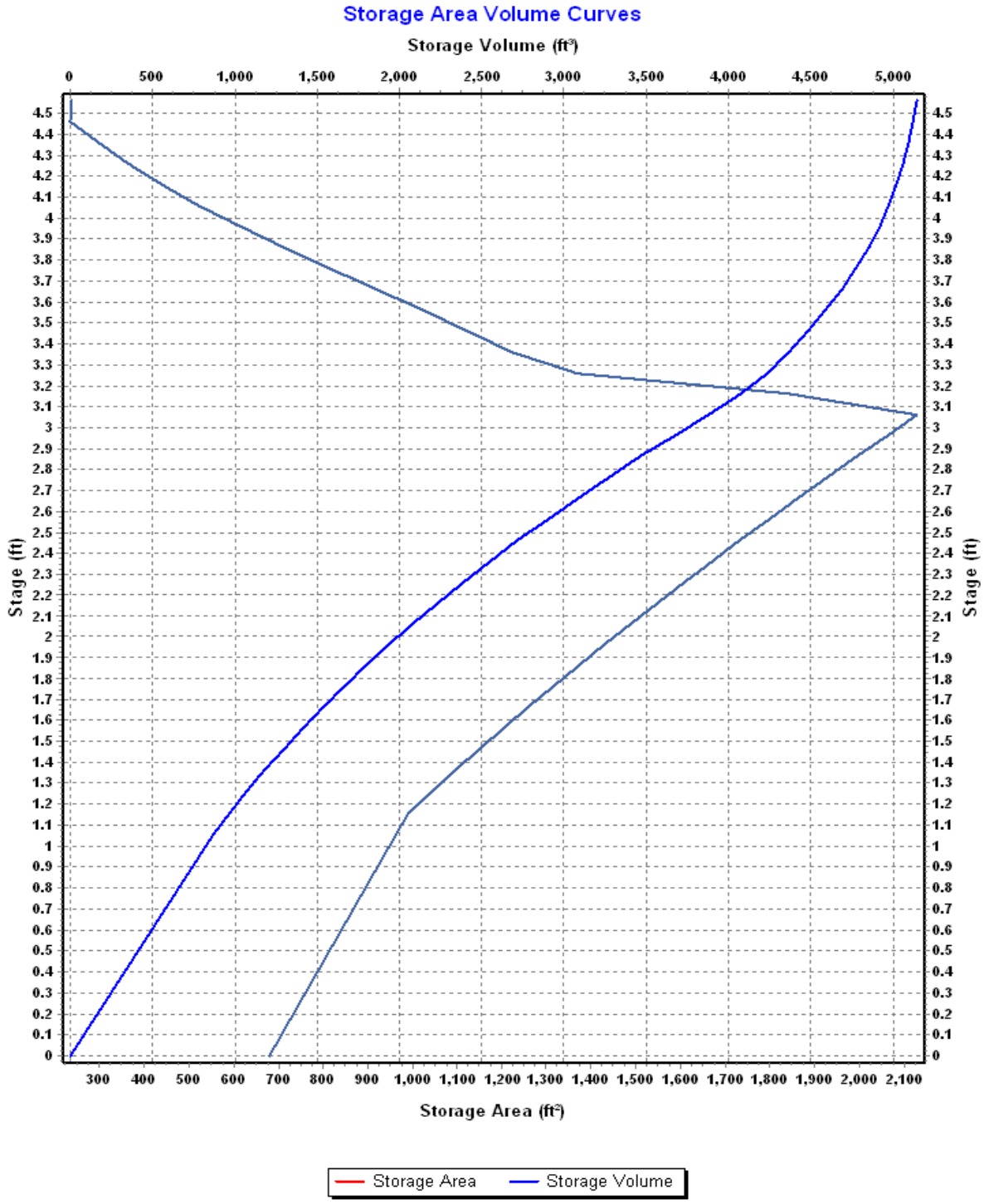
Exfiltration Rate (in/hr)	4.1500

Storage Area Volume Curves

Storage Curve : BR3C

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	681	0.000
1.06	963.86	871.78
1.16	990.19	969.48
1.26	1041.36	1071.06
1.36	1093.51	1177.80
1.46	1146.65	1289.81
1.56	1200.78	1407.18
1.66	1255.89	1530.01
1.76	1311.99	1658.40
1.86	1369.08	1792.45
1.96	1427.16	1932.26
2.06	1486.28	2077.93
2.16	1546.33	2229.56
2.26	1607.29	2387.24
2.36	1669.16	2551.06
2.46	1731.95	2721.12
2.56	1795.65	2897.50
2.66	1860.27	3080.30
2.76	1925.8	3269.60
2.86	1992.24	3465.50
2.96	2059.6	3668.09
3.06	2127.88	3877.46
3.16	1839.41	4075.82
3.26	1368.28	4236.20
3.36	1223.76	4365.80
3.46	1122.78	4483.13
3.56	1021.82	4590.36
3.66	920.87	4687.49
3.76	814.21	4774.24
3.86	709.9	4850.45
3.96	612.13	4916.55
4.06	521.34	4973.22
4.16	437.93	5021.18
4.26	362.17	5061.19
4.36	294.31	5094.01
4.46	234.5	5120.45
4.56	237.57	5144.05

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Storage Node : BR3C (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR3C	Bottom	CIRCULAR	No	24.00			911.95	0.61

Output Summary Results

Peak Inflow (cfs)	1.41
Peak Lateral Inflow (cfs)	0.00
Peak Outflow (cfs)	0.00
Peak Exfiltration Flow Rate (cfm)	7.76
Max HGL Elevation Attained (ft)	911.21
Max HGL Depth Attained (ft)	1.82
Average HGL Elevation Attained (ft)	909.47
Average HGL Depth Attained (ft)	0.08
Time of Max HGL Occurrence (days hh:mm)	0 01:12
Total Exfiltration Volume (1000-ft³)	2.010
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR4

Input Data

Invert Elevation (ft)	904.17
Max (Rim) Elevation (ft)	908.79
Max (Rim) Offset (ft)	4.62
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-904.17
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

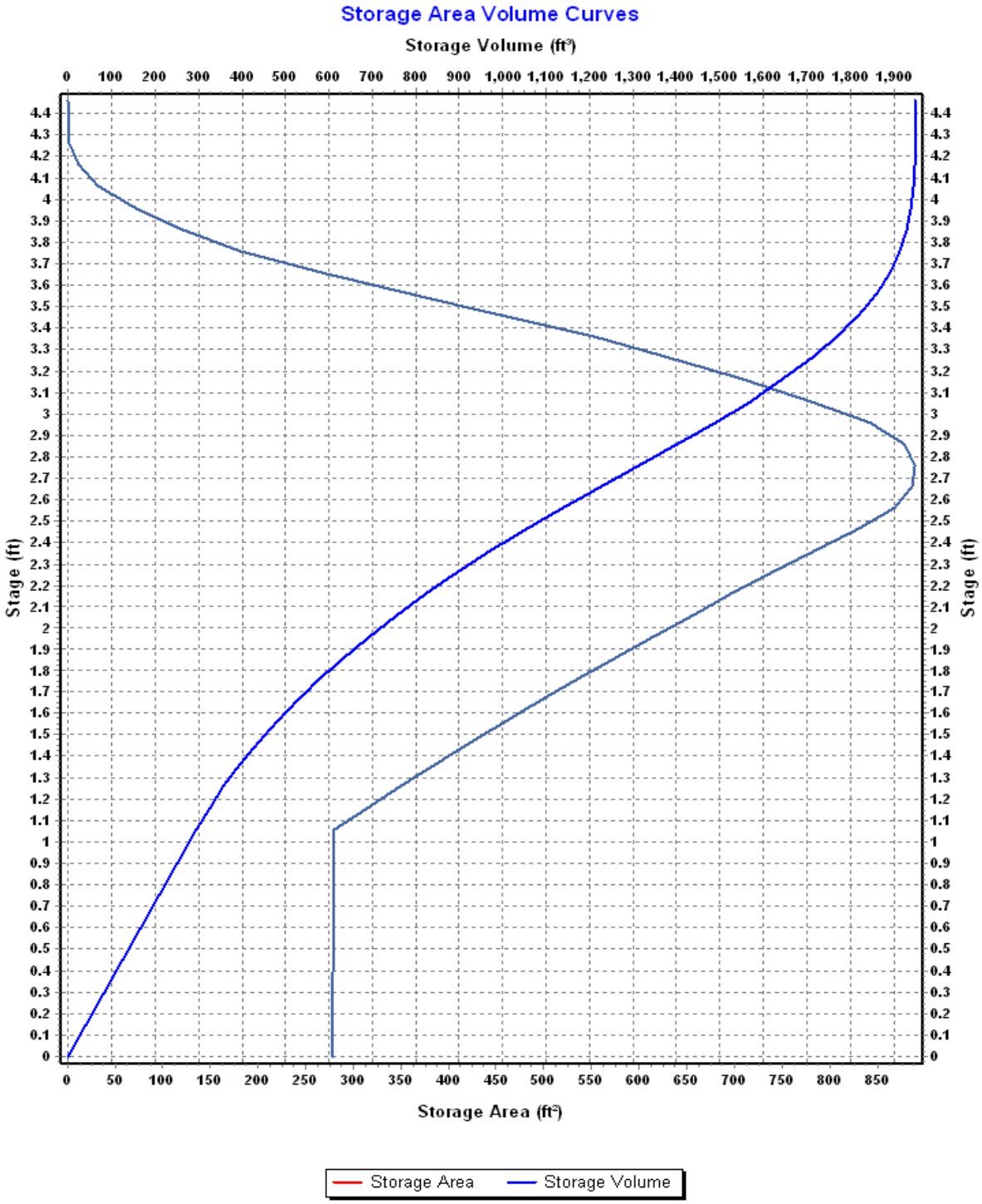
Exfiltration Rate (in/hr)	0.7500

Storage Area Volume Curves

Storage Curve : BR4

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	278	0.000
1.06	278.97	295.19
1.16	314.62	324.87
1.26	349.57	358.08
1.36	384.97	394.81
1.46	421.01	435.11
1.56	457.86	479.05
1.66	495.61	526.72
1.76	534.26	578.21
1.86	573.81	633.61
1.96	614.24	693.01
2.06	655.56	756.50
2.16	697.78	824.17
2.26	740.89	896.10
2.36	784.89	972.39
2.46	829.78	1053.12
2.56	868.08	1138.01
2.66	885.77	1225.70
2.76	889.34	1314.46
2.86	877.29	1402.79
2.96	841.77	1488.74
3.06	779.1	1569.78
3.16	707	1644.09
3.26	629.62	1710.92
3.36	551	1769.95
3.46	453.39	1820.17
3.56	357.92	1860.74
3.66	265.64	1891.92
3.76	181.58	1914.28
3.86	121.01	1929.41
3.96	71.61	1939.04
4.06	32.12	1944.23
4.16	12.15	1946.44
4.26	1.89	1947.14
4.36	1.39	1947.30
4.46	0.53	1947.40

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Storage Node : BR4 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR4	Bottom	CIRCULAR	No	24.00			906.23	0.61

Output Summary Results

Peak Inflow (cfs)	0.95
Peak Lateral Inflow (cfs)	0.95
Peak Outflow (cfs)	0.75
Peak Exfiltration Flow Rate (cfm)	0.73
Max HGL Elevation Attained (ft)	906.34
Max HGL Depth Attained (ft)	2.17
Average HGL Elevation Attained (ft)	904.66
Average HGL Depth Attained (ft)	0.49
Time of Max HGL Occurrence (days hh:mm)	0 00:53
Total Exfiltration Volume (1000-ft³)	0.789
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR5

Input Data

Invert Elevation (ft)	909.06
Max (Rim) Elevation (ft)	912.12
Max (Rim) Offset (ft)	3.06
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-909.06
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

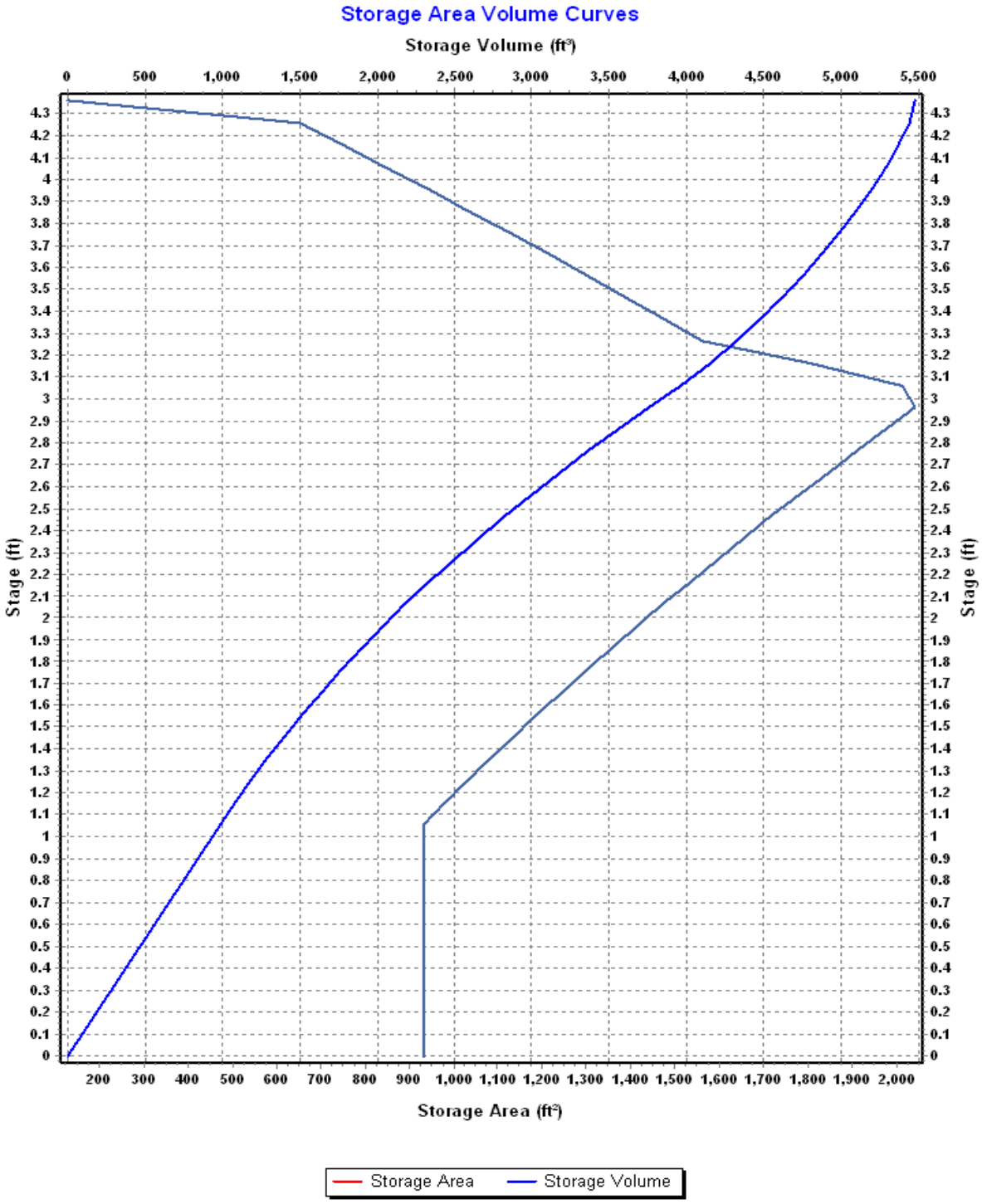
Exfiltration Rate (in/hr)	0.7000

Storage Area Volume Curves

Storage Curve : BR5

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	932	0.000
1.06	932.46	988.16
1.16	981.61	1083.86
1.26	1031.83	1184.53
1.36	1083.12	1290.28
1.46	1135.48	1401.21
1.56	1188.91	1517.43
1.66	1243.41	1639.05
1.76	1298.98	1766.17
1.86	1355.61	1898.90
1.96	1413.23	2037.34
2.06	1471.77	2181.59
2.16	1531.25	2331.74
2.26	1591.66	2487.89
2.36	1653	2650.12
2.46	1715.29	2818.53
2.56	1778.51	2993.22
2.66	1842.66	3174.28
2.76	1907.75	3361.80
2.86	1973.78	3555.88
2.96	2040.74	3756.61
3.06	2014.36	3959.37
3.16	1806.31	4150.40
3.26	1561.66	4318.80
3.36	1476.5	4470.71
3.46	1390.03	4614.04
3.56	1302.24	4748.65
3.66	1213.13	4874.42
3.76	1122.71	4991.21
3.86	1030.97	5098.89
3.96	937.91	5197.33
4.06	843.53	5286.40
4.16	747.83	5365.97
4.26	650.82	5435.90
4.36	128.99	5474.89

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Storage Node : BR5 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR5	Bottom	CIRCULAR	No	24.00			911.62	0.61

Output Summary Results

Peak Inflow (cfs)	1.31
Peak Lateral Inflow (cfs)	1.31
Peak Outflow (cfs)	0.00
Peak Exfiltration Flow Rate (cfm)	1.27
Max HGL Elevation Attained (ft)	910.84
Max HGL Depth Attained (ft)	1.78
Average HGL Elevation Attained (ft)	909.45
Average HGL Depth Attained (ft)	0.39
Time of Max HGL Occurrence (days hh:mm)	0 01:17
Total Exfiltration Volume (1000-ft³)	1.850
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR6

Input Data

Invert Elevation (ft)	902.92
Max (Rim) Elevation (ft)	913.75
Max (Rim) Offset (ft)	10.83
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-902.92
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

Exfiltration Rate (in/hr)	0.3500

Storage Area Volume Curves

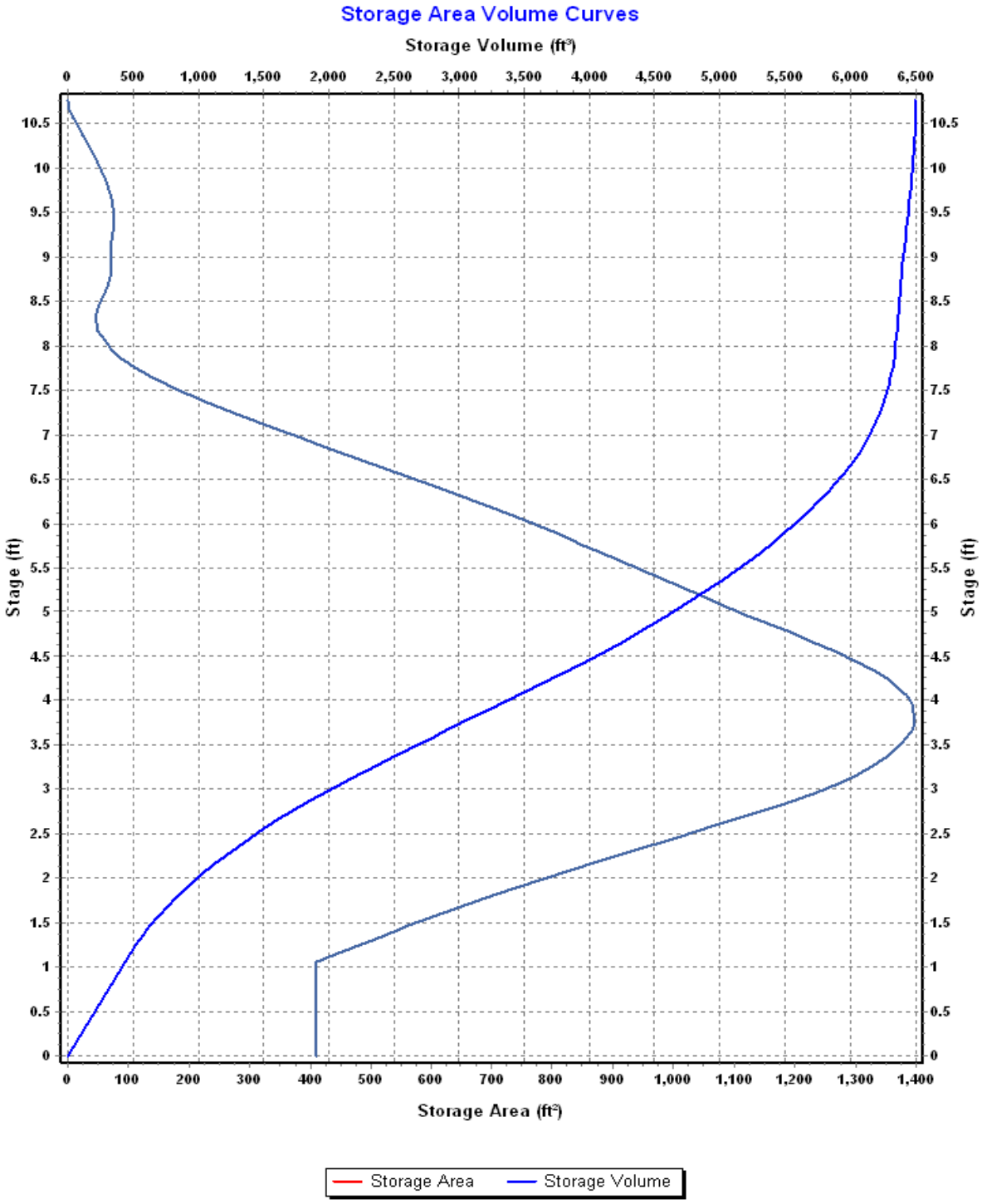
Storage Curve : BR6

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	410	0.000
1.06	410.77	435.01
1.16	446.75	477.89
1.26	483.71	524.41
1.36	521.65	574.68
1.46	560.56	628.79
1.56	600.46	686.84
1.66	641.33	748.93
1.76	683.18	815.16
1.86	726.02	885.62
1.96	769.83	960.41
2.06	814.61	1039.63
2.16	860.38	1123.38
2.26	907.13	1211.76
2.36	954.85	1304.86
2.46	1003.56	1402.78
2.56	1053.18	1505.62
2.66	1101.86	1613.37
2.76	1148.67	1725.90
2.86	1192.86	1842.98
2.96	1232.75	1964.26
3.06	1269.59	2089.38
3.16	1301.43	2217.93
3.26	1326.89	2349.35
3.36	1348.19	2483.10
3.46	1366.12	2618.82
3.56	1380.19	2756.14
3.66	1393.25	2894.81
3.76	1397.78	3034.36
3.86	1396.52	3174.08
3.96	1393.9	3313.60
4.06	1383.32	3452.46
4.16	1367.08	3589.98
4.26	1349.42	3725.81
4.36	1325.23	3859.54
4.46	1296.47	3990.63
4.56	1266.42	4118.77
4.66	1232.15	4243.70
4.76	1195.31	4365.07
4.86	1157.16	4482.69
4.96	1117.9	4596.44
5.06	1085.76	4706.62
5.16	1053.22	4813.57
5.26	1020.26	4917.24
5.36	986.9	5017.60
5.46	953.13	5114.60
5.56	918.95	5208.20
5.66	884.36	5298.37
5.76	849.37	5385.06
5.86	813.96	5468.23
5.96	778.15	5547.84
6.06	741.93	5623.84
6.16	705.08	5696.19
6.26	666.84	5764.79
6.36	628.22	5829.54
6.46	588.79	5890.39
6.56	548.05	5947.23
6.66	507.07	5999.99
6.76	465.94	6048.64
6.86	424.78	6093.18
6.96	383.49	6133.59
7.06	343.09	6169.92
7.16	303.81	6202.27
7.26	265.15	6230.72
7.36	229.45	6255.45
7.46	195.88	6276.72
7.56	163.53	6294.69
7.66	136.12	6309.67

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7.76	111.42	6322.05
7.86	88.83	6332.06
7.96	72.96	6340.15
8.06	60.06	6346.80
8.16	50.27	6352.32
8.26	47.61	6357.21
8.36	48.49	6362.02
8.46	53.24	6367.11
8.56	58.59	6372.70
8.66	64.53	6378.86
8.76	69.87	6385.58
8.86	71.43	6392.65
8.96	72.11	6399.83
9.06	72.32	6407.05
9.16	72.64	6414.30
9.26	74.98	6421.68
9.36	76.22	6429.24
9.46	76.74	6436.89
9.56	75.34	6444.49
9.66	72.1	6451.86
9.76	68.49	6458.89
9.86	63.88	6465.51
9.96	56.95	6471.55
10.06	50.1	6476.90
10.16	43.32	6481.57
10.26	34.16	6485.44
10.36	25.48	6488.42
10.46	17.32	6490.56
10.56	9.08	6491.88
10.66	3.27	6492.50
10.76	0.36	6492.68

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Storage Node : BR6 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR6	Bottom	CIRCULAR	No	24.00			904.98	0.61

Output Summary Results

Peak Inflow (cfs)	1.85
Peak Lateral Inflow (cfs)	0.00
Peak Outflow (cfs)	1.80
Peak Exfiltration Flow Rate (cfm)	0.44
Max HGL Elevation Attained (ft)	905.18
Max HGL Depth Attained (ft)	2.26
Average HGL Elevation Attained (ft)	903.96
Average HGL Depth Attained (ft)	1.04
Time of Max HGL Occurrence (days hh:mm)	0 00:52
Total Exfiltration Volume (1000-ft³)	1.063
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR7

Input Data

Invert Elevation (ft)	895.77
Max (Rim) Elevation (ft)	901.73
Max (Rim) Offset (ft)	5.96
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-895.77
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

Exfiltration Rate (in/hr)	0.3500

Storage Area Volume Curves

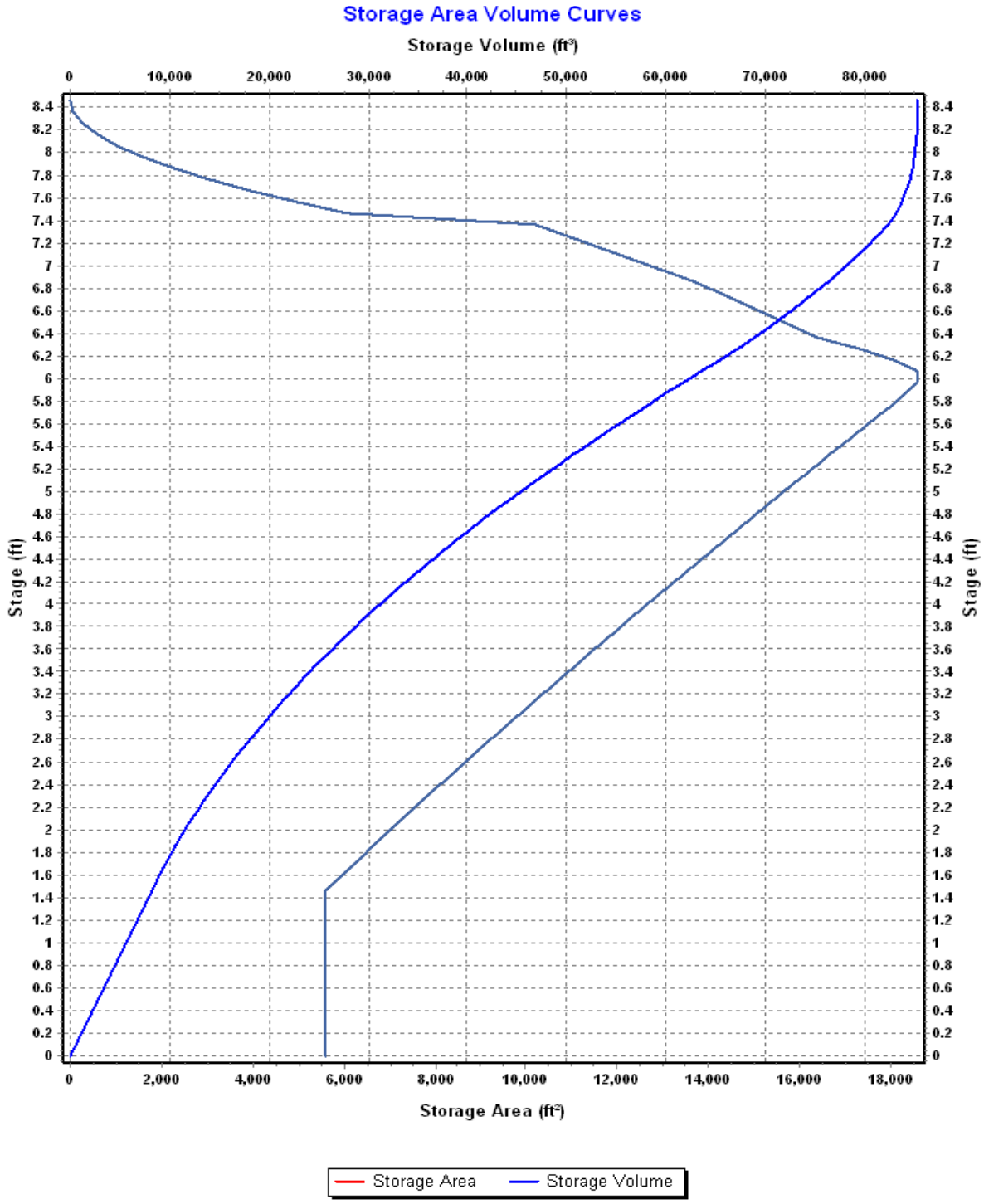
Storage Curve : BR7

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	5595	0.000
1.46	5595.13	8168.79
1.56	5856.73	8741.38
1.66	6119.66	9340.20
1.76	6383.94	9965.38
1.86	6649.55	10617.05
1.96	6916.5	11295.35
2.06	7184.79	12000.41
2.16	7454.41	12732.37
2.26	7725.38	13491.36
2.36	7997.69	14277.51
2.46	8271.33	15090.96
2.56	8546.31	15931.84
2.66	8822.63	16800.29
2.76	9100.3	17696.44
2.86	9379.31	18620.42
2.96	9659.68	19572.37
3.06	9941.38	20552.42
3.16	10224.44	21560.71
3.26	10508.84	22597.37
3.36	10794.59	23662.54
3.46	11081.69	24756.35
3.56	11370.12	25878.94
3.66	11659.61	27030.43
3.76	11950.17	28210.92
3.86	12241.84	29420.52
3.96	12534.6	30659.34
4.06	12828.48	31927.49
4.16	13123.45	33225.09
4.26	13419.52	34552.24
4.36	13716.7	35909.05
4.46	14014.97	37295.63
4.56	14314.29	38712.09
4.66	14614.69	40158.54
4.76	14916.14	41635.08
4.86	15218.67	43141.82
4.96	15522.25	44678.87
5.06	15826.91	46246.33
5.16	16132.63	47844.31
5.26	16439.41	49472.91
5.32	16623.99	50464.81
5.36	16747.26	51132.24
5.46	17056.17	52822.41
5.56	17366.15	54543.53
5.66	17677.19	56295.70
5.76	17989.3	58079.02
5.86	18302.47	59893.61
5.96	18561.7	61736.82
6.06	18563.99	63593.10
6.16	18028.51	65422.73
6.26	17266.47	67187.48
6.36	16354.62	68868.53
6.46	15821.95	70477.36
6.56	15283.77	72032.65
6.66	14740.05	73533.84
6.76	14190.76	74980.38
6.86	13635.89	76371.71
6.96	12950.52	77701.03
7.06	12263.14	78961.71
7.16	11573.75	80153.55
7.26	10882.35	81276.36
7.36	10188.94	82329.92
7.46	6084.34	83143.58
7.56	4958.1	83695.70
7.66	3945.56	84140.88
7.76	3046.43	84490.48
7.86	2260.65	84755.83
7.96	1588.12	84948.27

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8.06	1028.71	85079.11
8.16	592.94	85160.19
8.26	270.69	85203.37
8.36	49.56	85219.38
8.46	2.12	85221.96

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Storage Node : BR7 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR7B	Bottom	CIRCULAR	No	24.00			901.23	0.61

Output Summary Results

Peak Inflow (cfs)	4.94
Peak Lateral Inflow (cfs)	1.67
Peak Outflow (cfs)	0.00
Peak Exfiltration Flow Rate (cfm)	2.72
Max HGL Elevation Attained (ft)	897.00
Max HGL Depth Attained (ft)	1.23
Average HGL Elevation Attained (ft)	896.14
Average HGL Depth Attained (ft)	0.37
Time of Max HGL Occurrence (days hh:mm)	0 01:26
Total Exfiltration Volume (1000-ft³)	7.050
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR8

Input Data

Invert Elevation (ft)	900.16
Max (Rim) Elevation (ft)	910.55
Max (Rim) Offset (ft)	10.39
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-900.16
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

Exfiltration Rate (in/hr)	0.2500

Storage Area Volume Curves

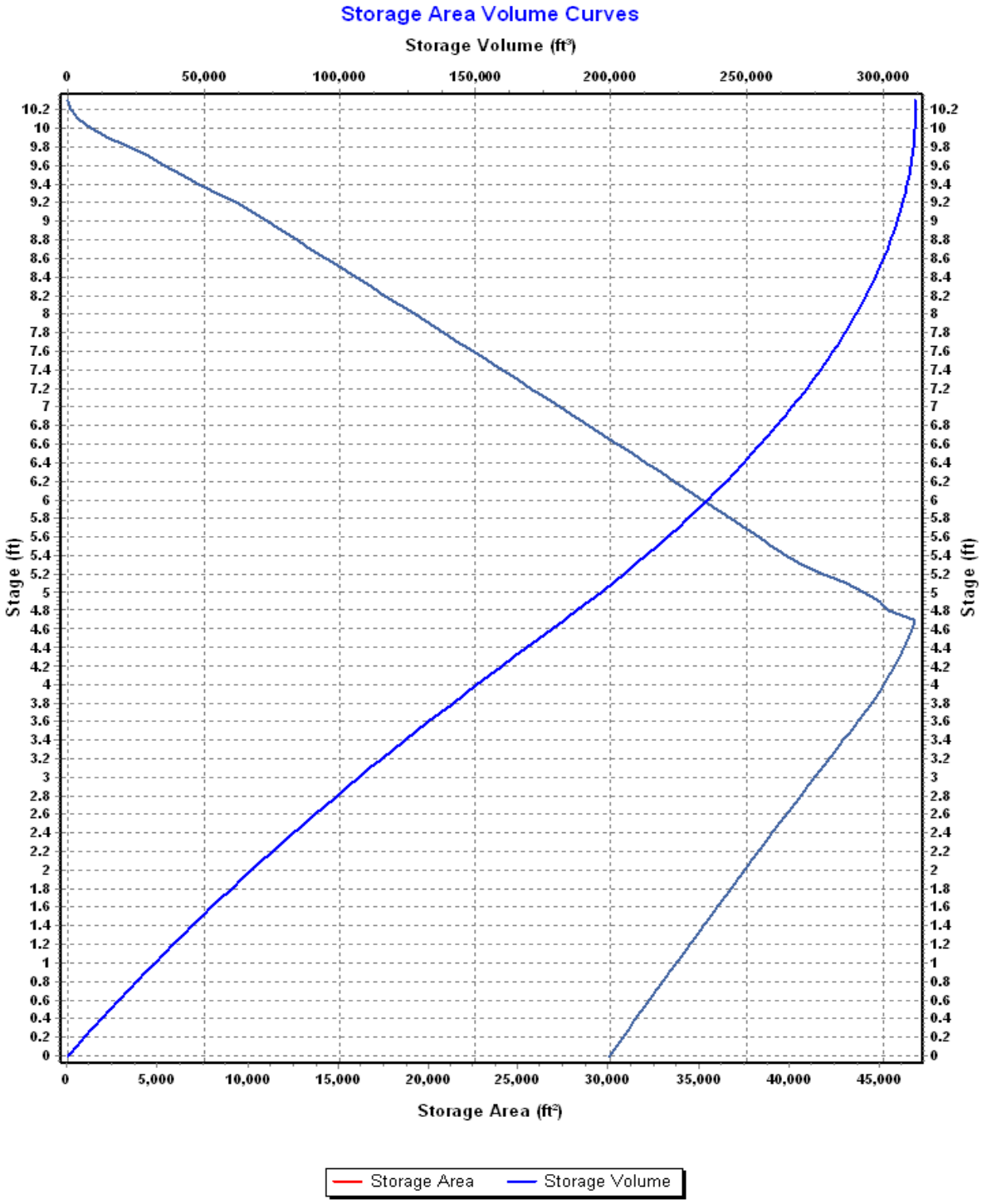
Storage Curve : RB

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	30060.38	0.000
0.1	30423.69	3024.20
0.2	30787.95	6084.78
0.3	31153.19	9181.84
0.4	31519.45	12315.47
0.5	31886.76	15485.78
0.6	32255.10	18692.87
0.7	32624.50	21936.85
0.8	32994.93	25217.82
0.9	33366.41	28535.89
1	33738.93	31891.16
1.1	34112.50	35283.73
1.2	34487.11	38713.71
1.3	34862.77	42181.20
1.4	35239.47	45686.31
1.5	35617.21	49229.14
1.6	35996.00	52809.80
1.7	36375.83	56428.39
1.8	36756.70	60085.02
1.9	37138.62	63779.79
2	37521.58	67512.80
2.1	37905.58	71284.16
2.2	38290.63	75093.97
2.3	38676.72	78942.34
2.4	39063.86	82829.37
2.46	39296.65	85180.19
2.5	39452.06	86755.16
2.6	39841.31	90719.83
2.7	40231.63	94723.48
2.8	40623.00	98766.21
2.9	41015.43	102848.13
3	41408.92	106969.35
3.1	41803.47	111129.97
3.2	42199.08	115330.10
3.3	42595.75	119569.84
3.4	42993.48	123849.30
3.5	43391.60	128168.55
3.6	43782.14	132527.24
3.7	44164.57	136924.58
3.8	44540.20	141359.82
3.9	44901.66	145831.91
4	45239.40	150338.96
4.1	45563.92	154879.13
4.2	45871.31	159450.89
4.3	46138.45	164051.38
4.4	46386.90	168677.65
4.5	46616.67	173327.83
4.6	46811.15	177999.22
4.7	46971.49	182688.35
4.8	45485.74	187311.21
4.9	45023.21	191836.66
5	44212.48	196298.44
5.1	43110.78	200664.60
5.2	41818.89	204911.08
5.3	40592.21	209031.64
5.4	39822.87	213052.39
5.5	39051.68	216996.12
5.6	38278.65	220862.64
5.7	37503.79	224651.76
5.8	36727.15	228363.31
5.9	35948.71	231997.10
6	35168.56	235552.96
6.1	34386.68	239030.72
6.2	33603.09	242430.21
6.3	32817.87	245751.26
6.4	32030.97	248993.70
6.5	31242.50	252157.37
6.6	30452.43	255242.12

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6.7	29660.78	258247.78
6.8	28867.64	261174.20
6.9	28072.95	264021.23
7	27276.82	266788.72
7.1	26479.23	269476.52
7.2	25680.17	272084.49
7.3	24879.78	274612.49
7.4	24077.96	277060.38
7.5	23274.83	279428.02
7.6	22470.38	281715.28
7.7	21664.58	283922.03
7.8	20857.60	286048.14
7.9	20049.29	288093.48
8	19239.75	290057.93
8.1	18429.02	291941.37
8.2	17617.00	293743.67
8.3	16803.95	295464.72
8.4	15989.67	297104.40
8.5	15174.27	298662.60
8.6	14357.79	300139.20
8.7	13540.07	301534.09
8.8	12721.38	302847.16
8.9	11901.56	304078.31
9	11080.62	305227.42
9.1	10258.76	306294.39
9.2	9327.55	307273.71
9.3	8324.12	308156.29
9.4	7321.13	308938.55
9.5	6362.76	309622.74
9.6	5439.54	310212.86
9.7	4519.10	310710.79
9.8	3459.55	311109.72
9.9	2336.41	311399.52
10	1375.60	311585.12
10.1	669.19	311687.36
10.2	186.39	311730.14
10.3	61.67	311742.54

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Storage Node : BR8 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR8A	Bottom	CIRCULAR	No	24.00			903.16	0.61

Output Summary Results

Peak Inflow (cfs)	9.34
Peak Lateral Inflow (cfs)	9.34
Peak Outflow (cfs)	0.00
Peak Exfiltration Flow Rate (cfm)	10.92
Max HGL Elevation Attained (ft)	900.54
Max HGL Depth Attained (ft)	0.38
Average HGL Elevation Attained (ft)	900.21
Average HGL Depth Attained (ft)	0.05
Time of Max HGL Occurrence (days hh:mm)	0 01:17
Total Exfiltration Volume (1000-ft³)	12.111
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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2-year/24-hour Rainfall Event Simulation Results

Project Description

File Name 20230.SPF

Project Options

Flow Units	CFS
Elevation Type	Elevation
Hydrology Method	SCS TR-55
Time of Concentration (TOC) Method	SCS TR-55
Link Routing Method	Kinematic Wave
Enable Overflow Ponding at Nodes	YES
Skip Steady State Analysis Time Periods	YES

Analysis Options

Start Analysis On	Oct 27, 2020	00:00:00
End Analysis On	Oct 30, 2020	00:00:00
Start Reporting On	Oct 27, 2020	00:00:00
Antecedent Dry Days	0	days
Runoff (Dry Weather) Time Step	0 01:00:00	days hh:mm:ss
Runoff (Wet Weather) Time Step	0 00:05:00	days hh:mm:ss
Reporting Time Step	0 00:06:00	days hh:mm:ss
Routing Time Step	30	seconds

Number of Elements

	Qty
Rain Gages	1
Subbasins	18
Nodes	50
Junctions	37
Outfalls	3
Flow Diversions	0
Inlets	0
Storage Nodes	10
Links	47
Channels	0
Pipes	37
Pumps	0
Orifices	10
Weirs	0
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1	Project	Time Series	2YR24HR	Cumulative	inches	California	San Bernardino (Victorville)	2	1.33	SCS Type I 24-hr

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Subbasin Summary

SN	Subbasin ID	Area (ac)	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	A01	0.92	90.57	1.33	0.58	0.54	0.35	0 00:10:00
2	A02	2.31	89.00	1.33	0.51	1.17	0.73	0 00:10:00
3	A04	1.11	89.00	1.33	0.51	0.56	0.35	0 00:10:00
4	A05	2.33	89.00	1.33	0.51	1.18	0.73	0 00:10:00
5	A06	1.52	89.00	1.33	0.51	0.77	0.48	0 00:10:00
6	A07	0.45	89.00	1.33	0.51	0.23	0.14	0 00:10:00
7	A08	1.59	89.00	1.33	0.51	0.80	0.50	0 00:10:00
8	A09	1.94	89.00	1.33	0.51	0.98	0.61	0 00:10:00
9	A10	16.37	84.72	1.33	0.34	5.55	2.85	0 00:10:00
10	A11a	0.92	98.00	1.33	1.11	1.02	0.72	0 00:10:00
11	A11b	0.64	98.00	1.33	1.11	0.71	0.50	0 00:10:00
12	A12	1.73	98.00	1.33	1.11	1.93	1.35	0 00:10:00
13	A13	3.78	98.00	1.33	1.11	4.21	2.95	0 00:10:00
14	A3A	0.54	95.00	1.33	0.86	0.46	0.33	0 00:10:00
15	A3B	0.80	91.77	1.33	0.65	0.52	0.35	0 00:10:00
16	A3C	1.34	89.00	1.33	0.51	0.68	0.42	0 00:10:00
17	RVPREDEV	16.37	70.76	1.33	0.06	0.90	0.08	0 01:40:47
18	TS-PREDEV	21.91	65.01	1.33	0.01	0.24	0.04	0 01:47:10

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Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft²)	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	J01	Junction	913.15	914.89	913.15	0.00	0.00	0.00	913.15	0.00	1.74	0 00:00	0.00	0.00
2	J02	Junction	907.89	912.64	907.89	0.00	0.00	0.73	908.34	0.00	4.30	0 00:00	0.00	0.00
3	J03	Junction	914.78	917.97	914.78	0.00	0.00	0.35	915.08	0.00	2.89	0 00:00	0.00	0.00
4	J04	Junction	910.56	914.38	910.56	0.00	0.00	0.42	910.86	0.00	3.52	0 00:00	0.00	0.00
5	J05	Junction	902.68	907.43	902.68	0.00	0.00	0.14	902.87	0.00	4.56	0 00:00	0.00	0.00
6	J06	Junction	902.12	906.87	902.12	0.00	0.00	0.50	902.29	0.00	4.58	0 00:00	0.00	0.00
7	J07	Junction	895.73	900.98	895.73	0.00	0.00	1.32	896.08	0.00	4.90	0 00:00	0.00	0.00
8	J08	Junction	898.06	902.31	898.06	0.00	0.00	0.49	898.27	0.00	4.04	0 00:00	0.00	0.00
9	J09	Junction	898.06	902.31	898.06	0.00	0.00	0.70	898.31	0.00	4.00	0 00:00	0.00	0.00
10	J10	Junction	886.32	890.92	886.32	0.00	0.00	2.89	887.17	0.00	3.75	0 00:00	0.00	0.00
11	O1	Junction	916.83	921.08	916.83	0.00	0.00	0.00	916.83	0.00	4.25	0 00:00	0.00	0.00
12	O2	Junction	909.85	914.85	909.85	0.00	0.00	0.00	909.85	0.00	5.00	0 00:00	0.00	0.00
13	O3A	Junction	915.23	921.60	915.23	0.00	0.00	0.00	915.23	0.00	6.37	0 00:00	0.00	0.00
14	O3B	Junction	911.08	916.72	911.08	0.00	0.00	0.02	911.14	0.00	5.58	0 00:00	0.00	0.00
15	O3C	Junction	906.09	912.24	906.09	0.00	0.00	0.00	906.09	0.00	6.15	0 00:00	0.00	0.00
16	O4	Junction	902.98	906.80	902.98	0.00	0.00	0.04	903.07	0.00	3.73	0 00:00	0.00	0.00
17	O5	Junction	907.79	912.12	907.79	0.00	0.00	0.00	907.79	0.00	4.33	0 00:00	0.00	0.00
18	O6	Junction	901.23	905.48	901.23	0.00	0.00	0.20	901.34	0.00	4.14	0 00:00	0.00	0.00
19	O7	Junction	888.27	901.23	888.27	0.00	0.00	0.00	888.27	0.00	12.96	0 00:00	0.00	0.00
20	O8A	Junction	894.34	903.66	894.34	0.00	0.00	0.00	894.34	0.00	9.32	0 00:00	0.00	0.00
21	SDMH01	Junction	916.48	921.15	916.48	0.00	0.00	0.00	916.58	0.00	4.57	0 00:00	0.00	0.00
22	SDMH02	Junction	909.48	914.04	909.48	0.00	0.00	0.00	909.58	0.00	4.46	0 00:00	0.00	0.00
23	SDMH03	Junction	907.54	914.70	907.54	0.00	0.00	0.73	909.08	0.00	5.62	0 00:00	0.00	0.00
24	SDMH04	Junction	907.26	914.39	907.26	0.00	0.00	0.72	907.81	0.00	6.58	0 00:00	0.00	0.00
25	SDMH05	Junction	907.53	914.79	907.53	0.00	0.00	0.00	907.63	0.00	7.16	0 00:00	0.00	0.00
26	SDMH06	Junction	905.75	910.18	905.75	0.00	0.00	0.00	905.75	0.00	4.43	0 00:00	0.00	0.00
27	SDMH07	Junction	905.33	909.05	905.33	0.00	0.00	0.00	905.43	0.00	3.62	0 00:00	0.00	0.00
28	SDMH08	Junction	902.75	909.14	902.75	0.00	0.00	0.04	902.94	0.00	6.20	0 00:00	0.00	0.00
29	SDMH09	Junction	901.44	907.96	901.44	0.00	0.00	0.14	902.79	0.00	5.17	0 00:00	0.00	0.00
30	SDMH10	Junction	900.51	907.70	900.51	0.00	0.00	0.61	900.78	0.00	6.92	0 00:00	0.00	0.00
31	SDMH11	Junction	894.85	901.92	894.85	0.00	0.00	1.32	895.34	0.00	6.58	0 00:00	0.00	0.00
32	SDMH12	Junction	893.85	903.70	893.85	0.00	0.00	1.30	894.34	0.00	9.36	0 00:00	0.00	0.00
33	SDMH13	Junction	897.40	902.76	897.40	0.00	0.00	1.18	897.99	0.00	4.77	0 00:00	0.00	0.00
34	SDMH14	Junction	893.13	902.49	893.13	0.00	0.00	2.41	895.34	0.00	7.15	0 00:00	0.00	0.00
35	SDMH15	Junction	886.12	891.87	886.12	0.00	0.00	5.12	887.13	0.00	4.74	0 00:00	0.00	0.00
36	SDMH16	Junction	885.50	893.01	885.50	0.00	0.00	5.09	886.72	0.00	6.29	0 00:00	0.00	0.00
37	SDMH17	Junction	884.58	889.78	884.58	0.00	0.00	5.06	885.62	0.00	4.16	0 00:00	0.00	0.00
38	OUT1	Outfall	884.42					5.06	885.35					
39	RVPRE	Outfall	0.00					0.08	0.00					
40	TSPRE	Outfall	0.00					0.04	0.00					
41	BR1	Storage Node	918.02	922.46	0.00		0.00	0.35	918.03				0.00	0.00
42	BR2	Storage Node	911.79	915.12	0.00		0.00	0.73	913.99				0.00	0.00
43	BR3A	Storage Node	918.54	922.87	0.00		0.00	0.32	919.13				0.00	0.00
44	BR3B	Storage Node	914.16	917.97	0.00		0.00	0.34	916.23				0.00	0.00
45	BR3C	Storage Node	909.39	912.45	0.00		0.00	0.42	909.94				0.00	0.00
46	BR4	Storage Node	904.17	908.79	0.00		0.00	0.35	906.24				0.00	0.00
47	BR5	Storage Node	909.06	912.12	0.00		0.00	0.48	910.81				0.00	0.00
48	BR6	Storage Node	902.92	913.75	0.00		0.00	0.72	905.03				0.00	0.00
49	BR7	Storage Node	895.77	901.73	0.00		0.00	1.22	897.25				0.00	0.00
50	BR8	Storage Node	900.16	910.55	0.00		0.00	2.81	900.51				0.00	0.00

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Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	(ft)		(min)	
1	P01	Pipe	O1	SDMH01	102.69	916.83	916.58	0.2400	12.000	0.0130	0.00	1.76	0.00	0.00	0.00	0.00	0.00	Calculated
2	P02	Pipe	SDMH01	J01	198.58	916.48	913.15	1.6800	12.000	0.0130	0.00	4.61	0.00	0.00	0.00	0.00	0.00	Calculated
3	P03	Pipe	J01	BR2	18.00	913.15	912.85	1.6700	12.000	0.0130	0.00	4.60	0.00	0.00	0.00	0.00	0.00	Calculated
4	P04	Pipe	O2	SDMH02	111.00	909.85	909.58	0.2400	12.000	0.0130	0.00	1.76	0.00	0.00	0.00	0.00	0.00	Calculated
5	P05	Pipe	SDMH02	SDMH03	160.94	909.48	909.08	0.2500	12.000	0.0130	0.00	1.78	0.00	0.00	0.00	0.00	0.00	Calculated
6	P06	Pipe	J02	SDMH03	99.00	907.89	907.64	0.2500	12.000	0.0130	0.73	1.79	0.41	2.17	0.44	0.44	0.00	Calculated
7	P07	Pipe	SDMH03	SDMH04	74.09	907.54	907.36	0.2400	12.000	0.0130	0.72	1.76	0.41	2.13	0.44	0.45	0.00	Calculated
8	P08	Pipe	O5	SDMH05	66.52	907.79	907.63	0.2400	12.000	0.0130	0.00	1.75	0.00	0.00	0.00	0.00	0.00	Calculated
9	P09	Pipe	SDMH05	SDMH04	70.26	907.53	907.36	0.2400	12.000	0.0130	0.00	1.75	0.00	0.00	0.00	0.00	0.00	Calculated
10	P10	Pipe	SDMH04	BR6	92.00	907.26	903.48	4.1100	12.000	0.0130	0.72	7.22	0.10	5.89	0.21	0.21	0.00	Calculated
11	P11	Pipe	O6	BR7	74.00	901.23	897.49	5.0500	12.000	0.0130	0.20	8.01	0.03	4.16	0.11	0.11	0.00	Calculated
12	P12	Pipe	O3A	J03	141.00	915.23	914.88	0.2500	12.000	0.0130	0.00	1.78	0.00	0.00	0.00	0.00	0.00	Calculated
13	P13	Pipe	J03	BR3B	25.00	914.78	914.72	0.2400	12.000	0.0130	0.34	1.75	0.20	1.73	0.30	0.30	0.00	Calculated
14	P14	Pipe	O3B	J04	83.00	911.08	910.66	0.5100	12.000	0.0130	0.02	2.53	0.01	0.88	0.06	0.06	0.00	Calculated
15	P15	Pipe	J04	BR3C	23.00	910.56	910.45	0.4800	12.000	0.0150	0.42	2.14	0.20	2.11	0.30	0.30	0.00	Calculated
16	P16	Pipe	O3C	SDMH06	102.00	906.09	905.75	0.3300	12.000	0.0130	0.00	2.06	0.00	0.00	0.00	0.00	0.00	Calculated
17	P17	Pipe	SDMH06	SDMH07	99.00	905.75	905.43	0.3200	12.000	0.0130	0.00	2.03	0.00	0.00	0.00	0.00	0.00	Calculated
18	P18	Pipe	SDMH07	BR4	31.00	905.33	905.23	0.3200	12.000	0.0130	0.00	2.02	0.00	0.00	0.00	0.00	0.00	Calculated
19	P19	Pipe	O4	SDMH08	50.02	902.98	902.85	0.2600	18.000	0.0130	0.04	5.36	0.01	0.87	0.09	0.06	0.00	Calculated
20	P20	Pipe	SDMH08	SDMH09	83.99	902.75	902.54	0.2500	18.000	0.0130	0.04	5.25	0.01	0.86	0.09	0.06	0.00	Calculated
21	P21	Pipe	J05	SDMH09	30.00	902.68	902.60	0.2700	12.000	0.0130	0.14	1.84	0.08	1.39	0.19	0.19	0.00	Calculated
22	P22	Pipe	SDMH09	SDMH10	331.00	901.44	900.61	0.2500	18.000	0.0130	0.13	5.26	0.02	1.31	0.16	0.11	0.00	Calculated
23	P23	Pipe	J06	SDMH10	32.00	902.12	900.61	4.7200	12.000	0.0130	0.50	7.74	0.06	5.53	0.17	0.17	0.00	Calculated
24	P24	Pipe	SDMH10	BR7	89.00	900.51	897.23	3.6900	18.000	0.0130	0.61	20.17	0.03	5.16	0.18	0.12	0.00	Calculated
25	P25	Pipe	O7	J10	62.00	888.27	887.17	1.7700	12.000	0.0130	0.00	4.75	0.00	0.00	0.00	0.00	0.00	Calculated
26	P26	Pipe	O8A	SDMH12	130.00	894.34	893.85	0.3800	12.000	0.0130	0.00	2.19	0.00	0.00	0.00	0.00	0.00	Calculated
27	P27	Pipe	J07	SDMH11	39.00	895.73	894.95	2.0000	12.000	0.0130	1.32	5.04	0.26	5.40	0.35	0.35	0.00	Calculated
28	P28	Pipe	SDMH11	SDMH12	333.48	894.85	893.85	0.3000	18.000	0.0130	1.30	5.75	0.23	2.68	0.48	0.32	0.00	Calculated
29	P29	Pipe	SDMH12	SDMH14	208.00	893.85	893.23	0.3000	18.000	0.0130	1.28	5.73	0.22	2.64	0.47	0.32	0.00	Calculated
30	P30	Pipe	J09	SDMH13	16.00	898.06	897.74	2.0000	12.000	0.0130	0.70	5.04	0.14	4.50	0.25	0.25	0.00	Calculated
31	P31	Pipe	J08	SDMH13	28.00	898.06	897.50	2.0000	12.000	0.0130	0.49	5.04	0.10	4.07	0.21	0.21	0.00	Calculated
32	P32	Pipe	SDMH13	SDMH14	93.00	897.40	895.07	2.5100	18.000	0.0130	1.18	16.63	0.07	5.46	0.27	0.18	0.00	Calculated
33	P33	Pipe	SDMH14	SDMH15	745.00	893.13	886.22	0.9300	18.000	0.0130	2.38	10.12	0.24	4.78	0.49	0.33	0.00	Calculated
34	P34	Pipe	J10	SDMH15	39.00	886.32	886.12	0.5100	18.000	0.0130	2.87	7.52	0.38	3.97	0.64	0.43	0.00	Calculated
35	P35	Pipe	SDMH15	SDMH16	200.04	886.12	885.72	0.2000	24.000	0.0130	5.09	10.12	0.50	3.24	1.00	0.50	0.00	Calculated
36	P36	Pipe	SDMH16	SDMH17	328.00	885.50	884.68	0.2500	24.000	0.0130	5.06	11.31	0.45	3.53	0.92	0.47	0.00	Calculated
37	P37	Pipe	SDMH17	OUT1	63.00	884.58	884.42	0.2500	24.000	0.0130	5.06	11.40	0.44	3.52	0.90	0.47	0.00	Calculated
38	OR1	Orifice	BR1	O1		918.02	916.83		24.000		0.00							
39	OR2	Orifice	BR2	O2		911.79	909.85		24.000		0.00							
40	OR3A	Orifice	BR3A	O3A		918.54	915.23		24.000		0.00							
41	OR3B	Orifice	BR3B	O3B		914.16	911.08		24.000		0.02							
42	OR3C	Orifice	BR3C	O3C		909.39	906.09		24.000		0.00							
43	OR4	Orifice	BR4	O4		904.17	902.98		24.000		0.04							
44	OR5	Orifice	BR5	O5		909.06	907.79		24.000		0.00							
45	OR6	Orifice	BR6	O6		902.92	901.23		24.000		0.20							
46	OR7B	Orifice	BR7	O7		895.77	888.27		24.000		0.00							
47	OR8A	Orifice	BR8	O8A		900.16	894.34		24.000		0.00							

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Subbasin Hydrology

Subbasin : A01

Input Data

Area (ac) 0.92
Weighted Curve Number 90.57
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	0.24	D	95.00
Urban commercial, 85% imp	0.68	A	89.00
Composite Area & Weighted CN	0.92		90.57

Time of Concentration

TOC Method : SCS TR-55

Sheet Flow Equation :

Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))

Where :

Tc = Time of Concentration (hr)
n = Manning's roughness
Lf = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation :

V = 16.1345 * (Sf^0.5) (unpaved surface)
V = 20.3282 * (Sf^0.5) (paved surface)
V = 15.0 * (Sf^0.5) (grassed waterway surface)
V = 10.0 * (Sf^0.5) (nearly bare & untilled surface)
V = 9.0 * (Sf^0.5) (cultivated straight rows surface)
V = 7.0 * (Sf^0.5) (short grass pasture surface)
V = 5.0 * (Sf^0.5) (woodland surface)
V = 2.5 * (Sf^0.5) (forest w/heavy litter surface)
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hr)
Lf = Flow Length (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)

Channel Flow Equation :

V = (1.49 * (R^(2/3)) * (Sf^0.5)) / n
R = Aq / Wp
Tc = (Lf / V) / (3600 sec/hr)

Where :

Tc = Time of Concentration (hr)
Lf = Flow Length (ft)
R = Hydraulic Radius (ft)
Aq = Flow Area (ft²)
Wp = Wetted Perimeter (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)
n = Manning's roughness

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

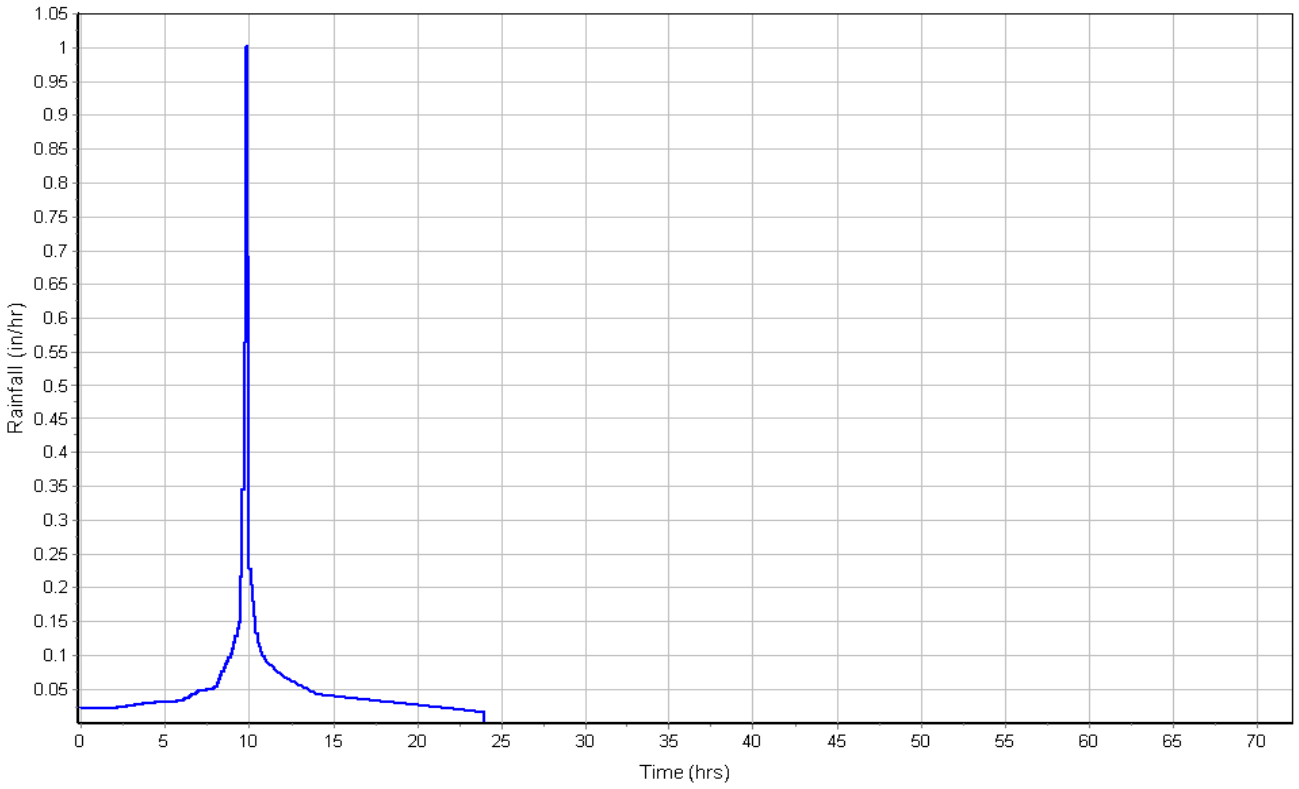
Total Rainfall (in) 1.33
Total Runoff (in) 0.58
Peak Runoff (cfs) 0.35
Weighted Curve Number 90.57
Time of Concentration (days hh:mm:ss) 0 00:10:00

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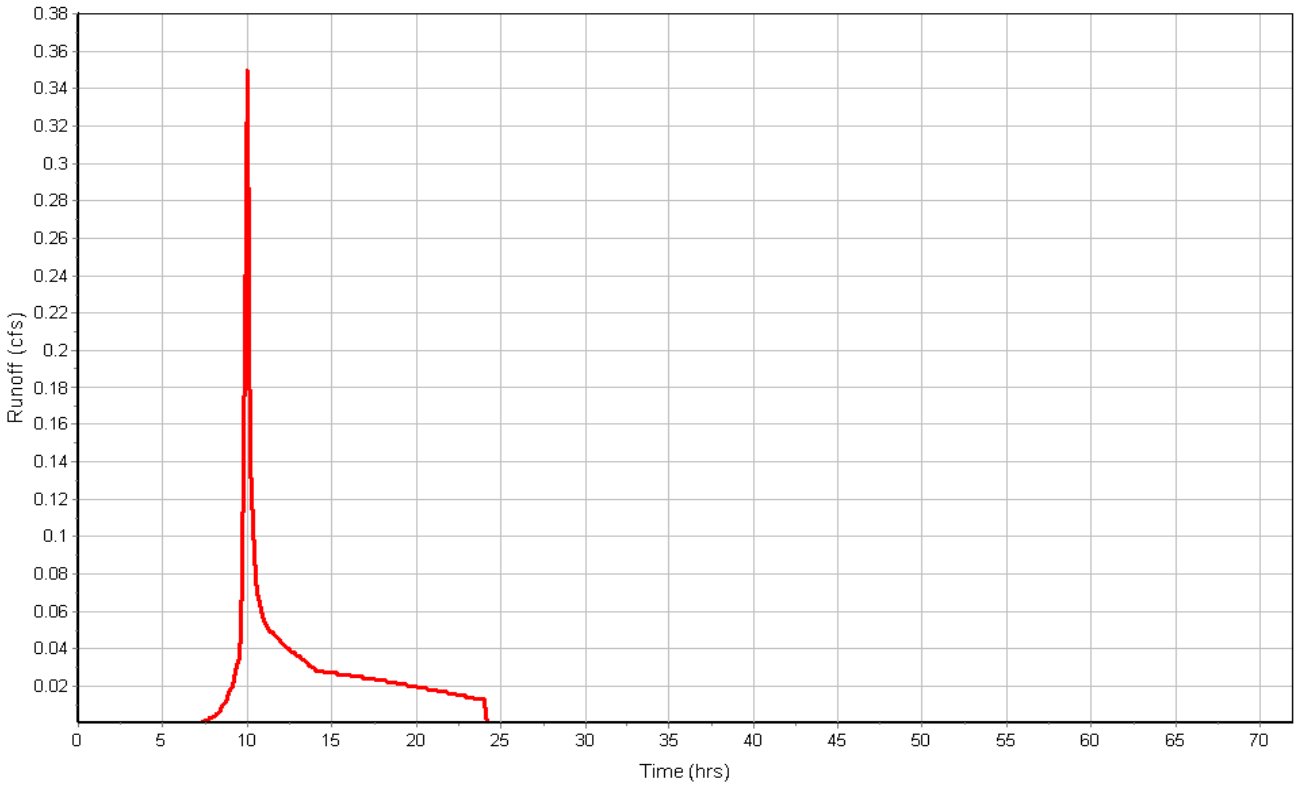
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Subbasin : A01

Rainfall Intensity Graph



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Subbasin : A02

Input Data

Area (ac) 2.31
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	2.31	A	89.00
Composite Area & Weighted CN	2.31		89.00

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

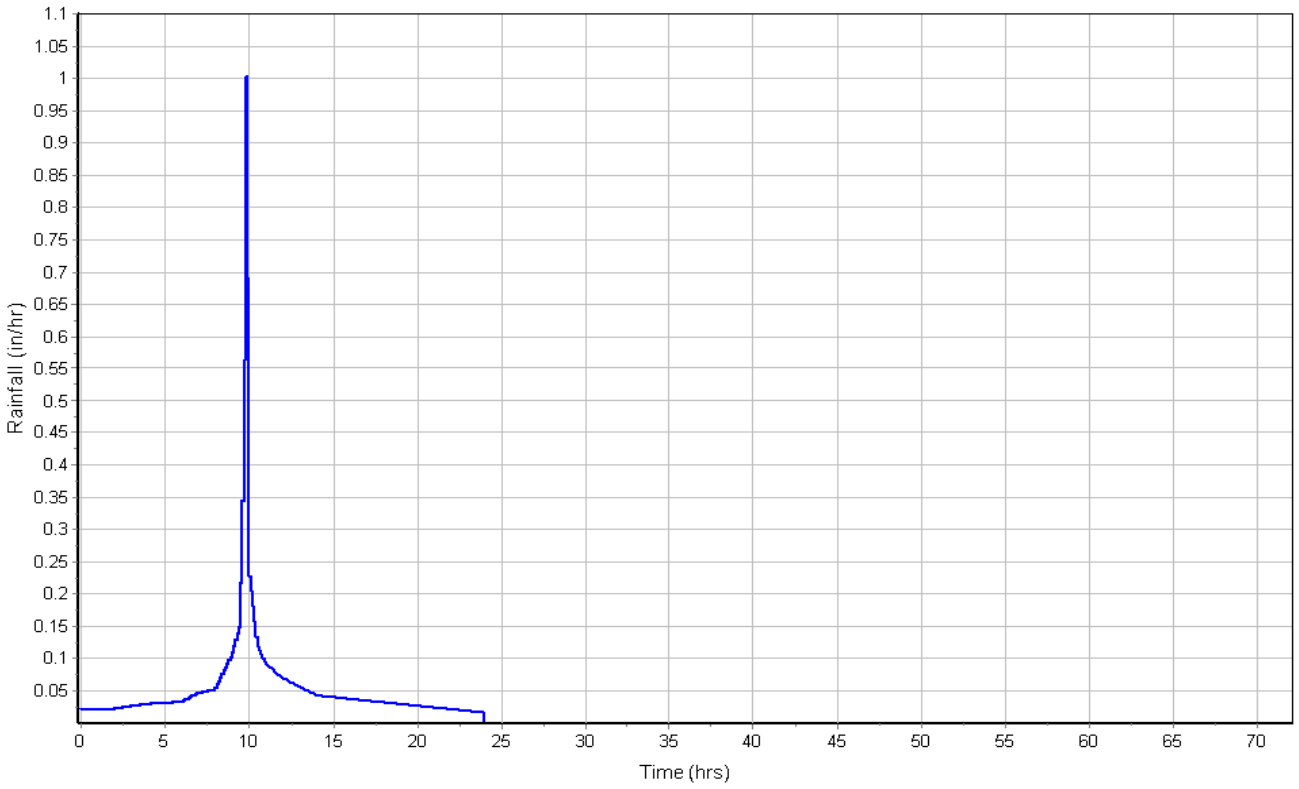
Total Rainfall (in) 1.33
Total Runoff (in) 0.51
Peak Runoff (cfs) 0.73
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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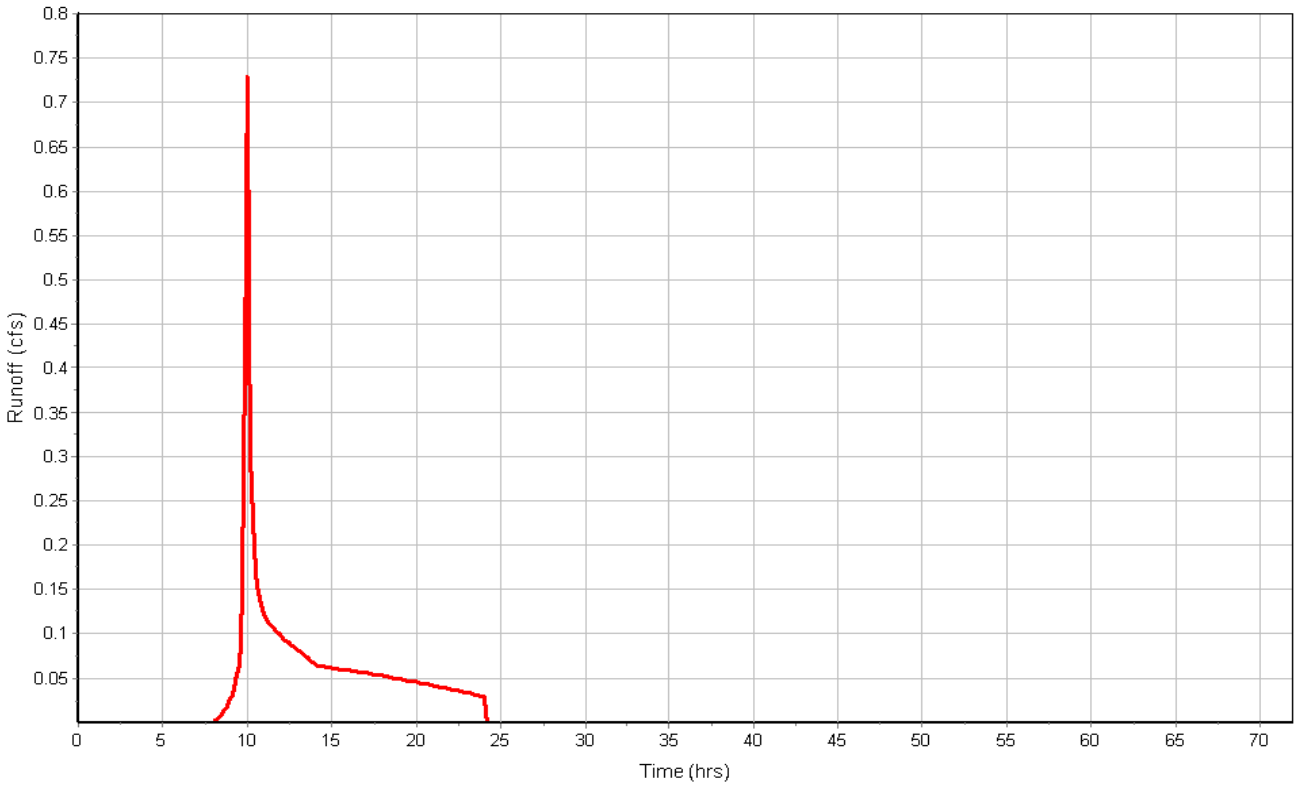
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Subbasin : A02

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Subbasin : A04

Input Data

Area (ac) 1.11
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	1.11	A	89.00
Composite Area & Weighted CN	1.11		89.00

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

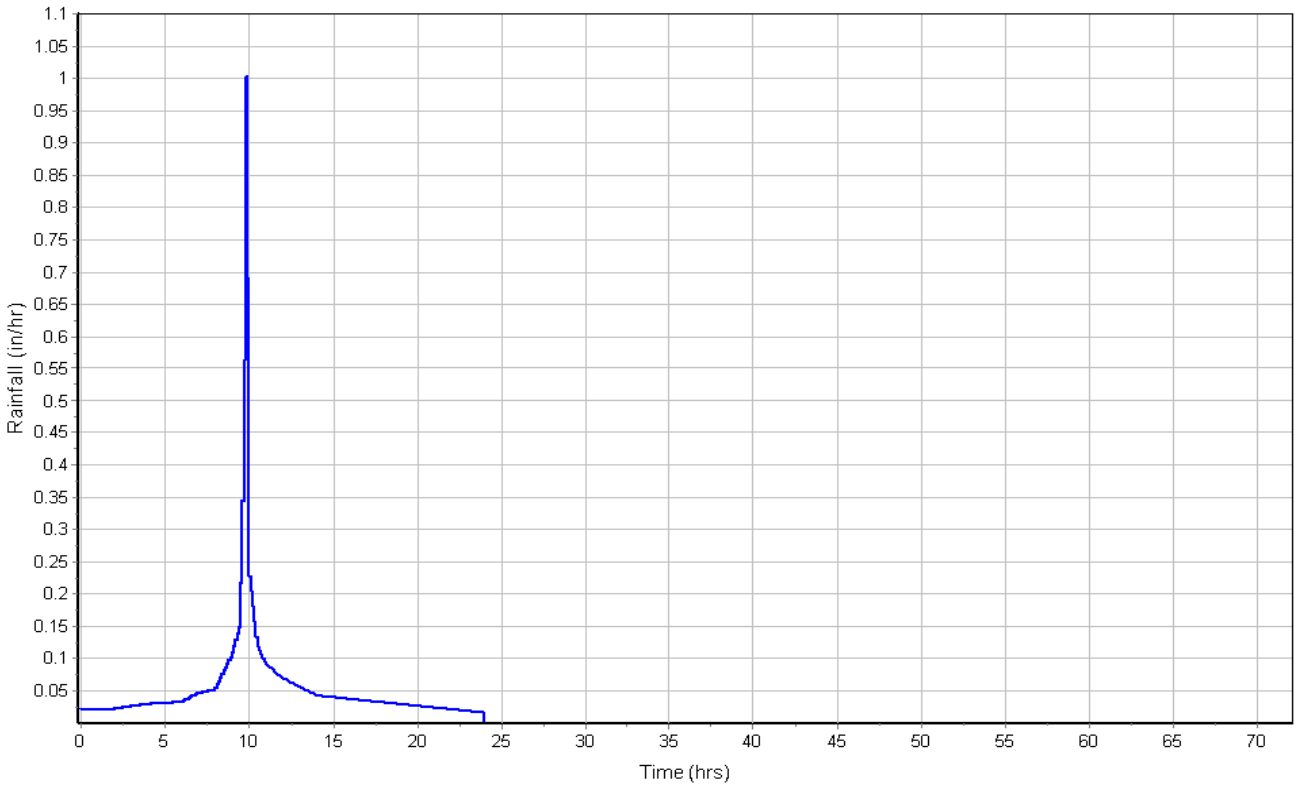
Total Rainfall (in) 1.33
Total Runoff (in) 0.51
Peak Runoff (cfs) 0.35
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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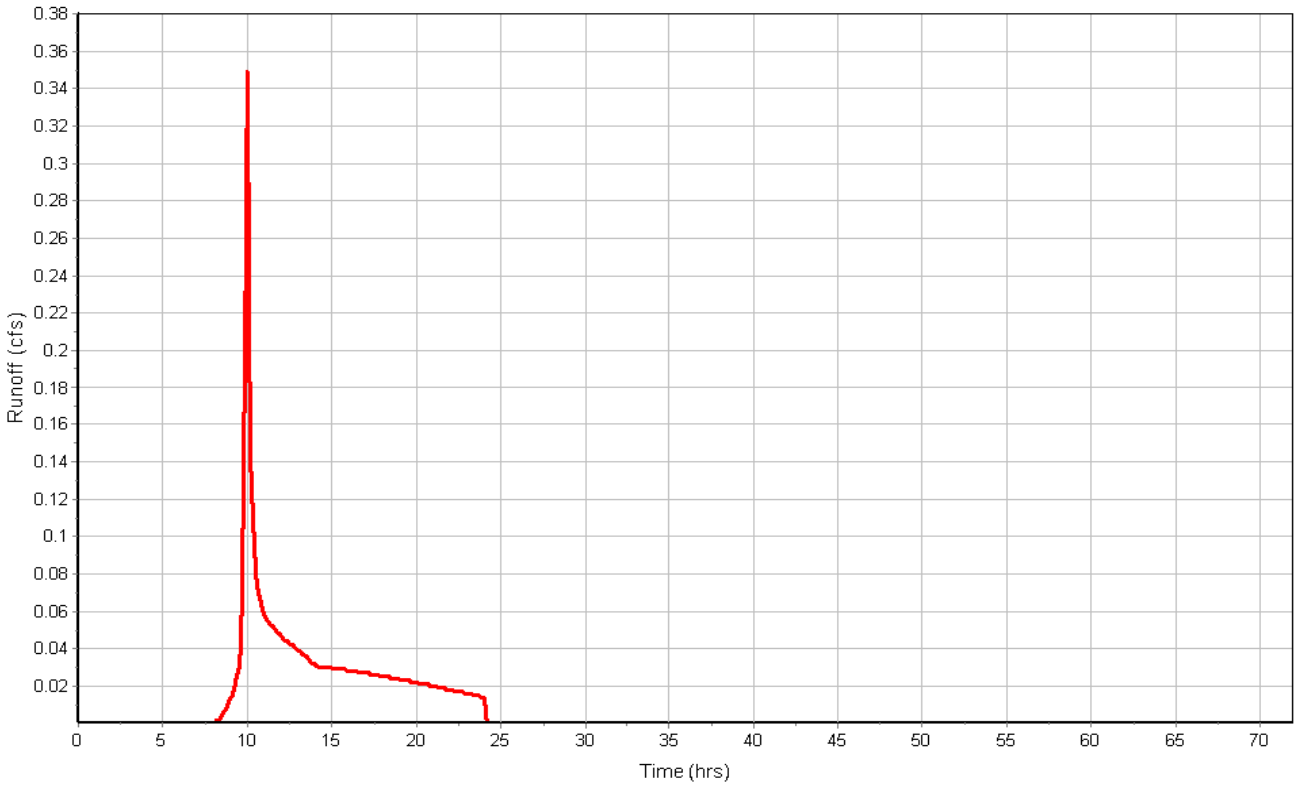
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Subbasin : A04

Rainfall Intensity Graph



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Subbasin : A05

Input Data

Area (ac) 2.33
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	2.33	A	89.00
Composite Area & Weighted CN	2.33		89.00

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

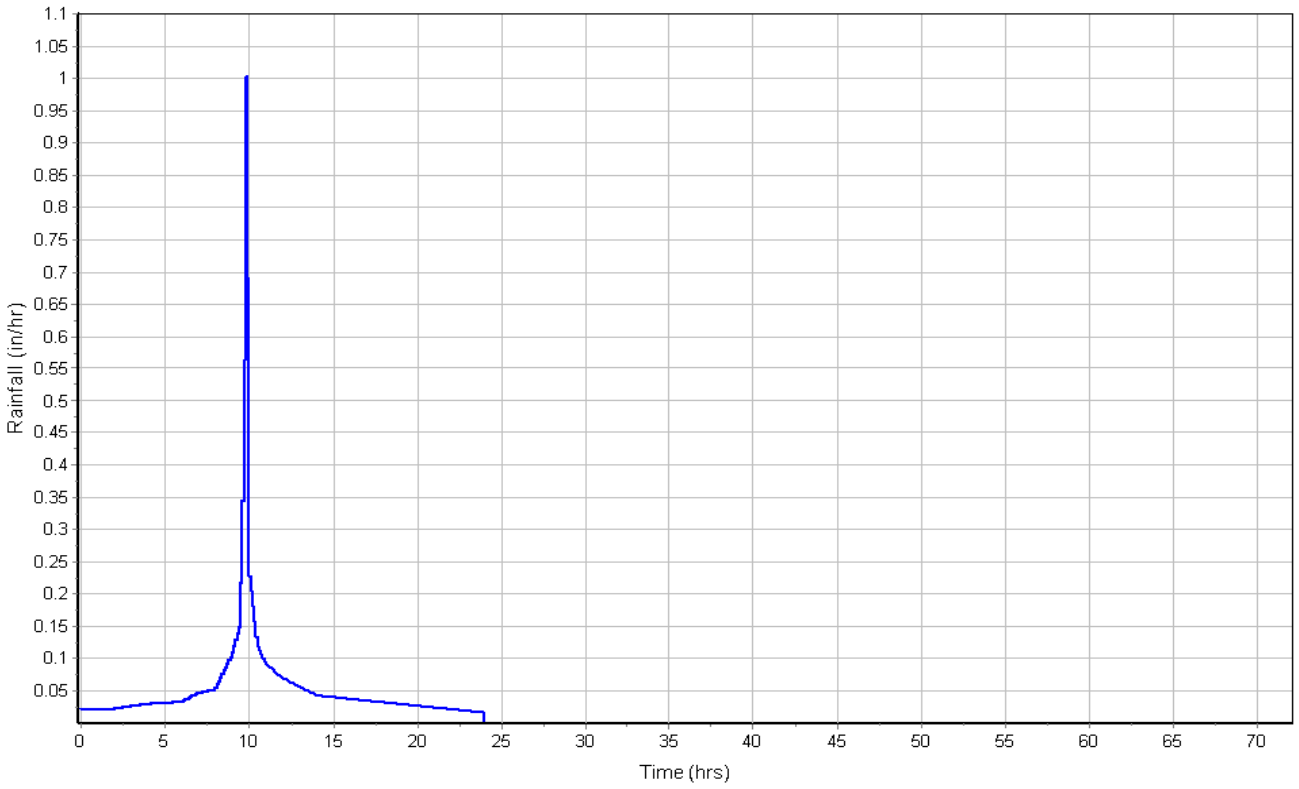
Total Rainfall (in) 1.33
Total Runoff (in) 0.51
Peak Runoff (cfs) 0.73
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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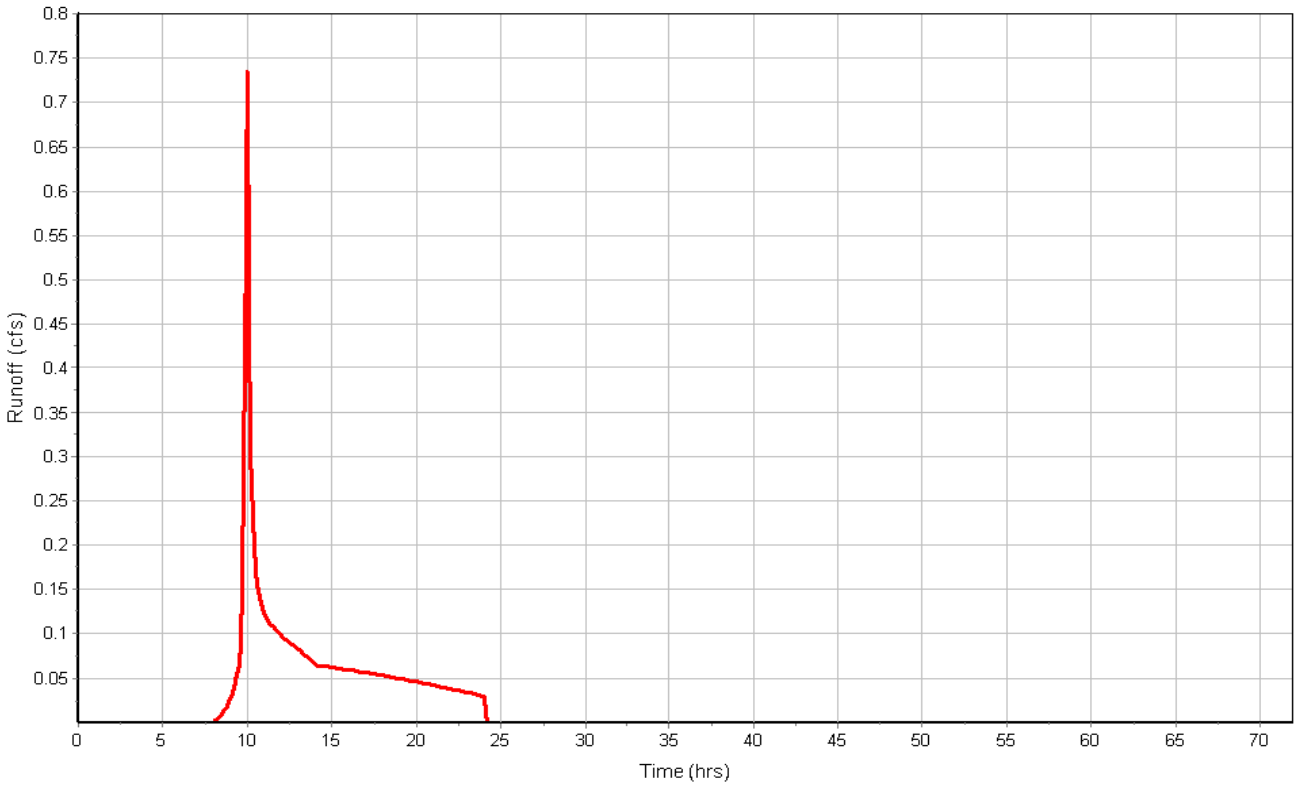
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Subbasin : A05

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Subbasin : A06

Input Data

Area (ac)	1.52
Weighted Curve Number	89.00
Rain Gage ID	Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	1.52	A	89.00
Composite Area & Weighted CN	1.52		89.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

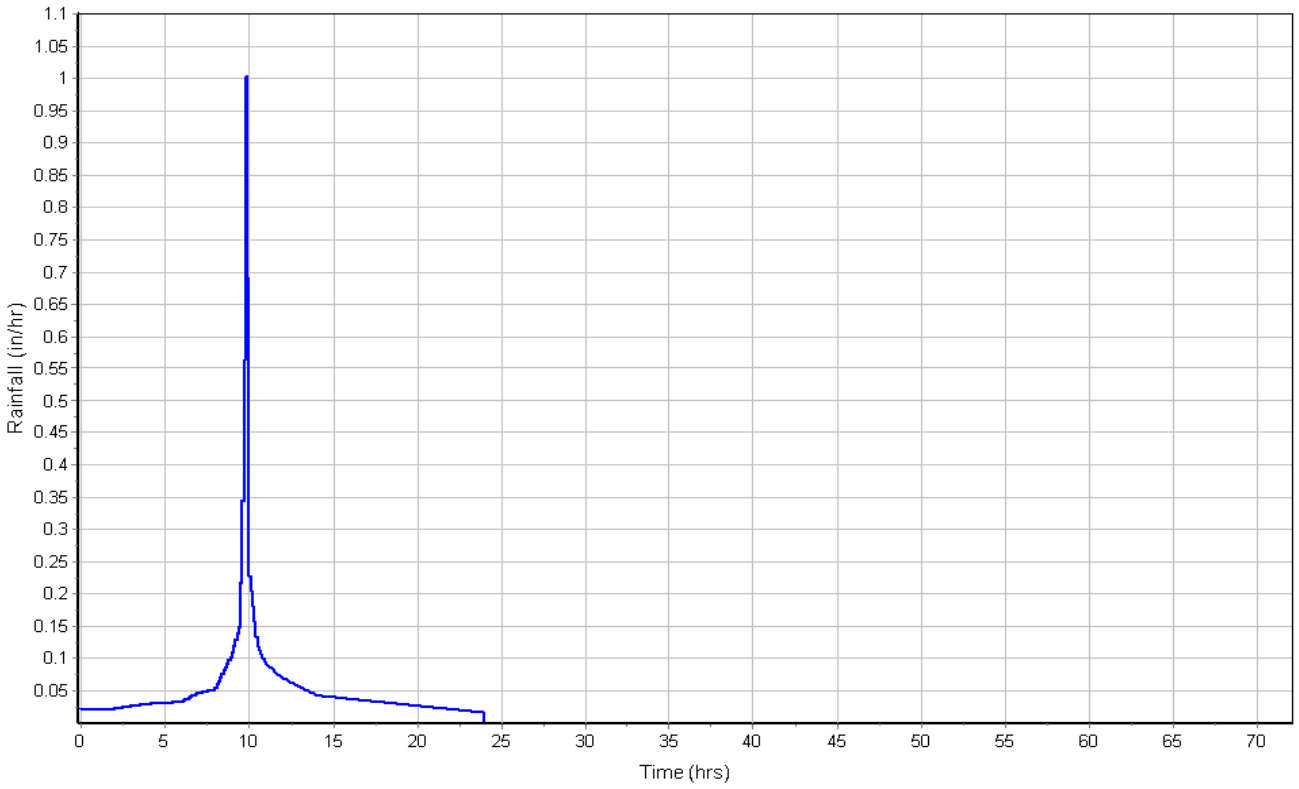
Total Rainfall (in)	1.33
Total Runoff (in)	0.51
Peak Runoff (cfs)	0.48
Weighted Curve Number	89.00
Time of Concentration (days hh:mm:ss)	0 00:10:00

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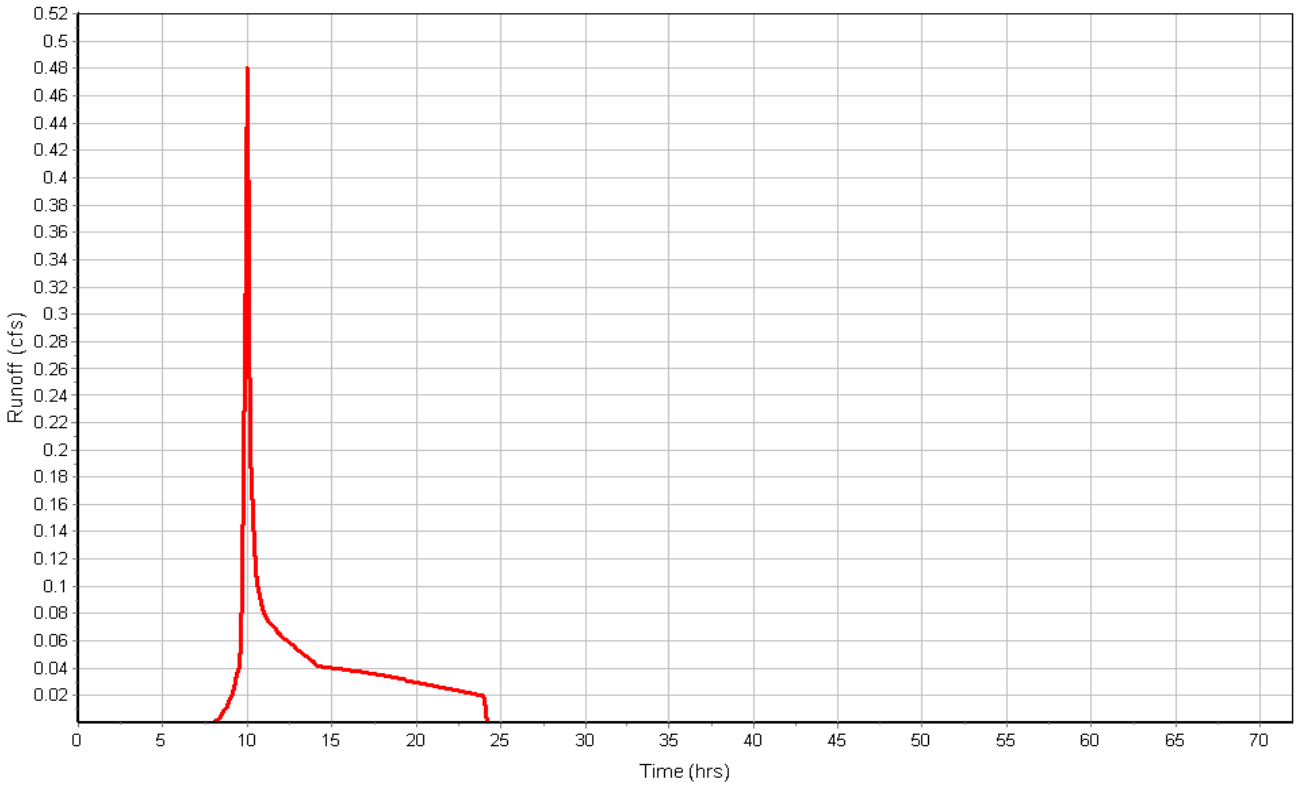
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Subbasin : A06

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Subbasin : A07

Input Data

Area (ac) 0.45
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	0.45	A	89.00
Composite Area & Weighted CN	0.45		89.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

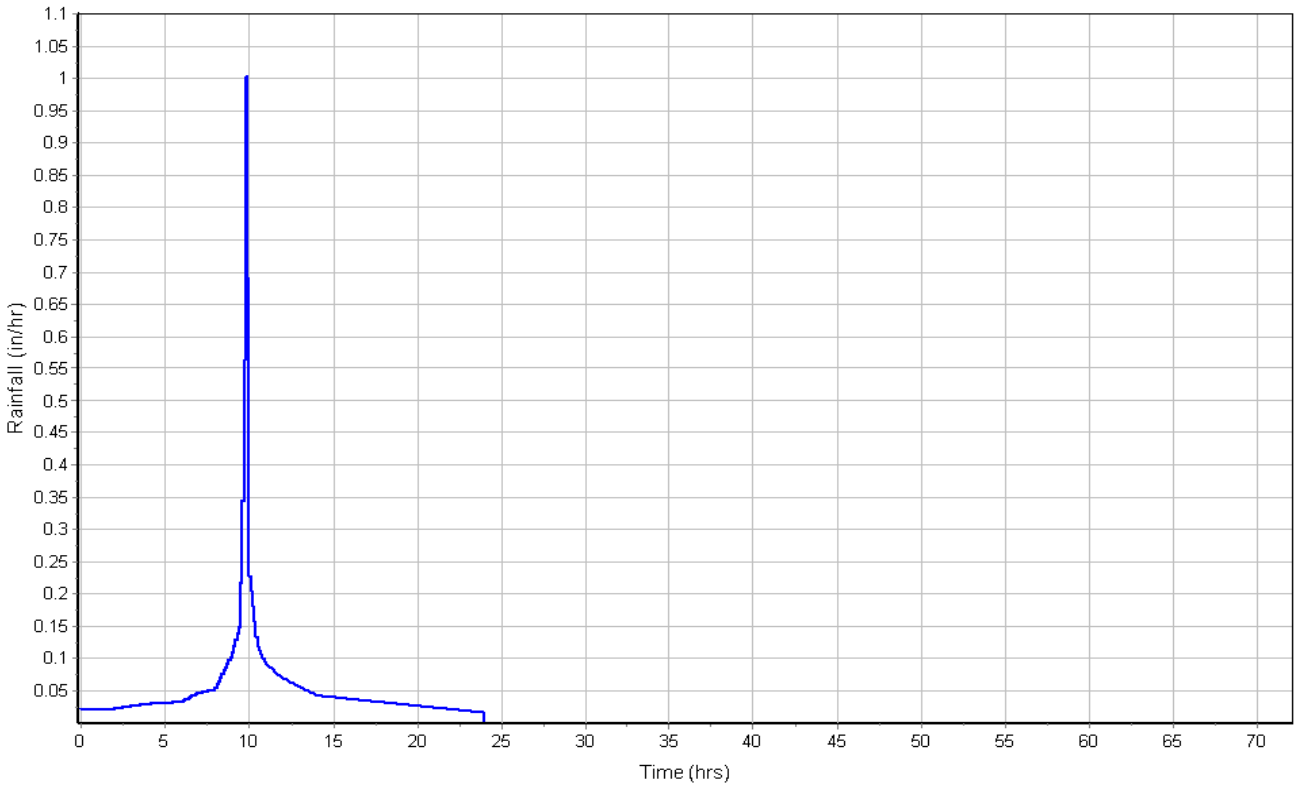
Total Rainfall (in) 1.33
Total Runoff (in) 0.51
Peak Runoff (cfs) 0.14
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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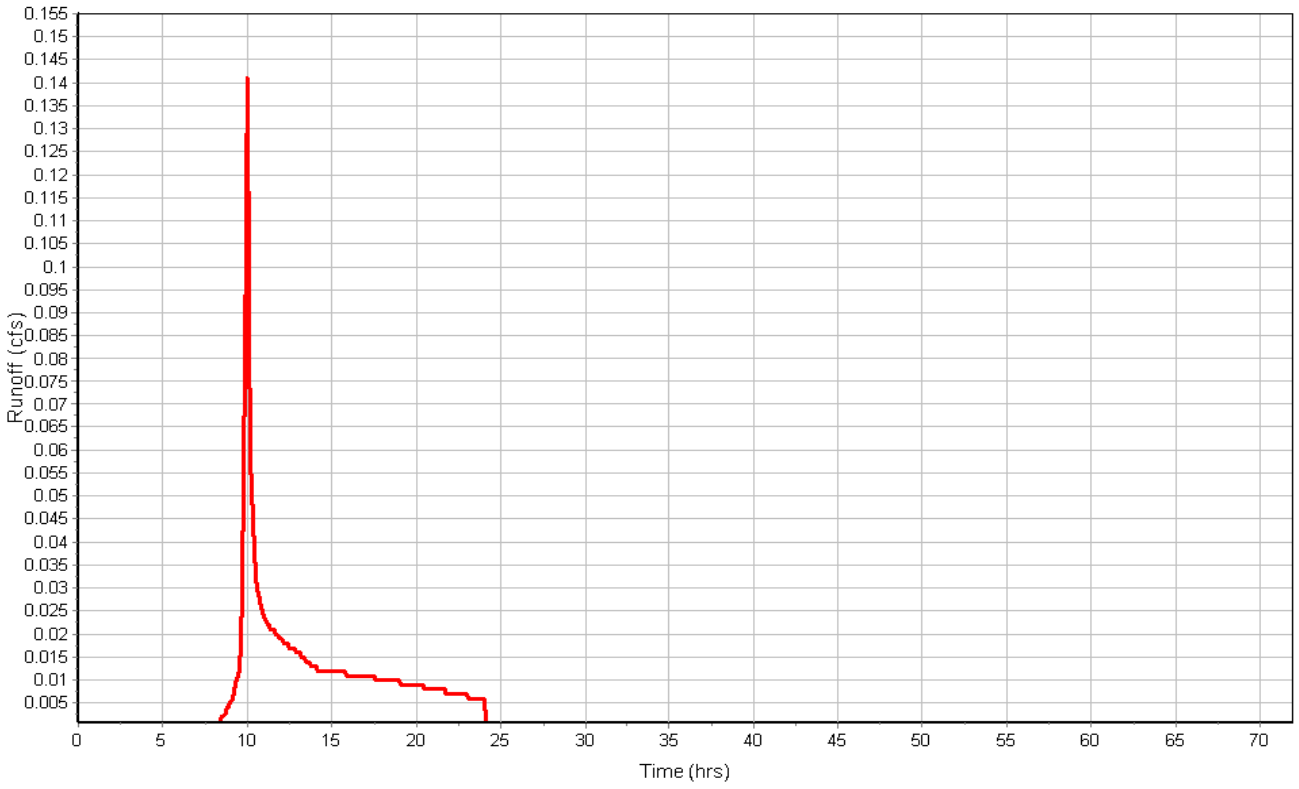
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Subbasin : A07

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Subbasin : A08

Input Data

Area (ac) 1.59
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	1.59	A	89.00
Composite Area & Weighted CN	1.59		89.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

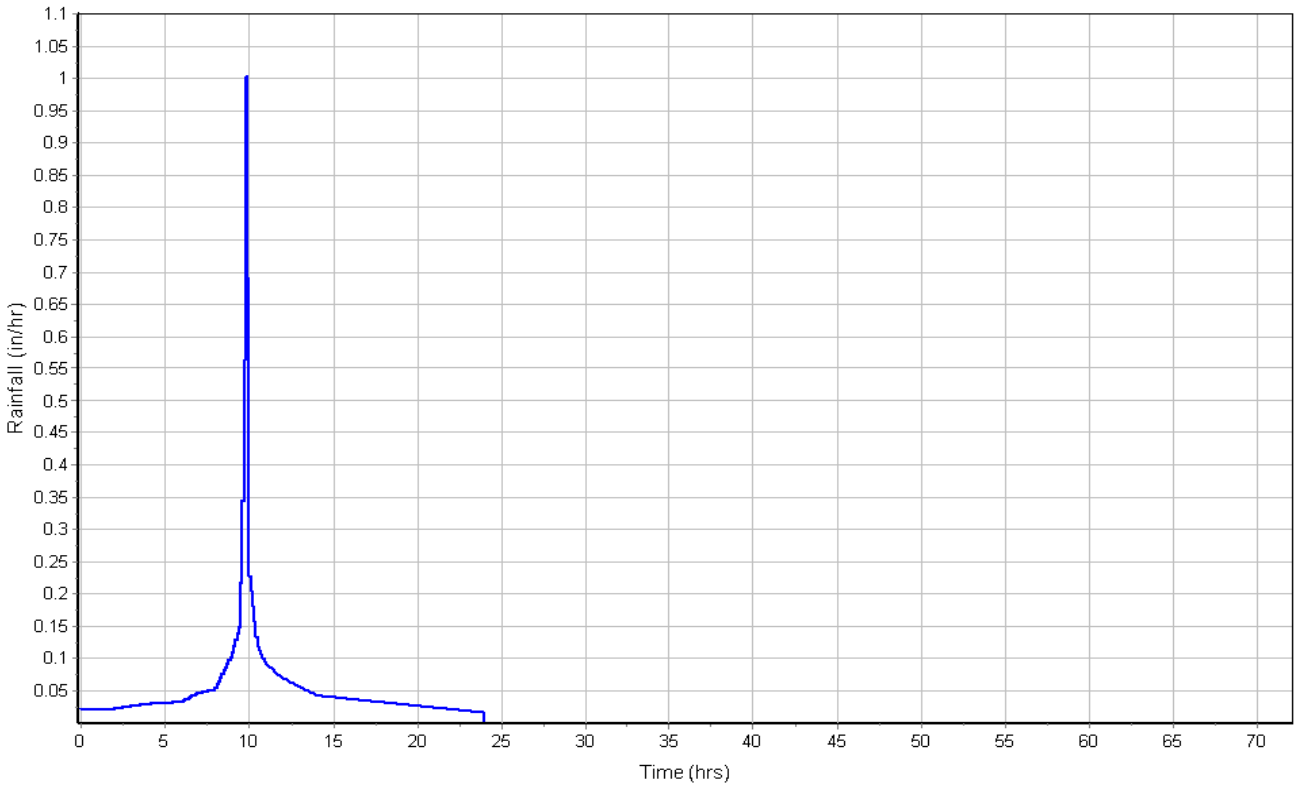
Total Rainfall (in) 1.33
Total Runoff (in) 0.51
Peak Runoff (cfs) 0.50
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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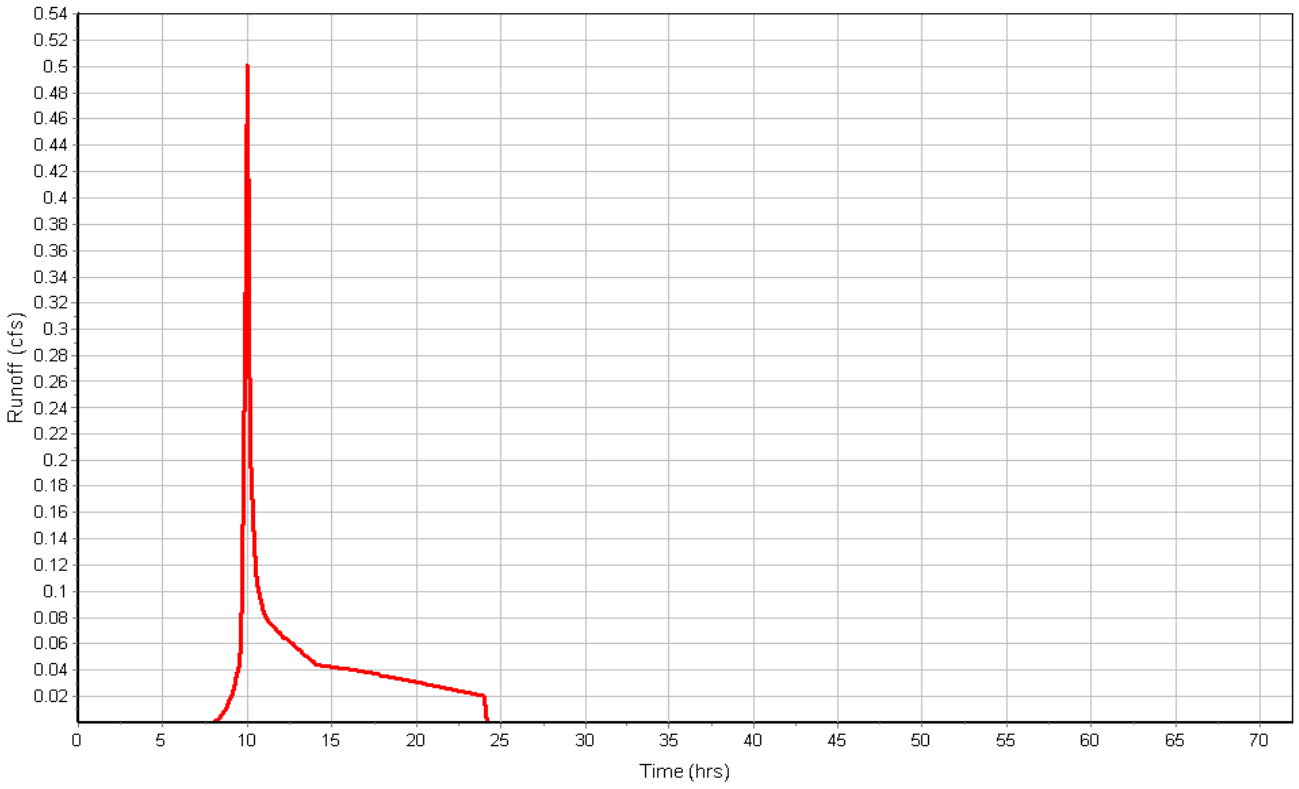
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Subbasin : A08

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Subbasin : A09

Input Data

Area (ac) 1.94
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	1.94	A	89.00
Composite Area & Weighted CN	1.94		89.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

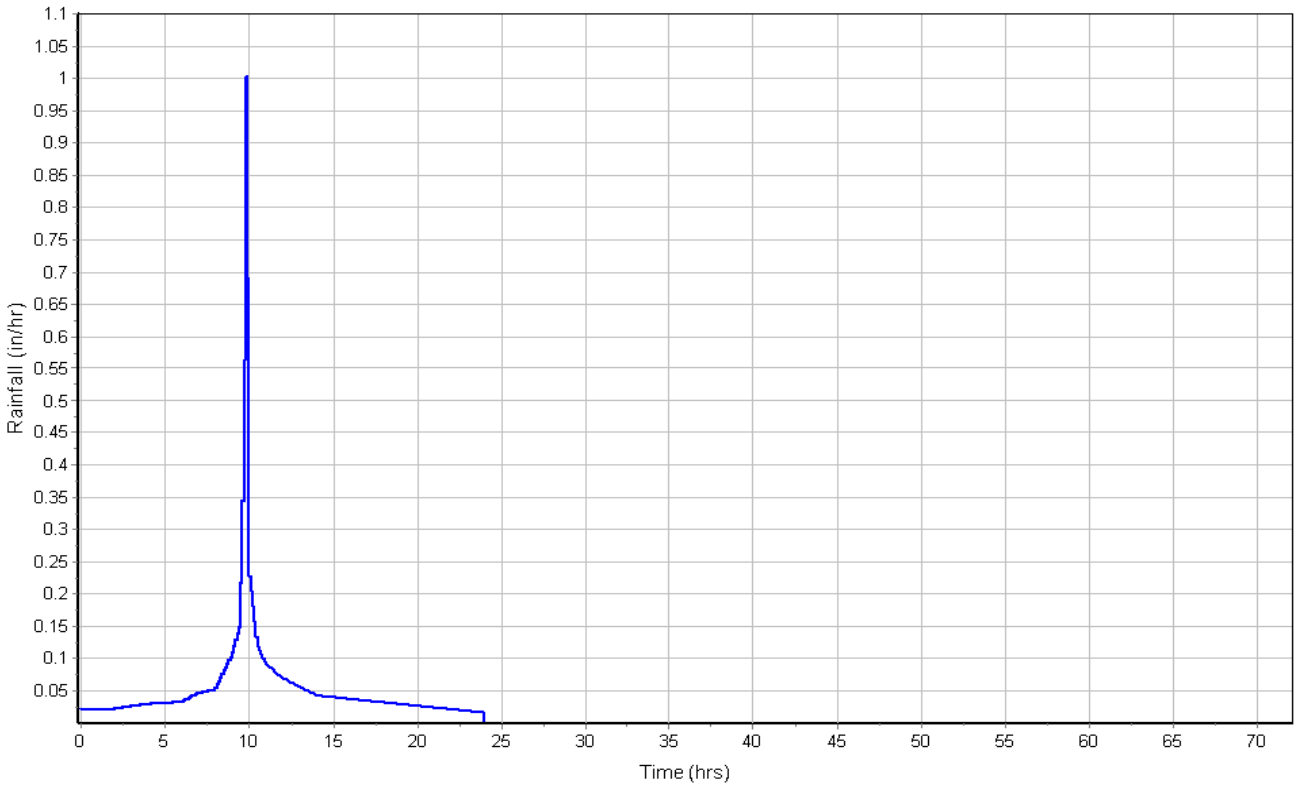
Total Rainfall (in) 1.33
Total Runoff (in) 0.51
Peak Runoff (cfs) 0.61
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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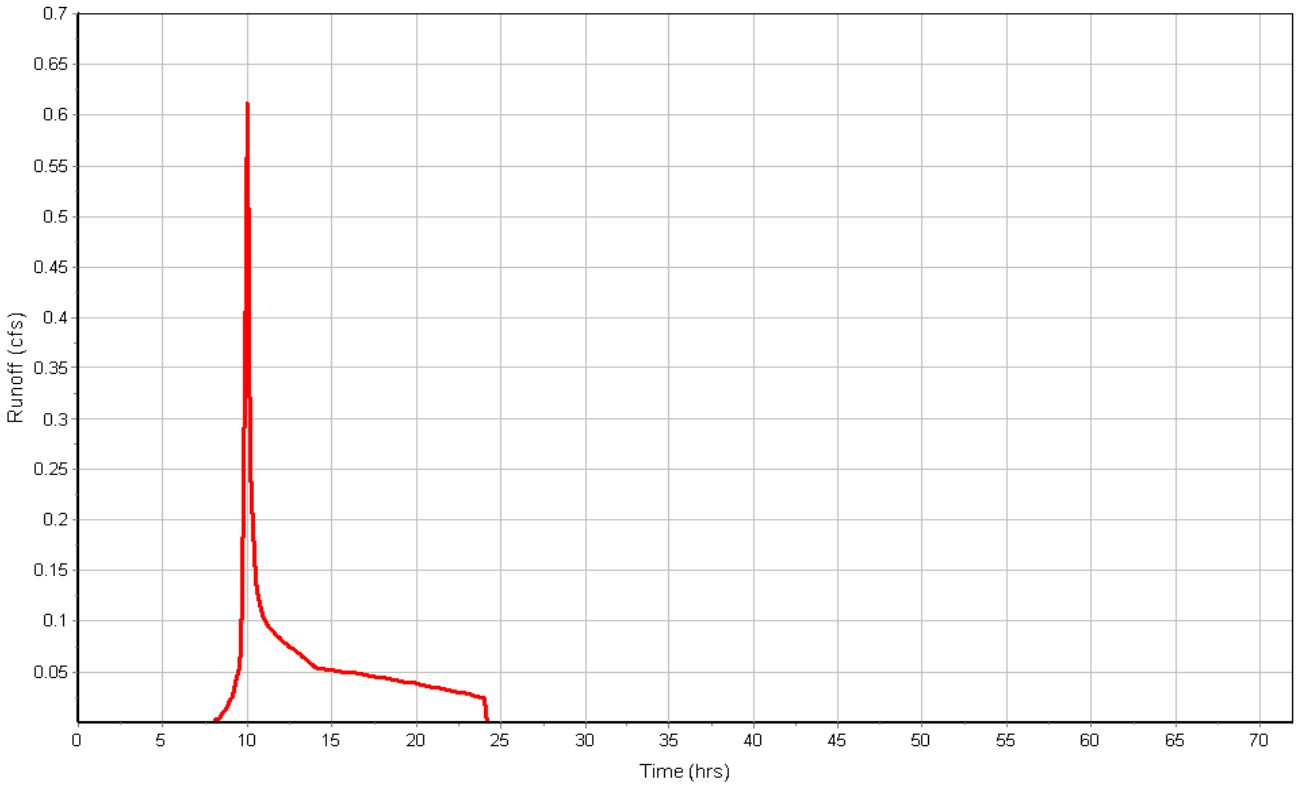
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Subbasin : A10

Input Data

Area (ac) 16.37
Weighted Curve Number 84.72
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban industrial, 72% imp	11.29	A	81.00
Urban industrial, 72% imp	5.08	D	93.00
Composite Area & Weighted CN	16.37		84.72

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

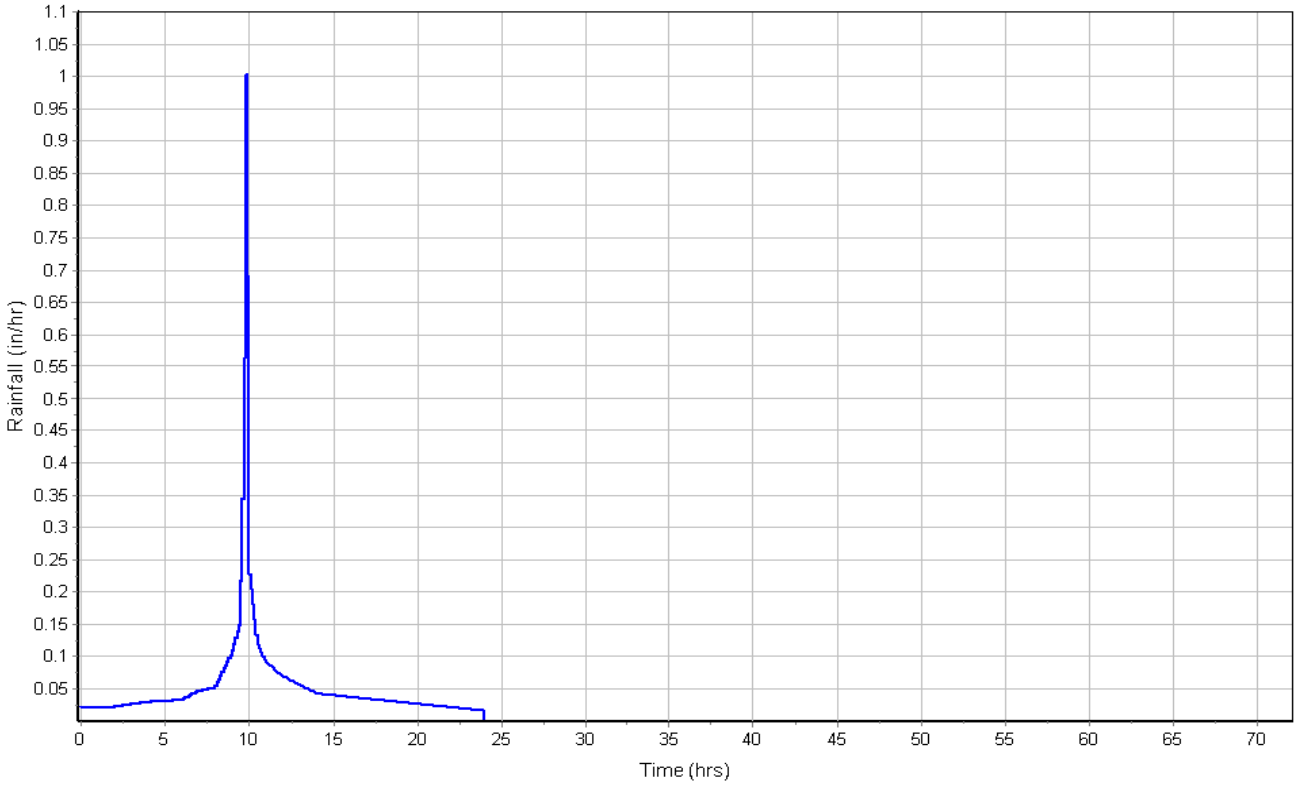
Total Rainfall (in) 1.33
Total Runoff (in) 0.34
Peak Runoff (cfs) 2.85
Weighted Curve Number 84.72
Time of Concentration (days hh:mm:ss) 0 00:10:00

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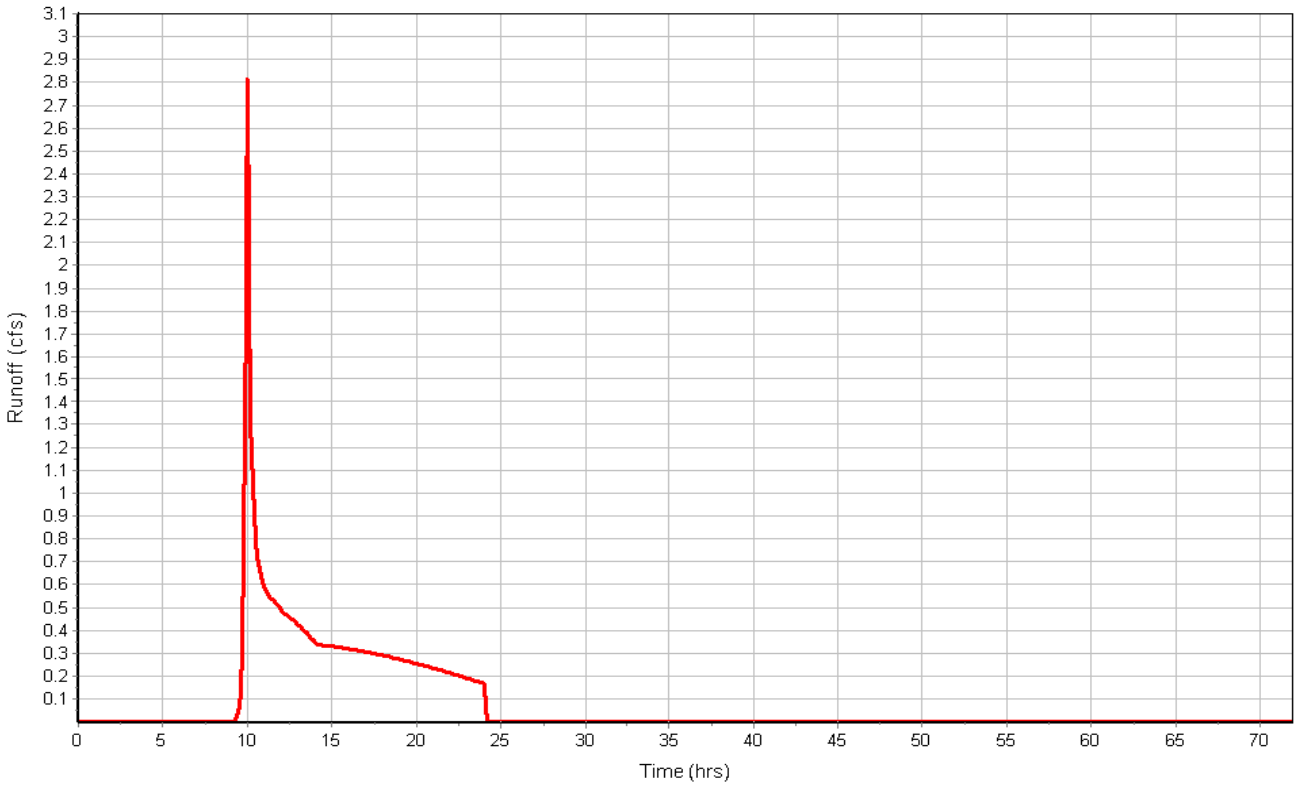
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Subbasin : A10

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Subbasin : A11a

Input Data

Area (ac)	0.92
Weighted Curve Number	98.00
Rain Gage ID	Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	0.52	A	98.00
Paved parking & roofs	0.40	D	98.00
Composite Area & Weighted CN	0.92		98.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

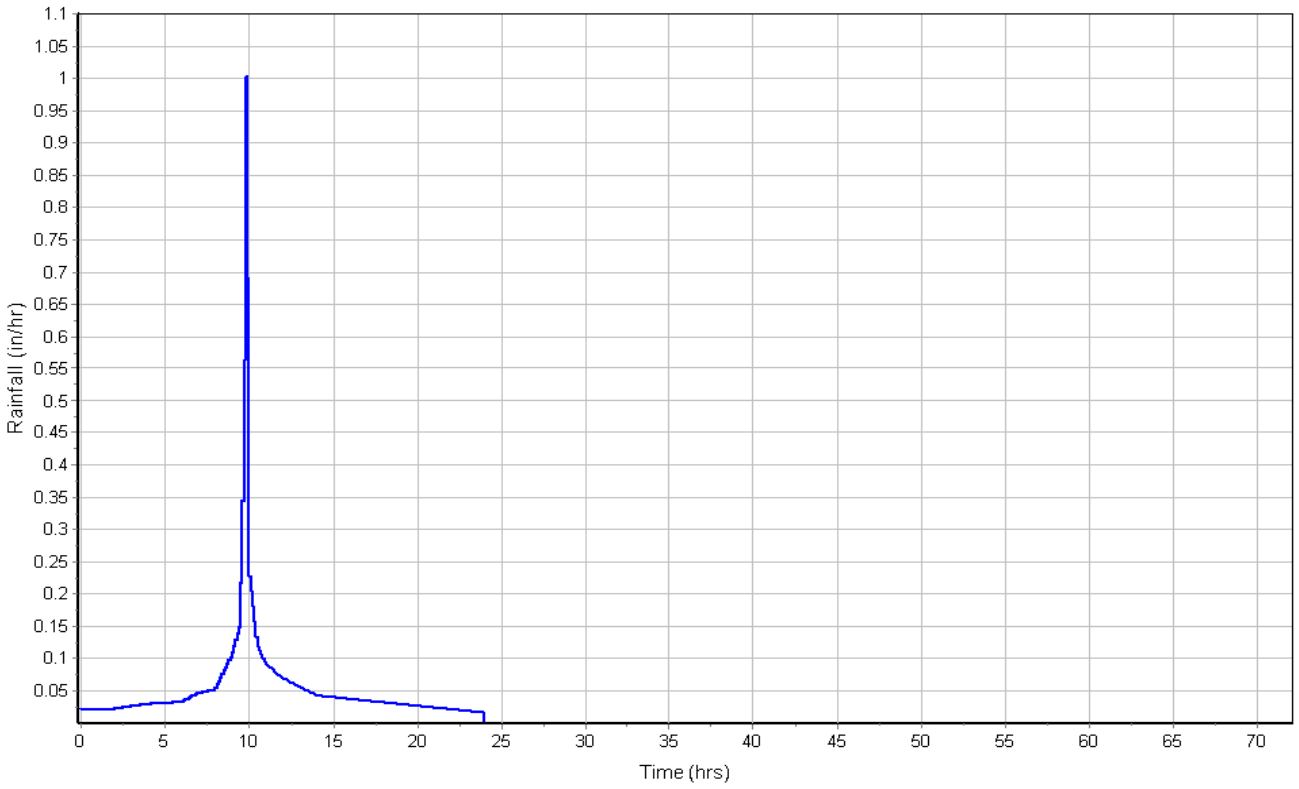
Total Rainfall (in)	1.33
Total Runoff (in)	1.11
Peak Runoff (cfs)	0.72
Weighted Curve Number	98.00
Time of Concentration (days hh:mm:ss)	0 00:10:00

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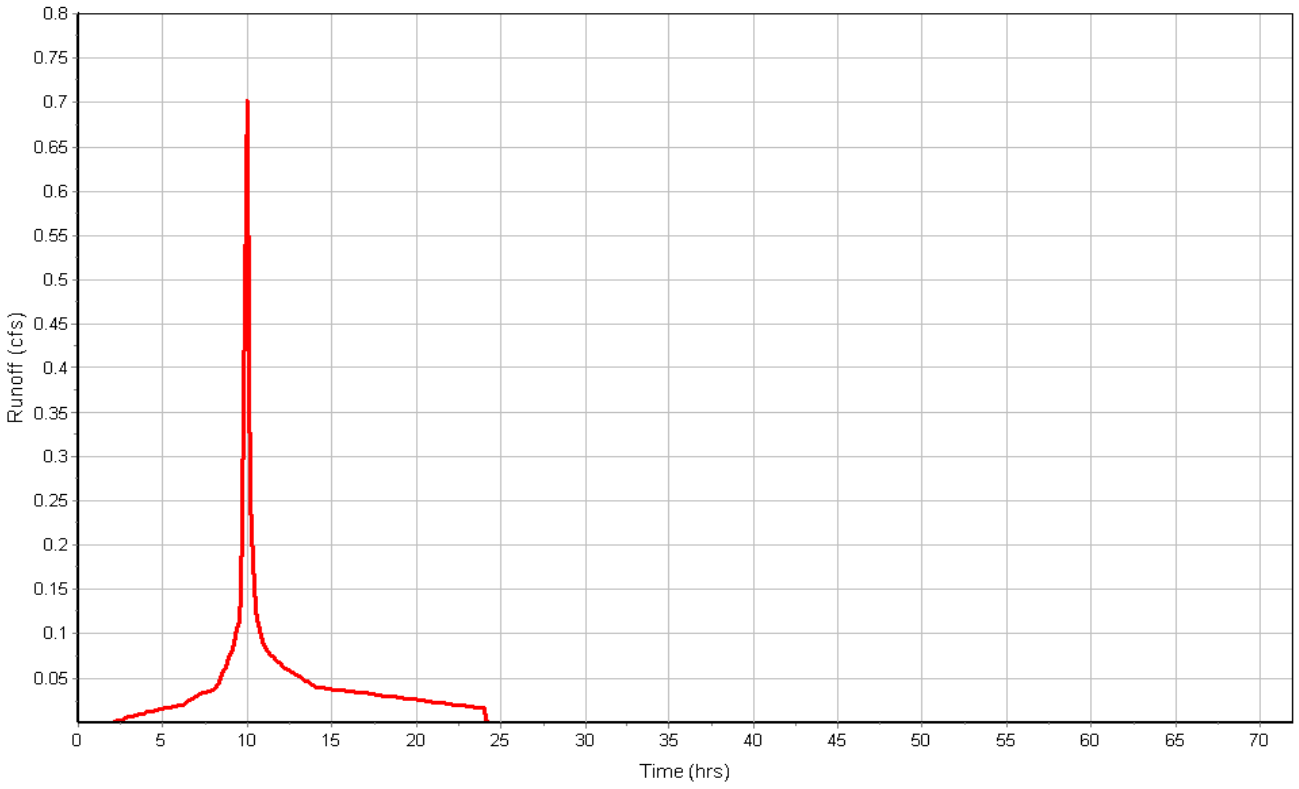
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Subbasin : A11a

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Subbasin : A11b

Input Data

Area (ac) 0.64
Weighted Curve Number 98.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	0.43	A	98.00
Paved parking & roofs	0.21	D	98.00
Composite Area & Weighted CN	0.64		98.00

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

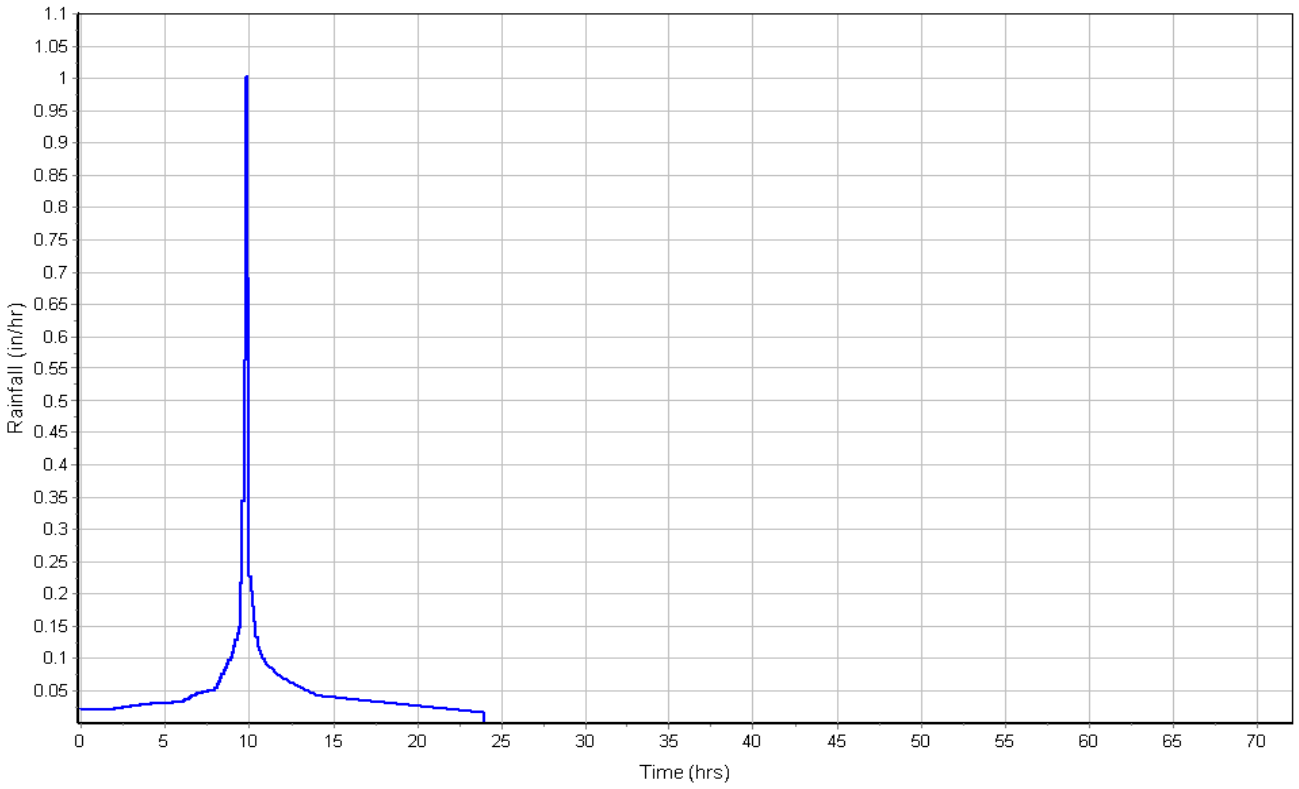
Total Rainfall (in) 1.33
Total Runoff (in) 1.11
Peak Runoff (cfs) 0.50
Weighted Curve Number 98.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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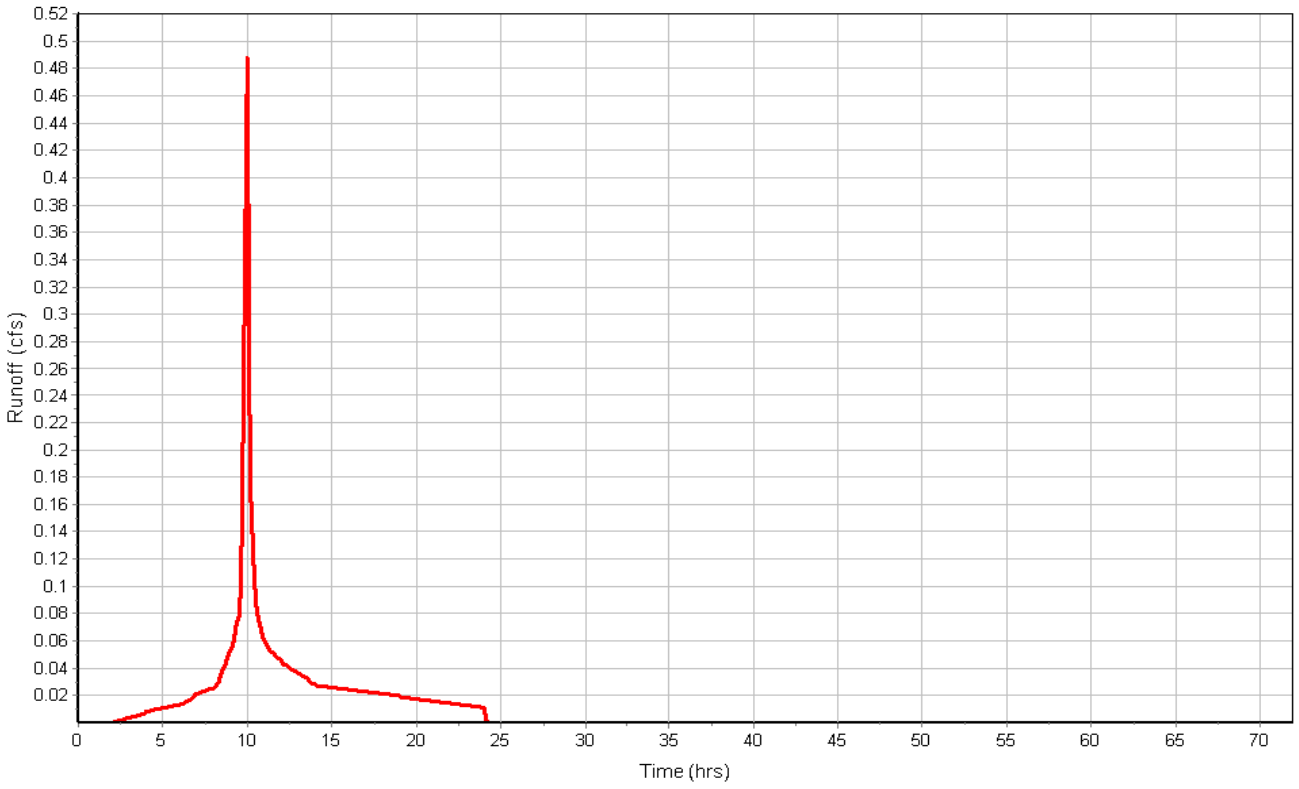
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Subbasin : A11b

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Runoff Hydrograph



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Subbasin : A12

Input Data

Area (ac)	1.73
Weighted Curve Number	98.00
Rain Gage ID	Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	1.73	A	98.00
Composite Area & Weighted CN	1.73		98.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

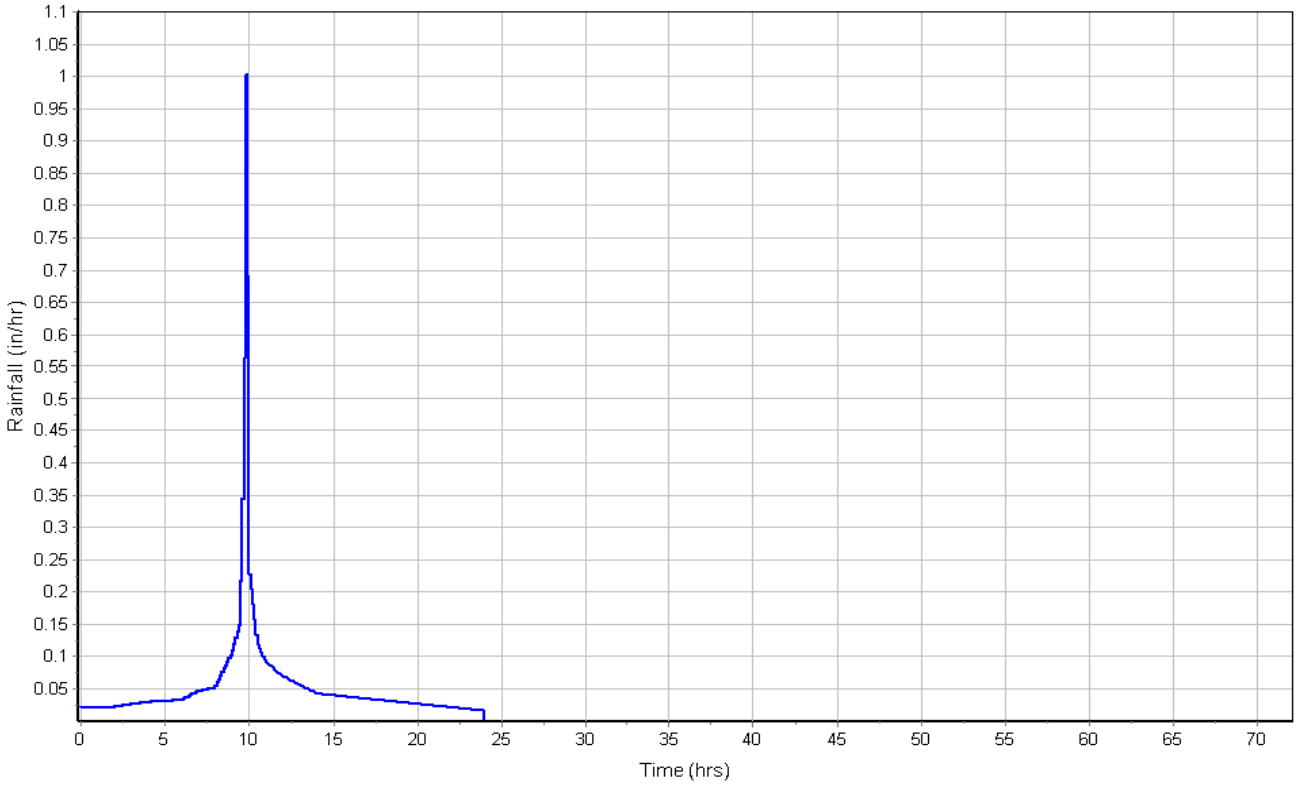
Total Rainfall (in)	1.33
Total Runoff (in)	1.11
Peak Runoff (cfs)	1.35
Weighted Curve Number	98.00
Time of Concentration (days hh:mm:ss)	0 00:10:00

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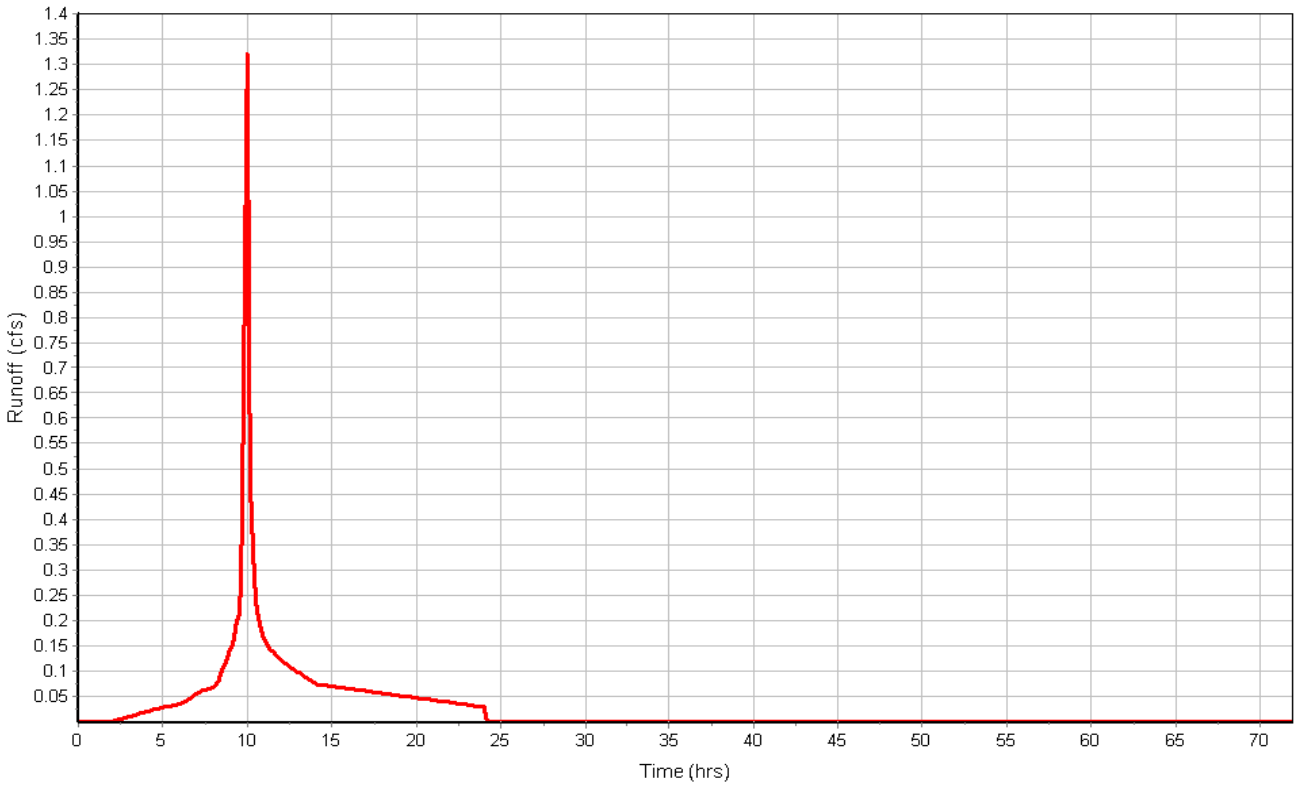
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Subbasin : A12

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A13

Input Data

Area (ac) 3.78
Weighted Curve Number 98.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved roads with curbs & sewers	3.78	A	98.00
Composite Area & Weighted CN	3.78		98.00

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

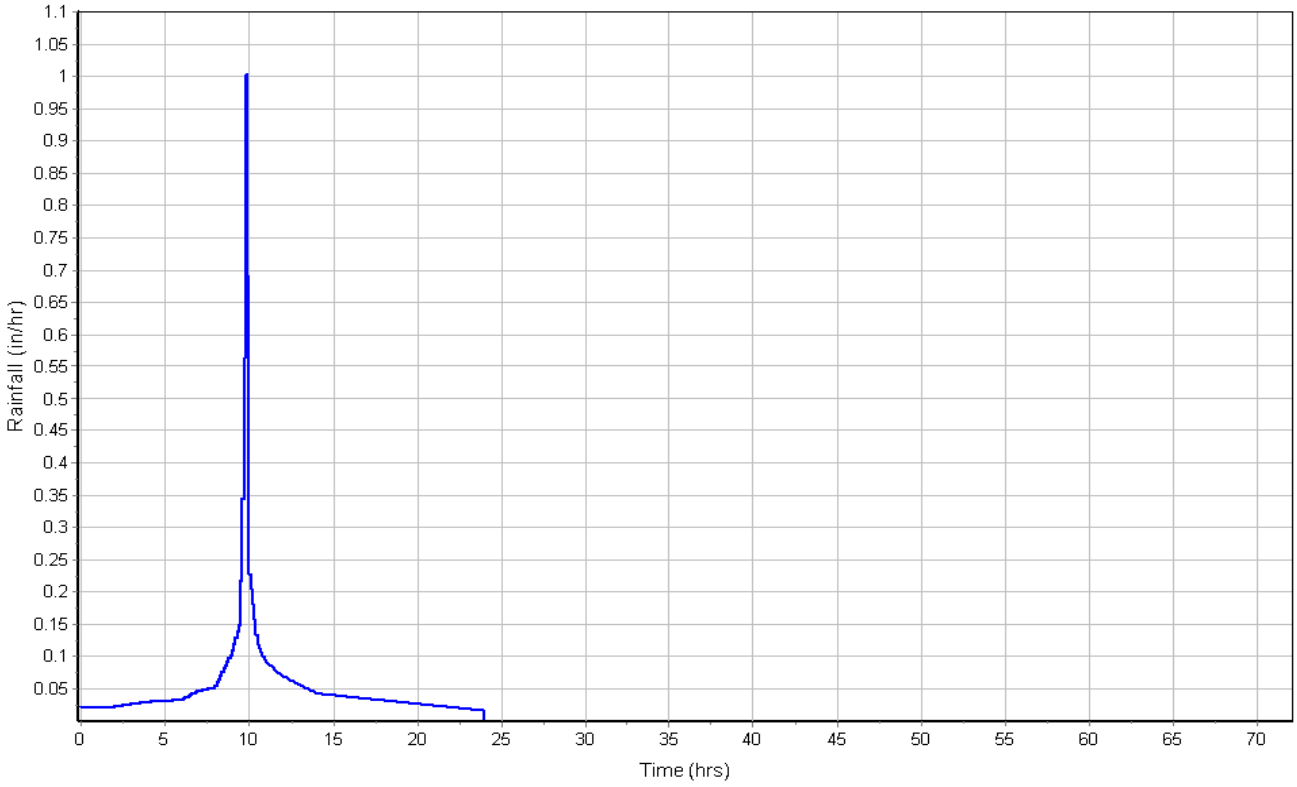
Total Rainfall (in) 1.33
Total Runoff (in) 1.11
Peak Runoff (cfs) 2.95
Weighted Curve Number 98.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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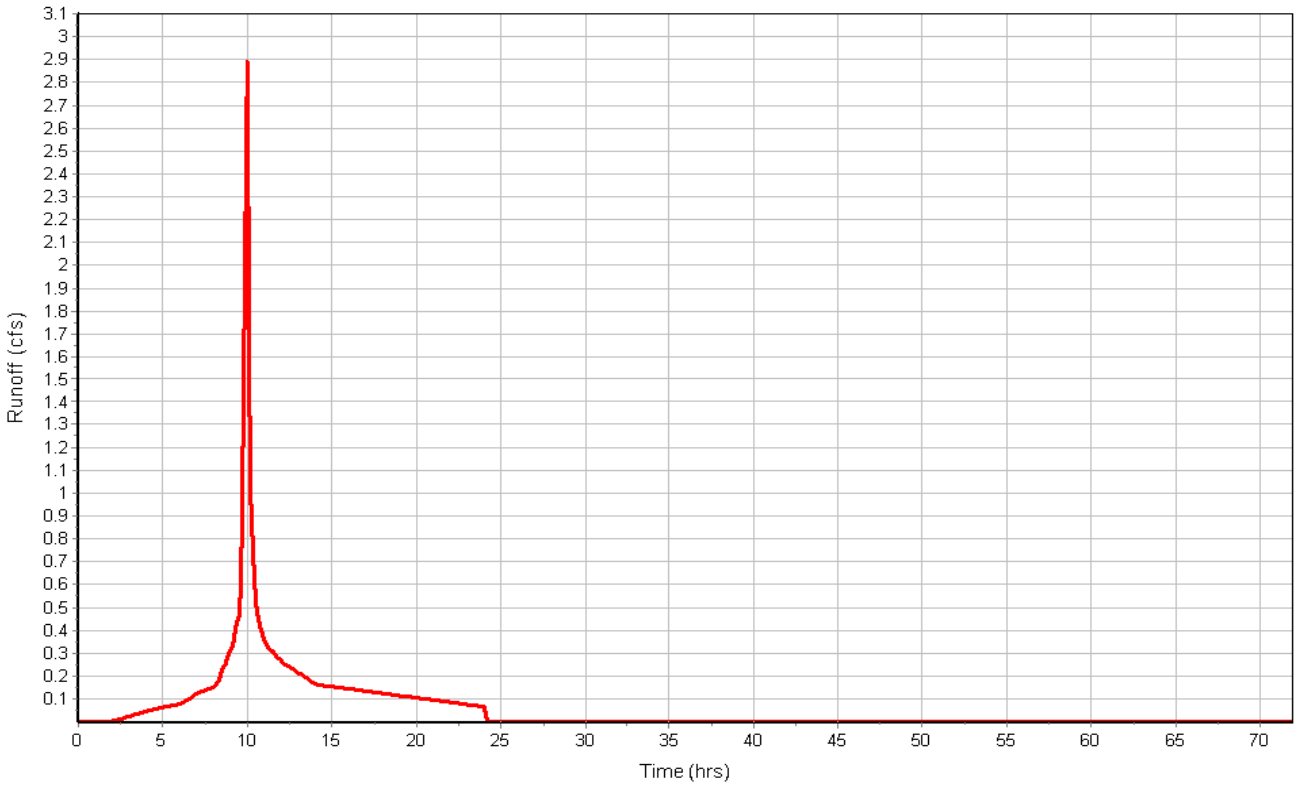
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Subbasin : A13

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A3A

Input Data

Area (ac)	0.54
Weighted Curve Number	95.00
Rain Gage ID	Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	0.54	D	95.00
Composite Area & Weighted CN	0.54		95.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

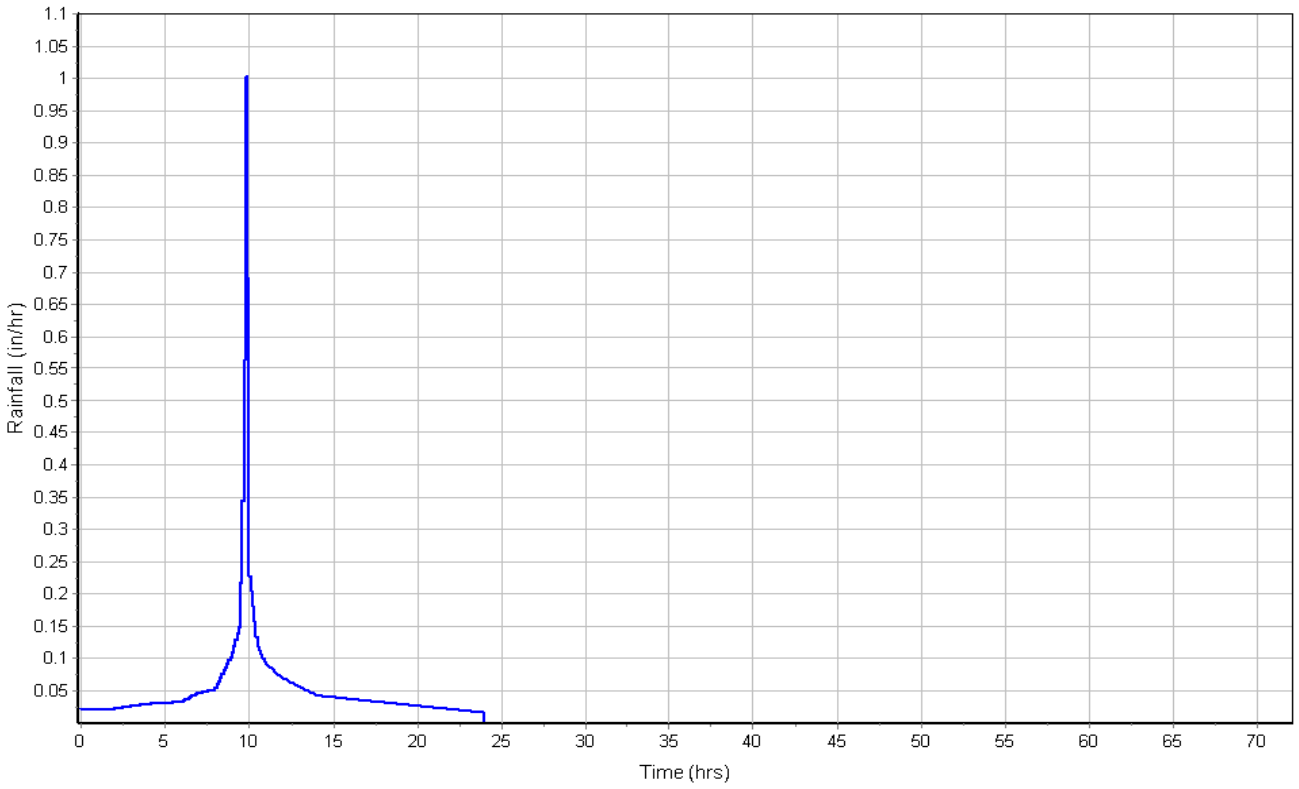
Total Rainfall (in)	1.33
Total Runoff (in)	0.86
Peak Runoff (cfs)	0.33
Weighted Curve Number	95.00
Time of Concentration (days hh:mm:ss)	0 00:10:00

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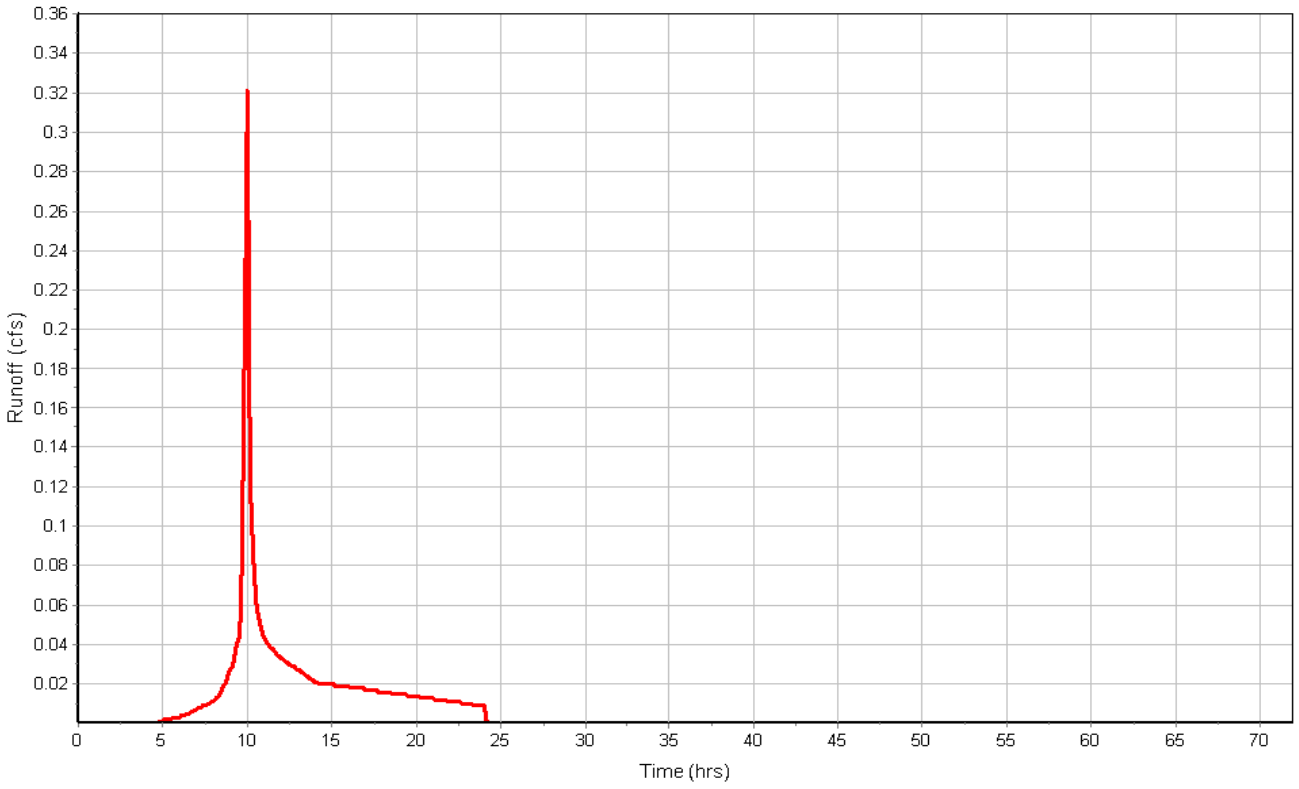
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Subbasin : A3A

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A3B

Input Data

Area (ac) 0.80
Weighted Curve Number 91.77
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	0.43	A	89.00
Urban commercial, 85% imp	0.37	D	95.00
Composite Area & Weighted CN	0.80		91.77

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

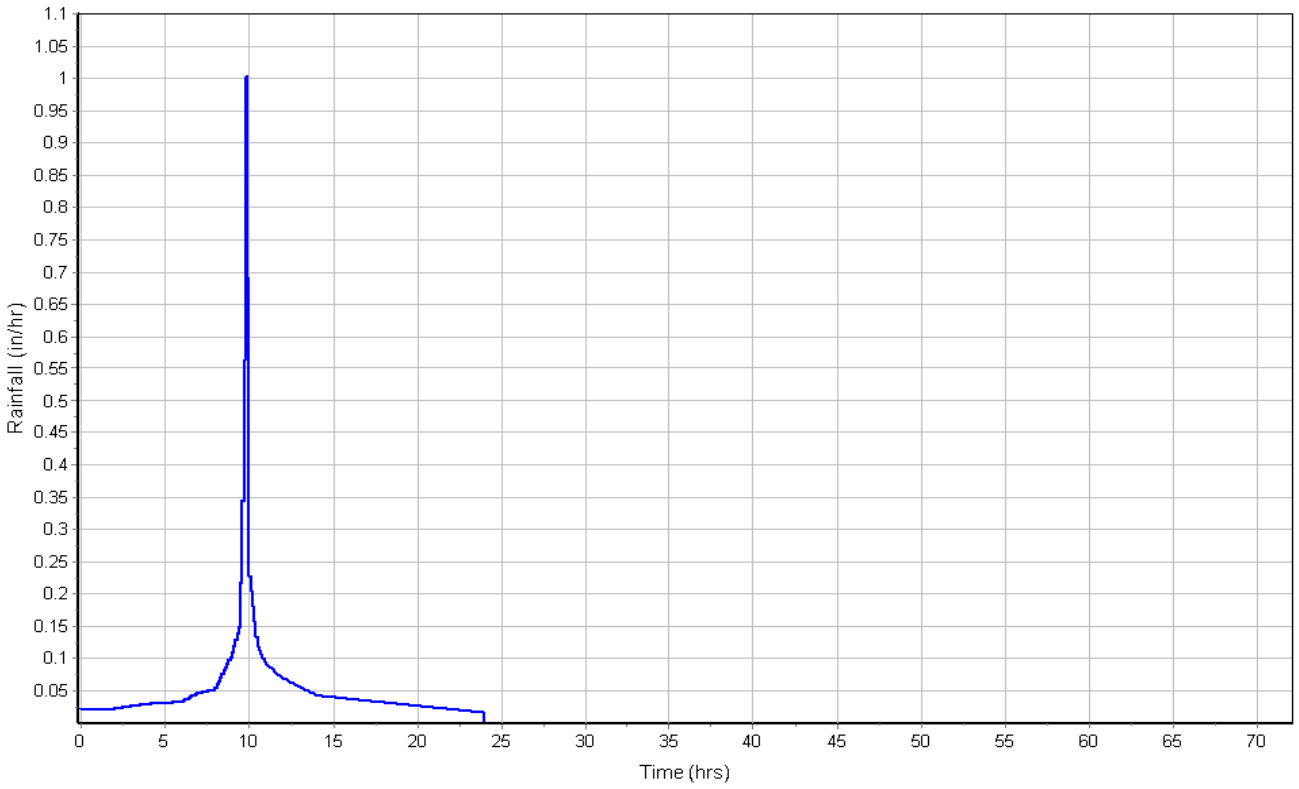
Total Rainfall (in) 1.33
Total Runoff (in) 0.65
Peak Runoff (cfs) 0.35
Weighted Curve Number 91.77
Time of Concentration (days hh:mm:ss) 0 00:10:00

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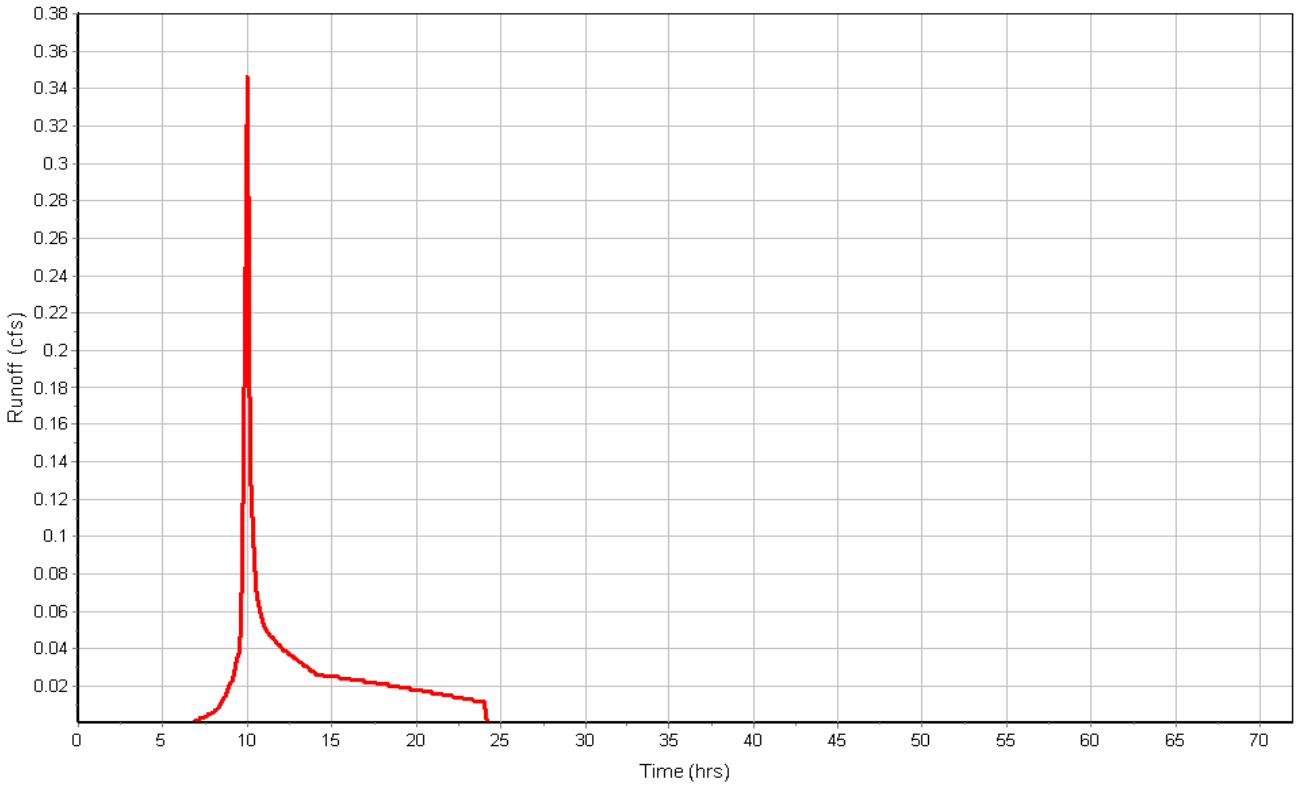
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Subbasin : A3B

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A3C

Input Data

Area (ac) 1.34
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	1.34	A	89.00
Composite Area & Weighted CN	1.34		89.00

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

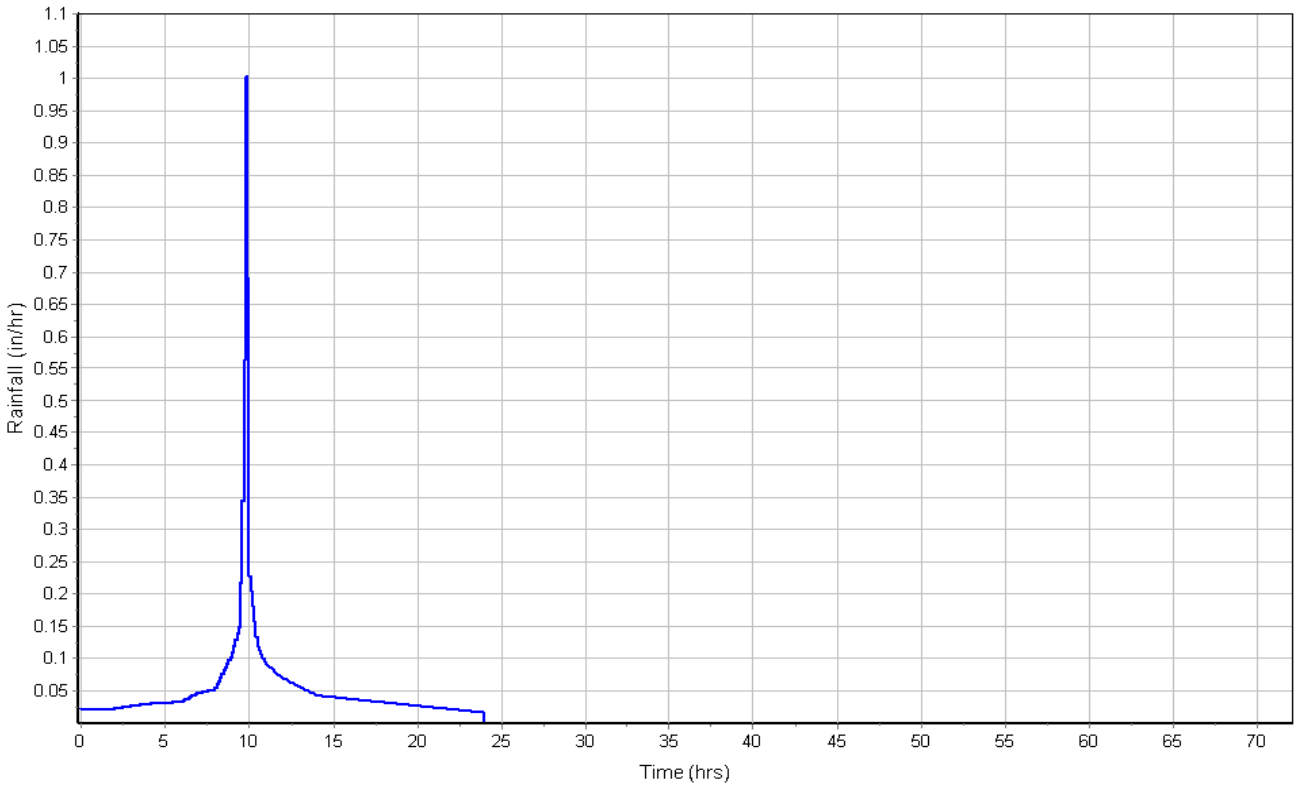
Total Rainfall (in) 1.33
Total Runoff (in) 0.51
Peak Runoff (cfs) 0.42
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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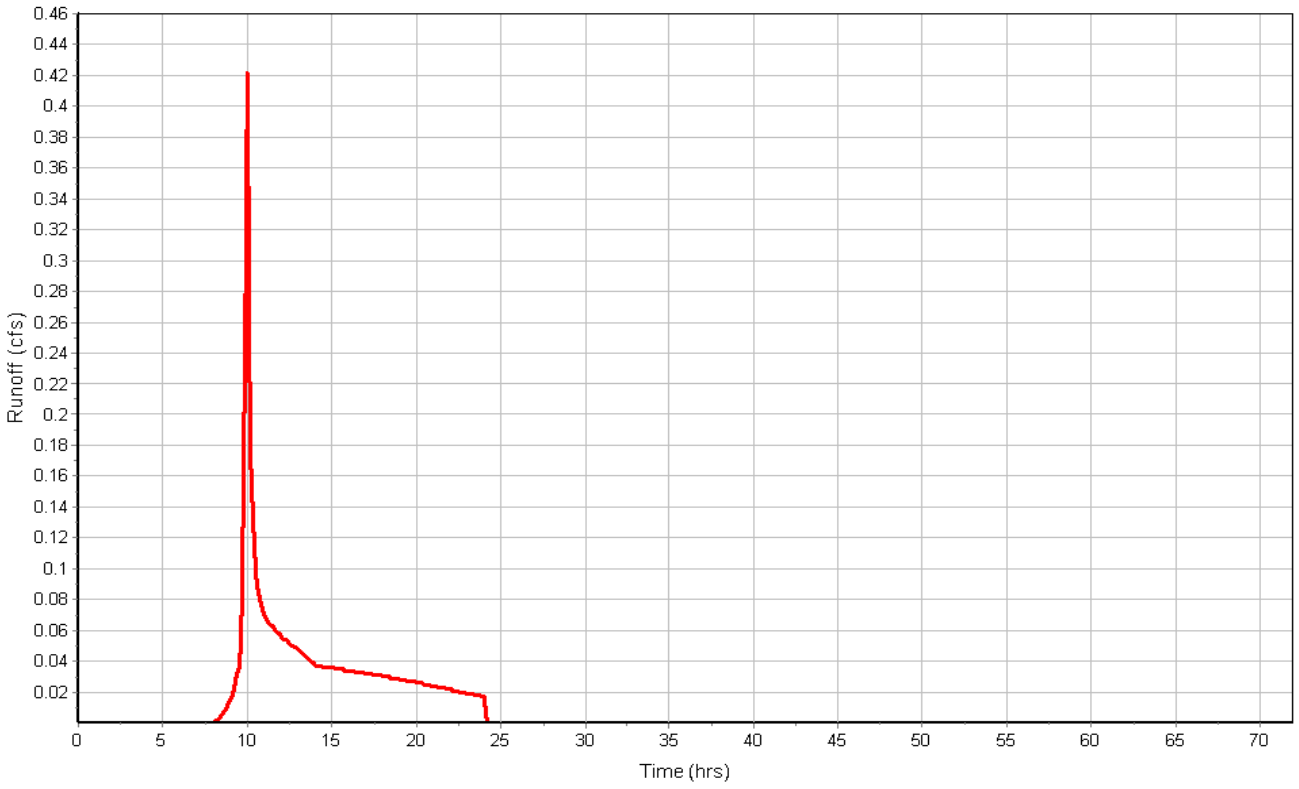
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Subbasin : A3C

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : RVPREDEV

Input Data

Area (ac) 16.37
Weighted Curve Number 70.76
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Desert shrub range, Poor	11.29	A	63.00
Desert shrub range, Poor	5.08	D	88.00
Composite Area & Weighted CN	16.37		70.76

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.13	0.00	0.00
Flow Length (ft) :	1228	0.00	0.00
Slope (%) :	2.0	0.00	0.00
2 yr, 24 hr Rainfall (in) :	1.33	0.00	0.00
Velocity (ft/sec) :	0.20	0.00	0.00
Computed Flow Time (min) :	100.79	0.00	0.00

Total TOC (min) 100.79

Subbasin Runoff Results

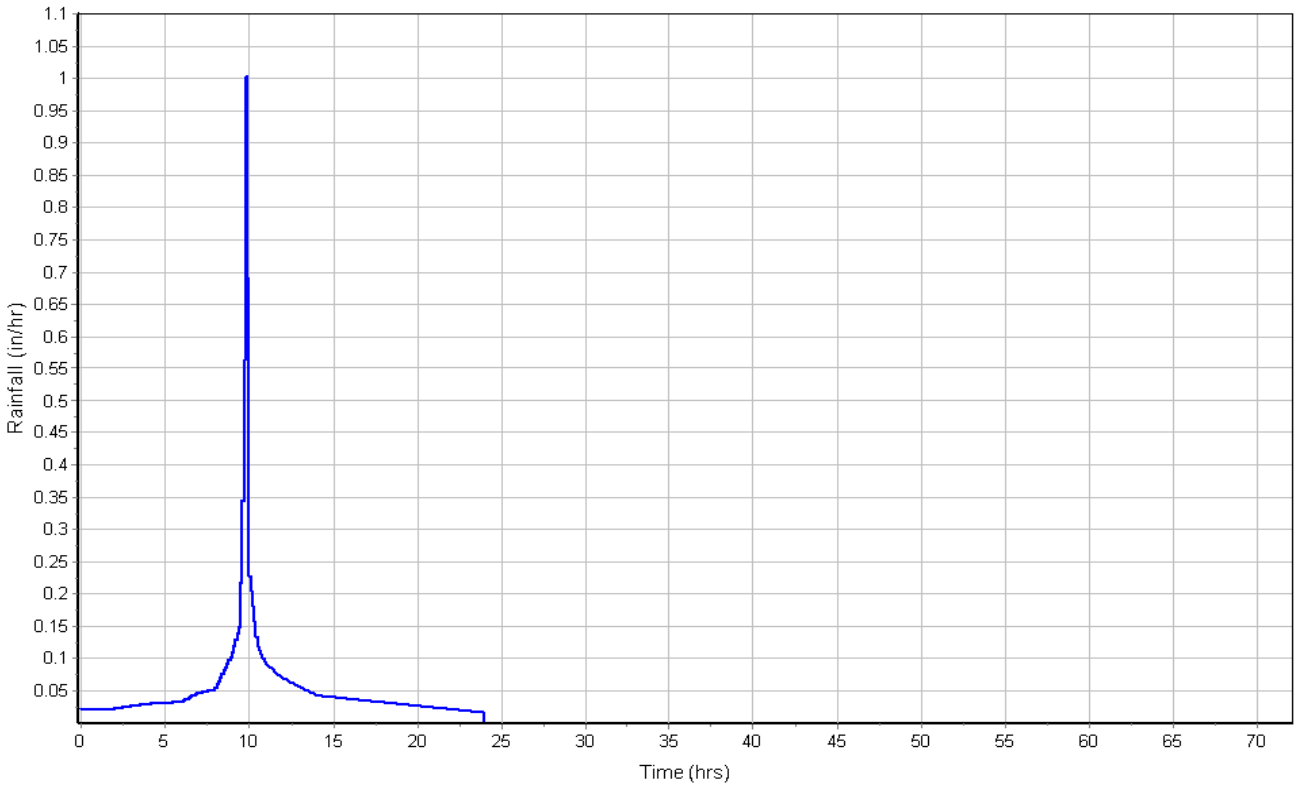
Total Rainfall (in) 1.33
Total Runoff (in) 0.06
Peak Runoff (cfs) 0.08
Weighted Curve Number 70.76
Time of Concentration (days hh:mm:ss) 0 01:40:47

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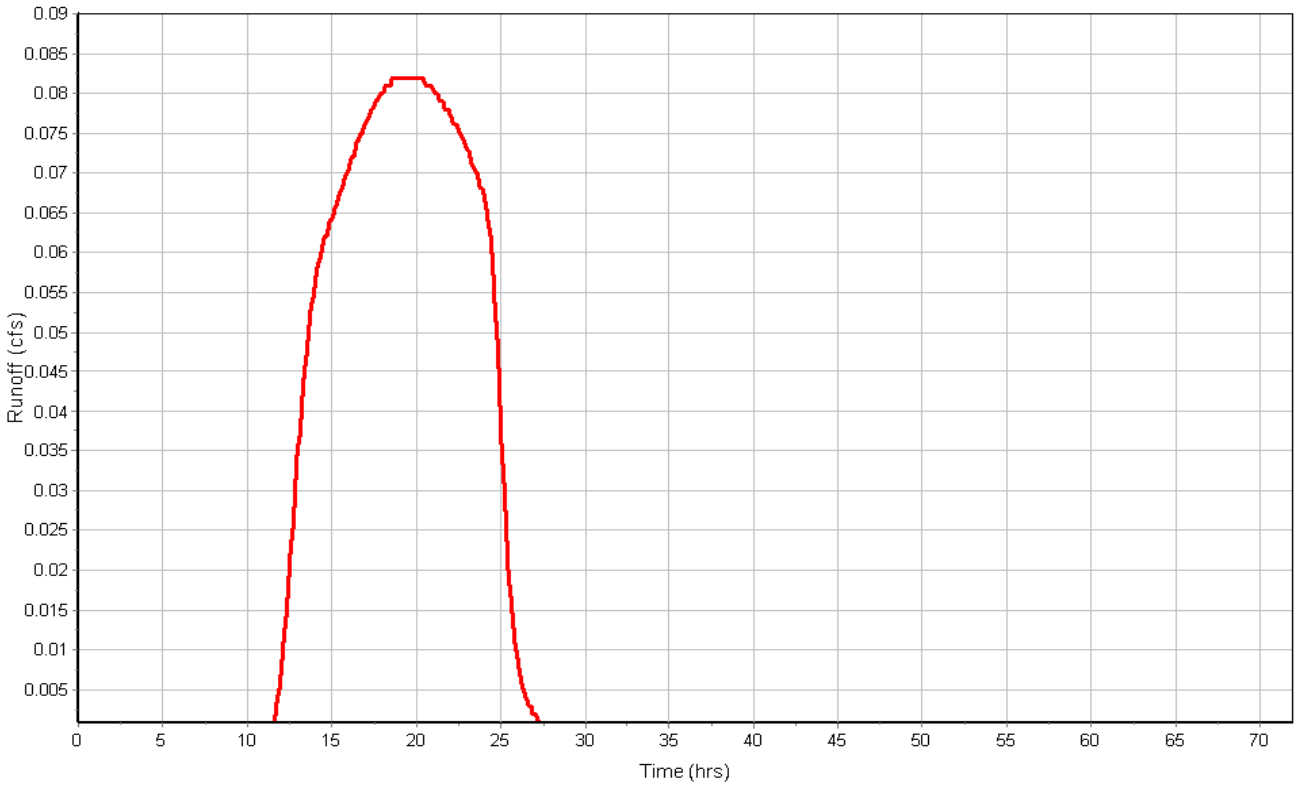
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Subbasin : RVPREDEV

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : TS-PREDEV

Input Data

Area (ac) 21.91
Weighted Curve Number 65.01
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Desert shrub range, Poor	1.76	D	88.00
Desert shrub range, Poor	20.14	A	63.00
Composite Area & Weighted CN	21.90		65.01

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.13	0.00	0.00
Flow Length (ft) :	1326	0.00	0.00
Slope (%) :	2.0	0.00	0.00
2 yr, 24 hr Rainfall (in) :	1.33	0.00	0.00
Velocity (ft/sec) :	0.21	0.00	0.00
Computed Flow Time (min) :	107.18	0.00	0.00

Total TOC (min) 107.18

Subbasin Runoff Results

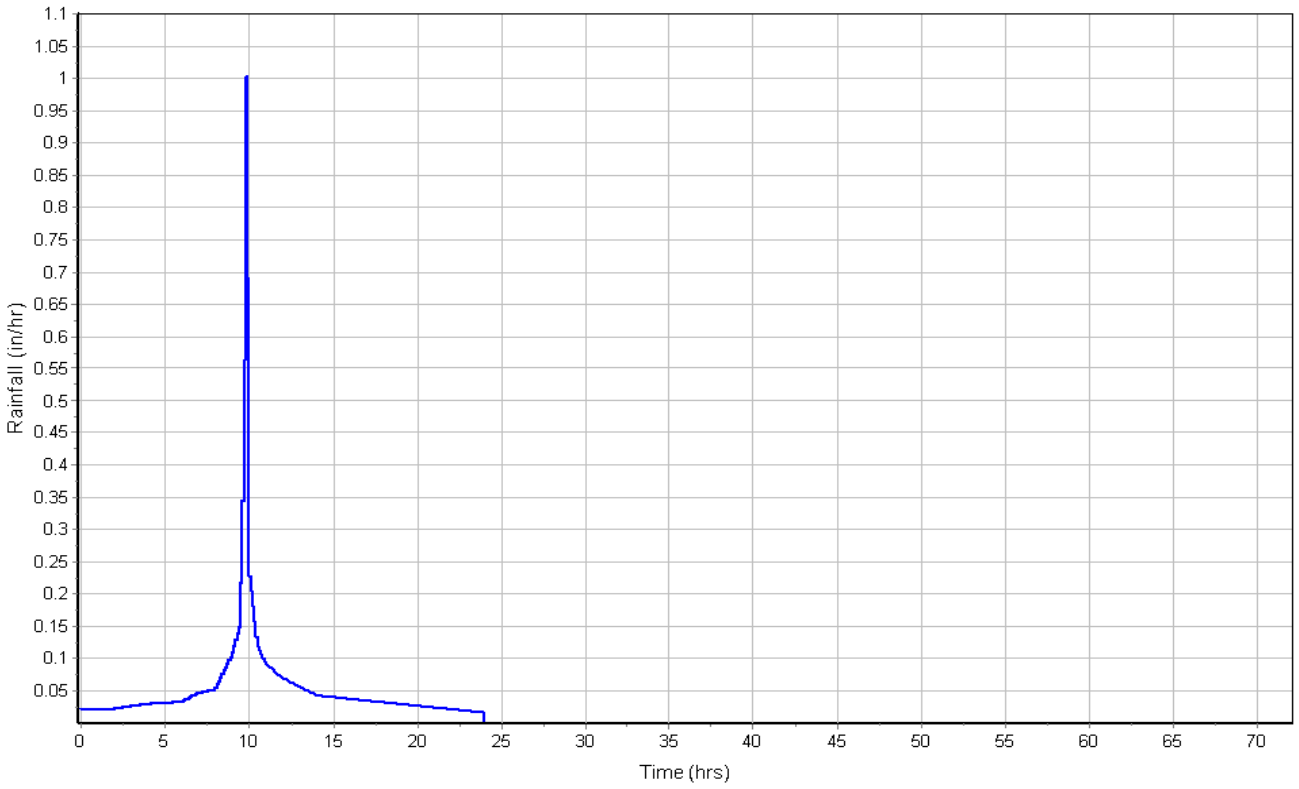
Total Rainfall (in) 1.33
Total Runoff (in) 0.01
Peak Runoff (cfs) 0.04
Weighted Curve Number 65.01
Time of Concentration (days hh:mm:ss) 0 01:47:11

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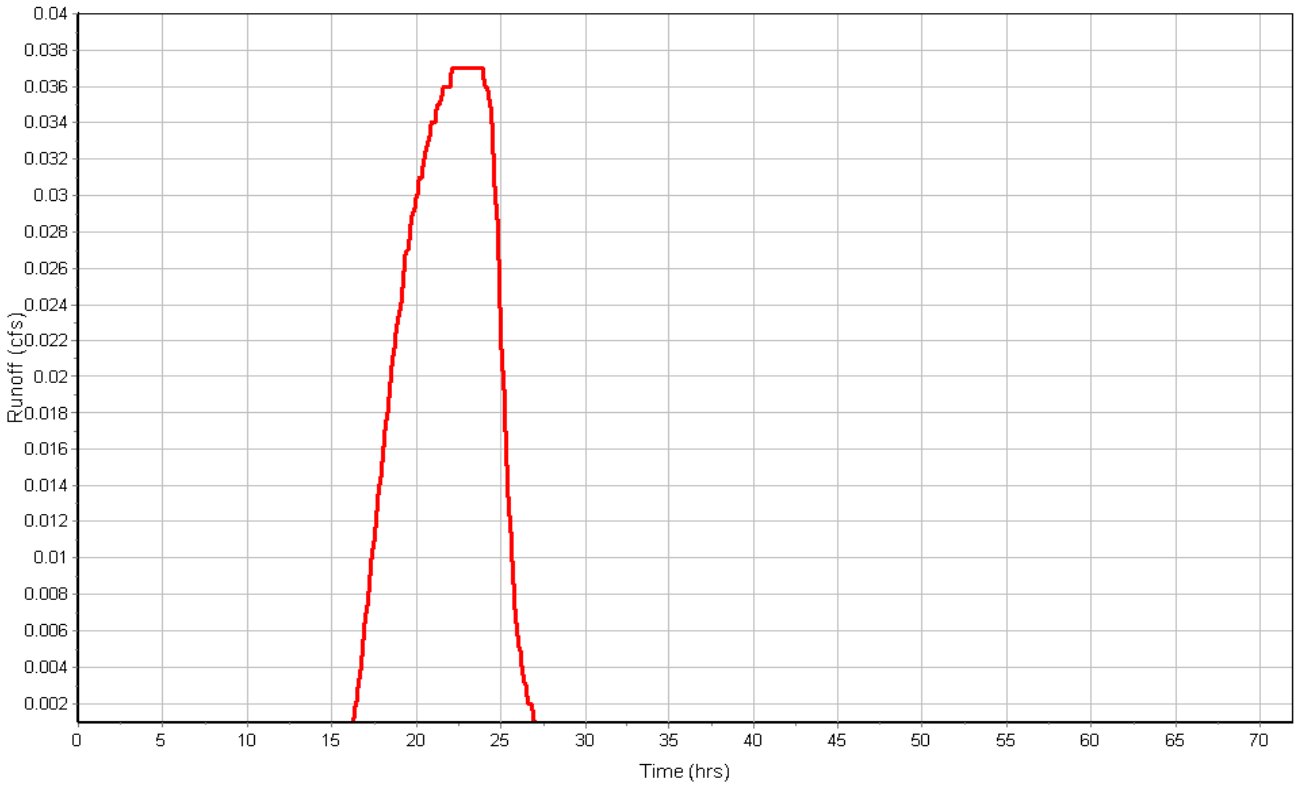
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Subbasin : TS-PREDEV

Rainfall Intensity Graph



Runoff Hydrograph



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Junction Input

SN	Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft²)	Minimum Pipe Cover (in)
1	J01	913.15	914.89	1.74	913.15	0.00	0.00	-914.89	0.00	8.88
2	J02	907.89	912.64	4.75	907.89	0.00	0.00	-912.64	0.00	45.00
3	J03	914.78	917.97	3.19	914.78	0.00	0.00	-917.97	0.00	25.08
4	J04	910.56	914.38	3.82	910.56	0.00	0.00	-914.38	0.00	32.64
5	J05	902.68	907.43	4.75	902.68	0.00	0.00	-907.43	0.00	45.00
6	J06	902.12	906.87	4.75	902.12	0.00	0.00	-906.87	0.00	45.00
7	J07	895.73	900.98	5.25	895.73	0.00	0.00	-900.98	0.00	51.00
8	J08	898.06	902.31	4.25	898.06	0.00	0.00	-902.31	0.00	39.00
9	J09	898.06	902.31	4.25	898.06	0.00	0.00	-902.31	0.00	39.00
10	J10	886.32	890.92	4.60	886.32	0.00	0.00	-890.92	0.00	33.00
11	O1	916.83	921.08	4.25	916.83	0.00	0.00	-921.08	0.00	0.00
12	O2	909.85	914.85	5.00	909.85	0.00	0.00	-914.85	0.00	0.00
13	O3A	915.23	921.60	6.37	915.23	0.00	0.00	-921.60	0.00	0.00
14	O3B	911.08	916.72	5.64	911.08	0.00	0.00	-916.72	0.00	0.00
15	O3C	906.09	912.24	6.15	906.09	0.00	0.00	-912.24	0.00	0.00
16	O4	902.98	906.80	3.82	902.98	0.00	0.00	-906.80	0.00	0.00
17	O5	907.79	912.12	4.33	907.79	0.00	0.00	-912.12	0.00	0.00
18	O6	901.23	905.48	4.25	901.23	0.00	0.00	-905.48	0.00	0.00
19	O7	888.27	901.23	12.96	888.27	0.00	0.00	-901.23	0.00	0.00
20	O8A	894.34	903.66	9.32	894.34	0.00	0.00	-903.66	0.00	0.00
21	SDMH01	916.48	921.15	4.67	916.48	0.00	0.00	-921.15	0.00	42.84
22	SDMH02	909.48	914.04	4.56	909.48	0.00	0.00	-914.04	0.00	41.52
23	SDMH03	907.54	914.70	7.16	907.54	0.00	0.00	-914.70	0.00	55.44
24	SDMH04	907.26	914.39	7.13	907.26	0.00	0.00	-914.39	0.00	72.36
25	SDMH05	907.53	914.79	7.26	907.53	0.00	0.00	-914.79	0.00	73.92
26	SDMH06	905.75	910.18	4.43	905.75	0.00	0.00	-910.18	0.00	41.16
27	SDMH07	905.33	909.05	3.72	905.33	0.00	0.00	-909.05	0.00	31.44
28	SDMH08	902.75	909.14	6.39	902.75	0.00	0.00	-909.14	0.00	57.48
29	SDMH09	901.44	907.96	6.52	901.44	0.00	0.00	-907.96	0.00	47.04
30	SDMH10	900.51	907.70	7.19	900.51	0.00	0.00	-907.70	0.00	67.08
31	SDMH11	894.85	901.92	7.07	894.85	0.00	0.00	-901.92	0.00	66.84
32	SDMH12	893.85	903.70	9.85	893.85	0.00	0.00	-903.70	0.00	100.20
33	SDMH13	897.40	902.76	5.36	897.40	0.00	0.00	-902.76	0.00	46.32
34	SDMH14	893.13	902.49	9.36	893.13	0.00	0.00	-902.49	0.00	71.04
35	SDMH15	886.12	891.87	5.75	886.12	0.00	0.00	-891.87	0.00	45.00
36	SDMH16	885.50	893.01	7.51	885.50	0.00	0.00	-893.01	0.00	63.48
37	SDMH17	884.58	889.78	5.20	884.58	0.00	0.00	-889.78	0.00	37.20

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Junction Results

SN	Element ID	Peak Inflow (cfs)	Peak Lateral Inflow (cfs)	Max HGL Elevation Attained (ft)	Max HGL Depth Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Average HGL Elevation Attained (ft)	Average HGL Depth Attained (ft)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	J01	0.00	0.00	913.15	0.00	0.00	1.74	913.15	0.00	0 00:00	0 00:00	0.00	0.00
2	J02	0.73	0.73	908.34	0.45	0.00	4.30	907.92	0.03	0 10:06	0 00:00	0.00	0.00
3	J03	0.35	0.35	915.08	0.30	0.00	2.89	914.88	0.10	0 10:06	0 00:00	0.00	0.00
4	J04	0.42	0.42	910.86	0.30	0.00	3.52	910.67	0.11	0 10:06	0 00:00	0.00	0.00
5	J05	0.14	0.14	902.87	0.19	0.00	4.56	902.69	0.01	0 10:06	0 00:00	0.00	0.00
6	J06	0.50	0.50	902.29	0.17	0.00	4.58	902.13	0.01	0 10:06	0 00:00	0.00	0.00
7	J07	1.32	1.32	896.08	0.35	0.00	4.90	895.76	0.03	0 10:06	0 00:00	0.00	0.00
8	J08	0.49	0.49	898.27	0.21	0.00	4.04	898.08	0.02	0 10:06	0 00:00	0.00	0.00
9	J09	0.70	0.70	898.31	0.25	0.00	4.00	898.08	0.02	0 10:06	0 00:00	0.00	0.00
10	J10	2.89	2.89	887.17	0.85	0.00	3.75	887.17	0.85	0 00:00	0 00:00	0.00	0.00
11	O1	0.00	0.00	916.83	0.00	0.00	4.25	916.83	0.00	0 00:00	0 00:00	0.00	0.00
12	O2	0.00	0.00	909.85	0.00	0.00	5.00	909.85	0.00	0 00:00	0 00:00	0.00	0.00
13	O3A	0.00	0.00	915.23	0.00	0.00	6.37	915.23	0.00	0 00:00	0 00:00	0.00	0.00
14	O3B	0.02	0.00	911.14	0.06	0.00	5.58	911.08	0.00	0 13:26	0 00:00	0.00	0.00
15	O3C	0.00	0.00	906.09	0.00	0.00	6.15	906.09	0.00	0 00:00	0 00:00	0.00	0.00
16	O4	0.04	0.00	903.07	0.09	0.00	3.73	902.99	0.01	0 11:56	0 00:00	0.00	0.00
17	O5	0.00	0.00	907.79	0.00	0.00	4.33	907.79	0.00	0 00:00	0 00:00	0.00	0.00
18	O6	0.20	0.00	901.34	0.11	0.00	4.14	901.24	0.01	0 10:31	0 00:00	0.00	0.00
19	O7	0.00	0.00	888.27	0.00	0.00	12.96	888.27	0.00	0 00:00	0 00:00	0.00	0.00
20	O8A	0.00	0.00	894.34	0.00	0.00	9.32	894.34	0.00	0 00:00	0 00:00	0.00	0.00
21	SDMH01	0.00	0.00	916.58	0.10	0.00	4.57	916.58	0.10	0 00:00	0 00:00	0.00	0.00
22	SDMH02	0.00	0.00	909.58	0.10	0.00	4.46	909.58	0.10	0 00:00	0 00:00	0.00	0.00
23	SDMH03	0.73	0.00	909.08	1.54	0.00	5.62	909.08	1.54	0 00:00	0 00:00	0.00	0.00
24	SDMH04	0.72	0.00	907.81	0.55	0.00	6.58	907.39	0.13	0 10:07	0 00:00	0.00	0.00
25	SDMH05	0.00	0.00	907.63	0.10	0.00	7.16	907.63	0.10	0 00:00	0 00:00	0.00	0.00
26	SDMH06	0.00	0.00	905.75	0.00	0.00	4.43	905.75	0.00	0 00:00	0 00:00	0.00	0.00
27	SDMH07	0.00	0.00	905.43	0.10	0.00	3.62	905.43	0.10	0 00:00	0 00:00	0.00	0.00
28	SDMH08	0.04	0.00	902.94	0.19	0.00	6.20	902.86	0.11	0 11:56	0 00:00	0.00	0.00
29	SDMH09	0.14	0.00	902.79	1.35	0.00	5.17	902.61	1.17	0 10:06	0 00:00	0.00	0.00
30	SDMH10	0.61	0.00	900.78	0.27	0.00	6.92	900.63	0.12	0 10:06	0 00:00	0.00	0.00
31	SDMH11	1.32	0.00	895.34	0.49	0.00	6.58	894.98	0.13	0 10:06	0 00:00	0.00	0.00
32	SDMH12	1.30	0.00	894.34	0.49	0.00	9.36	893.89	0.04	0 10:07	0 00:00	0.00	0.00
33	SDMH13	1.18	0.00	897.99	0.59	0.00	4.77	897.76	0.36	0 10:06	0 00:00	0.00	0.00
34	SDMH14	2.41	0.00	895.34	2.21	0.00	7.15	895.09	1.96	0 10:06	0 00:00	0.00	0.00
35	SDMH15	5.12	0.00	887.13	1.01	0.00	4.74	886.26	0.14	0 10:06	0 00:00	0.00	0.00
36	SDMH16	5.09	0.00	886.72	1.22	0.00	6.29	885.79	0.29	0 10:07	0 00:00	0.00	0.00
37	SDMH17	5.06	0.00	885.62	1.04	0.00	4.16	884.75	0.17	0 10:08	0 00:00	0.00	0.00

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Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
1	P01	102.69	916.83	0.00	916.58	0.10	0.25	0.2400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
2	P02	198.58	916.48	0.00	913.15	0.00	3.33	1.6800	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
3	P03	18.00	913.15	0.00	912.85	1.06	0.30	1.6700	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
4	P04	111.00	909.85	0.00	909.58	0.10	0.27	0.2400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
5	P05	160.94	909.48	0.00	909.08	1.54	0.40	0.2500	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
6	P06	99.00	907.89	0.00	907.64	0.10	0.25	0.2500	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
7	P07	74.09	907.54	0.00	907.36	0.10	0.18	0.2400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
8	P08	66.52	907.79	0.00	907.63	0.10	0.16	0.2400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
9	P09	70.26	907.53	0.00	907.36	0.10	0.17	0.2400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
10	P10	92.00	907.26	0.00	903.48	0.56	3.78	4.1100	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
11	P11	74.00	901.23	0.00	897.49	1.72	3.74	5.0500	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
12	P12	141.00	915.23	0.00	914.88	0.10	0.35	0.2500	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
13	P13	25.00	914.78	0.00	914.72	0.56	0.06	0.2400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
14	P14	83.00	911.08	0.00	910.66	0.10	0.42	0.5100	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
15	P15	23.00	910.56	0.00	910.45	1.06	0.11	0.4800	CIRCULAR	12.000	12.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
16	P16	102.00	906.09	0.00	905.75	0.00	0.34	0.3300	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
17	P17	99.00	905.75	0.00	905.43	0.10	0.32	0.3200	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
18	P18	31.00	905.33	0.00	905.23	1.06	0.10	0.3200	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
19	P19	50.02	902.98	0.00	902.85	0.10	0.13	0.2600	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
20	P20	83.99	902.75	0.00	902.54	1.10	0.21	0.2500	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
21	P21	30.00	902.68	0.00	902.60	1.16	0.08	0.2700	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
22	P22	331.00	901.44	0.00	900.61	0.10	0.83	0.2500	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
23	P23	32.00	902.12	0.00	900.61	0.10	1.51	4.7200	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
24	P24	89.00	900.51	0.00	897.23	1.46	3.28	3.6900	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
25	P25	62.00	888.27	0.00	887.17	0.85	1.10	1.7700	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
26	P26	130.00	894.34	0.00	893.85	0.00	0.49	0.3800	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
27	P27	39.00	895.73	0.00	894.95	0.10	0.78	2.0000	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
28	P28	333.48	894.85	0.00	893.85	0.00	1.00	0.3000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
29	P29	208.00	893.85	0.00	893.23	0.10	0.62	0.3000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
30	P30	16.00	898.06	0.00	897.74	0.34	0.32	2.0000	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
31	P31	28.00	898.06	0.00	897.50	0.10	0.56	2.0000	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
32	P32	93.00	897.40	0.00	895.07	1.94	2.33	2.5100	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
33	P33	745.00	893.13	0.00	886.22	0.10	6.91	0.9300	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
34	P34	39.00	886.32	0.00	886.12	0.00	0.20	0.5100	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
35	P35	200.04	886.12	0.00	885.72	0.22	0.40	0.2000	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
36	P36	328.00	885.50	0.00	884.68	0.10	0.82	0.2500	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
37	P37	63.00	884.58	0.00	884.42	0.00	0.16	0.2500	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1

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Pipe Results

SN	Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Froude Number	Reported Condition
		(cfs)	(days hh:mm)	(cfs)		(ft/sec)	(min)	(ft)		(min)		
1	P01	0.00	0 00:00	1.76	0.00	0.00		0.00	0.00	0.00		Calculated
2	P02	0.00	0 00:00	4.61	0.00	0.00		0.00	0.00	0.00		Calculated
3	P03	0.00	0 00:00	4.60	0.00	0.00		0.00	0.00	0.00		Calculated
4	P04	0.00	0 00:00	1.76	0.00	0.00		0.00	0.00	0.00		Calculated
5	P05	0.00	0 00:00	1.78	0.00	0.00		0.00	0.00	0.00		Calculated
6	P06	0.73	0 10:06	1.79	0.41	2.17	0.76	0.44	0.44	0.00		Calculated
7	P07	0.72	0 10:07	1.76	0.41	2.13	0.58	0.44	0.45	0.00		Calculated
8	P08	0.00	0 00:00	1.75	0.00	0.00		0.00	0.00	0.00		Calculated
9	P09	0.00	0 00:00	1.75	0.00	0.00		0.00	0.00	0.00		Calculated
10	P10	0.72	0 10:07	7.22	0.10	5.89	0.26	0.21	0.21	0.00		Calculated
11	P11	0.20	0 10:31	8.01	0.03	4.16	0.30	0.11	0.11	0.00		Calculated
12	P12	0.00	0 00:00	1.78	0.00	0.00		0.00	0.00	0.00		Calculated
13	P13	0.34	0 10:06	1.75	0.20	1.73	0.24	0.30	0.30	0.00		Calculated
14	P14	0.02	0 13:27	2.53	0.01	0.88	1.57	0.06	0.06	0.00		Calculated
15	P15	0.42	0 10:06	2.14	0.20	2.11	0.18	0.30	0.30	0.00		Calculated
16	P16	0.00	0 00:00	2.06	0.00	0.00		0.00	0.00	0.00		Calculated
17	P17	0.00	0 00:00	2.03	0.00	0.00		0.00	0.00	0.00		Calculated
18	P18	0.00	0 00:00	2.02	0.00	0.00		0.00	0.00	0.00		Calculated
19	P19	0.04	0 11:56	5.36	0.01	0.87	0.96	0.09	0.06	0.00		Calculated
20	P20	0.04	0 11:58	5.25	0.01	0.86	1.63	0.09	0.06	0.00		Calculated
21	P21	0.14	0 10:06	1.84	0.08	1.39	0.36	0.19	0.19	0.00		Calculated
22	P22	0.13	0 10:10	5.26	0.02	1.31	4.21	0.16	0.11	0.00		Calculated
23	P23	0.50	0 10:06	7.74	0.06	5.53	0.10	0.17	0.17	0.00		Calculated
24	P24	0.61	0 10:06	20.17	0.03	5.16	0.29	0.18	0.12	0.00		Calculated
25	P25	0.00	0 00:00	4.75	0.00	0.00		0.00	0.00	0.00		Calculated
26	P26	0.00	0 00:00	2.19	0.00	0.00		0.00	0.00	0.00		Calculated
27	P27	1.32	0 10:06	5.04	0.26	5.40	0.12	0.35	0.35	0.00		Calculated
28	P28	1.30	0 10:07	5.75	0.23	2.68	2.07	0.48	0.32	0.00		Calculated
29	P29	1.28	0 10:08	5.73	0.22	2.64	1.31	0.47	0.32	0.00		Calculated
30	P30	0.70	0 10:06	5.04	0.14	4.50	0.06	0.25	0.25	0.00		Calculated
31	P31	0.49	0 10:06	5.04	0.10	4.07	0.11	0.21	0.21	0.00		Calculated
32	P32	1.18	0 10:06	16.63	0.07	5.46	0.28	0.27	0.18	0.00		Calculated
33	P33	2.38	0 10:08	10.12	0.24	4.78	2.60	0.49	0.33	0.00		Calculated
34	P34	2.87	0 10:06	7.52	0.38	3.97	0.16	0.64	0.43	0.00		Calculated
35	P35	5.09	0 10:07	10.12	0.50	3.24	1.03	1.00	0.50	0.00		Calculated
36	P36	5.06	0 10:08	11.31	0.45	3.53	1.55	0.92	0.47	0.00		Calculated
37	P37	5.06	0 10:08	11.40	0.44	3.52	0.30	0.90	0.47	0.00		Calculated

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Storage Nodes

Storage Node : BR1

Input Data

Invert Elevation (ft)	918.02
Max (Rim) Elevation (ft)	922.46
Max (Rim) Offset (ft)	4.44
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-918.02
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

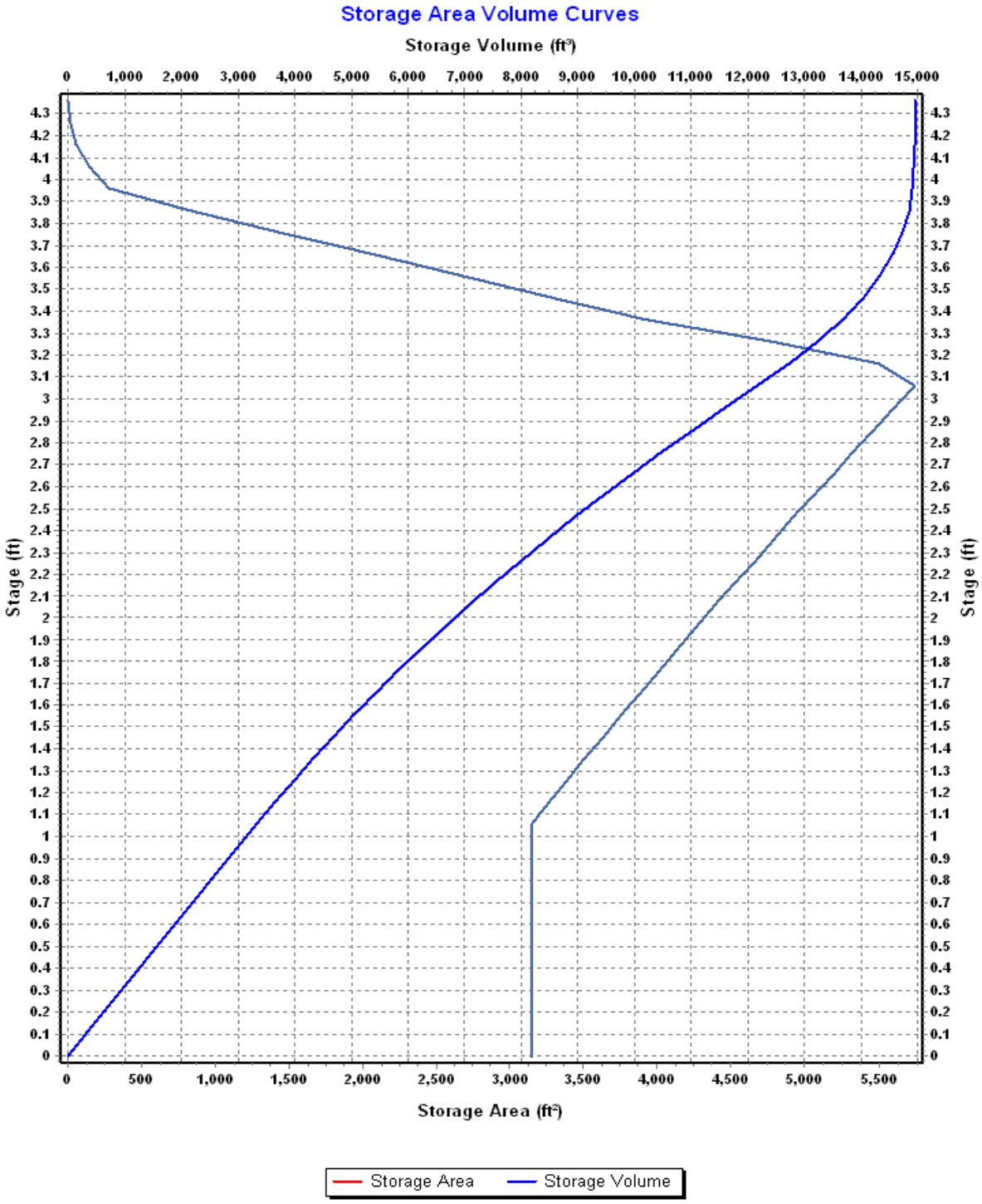
Exfiltration Rate (in/hr)	3.6500

Storage Area Volume Curves

Storage Curve : BR1

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	3141	0.000
1.06	3141.89	3329.93
1.16	3262.83	3650.17
1.26	3385.2	3982.57
1.36	3508.5	4327.26
1.46	3632.69	4684.32
1.56	3757.77	5053.84
1.66	3883.75	5435.92
1.76	4010.63	5830.64
1.86	4138.42	6238.09
1.96	4267.16	6658.37
2.06	4396.87	7091.57
2.16	4527.56	7537.79
2.26	4659.22	7997.13
2.36	4791.85	8469.68
2.46	4925.44	8955.54
2.56	5060	9454.81
2.66	5195.53	9967.59
2.76	5332.02	10493.97
2.86	5469.48	11034.05
2.96	5607.91	11587.92
3.06	5744.57	12155.54
3.16	5498	12717.67
3.26	4752.13	13230.18
3.36	3925.58	13664.07
3.46	3303.77	14025.54
3.56	2676.06	14324.53
3.66	2043.84	14560.53
3.76	1427.82	14734.11
3.86	837.63	14847.38
3.96	281.34	14903.33
4.06	149.84	14924.89
4.16	60.48	14935.41
4.26	15.53	14939.21
4.36	0.9	14940.03

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Storage Node : BR1 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR1	Bottom	CIRCULAR	No	24.00			920.58	0.61

Output Summary Results

Peak Inflow (cfs)	0.35
Peak Lateral Inflow (cfs)	0.35
Peak Outflow (cfs)	0.00
Peak Exfiltration Flow Rate (cfm)	15.92
Max HGL Elevation Attained (ft)	918.03
Max HGL Depth Attained (ft)	0.01
Average HGL Elevation Attained (ft)	918.02
Average HGL Depth Attained (ft)	0
Time of Max HGL Occurrence (days hh:mm)	0 10:12
Total Exfiltration Volume (1000-ft³)	0.287
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR2

Input Data

Invert Elevation (ft)	911.79
Max (Rim) Elevation (ft)	915.12
Max (Rim) Offset (ft)	3.33
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-911.79
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

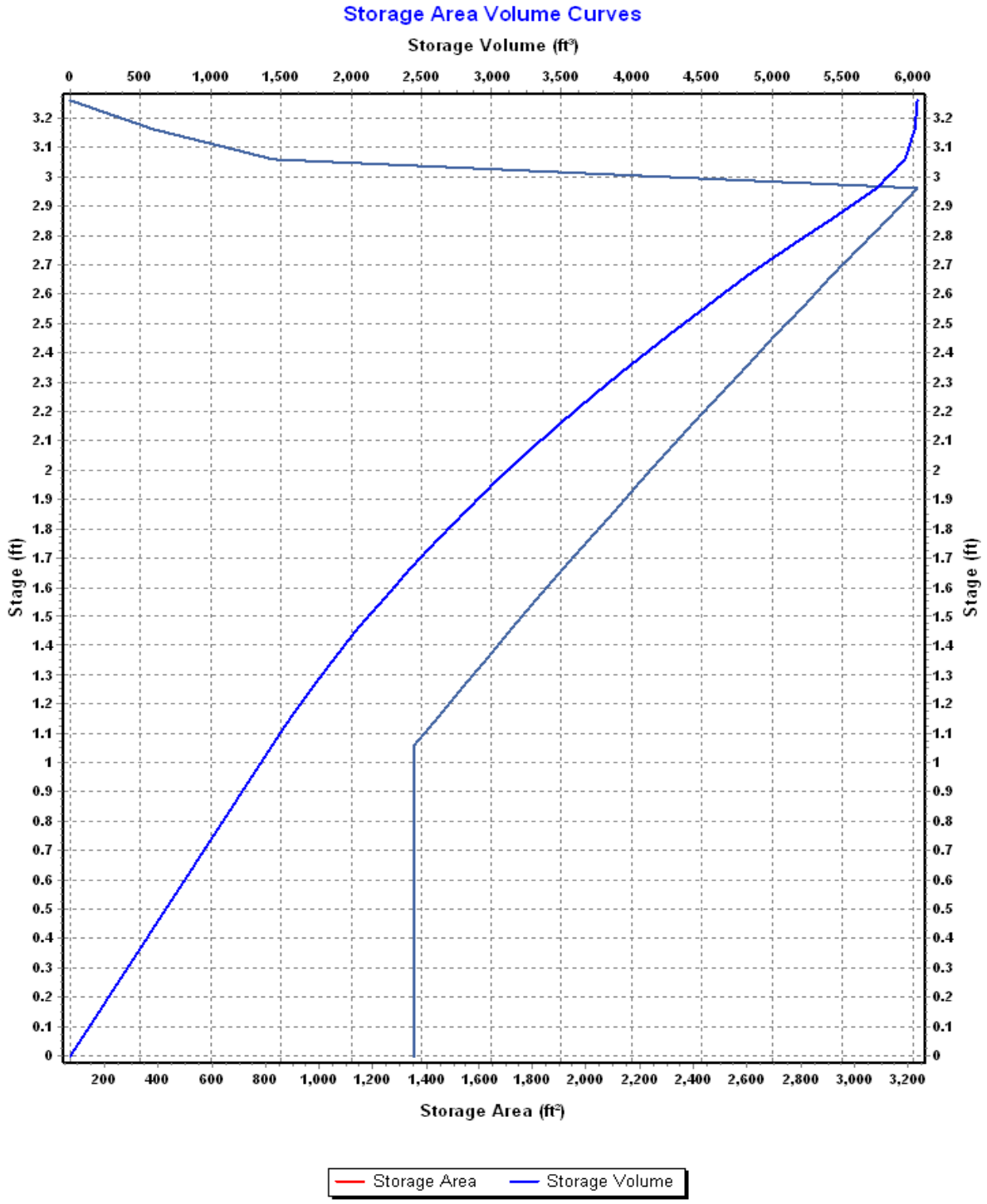
Exfiltration Rate (in/hr)	0.2500

Storage Area Volume Curves

Storage Curve : BR2

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	1355	0.000
1.06	1355.93	1436.79
1.16	1445.99	1576.89
1.26	1537.04	1726.04
1.36	1629.07	1884.35
1.46	1722.08	2051.91
1.56	1816.08	2228.82
1.66	1911.06	2415.18
1.76	2007.02	2611.08
1.86	2103.96	2816.63
1.96	2201.89	3031.92
2.06	2300.8	3257.05
2.16	2400.7	3492.13
2.26	2501.57	3737.24
2.36	2603.43	3992.49
2.46	2706.28	4257.98
2.56	2810.1	4533.80
2.66	2914.91	4820.05
2.76	3020.7	5116.83
2.86	3127.48	5424.24
2.96	3235.24	5742.38
3.06	833.86	5945.84
3.16	385.92	6006.83
3.26	72.94	6029.77

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Storage Node : BR2 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR2	Bottom	CIRCULAR	No	24.00			914.35	0.61

Output Summary Results

Peak Inflow (cfs)	0.73
Peak Lateral Inflow (cfs)	0.73
Peak Outflow (cfs)	0.00
Peak Exfiltration Flow Rate (cfm)	0.85
Max HGL Elevation Attained (ft)	913.99
Max HGL Depth Attained (ft)	2.2
Average HGL Elevation Attained (ft)	913.27
Average HGL Depth Attained (ft)	1.48
Time of Max HGL Occurrence (days hh:mm)	1 00:14
Total Exfiltration Volume (1000-ft³)	2.590
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR3A

Input Data

Invert Elevation (ft)	918.54
Max (Rim) Elevation (ft)	922.87
Max (Rim) Offset (ft)	4.33
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-918.54
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

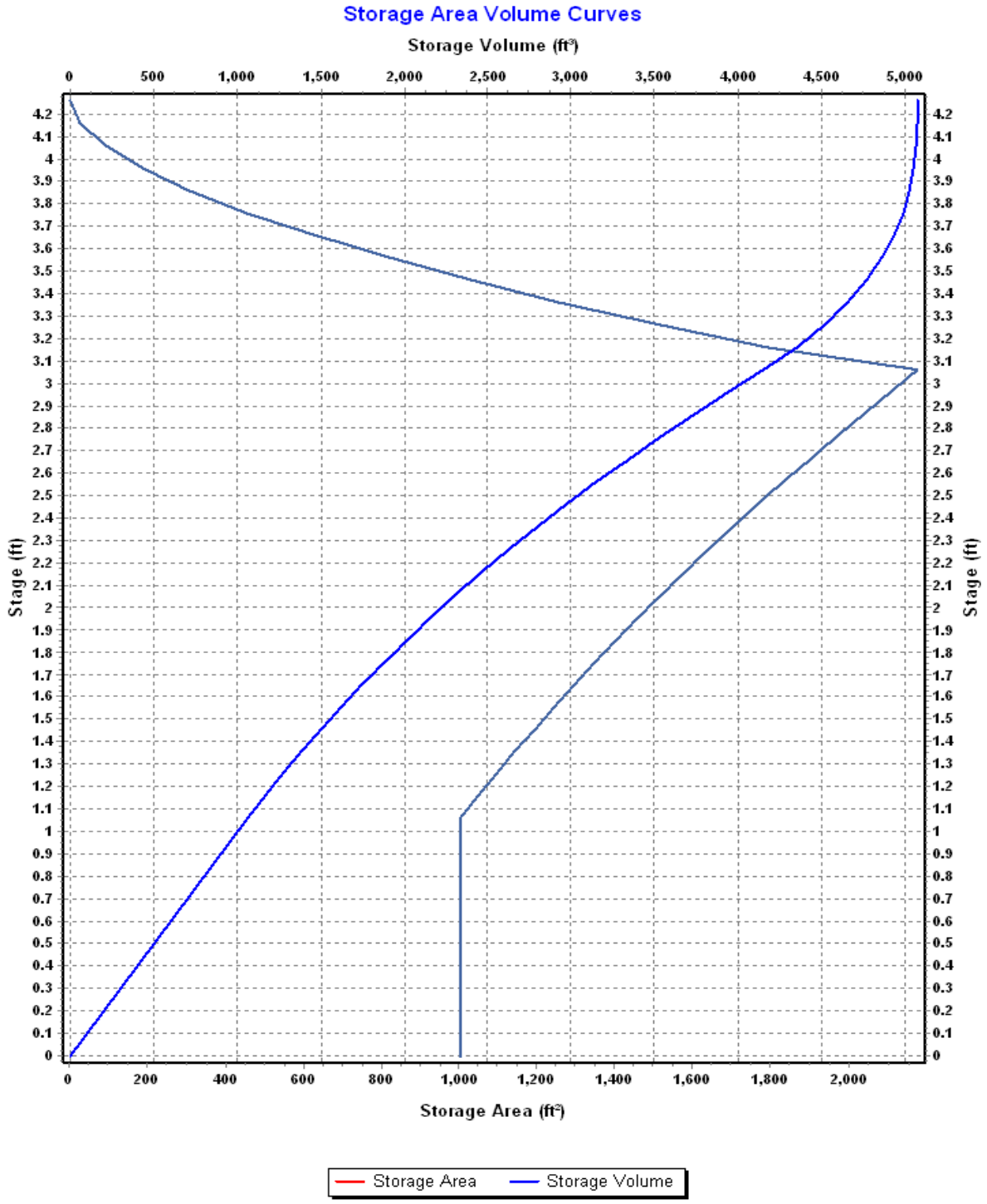
Exfiltration Rate (in/hr)	1.0000

Storage Area Volume Curves

Storage Curve : BR3A

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	1003	0.000
1.06	1003.24	1063.31
1.16	1049.23	1165.93
1.26	1096.69	1273.23
1.36	1145.31	1385.33
1.46	1195.09	1502.35
1.56	1246.03	1624.41
1.66	1298.19	1751.62
1.76	1351.67	1884.11
1.86	1406.49	2022.02
1.96	1462.89	2165.49
2.06	1520.96	2314.68
2.16	1580.66	2469.76
2.26	1641.67	2630.88
2.36	1704.02	2798.16
2.46	1767.77	2971.75
2.56	1832.91	3151.78
2.66	1899.44	3338.40
2.76	1967.37	3531.74
2.86	2036.69	3731.94
2.96	2107.4	3939.14
3.06	2176.53	4153.34
3.16	1787.16	4351.52
3.26	1515.95	4516.68
3.36	1252.64	4655.11
3.46	1029.78	4769.23
3.56	818.92	4861.67
3.66	625.41	4933.89
3.76	455.66	4987.94
3.86	307.6	5026.10
3.96	187.02	5050.83
4.06	94.69	5064.92
4.16	26.99	5071.00
4.26	2.5	5072.47

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Storage Node : BR3A (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR3A	Bottom	CIRCULAR	No	24.00			921.10	0.61

Output Summary Results

Peak Inflow (cfs)	0.32
Peak Lateral Inflow (cfs)	0.32
Peak Outflow (cfs)	0.00
Peak Exfiltration Flow Rate (cfm)	1.39
Max HGL Elevation Attained (ft)	919.13
Max HGL Depth Attained (ft)	0.59
Average HGL Elevation Attained (ft)	918.64
Average HGL Depth Attained (ft)	0.1
Time of Max HGL Occurrence (days hh:mm)	0 13:47
Total Exfiltration Volume (1000-ft³)	1.558
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR3B

Input Data

Invert Elevation (ft)	914.16
Max (Rim) Elevation (ft)	917.97
Max (Rim) Offset (ft)	3.81
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-914.16
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

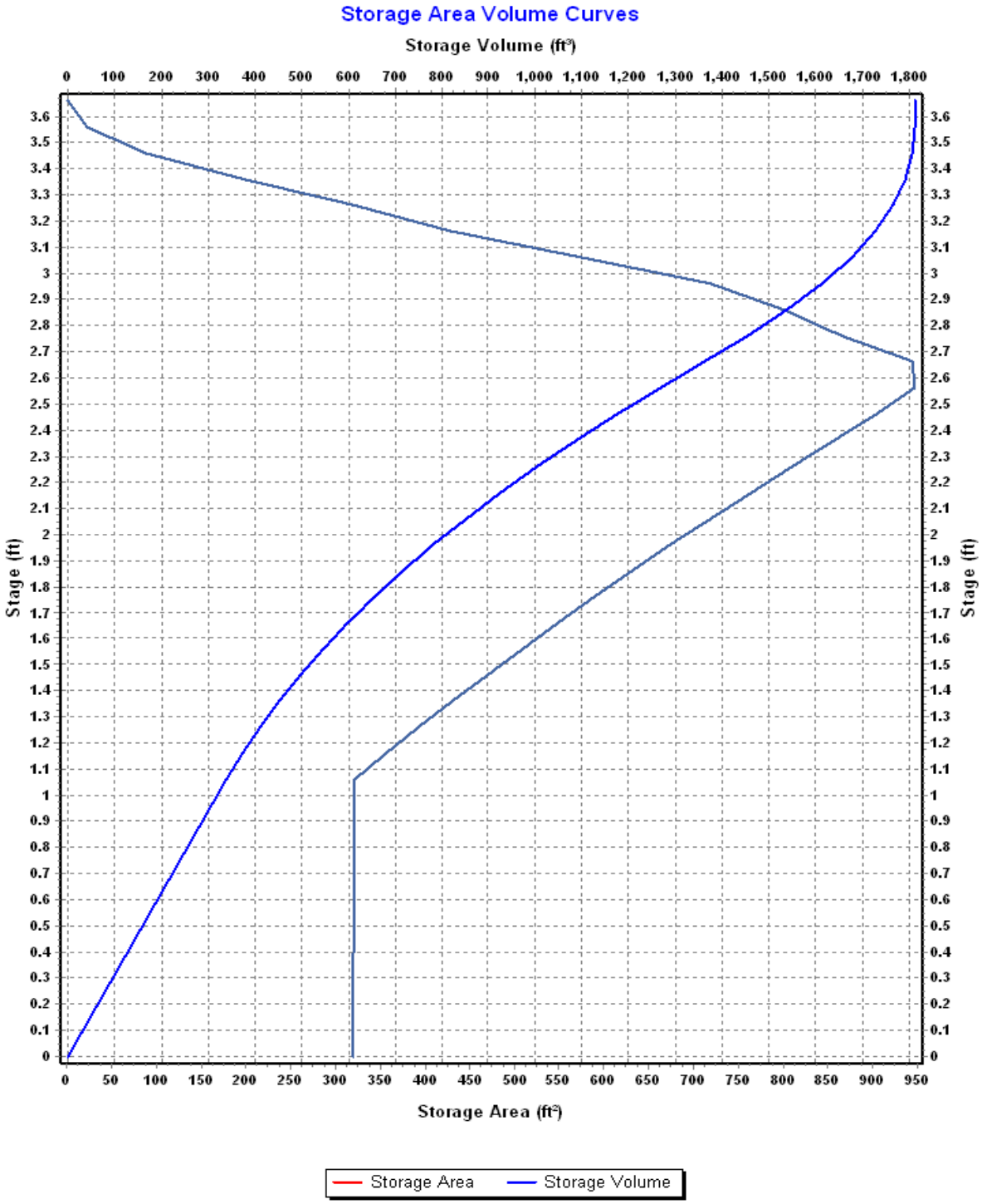
Exfiltration Rate (in/hr)	1.0000

Storage Area Volume Curves

Storage Curve : BR3B

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	320	0.000
1.06	320.79	339.62
1.16	356.4	373.48
1.26	392.93	410.95
1.36	430.38	452.12
1.46	468.77	497.08
1.56	508.1	545.92
1.66	548.38	598.74
1.76	589.6	655.64
1.86	631.77	716.71
1.96	674.88	782.04
2.06	718.94	851.73
2.16	763.94	925.87
2.26	809.88	1004.56
2.36	856.77	1087.89
2.46	904.6	1175.96
2.56	946.68	1268.52
2.66	943.54	1363.03
2.76	865.89	1453.50
2.86	800.8	1536.83
2.96	718.52	1612.80
3.06	573.23	1677.39
3.16	427.46	1727.42
3.26	317.49	1764.67
3.36	199.57	1790.52
3.46	88.48	1804.92
3.56	23.36	1810.51
3.66	1.54	1811.76

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Storage Node : BR3B (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR3B	Bottom	CIRCULAR	No	24.00			916.22	0.61

Output Summary Results

Peak Inflow (cfs)	0.34
Peak Lateral Inflow (cfs)	0.00
Peak Outflow (cfs)	0.02
Peak Exfiltration Flow Rate (cfm)	1.00
Max HGL Elevation Attained (ft)	916.23
Max HGL Depth Attained (ft)	2.07
Average HGL Elevation Attained (ft)	914.90
Average HGL Depth Attained (ft)	0.74
Time of Max HGL Occurrence (days hh:mm)	0 13:26
Total Exfiltration Volume (1000-ft³)	1.688
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR3C

Input Data

Invert Elevation (ft)	909.39
Max (Rim) Elevation (ft)	912.45
Max (Rim) Offset (ft)	3.06
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-909.39
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

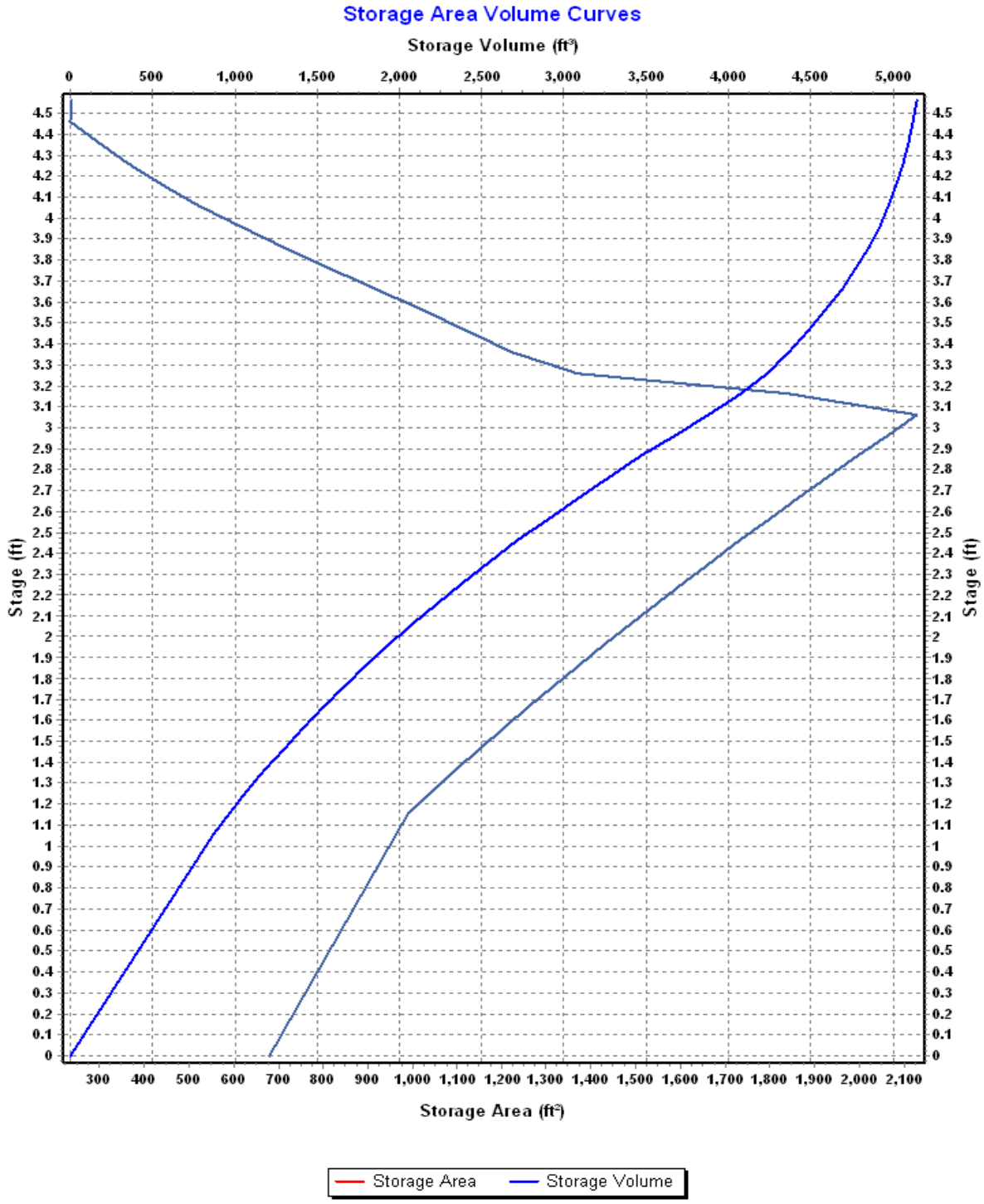
Exfiltration Rate (in/hr)	4.1500

Storage Area Volume Curves

Storage Curve : BR3C

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	681	0.000
1.06	963.86	871.78
1.16	990.19	969.48
1.26	1041.36	1071.06
1.36	1093.51	1177.80
1.46	1146.65	1289.81
1.56	1200.78	1407.18
1.66	1255.89	1530.01
1.76	1311.99	1658.40
1.86	1369.08	1792.45
1.96	1427.16	1932.26
2.06	1486.28	2077.93
2.16	1546.33	2229.56
2.26	1607.29	2387.24
2.36	1669.16	2551.06
2.46	1731.95	2721.12
2.56	1795.65	2897.50
2.66	1860.27	3080.30
2.76	1925.8	3269.60
2.86	1992.24	3465.50
2.96	2059.6	3668.09
3.06	2127.88	3877.46
3.16	1839.41	4075.82
3.26	1368.28	4236.20
3.36	1223.76	4365.80
3.46	1122.78	4483.13
3.56	1021.82	4590.36
3.66	920.87	4687.49
3.76	814.21	4774.24
3.86	709.9	4850.45
3.96	612.13	4916.55
4.06	521.34	4973.22
4.16	437.93	5021.18
4.26	362.17	5061.19
4.36	294.31	5094.01
4.46	234.5	5120.45
4.56	237.57	5144.05

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Storage Node : BR3C (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR3C	Bottom	CIRCULAR	No	24.00			911.95	0.61

Output Summary Results

Peak Inflow (cfs)	0.42
Peak Lateral Inflow (cfs)	0.00
Peak Outflow (cfs)	0.00
Peak Exfiltration Flow Rate (cfm)	4.77
Max HGL Elevation Attained (ft)	909.94
Max HGL Depth Attained (ft)	0.55
Average HGL Elevation Attained (ft)	909.42
Average HGL Depth Attained (ft)	0.03
Time of Max HGL Occurrence (days hh:mm)	0 10:52
Total Exfiltration Volume (1000-ft³)	1.723
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR4

Input Data

Invert Elevation (ft)	904.17
Max (Rim) Elevation (ft)	908.79
Max (Rim) Offset (ft)	4.62
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-904.17
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

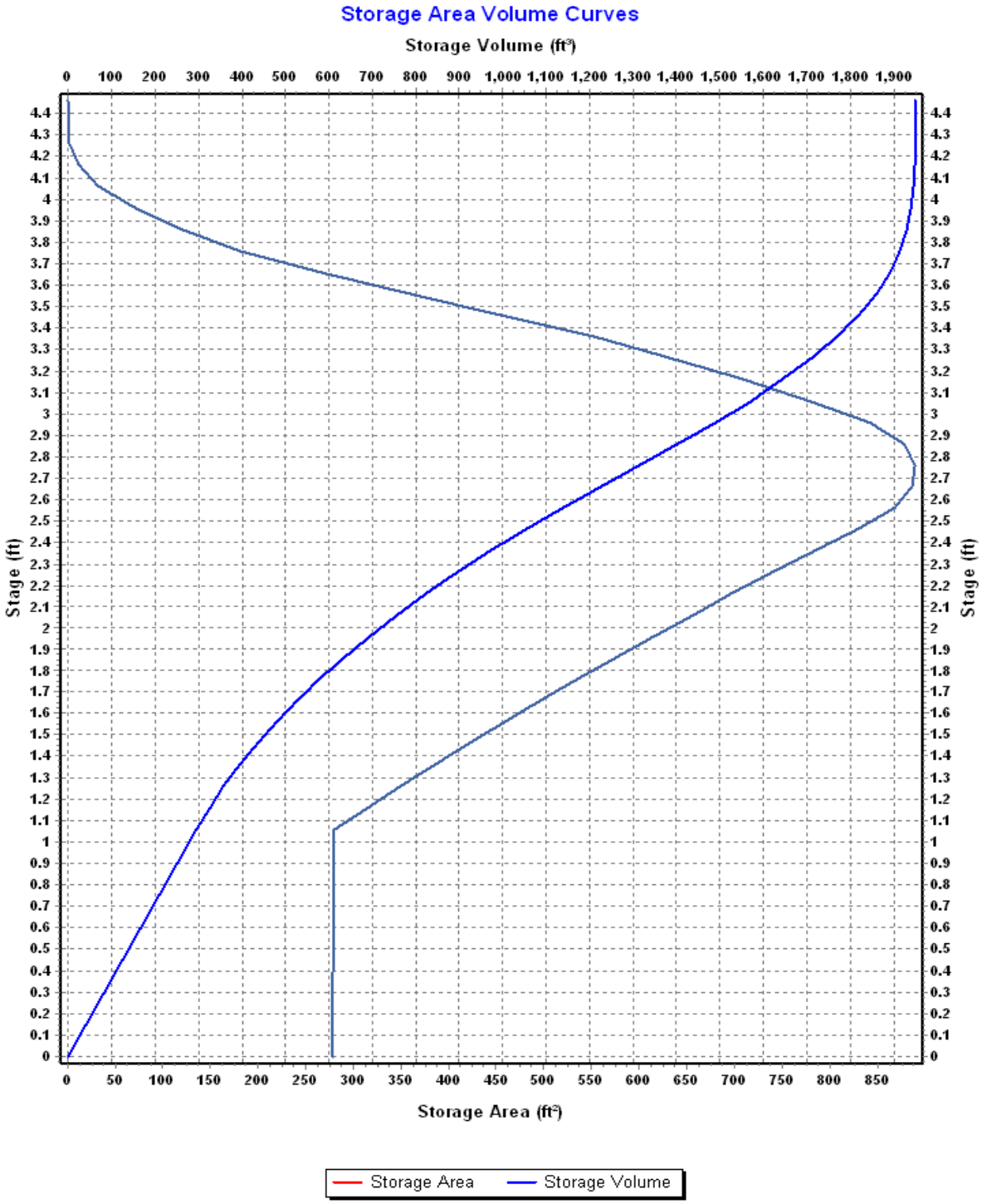
Exfiltration Rate (in/hr)	0.7500

Storage Area Volume Curves

Storage Curve : BR4

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	278	0.000
1.06	278.97	295.19
1.16	314.62	324.87
1.26	349.57	358.08
1.36	384.97	394.81
1.46	421.01	435.11
1.56	457.86	479.05
1.66	495.61	526.72
1.76	534.26	578.21
1.86	573.81	633.61
1.96	614.24	693.01
2.06	655.56	756.50
2.16	697.78	824.17
2.26	740.89	896.10
2.36	784.89	972.39
2.46	829.78	1053.12
2.56	868.08	1138.01
2.66	885.77	1225.70
2.76	889.34	1314.46
2.86	877.29	1402.79
2.96	841.77	1488.74
3.06	779.1	1569.78
3.16	707	1644.09
3.26	629.62	1710.92
3.36	551	1769.95
3.46	453.39	1820.17
3.56	357.92	1860.74
3.66	265.64	1891.92
3.76	181.58	1914.28
3.86	121.01	1929.41
3.96	71.61	1939.04
4.06	32.12	1944.23
4.16	12.15	1946.44
4.26	1.89	1947.14
4.36	1.39	1947.30
4.46	0.53	1947.40

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Storage Node : BR4 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR4	Bottom	CIRCULAR	No	24.00			906.23	0.61

Output Summary Results

Peak Inflow (cfs)	0.35
Peak Lateral Inflow (cfs)	0.35
Peak Outflow (cfs)	0.04
Peak Exfiltration Flow Rate (cfm)	0.69
Max HGL Elevation Attained (ft)	906.24
Max HGL Depth Attained (ft)	2.07
Average HGL Elevation Attained (ft)	905.05
Average HGL Depth Attained (ft)	0.88
Time of Max HGL Occurrence (days hh:mm)	0 11:56
Total Exfiltration Volume (1000-ft³)	1.354
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR5

Input Data

Invert Elevation (ft)	909.06
Max (Rim) Elevation (ft)	912.12
Max (Rim) Offset (ft)	3.06
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-909.06
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

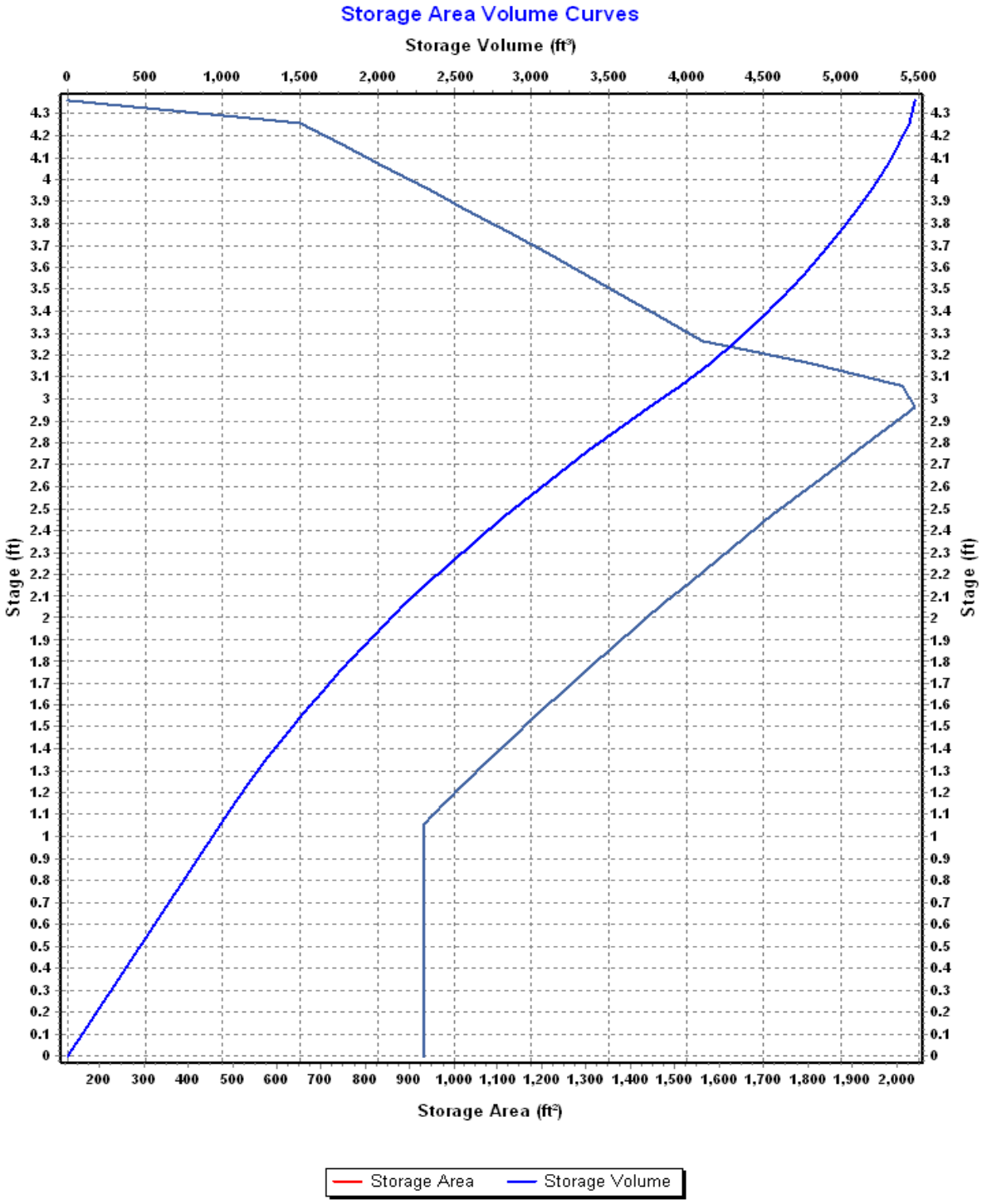
Exfiltration Rate (in/hr)	0.7000

Storage Area Volume Curves

Storage Curve : BR5

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	932	0.000
1.06	932.46	988.16
1.16	981.61	1083.86
1.26	1031.83	1184.53
1.36	1083.12	1290.28
1.46	1135.48	1401.21
1.56	1188.91	1517.43
1.66	1243.41	1639.05
1.76	1298.98	1766.17
1.86	1355.61	1898.90
1.96	1413.23	2037.34
2.06	1471.77	2181.59
2.16	1531.25	2331.74
2.26	1591.66	2487.89
2.36	1653	2650.12
2.46	1715.29	2818.53
2.56	1778.51	2993.22
2.66	1842.66	3174.28
2.76	1907.75	3361.80
2.86	1973.78	3555.88
2.96	2040.74	3756.61
3.06	2014.36	3959.37
3.16	1806.31	4150.40
3.26	1561.66	4318.80
3.36	1476.5	4470.71
3.46	1390.03	4614.04
3.56	1302.24	4748.65
3.66	1213.13	4874.42
3.76	1122.71	4991.21
3.86	1030.97	5098.89
3.96	937.91	5197.33
4.06	843.53	5286.40
4.16	747.83	5365.97
4.26	650.82	5435.90
4.36	128.99	5474.89

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Storage Node : BR5 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR5	Bottom	CIRCULAR	No	24.00			911.62	0.61

Output Summary Results

Peak Inflow (cfs)	0.48
Peak Lateral Inflow (cfs)	0.48
Peak Outflow (cfs)	0.00
Peak Exfiltration Flow Rate (cfm)	1.26
Max HGL Elevation Attained (ft)	910.81
Max HGL Depth Attained (ft)	1.75
Average HGL Elevation Attained (ft)	909.72
Average HGL Depth Attained (ft)	0.66
Time of Max HGL Occurrence (days hh:mm)	0 23:36
Total Exfiltration Volume (1000-ft³)	2.772
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR6

Input Data

Invert Elevation (ft)	902.92
Max (Rim) Elevation (ft)	913.75
Max (Rim) Offset (ft)	10.83
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-902.92
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

Exfiltration Rate (in/hr)	0.3500

Storage Area Volume Curves

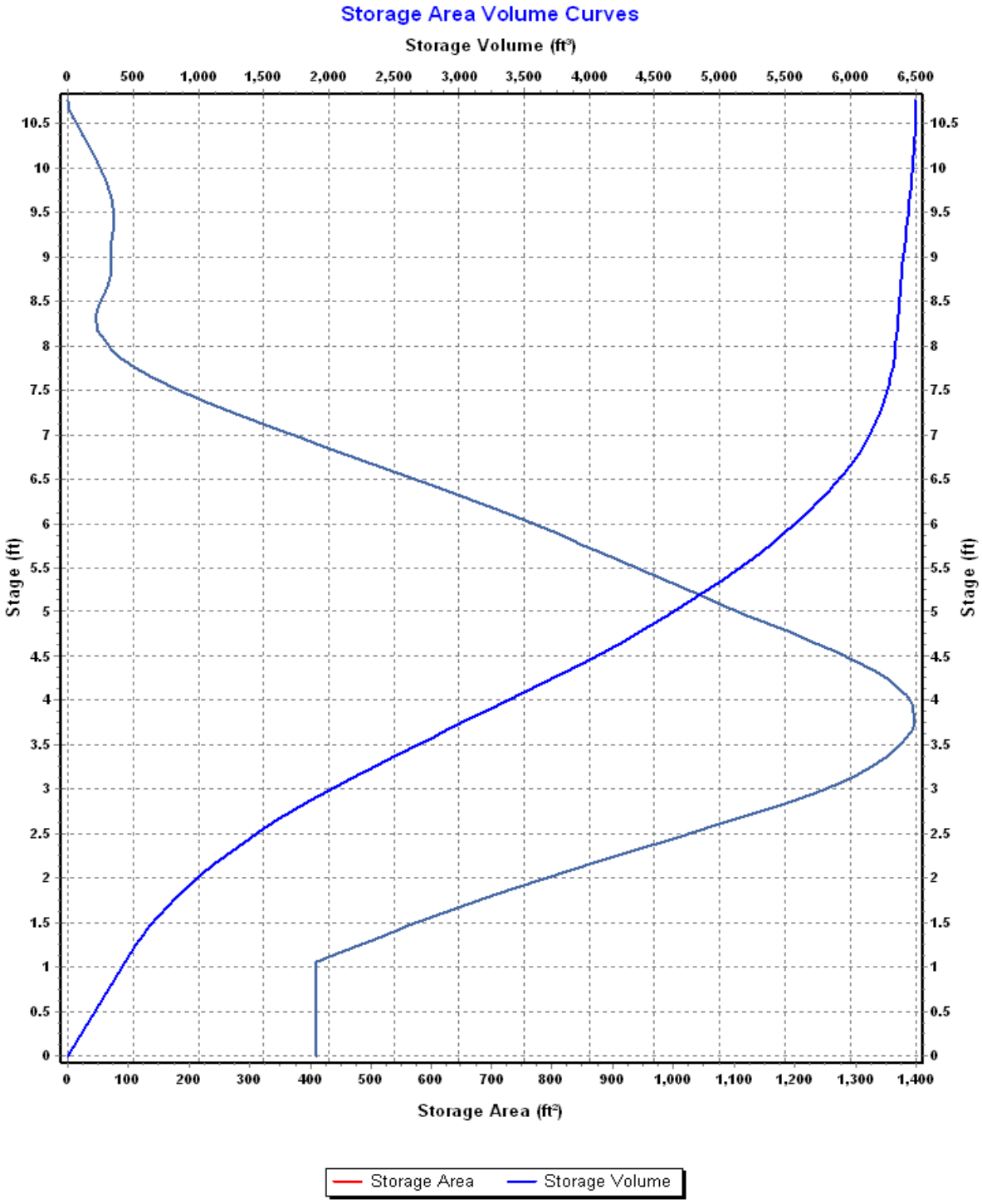
Storage Curve : BR6

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	410	0.000
1.06	410.77	435.01
1.16	446.75	477.89
1.26	483.71	524.41
1.36	521.65	574.68
1.46	560.56	628.79
1.56	600.46	686.84
1.66	641.33	748.93
1.76	683.18	815.16
1.86	726.02	885.62
1.96	769.83	960.41
2.06	814.61	1039.63
2.16	860.38	1123.38
2.26	907.13	1211.76
2.36	954.85	1304.86
2.46	1003.56	1402.78
2.56	1053.18	1505.62
2.66	1101.86	1613.37
2.76	1148.67	1725.90
2.86	1192.86	1842.98
2.96	1232.75	1964.26
3.06	1269.59	2089.38
3.16	1301.43	2217.93
3.26	1326.89	2349.35
3.36	1348.19	2483.10
3.46	1366.12	2618.82
3.56	1380.19	2756.14
3.66	1393.25	2894.81
3.76	1397.78	3034.36
3.86	1396.52	3174.08
3.96	1393.9	3313.60
4.06	1383.32	3452.46
4.16	1367.08	3589.98
4.26	1349.42	3725.81
4.36	1325.23	3859.54
4.46	1296.47	3990.63
4.56	1266.42	4118.77
4.66	1232.15	4243.70
4.76	1195.31	4365.07
4.86	1157.16	4482.69
4.96	1117.9	4596.44
5.06	1085.76	4706.62
5.16	1053.22	4813.57
5.26	1020.26	4917.24
5.36	986.9	5017.60
5.46	953.13	5114.60
5.56	918.95	5208.20
5.66	884.36	5298.37
5.76	849.37	5385.06
5.86	813.96	5468.23
5.96	778.15	5547.84
6.06	741.93	5623.84
6.16	705.08	5696.19
6.26	666.84	5764.79
6.36	628.22	5829.54
6.46	588.79	5890.39
6.56	548.05	5947.23
6.66	507.07	5999.99
6.76	465.94	6048.64
6.86	424.78	6093.18
6.96	383.49	6133.59
7.06	343.09	6169.92
7.16	303.81	6202.27
7.26	265.15	6230.72
7.36	229.45	6255.45
7.46	195.88	6276.72
7.56	163.53	6294.69
7.66	136.12	6309.67

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7.76	111.42	6322.05
7.86	88.83	6332.06
7.96	72.96	6340.15
8.06	60.06	6346.80
8.16	50.27	6352.32
8.26	47.61	6357.21
8.36	48.49	6362.02
8.46	53.24	6367.11
8.56	58.59	6372.70
8.66	64.53	6378.86
8.76	69.87	6385.58
8.86	71.43	6392.65
8.96	72.11	6399.83
9.06	72.32	6407.05
9.16	72.64	6414.30
9.26	74.98	6421.68
9.36	76.22	6429.24
9.46	76.74	6436.89
9.56	75.34	6444.49
9.66	72.1	6451.86
9.76	68.49	6458.89
9.86	63.88	6465.51
9.96	56.95	6471.55
10.06	50.1	6476.90
10.16	43.32	6481.57
10.26	34.16	6485.44
10.36	25.48	6488.42
10.46	17.32	6490.56
10.56	9.08	6491.88
10.66	3.27	6492.50
10.76	0.36	6492.68

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Storage Node : BR6 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR6	Bottom	CIRCULAR	No	24.00			904.98	0.61

Output Summary Results

Peak Inflow (cfs)	0.72
Peak Lateral Inflow (cfs)	0.00
Peak Outflow (cfs)	0.20
Peak Exfiltration Flow Rate (cfm)	0.41
Max HGL Elevation Attained (ft)	905.03
Max HGL Depth Attained (ft)	2.11
Average HGL Elevation Attained (ft)	904.24
Average HGL Depth Attained (ft)	1.32
Time of Max HGL Occurrence (days hh:mm)	0 10:31
Total Exfiltration Volume (1000-ft³)	1.128
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR7

Input Data

Invert Elevation (ft)	895.77
Max (Rim) Elevation (ft)	901.73
Max (Rim) Offset (ft)	5.96
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-895.77
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

Exfiltration Rate (in/hr)	0.3500

Storage Area Volume Curves

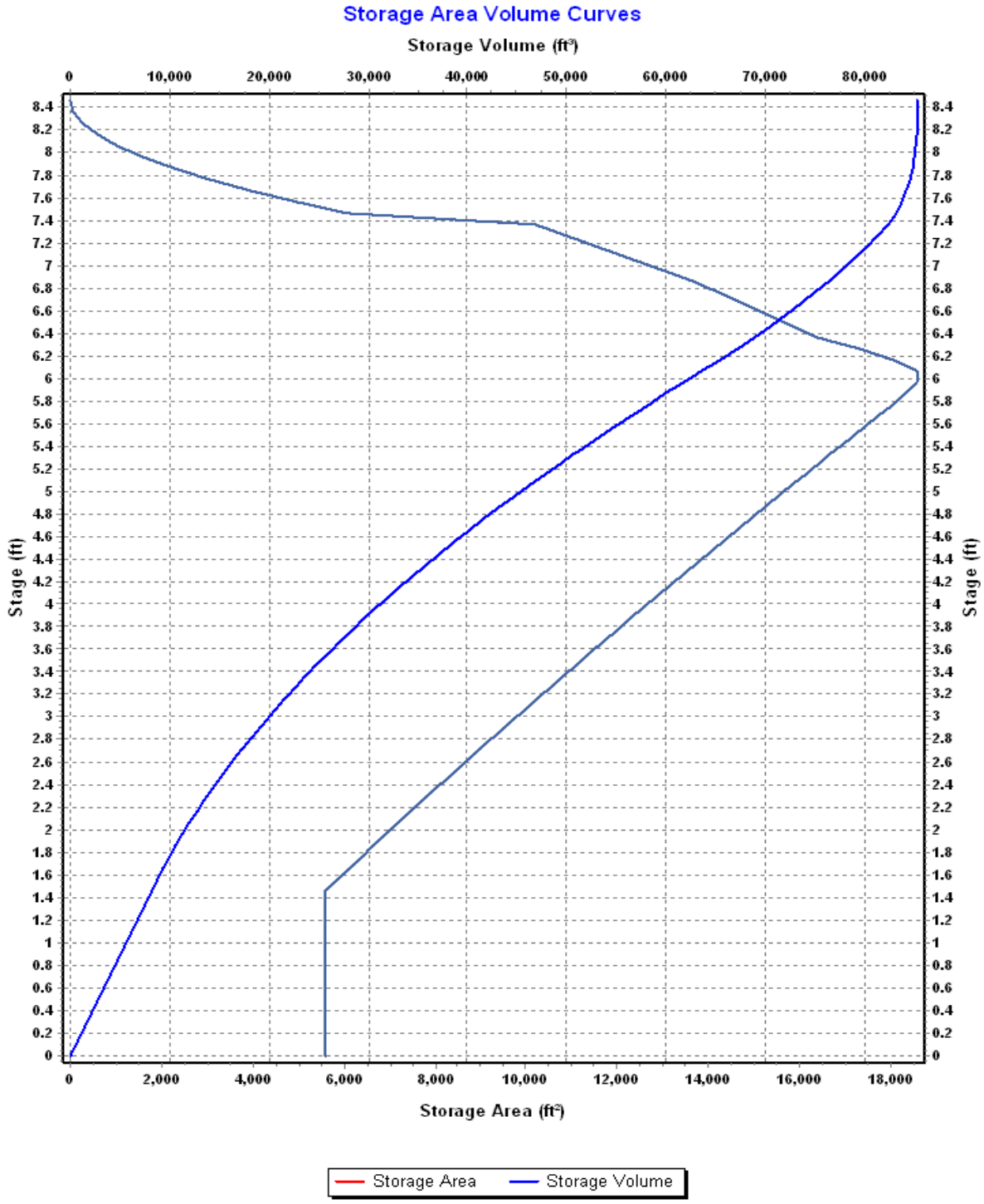
Storage Curve : BR7

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	5595	0.000
1.46	5595.13	8168.79
1.56	5856.73	8741.38
1.66	6119.66	9340.20
1.76	6383.94	9965.38
1.86	6649.55	10617.05
1.96	6916.5	11295.35
2.06	7184.79	12000.41
2.16	7454.41	12732.37
2.26	7725.38	13491.36
2.36	7997.69	14277.51
2.46	8271.33	15090.96
2.56	8546.31	15931.84
2.66	8822.63	16800.29
2.76	9100.3	17696.44
2.86	9379.31	18620.42
2.96	9659.68	19572.37
3.06	9941.38	20552.42
3.16	10224.44	21560.71
3.26	10508.84	22597.37
3.36	10794.59	23662.54
3.46	11081.69	24756.35
3.56	11370.12	25878.94
3.66	11659.61	27030.43
3.76	11950.17	28210.92
3.86	12241.84	29420.52
3.96	12534.6	30659.34
4.06	12828.48	31927.49
4.16	13123.45	33225.09
4.26	13419.52	34552.24
4.36	13716.7	35909.05
4.46	14014.97	37295.63
4.56	14314.29	38712.09
4.66	14614.69	40158.54
4.76	14916.14	41635.08
4.86	15218.67	43141.82
4.96	15522.25	44678.87
5.06	15826.91	46246.33
5.16	16132.63	47844.31
5.26	16439.41	49472.91
5.32	16623.99	50464.81
5.36	16747.26	51132.24
5.46	17056.17	52822.41
5.56	17366.15	54543.53
5.66	17677.19	56295.70
5.76	17989.3	58079.02
5.86	18302.47	59893.61
5.96	18561.7	61736.82
6.06	18563.99	63593.10
6.16	18028.51	65422.73
6.26	17266.47	67187.48
6.36	16354.62	68868.53
6.46	15821.95	70477.36
6.56	15283.77	72032.65
6.66	14740.05	73533.84
6.76	14190.76	74980.38
6.86	13635.89	76371.71
6.96	12950.52	77701.03
7.06	12263.14	78961.71
7.16	11573.75	80153.55
7.26	10882.35	81276.36
7.36	10188.94	82329.92
7.46	6084.34	83143.58
7.56	4958.1	83695.70
7.66	3945.56	84140.88
7.76	3046.43	84490.48
7.86	2260.65	84755.83
7.96	1588.12	84948.27

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8.06	1028.71	85079.11
8.16	592.94	85160.19
8.26	270.69	85203.37
8.36	49.56	85219.38
8.46	2.12	85221.96

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Storage Node : BR7 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR7B	Bottom	CIRCULAR	No	24.00			901.23	0.61

Output Summary Results

Peak Inflow (cfs)	1.22
Peak Lateral Inflow (cfs)	0.61
Peak Outflow (cfs)	0.00
Peak Exfiltration Flow Rate (cfm)	2.74
Max HGL Elevation Attained (ft)	897.25
Max HGL Depth Attained (ft)	1.48
Average HGL Elevation Attained (ft)	896.50
Average HGL Depth Attained (ft)	0.73
Time of Max HGL Occurrence (days hh:mm)	1 00:15
Total Exfiltration Volume (1000-ft³)	10.266
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR8

Input Data

Invert Elevation (ft)	900.16
Max (Rim) Elevation (ft)	910.55
Max (Rim) Offset (ft)	10.39
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-900.16
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

Exfiltration Rate (in/hr)	0.2500

Storage Area Volume Curves

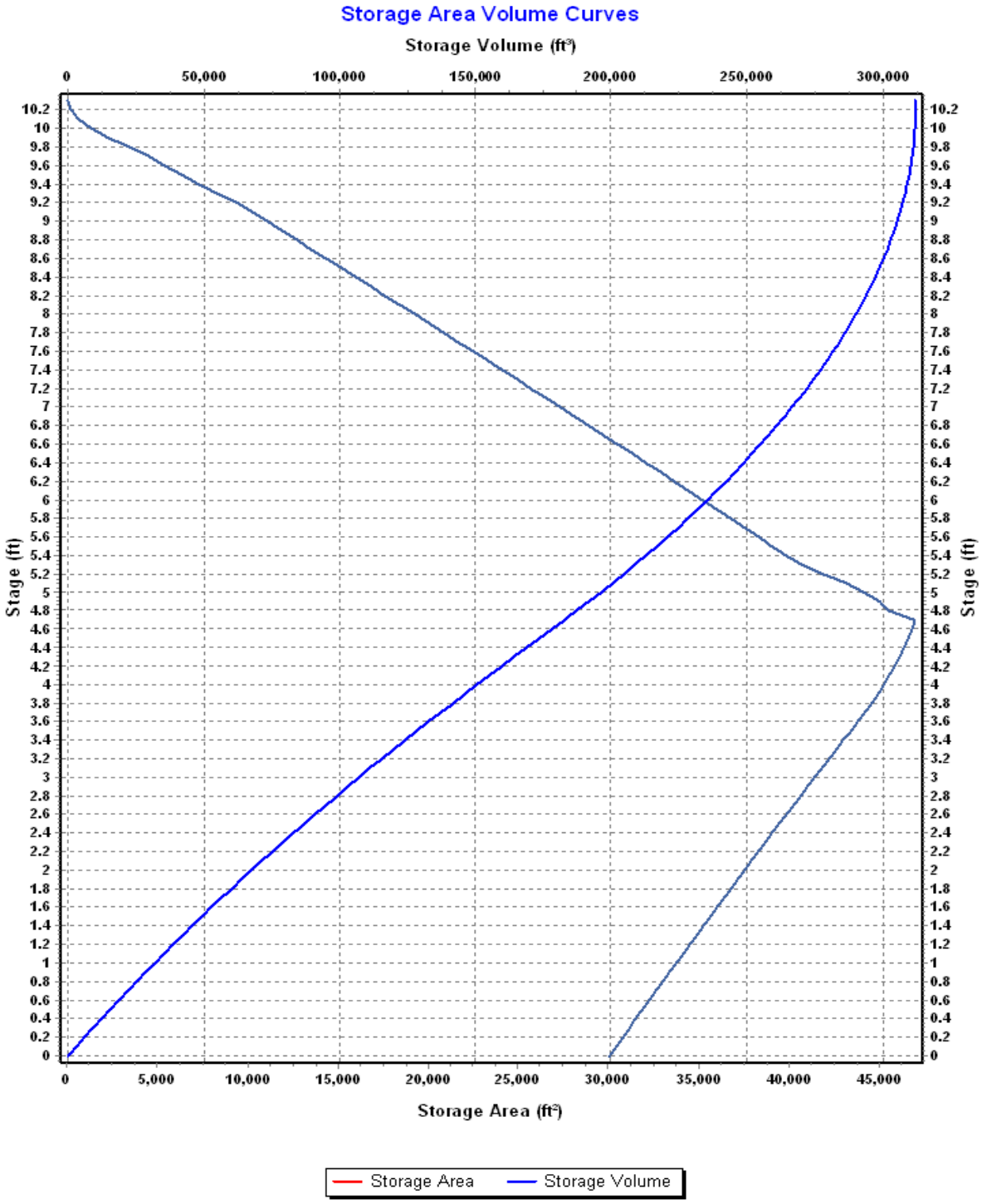
Storage Curve : RB

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	30060.38	0.000
0.1	30423.69	3024.20
0.2	30787.95	6084.78
0.3	31153.19	9181.84
0.4	31519.45	12315.47
0.5	31886.76	15485.78
0.6	32255.10	18692.87
0.7	32624.50	21936.85
0.8	32994.93	25217.82
0.9	33366.41	28535.89
1	33738.93	31891.16
1.1	34112.50	35283.73
1.2	34487.11	38713.71
1.3	34862.77	42181.20
1.4	35239.47	45686.31
1.5	35617.21	49229.14
1.6	35996.00	52809.80
1.7	36375.83	56428.39
1.8	36756.70	60085.02
1.9	37138.62	63779.79
2	37521.58	67512.80
2.1	37905.58	71284.16
2.2	38290.63	75093.97
2.3	38676.72	78942.34
2.4	39063.86	82829.37
2.46	39296.65	85180.19
2.5	39452.06	86755.16
2.6	39841.31	90719.83
2.7	40231.63	94723.48
2.8	40623.00	98766.21
2.9	41015.43	102848.13
3	41408.92	106969.35
3.1	41803.47	111129.97
3.2	42199.08	115330.10
3.3	42595.75	119569.84
3.4	42993.48	123849.30
3.5	43391.60	128168.55
3.6	43782.14	132527.24
3.7	44164.57	136924.58
3.8	44540.20	141359.82
3.9	44901.66	145831.91
4	45239.40	150338.96
4.1	45563.92	154879.13
4.2	45871.31	159450.89
4.3	46138.45	164051.38
4.4	46386.90	168677.65
4.5	46616.67	173327.83
4.6	46811.15	177999.22
4.7	46971.49	182688.35
4.8	45485.74	187311.21
4.9	45023.21	191836.66
5	44212.48	196298.44
5.1	43110.78	200664.60
5.2	41818.89	204911.08
5.3	40592.21	209031.64
5.4	39822.87	213052.39
5.5	39051.68	216996.12
5.6	38278.65	220862.64
5.7	37503.79	224651.76
5.8	36727.15	228363.31
5.9	35948.71	231997.10
6	35168.56	235552.96
6.1	34386.68	239030.72
6.2	33603.09	242430.21
6.3	32817.87	245751.26
6.4	32030.97	248993.70
6.5	31242.50	252157.37
6.6	30452.43	255242.12

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6.7	29660.78	258247.78
6.8	28867.64	261174.20
6.9	28072.95	264021.23
7	27276.82	266788.72
7.1	26479.23	269476.52
7.2	25680.17	272084.49
7.3	24879.78	274612.49
7.4	24077.96	277060.38
7.5	23274.83	279428.02
7.6	22470.38	281715.28
7.7	21664.58	283922.03
7.8	20857.60	286048.14
7.9	20049.29	288093.48
8	19239.75	290057.93
8.1	18429.02	291941.37
8.2	17617.00	293743.67
8.3	16803.95	295464.72
8.4	15989.67	297104.40
8.5	15174.27	298662.60
8.6	14357.79	300139.20
8.7	13540.07	301534.09
8.8	12721.38	302847.16
8.9	11901.56	304078.31
9	11080.62	305227.42
9.1	10258.76	306294.39
9.2	9327.55	307273.71
9.3	8324.12	308156.29
9.4	7321.13	308938.55
9.5	6362.76	309622.74
9.6	5439.54	310212.86
9.7	4519.10	310710.79
9.8	3459.55	311109.72
9.9	2336.41	311399.52
10	1375.60	311585.12
10.1	669.19	311687.36
10.2	186.39	311730.14
10.3	61.67	311742.54

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Storage Node : BR8 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR8A	Bottom	CIRCULAR	No	24.00			903.16	0.61

Output Summary Results

Peak Inflow (cfs)	2.81
Peak Lateral Inflow (cfs)	2.81
Peak Outflow (cfs)	0.00
Peak Exfiltration Flow Rate (cfm)	10.88
Max HGL Elevation Attained (ft)	900.51
Max HGL Depth Attained (ft)	0.35
Average HGL Elevation Attained (ft)	900.25
Average HGL Depth Attained (ft)	0.09
Time of Max HGL Occurrence (days hh:mm)	0 23:32
Total Exfiltration Volume (1000-ft³)	20.057
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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5-year/24-hour Rainfall Event Simulation Results

Project Description

File Name	20230.SPF

Project Options

Flow Units	CFS
Elevation Type	Elevation
Hydrology Method	SCS TR-55
Time of Concentration (TOC) Method	SCS TR-55
Link Routing Method	Kinematic Wave
Enable Overflow Ponding at Nodes	YES
Skip Steady State Analysis Time Periods	YES

Analysis Options

Start Analysis On	Oct 27, 2020	00:00:00
End Analysis On	Oct 30, 2020	00:00:00
Start Reporting On	Oct 27, 2020	00:00:00
Antecedent Dry Days	0	days
Runoff (Dry Weather) Time Step	0 01:00:00	days hh:mm:ss
Runoff (Wet Weather) Time Step	0 00:05:00	days hh:mm:ss
Reporting Time Step	0 00:06:00	days hh:mm:ss
Routing Time Step	30	seconds

Number of Elements

	Qty
Rain Gages	1
Subbasins	18
Nodes	50
Junctions	37
Outfalls	3
Flow Diversions	0
Inlets	0
Storage Nodes	10
Links	47
Channels	0
Pipes	37
Pumps	0
Orifices	10
Weirs	0
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1	Project	Time Series	5YR24HR	Cumulative	inches	California	San Bernardino (Victorville)	5	1.78	SCS Type I 24-hr

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Subbasin Summary

SN	Subbasin ID	Area (ac)	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	A01	0.92	90.57	1.78	0.95	0.87	0.60	0 00:10:00
2	A02	2.31	89.00	1.78	0.85	1.96	1.31	0 00:10:00
3	A04	1.11	89.00	1.78	0.85	0.94	0.63	0 00:10:00
4	A05	2.33	89.00	1.78	0.85	1.98	1.32	0 00:10:00
5	A06	1.52	89.00	1.78	0.85	1.29	0.86	0 00:10:00
6	A07	0.45	89.00	1.78	0.85	0.38	0.25	0 00:10:00
7	A08	1.59	89.00	1.78	0.85	1.35	0.90	0 00:10:00
8	A09	1.94	89.00	1.78	0.85	1.65	1.10	0 00:10:00
9	A10	16.37	84.72	1.78	0.63	10.23	6.20	0 00:10:00
10	A11a	0.92	98.00	1.78	1.56	1.43	0.99	0 00:10:00
11	A11b	0.64	98.00	1.78	1.56	1.00	0.69	0 00:10:00
12	A12	1.73	98.00	1.78	1.56	2.69	1.86	0 00:10:00
13	A13	3.78	98.00	1.78	1.56	5.89	4.07	0 00:10:00
14	A3A	0.54	95.00	1.78	1.27	0.69	0.49	0 00:10:00
15	A3B	0.80	91.77	1.78	1.03	0.82	0.57	0 00:10:00
16	A3C	1.34	89.00	1.78	0.85	1.14	0.76	0 00:10:00
17	RVPREDEV	16.37	70.76	1.78	0.18	2.93	0.25	0 01:40:47
18	TS-PREDEV	21.91	65.01	1.78	0.08	1.77	0.16	0 01:47:10

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Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft²)	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	J01	Junction	913.15	914.89	913.15	0.00	0.00	0.00	913.15	0.00	1.74	0 00:00	0.00	0.00
2	J02	Junction	907.89	912.64	907.89	0.00	0.00	1.32	908.53	0.00	4.11	0 00:00	0.00	0.00
3	J03	Junction	914.78	917.97	914.78	0.00	0.00	0.57	915.17	0.00	2.80	0 00:00	0.00	0.00
4	J04	Junction	910.56	914.38	910.56	0.00	0.00	0.76	910.97	0.00	3.41	0 00:00	0.00	0.00
5	J05	Junction	902.68	907.43	902.68	0.00	0.00	0.25	902.93	0.00	4.50	0 00:00	0.00	0.00
6	J06	Junction	902.12	906.87	902.12	0.00	0.00	0.90	902.35	0.00	4.52	0 00:00	0.00	0.00
7	J07	Junction	895.73	900.98	895.73	0.00	0.00	1.82	896.15	0.00	4.83	0 00:00	0.00	0.00
8	J08	Junction	898.06	902.31	898.06	0.00	0.00	0.67	898.31	0.00	4.00	0 00:00	0.00	0.00
9	J09	Junction	898.06	902.31	898.06	0.00	0.00	0.97	898.36	0.00	3.95	0 00:00	0.00	0.00
10	J10	Junction	886.32	890.92	886.32	0.00	0.00	3.97	887.17	0.00	3.75	0 00:00	0.00	0.00
11	O1	Junction	916.83	921.08	916.83	0.00	0.00	0.00	916.83	0.00	4.25	0 00:00	0.00	0.00
12	O2	Junction	909.85	914.85	909.85	0.00	0.00	0.07	909.99	0.00	4.86	0 00:00	0.00	0.00
13	O3A	Junction	915.23	921.60	915.23	0.00	0.00	0.00	915.23	0.00	6.37	0 00:00	0.00	0.00
14	O3B	Junction	911.08	916.72	911.08	0.00	0.00	0.17	911.26	0.00	5.46	0 00:00	0.00	0.00
15	O3C	Junction	906.09	912.24	906.09	0.00	0.00	0.00	906.09	0.00	6.15	0 00:00	0.00	0.00
16	O4	Junction	902.98	906.80	902.98	0.00	0.00	0.36	903.25	0.00	3.55	0 00:00	0.00	0.00
17	O5	Junction	907.79	912.12	907.79	0.00	0.00	0.02	907.86	0.00	4.26	0 00:00	0.00	0.00
18	O6	Junction	901.23	905.48	901.23	0.00	0.00	1.23	901.49	0.00	3.99	0 00:00	0.00	0.00
19	O7	Junction	888.27	901.23	888.27	0.00	0.00	0.00	888.27	0.00	12.96	0 00:00	0.00	0.00
20	O8A	Junction	894.34	903.66	894.34	0.00	0.00	0.00	894.34	0.00	9.32	0 00:00	0.00	0.00
21	SDMH01	Junction	916.48	921.15	916.48	0.00	0.00	0.00	916.58	0.00	4.57	0 00:00	0.00	0.00
22	SDMH02	Junction	909.48	914.04	909.48	0.00	0.00	0.07	909.72	0.00	4.32	0 00:00	0.00	0.00
23	SDMH03	Junction	907.54	914.70	907.54	0.00	0.00	1.31	909.22	0.00	5.48	0 00:00	0.00	0.00
24	SDMH04	Junction	907.26	914.39	907.26	0.00	0.00	1.30	908.00	0.00	6.39	0 00:00	0.00	0.00
25	SDMH05	Junction	907.53	914.79	907.53	0.00	0.00	0.02	907.70	0.00	7.09	0 00:00	0.00	0.00
26	SDMH06	Junction	905.75	910.18	905.75	0.00	0.00	0.00	905.75	0.00	4.43	0 00:00	0.00	0.00
27	SDMH07	Junction	905.33	909.05	905.33	0.00	0.00	0.00	905.43	0.00	3.62	0 00:00	0.00	0.00
28	SDMH08	Junction	902.75	909.14	902.75	0.00	0.00	0.36	903.11	0.00	6.03	0 00:00	0.00	0.00
29	SDMH09	Junction	901.44	907.96	901.44	0.00	0.00	0.49	902.85	0.00	5.11	0 00:00	0.00	0.00
30	SDMH10	Junction	900.51	907.70	900.51	0.00	0.00	1.12	900.91	0.00	6.79	0 00:00	0.00	0.00
31	SDMH11	Junction	894.85	901.92	894.85	0.00	0.00	1.81	895.43	0.00	6.49	0 00:00	0.00	0.00
32	SDMH12	Junction	893.85	903.70	893.85	0.00	0.00	1.79	894.43	0.00	9.27	0 00:00	0.00	0.00
33	SDMH13	Junction	897.40	902.76	897.40	0.00	0.00	1.64	898.04	0.00	4.72	0 00:00	0.00	0.00
34	SDMH14	Junction	893.13	902.49	893.13	0.00	0.00	3.34	895.39	0.00	7.10	0 00:00	0.00	0.00
35	SDMH15	Junction	886.12	891.87	886.12	0.00	0.00	7.10	887.36	0.00	4.51	0 00:00	0.00	0.00
36	SDMH16	Junction	885.50	893.01	885.50	0.00	0.00	7.07	886.95	0.00	6.06	0 00:00	0.00	0.00
37	SDMH17	Junction	884.58	889.78	884.58	0.00	0.00	7.02	885.82	0.00	3.96	0 00:00	0.00	0.00
38	OUT1	Outfall	884.42					7.02	885.55					
39	RVPRE	Outfall	0.00					0.25	0.00					
40	TSPRE	Outfall	0.00					0.16	0.00					
41	BR1	Storage Node	918.02	922.46	0.00		0.00	0.59	918.09				0.00	0.00
42	BR2	Storage Node	911.79	915.12	0.00		0.00	1.31	914.37				0.00	0.00
43	BR3A	Storage Node	918.54	922.87	0.00		0.00	0.48	919.66				0.00	0.00
44	BR3B	Storage Node	914.16	917.97	0.00		0.00	0.56	916.26				0.00	0.00
45	BR3C	Storage Node	909.39	912.45	0.00		0.00	0.75	910.97				0.00	0.00
46	BR4	Storage Node	904.17	908.79	0.00		0.00	0.63	906.30				0.00	0.00
47	BR5	Storage Node	909.06	912.12	0.00		0.00	0.86	911.63				0.00	0.00
48	BR6	Storage Node	902.92	913.75	0.00		0.00	1.29	905.13				0.00	0.00
49	BR7	Storage Node	895.77	901.73	0.00		0.00	3.29	898.59				0.00	0.00
50	BR8	Storage Node	900.16	910.55	0.00		0.00	6.20	901.01				0.00	0.00

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Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	(ft)		(min)	
1	P01	Pipe	O1	SDMH01	102.69	916.83	916.58	0.2400	12.000	0.0130	0.00	1.76	0.00	0.00	0.00	0.00	0.00	Calculated
2	P02	Pipe	SDMH01	J01	198.58	916.48	913.15	1.6800	12.000	0.0130	0.00	4.61	0.00	0.00	0.00	0.00	0.00	Calculated
3	P03	Pipe	J01	BR2	18.00	913.15	912.85	1.6700	12.000	0.0130	0.00	4.60	0.00	0.00	0.00	0.00	0.00	Calculated
4	P04	Pipe	O2	SDMH02	111.00	909.85	909.58	0.2400	12.000	0.0130	0.07	1.76	0.04	1.11	0.14	0.14	0.00	Calculated
5	P05	Pipe	SDMH02	SDMH03	160.94	909.48	909.08	0.2500	12.000	0.0130	0.07	1.78	0.04	1.12	0.14	0.14	0.00	Calculated
6	P06	Pipe	J02	SDMH03	99.00	907.89	907.64	0.2500	12.000	0.0130	1.31	1.79	0.73	2.50	0.63	0.63	0.00	Calculated
7	P07	Pipe	SDMH03	SDMH04	74.09	907.54	907.36	0.2400	12.000	0.0130	1.30	1.76	0.74	2.46	0.63	0.64	0.00	Calculated
8	P08	Pipe	O5	SDMH05	66.52	907.79	907.63	0.2400	12.000	0.0130	0.02	1.75	0.01	0.73	0.07	0.07	0.00	Calculated
9	P09	Pipe	SDMH05	SDMH04	70.26	907.53	907.36	0.2400	12.000	0.0130	0.02	1.75	0.01	0.73	0.07	0.07	0.00	Calculated
10	P10	Pipe	SDMH04	BR6	92.00	907.26	903.48	4.1100	12.000	0.0130	1.29	7.22	0.18	6.96	0.28	0.29	0.00	Calculated
11	P11	Pipe	O6	BR7	74.00	901.23	897.49	5.0500	12.000	0.0130	1.23	8.01	0.15	7.39	0.25	0.26	0.00	Calculated
12	P12	Pipe	O3A	J03	141.00	915.23	914.88	0.2500	12.000	0.0130	0.00	1.78	0.00	0.00	0.00	0.00	0.00	Calculated
13	P13	Pipe	J03	BR3B	25.00	914.78	914.72	0.2400	12.000	0.0130	0.56	1.75	0.32	1.98	0.39	0.39	0.00	Calculated
14	P14	Pipe	O3B	J04	83.00	911.08	910.66	0.5100	12.000	0.0130	0.17	2.53	0.07	1.83	0.17	0.18	0.00	Calculated
15	P15	Pipe	J04	BR3C	23.00	910.56	910.45	0.4800	12.000	0.0150	0.75	2.14	0.35	2.48	0.41	0.41	0.00	Calculated
16	P16	Pipe	O3C	SDMH06	102.00	906.09	905.75	0.3300	12.000	0.0130	0.00	2.06	0.00	0.00	0.00	0.00	0.00	Calculated
17	P17	Pipe	SDMH06	SDMH07	99.00	905.75	905.43	0.3200	12.000	0.0130	0.00	2.03	0.00	0.00	0.00	0.00	0.00	Calculated
18	P18	Pipe	SDMH07	BR4	31.00	905.33	905.23	0.3200	12.000	0.0130	0.00	2.02	0.00	0.00	0.00	0.00	0.00	Calculated
19	P19	Pipe	O4	SDMH08	50.02	902.98	902.85	0.2600	18.000	0.0130	0.36	5.36	0.07	1.72	0.24	0.18	0.00	Calculated
20	P20	Pipe	SDMH08	SDMH09	83.99	902.75	902.54	0.2500	18.000	0.0130	0.35	5.25	0.07	1.71	0.24	0.18	0.00	Calculated
21	P21	Pipe	J05	SDMH09	30.00	902.68	902.60	0.2700	12.000	0.0130	0.25	1.84	0.14	1.65	0.25	0.25	0.00	Calculated
22	P22	Pipe	SDMH09	SDMH10	331.00	901.44	900.61	0.2500	18.000	0.0130	0.46	5.26	0.09	1.92	0.29	0.20	0.00	Calculated
23	P23	Pipe	J06	SDMH10	32.00	902.12	900.61	4.7200	12.000	0.0130	0.90	7.74	0.12	6.56	0.23	0.23	0.00	Calculated
24	P24	Pipe	SDMH10	BR7	89.00	900.51	897.23	3.6900	18.000	0.0130	1.11	20.17	0.06	6.14	0.24	0.16	0.00	Calculated
25	P25	Pipe	O7	J10	62.00	888.27	887.17	1.7700	12.000	0.0130	0.00	4.75	0.00	0.00	0.00	0.00	0.00	Calculated
26	P26	Pipe	O8A	SDMH12	130.00	894.34	893.85	0.3800	12.000	0.0130	0.00	2.19	0.00	0.00	0.00	0.00	0.00	Calculated
27	P27	Pipe	J07	SDMH11	39.00	895.73	894.95	2.0000	12.000	0.0130	1.81	5.04	0.36	5.87	0.41	0.41	0.00	Calculated
28	P28	Pipe	SDMH11	SDMH12	333.48	894.85	893.85	0.3000	18.000	0.0130	1.79	5.75	0.31	2.91	0.57	0.38	0.00	Calculated
29	P29	Pipe	SDMH12	SDMH14	208.00	893.85	893.23	0.3000	18.000	0.0130	1.77	5.73	0.31	2.88	0.56	0.38	0.00	Calculated
30	P30	Pipe	J09	SDMH13	16.00	898.06	897.74	2.0000	12.000	0.0130	0.97	5.04	0.19	4.95	0.30	0.30	0.00	Calculated
31	P31	Pipe	J08	SDMH13	28.00	898.06	897.50	2.0000	12.000	0.0130	0.67	5.04	0.13	4.46	0.25	0.25	0.00	Calculated
32	P32	Pipe	SDMH13	SDMH14	93.00	897.40	895.07	2.5100	18.000	0.0130	1.62	16.63	0.10	6.01	0.32	0.21	0.00	Calculated
33	P33	Pipe	SDMH14	SDMH15	745.00	893.13	886.22	0.9300	18.000	0.0130	3.30	10.12	0.33	5.22	0.58	0.39	0.00	Calculated
34	P34	Pipe	J10	SDMH15	39.00	886.32	886.12	0.5100	18.000	0.0130	3.96	7.52	0.53	4.31	0.77	0.52	0.00	Calculated
35	P35	Pipe	SDMH15	SDMH16	200.04	886.12	885.72	0.2000	24.000	0.0130	7.07	10.12	0.70	3.49	1.22	0.62	0.00	Calculated
36	P36	Pipe	SDMH16	SDMH17	328.00	885.50	884.68	0.2500	24.000	0.0130	7.02	11.31	0.62	3.82	1.12	0.57	0.00	Calculated
37	P37	Pipe	SDMH17	OUT1	63.00	884.58	884.42	0.2500	24.000	0.0130	7.02	11.40	0.62	3.81	1.09	0.57	0.00	Calculated
38	OR1	Orifice	BR1	O1		918.02	916.83		24.000		0.00							
39	OR2	Orifice	BR2	O2		911.79	909.85		24.000		0.07							
40	OR3A	Orifice	BR3A	O3A		918.54	915.23		24.000		0.00							
41	OR3B	Orifice	BR3B	O3B		914.16	911.08		24.000		0.17							
42	OR3C	Orifice	BR3C	O3C		909.39	906.09		24.000		0.00							
43	OR4	Orifice	BR4	O4		904.17	902.98		24.000		0.36							
44	OR5	Orifice	BR5	O5		909.06	907.79		24.000		0.02							
45	OR6	Orifice	BR6	O6		902.92	901.23		24.000		1.23							
46	OR7B	Orifice	BR7	O7		895.77	888.27		24.000		0.00							
47	OR8A	Orifice	BR8	O8A		900.16	894.34		24.000		0.00							

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Subbasin Hydrology

Subbasin : A01

Input Data

Area (ac) 0.92
Weighted Curve Number 90.57
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	0.24	D	95.00
Urban commercial, 85% imp	0.68	A	89.00
Composite Area & Weighted CN	0.92		90.57

Time of Concentration

TOC Method : SCS TR-55

Sheet Flow Equation :

Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))

Where :

Tc = Time of Concentration (hr)
n = Manning's roughness
Lf = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation :

V = 16.1345 * (Sf^0.5) (unpaved surface)
V = 20.3282 * (Sf^0.5) (paved surface)
V = 15.0 * (Sf^0.5) (grassed waterway surface)
V = 10.0 * (Sf^0.5) (nearly bare & untilled surface)
V = 9.0 * (Sf^0.5) (cultivated straight rows surface)
V = 7.0 * (Sf^0.5) (short grass pasture surface)
V = 5.0 * (Sf^0.5) (woodland surface)
V = 2.5 * (Sf^0.5) (forest w/heavy litter surface)
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hr)
Lf = Flow Length (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)

Channel Flow Equation :

V = (1.49 * (R^(2/3)) * (Sf^0.5)) / n
R = Aq / Wp
Tc = (Lf / V) / (3600 sec/hr)

Where :

Tc = Time of Concentration (hr)
Lf = Flow Length (ft)
R = Hydraulic Radius (ft)
Aq = Flow Area (ft²)
Wp = Wetted Perimeter (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)
n = Manning's roughness

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

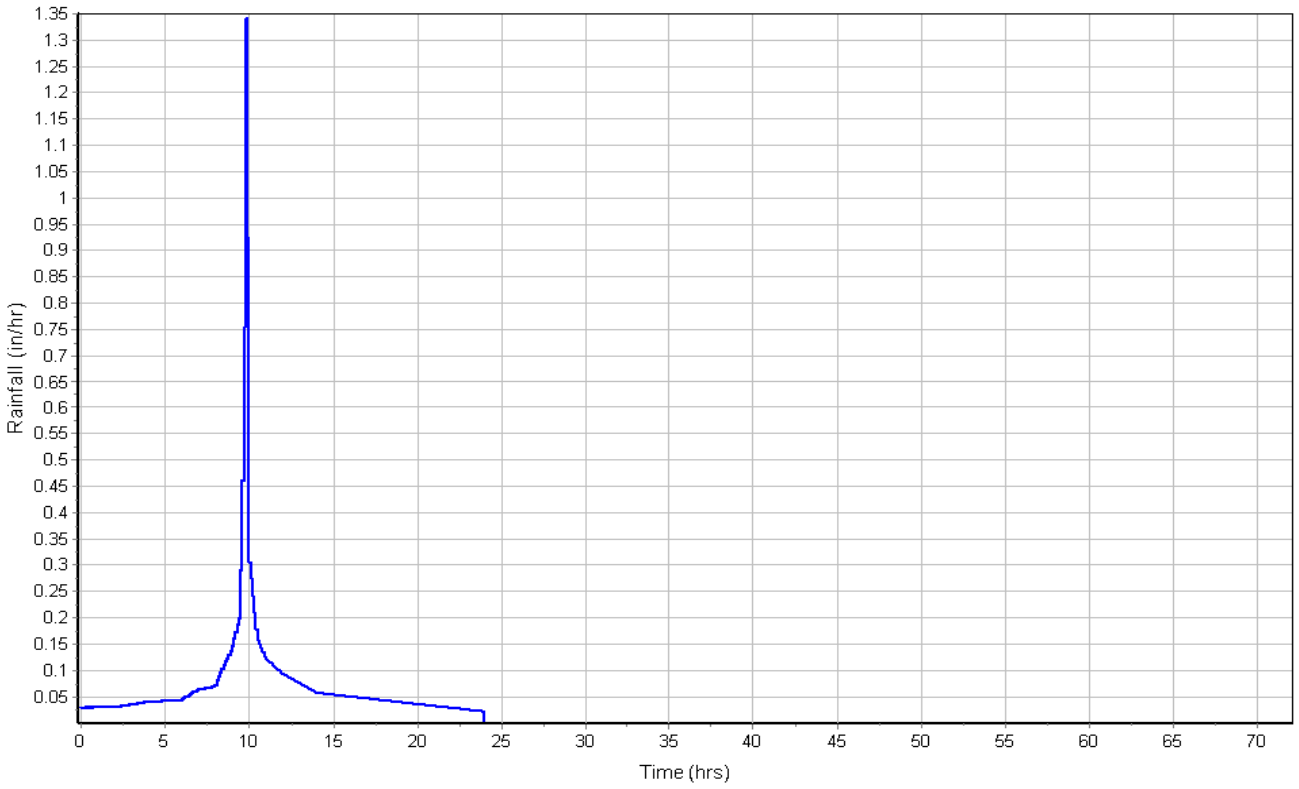
Total Rainfall (in) 1.78
Total Runoff (in) 0.95
Peak Runoff (cfs) 0.60
Weighted Curve Number 90.57
Time of Concentration (days hh:mm:ss) 0 00:10:00

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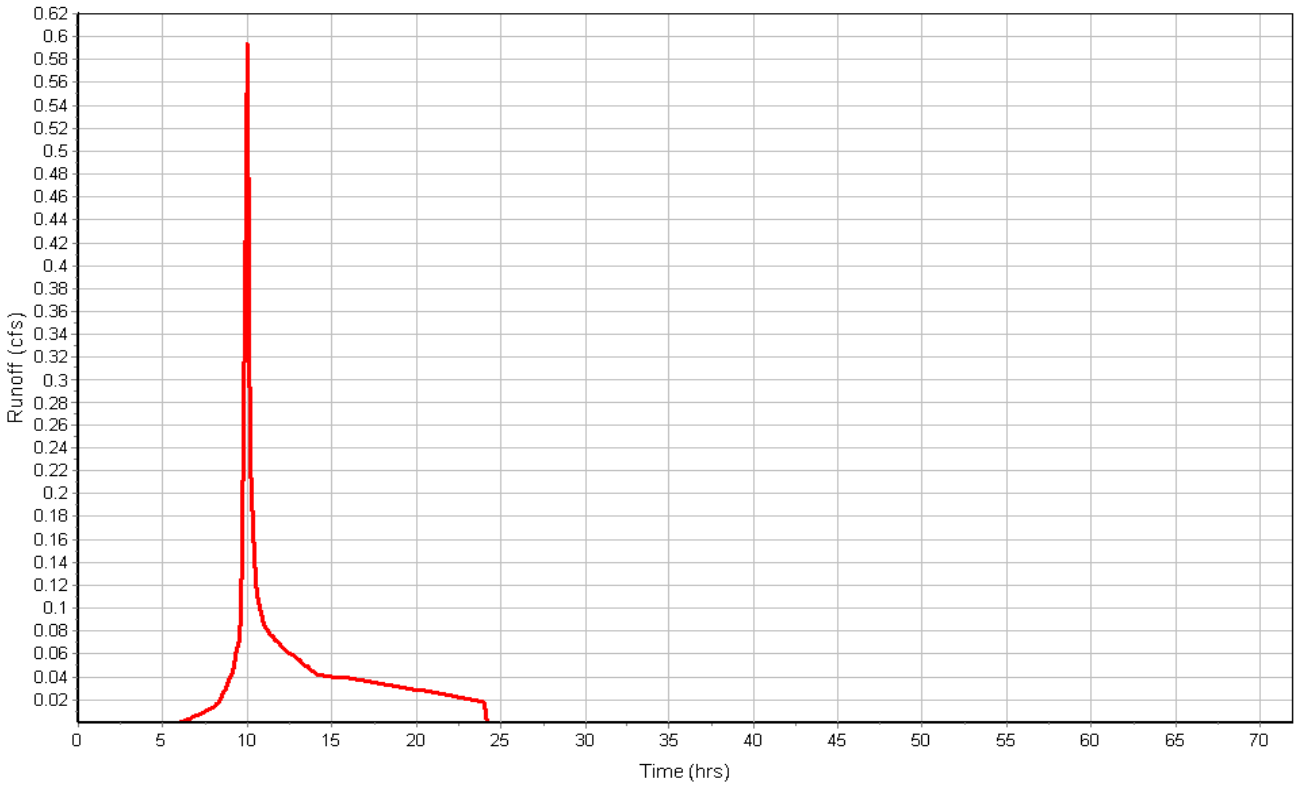
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Subbasin : A01

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A02

Input Data

Area (ac)	2.31
Weighted Curve Number	89.00
Rain Gage ID	Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	2.31	A	89.00
Composite Area & Weighted CN	2.31		89.00

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

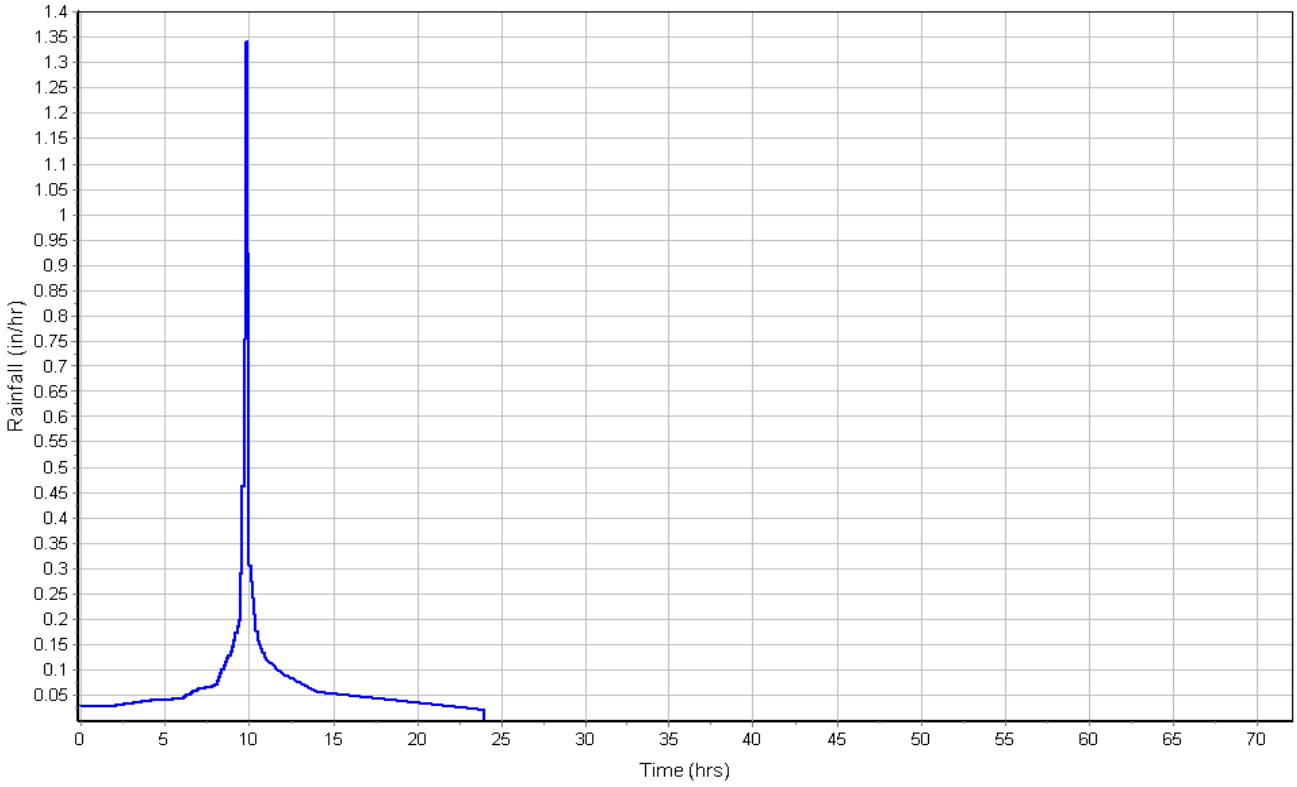
Total Rainfall (in)	1.78
Total Runoff (in)	0.85
Peak Runoff (cfs)	1.31
Weighted Curve Number	89.00
Time of Concentration (days hh:mm:ss)	0 00:10:00

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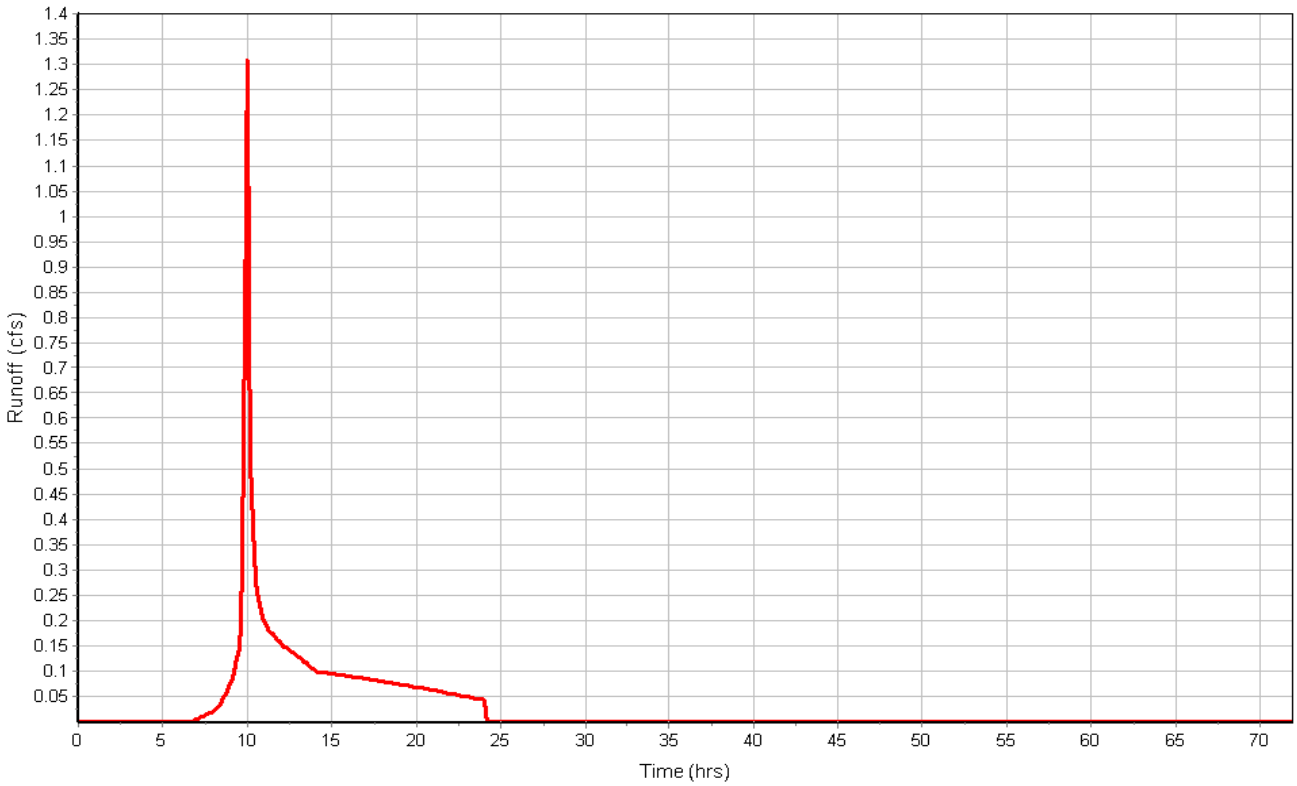
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Subbasin : A02

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A04

Input Data

Area (ac) 1.11
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	1.11	A	89.00
Composite Area & Weighted CN	1.11		89.00

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

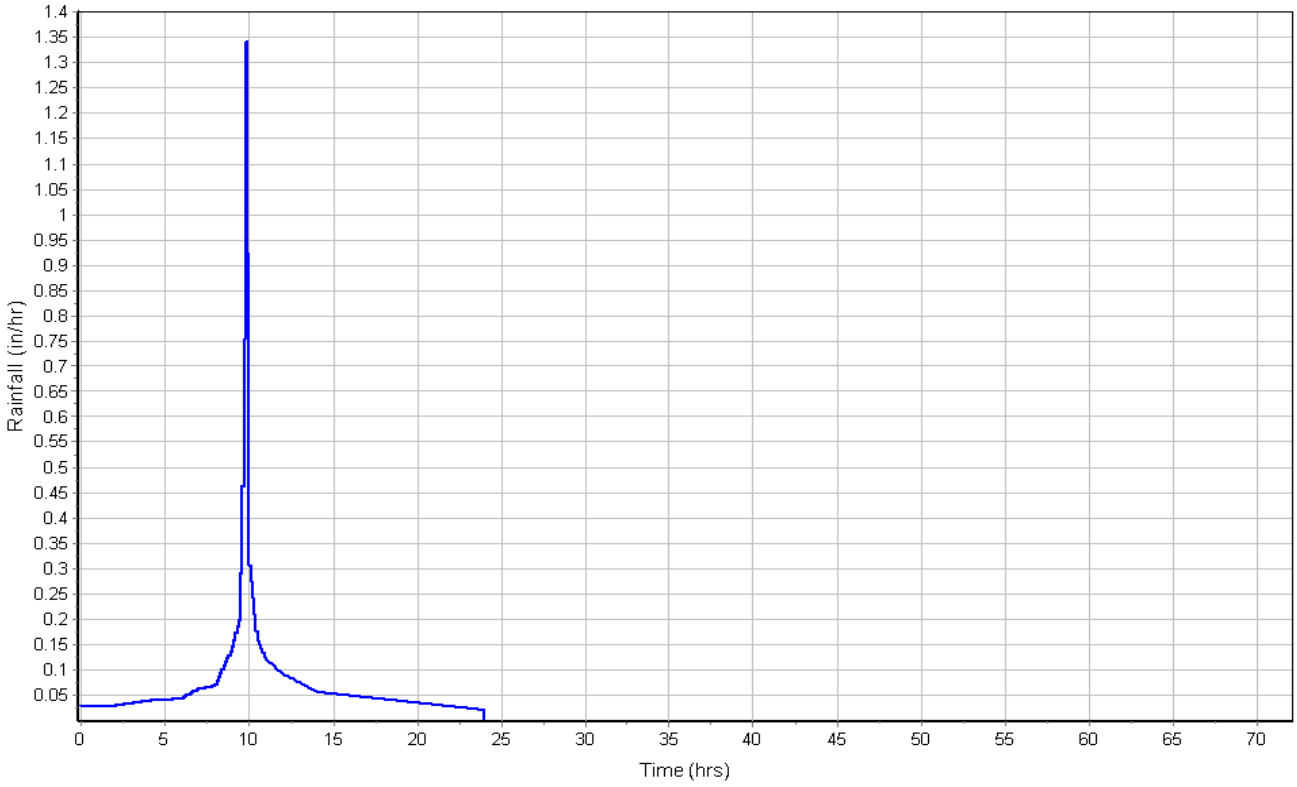
Total Rainfall (in) 1.78
Total Runoff (in) 0.85
Peak Runoff (cfs) 0.63
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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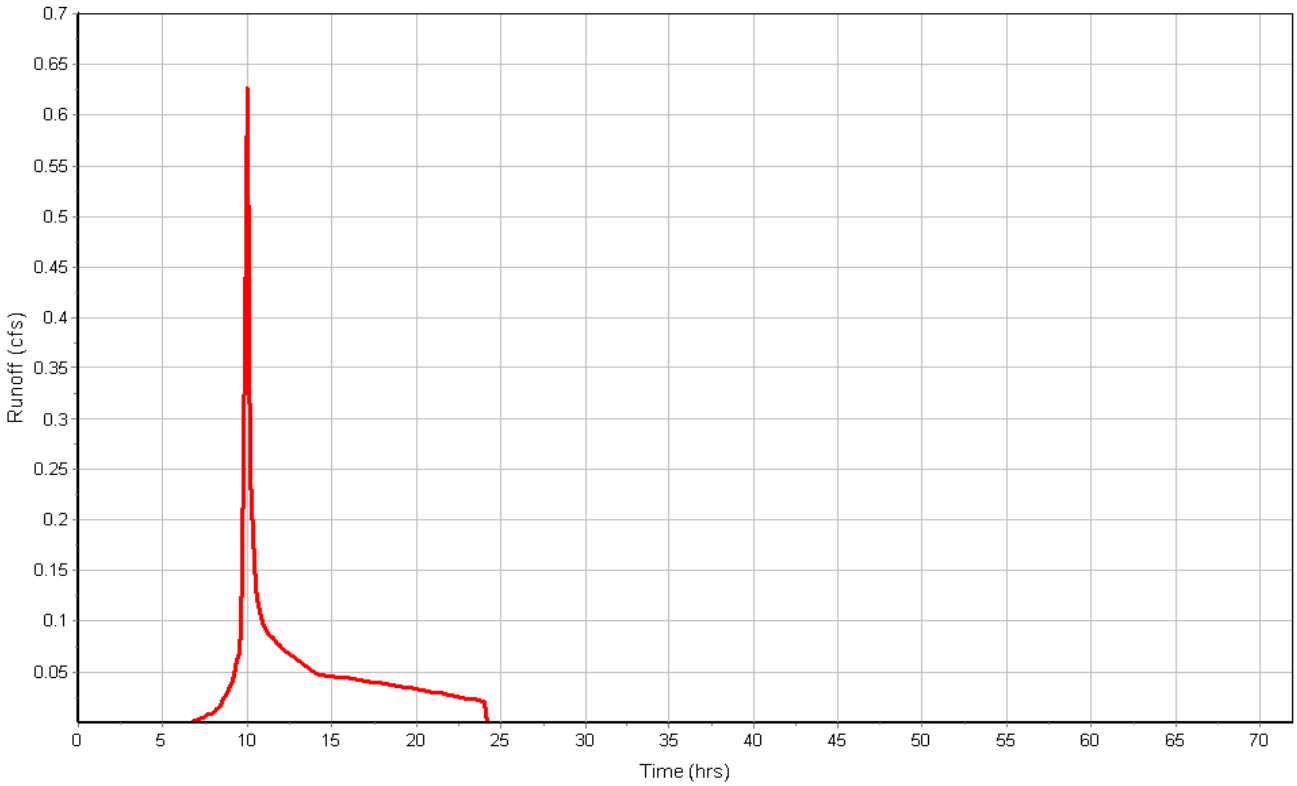
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Subbasin : A04

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A05

Input Data

Area (ac)	2.33
Weighted Curve Number	89.00
Rain Gage ID	Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	2.33	A	89.00
Composite Area & Weighted CN	2.33		89.00

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

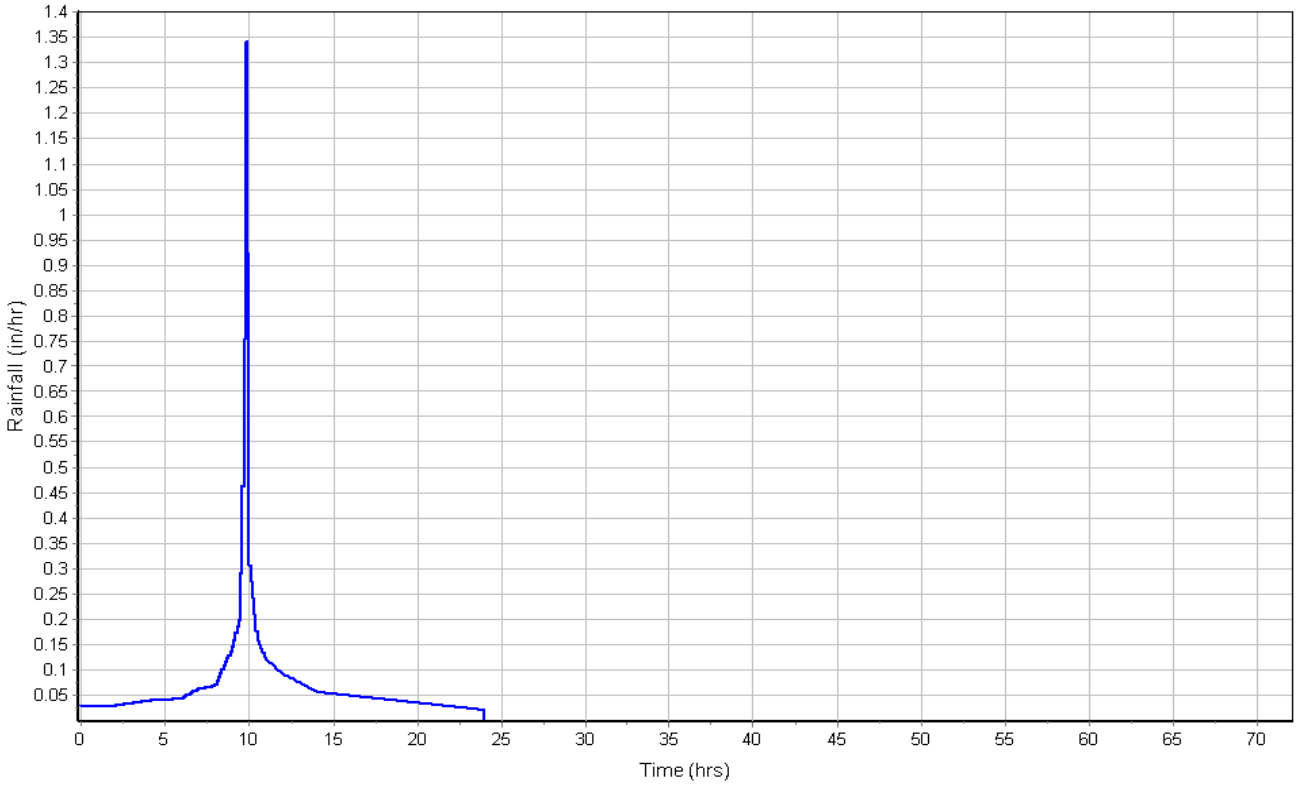
Total Rainfall (in)	1.78
Total Runoff (in)	0.85
Peak Runoff (cfs)	1.32
Weighted Curve Number	89.00
Time of Concentration (days hh:mm:ss)	0 00:10:00

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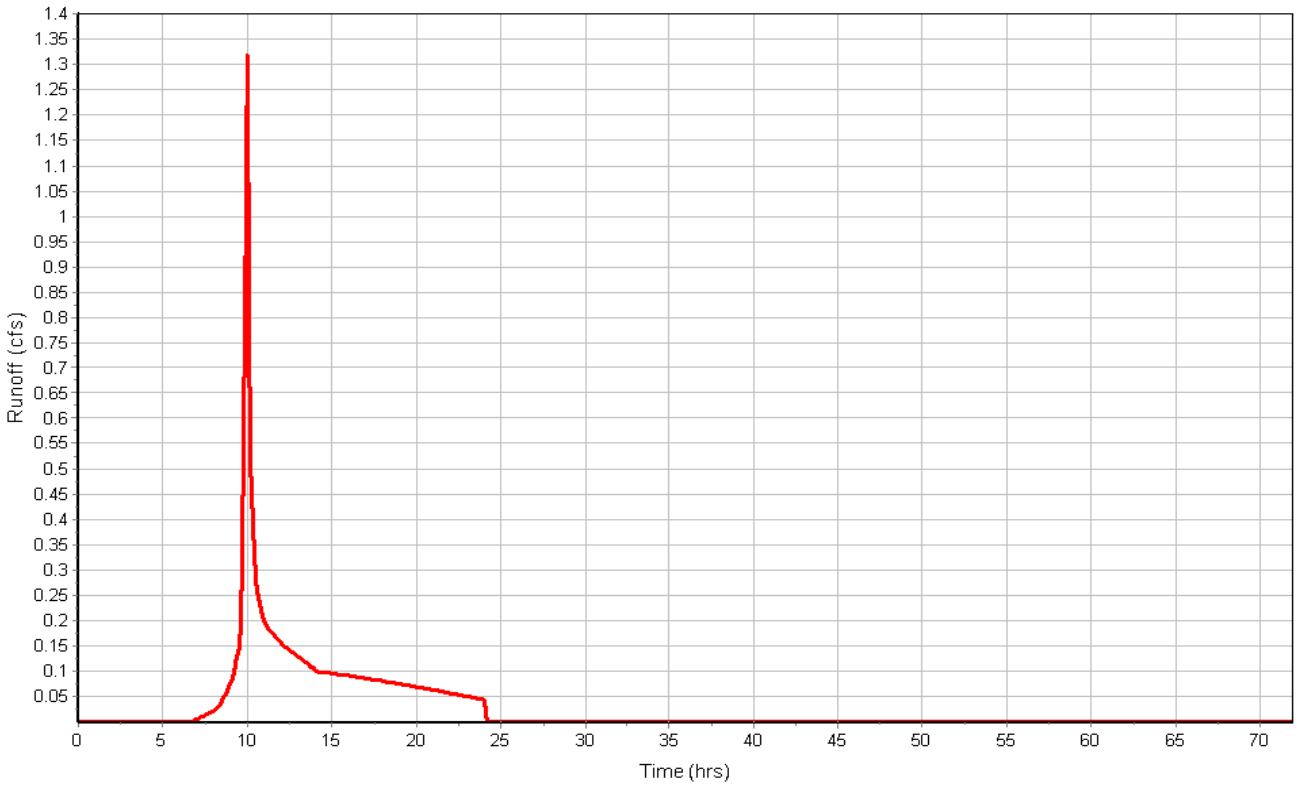
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Subbasin : A06

Input Data

Area (ac) 1.52
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	1.52	A	89.00
Composite Area & Weighted CN	1.52		89.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

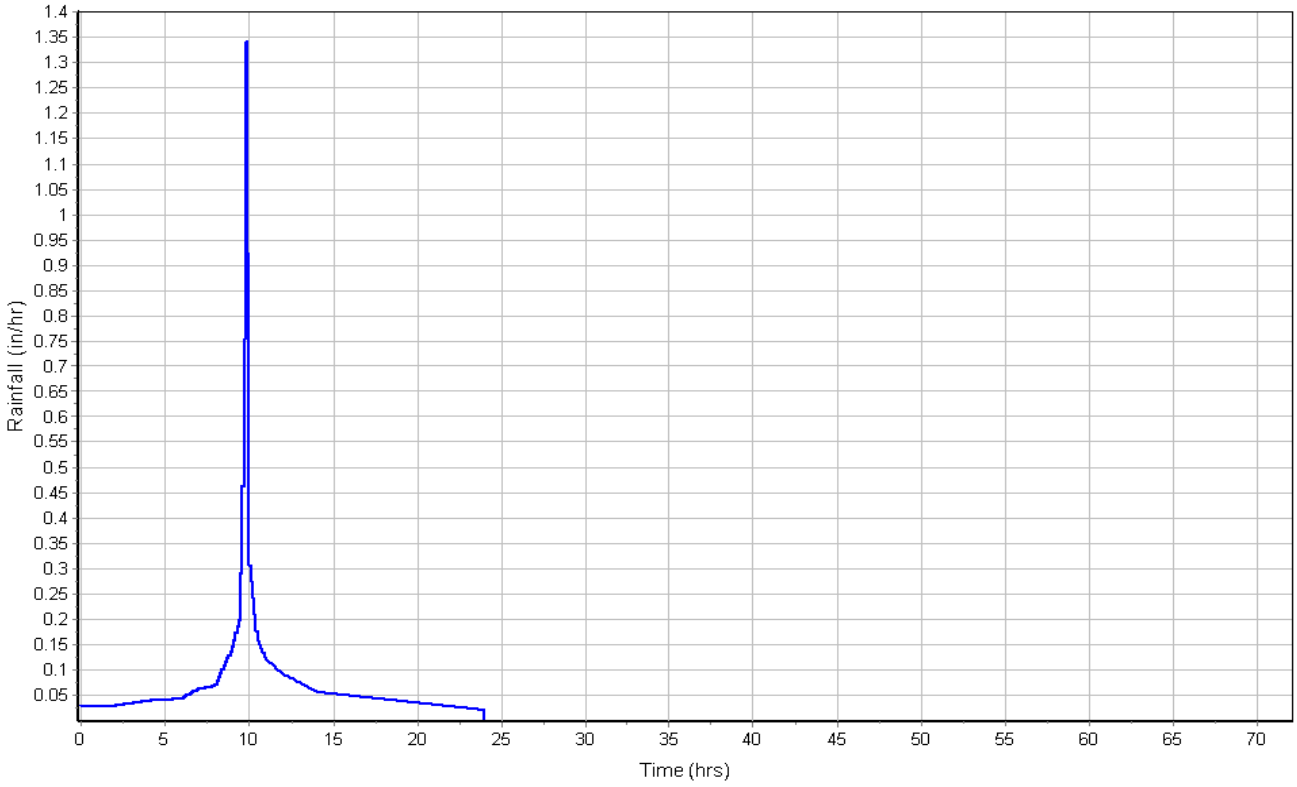
Total Rainfall (in) 1.78
Total Runoff (in) 0.85
Peak Runoff (cfs) 0.86
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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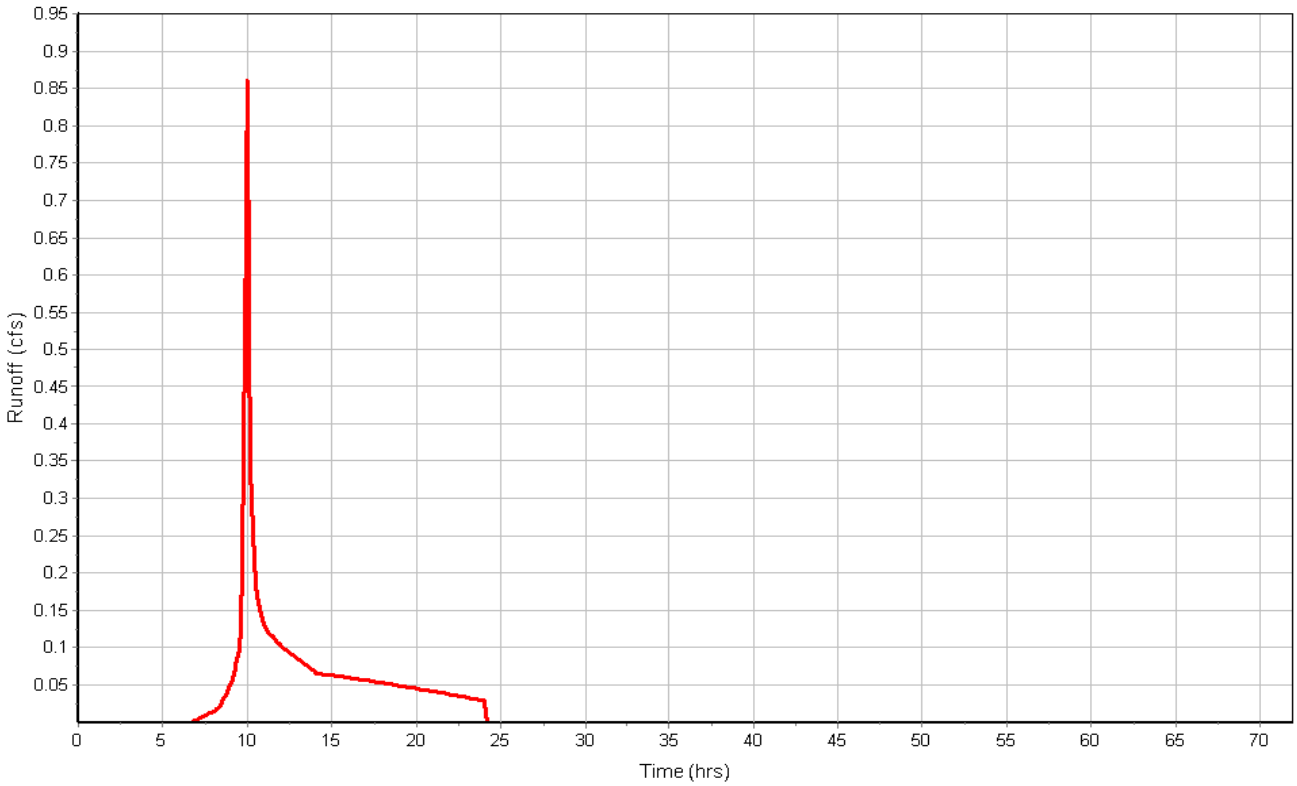
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Subbasin : A07

Input Data

Area (ac) 0.45
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	0.45	A	89.00
Composite Area & Weighted CN	0.45		89.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

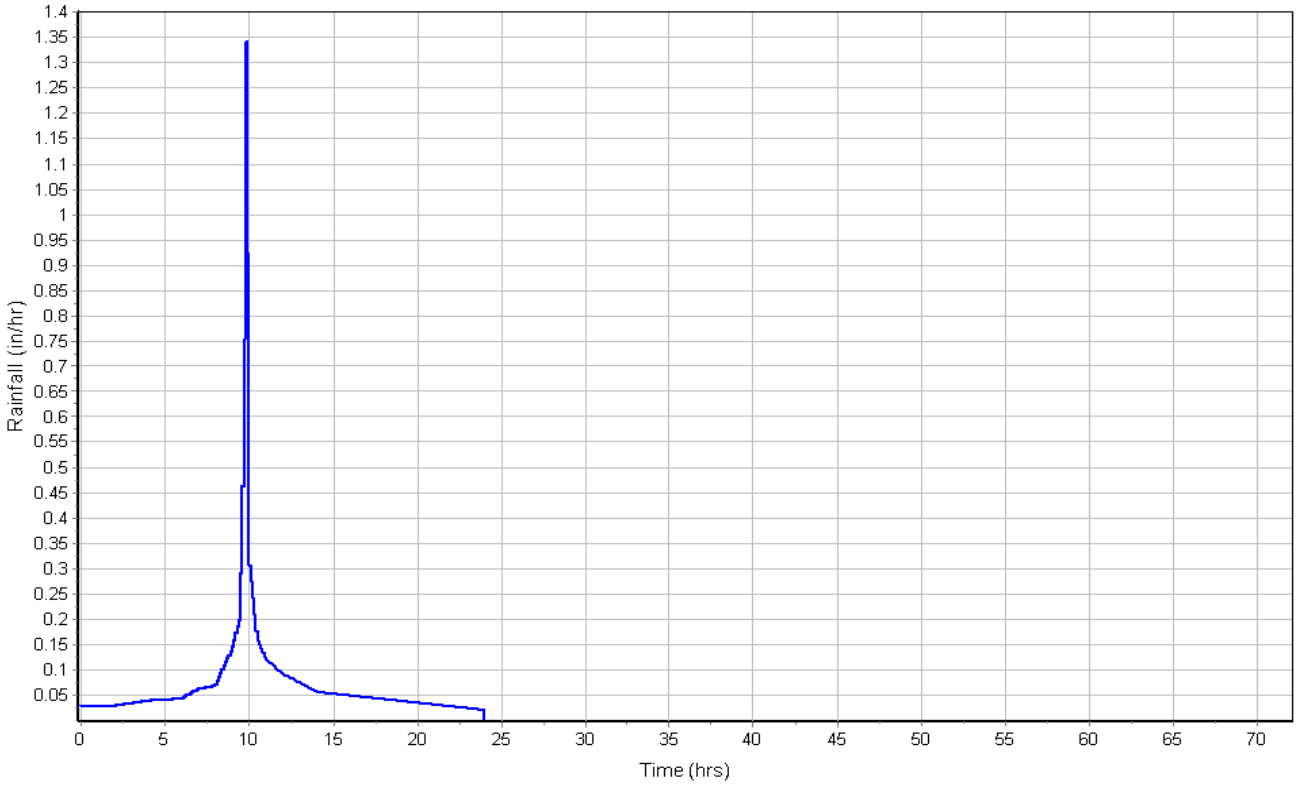
Total Rainfall (in) 1.78
Total Runoff (in) 0.85
Peak Runoff (cfs) 0.25
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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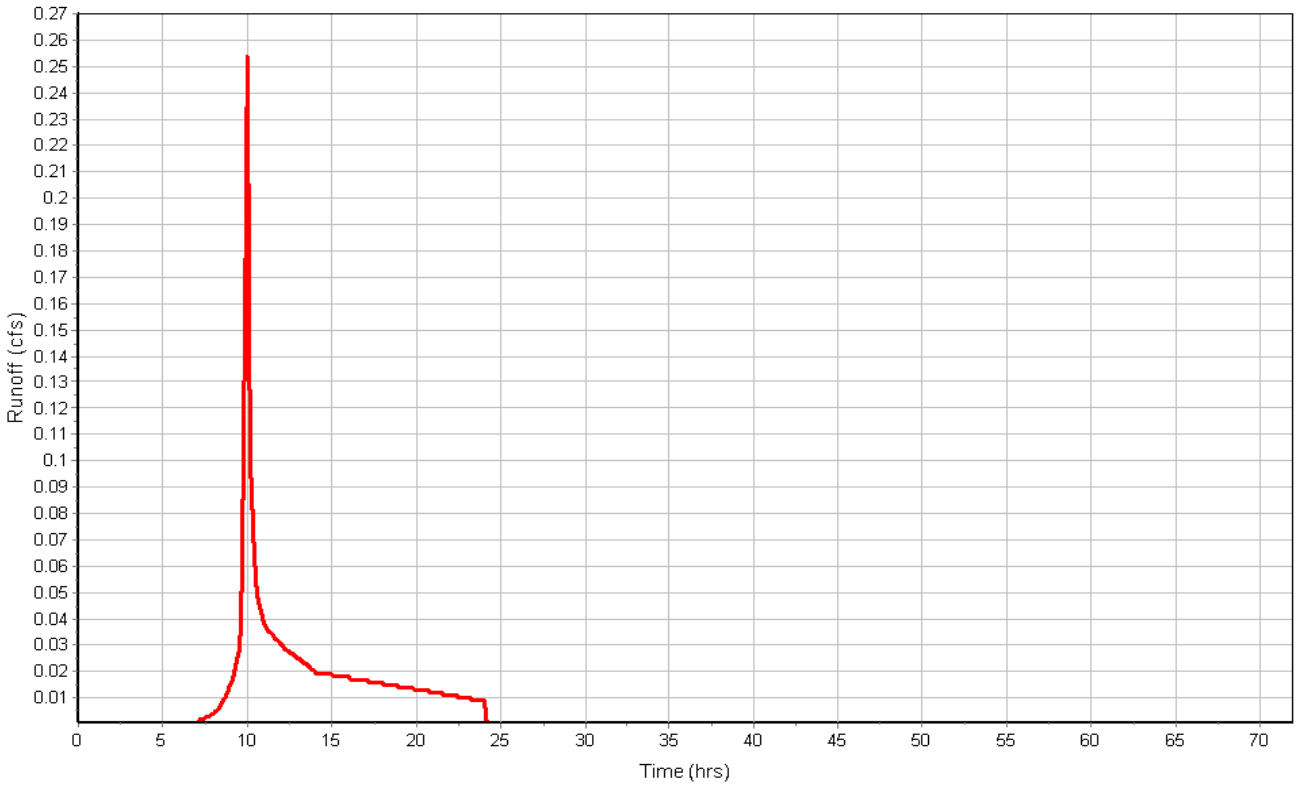
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Subbasin : A07

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A08

Input Data

Area (ac) 1.59
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	1.59	A	89.00
Composite Area & Weighted CN	1.59		89.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

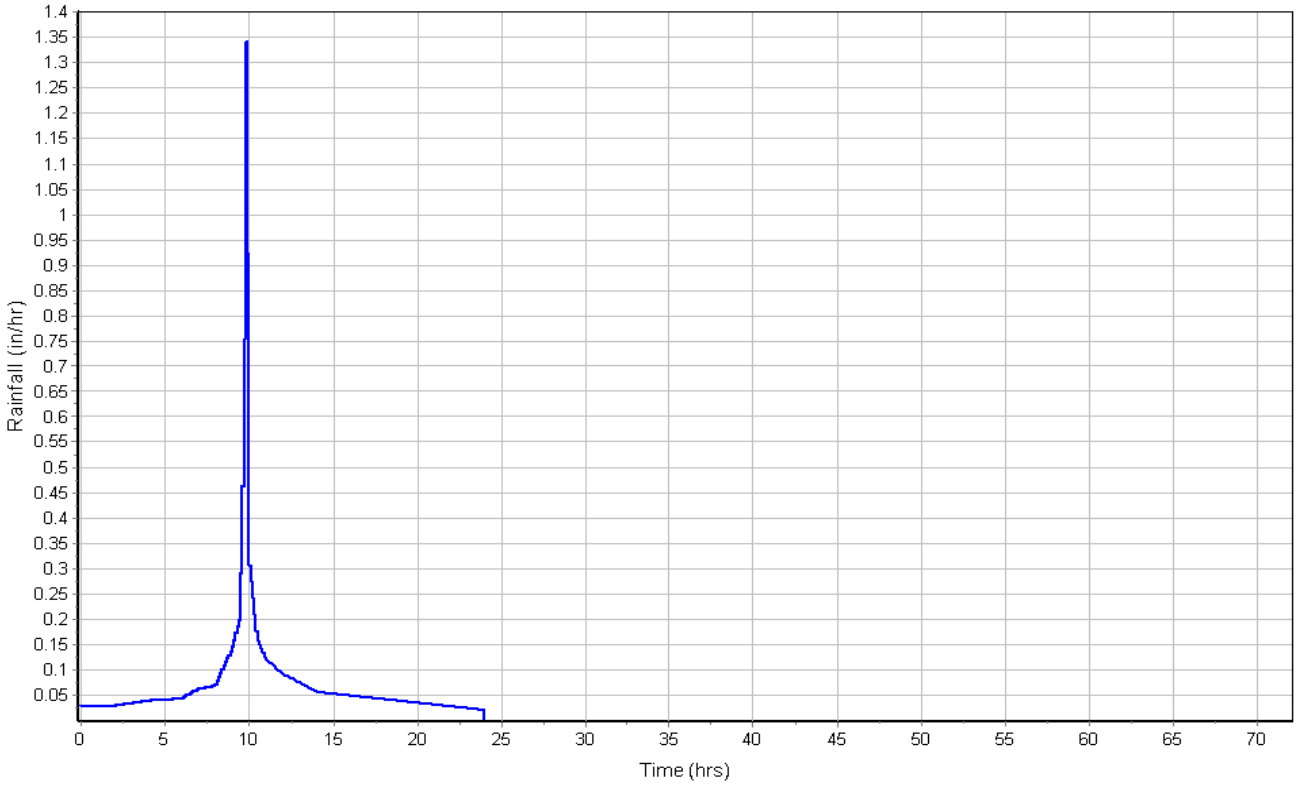
Total Rainfall (in) 1.78
Total Runoff (in) 0.85
Peak Runoff (cfs) 0.90
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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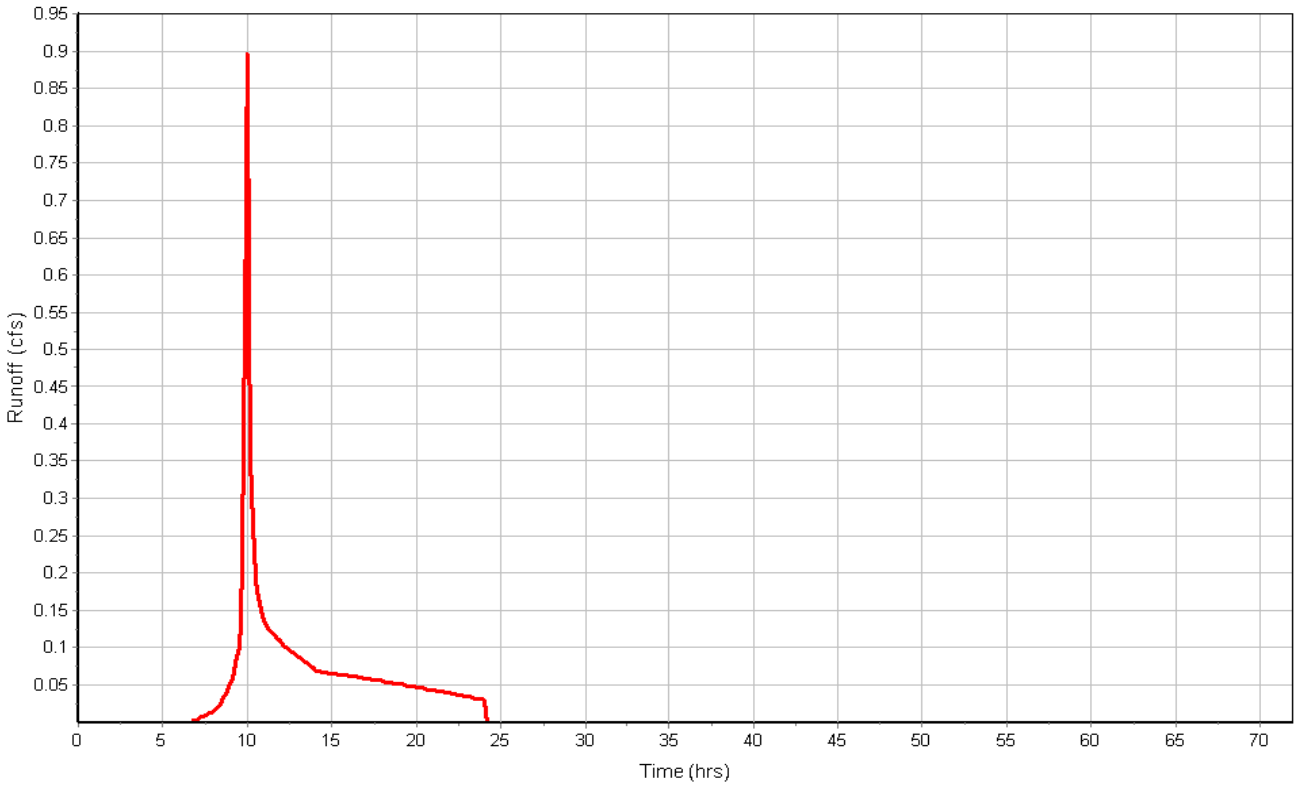
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Subbasin : A08

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A09

Input Data

Area (ac) 1.94
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	1.94	A	89.00
Composite Area & Weighted CN	1.94		89.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

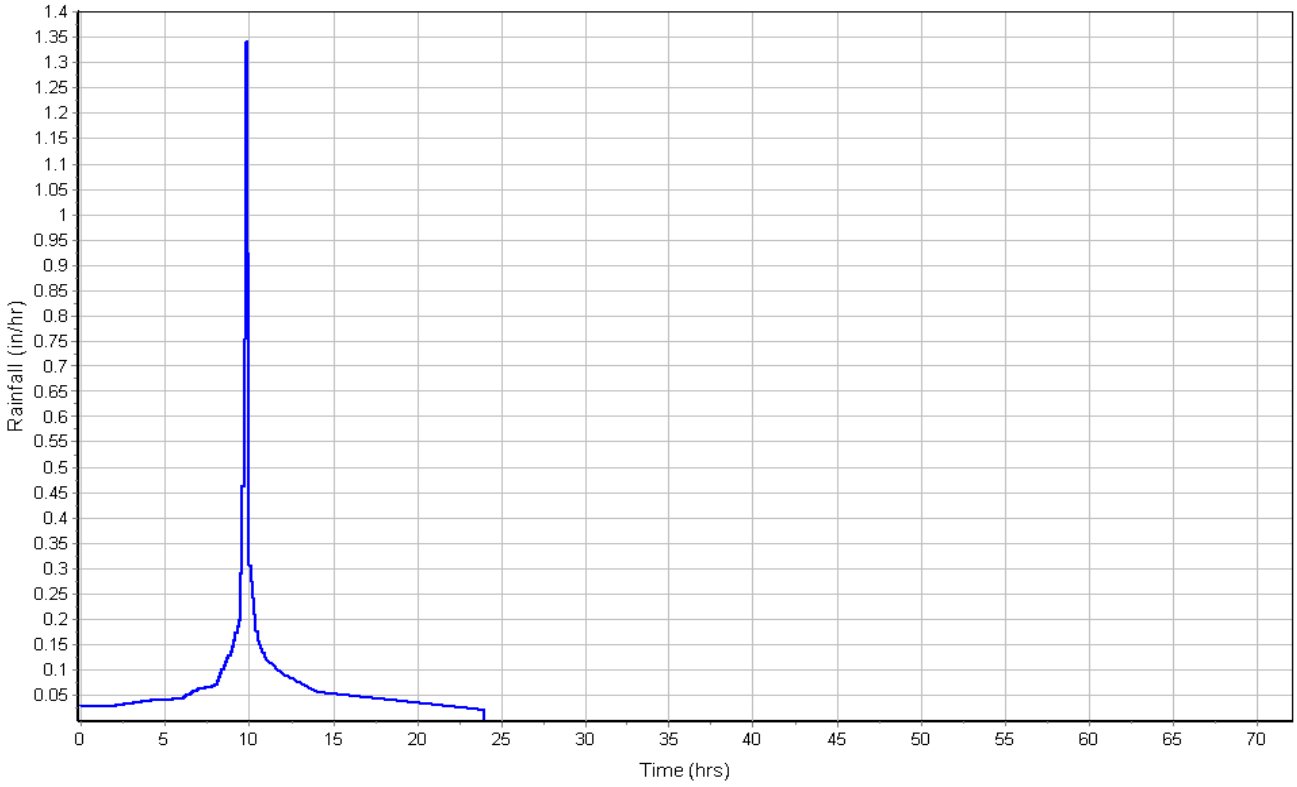
Total Rainfall (in) 1.78
Total Runoff (in) 0.85
Peak Runoff (cfs) 1.10
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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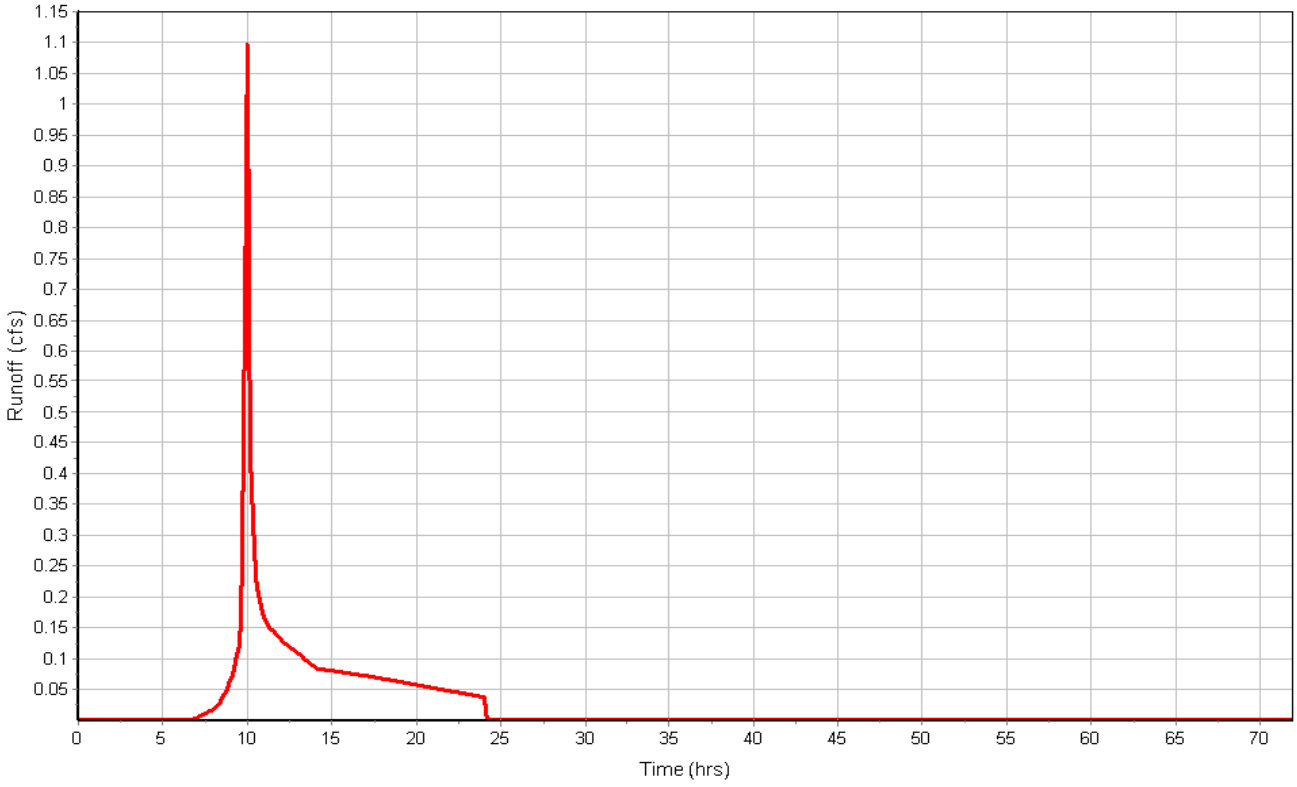
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Subbasin : A09

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A10

Input Data

Area (ac) 16.37
Weighted Curve Number 84.72
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban industrial, 72% imp	11.29	A	81.00
Urban industrial, 72% imp	5.08	D	93.00
Composite Area & Weighted CN	16.37		84.72

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

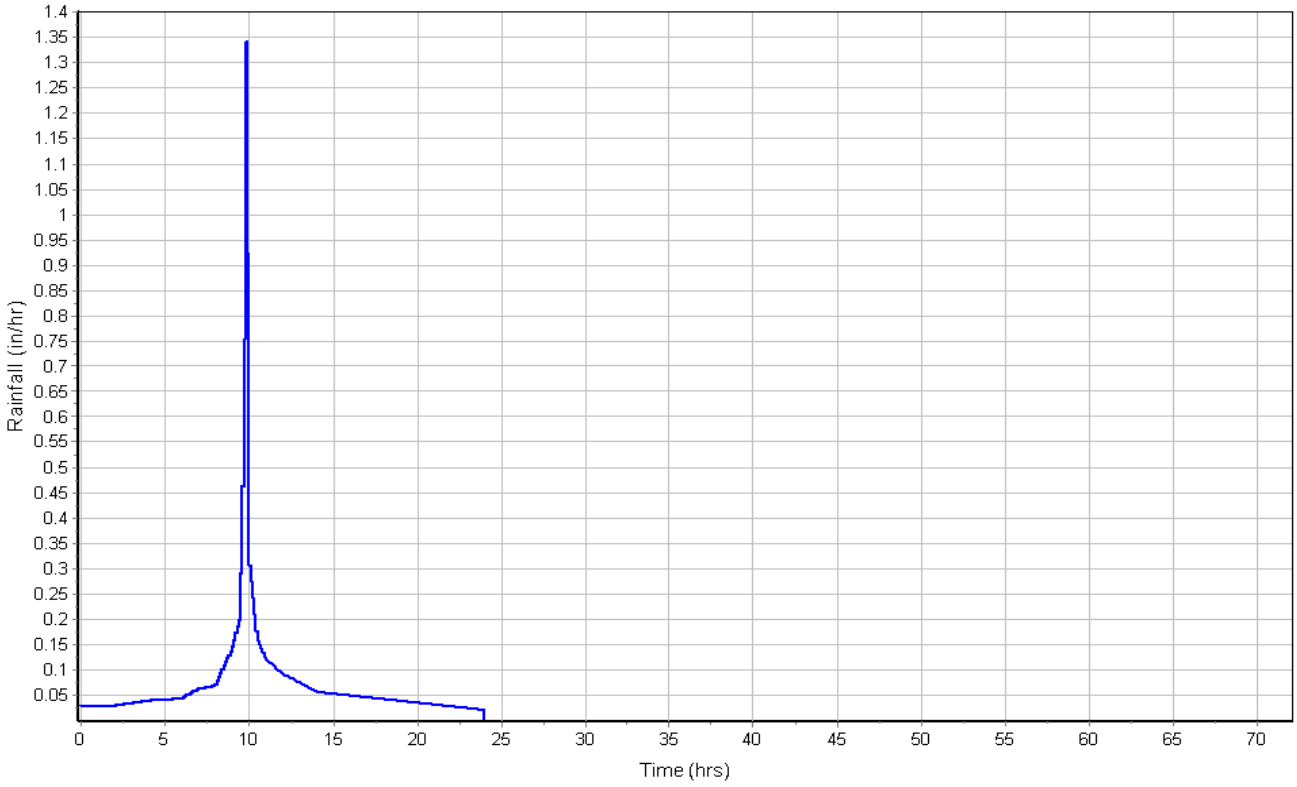
Total Rainfall (in) 1.78
Total Runoff (in) 0.63
Peak Runoff (cfs) 6.20
Weighted Curve Number 84.72
Time of Concentration (days hh:mm:ss) 0 00:10:00

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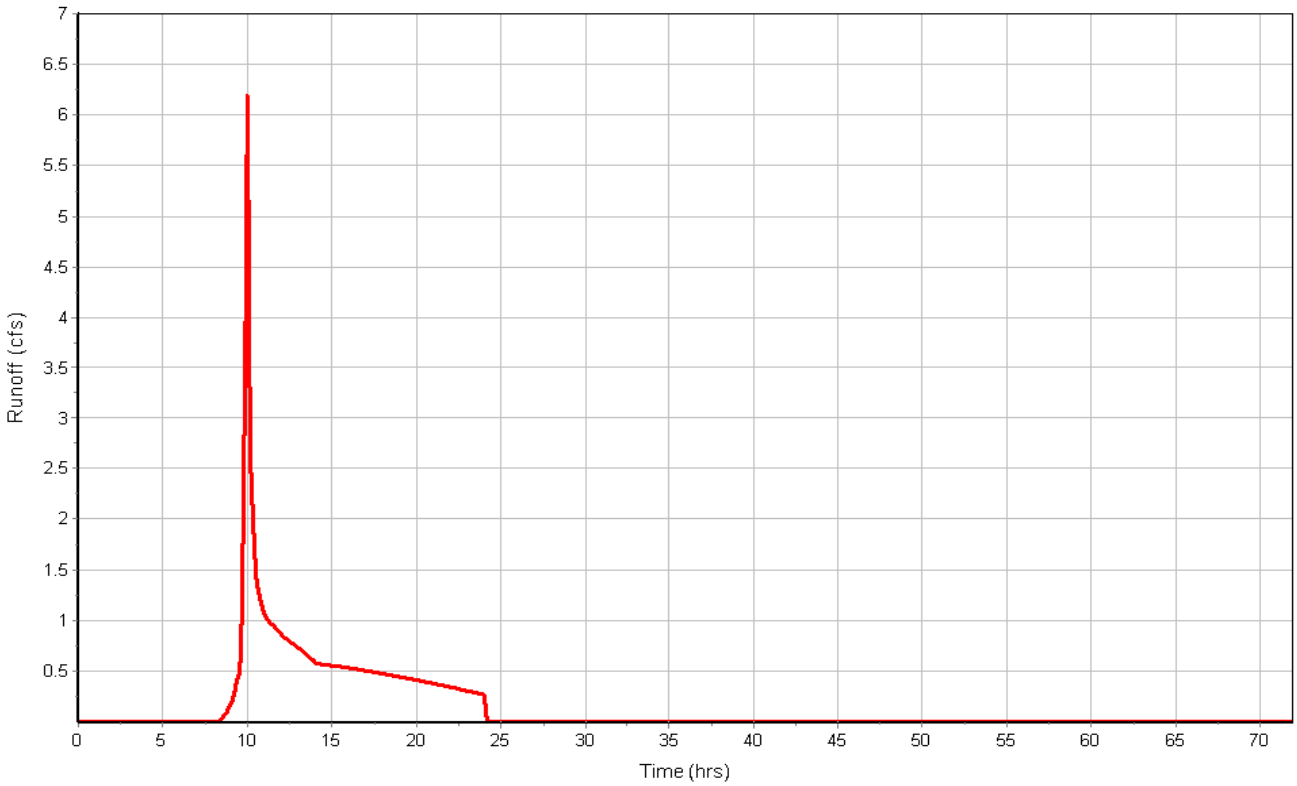
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Subbasin : A10

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A11a

Input Data

Area (ac) 0.92
Weighted Curve Number 98.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	0.52	A	98.00
Paved parking & roofs	0.40	D	98.00
Composite Area & Weighted CN	0.92		98.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

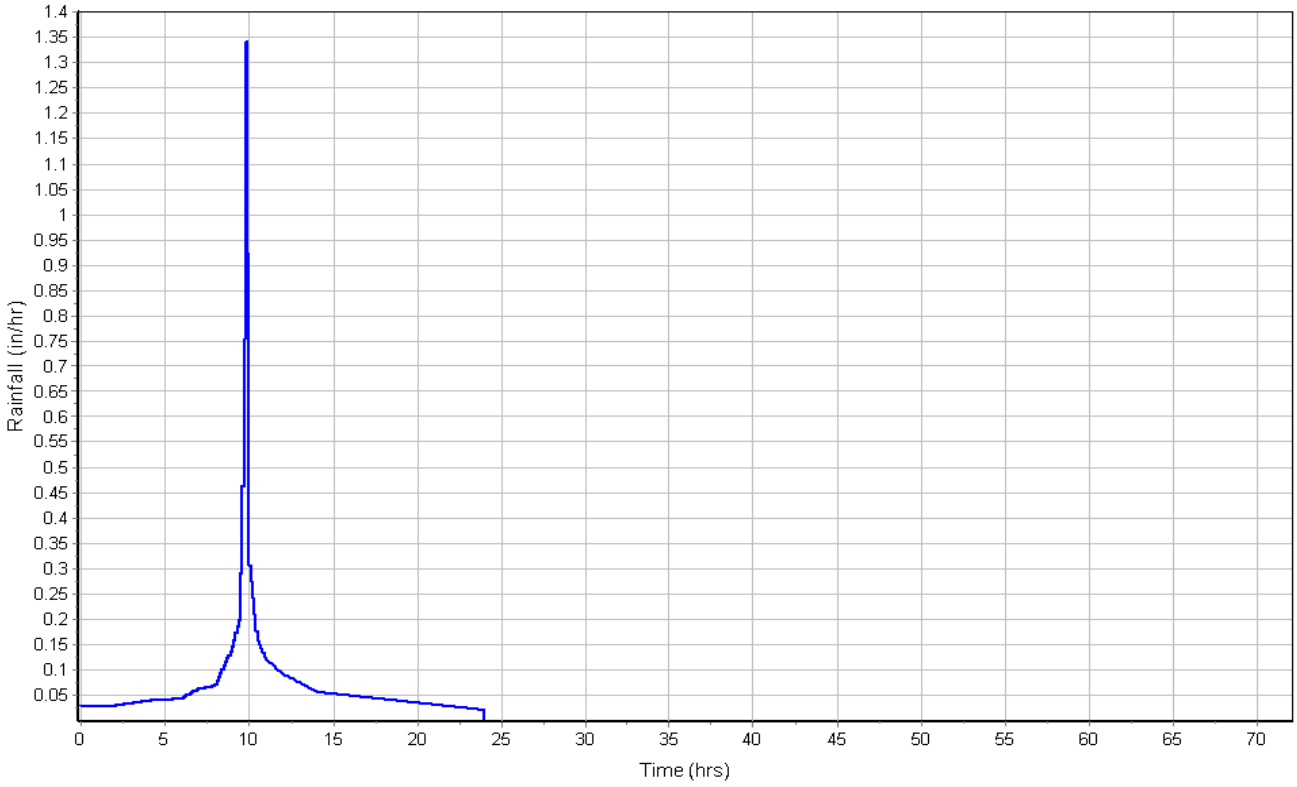
Total Rainfall (in) 1.78
Total Runoff (in) 1.56
Peak Runoff (cfs) 0.99
Weighted Curve Number 98.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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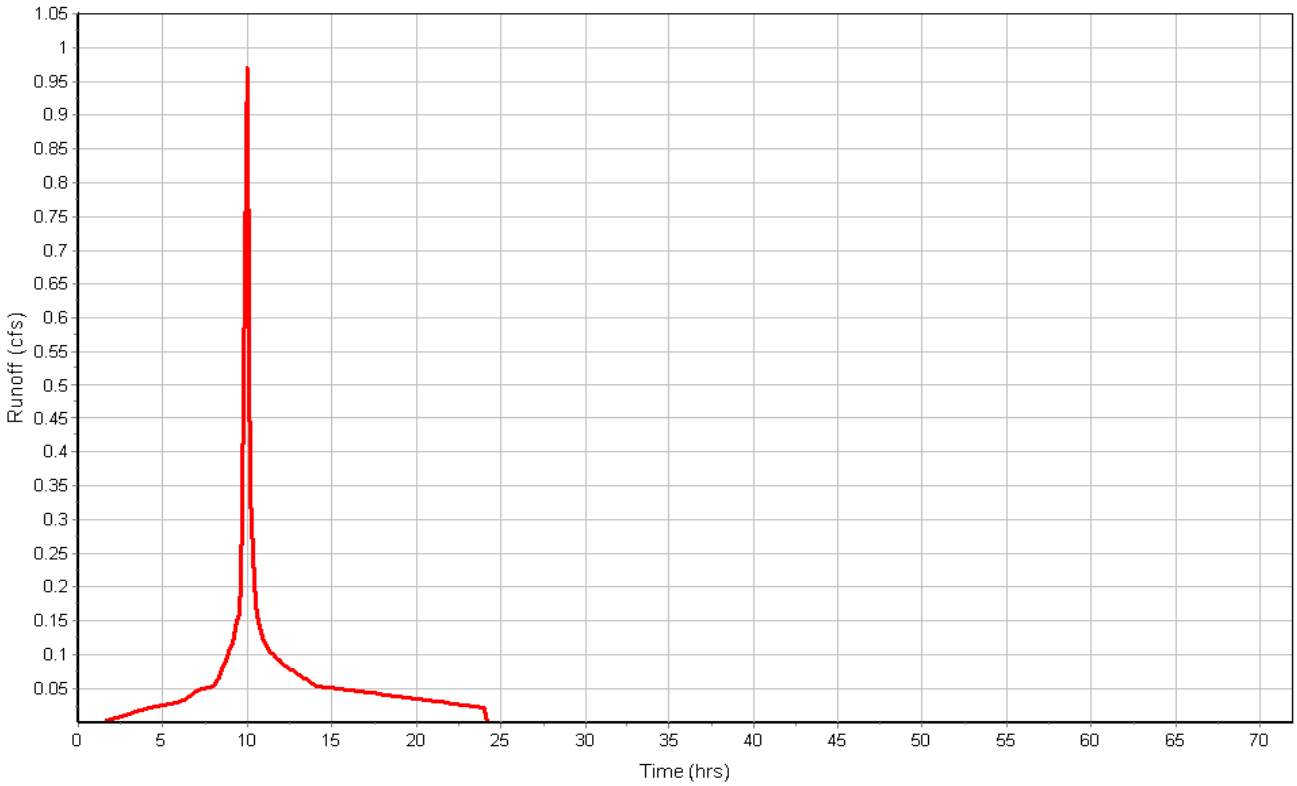
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Subbasin : A11a

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A11b

Input Data

Area (ac)	0.64
Weighted Curve Number	98.00
Rain Gage ID	Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	0.43	A	98.00
Paved parking & roofs	0.21	D	98.00
Composite Area & Weighted CN	0.64		98.00

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

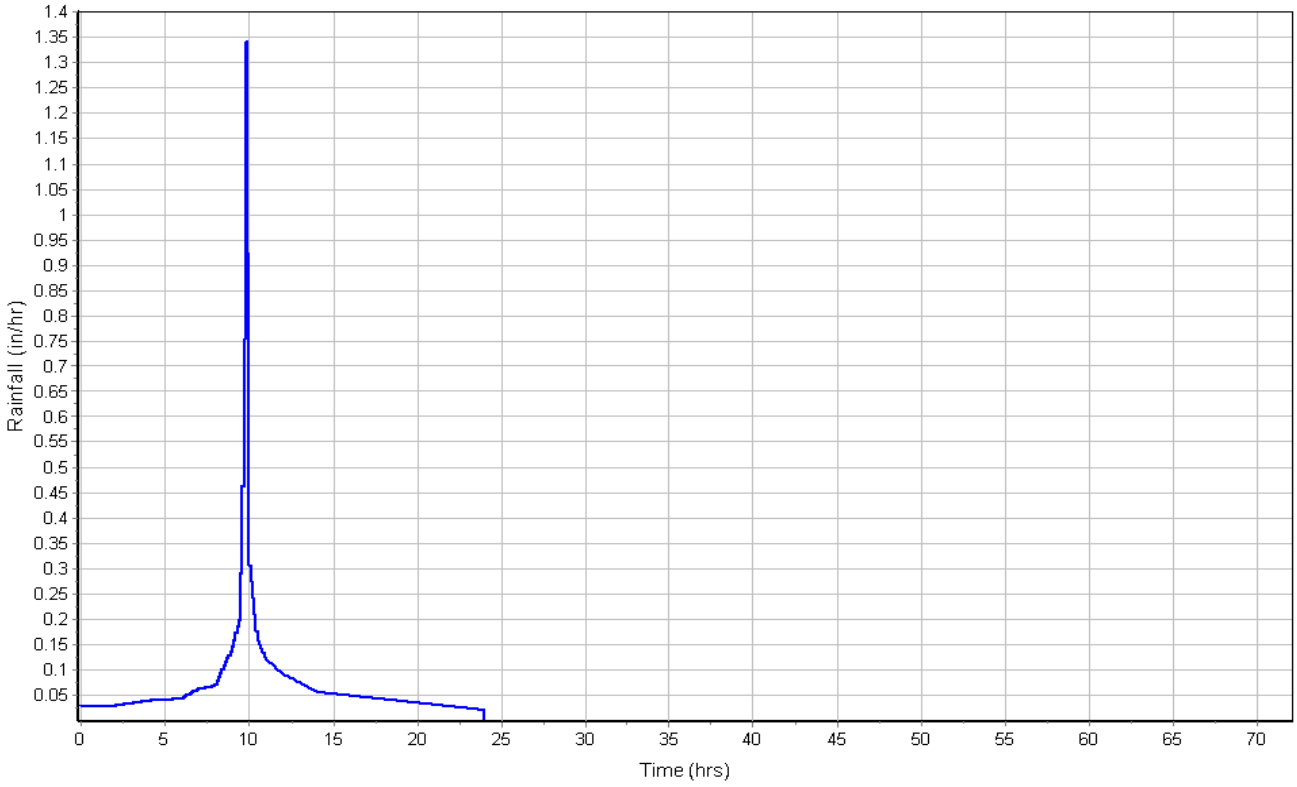
Total Rainfall (in)	1.78
Total Runoff (in)	1.56
Peak Runoff (cfs)	0.69
Weighted Curve Number	98.00
Time of Concentration (days hh:mm:ss)	0 00:10:00

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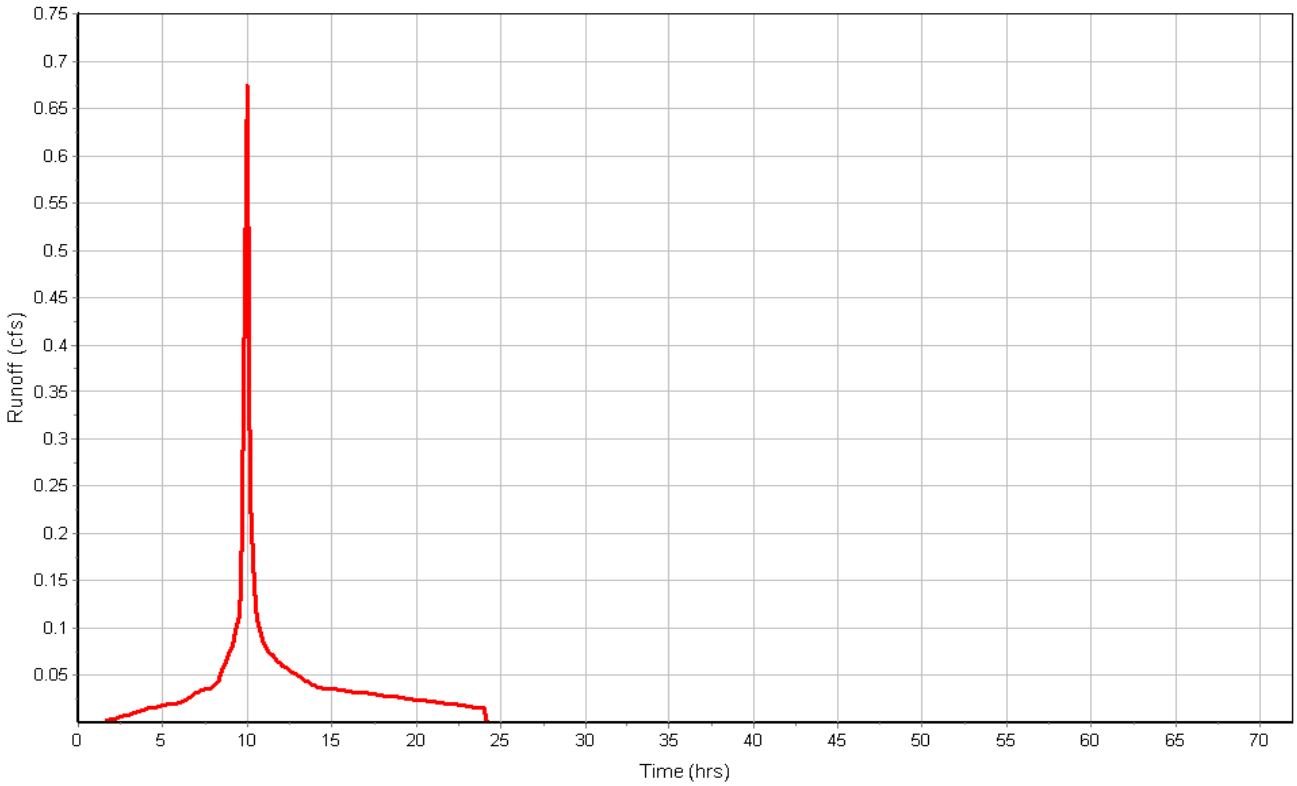
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Subbasin : A11b

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A12

Input Data

Area (ac)	1.73
Weighted Curve Number	98.00
Rain Gage ID	Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	1.73	A	98.00
Composite Area & Weighted CN	1.73		98.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

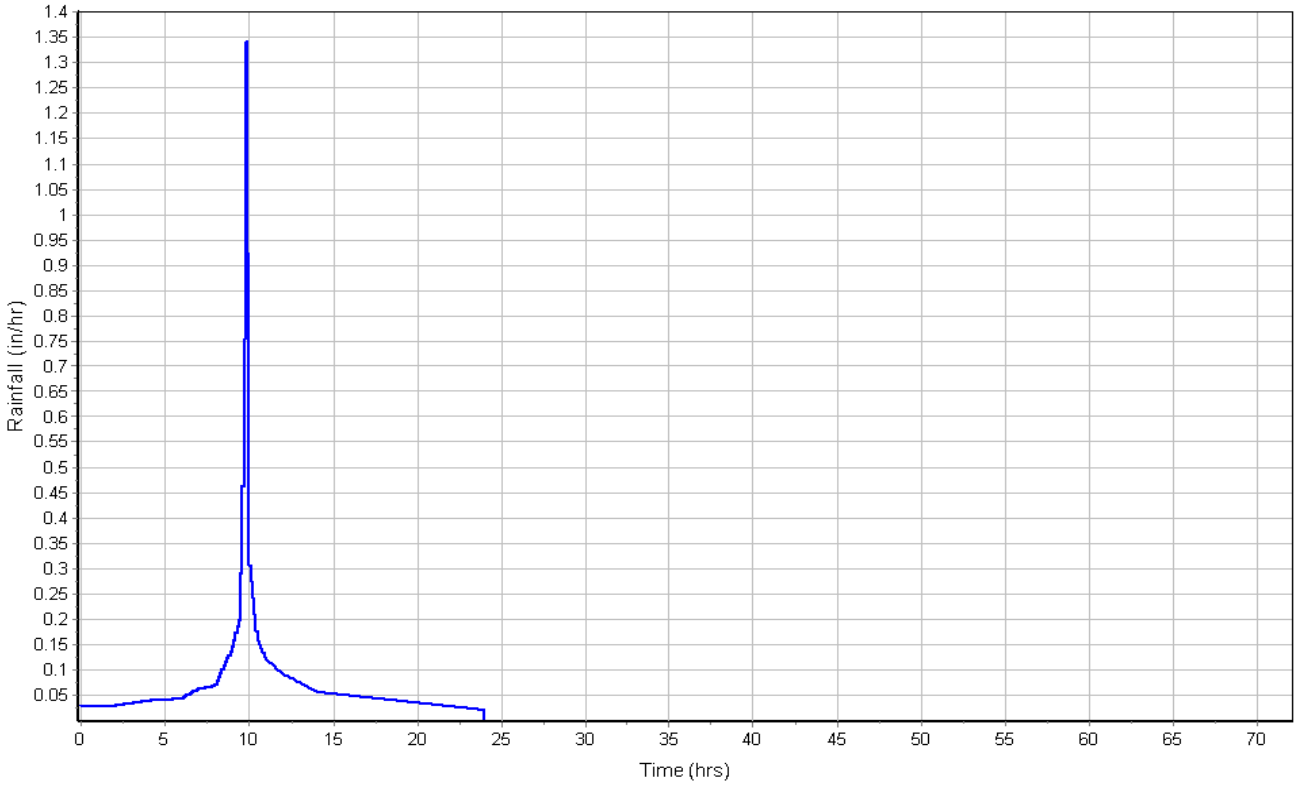
Total Rainfall (in)	1.78
Total Runoff (in)	1.56
Peak Runoff (cfs)	1.86
Weighted Curve Number	98.00
Time of Concentration (days hh:mm:ss)	0 00:10:00

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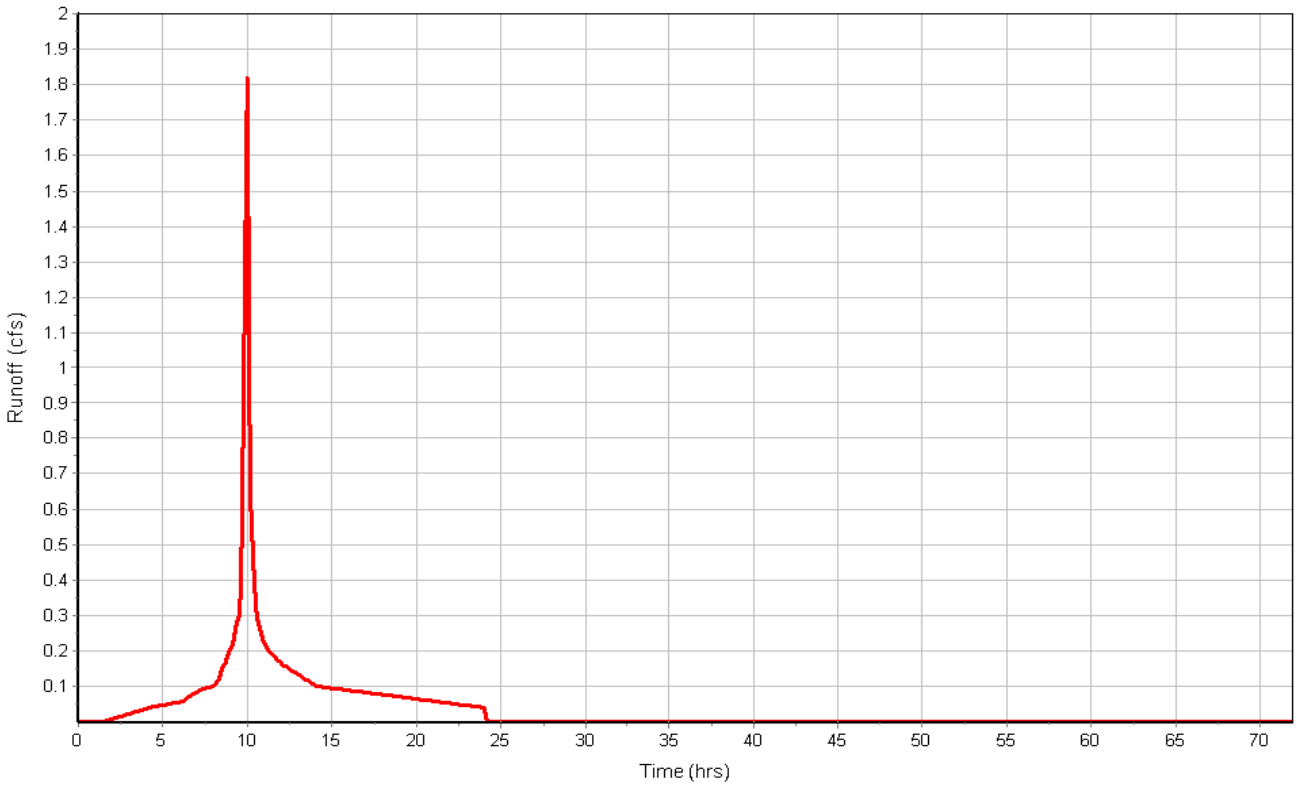
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Subbasin : A12

Rainfall Intensity Graph



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Subbasin : A13

Input Data

Area (ac) 3.78
Weighted Curve Number 98.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved roads with curbs & sewers	3.78	A	98.00
Composite Area & Weighted CN	3.78		98.00

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

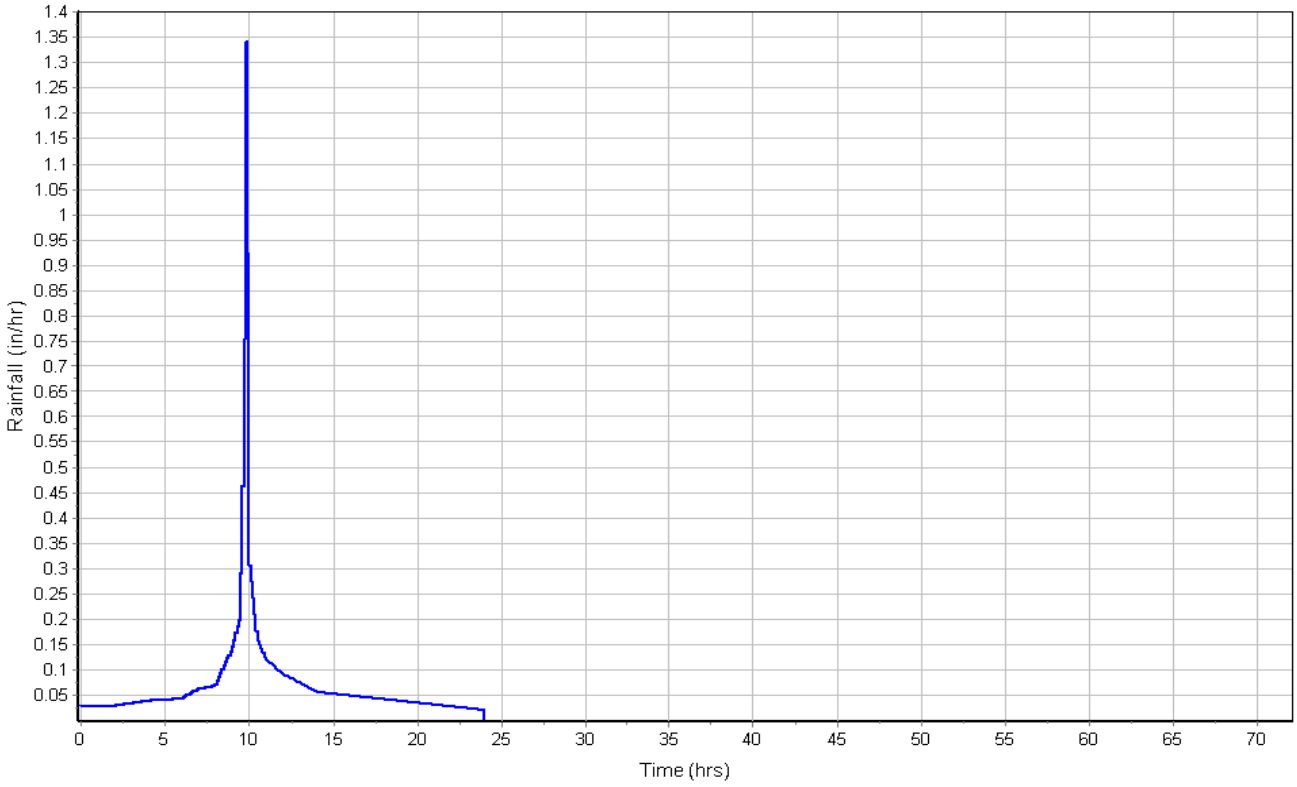
Total Rainfall (in) 1.78
Total Runoff (in) 1.56
Peak Runoff (cfs) 4.07
Weighted Curve Number 98.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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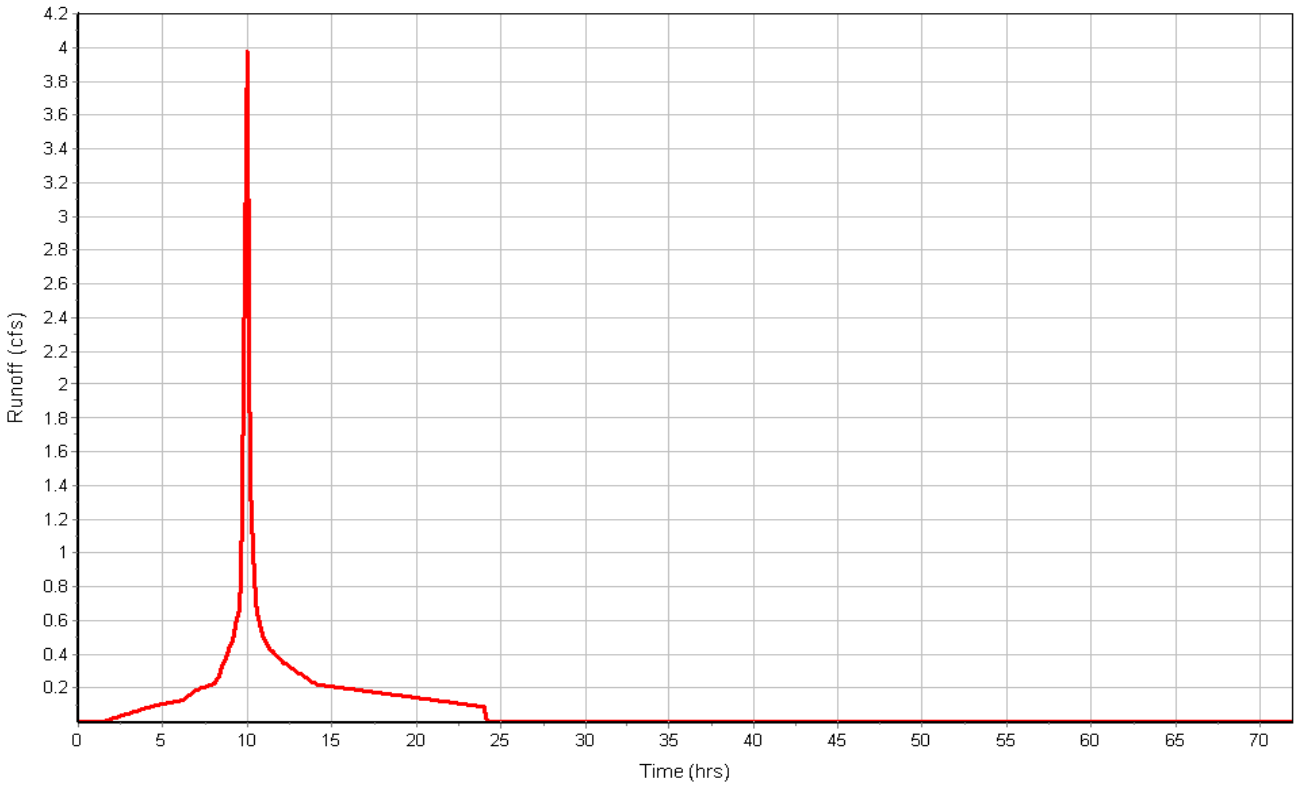
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Subbasin : A13

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A3A

Input Data

Area (ac) 0.54
Weighted Curve Number 95.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	0.54	D	95.00
Composite Area & Weighted CN	0.54		95.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

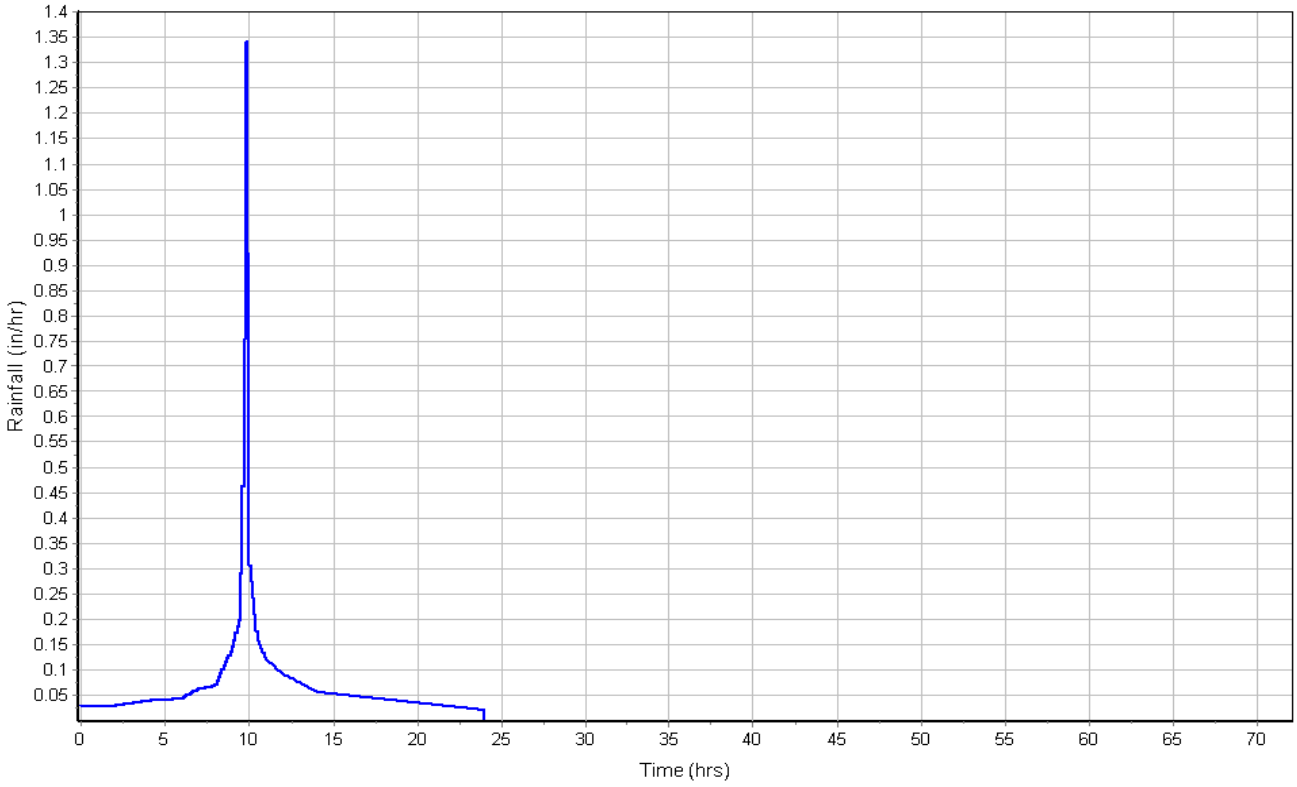
Total Rainfall (in) 1.78
Total Runoff (in) 1.27
Peak Runoff (cfs) 0.49
Weighted Curve Number 95.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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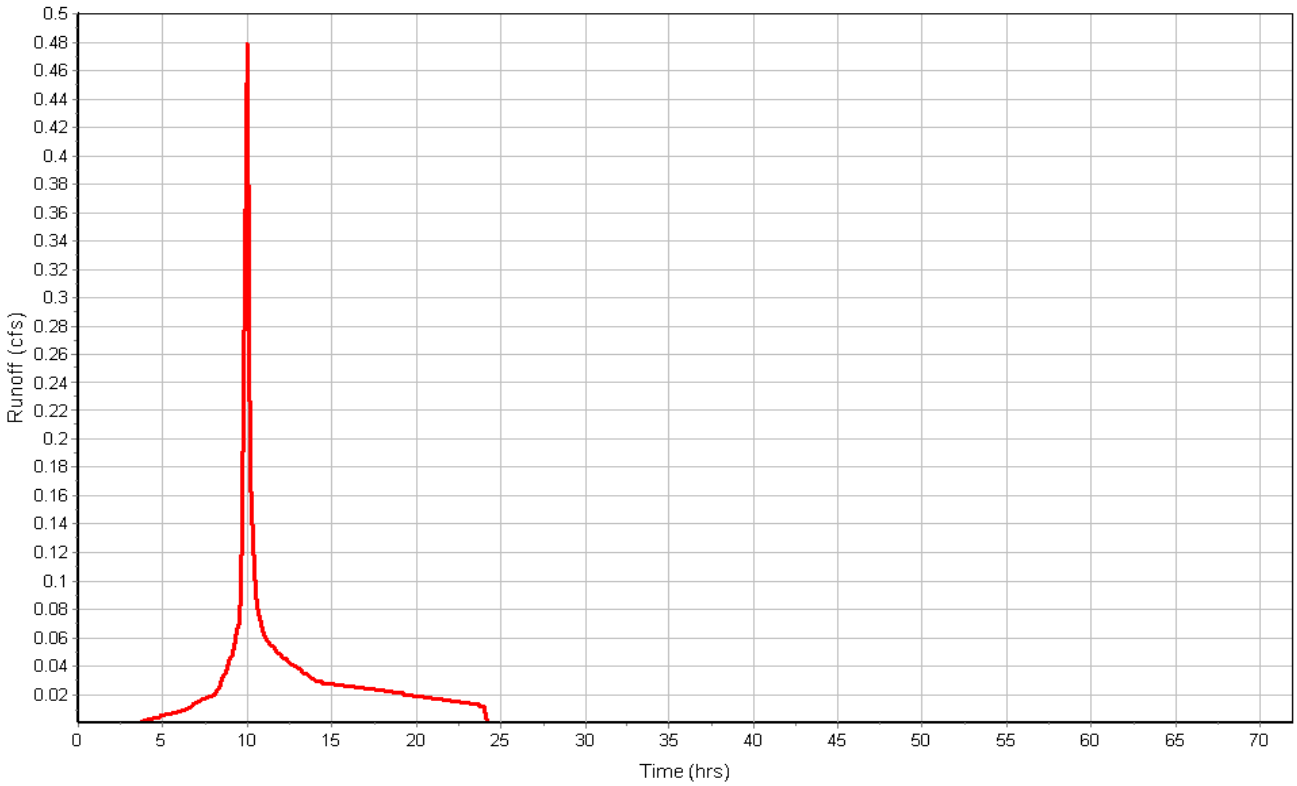
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Subbasin : A3A

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Subbasin : A3B

Input Data

Area (ac) 0.80
Weighted Curve Number 91.77
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	0.43	A	89.00
Urban commercial, 85% imp	0.37	D	95.00
Composite Area & Weighted CN	0.80		91.77

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

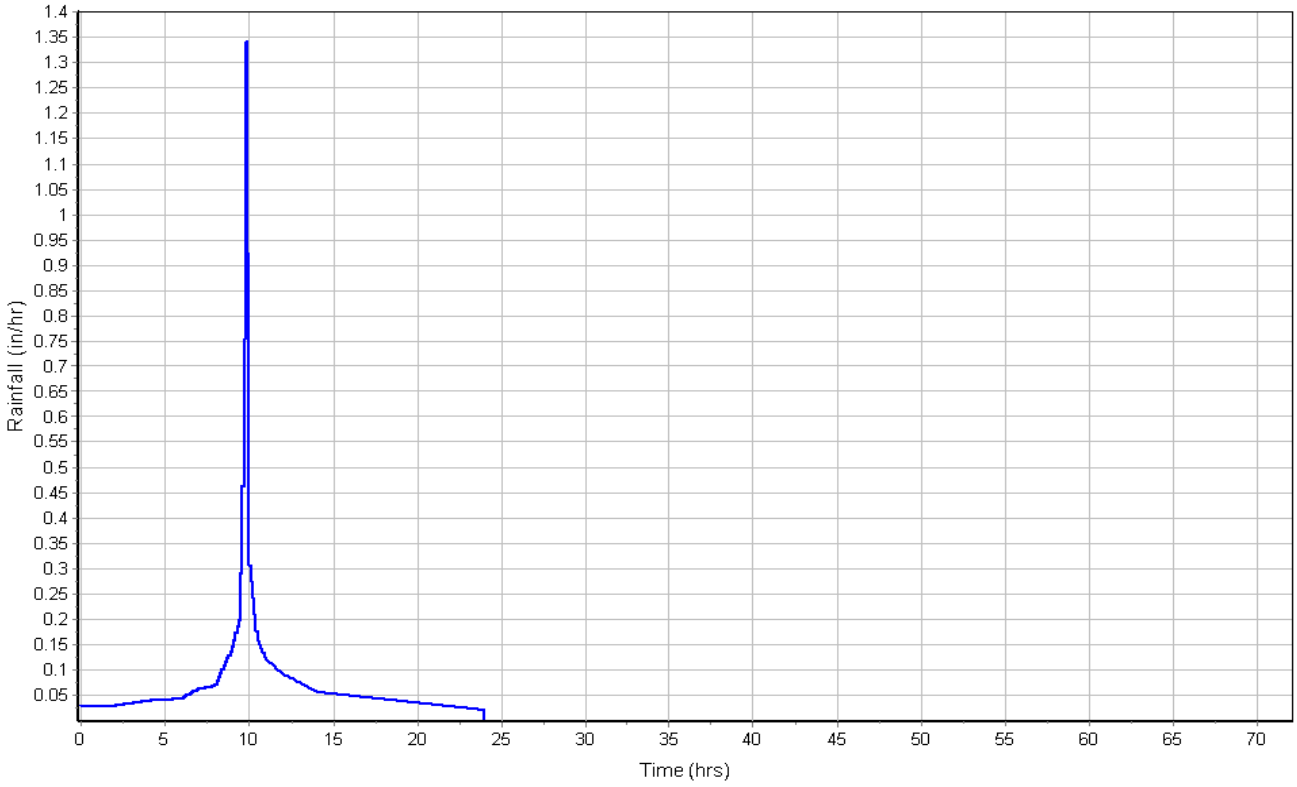
Total Rainfall (in) 1.78
Total Runoff (in) 1.03
Peak Runoff (cfs) 0.57
Weighted Curve Number 91.77
Time of Concentration (days hh:mm:ss) 0 00:10:00

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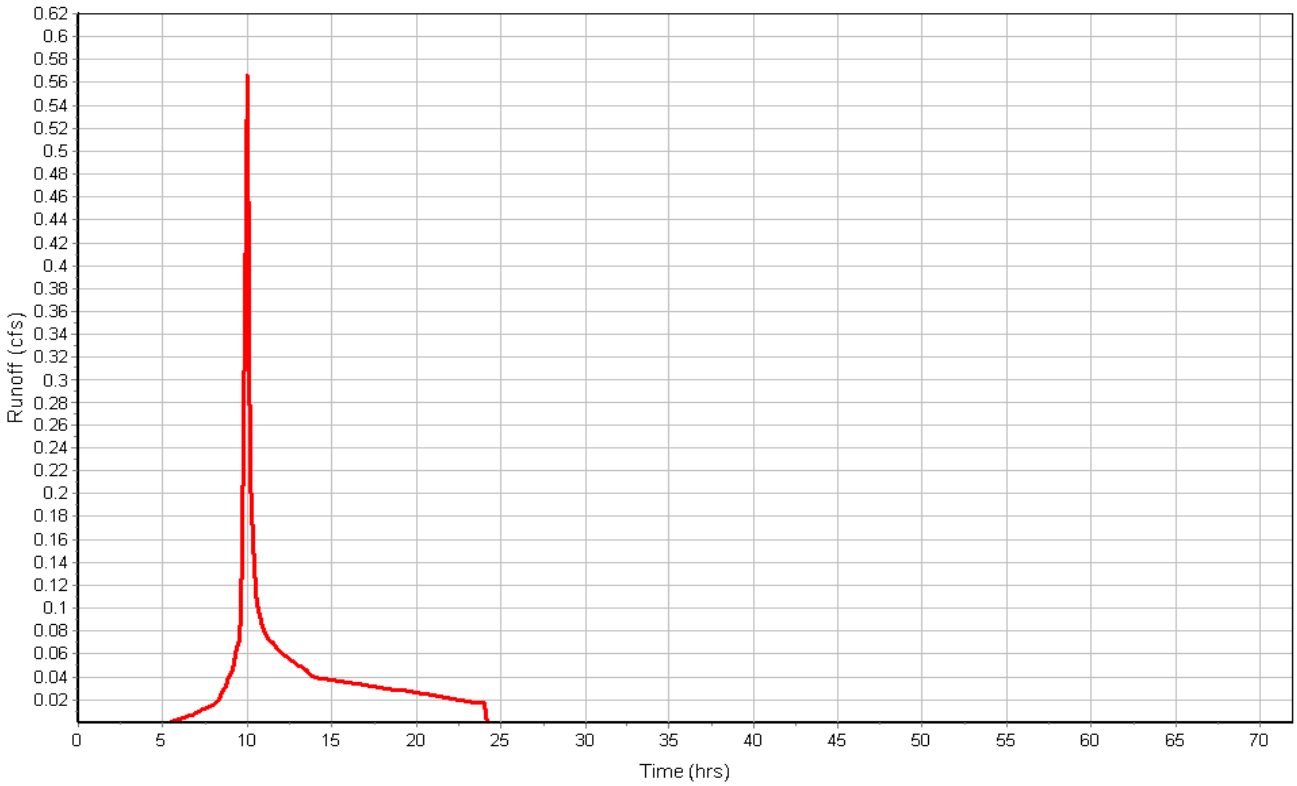
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Subbasin : A3B

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A3C

Input Data

Area (ac) 1.34
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	1.34	A	89.00
Composite Area & Weighted CN	1.34		89.00

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

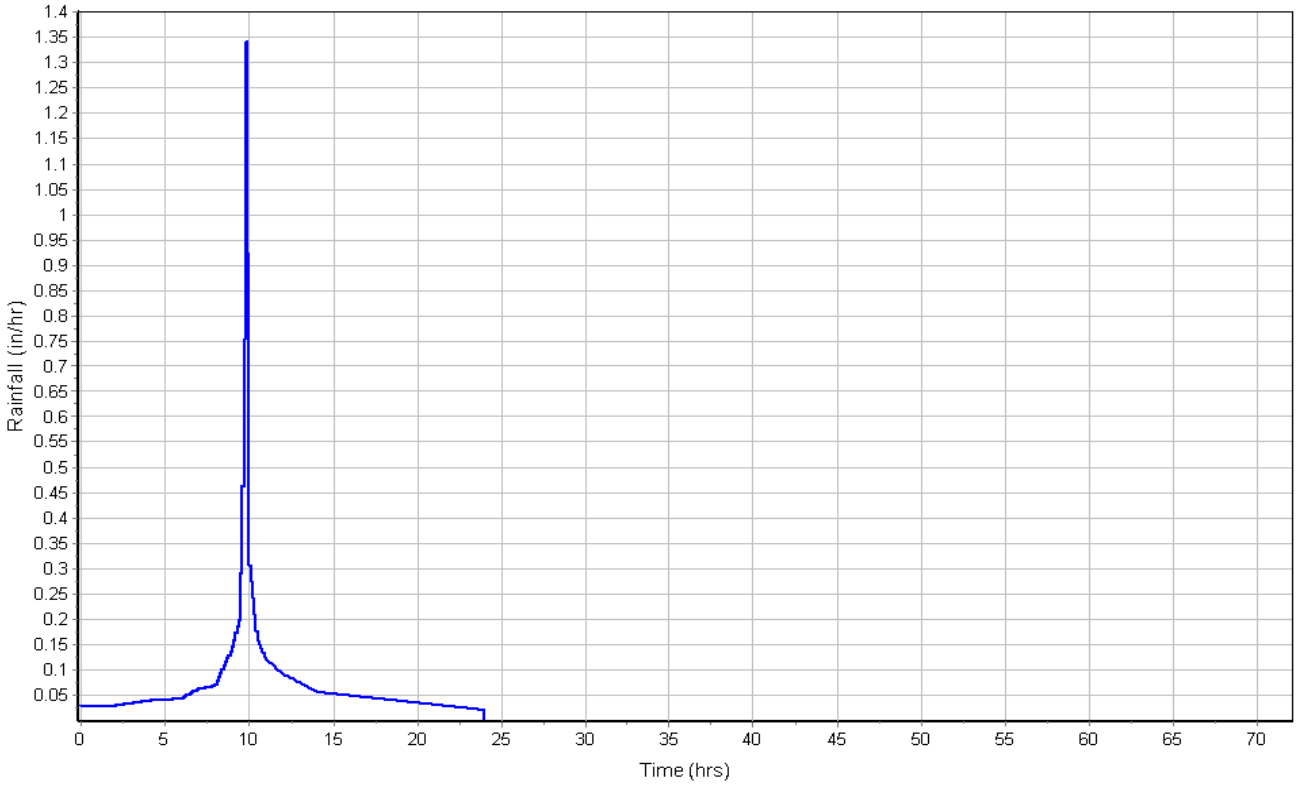
Total Rainfall (in) 1.78
Total Runoff (in) 0.85
Peak Runoff (cfs) 0.76
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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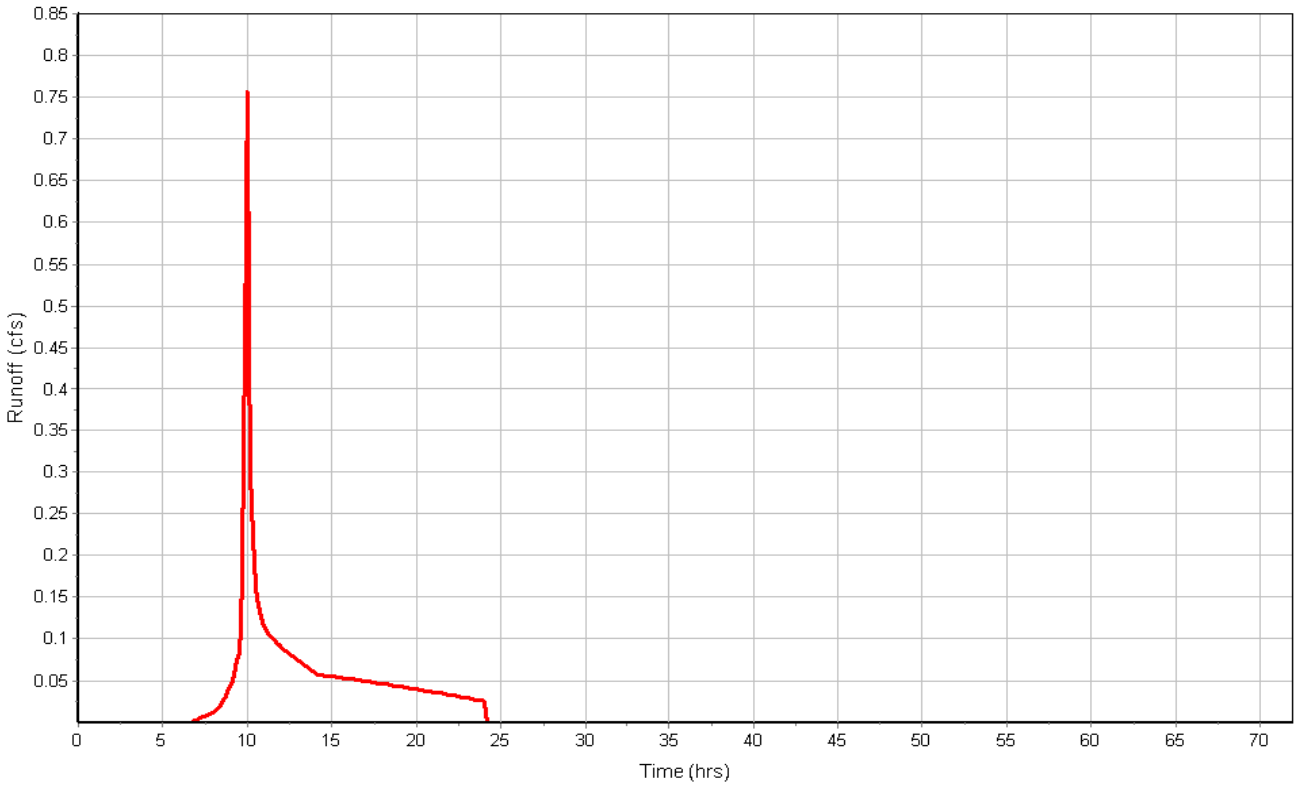
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Subbasin : A3C

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Subbasin : RVPREDEV

Input Data

Area (ac) 16.37
Weighted Curve Number 70.76
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Desert shrub range, Poor	11.29	A	63.00
Desert shrub range, Poor	5.08	D	88.00
Composite Area & Weighted CN	16.37		70.76

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.13	0.00	0.00
Flow Length (ft) :	1228	0.00	0.00
Slope (%) :	2.0	0.00	0.00
2 yr, 24 hr Rainfall (in) :	1.33	0.00	0.00
Velocity (ft/sec) :	0.20	0.00	0.00
Computed Flow Time (min) :	100.79	0.00	0.00

Total TOC (min) 100.79

Subbasin Runoff Results

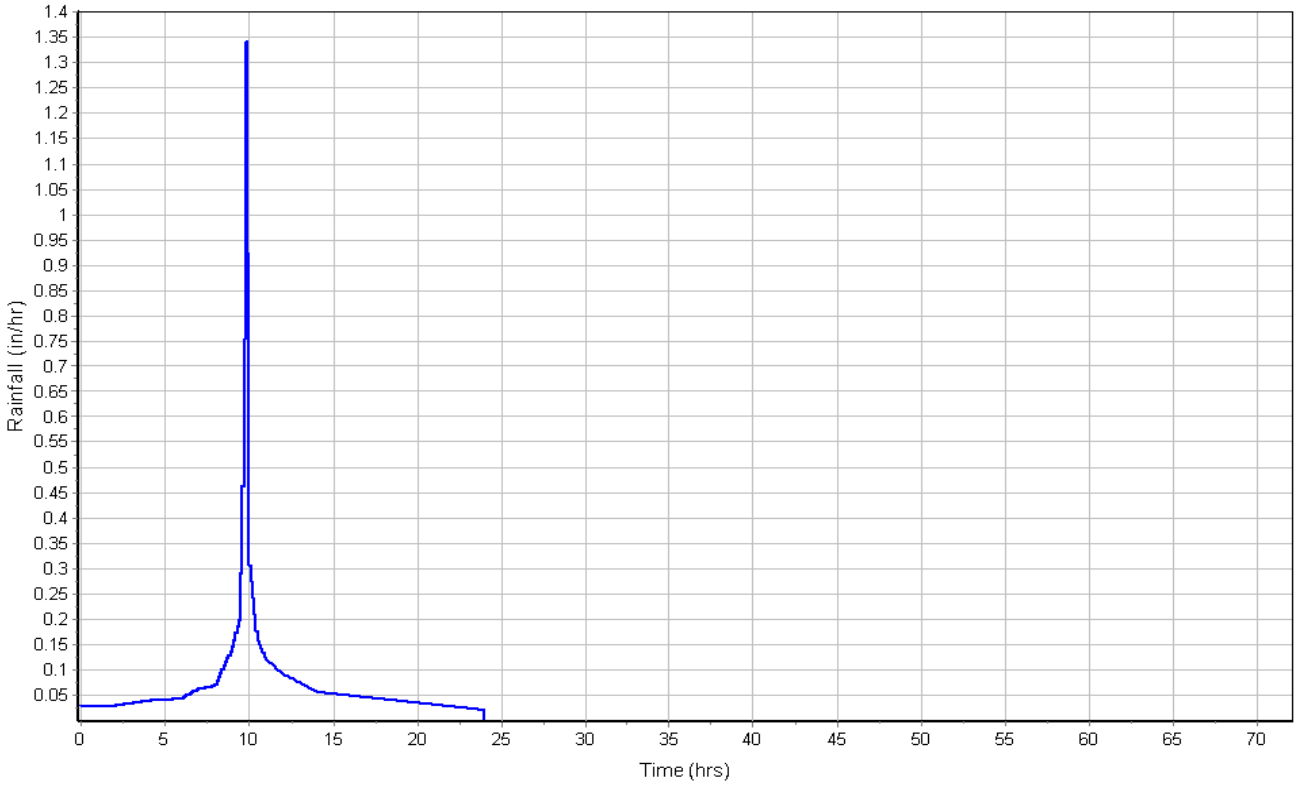
Total Rainfall (in) 1.78
Total Runoff (in) 0.18
Peak Runoff (cfs) 0.25
Weighted Curve Number 70.76
Time of Concentration (days hh:mm:ss) 0 01:40:47

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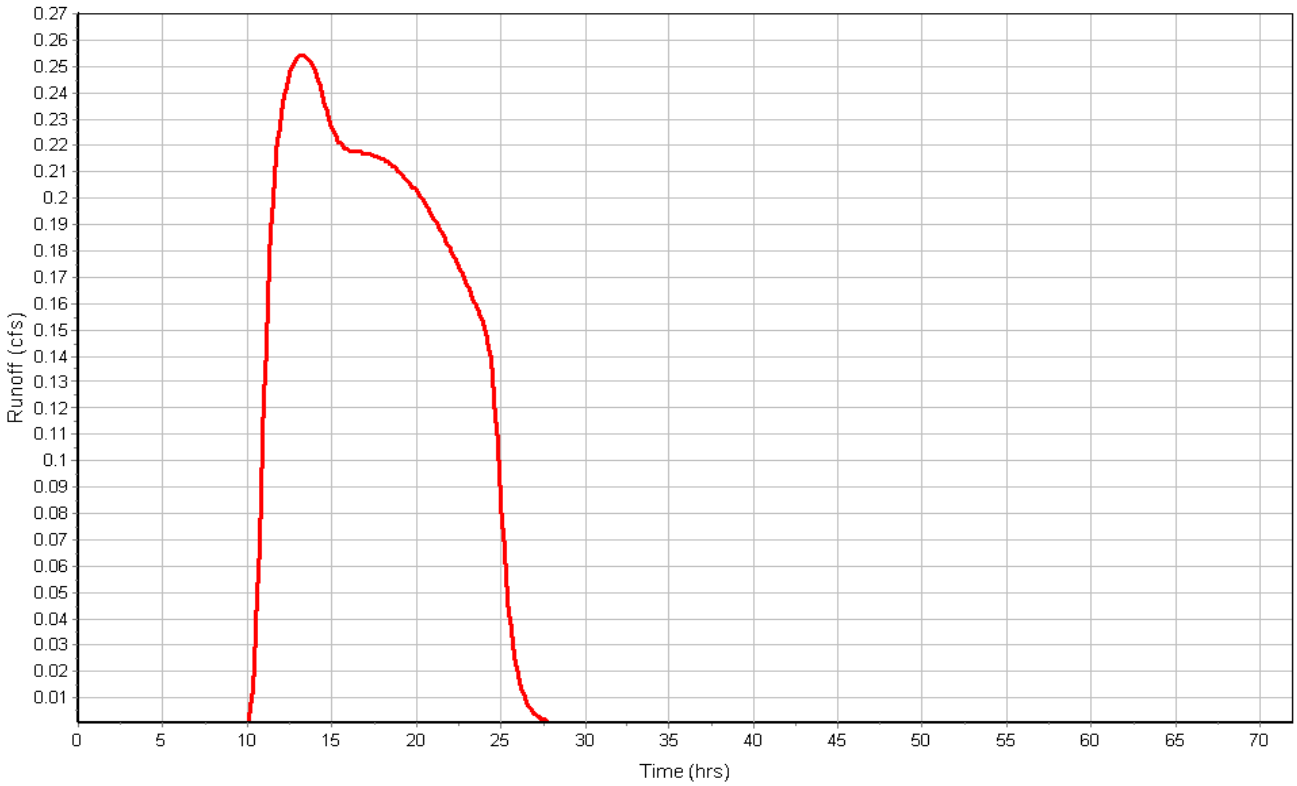
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Subbasin : RVPREDEV

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : TS-PREDEV

Input Data

Area (ac) 21.91
Weighted Curve Number 65.01
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Desert shrub range, Poor	1.76	D	88.00
Desert shrub range, Poor	20.14	A	63.00
Composite Area & Weighted CN	21.90		65.01

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.13	0.00	0.00
Flow Length (ft) :	1326	0.00	0.00
Slope (%) :	2.0	0.00	0.00
2 yr, 24 hr Rainfall (in) :	1.33	0.00	0.00
Velocity (ft/sec) :	0.21	0.00	0.00
Computed Flow Time (min) :	107.18	0.00	0.00

Total TOC (min) 107.18

Subbasin Runoff Results

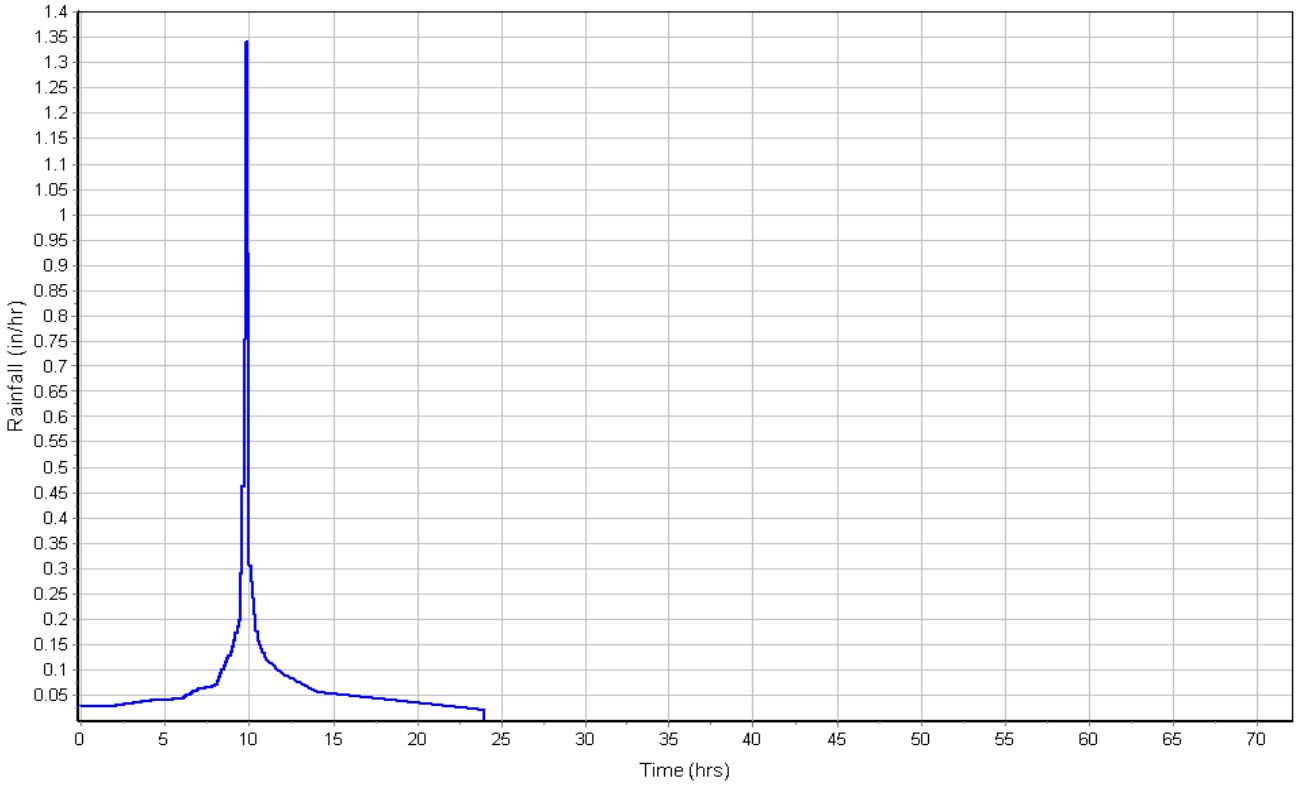
Total Rainfall (in) 1.78
Total Runoff (in) 0.08
Peak Runoff (cfs) 0.16
Weighted Curve Number 65.01
Time of Concentration (days hh:mm:ss) 0 01:47:11

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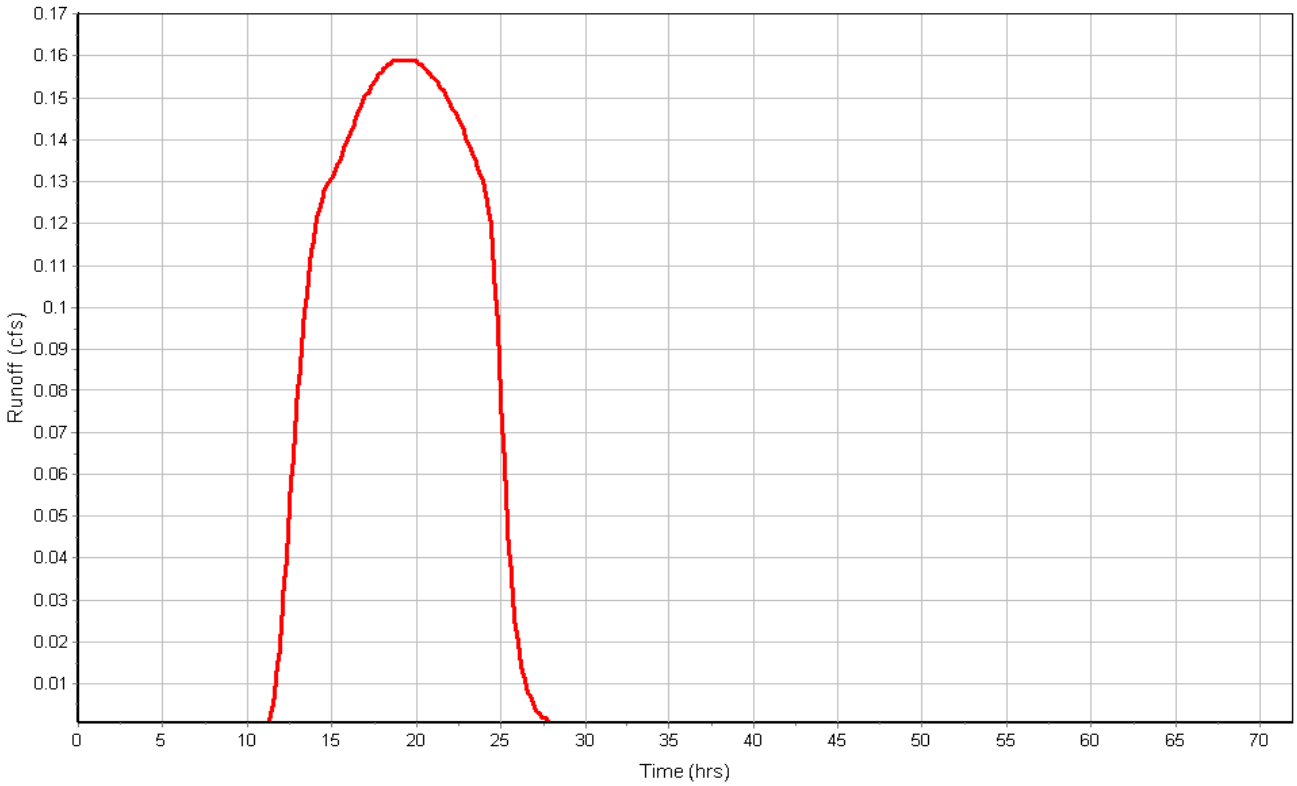
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Subbasin : TS-PREDEV

Rainfall Intensity Graph



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Junction Input

SN	Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft²)	Minimum Pipe Cover (in)
1	J01	913.15	914.89	1.74	913.15	0.00	0.00	-914.89	0.00	8.88
2	J02	907.89	912.64	4.75	907.89	0.00	0.00	-912.64	0.00	45.00
3	J03	914.78	917.97	3.19	914.78	0.00	0.00	-917.97	0.00	25.08
4	J04	910.56	914.38	3.82	910.56	0.00	0.00	-914.38	0.00	32.64
5	J05	902.68	907.43	4.75	902.68	0.00	0.00	-907.43	0.00	45.00
6	J06	902.12	906.87	4.75	902.12	0.00	0.00	-906.87	0.00	45.00
7	J07	895.73	900.98	5.25	895.73	0.00	0.00	-900.98	0.00	51.00
8	J08	898.06	902.31	4.25	898.06	0.00	0.00	-902.31	0.00	39.00
9	J09	898.06	902.31	4.25	898.06	0.00	0.00	-902.31	0.00	39.00
10	J10	886.32	890.92	4.60	886.32	0.00	0.00	-890.92	0.00	33.00
11	O1	916.83	921.08	4.25	916.83	0.00	0.00	-921.08	0.00	0.00
12	O2	909.85	914.85	5.00	909.85	0.00	0.00	-914.85	0.00	0.00
13	O3A	915.23	921.60	6.37	915.23	0.00	0.00	-921.60	0.00	0.00
14	O3B	911.08	916.72	5.64	911.08	0.00	0.00	-916.72	0.00	0.00
15	O3C	906.09	912.24	6.15	906.09	0.00	0.00	-912.24	0.00	0.00
16	O4	902.98	906.80	3.82	902.98	0.00	0.00	-906.80	0.00	0.00
17	O5	907.79	912.12	4.33	907.79	0.00	0.00	-912.12	0.00	0.00
18	O6	901.23	905.48	4.25	901.23	0.00	0.00	-905.48	0.00	0.00
19	O7	888.27	901.23	12.96	888.27	0.00	0.00	-901.23	0.00	0.00
20	O8A	894.34	903.66	9.32	894.34	0.00	0.00	-903.66	0.00	0.00
21	SDMH01	916.48	921.15	4.67	916.48	0.00	0.00	-921.15	0.00	42.84
22	SDMH02	909.48	914.04	4.56	909.48	0.00	0.00	-914.04	0.00	41.52
23	SDMH03	907.54	914.70	7.16	907.54	0.00	0.00	-914.70	0.00	55.44
24	SDMH04	907.26	914.39	7.13	907.26	0.00	0.00	-914.39	0.00	72.36
25	SDMH05	907.53	914.79	7.26	907.53	0.00	0.00	-914.79	0.00	73.92
26	SDMH06	905.75	910.18	4.43	905.75	0.00	0.00	-910.18	0.00	41.16
27	SDMH07	905.33	909.05	3.72	905.33	0.00	0.00	-909.05	0.00	31.44
28	SDMH08	902.75	909.14	6.39	902.75	0.00	0.00	-909.14	0.00	57.48
29	SDMH09	901.44	907.96	6.52	901.44	0.00	0.00	-907.96	0.00	47.04
30	SDMH10	900.51	907.70	7.19	900.51	0.00	0.00	-907.70	0.00	67.08
31	SDMH11	894.85	901.92	7.07	894.85	0.00	0.00	-901.92	0.00	66.84
32	SDMH12	893.85	903.70	9.85	893.85	0.00	0.00	-903.70	0.00	100.20
33	SDMH13	897.40	902.76	5.36	897.40	0.00	0.00	-902.76	0.00	46.32
34	SDMH14	893.13	902.49	9.36	893.13	0.00	0.00	-902.49	0.00	71.04
35	SDMH15	886.12	891.87	5.75	886.12	0.00	0.00	-891.87	0.00	45.00
36	SDMH16	885.50	893.01	7.51	885.50	0.00	0.00	-893.01	0.00	63.48
37	SDMH17	884.58	889.78	5.20	884.58	0.00	0.00	-889.78	0.00	37.20

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Junction Results

SN	Element ID	Peak Inflow (cfs)	Peak Lateral Inflow (cfs)	Max HGL Elevation Attained (ft)	Max HGL Depth Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Average HGL Elevation Attained (ft)	Average HGL Depth Attained (ft)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	J01	0.00	0.00	913.15	0.00	0.00	1.74	913.15	0.00	0 00:00	0 00:00	0.00	0.00
2	J02	1.32	1.32	908.53	0.64	0.00	4.11	907.93	0.04	0 10:06	0 00:00	0.00	0.00
3	J03	0.57	0.57	915.17	0.39	0.00	2.80	914.88	0.10	0 10:06	0 00:00	0.00	0.00
4	J04	0.76	0.76	910.97	0.41	0.00	3.41	910.67	0.11	0 10:06	0 00:00	0.00	0.00
5	J05	0.25	0.25	902.93	0.25	0.00	4.50	902.70	0.02	0 10:06	0 00:00	0.00	0.00
6	J06	0.90	0.90	902.35	0.23	0.00	4.52	902.14	0.02	0 10:06	0 00:00	0.00	0.00
7	J07	1.82	1.82	896.15	0.42	0.00	4.83	895.76	0.03	0 10:06	0 00:00	0.00	0.00
8	J08	0.67	0.67	898.31	0.25	0.00	4.00	898.08	0.02	0 10:06	0 00:00	0.00	0.00
9	J09	0.97	0.97	898.36	0.30	0.00	3.95	898.08	0.02	0 10:06	0 00:00	0.00	0.00
10	J10	3.97	3.97	887.17	0.85	0.00	3.75	887.17	0.85	0 00:00	0 00:00	0.00	0.00
11	O1	0.00	0.00	916.83	0.00	0.00	4.25	916.83	0.00	0 00:00	0 00:00	0.00	0.00
12	O2	0.07	0.00	909.99	0.14	0.00	4.86	909.86	0.01	0 16:10	0 00:00	0.00	0.00
13	O3A	0.00	0.00	915.23	0.00	0.00	6.37	915.23	0.00	0 00:00	0 00:00	0.00	0.00
14	O3B	0.17	0.00	911.26	0.18	0.00	5.46	911.09	0.01	0 10:22	0 00:00	0.00	0.00
15	O3C	0.00	0.00	906.09	0.00	0.00	6.15	906.09	0.00	0 00:00	0 00:00	0.00	0.00
16	O4	0.36	0.00	903.25	0.27	0.00	3.55	903.00	0.02	0 10:15	0 00:00	0.00	0.00
17	O5	0.02	0.00	907.86	0.07	0.00	4.26	907.79	0.00	0 19:31	0 00:00	0.00	0.00
18	O6	1.23	0.00	901.49	0.26	0.00	3.99	901.25	0.02	0 10:08	0 00:00	0.00	0.00
19	O7	0.00	0.00	888.27	0.00	0.00	12.96	888.27	0.00	0 00:00	0 00:00	0.00	0.00
20	O8A	0.00	0.00	894.34	0.00	0.00	9.32	894.34	0.00	0 00:00	0 00:00	0.00	0.00
21	SDMH01	0.00	0.00	916.58	0.10	0.00	4.57	916.58	0.10	0 00:00	0 00:00	0.00	0.00
22	SDMH02	0.07	0.00	909.72	0.24	0.00	4.32	909.59	0.11	0 16:11	0 00:00	0.00	0.00
23	SDMH03	1.31	0.00	909.22	1.68	0.00	5.48	909.09	1.55	0 16:13	0 00:00	0.00	0.00
24	SDMH04	1.30	0.00	908.00	0.74	0.00	6.39	907.40	0.14	0 10:07	0 00:00	0.00	0.00
25	SDMH05	0.02	0.00	907.70	0.17	0.00	7.09	907.63	0.10	0 19:32	0 00:00	0.00	0.00
26	SDMH06	0.00	0.00	905.75	0.00	0.00	4.43	905.75	0.00	0 00:00	0 00:00	0.00	0.00
27	SDMH07	0.00	0.00	905.43	0.10	0.00	3.62	905.43	0.10	0 00:00	0 00:00	0.00	0.00
28	SDMH08	0.36	0.00	903.11	0.36	0.00	6.03	902.87	0.12	0 10:15	0 00:00	0.00	0.00
29	SDMH09	0.49	0.00	902.85	1.41	0.00	5.11	902.62	1.18	0 10:06	0 00:00	0.00	0.00
30	SDMH10	1.12	0.00	900.91	0.40	0.00	6.79	900.63	0.12	0 10:18	0 00:00	0.00	0.00
31	SDMH11	1.81	0.00	895.43	0.58	0.00	6.49	894.98	0.13	0 10:06	0 00:00	0.00	0.00
32	SDMH12	1.79	0.00	894.43	0.58	0.00	9.27	893.89	0.04	0 10:07	0 00:00	0.00	0.00
33	SDMH13	1.64	0.00	898.04	0.64	0.00	4.72	897.76	0.36	0 10:06	0 00:00	0.00	0.00
34	SDMH14	3.34	0.00	895.39	2.26	0.00	7.10	895.09	1.96	0 10:06	0 00:00	0.00	0.00
35	SDMH15	7.10	0.00	887.36	1.24	0.00	4.51	886.28	0.16	0 10:06	0 00:00	0.00	0.00
36	SDMH16	7.07	0.00	886.95	1.45	0.00	6.06	885.80	0.30	0 10:07	0 00:00	0.00	0.00
37	SDMH17	7.02	0.00	885.82	1.24	0.00	3.96	884.76	0.18	0 10:08	0 00:00	0.00	0.00

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Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
1	P01	102.69	916.83	0.00	916.58	0.10	0.25	0.2400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
2	P02	198.58	916.48	0.00	913.15	0.00	3.33	1.6800	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
3	P03	18.00	913.15	0.00	912.85	1.06	0.30	1.6700	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
4	P04	111.00	909.85	0.00	909.58	0.10	0.27	0.2400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
5	P05	160.94	909.48	0.00	909.08	1.54	0.40	0.2500	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
6	P06	99.00	907.89	0.00	907.64	0.10	0.25	0.2500	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
7	P07	74.09	907.54	0.00	907.36	0.10	0.18	0.2400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
8	P08	66.52	907.79	0.00	907.63	0.10	0.16	0.2400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
9	P09	70.26	907.53	0.00	907.36	0.10	0.17	0.2400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
10	P10	92.00	907.26	0.00	903.48	0.56	3.78	4.1100	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
11	P11	74.00	901.23	0.00	897.49	1.72	3.74	5.0500	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
12	P12	141.00	915.23	0.00	914.88	0.10	0.35	0.2500	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
13	P13	25.00	914.78	0.00	914.72	0.56	0.06	0.2400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
14	P14	83.00	911.08	0.00	910.66	0.10	0.42	0.5100	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
15	P15	23.00	910.56	0.00	910.45	1.06	0.11	0.4800	CIRCULAR	12.000	12.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
16	P16	102.00	906.09	0.00	905.75	0.00	0.34	0.3300	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
17	P17	99.00	905.75	0.00	905.43	0.10	0.32	0.3200	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
18	P18	31.00	905.33	0.00	905.23	1.06	0.10	0.3200	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
19	P19	50.02	902.98	0.00	902.85	0.10	0.13	0.2600	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
20	P20	83.99	902.75	0.00	902.54	1.10	0.21	0.2500	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
21	P21	30.00	902.68	0.00	902.60	1.16	0.08	0.2700	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
22	P22	331.00	901.44	0.00	900.61	0.10	0.83	0.2500	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
23	P23	32.00	902.12	0.00	900.61	0.10	1.51	4.7200	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
24	P24	89.00	900.51	0.00	897.23	1.46	3.28	3.6900	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
25	P25	62.00	888.27	0.00	887.17	0.85	1.10	1.7700	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
26	P26	130.00	894.34	0.00	893.85	0.00	0.49	0.3800	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
27	P27	39.00	895.73	0.00	894.95	0.10	0.78	2.0000	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
28	P28	333.48	894.85	0.00	893.85	0.00	1.00	0.3000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
29	P29	208.00	893.85	0.00	893.23	0.10	0.62	0.3000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
30	P30	16.00	898.06	0.00	897.74	0.34	0.32	2.0000	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
31	P31	28.00	898.06	0.00	897.50	0.10	0.56	2.0000	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
32	P32	93.00	897.40	0.00	895.07	1.94	2.33	2.5100	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
33	P33	745.00	893.13	0.00	886.22	0.10	6.91	0.9300	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
34	P34	39.00	886.32	0.00	886.12	0.00	0.20	0.5100	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
35	P35	200.04	886.12	0.00	885.72	0.22	0.40	0.2000	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
36	P36	328.00	885.50	0.00	884.68	0.10	0.82	0.2500	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
37	P37	63.00	884.58	0.00	884.42	0.00	0.16	0.2500	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1

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Pipe Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	P01	0.00	0 00:00	1.76	0.00	0.00		0.00	0.00	0.00		Calculated
2	P02	0.00	0 00:00	4.61	0.00	0.00		0.00	0.00	0.00		Calculated
3	P03	0.00	0 00:00	4.60	0.00	0.00		0.00	0.00	0.00		Calculated
4	P04	0.07	0 16:11	1.76	0.04	1.11	1.67	0.14	0.14	0.00		Calculated
5	P05	0.07	0 16:13	1.78	0.04	1.12	2.39	0.14	0.14	0.00		Calculated
6	P06	1.31	0 10:06	1.79	0.73	2.50	0.66	0.63	0.63	0.00		Calculated
7	P07	1.30	0 10:07	1.76	0.74	2.46	0.50	0.63	0.64	0.00		Calculated
8	P08	0.02	0 19:32	1.75	0.01	0.73	1.52	0.07	0.07	0.00		Calculated
9	P09	0.02	0 19:33	1.75	0.01	0.73	1.60	0.07	0.07	0.00		Calculated
10	P10	1.29	0 10:07	7.22	0.18	6.96	0.22	0.28	0.29	0.00		Calculated
11	P11	1.23	0 10:09	8.01	0.15	7.39	0.17	0.25	0.26	0.00		Calculated
12	P12	0.00	0 00:00	1.78	0.00	0.00		0.00	0.00	0.00		Calculated
13	P13	0.56	0 10:06	1.75	0.32	1.98	0.21	0.39	0.39	0.00		Calculated
14	P14	0.17	0 10:23	2.53	0.07	1.83	0.76	0.17	0.18	0.00		Calculated
15	P15	0.75	0 10:06	2.14	0.35	2.48	0.15	0.41	0.41	0.00		Calculated
16	P16	0.00	0 00:00	2.06	0.00	0.00		0.00	0.00	0.00		Calculated
17	P17	0.00	0 00:00	2.03	0.00	0.00		0.00	0.00	0.00		Calculated
18	P18	0.00	0 00:00	2.02	0.00	0.00		0.00	0.00	0.00		Calculated
19	P19	0.36	0 10:15	5.36	0.07	1.72	0.48	0.24	0.18	0.00		Calculated
20	P20	0.35	0 10:16	5.25	0.07	1.71	0.82	0.24	0.18	0.00		Calculated
21	P21	0.25	0 10:06	1.84	0.14	1.65	0.30	0.25	0.25	0.00		Calculated
22	P22	0.46	0 10:18	5.26	0.09	1.92	2.87	0.29	0.20	0.00		Calculated
23	P23	0.90	0 10:06	7.74	0.12	6.56	0.08	0.23	0.23	0.00		Calculated
24	P24	1.11	0 10:06	20.17	0.06	6.14	0.24	0.24	0.16	0.00		Calculated
25	P25	0.00	0 00:00	4.75	0.00	0.00		0.00	0.00	0.00		Calculated
26	P26	0.00	0 00:00	2.19	0.00	0.00		0.00	0.00	0.00		Calculated
27	P27	1.81	0 10:06	5.04	0.36	5.87	0.11	0.41	0.41	0.00		Calculated
28	P28	1.79	0 10:07	5.75	0.31	2.91	1.91	0.57	0.38	0.00		Calculated
29	P29	1.77	0 10:08	5.73	0.31	2.88	1.20	0.56	0.38	0.00		Calculated
30	P30	0.97	0 10:06	5.04	0.19	4.95	0.05	0.30	0.30	0.00		Calculated
31	P31	0.67	0 10:06	5.04	0.13	4.46	0.10	0.25	0.25	0.00		Calculated
32	P32	1.62	0 10:06	16.63	0.10	6.01	0.26	0.32	0.21	0.00		Calculated
33	P33	3.30	0 10:08	10.12	0.33	5.22	2.38	0.58	0.39	0.00		Calculated
34	P34	3.96	0 10:06	7.52	0.53	4.31	0.15	0.77	0.52	0.00		Calculated
35	P35	7.07	0 10:07	10.12	0.70	3.49	0.96	1.22	0.62	0.00		Calculated
36	P36	7.02	0 10:08	11.31	0.62	3.82	1.43	1.12	0.57	0.00		Calculated
37	P37	7.02	0 10:08	11.40	0.62	3.81	0.28	1.09	0.57	0.00		Calculated

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Storage Nodes

Storage Node : BR1

Input Data

Invert Elevation (ft)	918.02
Max (Rim) Elevation (ft)	922.46
Max (Rim) Offset (ft)	4.44
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-918.02
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

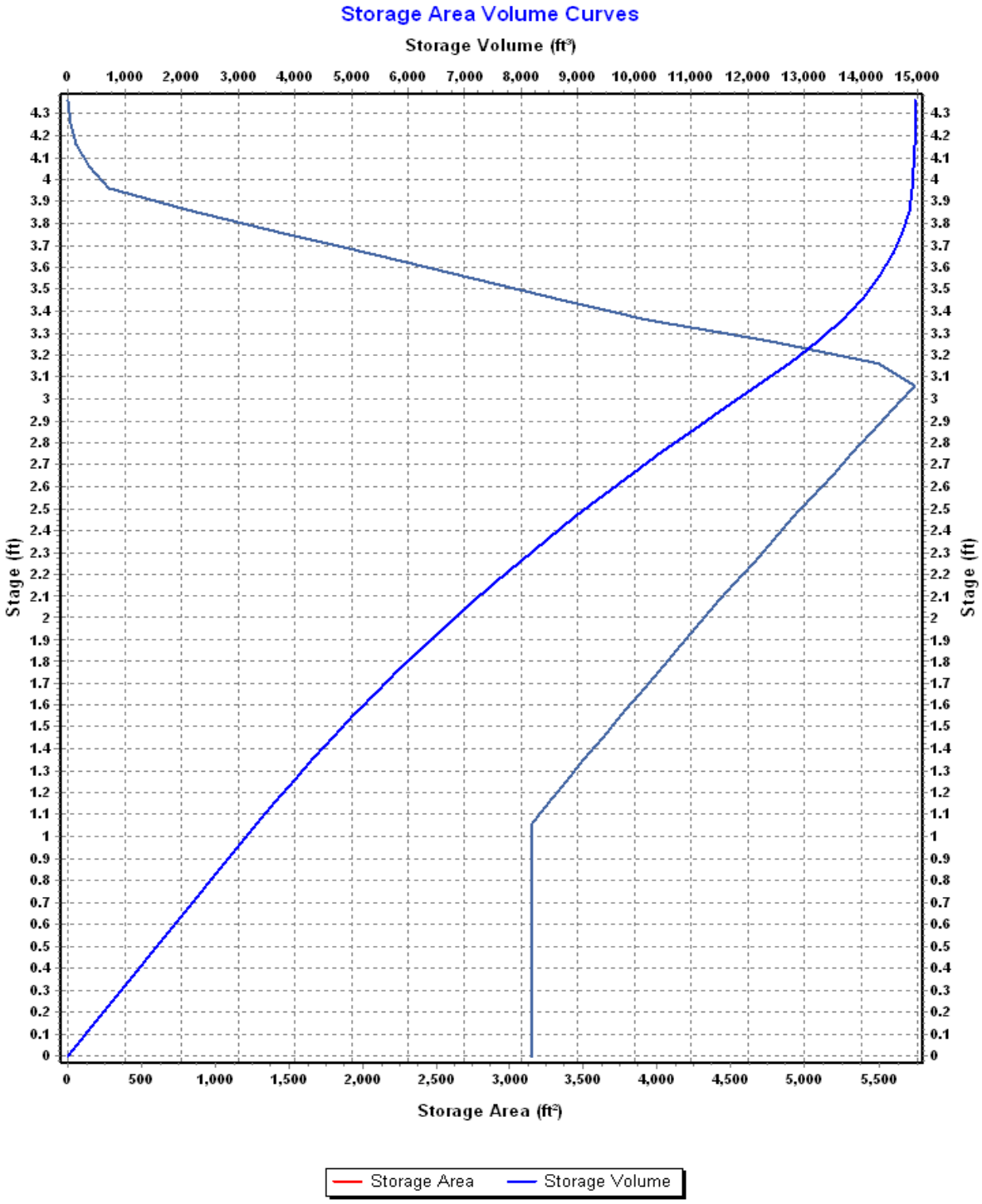
Exfiltration Rate (in/hr)	3.6500

Storage Area Volume Curves

Storage Curve : BR1

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	3141	0.000
1.06	3141.89	3329.93
1.16	3262.83	3650.17
1.26	3385.2	3982.57
1.36	3508.5	4327.26
1.46	3632.69	4684.32
1.56	3757.77	5053.84
1.66	3883.75	5435.92
1.76	4010.63	5830.64
1.86	4138.42	6238.09
1.96	4267.16	6658.37
2.06	4396.87	7091.57
2.16	4527.56	7537.79
2.26	4659.22	7997.13
2.36	4791.85	8469.68
2.46	4925.44	8955.54
2.56	5060	9454.81
2.66	5195.53	9967.59
2.76	5332.02	10493.97
2.86	5469.48	11034.05
2.96	5607.91	11587.92
3.06	5744.57	12155.54
3.16	5498	12717.67
3.26	4752.13	13230.18
3.36	3925.58	13664.07
3.46	3303.77	14025.54
3.56	2676.06	14324.53
3.66	2043.84	14560.53
3.76	1427.82	14734.11
3.86	837.63	14847.38
3.96	281.34	14903.33
4.06	149.84	14924.89
4.16	60.48	14935.41
4.26	15.53	14939.21
4.36	0.9	14940.03

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Storage Node : BR1 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR1	Bottom	CIRCULAR	No	24.00			920.58	0.61

Output Summary Results

Peak Inflow (cfs)	0.59
Peak Lateral Inflow (cfs)	0.59
Peak Outflow (cfs)	0.00
Peak Exfiltration Flow Rate (cfm)	15.92
Max HGL Elevation Attained (ft)	918.09
Max HGL Depth Attained (ft)	0.07
Average HGL Elevation Attained (ft)	918.02
Average HGL Depth Attained (ft)	0
Time of Max HGL Occurrence (days hh:mm)	0 10:17
Total Exfiltration Volume (1000-ft³)	0.860
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR2

Input Data

Invert Elevation (ft)	911.79
Max (Rim) Elevation (ft)	915.12
Max (Rim) Offset (ft)	3.33
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-911.79
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

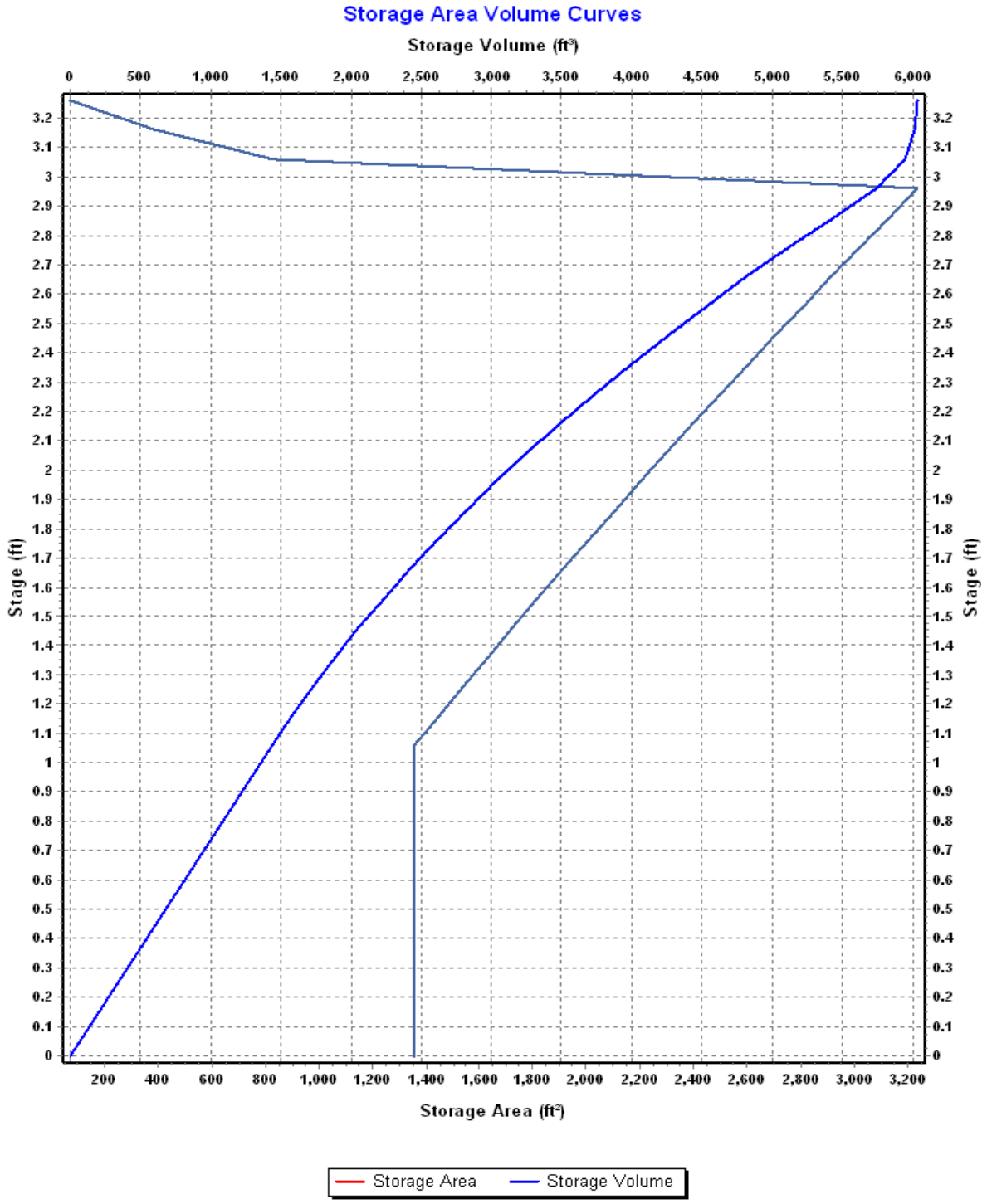
Exfiltration Rate (in/hr)	0.2500

Storage Area Volume Curves

Storage Curve : BR2

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	1355	0.000
1.06	1355.93	1436.79
1.16	1445.99	1576.89
1.26	1537.04	1726.04
1.36	1629.07	1884.35
1.46	1722.08	2051.91
1.56	1816.08	2228.82
1.66	1911.06	2415.18
1.76	2007.02	2611.08
1.86	2103.96	2816.63
1.96	2201.89	3031.92
2.06	2300.8	3257.05
2.16	2400.7	3492.13
2.26	2501.57	3737.24
2.36	2603.43	3992.49
2.46	2706.28	4257.98
2.56	2810.1	4533.80
2.66	2914.91	4820.05
2.76	3020.7	5116.83
2.86	3127.48	5424.24
2.96	3235.24	5742.38
3.06	833.86	5945.84
3.16	385.92	6006.83
3.26	72.94	6029.77

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Storage Node : BR2 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR2	Bottom	CIRCULAR	No	24.00			914.35	0.61

Output Summary Results

Peak Inflow (cfs)	1.31
Peak Lateral Inflow (cfs)	1.31
Peak Outflow (cfs)	0.07
Peak Exfiltration Flow Rate (cfm)	0.98
Max HGL Elevation Attained (ft)	914.37
Max HGL Depth Attained (ft)	2.58
Average HGL Elevation Attained (ft)	913.64
Average HGL Depth Attained (ft)	1.85
Time of Max HGL Occurrence (days hh:mm)	0 16:10
Total Exfiltration Volume (1000-ft³)	3.170
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR3A

Input Data

Invert Elevation (ft)	918.54
Max (Rim) Elevation (ft)	922.87
Max (Rim) Offset (ft)	4.33
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-918.54
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

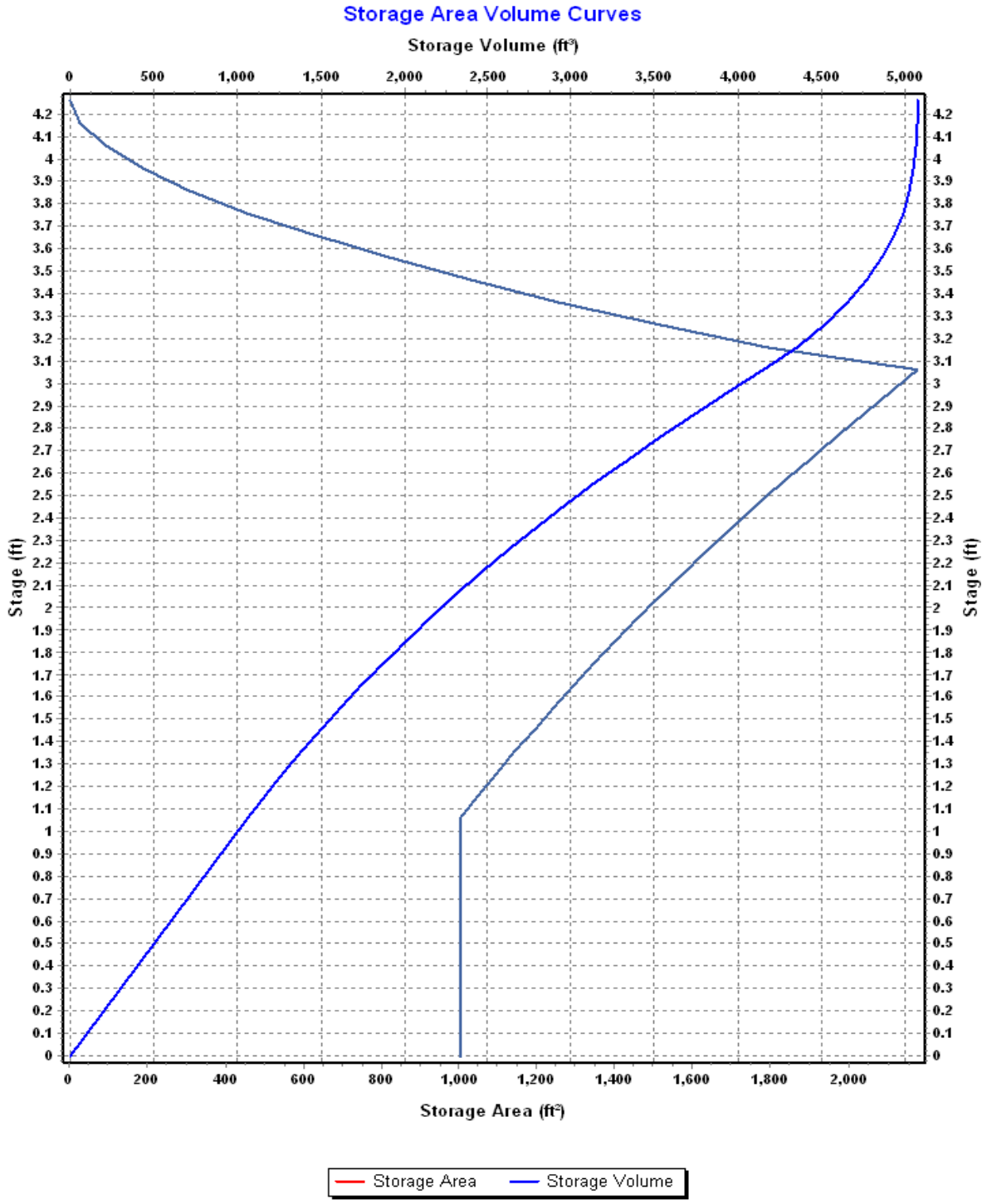
Exfiltration Rate (in/hr)	1.0000

Storage Area Volume Curves

Storage Curve : BR3A

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	1003	0.000
1.06	1003.24	1063.31
1.16	1049.23	1165.93
1.26	1096.69	1273.23
1.36	1145.31	1385.33
1.46	1195.09	1502.35
1.56	1246.03	1624.41
1.66	1298.19	1751.62
1.76	1351.67	1884.11
1.86	1406.49	2022.02
1.96	1462.89	2165.49
2.06	1520.96	2314.68
2.16	1580.66	2469.76
2.26	1641.67	2630.88
2.36	1704.02	2798.16
2.46	1767.77	2971.75
2.56	1832.91	3151.78
2.66	1899.44	3338.40
2.76	1967.37	3531.74
2.86	2036.69	3731.94
2.96	2107.4	3939.14
3.06	2176.53	4153.34
3.16	1787.16	4351.52
3.26	1515.95	4516.68
3.36	1252.64	4655.11
3.46	1029.78	4769.23
3.56	818.92	4861.67
3.66	625.41	4933.89
3.76	455.66	4987.94
3.86	307.6	5026.10
3.96	187.02	5050.83
4.06	94.69	5064.92
4.16	26.99	5071.00
4.26	2.5	5072.47

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Storage Node : BR3A (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR3A	Bottom	CIRCULAR	No	24.00			921.10	0.61

Output Summary Results

Peak Inflow (cfs)	0.48
Peak Lateral Inflow (cfs)	0.48
Peak Outflow (cfs)	0.00
Peak Exfiltration Flow Rate (cfm)	1.43
Max HGL Elevation Attained (ft)	919.66
Max HGL Depth Attained (ft)	1.12
Average HGL Elevation Attained (ft)	918.83
Average HGL Depth Attained (ft)	0.29
Time of Max HGL Occurrence (days hh:mm)	0 17:37
Total Exfiltration Volume (1000-ft³)	2.330
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR3B

Input Data

Invert Elevation (ft)	914.16
Max (Rim) Elevation (ft)	917.97
Max (Rim) Offset (ft)	3.81
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-914.16
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

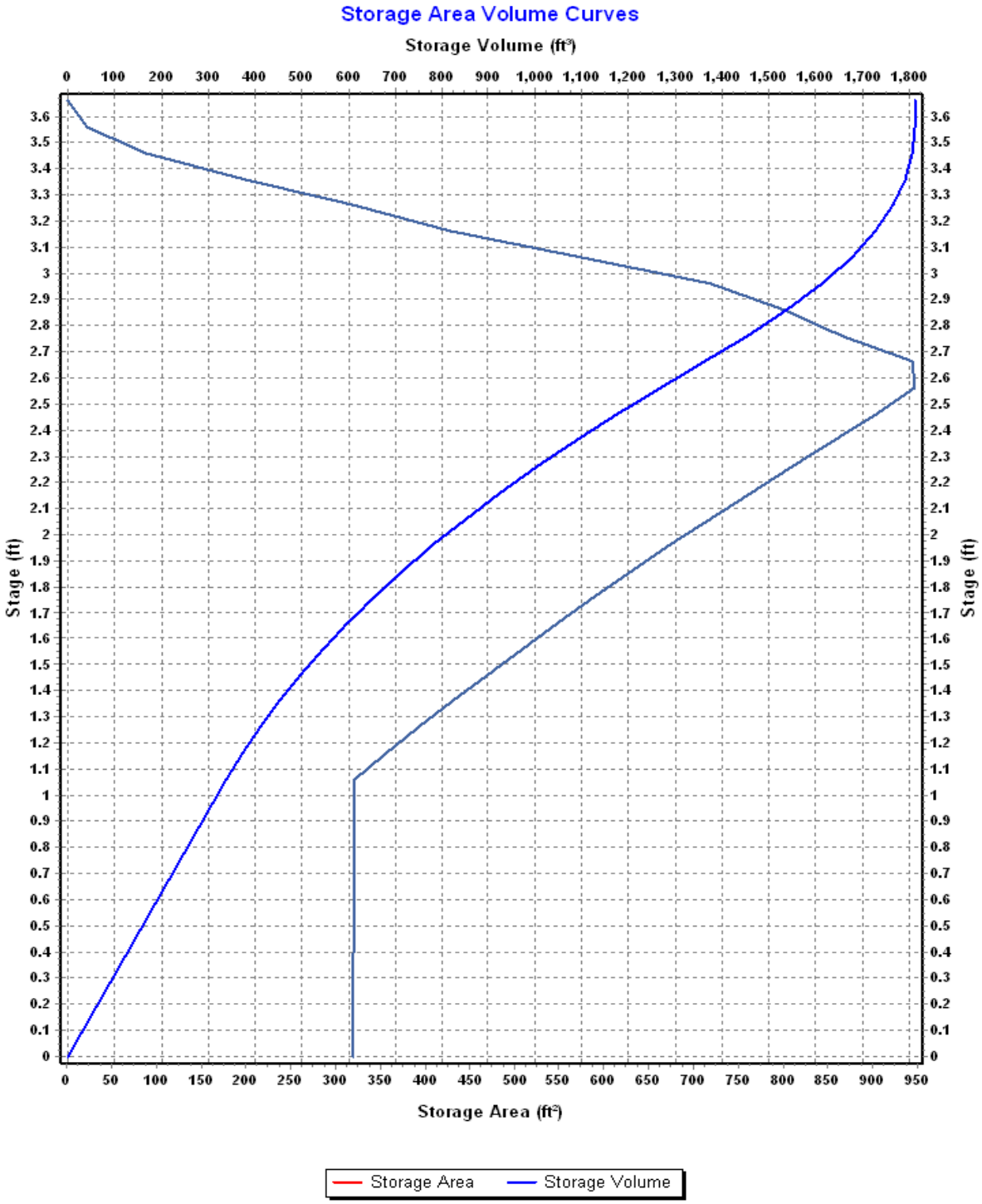
Exfiltration Rate (in/hr)	1.0000

Storage Area Volume Curves

Storage Curve : BR3B

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	320	0.000
1.06	320.79	339.62
1.16	356.4	373.48
1.26	392.93	410.95
1.36	430.38	452.12
1.46	468.77	497.08
1.56	508.1	545.92
1.66	548.38	598.74
1.76	589.6	655.64
1.86	631.77	716.71
1.96	674.88	782.04
2.06	718.94	851.73
2.16	763.94	925.87
2.26	809.88	1004.56
2.36	856.77	1087.89
2.46	904.6	1175.96
2.56	946.68	1268.52
2.66	943.54	1363.03
2.76	865.89	1453.50
2.86	800.8	1536.83
2.96	718.52	1612.80
3.06	573.23	1677.39
3.16	427.46	1727.42
3.26	317.49	1764.67
3.36	199.57	1790.52
3.46	88.48	1804.92
3.56	23.36	1810.51
3.66	1.54	1811.76

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Storage Node : BR3B (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR3B	Bottom	CIRCULAR	No	24.00			916.22	0.61

Output Summary Results

Peak Inflow (cfs)	0.56
Peak Lateral Inflow (cfs)	0.00
Peak Outflow (cfs)	0.17
Peak Exfiltration Flow Rate (cfm)	1.02
Max HGL Elevation Attained (ft)	916.26
Max HGL Depth Attained (ft)	2.1
Average HGL Elevation Attained (ft)	914.93
Average HGL Depth Attained (ft)	0.77
Time of Max HGL Occurrence (days hh:mm)	0 10:22
Total Exfiltration Volume (1000-ft³)	1.789
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR3C

Input Data

Invert Elevation (ft)	909.39
Max (Rim) Elevation (ft)	912.45
Max (Rim) Offset (ft)	3.06
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-909.39
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

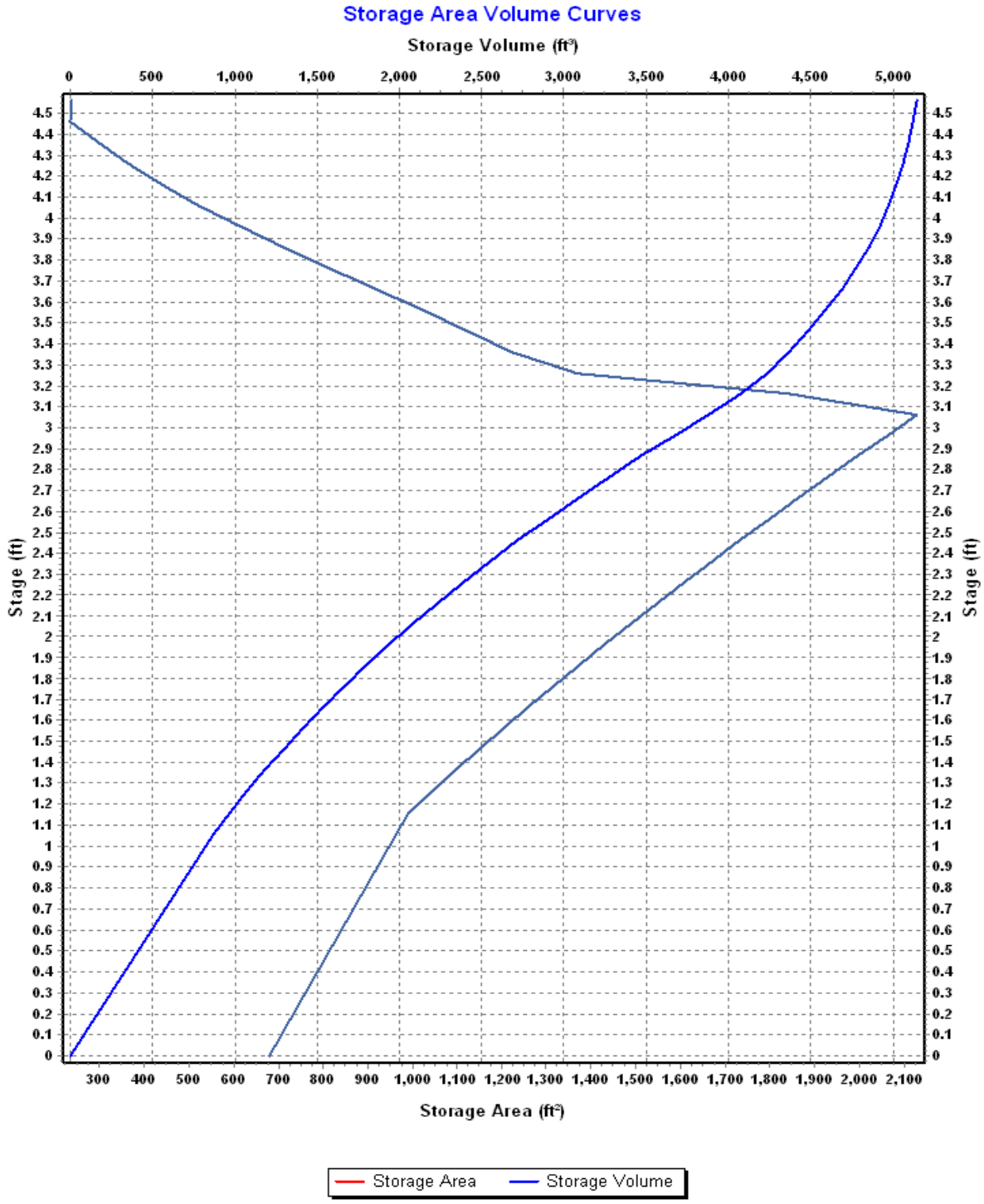
Exfiltration Rate (in/hr)	4.1500

Storage Area Volume Curves

Storage Curve : BR3C

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	681	0.000
1.06	963.86	871.78
1.16	990.19	969.48
1.26	1041.36	1071.06
1.36	1093.51	1177.80
1.46	1146.65	1289.81
1.56	1200.78	1407.18
1.66	1255.89	1530.01
1.76	1311.99	1658.40
1.86	1369.08	1792.45
1.96	1427.16	1932.26
2.06	1486.28	2077.93
2.16	1546.33	2229.56
2.26	1607.29	2387.24
2.36	1669.16	2551.06
2.46	1731.95	2721.12
2.56	1795.65	2897.50
2.66	1860.27	3080.30
2.76	1925.8	3269.60
2.86	1992.24	3465.50
2.96	2059.6	3668.09
3.06	2127.88	3877.46
3.16	1839.41	4075.82
3.26	1368.28	4236.20
3.36	1223.76	4365.80
3.46	1122.78	4483.13
3.56	1021.82	4590.36
3.66	920.87	4687.49
3.76	814.21	4774.24
3.86	709.9	4850.45
3.96	612.13	4916.55
4.06	521.34	4973.22
4.16	437.93	5021.18
4.26	362.17	5061.19
4.36	294.31	5094.01
4.46	234.5	5120.45
4.56	237.57	5144.05

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Storage Node : BR3C (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR3C	Bottom	CIRCULAR	No	24.00			911.95	0.61

Output Summary Results

Peak Inflow (cfs)	0.75
Peak Lateral Inflow (cfs)	0.00
Peak Outflow (cfs)	0.00
Peak Exfiltration Flow Rate (cfm)	7.00
Max HGL Elevation Attained (ft)	910.97
Max HGL Depth Attained (ft)	1.58
Average HGL Elevation Attained (ft)	909.60
Average HGL Depth Attained (ft)	0.21
Time of Max HGL Occurrence (days hh:mm)	0 12:50
Total Exfiltration Volume (1000-ft³)	5.093
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR4

Input Data

Invert Elevation (ft)	904.17
Max (Rim) Elevation (ft)	908.79
Max (Rim) Offset (ft)	4.62
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-904.17
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

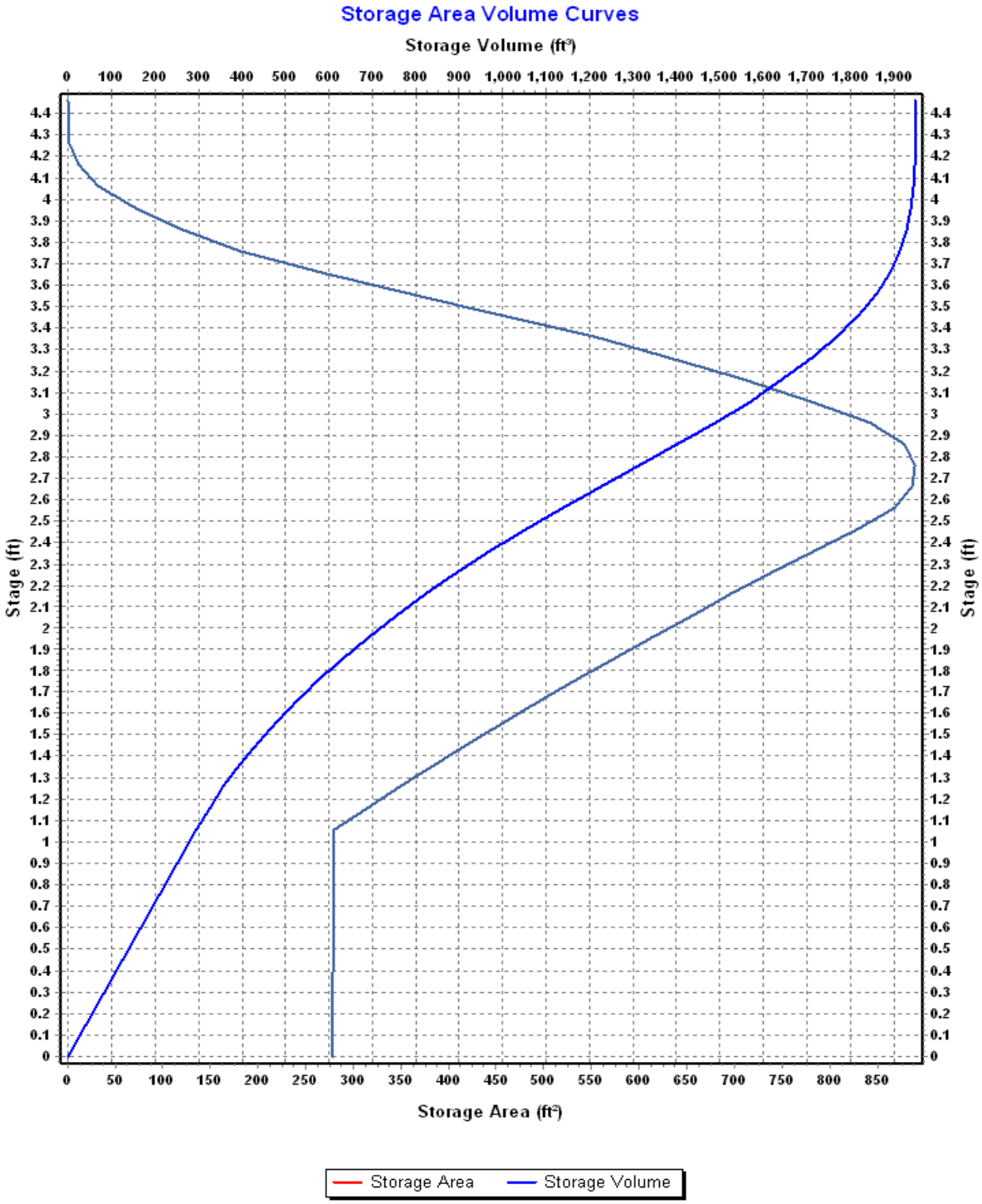
Exfiltration Rate (in/hr)	0.7500

Storage Area Volume Curves

Storage Curve : BR4

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	278	0.000
1.06	278.97	295.19
1.16	314.62	324.87
1.26	349.57	358.08
1.36	384.97	394.81
1.46	421.01	435.11
1.56	457.86	479.05
1.66	495.61	526.72
1.76	534.26	578.21
1.86	573.81	633.61
1.96	614.24	693.01
2.06	655.56	756.50
2.16	697.78	824.17
2.26	740.89	896.10
2.36	784.89	972.39
2.46	829.78	1053.12
2.56	868.08	1138.01
2.66	885.77	1225.70
2.76	889.34	1314.46
2.86	877.29	1402.79
2.96	841.77	1488.74
3.06	779.1	1569.78
3.16	707	1644.09
3.26	629.62	1710.92
3.36	551	1769.95
3.46	453.39	1820.17
3.56	357.92	1860.74
3.66	265.64	1891.92
3.76	181.58	1914.28
3.86	121.01	1929.41
3.96	71.61	1939.04
4.06	32.12	1944.23
4.16	12.15	1946.44
4.26	1.89	1947.14
4.36	1.39	1947.30
4.46	0.53	1947.40

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Storage Node : BR4 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR4	Bottom	CIRCULAR	No	24.00			906.23	0.61

Output Summary Results

Peak Inflow (cfs)	0.63
Peak Lateral Inflow (cfs)	0.63
Peak Outflow (cfs)	0.36
Peak Exfiltration Flow Rate (cfm)	0.71
Max HGL Elevation Attained (ft)	906.30
Max HGL Depth Attained (ft)	2.13
Average HGL Elevation Attained (ft)	905.06
Average HGL Depth Attained (ft)	0.89
Time of Max HGL Occurrence (days hh:mm)	0 10:15
Total Exfiltration Volume (1000-ft³)	1.393
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR5

Input Data

Invert Elevation (ft)	909.06
Max (Rim) Elevation (ft)	912.12
Max (Rim) Offset (ft)	3.06
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-909.06
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

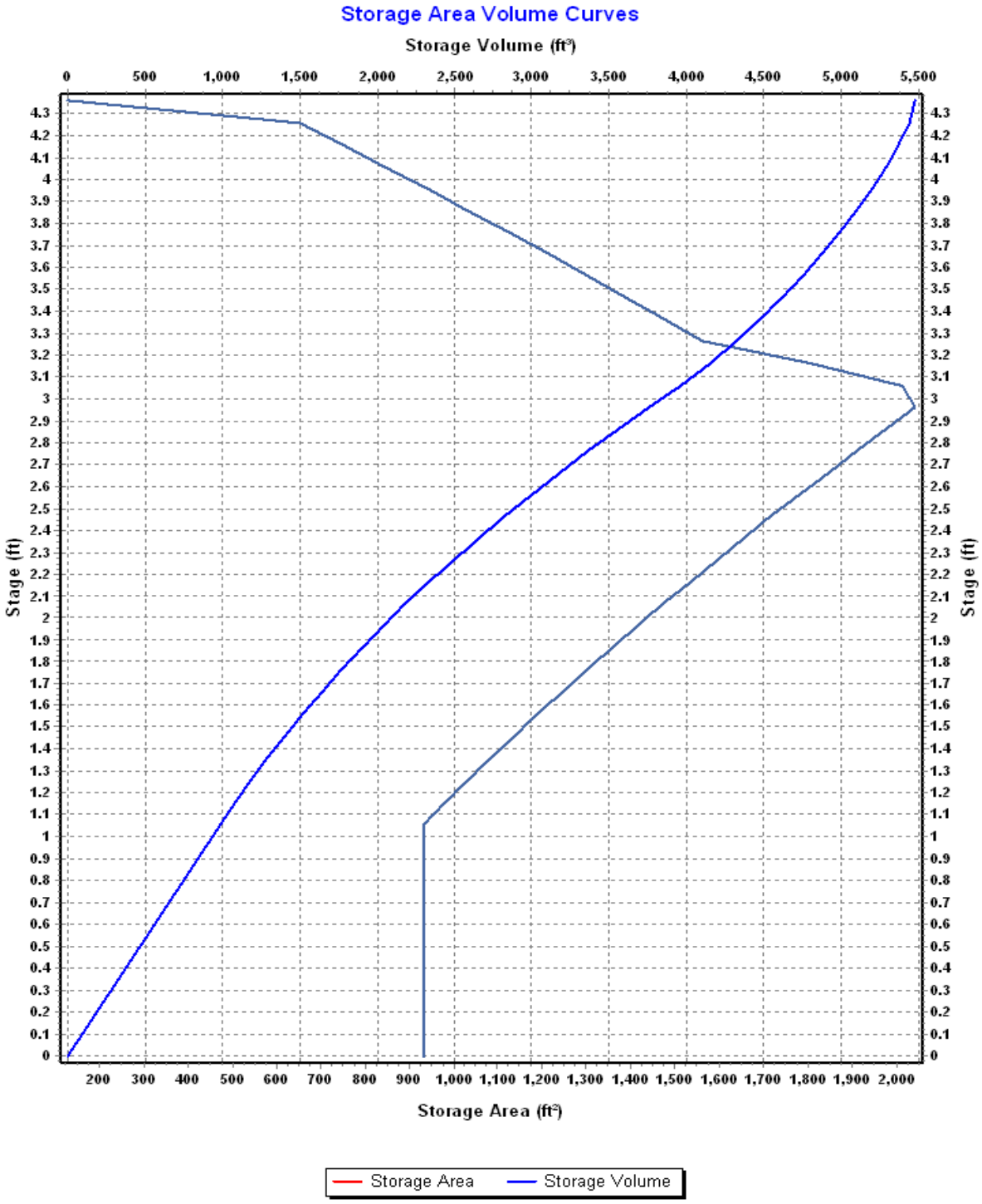
Exfiltration Rate (in/hr)	0.7000

Storage Area Volume Curves

Storage Curve : BR5

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	932	0.000
1.06	932.46	988.16
1.16	981.61	1083.86
1.26	1031.83	1184.53
1.36	1083.12	1290.28
1.46	1135.48	1401.21
1.56	1188.91	1517.43
1.66	1243.41	1639.05
1.76	1298.98	1766.17
1.86	1355.61	1898.90
1.96	1413.23	2037.34
2.06	1471.77	2181.59
2.16	1531.25	2331.74
2.26	1591.66	2487.89
2.36	1653	2650.12
2.46	1715.29	2818.53
2.56	1778.51	2993.22
2.66	1842.66	3174.28
2.76	1907.75	3361.80
2.86	1973.78	3555.88
2.96	2040.74	3756.61
3.06	2014.36	3959.37
3.16	1806.31	4150.40
3.26	1561.66	4318.80
3.36	1476.5	4470.71
3.46	1390.03	4614.04
3.56	1302.24	4748.65
3.66	1213.13	4874.42
3.76	1122.71	4991.21
3.86	1030.97	5098.89
3.96	937.91	5197.33
4.06	843.53	5286.40
4.16	747.83	5365.97
4.26	650.82	5435.90
4.36	128.99	5474.89

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Storage Node : BR5 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR5	Bottom	CIRCULAR	No	24.00			911.62	0.61

Output Summary Results

Peak Inflow (cfs)	0.86
Peak Lateral Inflow (cfs)	0.86
Peak Outflow (cfs)	0.02
Peak Exfiltration Flow Rate (cfm)	1.73
Max HGL Elevation Attained (ft)	911.63
Max HGL Depth Attained (ft)	2.57
Average HGL Elevation Attained (ft)	910.30
Average HGL Depth Attained (ft)	1.24
Time of Max HGL Occurrence (days hh:mm)	0 19:31
Total Exfiltration Volume (1000-ft³)	4.445
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR6

Input Data

Invert Elevation (ft)	902.92
Max (Rim) Elevation (ft)	913.75
Max (Rim) Offset (ft)	10.83
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-902.92
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

Exfiltration Rate (in/hr)	0.3500

Storage Area Volume Curves

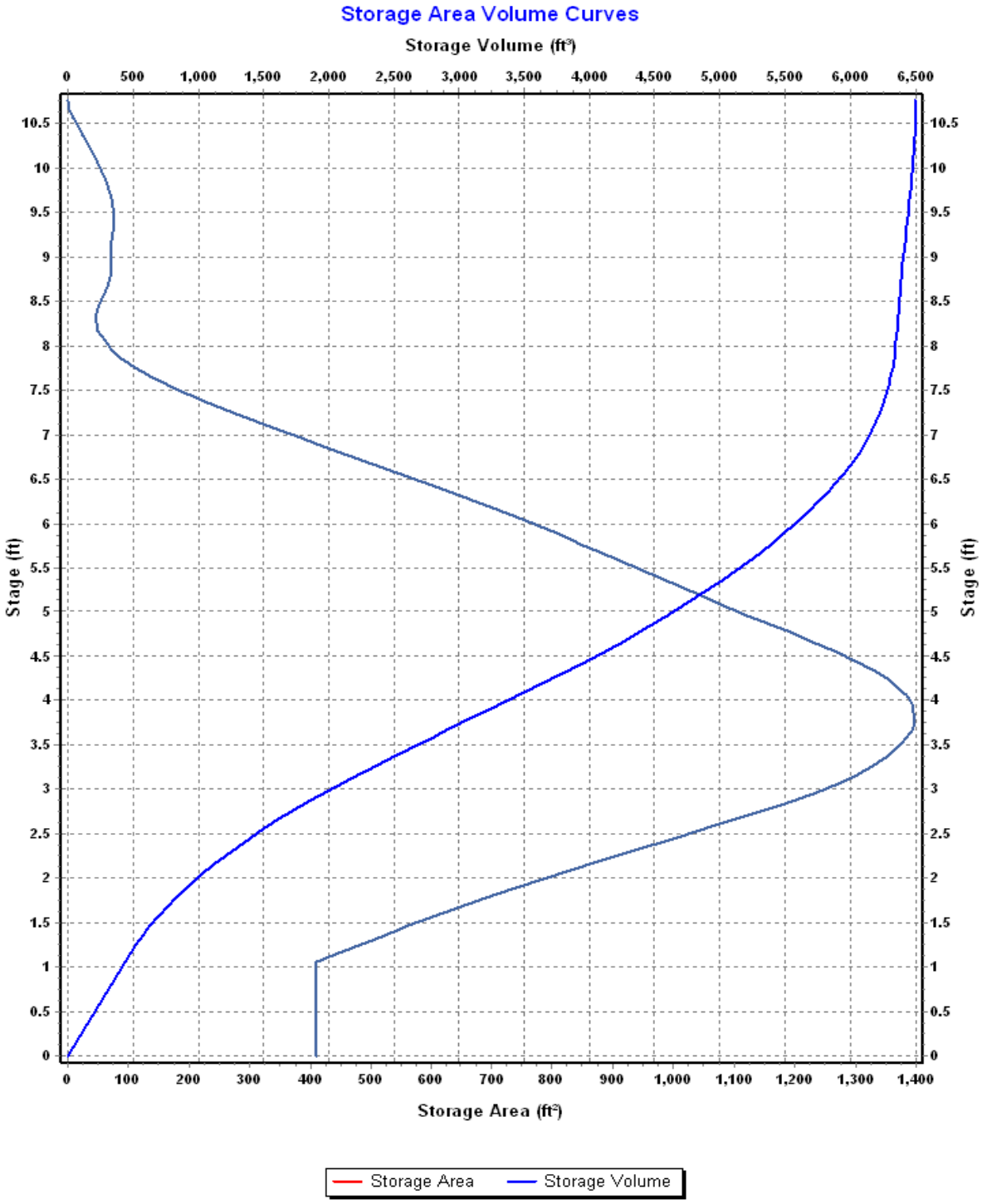
Storage Curve : BR6

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	410	0.000
1.06	410.77	435.01
1.16	446.75	477.89
1.26	483.71	524.41
1.36	521.65	574.68
1.46	560.56	628.79
1.56	600.46	686.84
1.66	641.33	748.93
1.76	683.18	815.16
1.86	726.02	885.62
1.96	769.83	960.41
2.06	814.61	1039.63
2.16	860.38	1123.38
2.26	907.13	1211.76
2.36	954.85	1304.86
2.46	1003.56	1402.78
2.56	1053.18	1505.62
2.66	1101.86	1613.37
2.76	1148.67	1725.90
2.86	1192.86	1842.98
2.96	1232.75	1964.26
3.06	1269.59	2089.38
3.16	1301.43	2217.93
3.26	1326.89	2349.35
3.36	1348.19	2483.10
3.46	1366.12	2618.82
3.56	1380.19	2756.14
3.66	1393.25	2894.81
3.76	1397.78	3034.36
3.86	1396.52	3174.08
3.96	1393.9	3313.60
4.06	1383.32	3452.46
4.16	1367.08	3589.98
4.26	1349.42	3725.81
4.36	1325.23	3859.54
4.46	1296.47	3990.63
4.56	1266.42	4118.77
4.66	1232.15	4243.70
4.76	1195.31	4365.07
4.86	1157.16	4482.69
4.96	1117.9	4596.44
5.06	1085.76	4706.62
5.16	1053.22	4813.57
5.26	1020.26	4917.24
5.36	986.9	5017.60
5.46	953.13	5114.60
5.56	918.95	5208.20
5.66	884.36	5298.37
5.76	849.37	5385.06
5.86	813.96	5468.23
5.96	778.15	5547.84
6.06	741.93	5623.84
6.16	705.08	5696.19
6.26	666.84	5764.79
6.36	628.22	5829.54
6.46	588.79	5890.39
6.56	548.05	5947.23
6.66	507.07	5999.99
6.76	465.94	6048.64
6.86	424.78	6093.18
6.96	383.49	6133.59
7.06	343.09	6169.92
7.16	303.81	6202.27
7.26	265.15	6230.72
7.36	229.45	6255.45
7.46	195.88	6276.72
7.56	163.53	6294.69
7.66	136.12	6309.67

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7.76	111.42	6322.05
7.86	88.83	6332.06
7.96	72.96	6340.15
8.06	60.06	6346.80
8.16	50.27	6352.32
8.26	47.61	6357.21
8.36	48.49	6362.02
8.46	53.24	6367.11
8.56	58.59	6372.70
8.66	64.53	6378.86
8.76	69.87	6385.58
8.86	71.43	6392.65
8.96	72.11	6399.83
9.06	72.32	6407.05
9.16	72.64	6414.30
9.26	74.98	6421.68
9.36	76.22	6429.24
9.46	76.74	6436.89
9.56	75.34	6444.49
9.66	72.1	6451.86
9.76	68.49	6458.89
9.86	63.88	6465.51
9.96	56.95	6471.55
10.06	50.1	6476.90
10.16	43.32	6481.57
10.26	34.16	6485.44
10.36	25.48	6488.42
10.46	17.32	6490.56
10.56	9.08	6491.88
10.66	3.27	6492.50
10.76	0.36	6492.68

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Storage Node : BR6 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR6	Bottom	CIRCULAR	No	24.00			904.98	0.61

Output Summary Results

Peak Inflow (cfs)	1.29
Peak Lateral Inflow (cfs)	0.00
Peak Outflow (cfs)	1.23
Peak Exfiltration Flow Rate (cfm)	0.43
Max HGL Elevation Attained (ft)	905.13
Max HGL Depth Attained (ft)	2.21
Average HGL Elevation Attained (ft)	904.26
Average HGL Depth Attained (ft)	1.34
Time of Max HGL Occurrence (days hh:mm)	0 10:08
Total Exfiltration Volume (1000-ft³)	1.154
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR7

Input Data

Invert Elevation (ft)	895.77
Max (Rim) Elevation (ft)	901.73
Max (Rim) Offset (ft)	5.96
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-895.77
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

Exfiltration Rate (in/hr)	0.3500

Storage Area Volume Curves

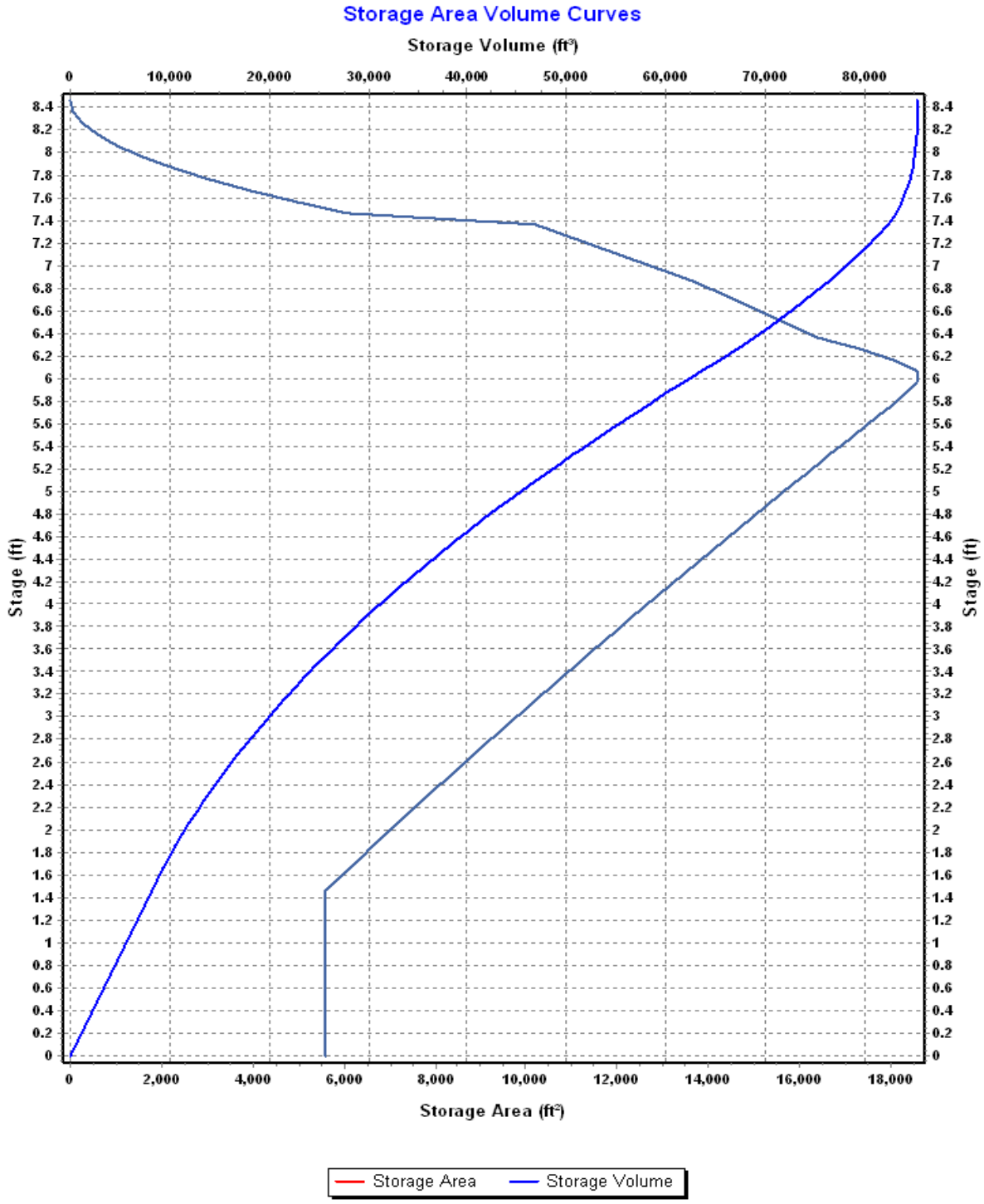
Storage Curve : BR7

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	5595	0.000
1.46	5595.13	8168.79
1.56	5856.73	8741.38
1.66	6119.66	9340.20
1.76	6383.94	9965.38
1.86	6649.55	10617.05
1.96	6916.5	11295.35
2.06	7184.79	12000.41
2.16	7454.41	12732.37
2.26	7725.38	13491.36
2.36	7997.69	14277.51
2.46	8271.33	15090.96
2.56	8546.31	15931.84
2.66	8822.63	16800.29
2.76	9100.3	17696.44
2.86	9379.31	18620.42
2.96	9659.68	19572.37
3.06	9941.38	20552.42
3.16	10224.44	21560.71
3.26	10508.84	22597.37
3.36	10794.59	23662.54
3.46	11081.69	24756.35
3.56	11370.12	25878.94
3.66	11659.61	27030.43
3.76	11950.17	28210.92
3.86	12241.84	29420.52
3.96	12534.6	30659.34
4.06	12828.48	31927.49
4.16	13123.45	33225.09
4.26	13419.52	34552.24
4.36	13716.7	35909.05
4.46	14014.97	37295.63
4.56	14314.29	38712.09
4.66	14614.69	40158.54
4.76	14916.14	41635.08
4.86	15218.67	43141.82
4.96	15522.25	44678.87
5.06	15826.91	46246.33
5.16	16132.63	47844.31
5.26	16439.41	49472.91
5.32	16623.99	50464.81
5.36	16747.26	51132.24
5.46	17056.17	52822.41
5.56	17366.15	54543.53
5.66	17677.19	56295.70
5.76	17989.3	58079.02
5.86	18302.47	59893.61
5.96	18561.7	61736.82
6.06	18563.99	63593.10
6.16	18028.51	65422.73
6.26	17266.47	67187.48
6.36	16354.62	68868.53
6.46	15821.95	70477.36
6.56	15283.77	72032.65
6.66	14740.05	73533.84
6.76	14190.76	74980.38
6.86	13635.89	76371.71
6.96	12950.52	77701.03
7.06	12263.14	78961.71
7.16	11573.75	80153.55
7.26	10882.35	81276.36
7.36	10188.94	82329.92
7.46	6084.34	83143.58
7.56	4958.1	83695.70
7.66	3945.56	84140.88
7.76	3046.43	84490.48
7.86	2260.65	84755.83
7.96	1588.12	84948.27

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8.06	1028.71	85079.11
8.16	592.94	85160.19
8.26	270.69	85203.37
8.36	49.56	85219.38
8.46	2.12	85221.96

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Storage Node : BR7 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR7B	Bottom	CIRCULAR	No	24.00			901.23	0.61

Output Summary Results

Peak Inflow (cfs)	3.29
Peak Lateral Inflow (cfs)	1.10
Peak Outflow (cfs)	0.00
Peak Exfiltration Flow Rate (cfm)	4.51
Max HGL Elevation Attained (ft)	898.59
Max HGL Depth Attained (ft)	2.82
Average HGL Elevation Attained (ft)	897.61
Average HGL Depth Attained (ft)	1.84
Time of Max HGL Occurrence (days hh:mm)	1 00:18
Total Exfiltration Volume (1000-ft³)	13.718
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR8

Input Data

Invert Elevation (ft)	900.16
Max (Rim) Elevation (ft)	910.55
Max (Rim) Offset (ft)	10.39
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-900.16
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

Exfiltration Rate (in/hr)	0.2500

Storage Area Volume Curves

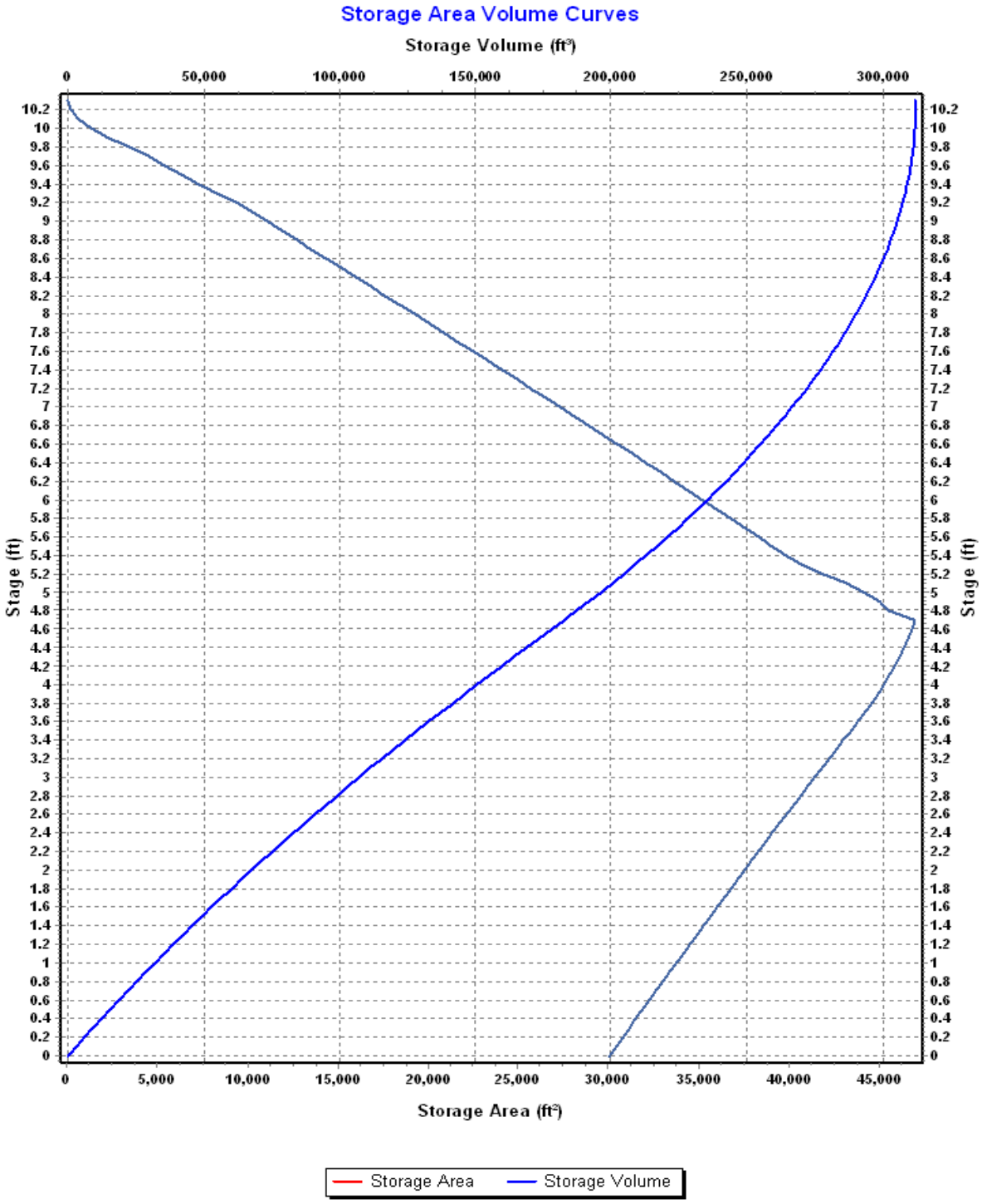
Storage Curve : RB

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	30060.38	0.000
0.1	30423.69	3024.20
0.2	30787.95	6084.78
0.3	31153.19	9181.84
0.4	31519.45	12315.47
0.5	31886.76	15485.78
0.6	32255.10	18692.87
0.7	32624.50	21936.85
0.8	32994.93	25217.82
0.9	33366.41	28535.89
1	33738.93	31891.16
1.1	34112.50	35283.73
1.2	34487.11	38713.71
1.3	34862.77	42181.20
1.4	35239.47	45686.31
1.5	35617.21	49229.14
1.6	35996.00	52809.80
1.7	36375.83	56428.39
1.8	36756.70	60085.02
1.9	37138.62	63779.79
2	37521.58	67512.80
2.1	37905.58	71284.16
2.2	38290.63	75093.97
2.3	38676.72	78942.34
2.4	39063.86	82829.37
2.46	39296.65	85180.19
2.5	39452.06	86755.16
2.6	39841.31	90719.83
2.7	40231.63	94723.48
2.8	40623.00	98766.21
2.9	41015.43	102848.13
3	41408.92	106969.35
3.1	41803.47	111129.97
3.2	42199.08	115330.10
3.3	42595.75	119569.84
3.4	42993.48	123849.30
3.5	43391.60	128168.55
3.6	43782.14	132527.24
3.7	44164.57	136924.58
3.8	44540.20	141359.82
3.9	44901.66	145831.91
4	45239.40	150338.96
4.1	45563.92	154879.13
4.2	45871.31	159450.89
4.3	46138.45	164051.38
4.4	46386.90	168677.65
4.5	46616.67	173327.83
4.6	46811.15	177999.22
4.7	46971.49	182688.35
4.8	45485.74	187311.21
4.9	45023.21	191836.66
5	44212.48	196298.44
5.1	43110.78	200664.60
5.2	41818.89	204911.08
5.3	40592.21	209031.64
5.4	39822.87	213052.39
5.5	39051.68	216996.12
5.6	38278.65	220862.64
5.7	37503.79	224651.76
5.8	36727.15	228363.31
5.9	35948.71	231997.10
6	35168.56	235552.96
6.1	34386.68	239030.72
6.2	33603.09	242430.21
6.3	32817.87	245751.26
6.4	32030.97	248993.70
6.5	31242.50	252157.37
6.6	30452.43	255242.12

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6.7	29660.78	258247.78
6.8	28867.64	261174.20
6.9	28072.95	264021.23
7	27276.82	266788.72
7.1	26479.23	269476.52
7.2	25680.17	272084.49
7.3	24879.78	274612.49
7.4	24077.96	277060.38
7.5	23274.83	279428.02
7.6	22470.38	281715.28
7.7	21664.58	283922.03
7.8	20857.60	286048.14
7.9	20049.29	288093.48
8	19239.75	290057.93
8.1	18429.02	291941.37
8.2	17617.00	293743.67
8.3	16803.95	295464.72
8.4	15989.67	297104.40
8.5	15174.27	298662.60
8.6	14357.79	300139.20
8.7	13540.07	301534.09
8.8	12721.38	302847.16
8.9	11901.56	304078.31
9	11080.62	305227.42
9.1	10258.76	306294.39
9.2	9327.55	307273.71
9.3	8324.12	308156.29
9.4	7321.13	308938.55
9.5	6362.76	309622.74
9.6	5439.54	310212.86
9.7	4519.10	310710.79
9.8	3459.55	311109.72
9.9	2336.41	311399.52
10	1375.60	311585.12
10.1	669.19	311687.36
10.2	186.39	311730.14
10.3	61.67	311742.54

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Storage Node : BR8 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR8A	Bottom	CIRCULAR	No	24.00			903.16	0.61

Output Summary Results

Peak Inflow (cfs)	6.20
Peak Lateral Inflow (cfs)	6.20
Peak Outflow (cfs)	0.00
Peak Exfiltration Flow Rate (cfm)	11.52
Max HGL Elevation Attained (ft)	901.01
Max HGL Depth Attained (ft)	0.85
Average HGL Elevation Attained (ft)	900.53
Average HGL Depth Attained (ft)	0.37
Time of Max HGL Occurrence (days hh:mm)	1 00:11
Total Exfiltration Volume (1000-ft³)	36.899
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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10-year/24-hour Rainfall Event Simulation Results

Project Description

File Name 20230.SPF

Project Options

Flow Units	CFS
Elevation Type	Elevation
Hydrology Method	SCS TR-55
Time of Concentration (TOC) Method	SCS TR-55
Link Routing Method	Kinematic Wave
Enable Overflow Ponding at Nodes	YES
Skip Steady State Analysis Time Periods	YES

Analysis Options

Start Analysis On	Oct 27, 2020	00:00:00
End Analysis On	Oct 30, 2020	00:00:00
Start Reporting On	Oct 27, 2020	00:00:00
Antecedent Dry Days	0	days
Runoff (Dry Weather) Time Step	0 01:00:00	days hh:mm:ss
Runoff (Wet Weather) Time Step	0 00:05:00	days hh:mm:ss
Reporting Time Step	0 00:06:00	days hh:mm:ss
Routing Time Step	30	seconds

Number of Elements

	Qty
Rain Gages	1
Subbasins	18
Nodes	50
Junctions	37
Outfalls	3
Flow Diversions	0
Inlets	0
Storage Nodes	10
Links	47
Channels	0
Pipes	37
Pumps	0
Orifices	10
Weirs	0
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1	Project	Time Series	10YR24HR	Cumulative	inches	California	San Bernardino (Victorville)	10	2.15	SCS Type I 24-hr

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Subbasin Summary

SN	Subbasin ID	Area (ac)	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	A01	0.92	90.57	2.15	1.26	1.16	0.81	0 00:10:00
2	A02	2.31	89.00	2.15	1.15	2.66	1.83	0 00:10:00
3	A04	1.11	89.00	2.15	1.15	1.28	0.88	0 00:10:00
4	A05	2.33	89.00	2.15	1.15	2.69	1.85	0 00:10:00
5	A06	1.52	89.00	2.15	1.15	1.75	1.21	0 00:10:00
6	A07	0.45	89.00	2.15	1.15	0.52	0.35	0 00:10:00
7	A08	1.59	89.00	2.15	1.15	1.83	1.26	0 00:10:00
8	A09	1.94	89.00	2.15	1.15	2.24	1.54	0 00:10:00
9	A10	16.37	84.72	2.15	0.89	14.59	9.37	0 00:10:00
10	A11a	0.92	98.00	2.15	1.92	1.77	1.21	0 00:10:00
11	A11b	0.64	98.00	2.15	1.92	1.23	0.84	0 00:10:00
12	A12	1.73	98.00	2.15	1.92	3.33	2.28	0 00:10:00
13	A13	3.78	98.00	2.15	1.92	7.27	4.98	0 00:10:00
14	A3A	0.54	95.00	2.15	1.63	0.88	0.62	0 00:10:00
15	A3B	0.80	91.77	2.15	1.35	1.08	0.76	0 00:10:00
16	A3C	1.34	89.00	2.15	1.15	1.55	1.06	0 00:10:00
17	RVPREDEV	16.37	70.76	2.15	0.32	5.25	0.56	0 01:40:47
18	TS-PREDEV	21.91	65.01	2.15	0.18	3.92	0.33	0 01:47:10

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Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft²)	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	J01	Junction	913.15	914.89	913.15	0.00	0.00	0.00	913.15	0.00	1.74	0 00:00	0.00	0.00
2	J02	Junction	907.89	912.64	907.89	0.00	0.00	1.83	912.64	0.00	0.00	0 10:06	0.00	2.00
3	J03	Junction	914.78	917.97	914.78	0.00	0.00	0.76	915.24	0.00	2.73	0 00:00	0.00	0.00
4	J04	Junction	910.56	914.38	910.56	0.00	0.00	1.50	911.18	0.00	3.20	0 00:00	0.00	0.00
5	J05	Junction	902.68	907.43	902.68	0.00	0.00	0.35	902.98	0.00	4.45	0 00:00	0.00	0.00
6	J06	Junction	902.12	906.87	902.12	0.00	0.00	1.25	902.39	0.00	4.48	0 00:00	0.00	0.00
7	J07	Junction	895.73	900.98	895.73	0.00	0.00	2.23	896.20	0.00	4.78	0 00:00	0.00	0.00
8	J08	Junction	898.06	902.31	898.06	0.00	0.00	0.82	898.33	0.00	3.98	0 00:00	0.00	0.00
9	J09	Junction	898.06	902.31	898.06	0.00	0.00	1.18	898.39	0.00	3.92	0 00:00	0.00	0.00
10	J10	Junction	886.32	890.92	886.32	0.00	0.00	4.86	887.20	0.00	3.72	0 00:00	0.00	0.00
11	O1	Junction	916.83	921.08	916.83	0.00	0.00	0.00	916.83	0.00	4.25	0 00:00	0.00	0.00
12	O2	Junction	909.85	914.85	909.85	0.00	0.00	0.18	910.07	0.00	4.78	0 00:00	0.00	0.00
13	O3A	Junction	915.23	921.60	915.23	0.00	0.00	0.00	915.23	0.00	6.37	0 00:00	0.00	0.00
14	O3B	Junction	911.08	916.72	911.08	0.00	0.00	0.62	911.42	0.00	5.30	0 00:00	0.00	0.00
15	O3C	Junction	906.09	912.24	906.09	0.00	0.00	0.00	906.09	0.00	6.15	0 00:00	0.00	0.00
16	O4	Junction	902.98	906.80	902.98	0.00	0.00	0.82	903.38	0.00	3.42	0 00:00	0.00	0.00
17	O5	Junction	907.79	912.12	907.79	0.00	0.00	0.09	907.95	0.00	4.17	0 00:00	0.00	0.00
18	O6	Junction	901.23	905.48	901.23	0.00	0.00	1.76	901.55	0.00	3.93	0 00:00	0.00	0.00
19	O7	Junction	888.27	901.23	888.27	0.00	0.00	0.00	888.27	0.00	12.96	0 00:00	0.00	0.00
20	O8A	Junction	894.34	903.66	894.34	0.00	0.00	0.00	894.34	0.00	9.32	0 00:00	0.00	0.00
21	SDMH01	Junction	916.48	921.15	916.48	0.00	0.00	0.00	916.58	0.00	4.57	0 00:00	0.00	0.00
22	SDMH02	Junction	909.48	914.04	909.48	0.00	0.00	0.18	909.80	0.00	4.24	0 00:00	0.00	0.00
23	SDMH03	Junction	907.54	914.70	907.54	0.00	0.00	1.88	914.70	0.00	0.00	0 10:07	0.00	3.00
24	SDMH04	Junction	907.26	914.39	907.26	0.00	0.00	1.83	908.22	0.00	6.17	0 00:00	0.00	0.00
25	SDMH05	Junction	907.53	914.79	907.53	0.00	0.00	0.09	907.79	0.00	7.00	0 00:00	0.00	0.00
26	SDMH06	Junction	905.75	910.18	905.75	0.00	0.00	0.00	905.75	0.00	4.43	0 00:00	0.00	0.00
27	SDMH07	Junction	905.33	909.05	905.33	0.00	0.00	0.00	905.43	0.00	3.62	0 00:00	0.00	0.00
28	SDMH08	Junction	902.75	909.14	902.75	0.00	0.00	0.82	903.25	0.00	5.89	0 00:00	0.00	0.00
29	SDMH09	Junction	901.44	907.96	901.44	0.00	0.00	1.14	902.94	0.00	5.02	0 00:00	0.00	0.00
30	SDMH10	Junction	900.51	907.70	900.51	0.00	0.00	2.18	901.08	0.00	6.62	0 00:00	0.00	0.00
31	SDMH11	Junction	894.85	901.92	894.85	0.00	0.00	2.22	895.50	0.00	6.42	0 00:00	0.00	0.00
32	SDMH12	Junction	893.85	903.70	893.85	0.00	0.00	2.19	894.49	0.00	9.21	0 00:00	0.00	0.00
33	SDMH13	Junction	897.40	902.76	897.40	0.00	0.00	2.01	898.07	0.00	4.69	0 00:00	0.00	0.00
34	SDMH14	Junction	893.13	902.49	893.13	0.00	0.00	4.09	895.42	0.00	7.07	0 00:00	0.00	0.00
35	SDMH15	Junction	886.12	891.87	886.12	0.00	0.00	8.70	887.55	0.00	4.32	0 00:00	0.00	0.00
36	SDMH16	Junction	885.50	893.01	885.50	0.00	0.00	8.68	887.15	0.00	5.86	0 00:00	0.00	0.00
37	SDMH17	Junction	884.58	889.78	884.58	0.00	0.00	8.62	885.99	0.00	3.79	0 00:00	0.00	0.00
38	OUT1	Outfall	884.42					8.61	885.72					
39	RVPRE	Outfall	0.00					0.56	0.00					
40	TSPRE	Outfall	0.00					0.33	0.00					
41	BR1	Storage Node	918.02	922.46	0.00		0.00	0.81	918.17				0.00	0.00
42	BR2	Storage Node	911.79	915.12	0.00		0.00	1.82	914.39				0.00	0.00
43	BR3A	Storage Node	918.54	922.87	0.00		0.00	0.61	920.04				0.00	0.00
44	BR3B	Storage Node	914.16	917.97	0.00		0.00	0.75	916.32				0.00	0.00
45	BR3C	Storage Node	909.39	912.45	0.00		0.00	1.50	911.69				0.00	0.00
46	BR4	Storage Node	904.17	908.79	0.00		0.00	0.87	906.35				0.00	0.00
47	BR5	Storage Node	909.06	912.12	0.00		0.00	1.20	911.65				0.00	0.00
48	BR6	Storage Node	902.92	913.75	0.00		0.00	1.82	905.17				0.00	0.00
49	BR7	Storage Node	895.77	901.73	0.00		0.00	5.28	899.62				0.00	0.00
50	BR8	Storage Node	900.16	910.55	0.00		0.00	9.36	901.45				0.00	0.00

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Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	(ft)		(min)	
1	P01	Pipe	O1	SDMH01	102.69	916.83	916.58	0.2400	12.000	0.0130	0.00	1.76	0.00	0.00	0.00	0.00	0.00	Calculated
2	P02	Pipe	SDMH01	J01	198.58	916.48	913.15	1.6800	12.000	0.0130	0.00	4.61	0.00	0.00	0.00	0.00	0.00	Calculated
3	P03	Pipe	J01	BR2	18.00	913.15	912.85	1.6700	12.000	0.0130	0.00	4.60	0.00	0.00	0.00	0.00	0.00	Calculated
4	P04	Pipe	O2	SDMH02	111.00	909.85	909.58	0.2400	12.000	0.0130	0.18	1.76	0.10	1.45	0.22	0.22	0.00	Calculated
5	P05	Pipe	SDMH02	SDMH03	160.94	909.48	909.08	0.2500	12.000	0.0130	0.18	1.78	0.10	1.46	0.22	0.22	0.00	Calculated
6	P06	Pipe	J02	SDMH03	99.00	907.89	907.64	0.2500	12.000	0.0130	1.88	1.79	1.05	2.65	0.91	0.91	0.00	> CAPACITY
7	P07	Pipe	SDMH03	SDMH04	74.09	907.54	907.36	0.2400	12.000	0.0130	1.83	1.76	1.04	2.62	0.88	0.92	0.00	> CAPACITY
8	P08	Pipe	O5	SDMH05	66.52	907.79	907.63	0.2400	12.000	0.0130	0.09	1.75	0.05	1.18	0.16	0.16	0.00	Calculated
9	P09	Pipe	SDMH05	SDMH04	70.26	907.53	907.36	0.2400	12.000	0.0130	0.09	1.75	0.05	1.18	0.16	0.16	0.00	Calculated
10	P10	Pipe	SDMH04	BR6	92.00	907.26	903.48	4.1100	12.000	0.0130	1.82	7.22	0.25	7.69	0.32	0.34	0.00	Calculated
11	P11	Pipe	O6	BR7	74.00	901.23	897.49	5.0500	12.000	0.0130	1.76	8.01	0.22	8.18	0.31	0.32	0.00	Calculated
12	P12	Pipe	O3A	J03	141.00	915.23	914.88	0.2500	12.000	0.0130	0.00	1.78	0.00	0.00	0.00	0.00	0.00	Calculated
13	P13	Pipe	J03	BR3B	25.00	914.78	914.72	0.2400	12.000	0.0130	0.75	1.75	0.43	2.14	0.46	0.46	0.00	Calculated
14	P14	Pipe	O3B	J04	83.00	911.08	910.66	0.5100	12.000	0.0130	0.62	2.53	0.24	2.67	0.32	0.34	0.00	Calculated
15	P15	Pipe	J04	BR3C	23.00	910.56	910.45	0.4800	12.000	0.0150	1.50	2.14	0.70	2.94	0.57	0.62	0.00	Calculated
16	P16	Pipe	O3C	SDMH06	102.00	906.09	905.75	0.3300	12.000	0.0130	0.00	2.06	0.00	0.00	0.00	0.00	0.00	Calculated
17	P17	Pipe	SDMH06	SDMH07	99.00	905.75	905.43	0.3200	12.000	0.0130	0.00	2.03	0.00	0.00	0.00	0.00	0.00	Calculated
18	P18	Pipe	SDMH07	BR4	31.00	905.33	905.23	0.3200	12.000	0.0130	0.00	2.02	0.00	0.00	0.00	0.00	0.00	Calculated
19	P19	Pipe	O4	SDMH08	50.02	902.98	902.85	0.2600	18.000	0.0130	0.82	5.36	0.15	2.19	0.38	0.26	0.00	Calculated
20	P20	Pipe	SDMH08	SDMH09	83.99	902.75	902.54	0.2500	18.000	0.0130	0.82	5.25	0.16	2.17	0.38	0.27	0.00	Calculated
21	P21	Pipe	J05	SDMH09	30.00	902.68	902.60	0.2700	12.000	0.0130	0.35	1.84	0.19	1.81	0.30	0.30	0.00	Calculated
22	P22	Pipe	SDMH09	SDMH10	331.00	901.44	900.61	0.2500	18.000	0.0130	1.11	5.26	0.21	2.40	0.44	0.31	0.00	Calculated
23	P23	Pipe	J06	SDMH10	32.00	902.12	900.61	4.7200	12.000	0.0130	1.25	7.74	0.16	7.23	0.27	0.27	0.00	Calculated
24	P24	Pipe	SDMH10	BR7	89.00	900.51	897.23	3.6900	18.000	0.0130	2.18	20.17	0.11	7.46	0.31	0.22	0.00	Calculated
25	P25	Pipe	O7	J10	62.00	888.27	887.17	1.7700	12.000	0.0130	0.00	4.75	0.00	0.00	0.00	0.00	0.00	Calculated
26	P26	Pipe	O8A	SDMH12	130.00	894.34	893.85	0.3800	12.000	0.0130	0.00	2.19	0.00	0.00	0.00	0.00	0.00	Calculated
27	P27	Pipe	J07	SDMH11	39.00	895.73	894.95	2.0000	12.000	0.0130	2.22	5.04	0.44	6.21	0.47	0.47	0.00	Calculated
28	P28	Pipe	SDMH11	SDMH12	333.48	894.85	893.85	0.3000	18.000	0.0130	2.19	5.75	0.38	3.08	0.64	0.43	0.00	Calculated
29	P29	Pipe	SDMH12	SDMH14	208.00	893.85	893.23	0.3000	18.000	0.0130	2.17	5.73	0.38	3.04	0.63	0.43	0.00	Calculated
30	P30	Pipe	J09	SDMH13	16.00	898.06	897.74	2.0000	12.000	0.0130	1.18	5.04	0.23	5.24	0.33	0.33	0.00	Calculated
31	P31	Pipe	J08	SDMH13	28.00	898.06	897.50	2.0000	12.000	0.0130	0.82	5.04	0.16	4.72	0.27	0.27	0.00	Calculated
32	P32	Pipe	SDMH13	SDMH14	93.00	897.40	895.07	2.5100	18.000	0.0130	2.00	16.63	0.12	6.35	0.35	0.23	0.00	Calculated
33	P33	Pipe	SDMH14	SDMH15	745.00	893.13	886.22	0.9300	18.000	0.0130	4.04	10.12	0.40	5.51	0.65	0.44	0.00	Calculated
34	P34	Pipe	J10	SDMH15	39.00	886.32	886.12	0.5100	18.000	0.0130	4.85	7.52	0.64	4.52	0.88	0.58	0.00	Calculated
35	P35	Pipe	SDMH15	SDMH16	200.04	886.12	885.72	0.2000	24.000	0.0130	8.68	10.12	0.86	3.64	1.42	0.71	0.00	Calculated
36	P36	Pipe	SDMH16	SDMH17	328.00	885.50	884.68	0.2500	24.000	0.0130	8.62	11.31	0.76	4.00	1.28	0.65	0.00	Calculated
37	P37	Pipe	SDMH17	OUT1	63.00	884.58	884.42	0.2500	24.000	0.0130	8.61	11.40	0.76	3.99	1.25	0.65	0.00	Calculated
38	OR1	Orifice	BR1	O1		918.02	916.83		24.000		0.00							
39	OR2	Orifice	BR2	O2		911.79	909.85		24.000		0.18							
40	OR3A	Orifice	BR3A	O3A		918.54	915.23		24.000		0.00							
41	OR3B	Orifice	BR3B	O3B		914.16	911.08		24.000		0.62							
42	OR3C	Orifice	BR3C	O3C		909.39	906.09		24.000		0.00							
43	OR4	Orifice	BR4	O4		904.17	902.98		24.000		0.82							
44	OR5	Orifice	BR5	O5		909.06	907.79		24.000		0.09							
45	OR6	Orifice	BR6	O6		902.92	901.23		24.000		1.76							
46	OR7B	Orifice	BR7	O7		895.77	888.27		24.000		0.00							
47	OR8A	Orifice	BR8	O8A		900.16	894.34		24.000		0.00							

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Subbasin Hydrology

Subbasin : A01

Input Data

Area (ac) 0.92
Weighted Curve Number 90.57
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	0.24	D	95.00
Urban commercial, 85% imp	0.68	A	89.00
Composite Area & Weighted CN	0.92		90.57

Time of Concentration

TOC Method : SCS TR-55

Sheet Flow Equation :

Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))

Where :

Tc = Time of Concentration (hr)
n = Manning's roughness
Lf = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation :

V = 16.1345 * (Sf^0.5) (unpaved surface)
V = 20.3282 * (Sf^0.5) (paved surface)
V = 15.0 * (Sf^0.5) (grassed waterway surface)
V = 10.0 * (Sf^0.5) (nearly bare & untilled surface)
V = 9.0 * (Sf^0.5) (cultivated straight rows surface)
V = 7.0 * (Sf^0.5) (short grass pasture surface)
V = 5.0 * (Sf^0.5) (woodland surface)
V = 2.5 * (Sf^0.5) (forest w/heavy litter surface)
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hr)
Lf = Flow Length (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)

Channel Flow Equation :

V = (1.49 * (R^(2/3)) * (Sf^0.5)) / n
R = Aq / Wp
Tc = (Lf / V) / (3600 sec/hr)

Where :

Tc = Time of Concentration (hr)
Lf = Flow Length (ft)
R = Hydraulic Radius (ft)
Aq = Flow Area (ft²)
Wp = Wetted Perimeter (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)
n = Manning's roughness

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

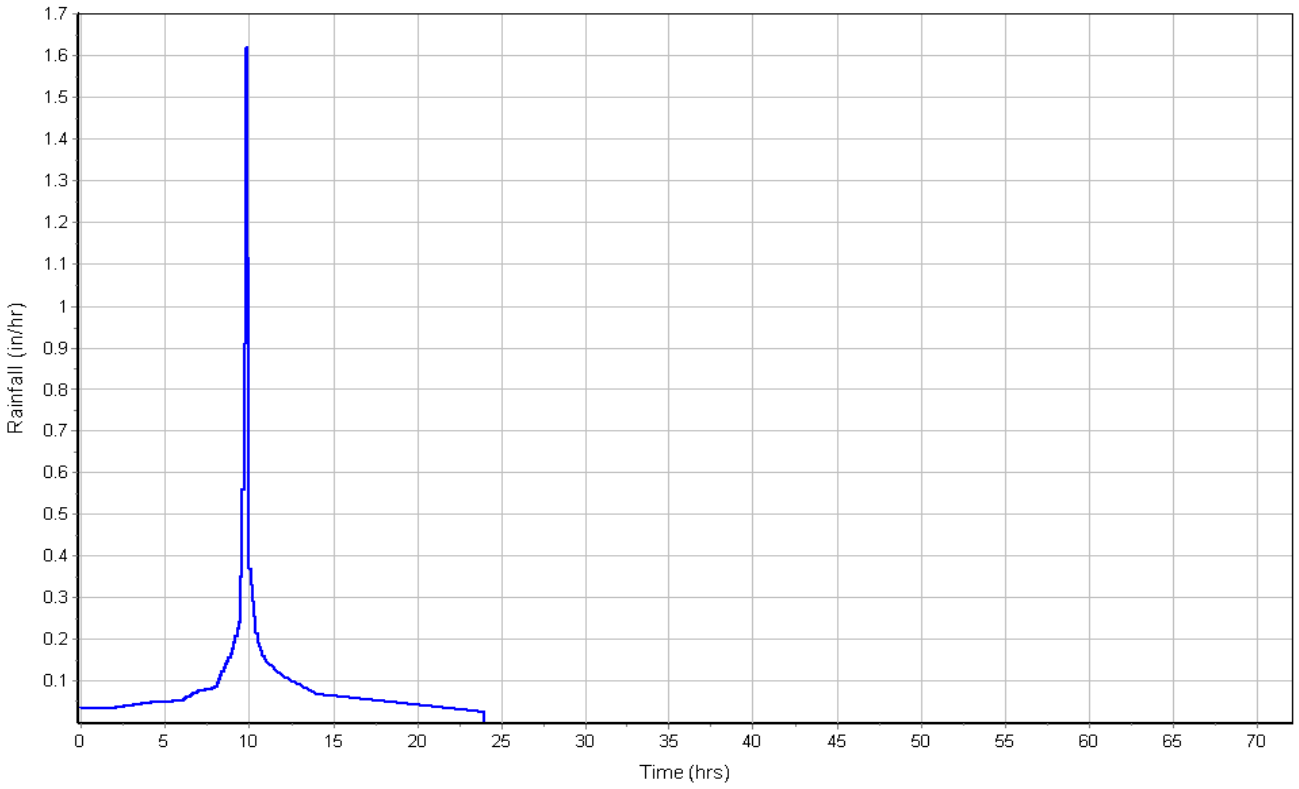
Total Rainfall (in) 2.15
Total Runoff (in) 1.26
Peak Runoff (cfs) 0.81
Weighted Curve Number 90.57
Time of Concentration (days hh:mm:ss) 0 00:10:00

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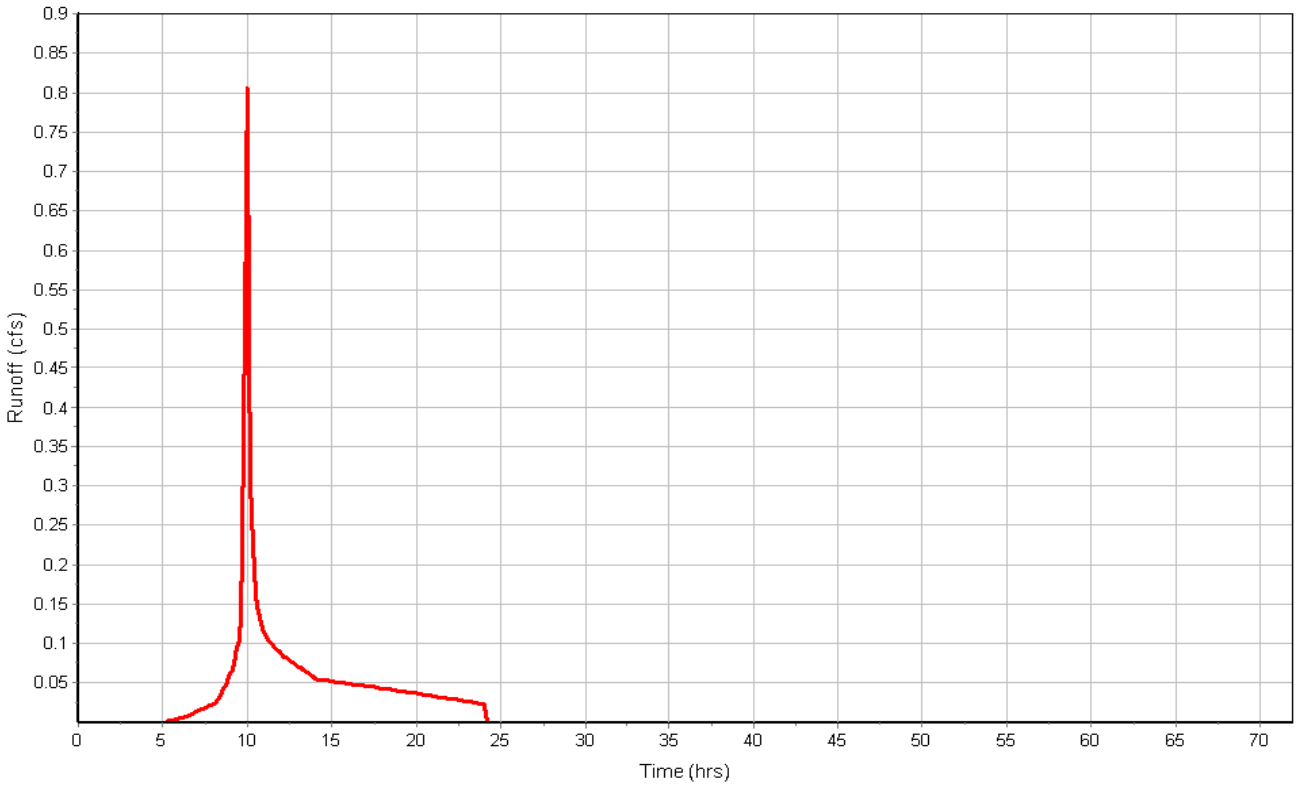
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Subbasin : A01

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A02

Input Data

Area (ac) 2.31
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	2.31	A	89.00
Composite Area & Weighted CN	2.31		89.00

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

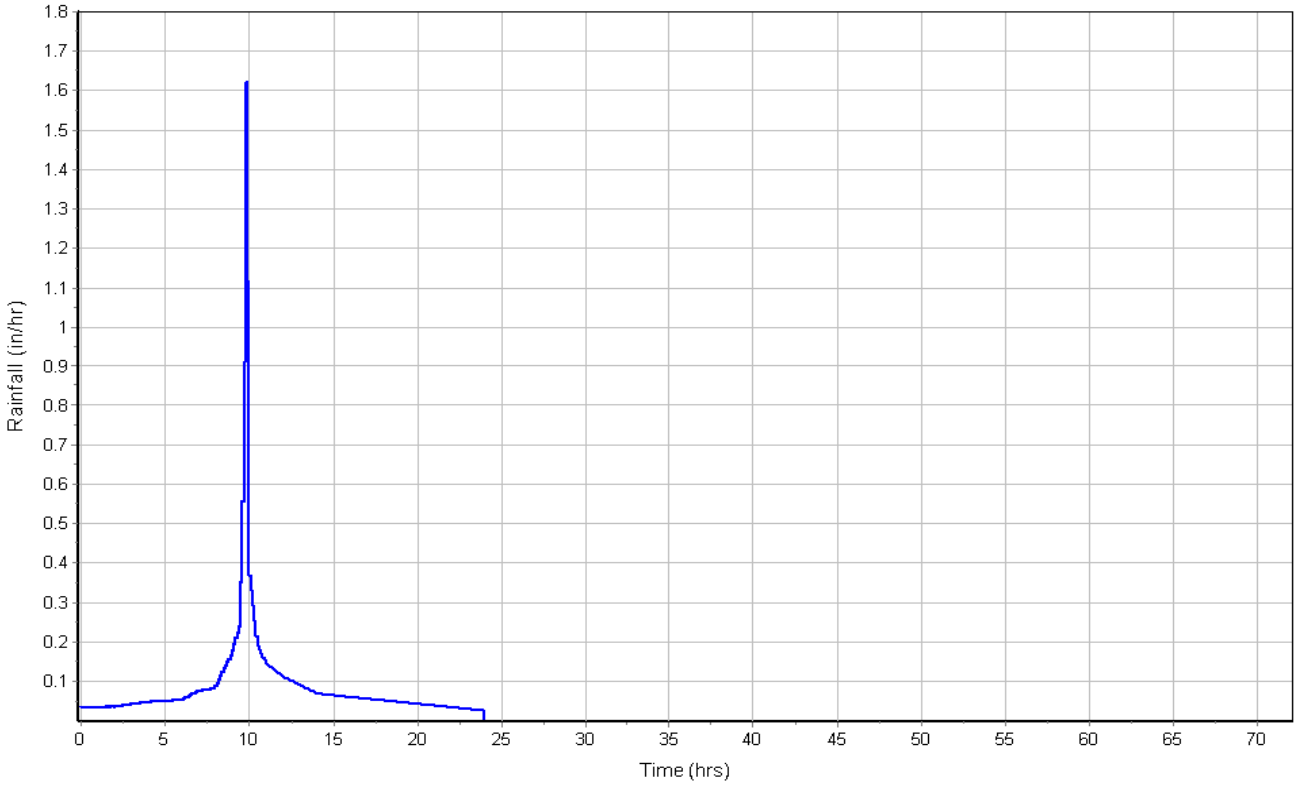
Total Rainfall (in) 2.15
Total Runoff (in) 1.15
Peak Runoff (cfs) 1.83
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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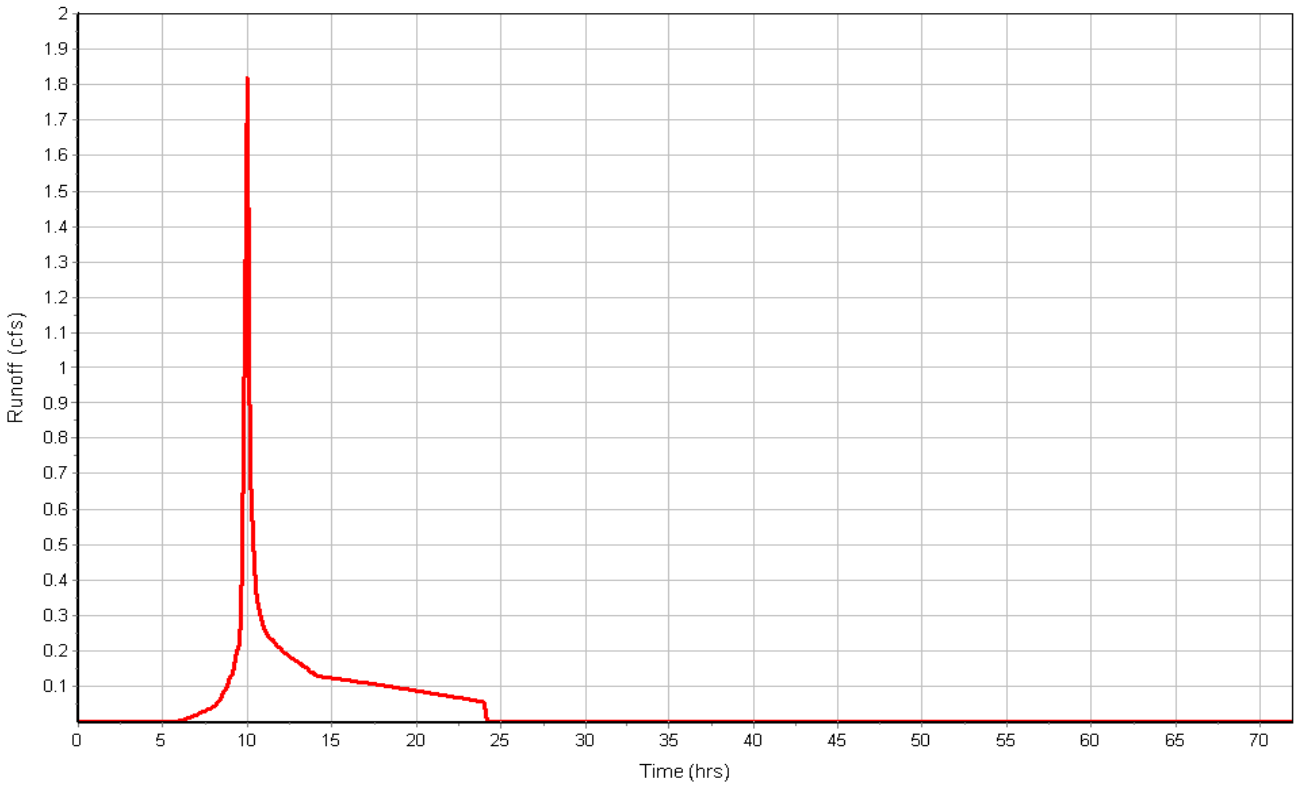
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Subbasin : A02

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A04

Input Data

Area (ac) 1.11
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	1.11	A	89.00
Composite Area & Weighted CN	1.11		89.00

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

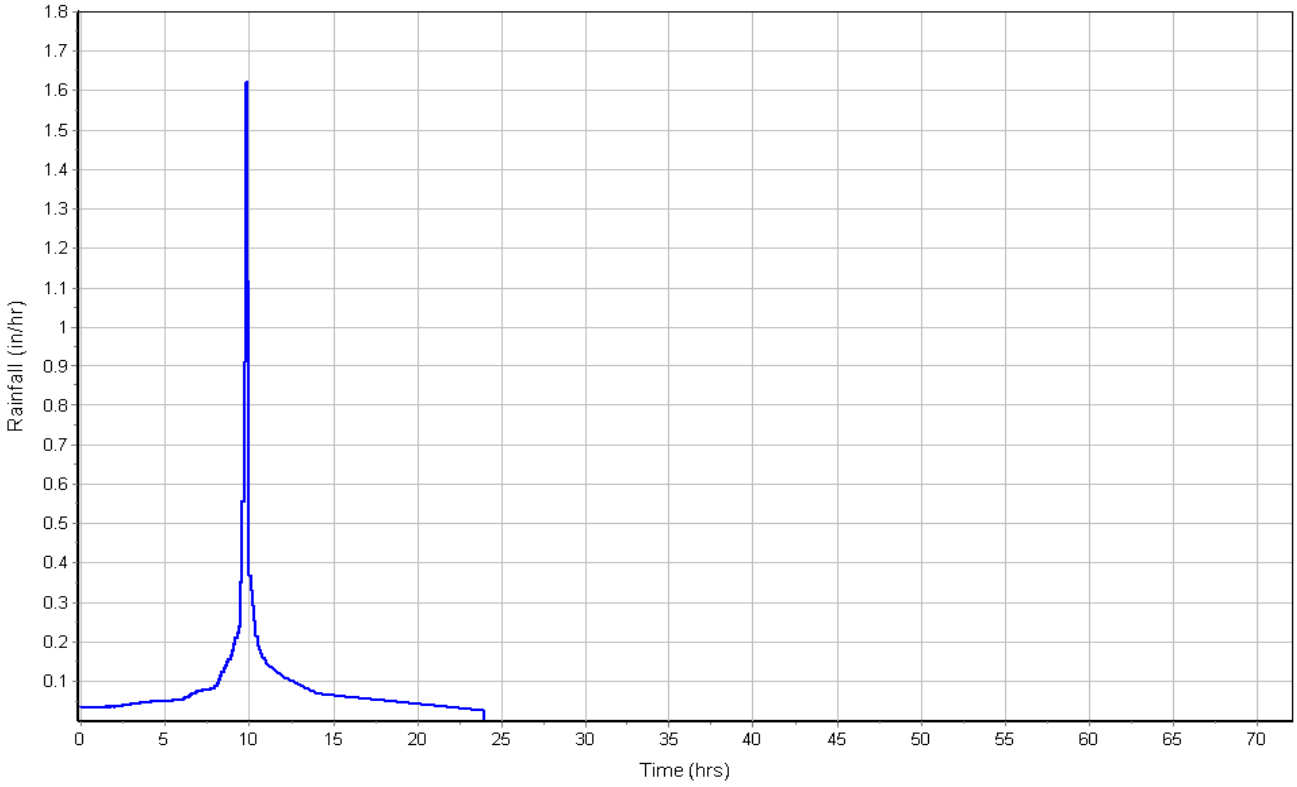
Total Rainfall (in) 2.15
Total Runoff (in) 1.15
Peak Runoff (cfs) 0.88
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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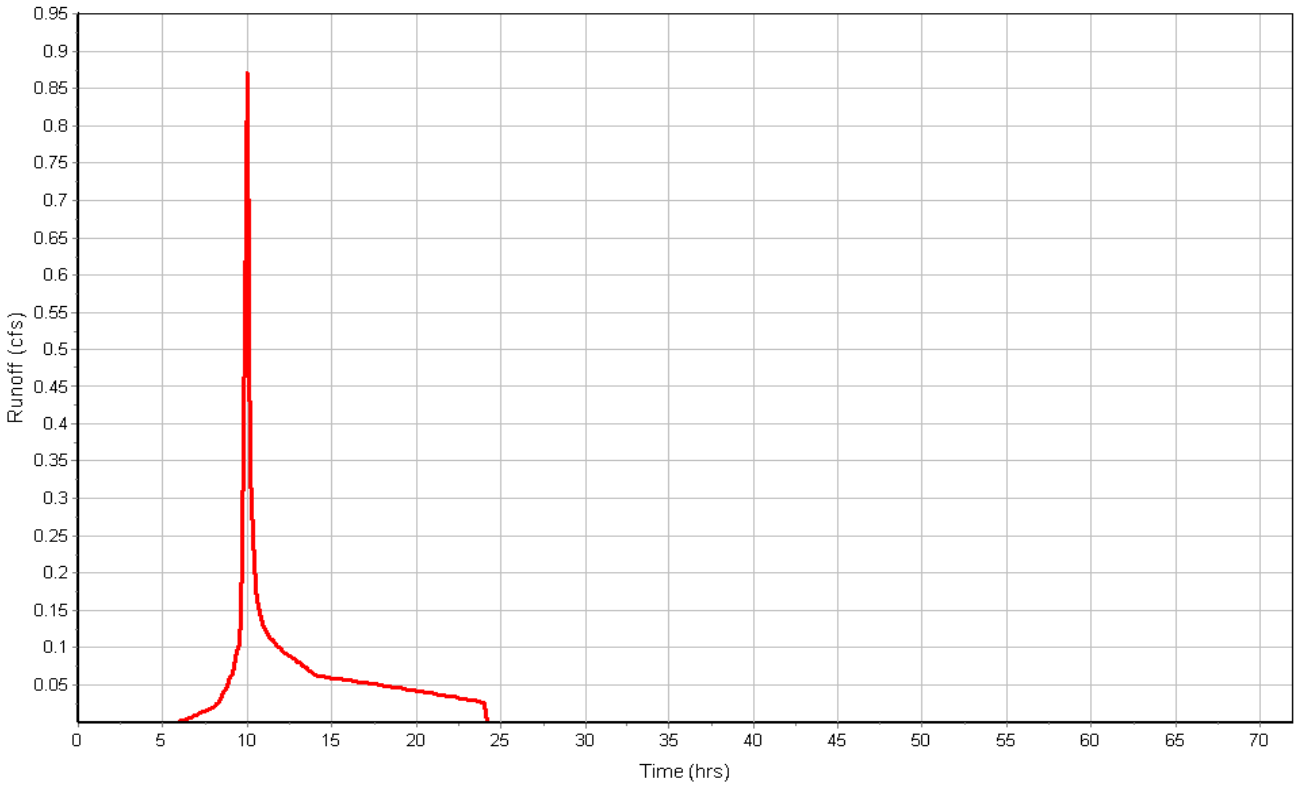
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Subbasin : A04

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A05

Input Data

Area (ac) 2.33
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	2.33	A	89.00
Composite Area & Weighted CN	2.33		89.00

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

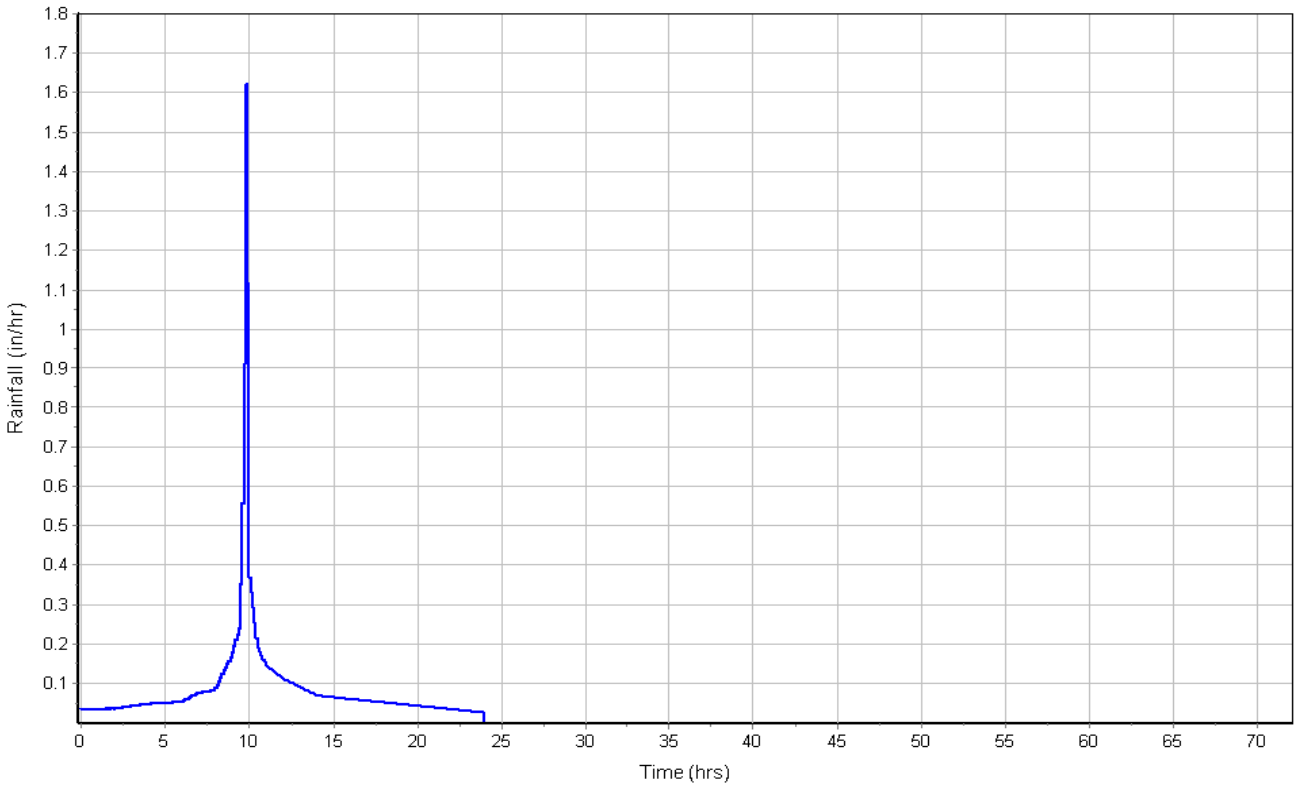
Total Rainfall (in) 2.15
Total Runoff (in) 1.15
Peak Runoff (cfs) 1.85
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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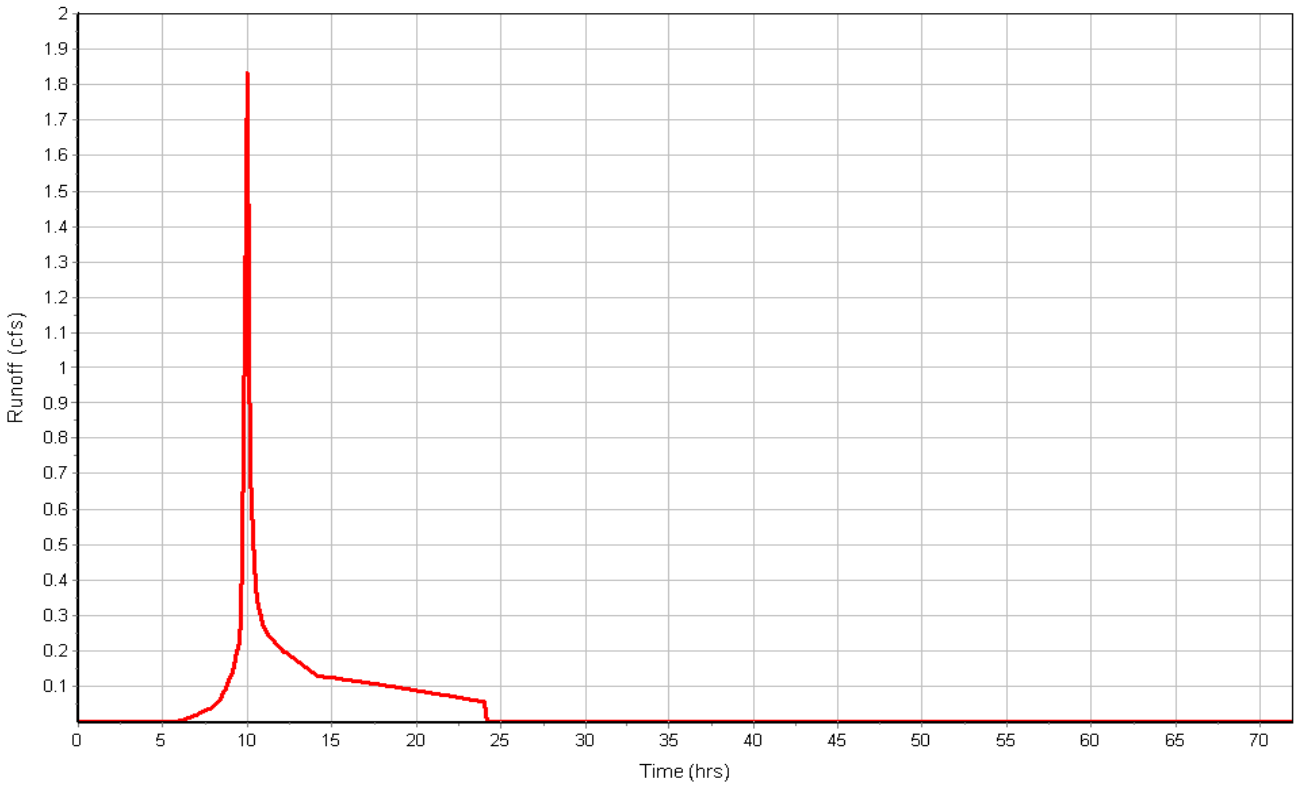
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Subbasin : A05

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A06

Input Data

Area (ac) 1.52
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	1.52	A	89.00
Composite Area & Weighted CN	1.52		89.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

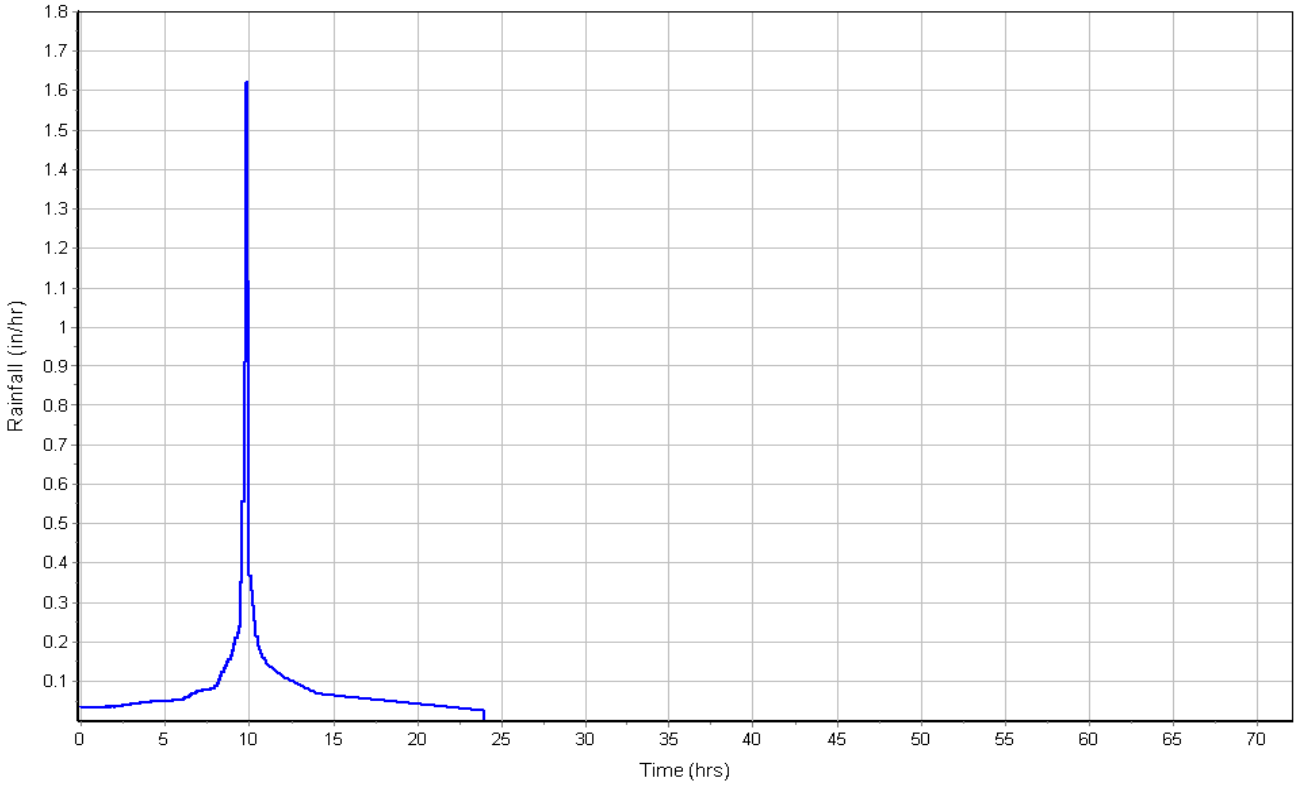
Total Rainfall (in) 2.15
Total Runoff (in) 1.15
Peak Runoff (cfs) 1.21
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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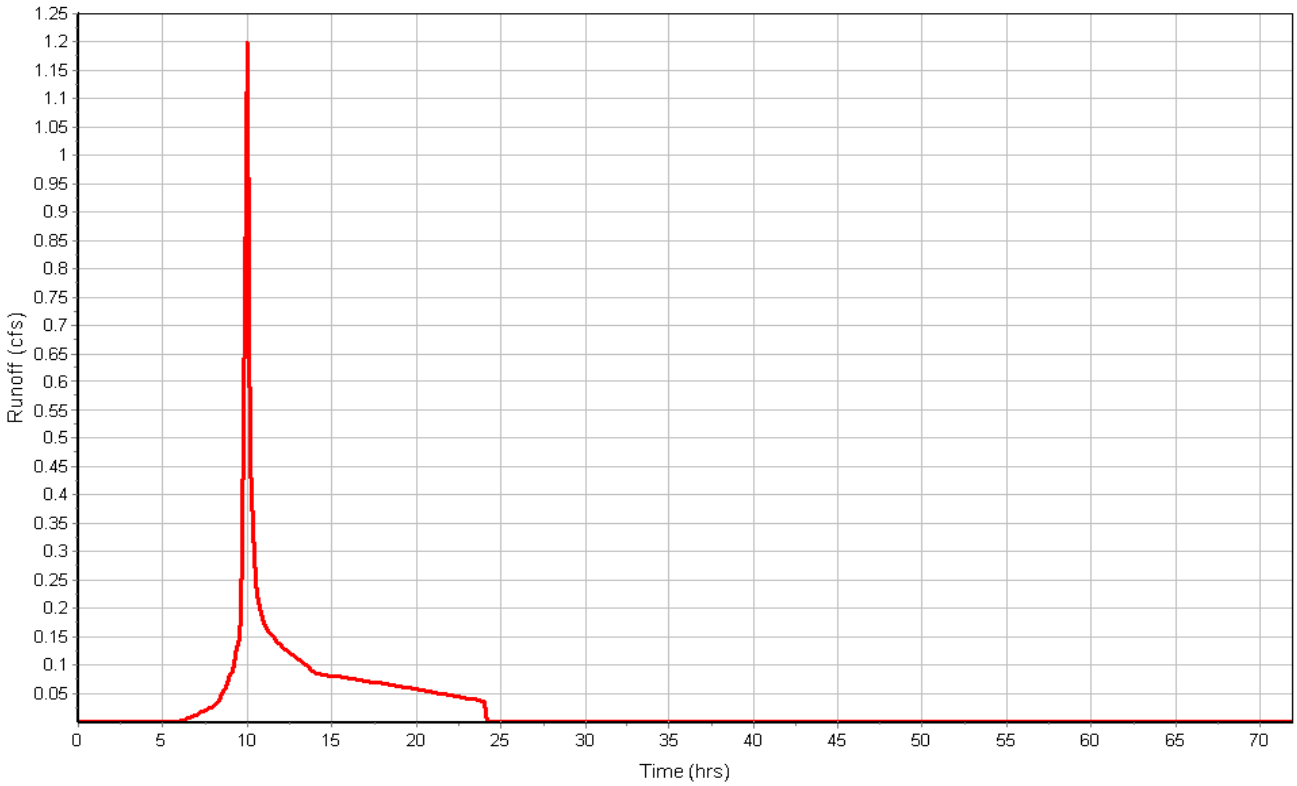
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Subbasin : A06

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A07

Input Data

Area (ac) 0.45
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	0.45	A	89.00
Composite Area & Weighted CN	0.45		89.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

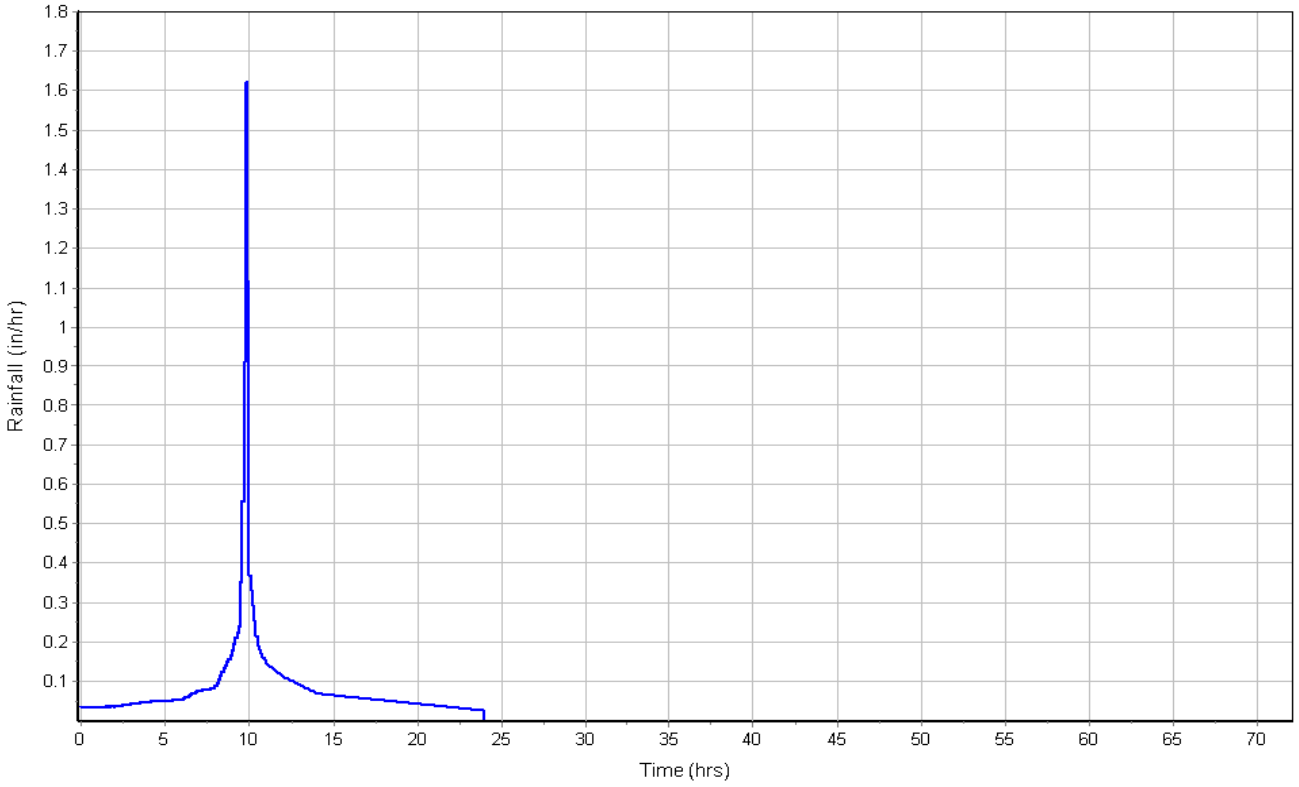
Total Rainfall (in) 2.15
Total Runoff (in) 1.15
Peak Runoff (cfs) 0.35
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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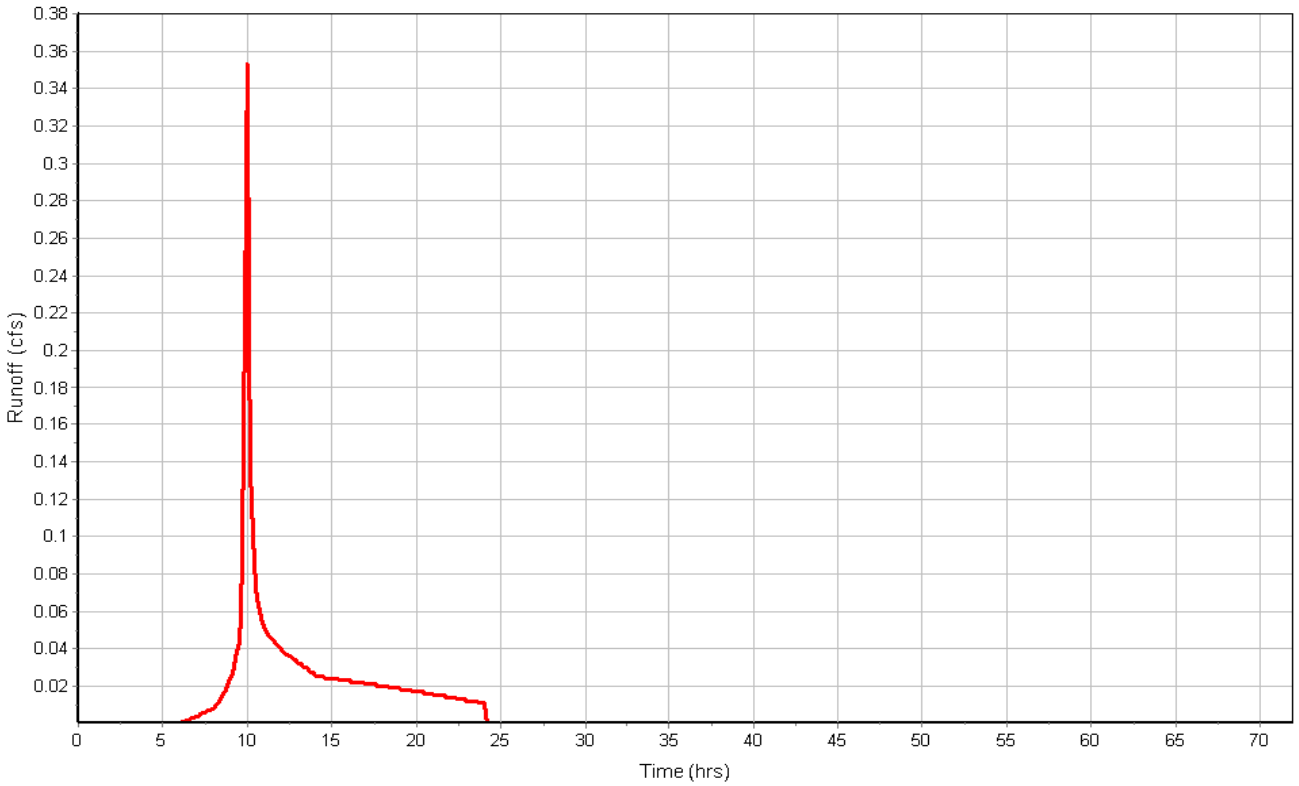
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Subbasin : A07

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A08

Input Data

Area (ac) 1.59
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	1.59	A	89.00
Composite Area & Weighted CN	1.59		89.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

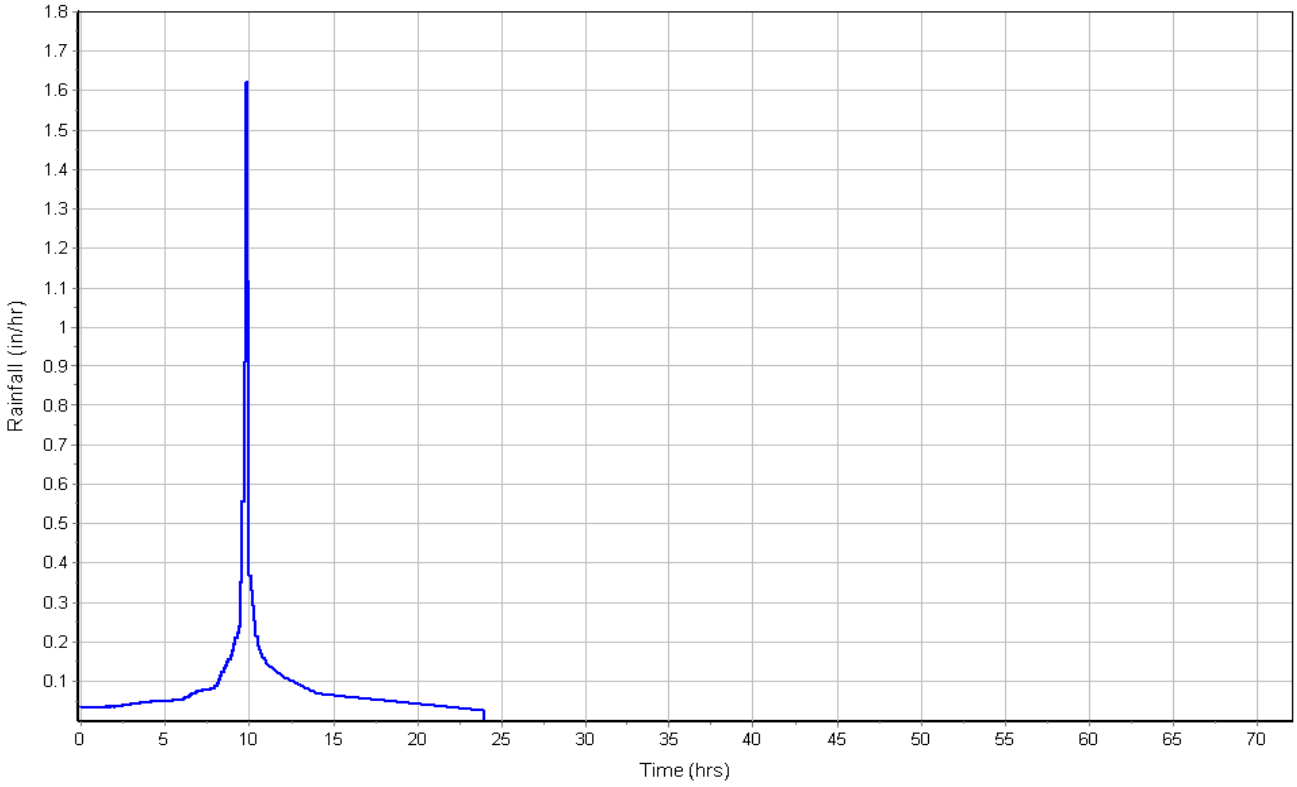
Total Rainfall (in) 2.15
Total Runoff (in) 1.15
Peak Runoff (cfs) 1.26
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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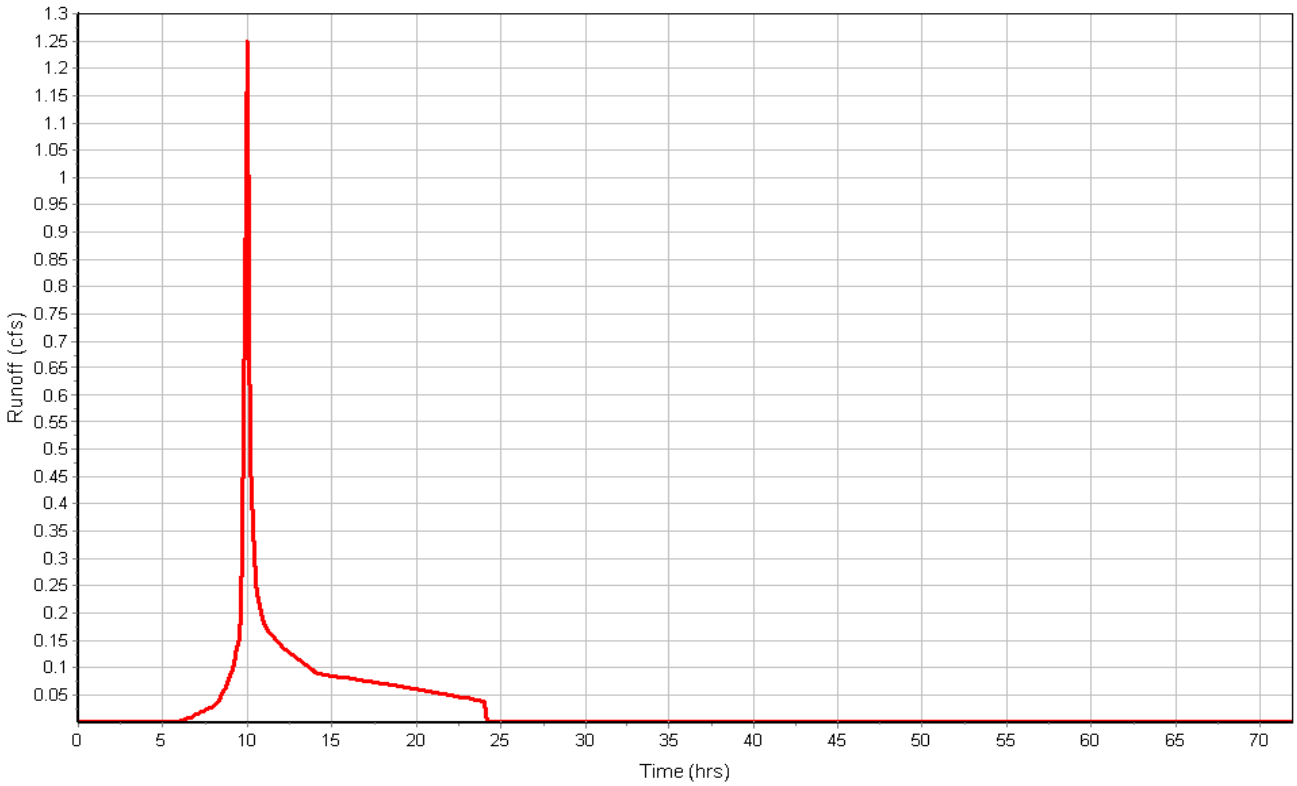
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Subbasin : A08

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A09

Input Data

Area (ac) 1.94
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	1.94	A	89.00
Composite Area & Weighted CN	1.94		89.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

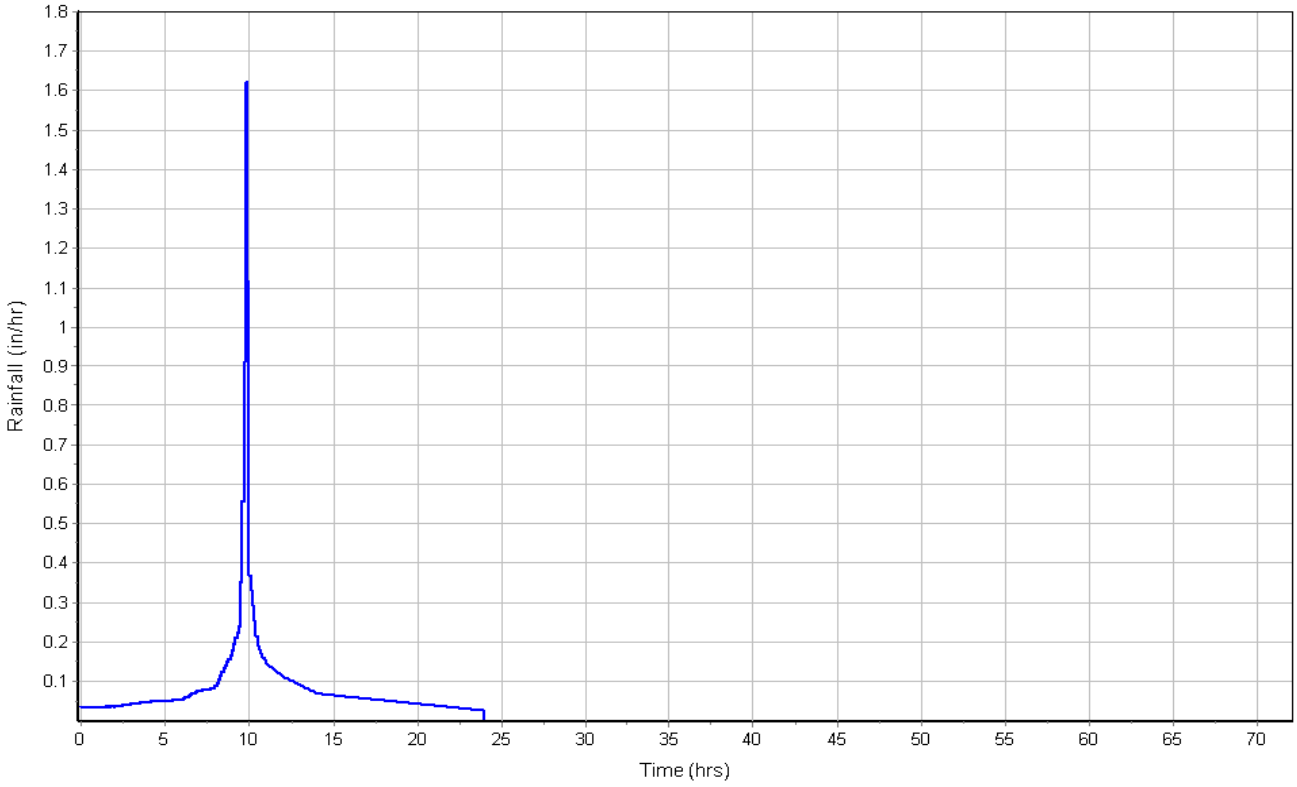
Total Rainfall (in) 2.15
Total Runoff (in) 1.15
Peak Runoff (cfs) 1.54
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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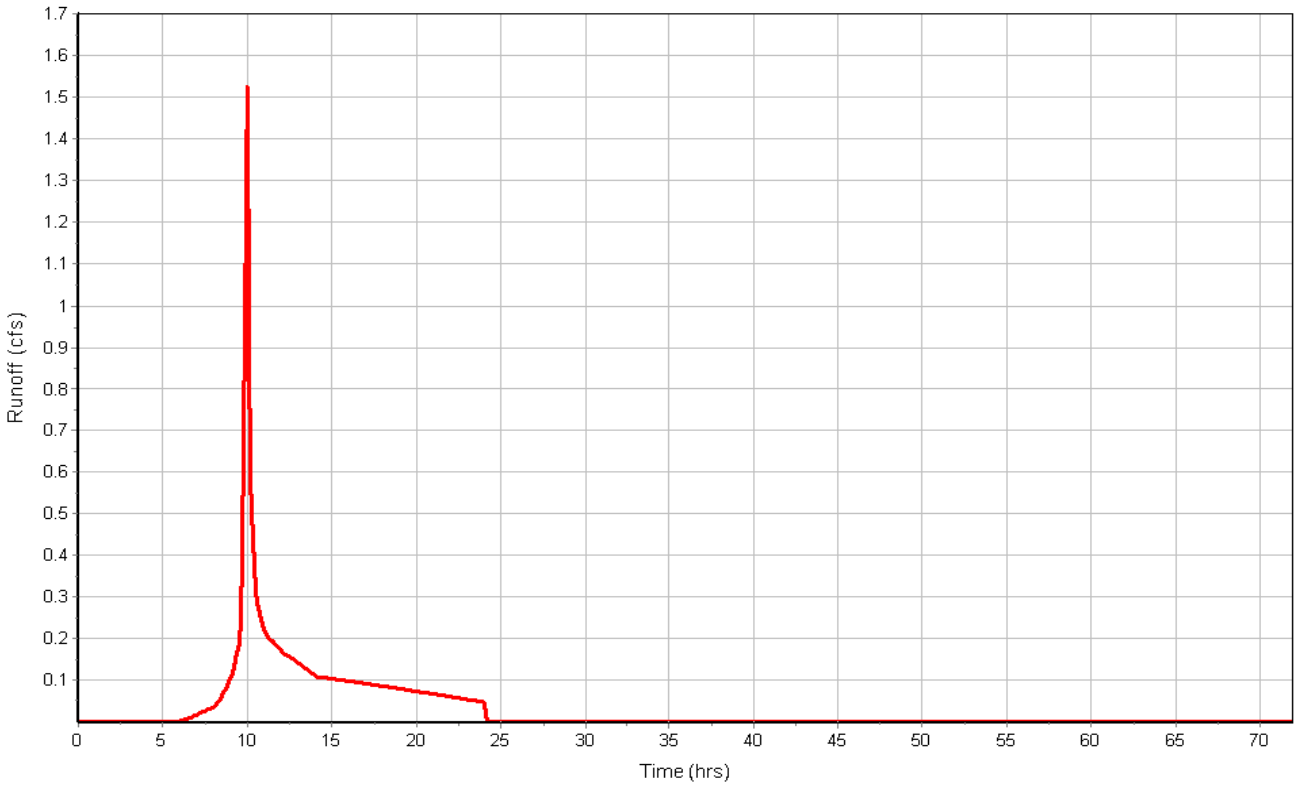
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Subbasin : A09

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Subbasin : A10

Input Data

Area (ac) 16.37
Weighted Curve Number 84.72
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban industrial, 72% imp	11.29	A	81.00
Urban industrial, 72% imp	5.08	D	93.00
Composite Area & Weighted CN	16.37		84.72

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

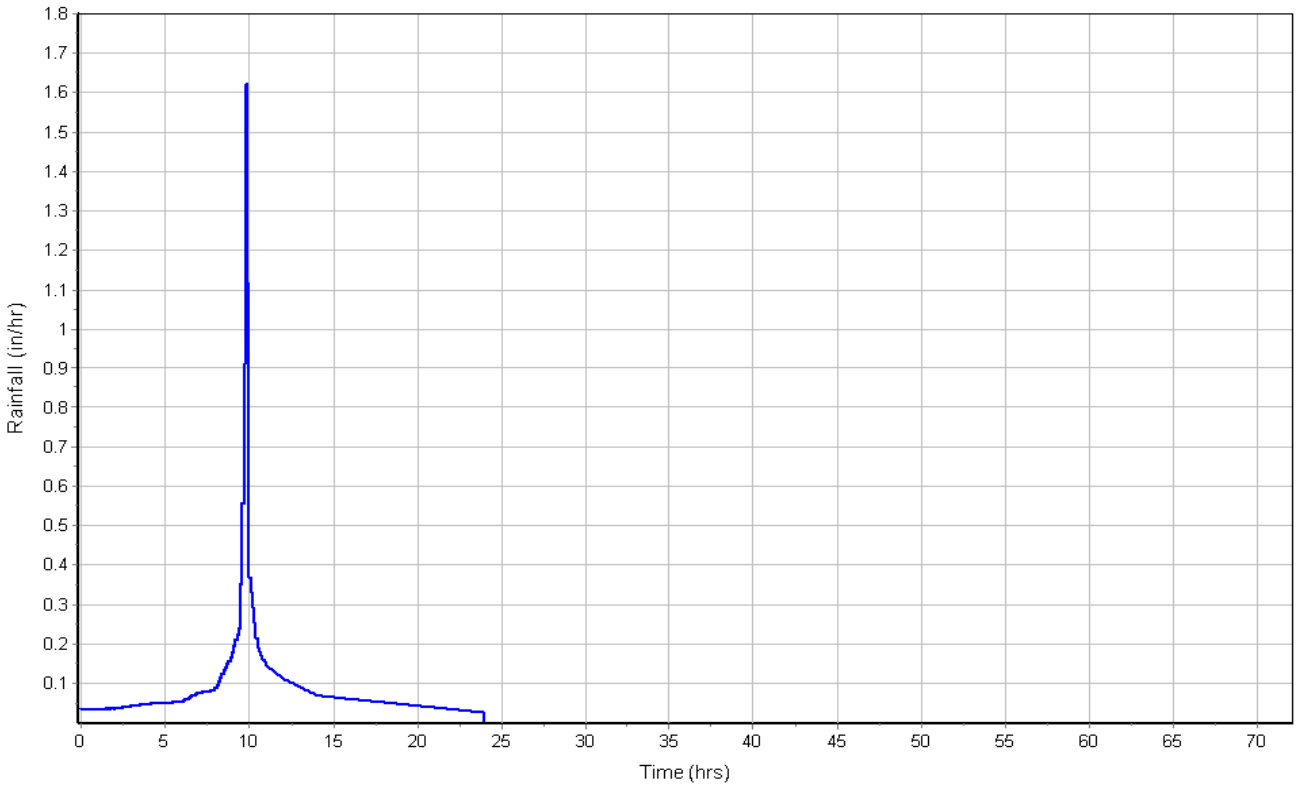
Total Rainfall (in) 2.15
Total Runoff (in) 0.89
Peak Runoff (cfs) 9.37
Weighted Curve Number 84.72
Time of Concentration (days hh:mm:ss) 0 00:10:00

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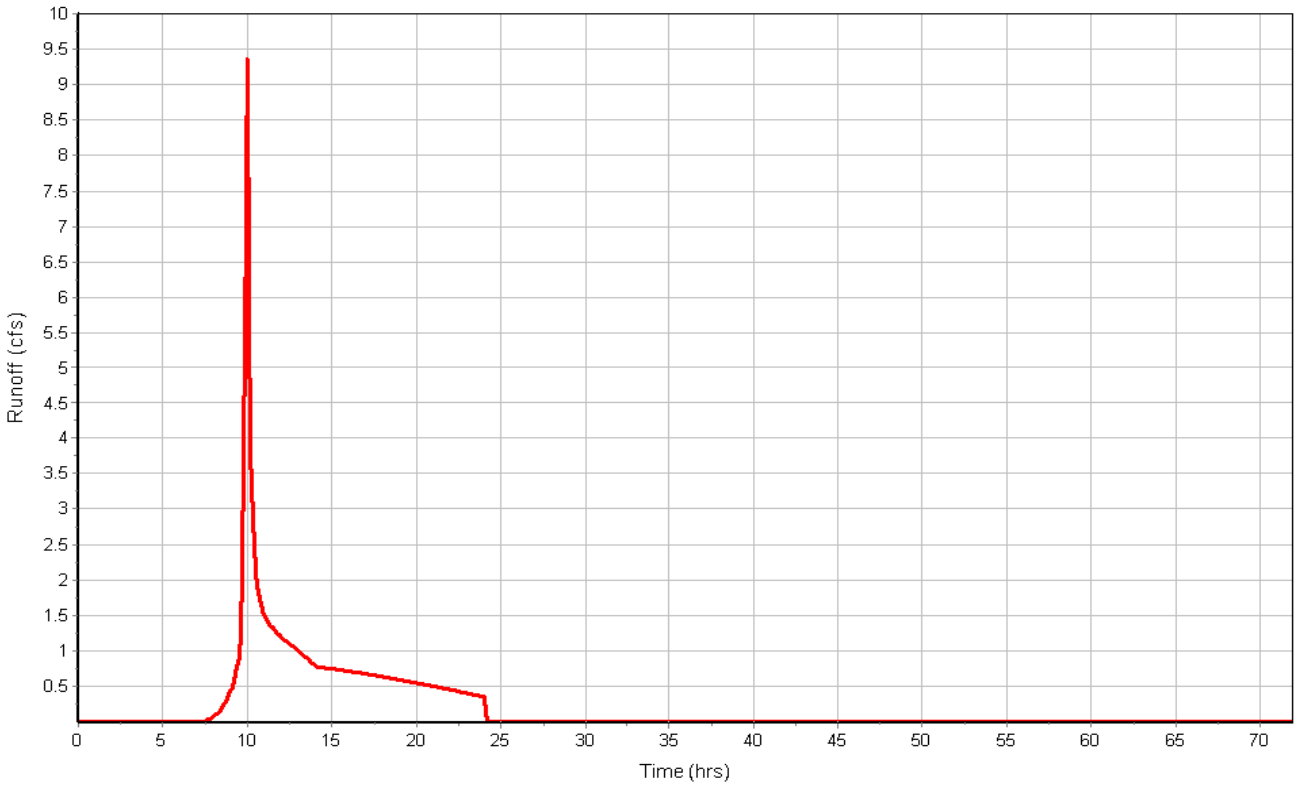
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Subbasin : A10

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A11a

Input Data

Area (ac)	0.92
Weighted Curve Number	98.00
Rain Gage ID	Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	0.52	A	98.00
Paved parking & roofs	0.40	D	98.00
Composite Area & Weighted CN	0.92		98.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

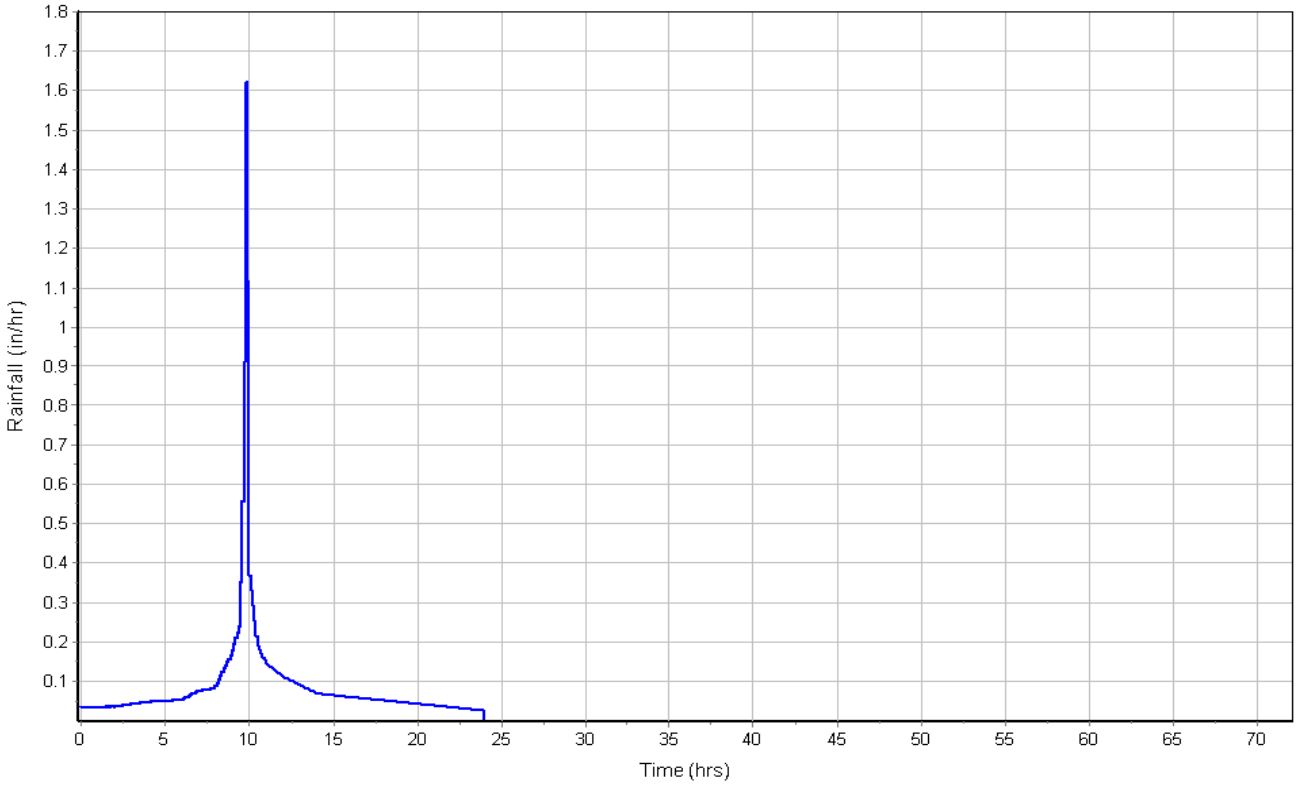
Total Rainfall (in)	2.15
Total Runoff (in)	1.92
Peak Runoff (cfs)	1.21
Weighted Curve Number	98.00
Time of Concentration (days hh:mm:ss)	0 00:10:00

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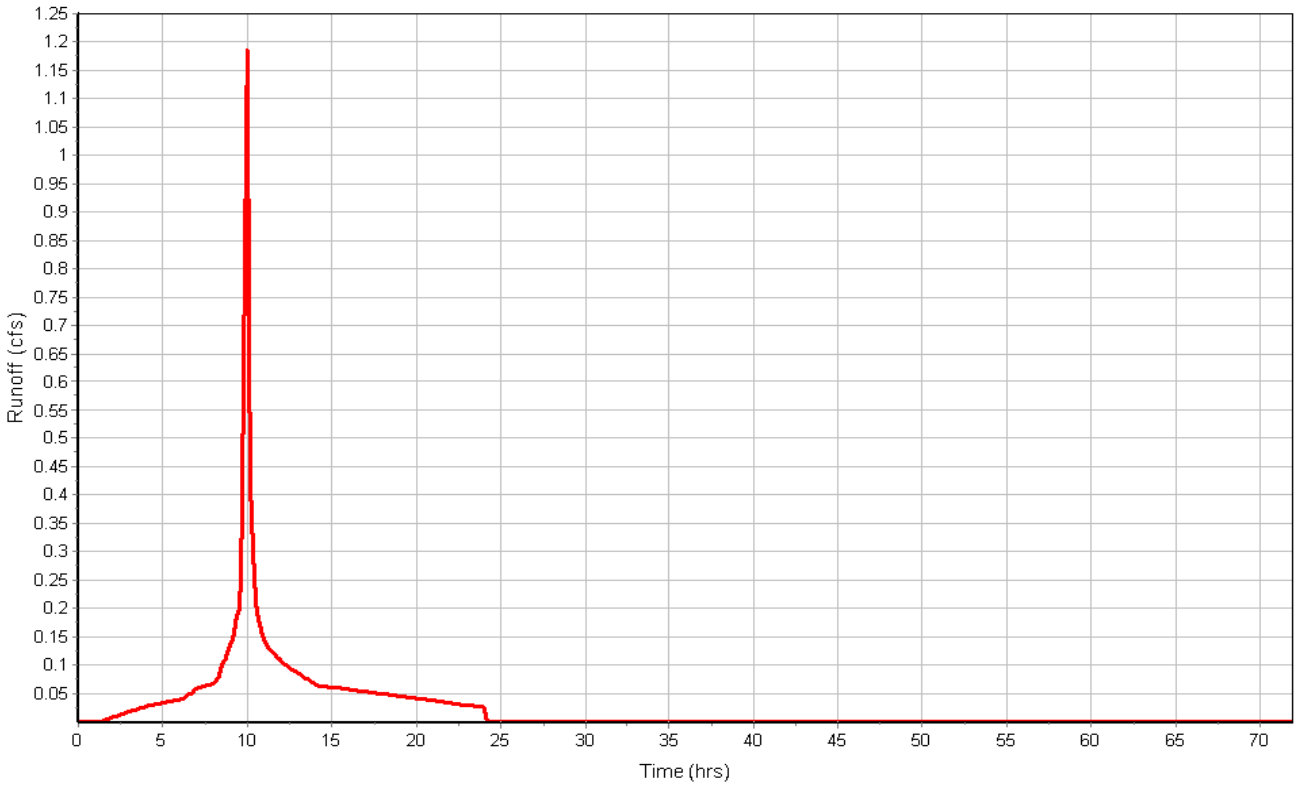
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Subbasin : A11a

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A11b

Input Data

Area (ac) 0.64
Weighted Curve Number 98.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	0.43	A	98.00
Paved parking & roofs	0.21	D	98.00
Composite Area & Weighted CN	0.64		98.00

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

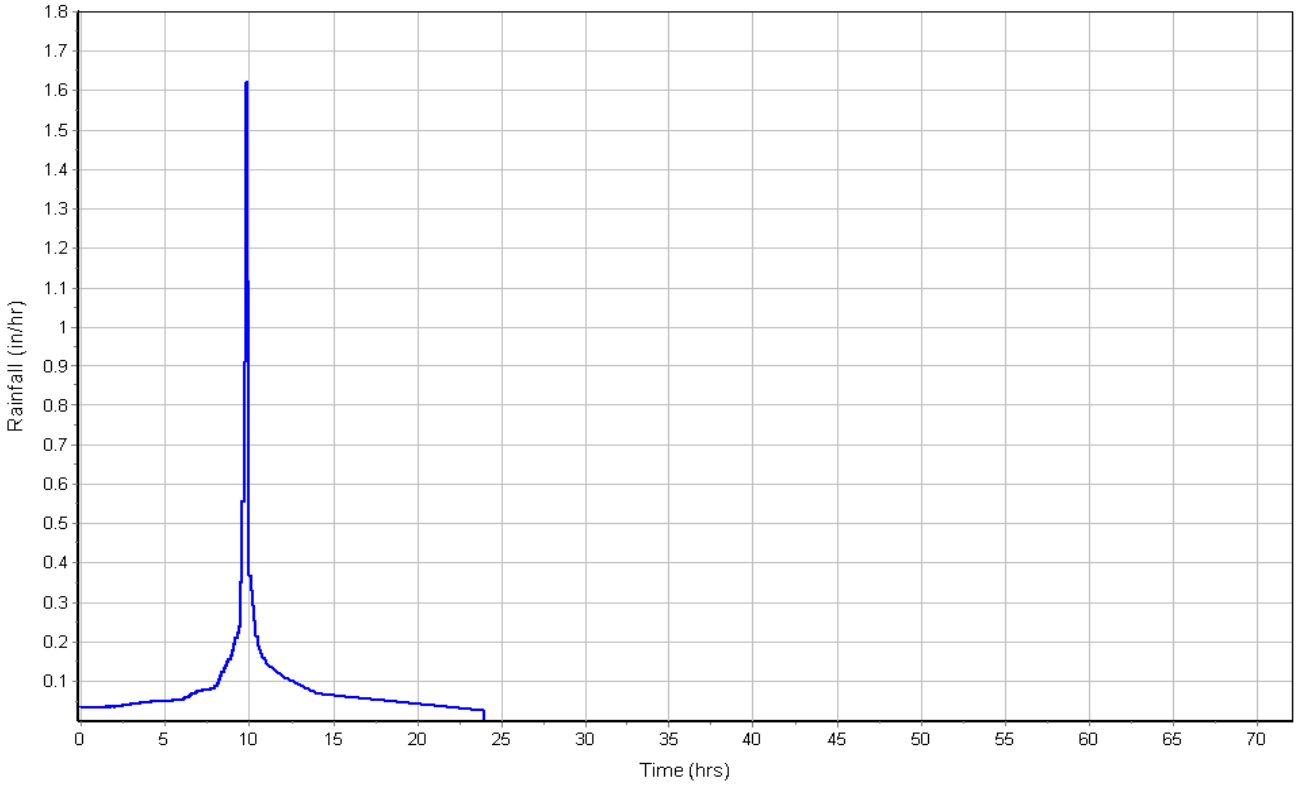
Total Rainfall (in) 2.15
Total Runoff (in) 1.92
Peak Runoff (cfs) 0.84
Weighted Curve Number 98.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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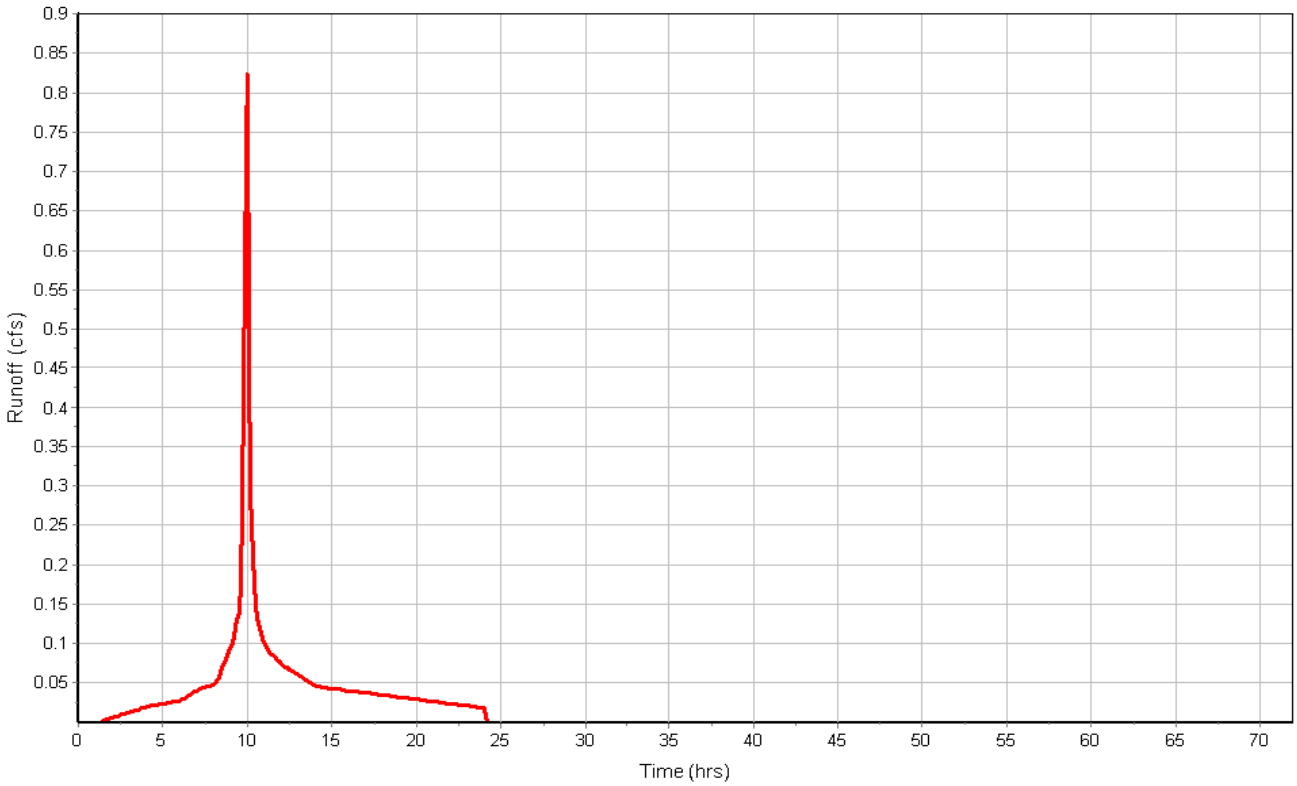
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Subbasin : A11b

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A12

Input Data

Area (ac)	1.73
Weighted Curve Number	98.00
Rain Gage ID	Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	1.73	A	98.00
Composite Area & Weighted CN	1.73		98.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

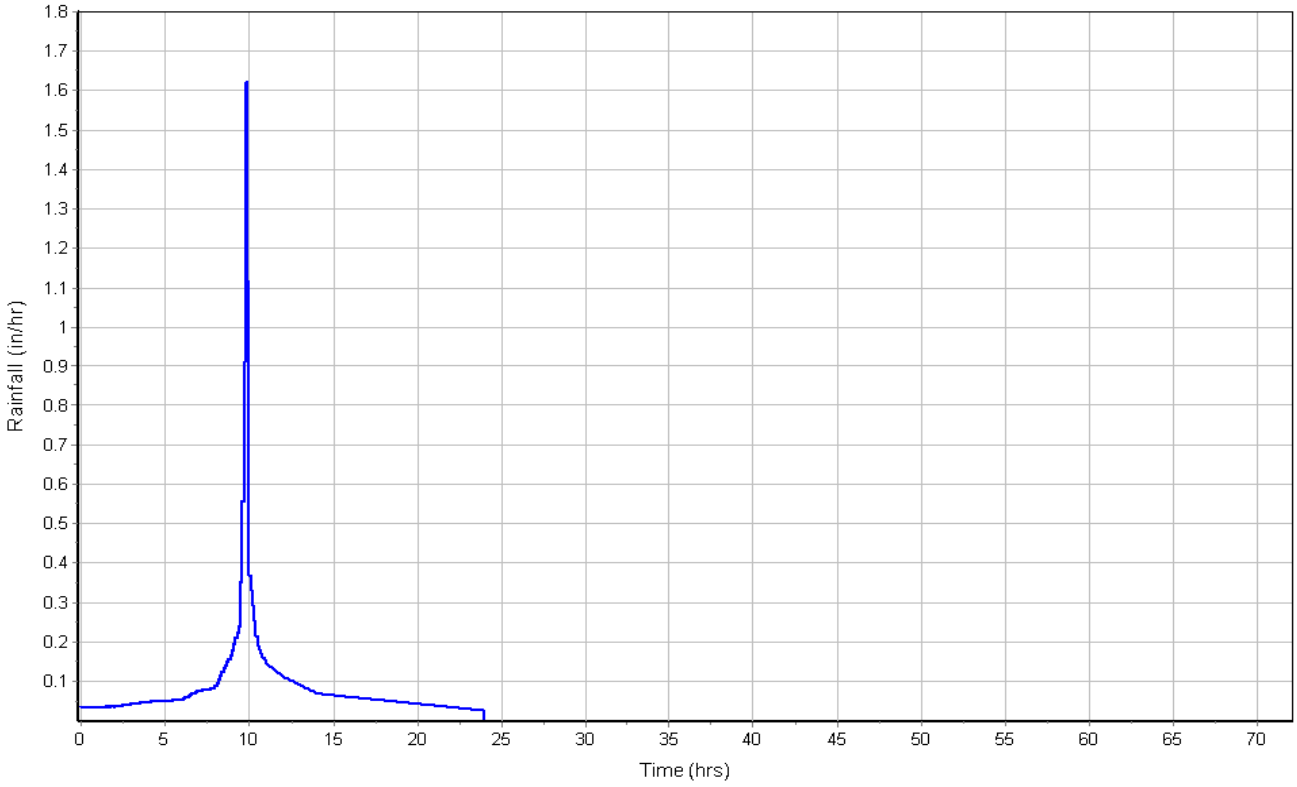
Total Rainfall (in)	2.15
Total Runoff (in)	1.92
Peak Runoff (cfs)	2.28
Weighted Curve Number	98.00
Time of Concentration (days hh:mm:ss)	0 00:10:00

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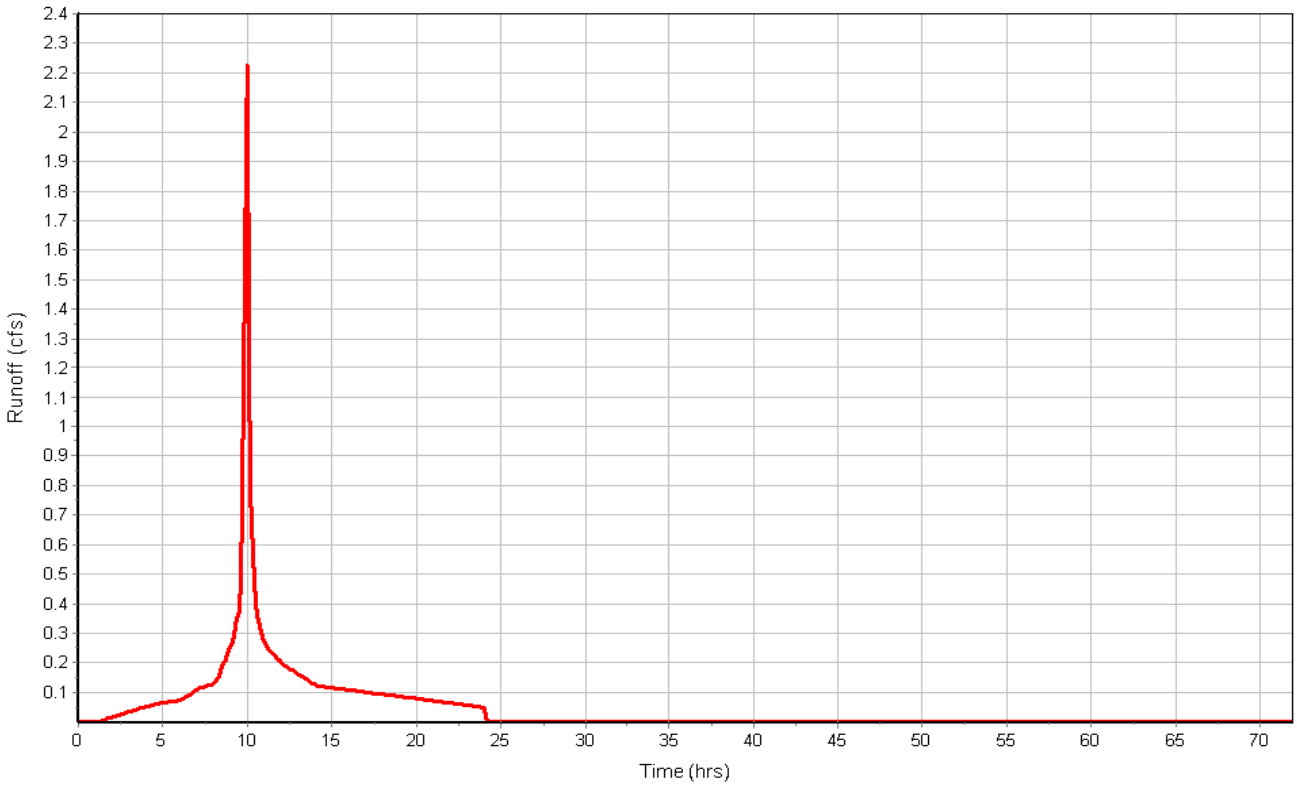
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Subbasin : A12

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A13

Input Data

Area (ac)	3.78
Weighted Curve Number	98.00
Rain Gage ID	Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved roads with curbs & sewers	3.78	A	98.00
Composite Area & Weighted CN	3.78		98.00

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

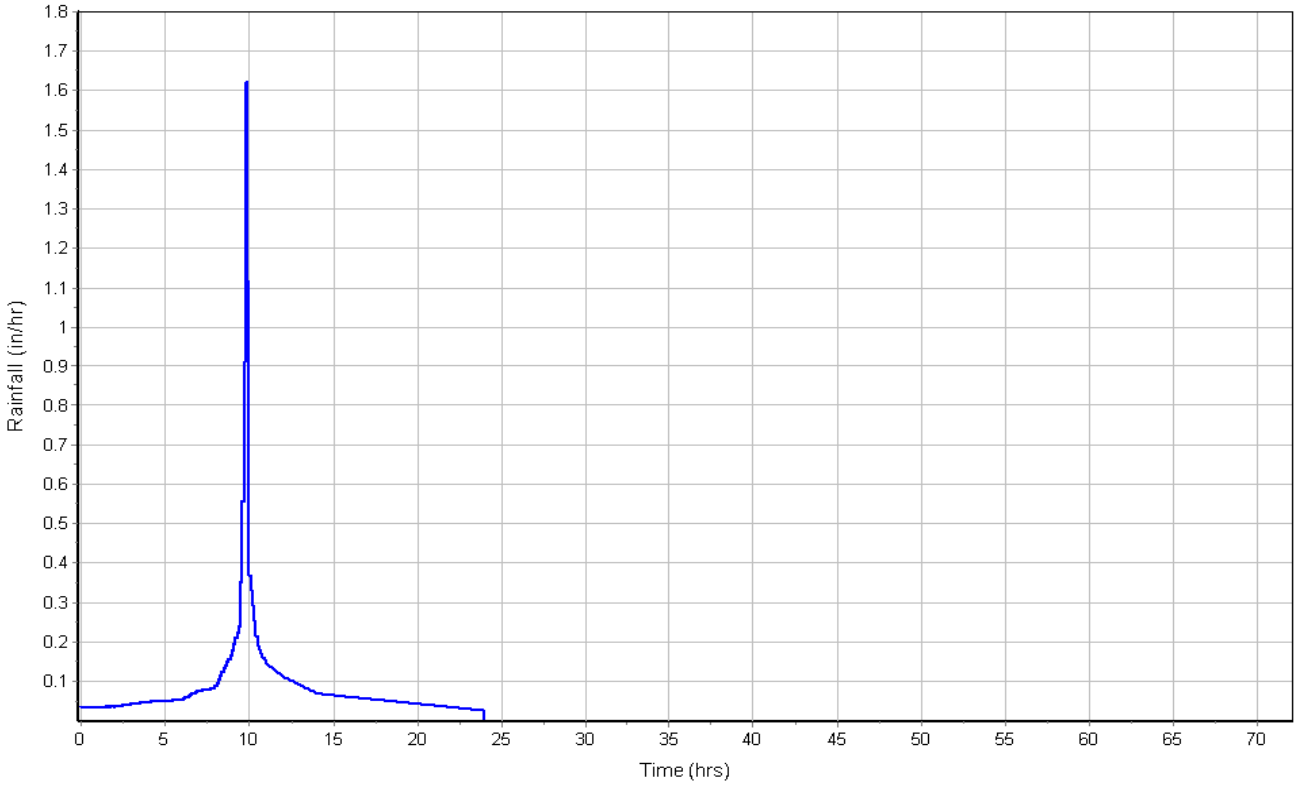
Total Rainfall (in)	2.15
Total Runoff (in)	1.92
Peak Runoff (cfs)	4.98
Weighted Curve Number	98.00
Time of Concentration (days hh:mm:ss)	0 00:10:00

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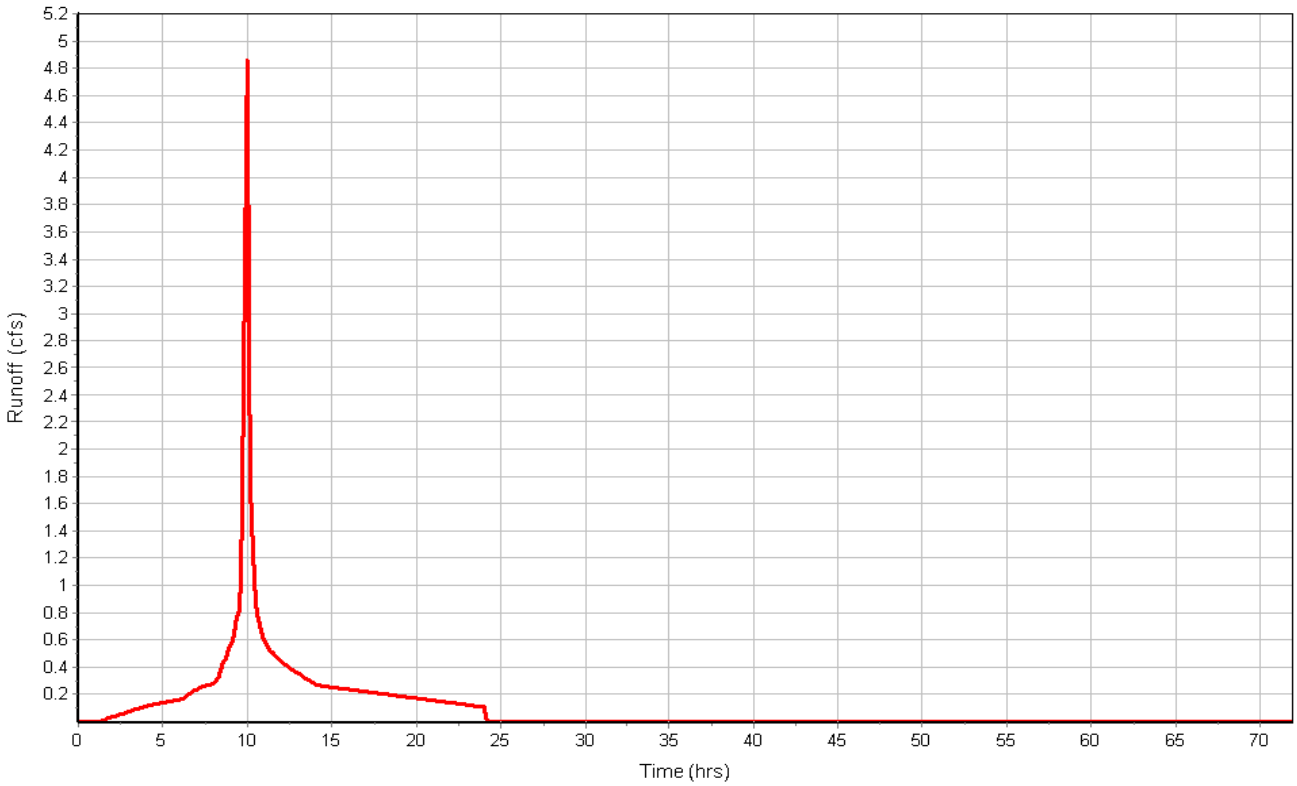
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Subbasin : A13

Rainfall Intensity Graph



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Subbasin : A3A

Input Data

Area (ac) 0.54
Weighted Curve Number 95.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	0.54	D	95.00
Composite Area & Weighted CN	0.54		95.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

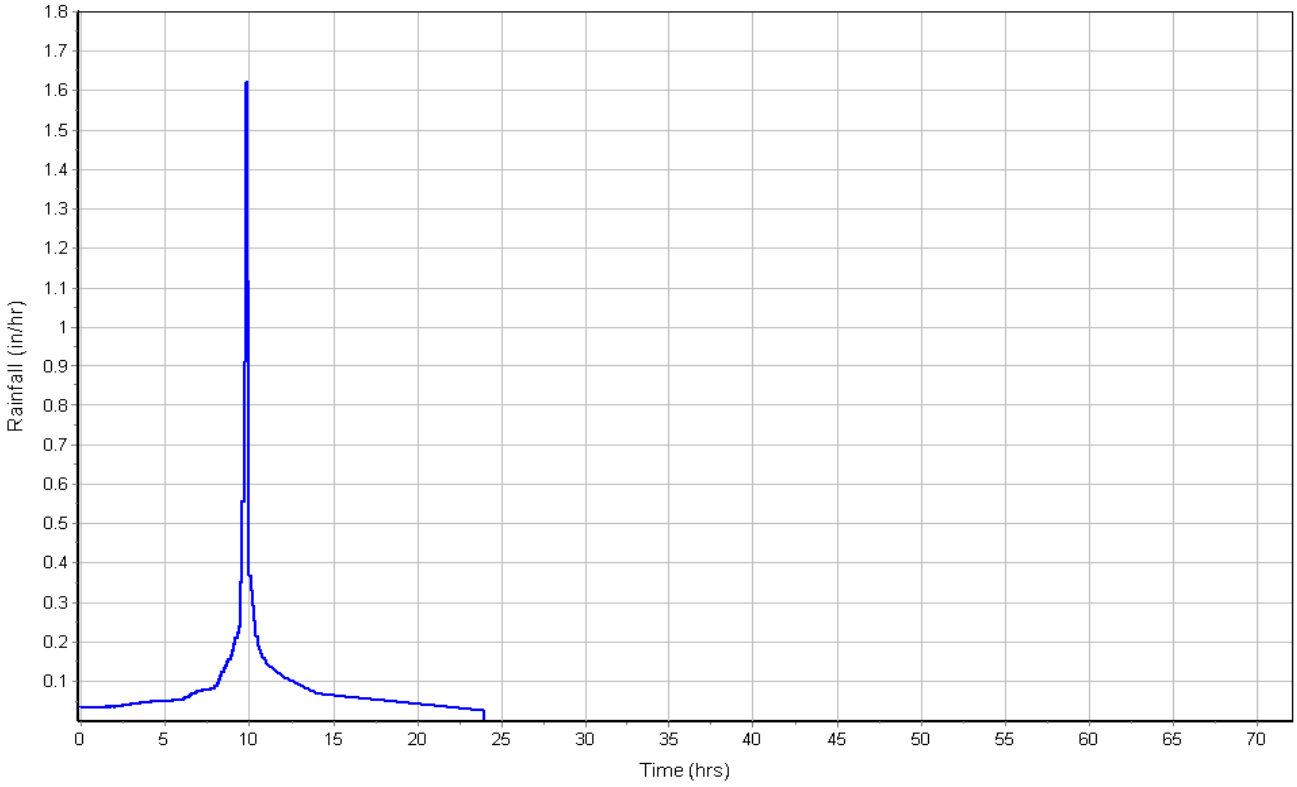
Total Rainfall (in) 2.15
Total Runoff (in) 1.63
Peak Runoff (cfs) 0.62
Weighted Curve Number 95.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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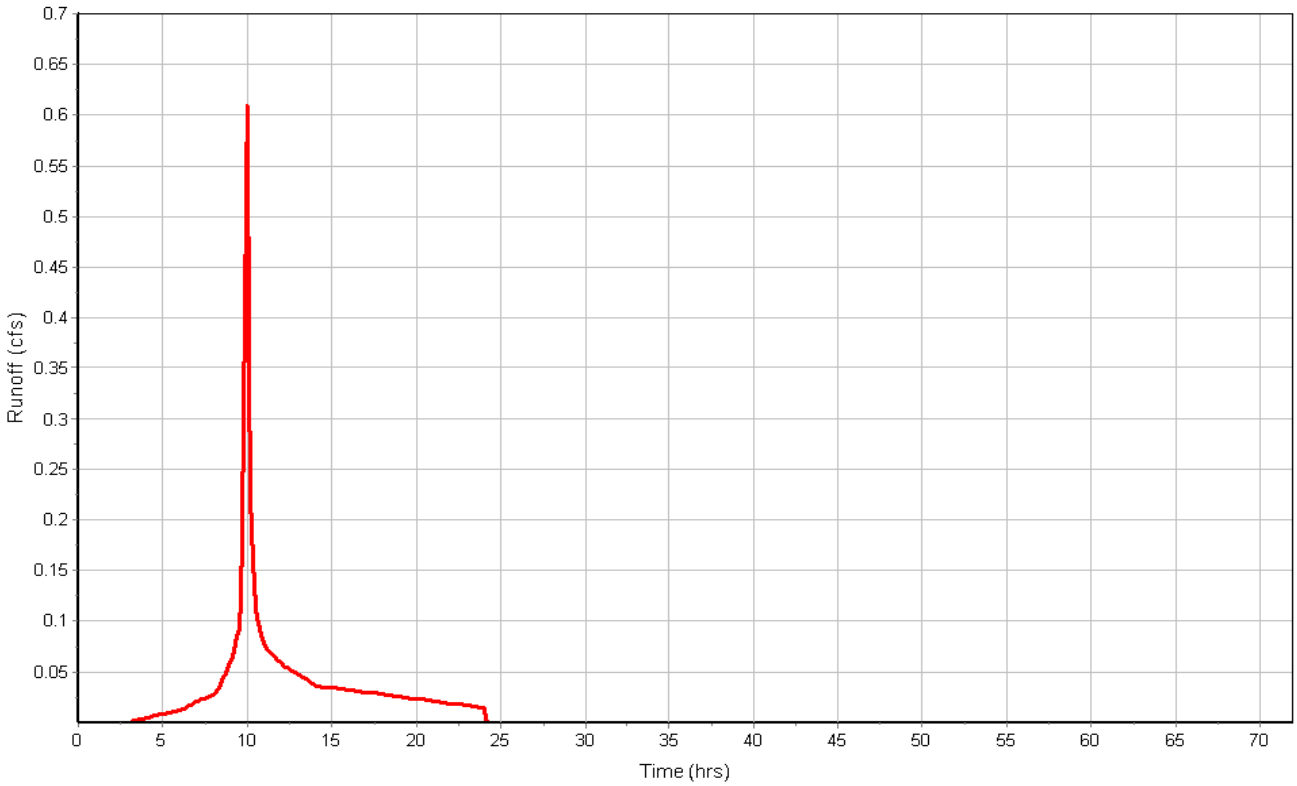
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Subbasin : A3A

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Subbasin : A3B

Input Data

Area (ac) 0.80
Weighted Curve Number 91.77
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	0.43	A	89.00
Urban commercial, 85% imp	0.37	D	95.00
Composite Area & Weighted CN	0.80		91.77

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

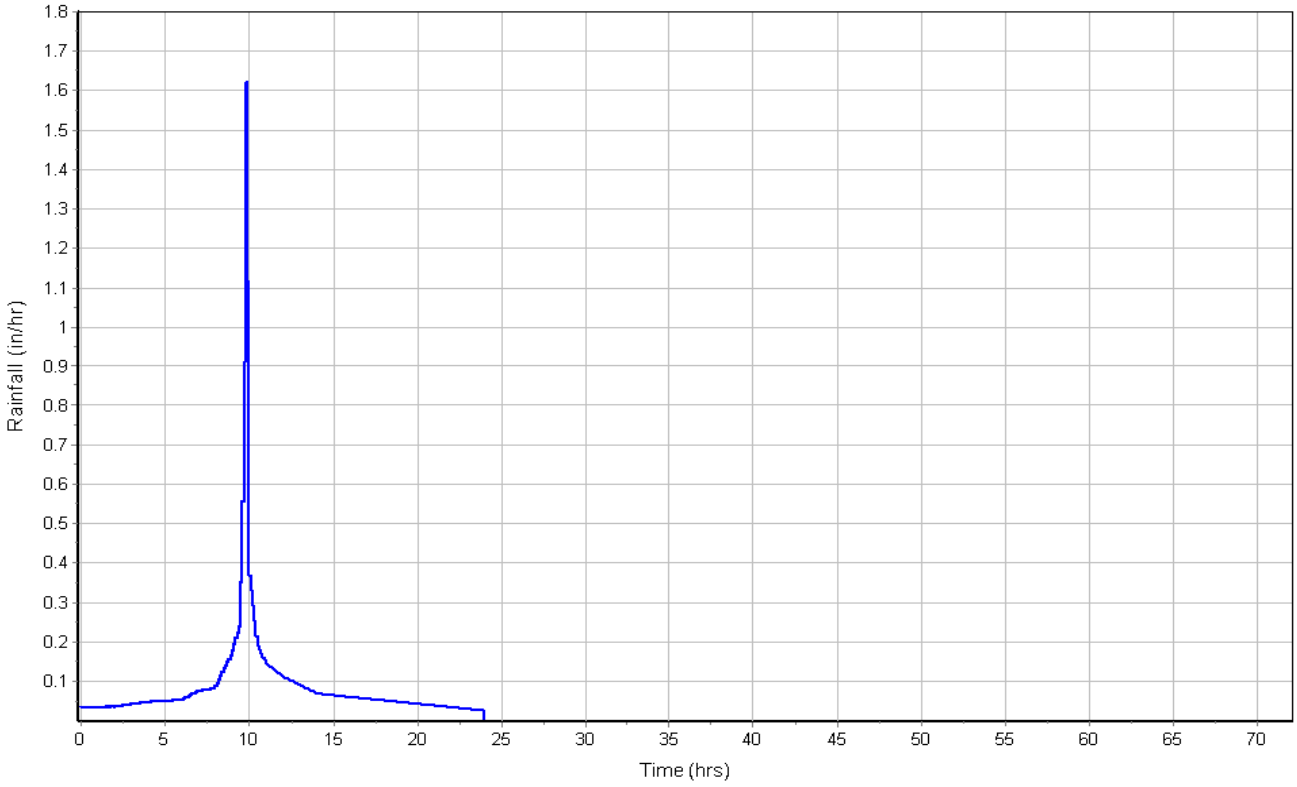
Total Rainfall (in) 2.15
Total Runoff (in) 1.35
Peak Runoff (cfs) 0.76
Weighted Curve Number 91.77
Time of Concentration (days hh:mm:ss) 0 00:10:00

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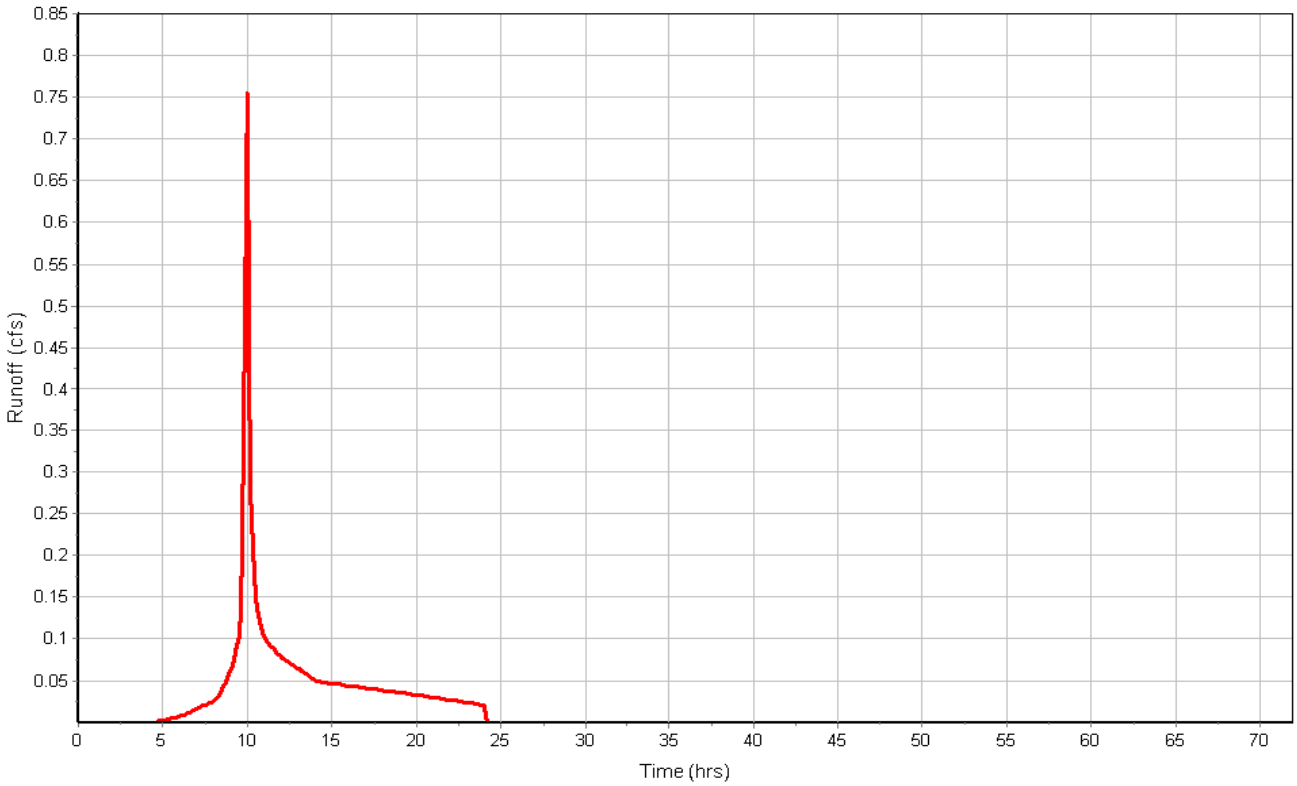
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Subbasin : A3B

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A3C

Input Data

Area (ac) 1.34
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	1.34	A	89.00
Composite Area & Weighted CN	1.34		89.00

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

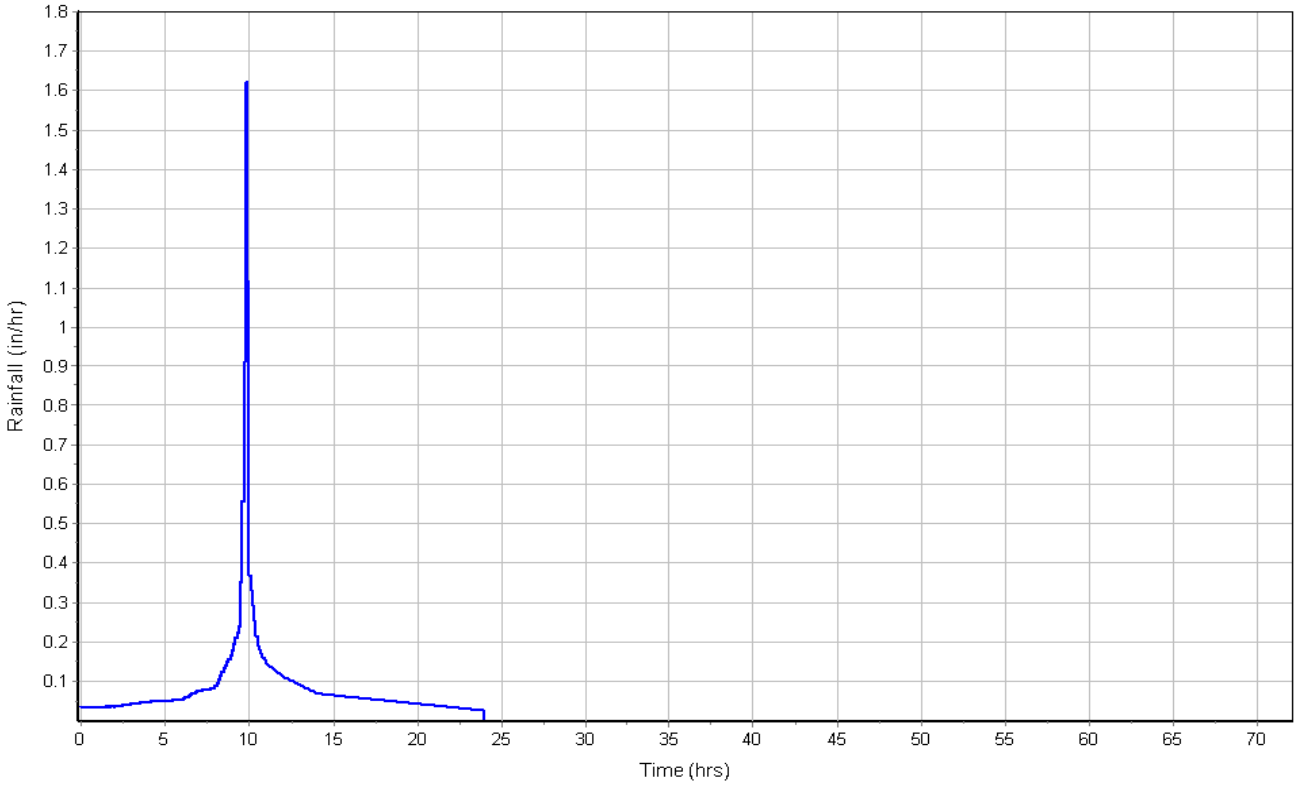
Total Rainfall (in) 2.15
Total Runoff (in) 1.15
Peak Runoff (cfs) 1.06
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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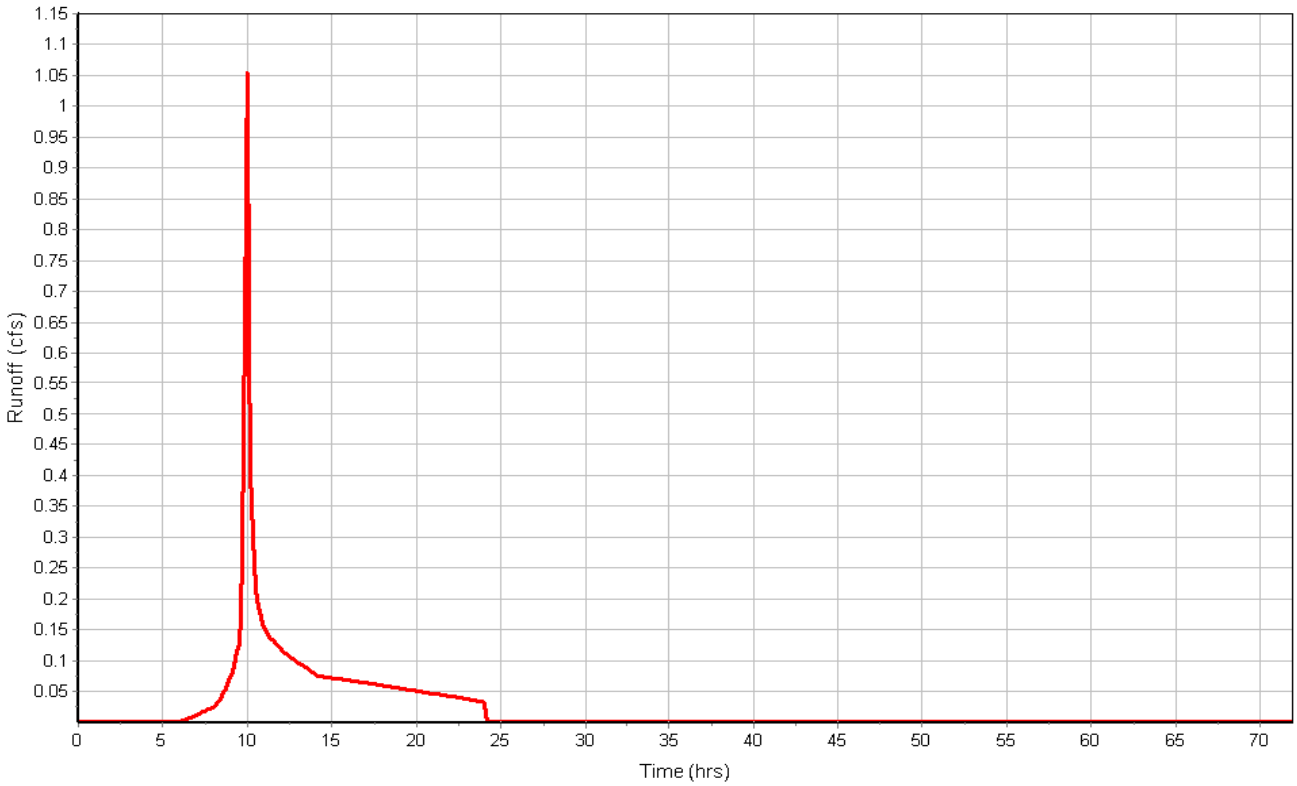
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Subbasin : A3C

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Subbasin : RVPREDEV

Input Data

Area (ac) 16.37
Weighted Curve Number 70.76
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Desert shrub range, Poor	11.29	A	63.00
Desert shrub range, Poor	5.08	D	88.00
Composite Area & Weighted CN	16.37		70.76

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.13	0.00	0.00
Flow Length (ft) :	1228	0.00	0.00
Slope (%) :	2.0	0.00	0.00
2 yr, 24 hr Rainfall (in) :	1.33	0.00	0.00
Velocity (ft/sec) :	0.20	0.00	0.00
Computed Flow Time (min) :	100.79	0.00	0.00

Total TOC (min) 100.79

Subbasin Runoff Results

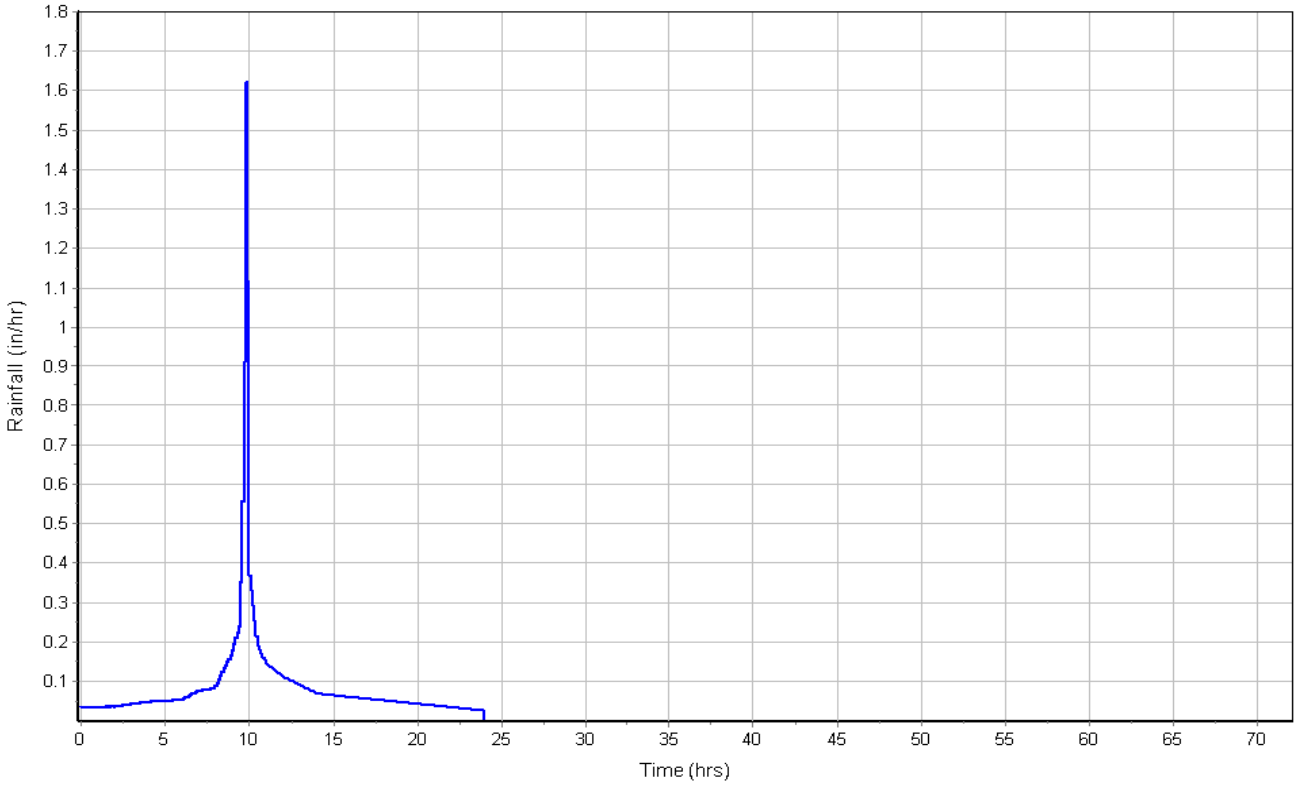
Total Rainfall (in) 2.15
Total Runoff (in) 0.32
Peak Runoff (cfs) 0.56
Weighted Curve Number 70.76
Time of Concentration (days hh:mm:ss) 0 01:40:47

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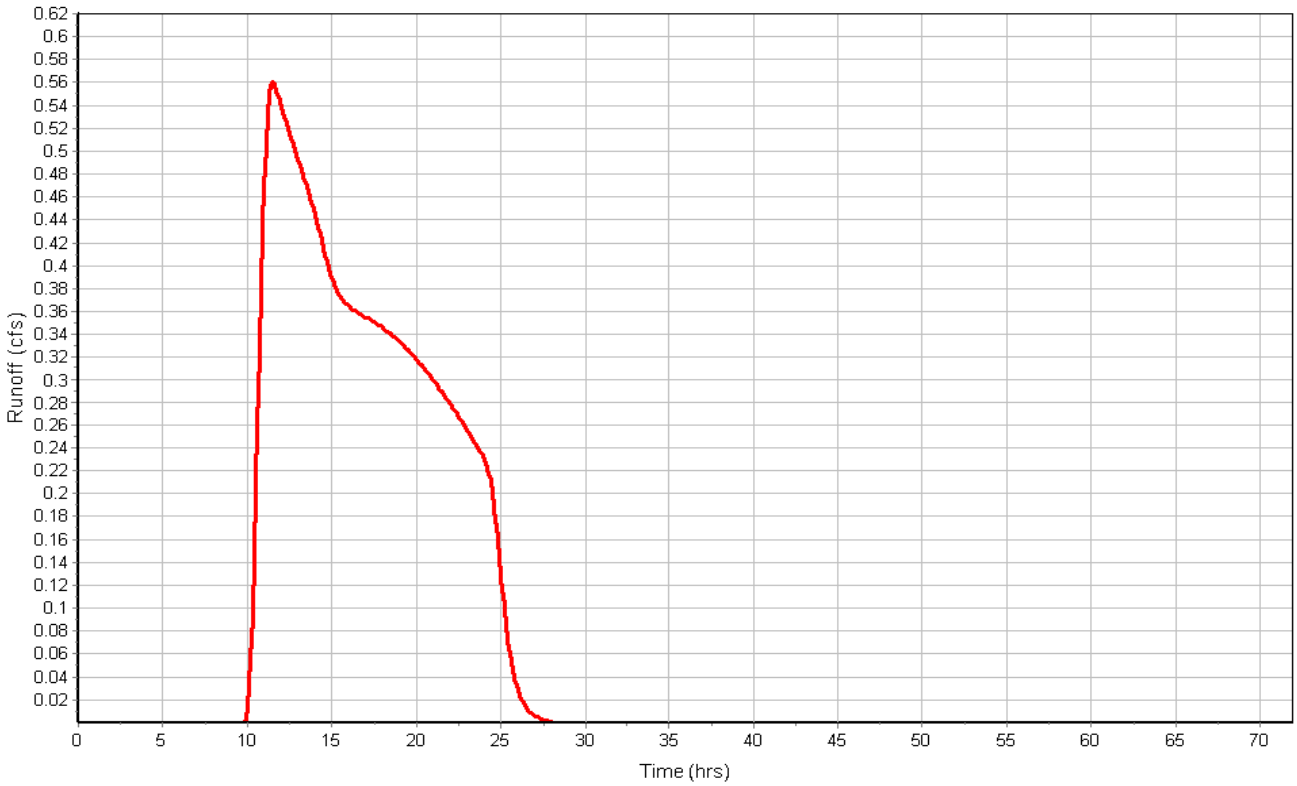
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Subbasin : RVPREDEV

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : TS-PREDEV

Input Data

Area (ac) 21.91
Weighted Curve Number 65.01
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Desert shrub range, Poor	1.76	D	88.00
Desert shrub range, Poor	20.14	A	63.00
Composite Area & Weighted CN	21.90		65.01

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.13	0.00	0.00
Flow Length (ft) :	1326	0.00	0.00
Slope (%) :	2.0	0.00	0.00
2 yr, 24 hr Rainfall (in) :	1.33	0.00	0.00
Velocity (ft/sec) :	0.21	0.00	0.00
Computed Flow Time (min) :	107.18	0.00	0.00

Total TOC (min) 107.18

Subbasin Runoff Results

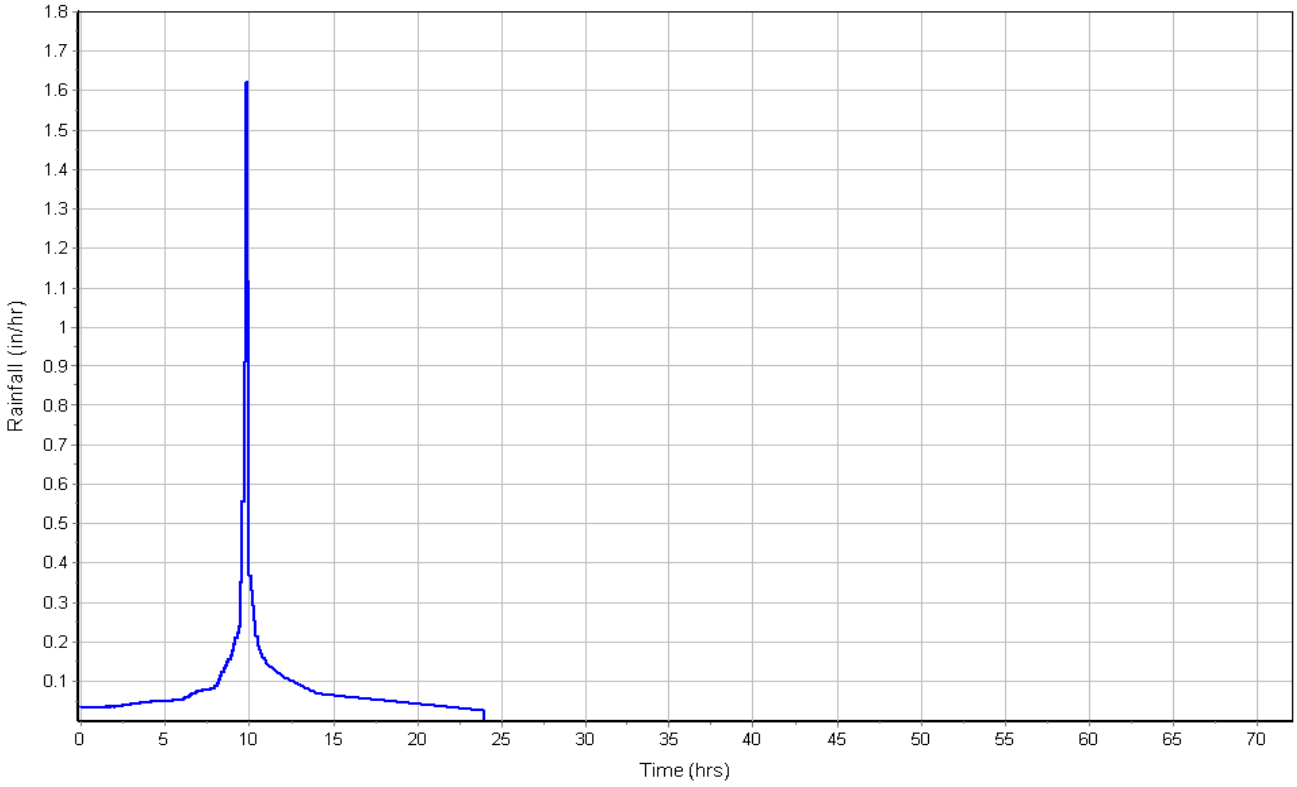
Total Rainfall (in) 2.15
Total Runoff (in) 0.18
Peak Runoff (cfs) 0.33
Weighted Curve Number 65.01
Time of Concentration (days hh:mm:ss) 0 01:47:11

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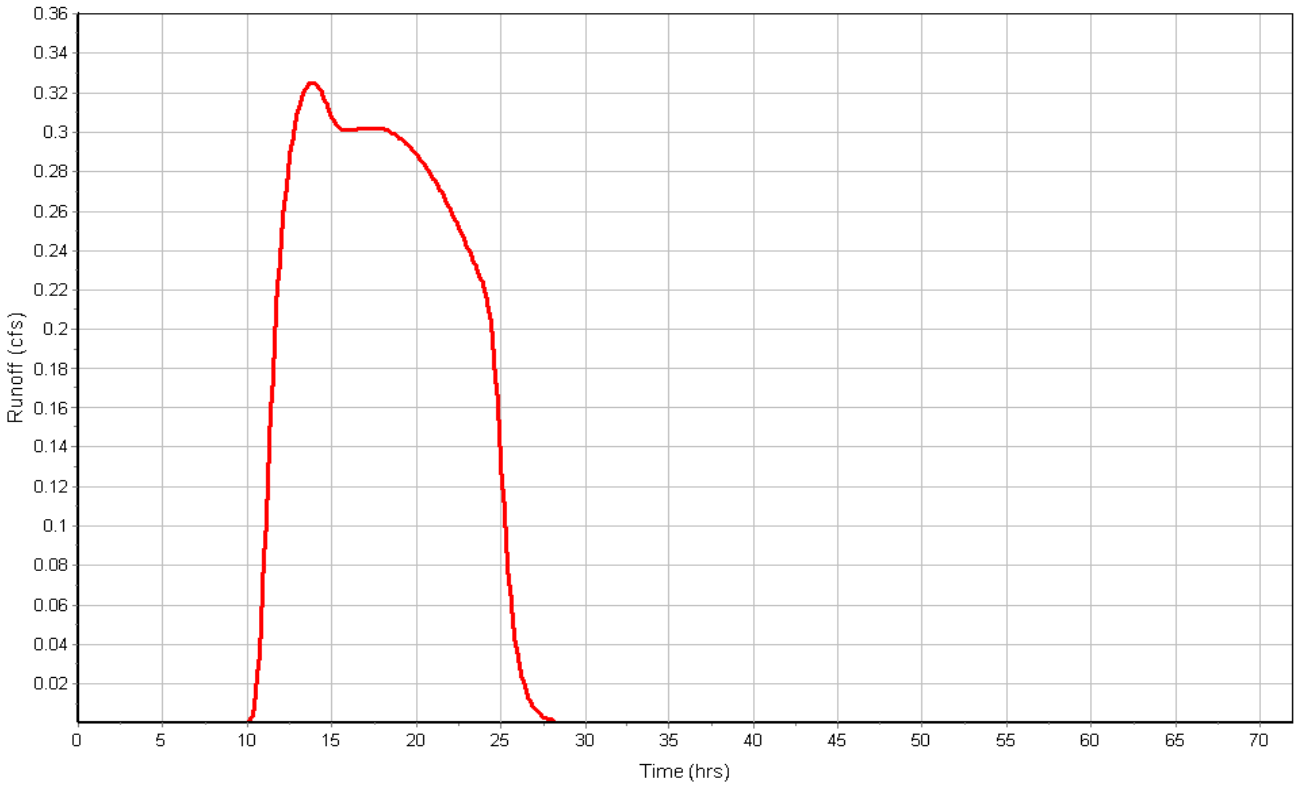
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Subbasin : TS-PREDEV

Rainfall Intensity Graph



Runoff Hydrograph



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Junction Input

SN	Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft²)	Minimum Pipe Cover (in)
1	J01	913.15	914.89	1.74	913.15	0.00	0.00	-914.89	0.00	8.88
2	J02	907.89	912.64	4.75	907.89	0.00	0.00	-912.64	0.00	45.00
3	J03	914.78	917.97	3.19	914.78	0.00	0.00	-917.97	0.00	25.08
4	J04	910.56	914.38	3.82	910.56	0.00	0.00	-914.38	0.00	32.64
5	J05	902.68	907.43	4.75	902.68	0.00	0.00	-907.43	0.00	45.00
6	J06	902.12	906.87	4.75	902.12	0.00	0.00	-906.87	0.00	45.00
7	J07	895.73	900.98	5.25	895.73	0.00	0.00	-900.98	0.00	51.00
8	J08	898.06	902.31	4.25	898.06	0.00	0.00	-902.31	0.00	39.00
9	J09	898.06	902.31	4.25	898.06	0.00	0.00	-902.31	0.00	39.00
10	J10	886.32	890.92	4.60	886.32	0.00	0.00	-890.92	0.00	33.00
11	O1	916.83	921.08	4.25	916.83	0.00	0.00	-921.08	0.00	0.00
12	O2	909.85	914.85	5.00	909.85	0.00	0.00	-914.85	0.00	0.00
13	O3A	915.23	921.60	6.37	915.23	0.00	0.00	-921.60	0.00	0.00
14	O3B	911.08	916.72	5.64	911.08	0.00	0.00	-916.72	0.00	0.00
15	O3C	906.09	912.24	6.15	906.09	0.00	0.00	-912.24	0.00	0.00
16	O4	902.98	906.80	3.82	902.98	0.00	0.00	-906.80	0.00	0.00
17	O5	907.79	912.12	4.33	907.79	0.00	0.00	-912.12	0.00	0.00
18	O6	901.23	905.48	4.25	901.23	0.00	0.00	-905.48	0.00	0.00
19	O7	888.27	901.23	12.96	888.27	0.00	0.00	-901.23	0.00	0.00
20	O8A	894.34	903.66	9.32	894.34	0.00	0.00	-903.66	0.00	0.00
21	SDMH01	916.48	921.15	4.67	916.48	0.00	0.00	-921.15	0.00	42.84
22	SDMH02	909.48	914.04	4.56	909.48	0.00	0.00	-914.04	0.00	41.52
23	SDMH03	907.54	914.70	7.16	907.54	0.00	0.00	-914.70	0.00	55.44
24	SDMH04	907.26	914.39	7.13	907.26	0.00	0.00	-914.39	0.00	72.36
25	SDMH05	907.53	914.79	7.26	907.53	0.00	0.00	-914.79	0.00	73.92
26	SDMH06	905.75	910.18	4.43	905.75	0.00	0.00	-910.18	0.00	41.16
27	SDMH07	905.33	909.05	3.72	905.33	0.00	0.00	-909.05	0.00	31.44
28	SDMH08	902.75	909.14	6.39	902.75	0.00	0.00	-909.14	0.00	57.48
29	SDMH09	901.44	907.96	6.52	901.44	0.00	0.00	-907.96	0.00	47.04
30	SDMH10	900.51	907.70	7.19	900.51	0.00	0.00	-907.70	0.00	67.08
31	SDMH11	894.85	901.92	7.07	894.85	0.00	0.00	-901.92	0.00	66.84
32	SDMH12	893.85	903.70	9.85	893.85	0.00	0.00	-903.70	0.00	100.20
33	SDMH13	897.40	902.76	5.36	897.40	0.00	0.00	-902.76	0.00	46.32
34	SDMH14	893.13	902.49	9.36	893.13	0.00	0.00	-902.49	0.00	71.04
35	SDMH15	886.12	891.87	5.75	886.12	0.00	0.00	-891.87	0.00	45.00
36	SDMH16	885.50	893.01	7.51	885.50	0.00	0.00	-893.01	0.00	63.48
37	SDMH17	884.58	889.78	5.20	884.58	0.00	0.00	-889.78	0.00	37.20

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Junction Results

SN	Element ID	Peak Inflow (cfs)	Peak Lateral Inflow (cfs)	Max HGL Elevation Attained (ft)	Max HGL Depth Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Average HGL Elevation Attained (ft)	Average HGL Depth Attained (ft)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	J01	0.00	0.00	913.15	0.00	0.00	1.74	913.15	0.00	0 00:00	0 00:00	0.00	0.00
2	J02	1.83	1.83	912.64	4.75	0.00	0.00	907.94	0.05	0 10:05	0 10:06	0.00	2.00
3	J03	0.76	0.76	915.24	0.46	0.00	2.73	914.89	0.11	0 10:06	0 00:00	0.00	0.00
4	J04	1.50	1.05	911.18	0.62	0.00	3.20	910.68	0.12	0 10:09	0 00:00	0.00	0.00
5	J05	0.35	0.35	902.98	0.30	0.00	4.45	902.70	0.02	0 10:06	0 00:00	0.00	0.00
6	J06	1.25	1.25	902.39	0.27	0.00	4.48	902.14	0.02	0 10:06	0 00:00	0.00	0.00
7	J07	2.23	2.23	896.20	0.47	0.00	4.78	895.76	0.03	0 10:06	0 00:00	0.00	0.00
8	J08	0.82	0.82	898.33	0.27	0.00	3.98	898.08	0.02	0 10:06	0 00:00	0.00	0.00
9	J09	1.18	1.18	898.39	0.33	0.00	3.92	898.08	0.02	0 10:06	0 00:00	0.00	0.00
10	J10	4.86	4.86	887.20	0.88	0.00	3.72	887.17	0.85	0 10:06	0 00:00	0.00	0.00
11	O1	0.00	0.00	916.83	0.00	0.00	4.25	916.83	0.00	0 00:00	0 00:00	0.00	0.00
12	O2	0.18	0.00	910.07	0.22	0.00	4.78	909.88	0.03	0 12:14	0 00:00	0.00	0.00
13	O3A	0.00	0.00	915.23	0.00	0.00	6.37	915.23	0.00	0 00:00	0 00:00	0.00	0.00
14	O3B	0.62	0.00	911.42	0.34	0.00	5.30	911.10	0.02	0 10:09	0 00:00	0.00	0.00
15	O3C	0.00	0.00	906.09	0.00	0.00	6.15	906.09	0.00	0 00:00	0 00:00	0.00	0.00
16	O4	0.82	0.00	903.38	0.40	0.00	3.42	903.00	0.02	0 10:07	0 00:00	0.00	0.00
17	O5	0.09	0.00	907.95	0.16	0.00	4.17	907.81	0.02	0 12:41	0 00:00	0.00	0.00
18	O6	1.76	0.00	901.55	0.32	0.00	3.93	901.25	0.02	0 10:08	0 00:00	0.00	0.00
19	O7	0.00	0.00	888.27	0.00	0.00	12.96	888.27	0.00	0 00:00	0 00:00	0.00	0.00
20	O8A	0.00	0.00	894.34	0.00	0.00	9.32	894.34	0.00	0 00:00	0 00:00	0.00	0.00
21	SDMH01	0.00	0.00	916.58	0.10	0.00	4.57	916.58	0.10	0 00:00	0 00:00	0.00	0.00
22	SDMH02	0.18	0.00	909.80	0.32	0.00	4.24	909.61	0.13	0 12:15	0 00:00	0.00	0.00
23	SDMH03	1.88	0.00	914.70	7.16	0.00	0.00	909.11	1.57	0 10:06	0 10:07	0.00	3.00
24	SDMH04	1.83	0.00	908.22	0.96	0.00	6.17	907.42	0.16	0 10:08	0 00:00	0.00	0.00
25	SDMH05	0.09	0.00	907.79	0.26	0.00	7.00	907.65	0.12	0 12:42	0 00:00	0.00	0.00
26	SDMH06	0.00	0.00	905.75	0.00	0.00	4.43	905.75	0.00	0 00:00	0 00:00	0.00	0.00
27	SDMH07	0.00	0.00	905.43	0.10	0.00	3.62	905.43	0.10	0 00:00	0 00:00	0.00	0.00
28	SDMH08	0.82	0.00	903.25	0.50	0.00	5.89	902.87	0.12	0 10:07	0 00:00	0.00	0.00
29	SDMH09	1.14	0.00	902.94	1.50	0.00	5.02	902.62	1.18	0 10:08	0 00:00	0.00	0.00
30	SDMH10	2.18	0.00	901.08	0.57	0.00	6.62	900.64	0.13	0 10:09	0 00:00	0.00	0.00
31	SDMH11	2.22	0.00	895.50	0.65	0.00	6.42	894.98	0.13	0 10:06	0 00:00	0.00	0.00
32	SDMH12	2.19	0.00	894.49	0.64	0.00	9.21	893.90	0.05	0 10:07	0 00:00	0.00	0.00
33	SDMH13	2.01	0.00	898.07	0.67	0.00	4.69	897.76	0.36	0 10:06	0 00:00	0.00	0.00
34	SDMH14	4.09	0.00	895.42	2.29	0.00	7.07	895.10	1.97	0 10:06	0 00:00	0.00	0.00
35	SDMH15	8.70	0.00	887.55	1.43	0.00	4.32	886.28	0.16	0 10:06	0 00:00	0.00	0.00
36	SDMH16	8.68	0.00	887.15	1.65	0.00	5.86	885.81	0.31	0 10:07	0 00:00	0.00	0.00
37	SDMH17	8.62	0.00	885.99	1.41	0.00	3.79	884.77	0.19	0 10:08	0 00:00	0.00	0.00

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Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
1	P01	102.69	916.83	0.00	916.58	0.10	0.25	0.2400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
2	P02	198.58	916.48	0.00	913.15	0.00	3.33	1.6800	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
3	P03	18.00	913.15	0.00	912.85	1.06	0.30	1.6700	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
4	P04	111.00	909.85	0.00	909.58	0.10	0.27	0.2400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
5	P05	160.94	909.48	0.00	909.08	1.54	0.40	0.2500	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
6	P06	99.00	907.89	0.00	907.64	0.10	0.25	0.2500	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
7	P07	74.09	907.54	0.00	907.36	0.10	0.18	0.2400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
8	P08	66.52	907.79	0.00	907.63	0.10	0.16	0.2400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
9	P09	70.26	907.53	0.00	907.36	0.10	0.17	0.2400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
10	P10	92.00	907.26	0.00	903.48	0.56	3.78	4.1100	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
11	P11	74.00	901.23	0.00	897.49	1.72	3.74	5.0500	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
12	P12	141.00	915.23	0.00	914.88	0.10	0.35	0.2500	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
13	P13	25.00	914.78	0.00	914.72	0.56	0.06	0.2400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
14	P14	83.00	911.08	0.00	910.66	0.10	0.42	0.5100	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
15	P15	23.00	910.56	0.00	910.45	1.06	0.11	0.4800	CIRCULAR	12.000	12.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
16	P16	102.00	906.09	0.00	905.75	0.00	0.34	0.3300	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
17	P17	99.00	905.75	0.00	905.43	0.10	0.32	0.3200	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
18	P18	31.00	905.33	0.00	905.23	1.06	0.10	0.3200	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
19	P19	50.02	902.98	0.00	902.85	0.10	0.13	0.2600	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
20	P20	83.99	902.75	0.00	902.54	1.10	0.21	0.2500	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
21	P21	30.00	902.68	0.00	902.60	1.16	0.08	0.2700	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
22	P22	331.00	901.44	0.00	900.61	0.10	0.83	0.2500	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
23	P23	32.00	902.12	0.00	900.61	0.10	1.51	4.7200	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
24	P24	89.00	900.51	0.00	897.23	1.46	3.28	3.6900	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
25	P25	62.00	888.27	0.00	887.17	0.85	1.10	1.7700	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
26	P26	130.00	894.34	0.00	893.85	0.00	0.49	0.3800	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
27	P27	39.00	895.73	0.00	894.95	0.10	0.78	2.0000	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
28	P28	333.48	894.85	0.00	893.85	0.00	1.00	0.3000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
29	P29	208.00	893.85	0.00	893.23	0.10	0.62	0.3000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
30	P30	16.00	898.06	0.00	897.74	0.34	0.32	2.0000	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
31	P31	28.00	898.06	0.00	897.50	0.10	0.56	2.0000	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
32	P32	93.00	897.40	0.00	895.07	1.94	2.33	2.5100	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
33	P33	745.00	893.13	0.00	886.22	0.10	6.91	0.9300	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
34	P34	39.00	886.32	0.00	886.12	0.00	0.20	0.5100	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
35	P35	200.04	886.12	0.00	885.72	0.22	0.40	0.2000	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
36	P36	328.00	885.50	0.00	884.68	0.10	0.82	0.2500	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
37	P37	63.00	884.58	0.00	884.42	0.00	0.16	0.2500	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1

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Pipe Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	P01	0.00	0 00:00	1.76	0.00	0.00		0.00	0.00	0.00		Calculated
2	P02	0.00	0 00:00	4.61	0.00	0.00		0.00	0.00	0.00		Calculated
3	P03	0.00	0 00:00	4.60	0.00	0.00		0.00	0.00	0.00		Calculated
4	P04	0.18	0 12:15	1.76	0.10	1.45	1.28	0.22	0.22	0.00		Calculated
5	P05	0.18	0 12:16	1.78	0.10	1.46	1.84	0.22	0.22	0.00		Calculated
6	P06	1.88	0 10:06	1.79	1.05	2.65	0.62	0.91	0.91	0.00		> CAPACITY
7	P07	1.83	0 10:08	1.76	1.04	2.62	0.47	0.88	0.92	0.00		> CAPACITY
8	P08	0.09	0 12:42	1.75	0.05	1.18	0.94	0.16	0.16	0.00		Calculated
9	P09	0.09	0 12:43	1.75	0.05	1.18	0.99	0.16	0.16	0.00		Calculated
10	P10	1.82	0 10:07	7.22	0.25	7.69	0.20	0.32	0.34	0.00		Calculated
11	P11	1.76	0 10:08	8.01	0.22	8.18	0.15	0.31	0.32	0.00		Calculated
12	P12	0.00	0 00:00	1.78	0.00	0.00		0.00	0.00	0.00		Calculated
13	P13	0.75	0 10:06	1.75	0.43	2.14	0.19	0.46	0.46	0.00		Calculated
14	P14	0.62	0 10:10	2.53	0.24	2.67	0.52	0.32	0.34	0.00		Calculated
15	P15	1.50	0 10:09	2.14	0.70	2.94	0.13	0.57	0.62	0.00		Calculated
16	P16	0.00	0 00:00	2.06	0.00	0.00		0.00	0.00	0.00		Calculated
17	P17	0.00	0 00:00	2.03	0.00	0.00		0.00	0.00	0.00		Calculated
18	P18	0.00	0 00:00	2.02	0.00	0.00		0.00	0.00	0.00		Calculated
19	P19	0.82	0 10:07	5.36	0.15	2.19	0.38	0.38	0.26	0.00		Calculated
20	P20	0.82	0 10:08	5.25	0.16	2.17	0.65	0.38	0.27	0.00		Calculated
21	P21	0.35	0 10:06	1.84	0.19	1.81	0.28	0.30	0.30	0.00		Calculated
22	P22	1.11	0 10:09	5.26	0.21	2.40	2.30	0.44	0.31	0.00		Calculated
23	P23	1.25	0 10:06	7.74	0.16	7.23	0.07	0.27	0.27	0.00		Calculated
24	P24	2.18	0 10:09	20.17	0.11	7.46	0.20	0.31	0.22	0.00		Calculated
25	P25	0.00	0 00:00	4.75	0.00	0.00		0.00	0.00	0.00		Calculated
26	P26	0.00	0 00:00	2.19	0.00	0.00		0.00	0.00	0.00		Calculated
27	P27	2.22	0 10:06	5.04	0.44	6.21	0.10	0.47	0.47	0.00		Calculated
28	P28	2.19	0 10:07	5.75	0.38	3.08	1.80	0.64	0.43	0.00		Calculated
29	P29	2.17	0 10:07	5.73	0.38	3.04	1.14	0.63	0.43	0.00		Calculated
30	P30	1.18	0 10:06	5.04	0.23	5.24	0.05	0.33	0.33	0.00		Calculated
31	P31	0.82	0 10:06	5.04	0.16	4.72	0.10	0.27	0.27	0.00		Calculated
32	P32	2.00	0 10:06	16.63	0.12	6.35	0.24	0.35	0.23	0.00		Calculated
33	P33	4.04	0 10:08	10.12	0.40	5.51	2.25	0.65	0.44	0.00		Calculated
34	P34	4.85	0 10:06	7.52	0.64	4.52	0.14	0.88	0.58	0.00		Calculated
35	P35	8.68	0 10:07	10.12	0.86	3.64	0.92	1.42	0.71	0.00		Calculated
36	P36	8.62	0 10:08	11.31	0.76	4.00	1.37	1.28	0.65	0.00		Calculated
37	P37	8.61	0 10:08	11.40	0.76	3.99	0.26	1.25	0.65	0.00		Calculated

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Storage Nodes

Storage Node : BR1

Input Data

Invert Elevation (ft)	918.02
Max (Rim) Elevation (ft)	922.46
Max (Rim) Offset (ft)	4.44
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-918.02
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

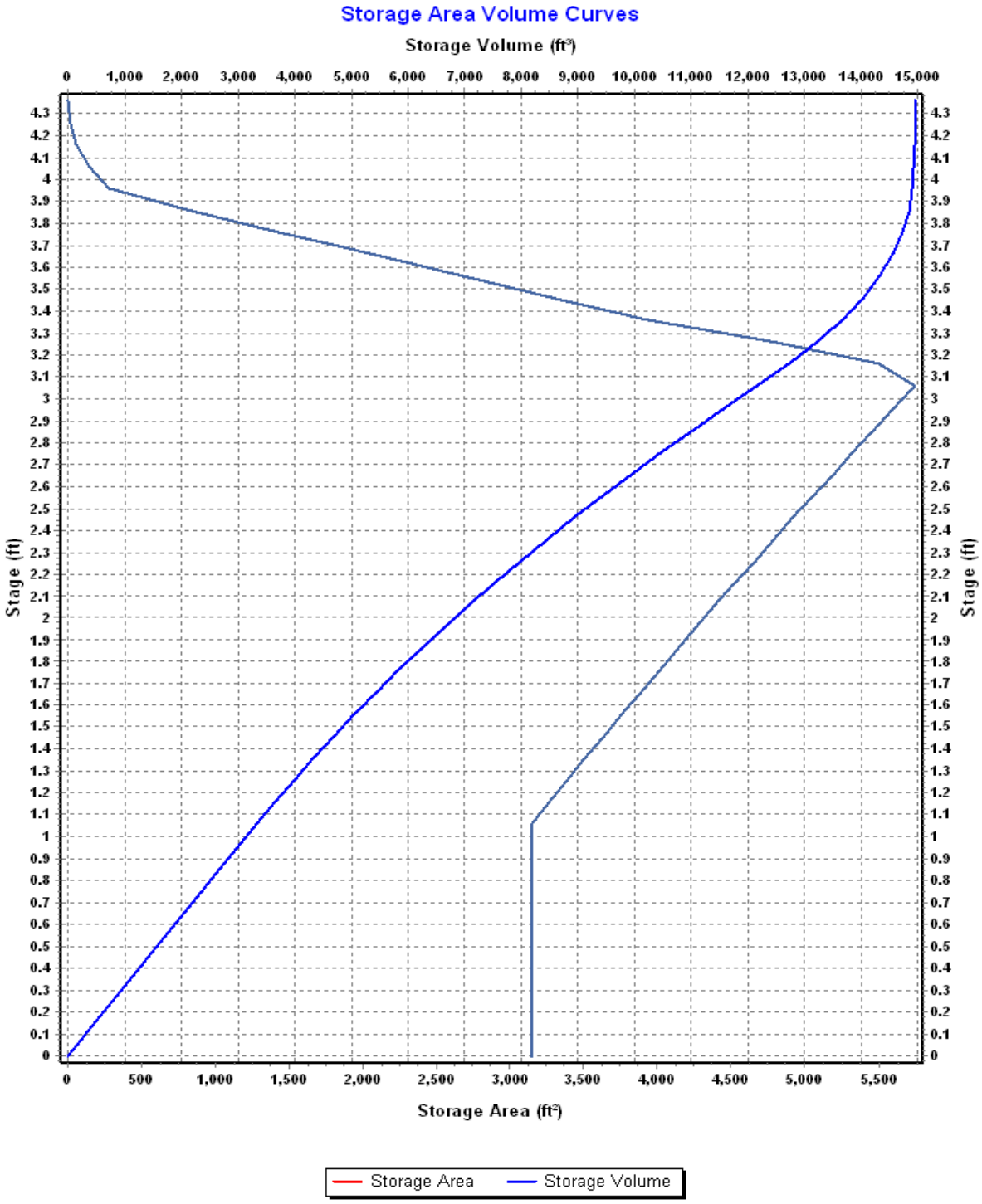
Exfiltration Rate (in/hr)	3.6500

Storage Area Volume Curves

Storage Curve : BR1

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	3141	0.000
1.06	3141.89	3329.93
1.16	3262.83	3650.17
1.26	3385.2	3982.57
1.36	3508.5	4327.26
1.46	3632.69	4684.32
1.56	3757.77	5053.84
1.66	3883.75	5435.92
1.76	4010.63	5830.64
1.86	4138.42	6238.09
1.96	4267.16	6658.37
2.06	4396.87	7091.57
2.16	4527.56	7537.79
2.26	4659.22	7997.13
2.36	4791.85	8469.68
2.46	4925.44	8955.54
2.56	5060	9454.81
2.66	5195.53	9967.59
2.76	5332.02	10493.97
2.86	5469.48	11034.05
2.96	5607.91	11587.92
3.06	5744.57	12155.54
3.16	5498	12717.67
3.26	4752.13	13230.18
3.36	3925.58	13664.07
3.46	3303.77	14025.54
3.56	2676.06	14324.53
3.66	2043.84	14560.53
3.76	1427.82	14734.11
3.86	837.63	14847.38
3.96	281.34	14903.33
4.06	149.84	14924.89
4.16	60.48	14935.41
4.26	15.53	14939.21
4.36	0.9	14940.03

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Storage Node : BR1 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR1	Bottom	CIRCULAR	No	24.00			920.58	0.61

Output Summary Results

Peak Inflow (cfs)	0.81
Peak Lateral Inflow (cfs)	0.81
Peak Outflow (cfs)	0.00
Peak Exfiltration Flow Rate (cfm)	15.92
Max HGL Elevation Attained (ft)	918.17
Max HGL Depth Attained (ft)	0.15
Average HGL Elevation Attained (ft)	918.02
Average HGL Depth Attained (ft)	0
Time of Max HGL Occurrence (days hh:mm)	0 10:22
Total Exfiltration Volume (1000-ft³)	1.529
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR2

Input Data

Invert Elevation (ft)	911.79
Max (Rim) Elevation (ft)	915.12
Max (Rim) Offset (ft)	3.33
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-911.79
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

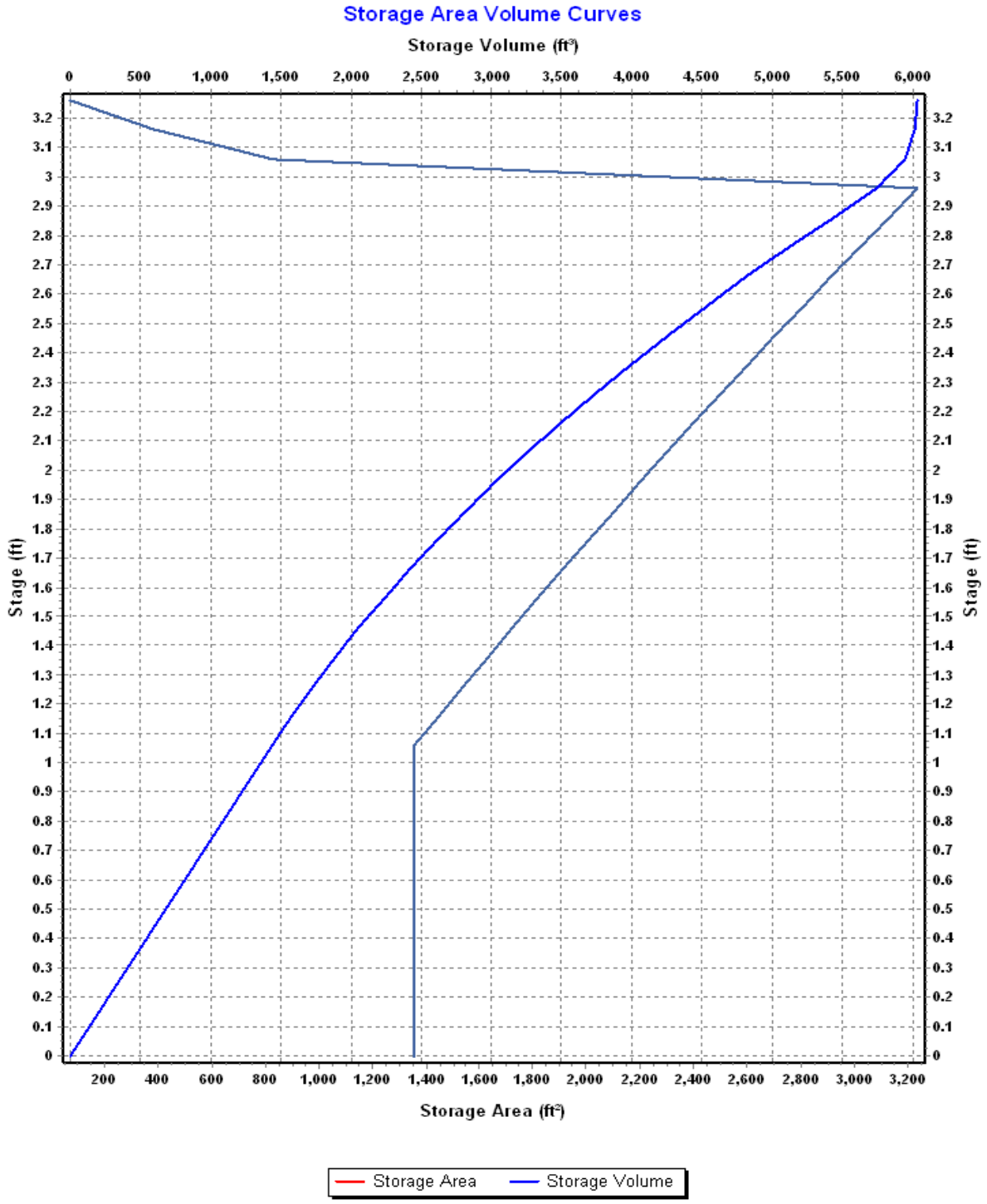
Exfiltration Rate (in/hr)	0.2500

Storage Area Volume Curves

Storage Curve : BR2

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	1355	0.000
1.06	1355.93	1436.79
1.16	1445.99	1576.89
1.26	1537.04	1726.04
1.36	1629.07	1884.35
1.46	1722.08	2051.91
1.56	1816.08	2228.82
1.66	1911.06	2415.18
1.76	2007.02	2611.08
1.86	2103.96	2816.63
1.96	2201.89	3031.92
2.06	2300.8	3257.05
2.16	2400.7	3492.13
2.26	2501.57	3737.24
2.36	2603.43	3992.49
2.46	2706.28	4257.98
2.56	2810.1	4533.80
2.66	2914.91	4820.05
2.76	3020.7	5116.83
2.86	3127.48	5424.24
2.96	3235.24	5742.38
3.06	833.86	5945.84
3.16	385.92	6006.83
3.26	72.94	6029.77

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Storage Node : BR2 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR2	Bottom	CIRCULAR	No	24.00			914.35	0.61

Output Summary Results

Peak Inflow (cfs)	1.82
Peak Lateral Inflow (cfs)	1.82
Peak Outflow (cfs)	0.18
Peak Exfiltration Flow Rate (cfm)	0.99
Max HGL Elevation Attained (ft)	914.39
Max HGL Depth Attained (ft)	2.6
Average HGL Elevation Attained (ft)	913.67
Average HGL Depth Attained (ft)	1.88
Time of Max HGL Occurrence (days hh:mm)	0 12:14
Total Exfiltration Volume (1000-ft³)	3.234
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR3A

Input Data

Invert Elevation (ft)	918.54
Max (Rim) Elevation (ft)	922.87
Max (Rim) Offset (ft)	4.33
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-918.54
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

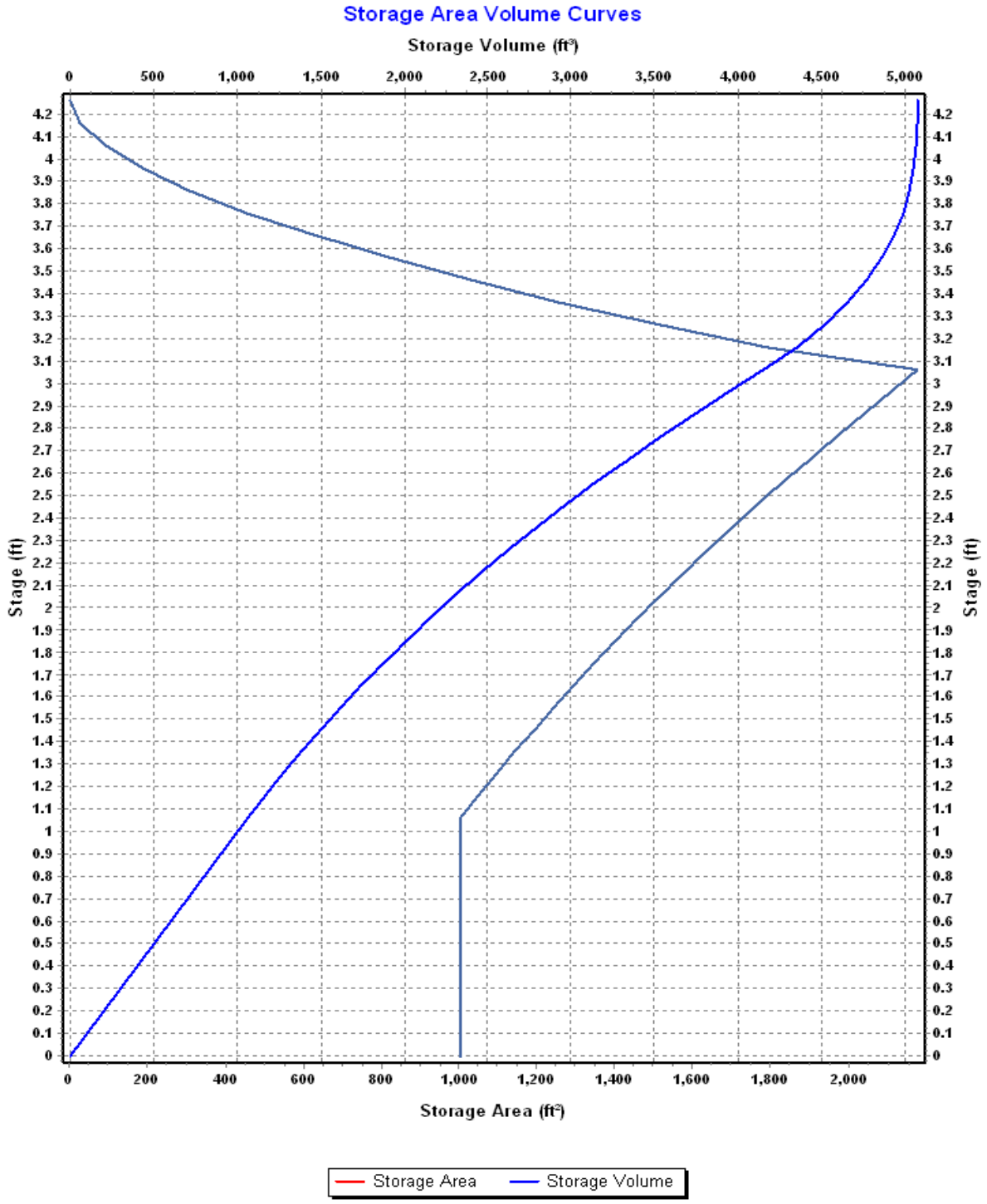
Exfiltration Rate (in/hr)	1.0000

Storage Area Volume Curves

Storage Curve : BR3A

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	1003	0.000
1.06	1003.24	1063.31
1.16	1049.23	1165.93
1.26	1096.69	1273.23
1.36	1145.31	1385.33
1.46	1195.09	1502.35
1.56	1246.03	1624.41
1.66	1298.19	1751.62
1.76	1351.67	1884.11
1.86	1406.49	2022.02
1.96	1462.89	2165.49
2.06	1520.96	2314.68
2.16	1580.66	2469.76
2.26	1641.67	2630.88
2.36	1704.02	2798.16
2.46	1767.77	2971.75
2.56	1832.91	3151.78
2.66	1899.44	3338.40
2.76	1967.37	3531.74
2.86	2036.69	3731.94
2.96	2107.4	3939.14
3.06	2176.53	4153.34
3.16	1787.16	4351.52
3.26	1515.95	4516.68
3.36	1252.64	4655.11
3.46	1029.78	4769.23
3.56	818.92	4861.67
3.66	625.41	4933.89
3.76	455.66	4987.94
3.86	307.6	5026.10
3.96	187.02	5050.83
4.06	94.69	5064.92
4.16	26.99	5071.00
4.26	2.5	5072.47

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Storage Node : BR3A (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR3A	Bottom	CIRCULAR	No	24.00			921.10	0.61

Output Summary Results

Peak Inflow (cfs)	0.61
Peak Lateral Inflow (cfs)	0.61
Peak Outflow (cfs)	0.00
Peak Exfiltration Flow Rate (cfm)	1.69
Max HGL Elevation Attained (ft)	920.04
Max HGL Depth Attained (ft)	1.5
Average HGL Elevation Attained (ft)	918.98
Average HGL Depth Attained (ft)	0.44
Time of Max HGL Occurrence (days hh:mm)	0 17:53
Total Exfiltration Volume (1000-ft³)	3.019
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR3B

Input Data

Invert Elevation (ft)	914.16
Max (Rim) Elevation (ft)	917.97
Max (Rim) Offset (ft)	3.81
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-914.16
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

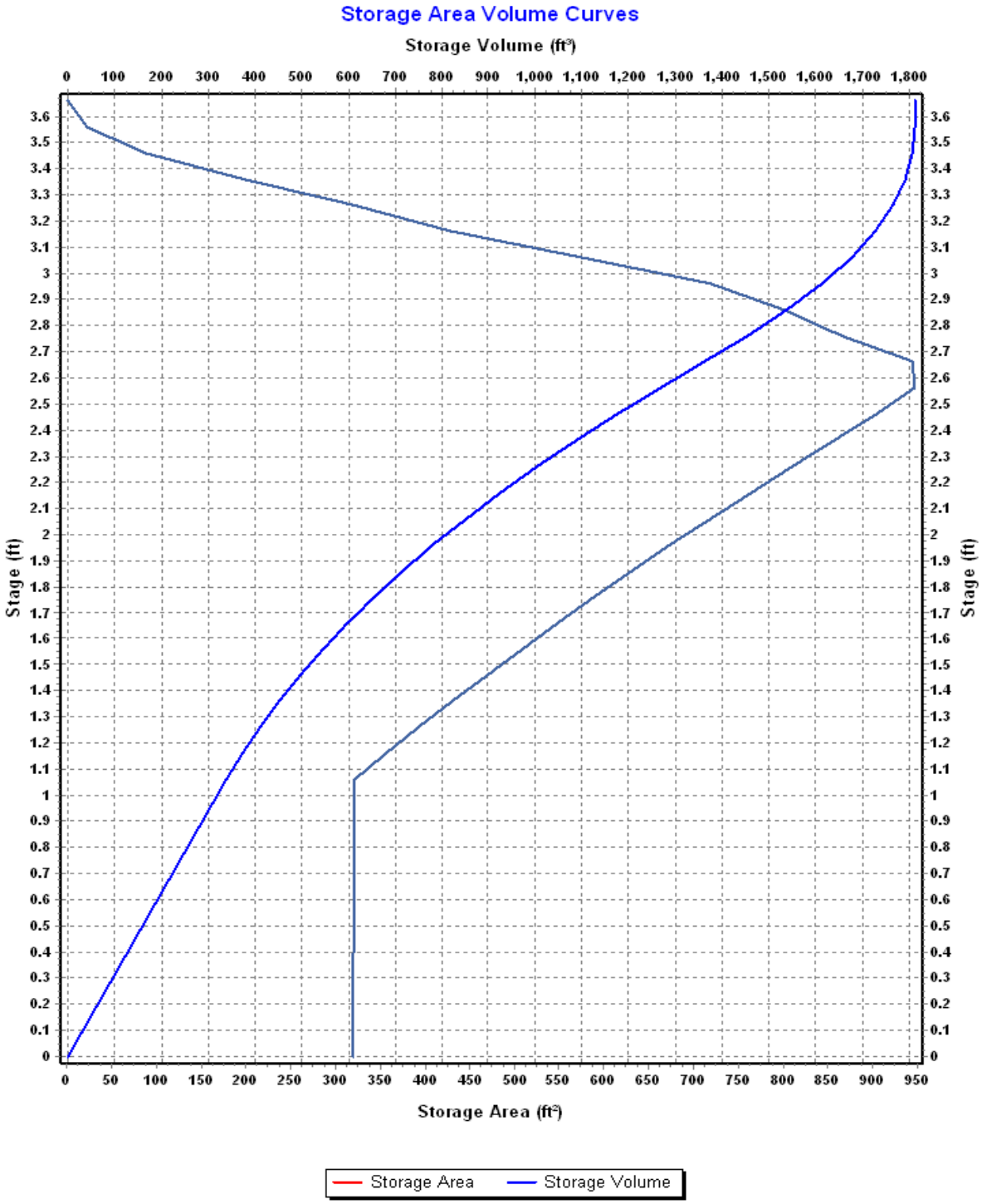
Exfiltration Rate (in/hr)	1.0000

Storage Area Volume Curves

Storage Curve : BR3B

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	320	0.000
1.06	320.79	339.62
1.16	356.4	373.48
1.26	392.93	410.95
1.36	430.38	452.12
1.46	468.77	497.08
1.56	508.1	545.92
1.66	548.38	598.74
1.76	589.6	655.64
1.86	631.77	716.71
1.96	674.88	782.04
2.06	718.94	851.73
2.16	763.94	925.87
2.26	809.88	1004.56
2.36	856.77	1087.89
2.46	904.6	1175.96
2.56	946.68	1268.52
2.66	943.54	1363.03
2.76	865.89	1453.50
2.86	800.8	1536.83
2.96	718.52	1612.80
3.06	573.23	1677.39
3.16	427.46	1727.42
3.26	317.49	1764.67
3.36	199.57	1790.52
3.46	88.48	1804.92
3.56	23.36	1810.51
3.66	1.54	1811.76

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Storage Node : BR3B (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR3B	Bottom	CIRCULAR	No	24.00			916.22	0.61

Output Summary Results

Peak Inflow (cfs)	0.75
Peak Lateral Inflow (cfs)	0.00
Peak Outflow (cfs)	0.62
Peak Exfiltration Flow Rate (cfm)	1.06
Max HGL Elevation Attained (ft)	916.32
Max HGL Depth Attained (ft)	2.16
Average HGL Elevation Attained (ft)	914.94
Average HGL Depth Attained (ft)	0.78
Time of Max HGL Occurrence (days hh:mm)	0 10:09
Total Exfiltration Volume (1000-ft³)	1.820
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR3C

Input Data

Invert Elevation (ft)	909.39
Max (Rim) Elevation (ft)	912.45
Max (Rim) Offset (ft)	3.06
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-909.39
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

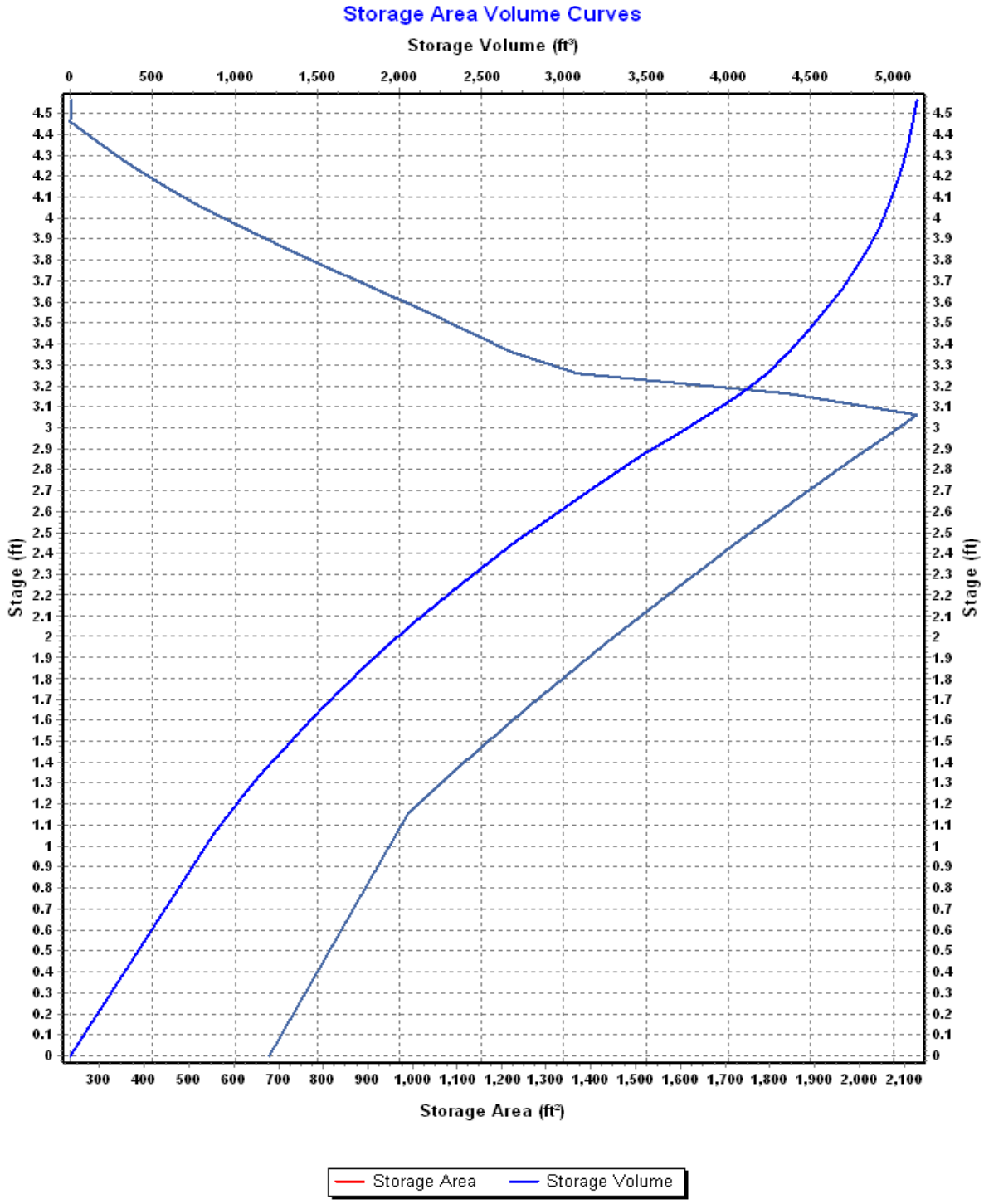
Exfiltration Rate (in/hr)	4.1500

Storage Area Volume Curves

Storage Curve : BR3C

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	681	0.000
1.06	963.86	871.78
1.16	990.19	969.48
1.26	1041.36	1071.06
1.36	1093.51	1177.80
1.46	1146.65	1289.81
1.56	1200.78	1407.18
1.66	1255.89	1530.01
1.76	1311.99	1658.40
1.86	1369.08	1792.45
1.96	1427.16	1932.26
2.06	1486.28	2077.93
2.16	1546.33	2229.56
2.26	1607.29	2387.24
2.36	1669.16	2551.06
2.46	1731.95	2721.12
2.56	1795.65	2897.50
2.66	1860.27	3080.30
2.76	1925.8	3269.60
2.86	1992.24	3465.50
2.96	2059.6	3668.09
3.06	2127.88	3877.46
3.16	1839.41	4075.82
3.26	1368.28	4236.20
3.36	1223.76	4365.80
3.46	1122.78	4483.13
3.56	1021.82	4590.36
3.66	920.87	4687.49
3.76	814.21	4774.24
3.86	709.9	4850.45
3.96	612.13	4916.55
4.06	521.34	4973.22
4.16	437.93	5021.18
4.26	362.17	5061.19
4.36	294.31	5094.01
4.46	234.5	5120.45
4.56	237.57	5144.05

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Storage Node : BR3C (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR3C	Bottom	CIRCULAR	No	24.00			911.95	0.61

Output Summary Results

Peak Inflow (cfs)	1.50
Peak Lateral Inflow (cfs)	0.00
Peak Outflow (cfs)	0.00
Peak Exfiltration Flow Rate (cfm)	9.40
Max HGL Elevation Attained (ft)	911.69
Max HGL Depth Attained (ft)	2.3
Average HGL Elevation Attained (ft)	909.75
Average HGL Depth Attained (ft)	0.36
Time of Max HGL Occurrence (days hh:mm)	0 12:48
Total Exfiltration Volume (1000-ft³)	7.448
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR4

Input Data

Invert Elevation (ft)	904.17
Max (Rim) Elevation (ft)	908.79
Max (Rim) Offset (ft)	4.62
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-904.17
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

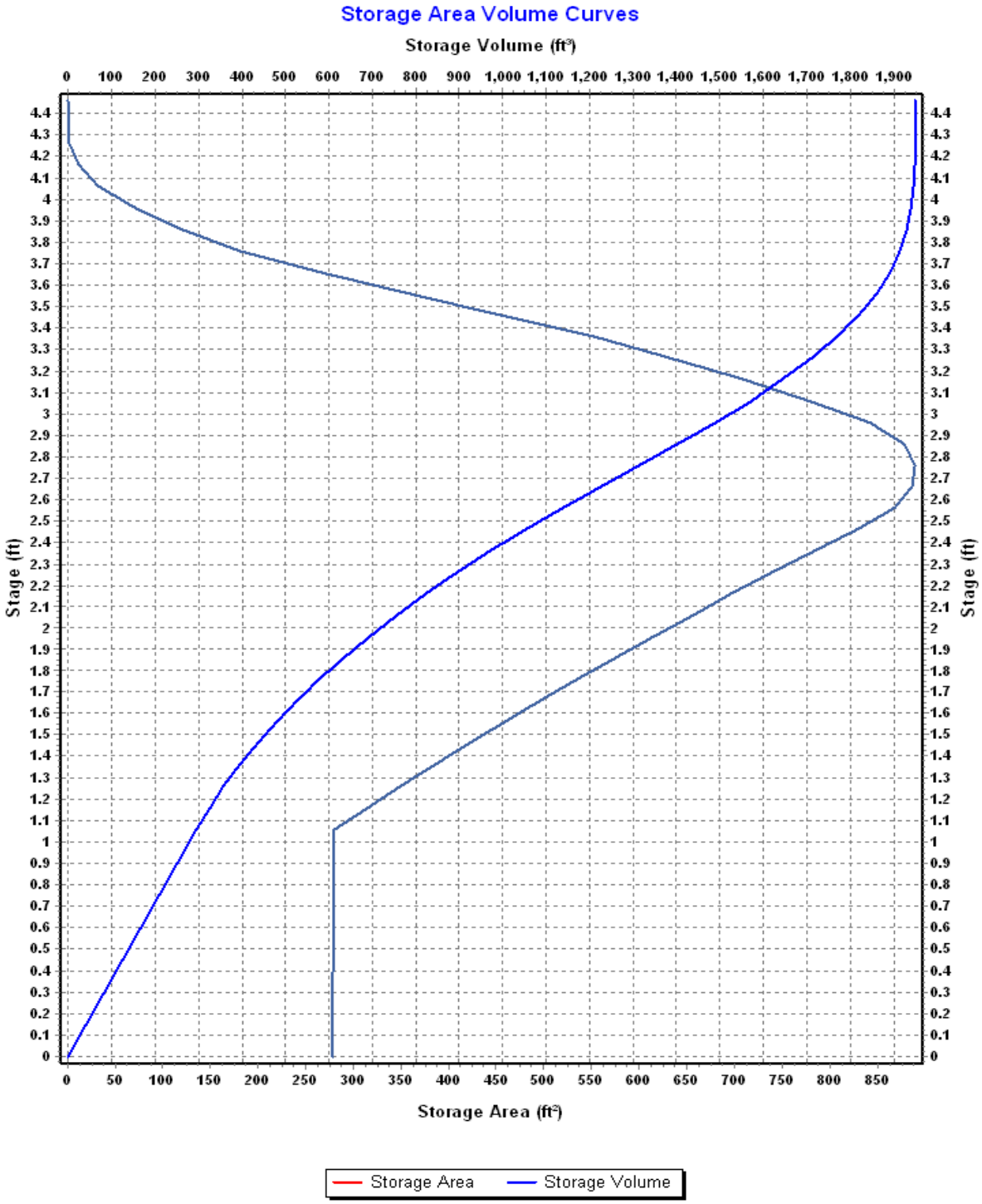
Exfiltration Rate (in/hr)	0.7500

Storage Area Volume Curves

Storage Curve : BR4

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	278	0.000
1.06	278.97	295.19
1.16	314.62	324.87
1.26	349.57	358.08
1.36	384.97	394.81
1.46	421.01	435.11
1.56	457.86	479.05
1.66	495.61	526.72
1.76	534.26	578.21
1.86	573.81	633.61
1.96	614.24	693.01
2.06	655.56	756.50
2.16	697.78	824.17
2.26	740.89	896.10
2.36	784.89	972.39
2.46	829.78	1053.12
2.56	868.08	1138.01
2.66	885.77	1225.70
2.76	889.34	1314.46
2.86	877.29	1402.79
2.96	841.77	1488.74
3.06	779.1	1569.78
3.16	707	1644.09
3.26	629.62	1710.92
3.36	551	1769.95
3.46	453.39	1820.17
3.56	357.92	1860.74
3.66	265.64	1891.92
3.76	181.58	1914.28
3.86	121.01	1929.41
3.96	71.61	1939.04
4.06	32.12	1944.23
4.16	12.15	1946.44
4.26	1.89	1947.14
4.36	1.39	1947.30
4.46	0.53	1947.40

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Storage Node : BR4 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR4	Bottom	CIRCULAR	No	24.00			906.23	0.61

Output Summary Results

Peak Inflow (cfs)	0.87
Peak Lateral Inflow (cfs)	0.87
Peak Outflow (cfs)	0.82
Peak Exfiltration Flow Rate (cfm)	0.73
Max HGL Elevation Attained (ft)	906.35
Max HGL Depth Attained (ft)	2.18
Average HGL Elevation Attained (ft)	905.07
Average HGL Depth Attained (ft)	0.9
Time of Max HGL Occurrence (days hh:mm)	0 10:07
Total Exfiltration Volume (1000-ft³)	1.414
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR5

Input Data

Invert Elevation (ft)	909.06
Max (Rim) Elevation (ft)	912.12
Max (Rim) Offset (ft)	3.06
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-909.06
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

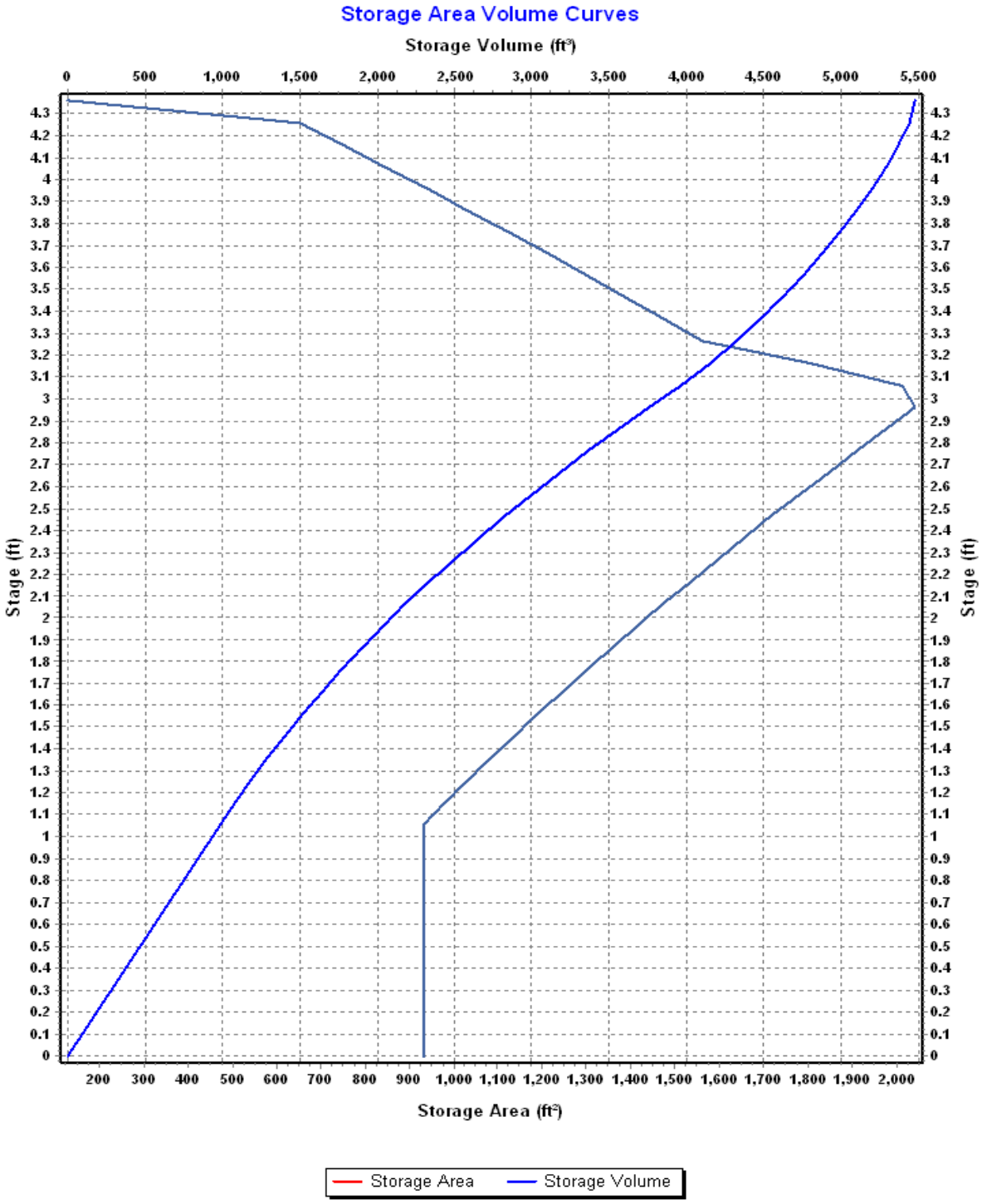
Exfiltration Rate (in/hr)	0.7000

Storage Area Volume Curves

Storage Curve : BR5

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	932	0.000
1.06	932.46	988.16
1.16	981.61	1083.86
1.26	1031.83	1184.53
1.36	1083.12	1290.28
1.46	1135.48	1401.21
1.56	1188.91	1517.43
1.66	1243.41	1639.05
1.76	1298.98	1766.17
1.86	1355.61	1898.90
1.96	1413.23	2037.34
2.06	1471.77	2181.59
2.16	1531.25	2331.74
2.26	1591.66	2487.89
2.36	1653	2650.12
2.46	1715.29	2818.53
2.56	1778.51	2993.22
2.66	1842.66	3174.28
2.76	1907.75	3361.80
2.86	1973.78	3555.88
2.96	2040.74	3756.61
3.06	2014.36	3959.37
3.16	1806.31	4150.40
3.26	1561.66	4318.80
3.36	1476.5	4470.71
3.46	1390.03	4614.04
3.56	1302.24	4748.65
3.66	1213.13	4874.42
3.76	1122.71	4991.21
3.86	1030.97	5098.89
3.96	937.91	5197.33
4.06	843.53	5286.40
4.16	747.83	5365.97
4.26	650.82	5435.90
4.36	128.99	5474.89

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Storage Node : BR5 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR5	Bottom	CIRCULAR	No	24.00			911.62	0.61

Output Summary Results

Peak Inflow (cfs)	1.20
Peak Lateral Inflow (cfs)	1.20
Peak Outflow (cfs)	0.09
Peak Exfiltration Flow Rate (cfm)	1.75
Max HGL Elevation Attained (ft)	911.65
Max HGL Depth Attained (ft)	2.59
Average HGL Elevation Attained (ft)	910.34
Average HGL Depth Attained (ft)	1.28
Time of Max HGL Occurrence (days hh:mm)	0 12:41
Total Exfiltration Volume (1000-ft³)	4.606
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR6

Input Data

Invert Elevation (ft)	902.92
Max (Rim) Elevation (ft)	913.75
Max (Rim) Offset (ft)	10.83
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-902.92
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

Exfiltration Rate (in/hr)	0.3500

Storage Area Volume Curves

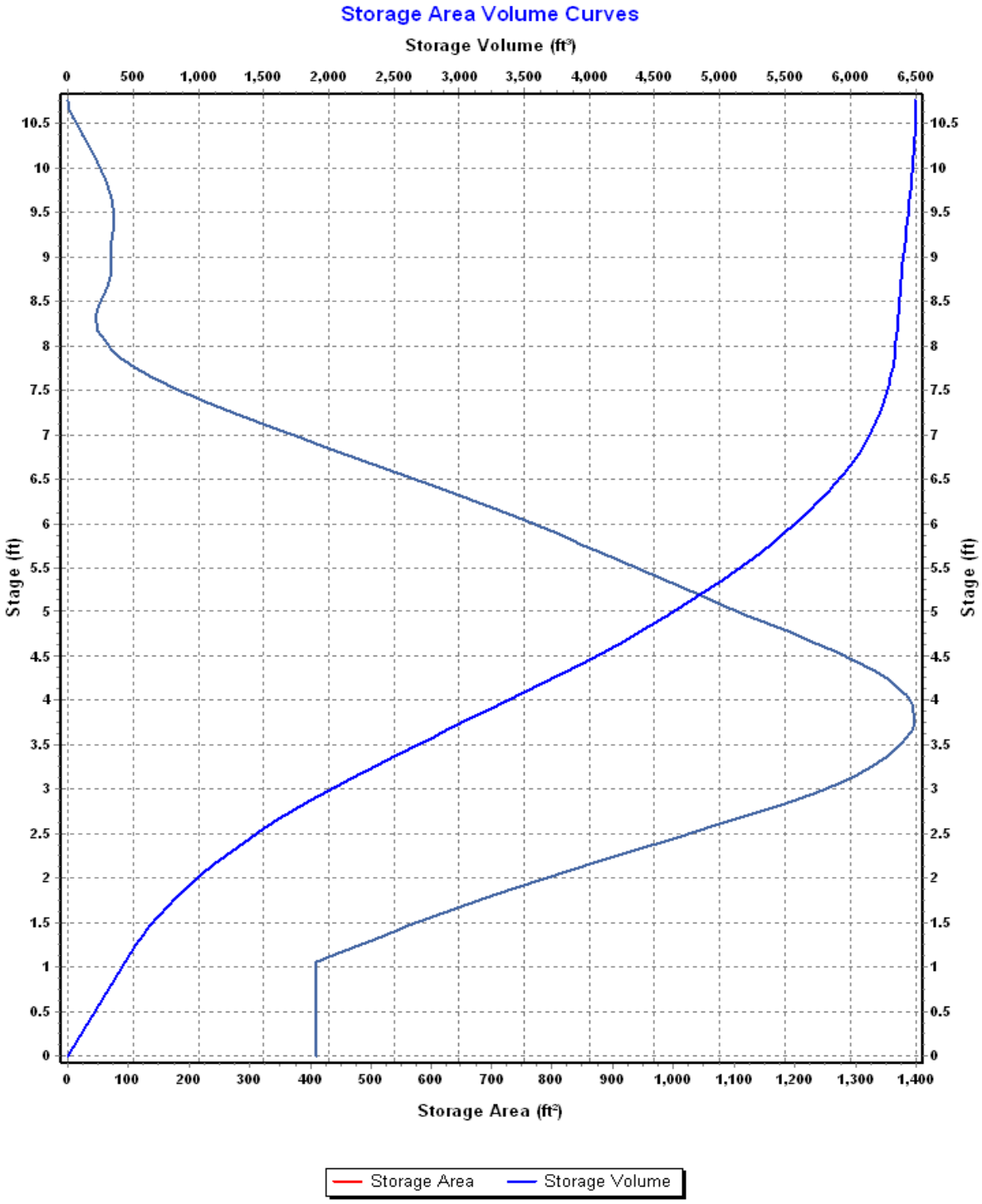
Storage Curve : BR6

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	410	0.000
1.06	410.77	435.01
1.16	446.75	477.89
1.26	483.71	524.41
1.36	521.65	574.68
1.46	560.56	628.79
1.56	600.46	686.84
1.66	641.33	748.93
1.76	683.18	815.16
1.86	726.02	885.62
1.96	769.83	960.41
2.06	814.61	1039.63
2.16	860.38	1123.38
2.26	907.13	1211.76
2.36	954.85	1304.86
2.46	1003.56	1402.78
2.56	1053.18	1505.62
2.66	1101.86	1613.37
2.76	1148.67	1725.90
2.86	1192.86	1842.98
2.96	1232.75	1964.26
3.06	1269.59	2089.38
3.16	1301.43	2217.93
3.26	1326.89	2349.35
3.36	1348.19	2483.10
3.46	1366.12	2618.82
3.56	1380.19	2756.14
3.66	1393.25	2894.81
3.76	1397.78	3034.36
3.86	1396.52	3174.08
3.96	1393.9	3313.60
4.06	1383.32	3452.46
4.16	1367.08	3589.98
4.26	1349.42	3725.81
4.36	1325.23	3859.54
4.46	1296.47	3990.63
4.56	1266.42	4118.77
4.66	1232.15	4243.70
4.76	1195.31	4365.07
4.86	1157.16	4482.69
4.96	1117.9	4596.44
5.06	1085.76	4706.62
5.16	1053.22	4813.57
5.26	1020.26	4917.24
5.36	986.9	5017.60
5.46	953.13	5114.60
5.56	918.95	5208.20
5.66	884.36	5298.37
5.76	849.37	5385.06
5.86	813.96	5468.23
5.96	778.15	5547.84
6.06	741.93	5623.84
6.16	705.08	5696.19
6.26	666.84	5764.79
6.36	628.22	5829.54
6.46	588.79	5890.39
6.56	548.05	5947.23
6.66	507.07	5999.99
6.76	465.94	6048.64
6.86	424.78	6093.18
6.96	383.49	6133.59
7.06	343.09	6169.92
7.16	303.81	6202.27
7.26	265.15	6230.72
7.36	229.45	6255.45
7.46	195.88	6276.72
7.56	163.53	6294.69
7.66	136.12	6309.67

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7.76	111.42	6322.05
7.86	88.83	6332.06
7.96	72.96	6340.15
8.06	60.06	6346.80
8.16	50.27	6352.32
8.26	47.61	6357.21
8.36	48.49	6362.02
8.46	53.24	6367.11
8.56	58.59	6372.70
8.66	64.53	6378.86
8.76	69.87	6385.58
8.86	71.43	6392.65
8.96	72.11	6399.83
9.06	72.32	6407.05
9.16	72.64	6414.30
9.26	74.98	6421.68
9.36	76.22	6429.24
9.46	76.74	6436.89
9.56	75.34	6444.49
9.66	72.1	6451.86
9.76	68.49	6458.89
9.86	63.88	6465.51
9.96	56.95	6471.55
10.06	50.1	6476.90
10.16	43.32	6481.57
10.26	34.16	6485.44
10.36	25.48	6488.42
10.46	17.32	6490.56
10.56	9.08	6491.88
10.66	3.27	6492.50
10.76	0.36	6492.68

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Storage Node : BR6 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR6	Bottom	CIRCULAR	No	24.00			904.98	0.61

Output Summary Results

Peak Inflow (cfs)	1.82
Peak Lateral Inflow (cfs)	0.00
Peak Outflow (cfs)	1.76
Peak Exfiltration Flow Rate (cfm)	0.44
Max HGL Elevation Attained (ft)	905.17
Max HGL Depth Attained (ft)	2.25
Average HGL Elevation Attained (ft)	904.28
Average HGL Depth Attained (ft)	1.36
Time of Max HGL Occurrence (days hh:mm)	0 10:08
Total Exfiltration Volume (1000-ft³)	1.172
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR7

Input Data

Invert Elevation (ft)	895.77
Max (Rim) Elevation (ft)	901.73
Max (Rim) Offset (ft)	5.96
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-895.77
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

Exfiltration Rate (in/hr)	0.3500

Storage Area Volume Curves

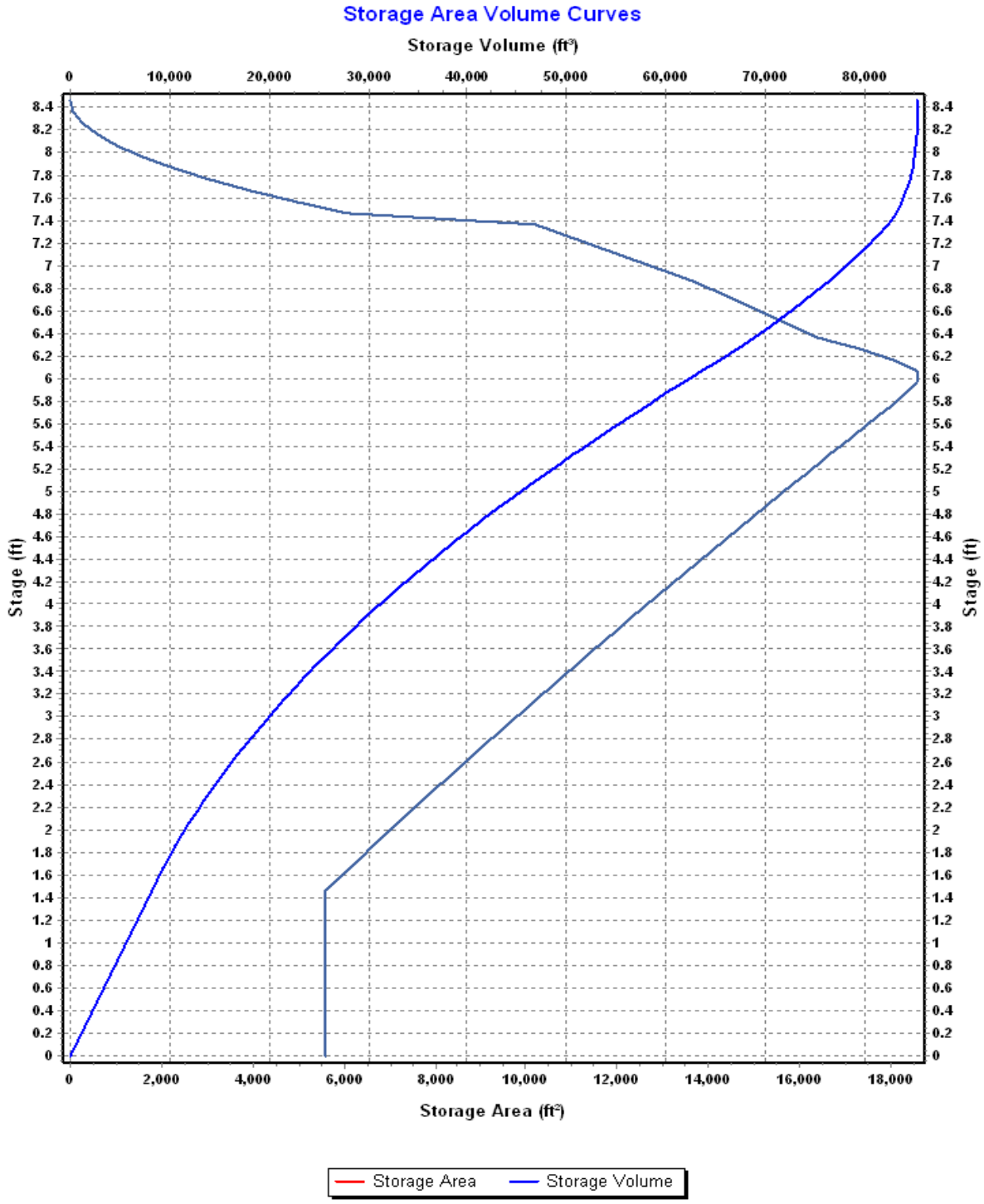
Storage Curve : BR7

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	5595	0.000
1.46	5595.13	8168.79
1.56	5856.73	8741.38
1.66	6119.66	9340.20
1.76	6383.94	9965.38
1.86	6649.55	10617.05
1.96	6916.5	11295.35
2.06	7184.79	12000.41
2.16	7454.41	12732.37
2.26	7725.38	13491.36
2.36	7997.69	14277.51
2.46	8271.33	15090.96
2.56	8546.31	15931.84
2.66	8822.63	16800.29
2.76	9100.3	17696.44
2.86	9379.31	18620.42
2.96	9659.68	19572.37
3.06	9941.38	20552.42
3.16	10224.44	21560.71
3.26	10508.84	22597.37
3.36	10794.59	23662.54
3.46	11081.69	24756.35
3.56	11370.12	25878.94
3.66	11659.61	27030.43
3.76	11950.17	28210.92
3.86	12241.84	29420.52
3.96	12534.6	30659.34
4.06	12828.48	31927.49
4.16	13123.45	33225.09
4.26	13419.52	34552.24
4.36	13716.7	35909.05
4.46	14014.97	37295.63
4.56	14314.29	38712.09
4.66	14614.69	40158.54
4.76	14916.14	41635.08
4.86	15218.67	43141.82
4.96	15522.25	44678.87
5.06	15826.91	46246.33
5.16	16132.63	47844.31
5.26	16439.41	49472.91
5.32	16623.99	50464.81
5.36	16747.26	51132.24
5.46	17056.17	52822.41
5.56	17366.15	54543.53
5.66	17677.19	56295.70
5.76	17989.3	58079.02
5.86	18302.47	59893.61
5.96	18561.7	61736.82
6.06	18563.99	63593.10
6.16	18028.51	65422.73
6.26	17266.47	67187.48
6.36	16354.62	68868.53
6.46	15821.95	70477.36
6.56	15283.77	72032.65
6.66	14740.05	73533.84
6.76	14190.76	74980.38
6.86	13635.89	76371.71
6.96	12950.52	77701.03
7.06	12263.14	78961.71
7.16	11573.75	80153.55
7.26	10882.35	81276.36
7.36	10188.94	82329.92
7.46	6084.34	83143.58
7.56	4958.1	83695.70
7.66	3945.56	84140.88
7.76	3046.43	84490.48
7.86	2260.65	84755.83
7.96	1588.12	84948.27

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8.06	1028.71	85079.11
8.16	592.94	85160.19
8.26	270.69	85203.37
8.36	49.56	85219.38
8.46	2.12	85221.96

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Storage Node : BR7 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR7B	Bottom	CIRCULAR	No	24.00			901.23	0.61

Output Summary Results

Peak Inflow (cfs)	5.28
Peak Lateral Inflow (cfs)	1.53
Peak Outflow (cfs)	0.00
Peak Exfiltration Flow Rate (cfm)	5.93
Max HGL Elevation Attained (ft)	899.62
Max HGL Depth Attained (ft)	3.85
Average HGL Elevation Attained (ft)	898.47
Average HGL Depth Attained (ft)	2.7
Time of Max HGL Occurrence (days hh:mm)	1 00:19
Total Exfiltration Volume (1000-ft³)	18.844
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR8

Input Data

Invert Elevation (ft)	900.16
Max (Rim) Elevation (ft)	910.55
Max (Rim) Offset (ft)	10.39
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-900.16
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

Exfiltration Rate (in/hr)	0.2500

Storage Area Volume Curves

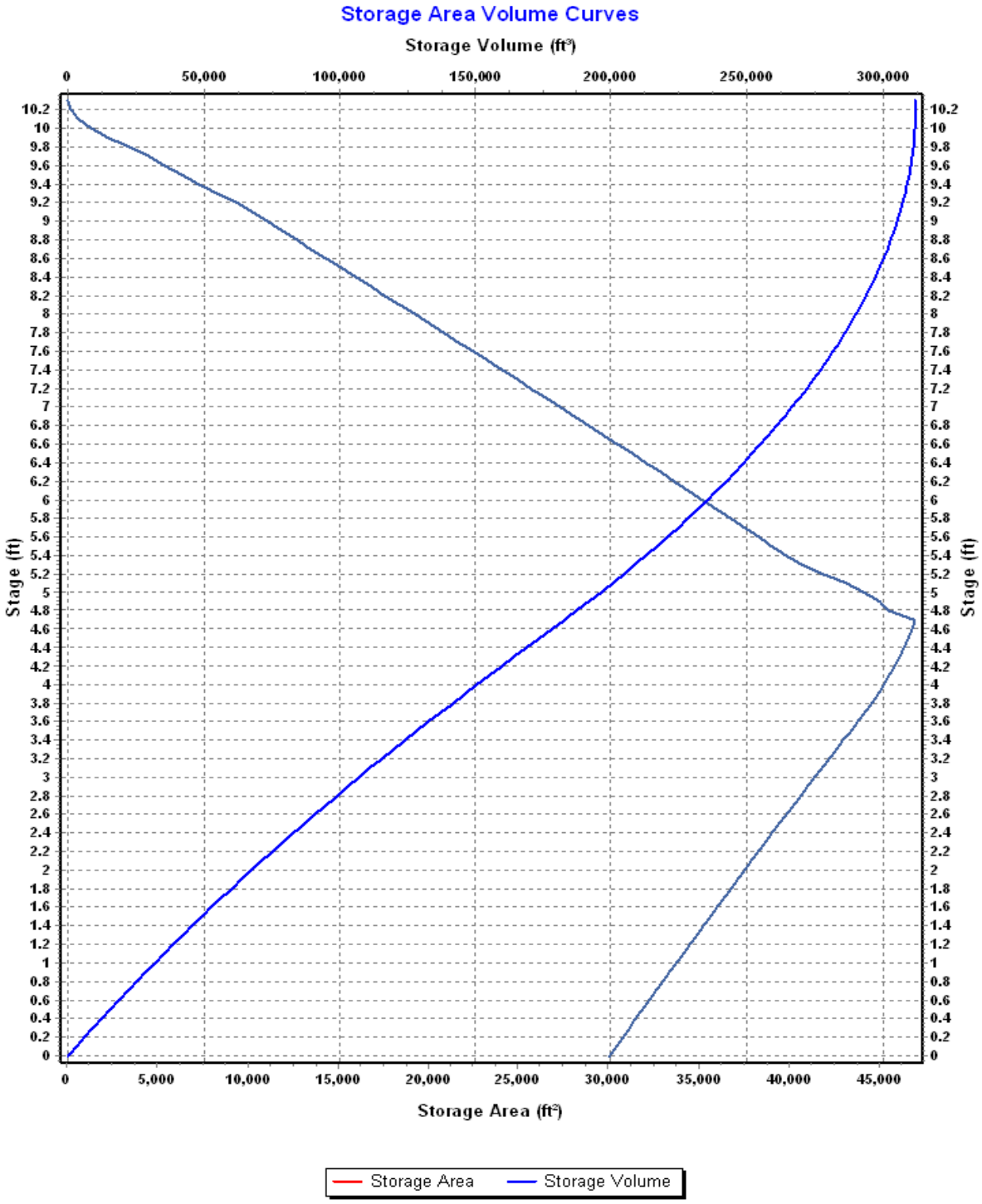
Storage Curve : RB

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	30060.38	0.000
0.1	30423.69	3024.20
0.2	30787.95	6084.78
0.3	31153.19	9181.84
0.4	31519.45	12315.47
0.5	31886.76	15485.78
0.6	32255.10	18692.87
0.7	32624.50	21936.85
0.8	32994.93	25217.82
0.9	33366.41	28535.89
1	33738.93	31891.16
1.1	34112.50	35283.73
1.2	34487.11	38713.71
1.3	34862.77	42181.20
1.4	35239.47	45686.31
1.5	35617.21	49229.14
1.6	35996.00	52809.80
1.7	36375.83	56428.39
1.8	36756.70	60085.02
1.9	37138.62	63779.79
2	37521.58	67512.80
2.1	37905.58	71284.16
2.2	38290.63	75093.97
2.3	38676.72	78942.34
2.4	39063.86	82829.37
2.46	39296.65	85180.19
2.5	39452.06	86755.16
2.6	39841.31	90719.83
2.7	40231.63	94723.48
2.8	40623.00	98766.21
2.9	41015.43	102848.13
3	41408.92	106969.35
3.1	41803.47	111129.97
3.2	42199.08	115330.10
3.3	42595.75	119569.84
3.4	42993.48	123849.30
3.5	43391.60	128168.55
3.6	43782.14	132527.24
3.7	44164.57	136924.58
3.8	44540.20	141359.82
3.9	44901.66	145831.91
4	45239.40	150338.96
4.1	45563.92	154879.13
4.2	45871.31	159450.89
4.3	46138.45	164051.38
4.4	46386.90	168677.65
4.5	46616.67	173327.83
4.6	46811.15	177999.22
4.7	46971.49	182688.35
4.8	45485.74	187311.21
4.9	45023.21	191836.66
5	44212.48	196298.44
5.1	43110.78	200664.60
5.2	41818.89	204911.08
5.3	40592.21	209031.64
5.4	39822.87	213052.39
5.5	39051.68	216996.12
5.6	38278.65	220862.64
5.7	37503.79	224651.76
5.8	36727.15	228363.31
5.9	35948.71	231997.10
6	35168.56	235552.96
6.1	34386.68	239030.72
6.2	33603.09	242430.21
6.3	32817.87	245751.26
6.4	32030.97	248993.70
6.5	31242.50	252157.37
6.6	30452.43	255242.12

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6.7	29660.78	258247.78
6.8	28867.64	261174.20
6.9	28072.95	264021.23
7	27276.82	266788.72
7.1	26479.23	269476.52
7.2	25680.17	272084.49
7.3	24879.78	274612.49
7.4	24077.96	277060.38
7.5	23274.83	279428.02
7.6	22470.38	281715.28
7.7	21664.58	283922.03
7.8	20857.60	286048.14
7.9	20049.29	288093.48
8	19239.75	290057.93
8.1	18429.02	291941.37
8.2	17617.00	293743.67
8.3	16803.95	295464.72
8.4	15989.67	297104.40
8.5	15174.27	298662.60
8.6	14357.79	300139.20
8.7	13540.07	301534.09
8.8	12721.38	302847.16
8.9	11901.56	304078.31
9	11080.62	305227.42
9.1	10258.76	306294.39
9.2	9327.55	307273.71
9.3	8324.12	308156.29
9.4	7321.13	308938.55
9.5	6362.76	309622.74
9.6	5439.54	310212.86
9.7	4519.10	310710.79
9.8	3459.55	311109.72
9.9	2336.41	311399.52
10	1375.60	311585.12
10.1	669.19	311687.36
10.2	186.39	311730.14
10.3	61.67	311742.54

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Storage Node : BR8 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR8A	Bottom	CIRCULAR	No	24.00			903.16	0.61

Output Summary Results

Peak Inflow (cfs)	9.36
Peak Lateral Inflow (cfs)	9.36
Peak Outflow (cfs)	0.00
Peak Exfiltration Flow Rate (cfm)	12.09
Max HGL Elevation Attained (ft)	901.45
Max HGL Depth Attained (ft)	1.29
Average HGL Elevation Attained (ft)	900.88
Average HGL Depth Attained (ft)	0.72
Time of Max HGL Occurrence (days hh:mm)	1 00:13
Total Exfiltration Volume (1000-ft³)	43.746
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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25-year/24-hour Rainfall Event Simulation Results

Project Description

File Name	20230.SPF

Project Options

Flow Units	CFS
Elevation Type	Elevation
Hydrology Method	SCS TR-55
Time of Concentration (TOC) Method	SCS TR-55
Link Routing Method	Kinematic Wave
Enable Overflow Ponding at Nodes	YES
Skip Steady State Analysis Time Periods	YES

Analysis Options

Start Analysis On	Oct 27, 2020	00:00:00
End Analysis On	Oct 30, 2020	00:00:00
Start Reporting On	Oct 27, 2020	00:00:00
Antecedent Dry Days	0	days
Runoff (Dry Weather) Time Step	0 01:00:00	days hh:mm:ss
Runoff (Wet Weather) Time Step	0 00:05:00	days hh:mm:ss
Reporting Time Step	0 00:06:00	days hh:mm:ss
Routing Time Step	30	seconds

Number of Elements

	Qty
Rain Gages	1
Subbasins	18
Nodes	50
Junctions	37
Outfalls	3
Flow Diversions	0
Inlets	0
Storage Nodes	10
Links	47
Channels	0
Pipes	37
Pumps	0
Orifices	10
Weirs	0
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1	Project	Time Series	25YR24HR	Cumulative	inches	California	San Bernardino (Victorville)	25	2.67	SCS Type I 24-hr

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Subbasin Summary

SN	Subbasin ID	Area (ac)	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	A01	0.92	90.57	2.67	1.73	1.59	1.13	0 00:10:00
2	A02	2.31	89.00	2.67	1.60	3.71	2.60	0 00:10:00
3	A04	1.11	89.00	2.67	1.60	1.78	1.24	0 00:10:00
4	A05	2.33	89.00	2.67	1.60	3.74	2.62	0 00:10:00
5	A06	1.52	89.00	2.67	1.60	2.44	1.71	0 00:10:00
6	A07	0.45	89.00	2.67	1.60	0.72	0.50	0 00:10:00
7	A08	1.59	89.00	2.67	1.60	2.55	1.78	0 00:10:00
8	A09	1.94	89.00	2.67	1.60	3.11	2.18	0 00:10:00
9	A10	16.37	84.72	2.67	1.30	21.23	14.26	0 00:10:00
10	A11a	0.92	98.00	2.67	2.44	2.24	1.53	0 00:10:00
11	A11b	0.64	98.00	2.67	2.44	1.56	1.06	0 00:10:00
12	A12	1.73	98.00	2.67	2.44	4.22	2.86	0 00:10:00
13	A13	3.78	98.00	2.67	2.44	9.22	6.26	0 00:10:00
14	A3A	0.54	95.00	2.67	2.13	1.15	0.81	0 00:10:00
15	A3B	0.80	91.77	2.67	1.83	1.46	1.04	0 00:10:00
16	A3C	1.34	89.00	2.67	1.60	2.15	1.50	0 00:10:00
17	RVPREDEV	16.37	70.76	2.67	0.57	9.31	1.34	0 01:40:47
18	TS-PREDEV	21.91	65.01	2.67	0.36	7.98	0.78	0 01:47:10

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Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft²)	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	J01	Junction	913.15	914.89	913.15	0.00	0.00	0.00	913.15	0.00	1.74	0 00:00	0.00	0.00
2	J02	Junction	907.89	912.64	907.89	0.00	0.00	2.59	912.64	0.00	0.00	0 10:06	0.10	15.00
3	J03	Junction	914.78	917.97	914.78	0.00	0.00	1.03	915.33	0.00	2.64	0 00:00	0.00	0.00
4	J04	Junction	910.56	914.38	910.56	0.00	0.00	2.44	914.38	0.00	0.00	0 10:06	0.02	7.00
5	J05	Junction	902.68	907.43	902.68	0.00	0.00	0.50	903.04	0.00	4.39	0 00:00	0.00	0.00
6	J06	Junction	902.12	906.87	902.12	0.00	0.00	1.77	902.44	0.00	4.43	0 00:00	0.00	0.00
7	J07	Junction	895.73	900.98	895.73	0.00	0.00	2.79	896.26	0.00	4.72	0 00:00	0.00	0.00
8	J08	Junction	898.06	902.31	898.06	0.00	0.00	1.03	898.37	0.00	3.94	0 00:00	0.00	0.00
9	J09	Junction	898.06	902.31	898.06	0.00	0.00	1.49	898.43	0.00	3.88	0 00:00	0.00	0.00
10	J10	Junction	886.32	890.92	886.32	0.00	0.00	6.11	887.35	0.00	3.57	0 00:00	0.00	0.00
11	O1	Junction	916.83	921.08	916.83	0.00	0.00	0.00	916.83	0.00	4.25	0 00:00	0.00	0.00
12	O2	Junction	909.85	914.85	909.85	0.00	0.00	0.59	910.25	0.00	4.60	0 00:00	0.00	0.00
13	O3A	Junction	915.23	921.60	915.23	0.00	0.00	0.00	915.23	0.00	6.37	0 00:00	0.00	0.00
14	O3B	Junction	911.08	916.72	911.08	0.00	0.00	0.98	911.51	0.00	5.21	0 00:00	0.00	0.00
15	O3C	Junction	906.09	912.24	906.09	0.00	0.00	0.41	906.39	0.00	5.85	0 00:00	0.00	0.00
16	O4	Junction	902.98	906.80	902.98	0.00	0.00	1.19	903.46	0.00	3.34	0 00:00	0.00	0.00
17	O5	Junction	907.79	912.12	907.79	0.00	0.00	0.34	908.09	0.00	4.03	0 00:00	0.00	0.00
18	O6	Junction	901.23	905.48	901.23	0.00	0.00	1.80	901.55	0.00	3.93	0 00:00	0.00	0.00
19	O7	Junction	888.27	901.23	888.27	0.00	0.00	0.00	888.27	0.00	12.96	0 00:00	0.00	0.00
20	O8A	Junction	894.34	903.66	894.34	0.00	0.00	0.00	894.34	0.00	9.32	0 00:00	0.00	0.00
21	SDMH01	Junction	916.48	921.15	916.48	0.00	0.00	0.00	916.58	0.00	4.57	0 00:00	0.00	0.00
22	SDMH02	Junction	909.48	914.04	909.48	0.00	0.00	0.59	909.98	0.00	4.06	0 00:00	0.00	0.00
23	SDMH03	Junction	907.54	914.70	907.54	0.00	0.00	1.90	914.70	0.00	0.00	0 10:13	0.01	16.00
24	SDMH04	Junction	907.26	914.39	907.26	0.00	0.00	1.83	908.22	0.00	6.17	0 00:00	0.00	0.00
25	SDMH05	Junction	907.53	914.79	907.53	0.00	0.00	0.34	907.93	0.00	6.86	0 00:00	0.00	0.00
26	SDMH06	Junction	905.75	910.18	905.75	0.00	0.00	0.41	906.06	0.00	4.12	0 00:00	0.00	0.00
27	SDMH07	Junction	905.33	909.05	905.33	0.00	0.00	0.41	905.74	0.00	3.31	0 00:00	0.00	0.00
28	SDMH08	Junction	902.75	909.14	902.75	0.00	0.00	1.19	903.33	0.00	5.81	0 00:00	0.00	0.00
29	SDMH09	Junction	901.44	907.96	901.44	0.00	0.00	1.66	903.02	0.00	4.94	0 00:00	0.00	0.00
30	SDMH10	Junction	900.51	907.70	900.51	0.00	0.00	3.31	901.19	0.00	6.51	0 00:00	0.00	0.00
31	SDMH11	Junction	894.85	901.92	894.85	0.00	0.00	2.79	895.59	0.00	6.33	0 00:00	0.00	0.00
32	SDMH12	Junction	893.85	903.70	893.85	0.00	0.00	2.75	894.58	0.00	9.12	0 00:00	0.00	0.00
33	SDMH13	Junction	897.40	902.76	897.40	0.00	0.00	2.52	898.11	0.00	4.65	0 00:00	0.00	0.00
34	SDMH14	Junction	893.13	902.49	893.13	0.00	0.00	5.15	895.46	0.00	7.03	0 00:00	0.00	0.00
35	SDMH15	Junction	886.12	891.87	886.12	0.00	0.00	10.95	891.87	0.00	0.00	0 10:06	0.05	7.00
36	SDMH16	Junction	885.50	893.01	885.50	0.00	0.00	10.73	887.50	0.00	5.51	0 00:00	0.00	0.00
37	SDMH17	Junction	884.58	889.78	884.58	0.00	0.00	10.57	886.21	0.00	3.57	0 00:00	0.00	0.00
38	OUT1	Outfall	884.42					10.57	885.94					
39	RVPRE	Outfall	0.00					1.33	0.00					
40	TSPRE	Outfall	0.00					0.78	0.00					
41	BR1	Storage Node	918.02	922.46	0.00		0.00	1.11	918.30				0.00	0.00
42	BR2	Storage Node	911.79	915.12	0.00		0.00	2.57	914.44				0.00	0.00
43	BR3A	Storage Node	918.54	922.87	0.00		0.00	0.79	920.51				0.00	0.00
44	BR3B	Storage Node	914.16	917.97	0.00		0.00	1.02	916.35				0.00	0.00
45	BR3C	Storage Node	909.39	912.45	0.00		0.00	2.26	912.02				0.00	0.00
46	BR4	Storage Node	904.17	908.79	0.00		0.00	1.23	906.38				0.00	0.00
47	BR5	Storage Node	909.06	912.12	0.00		0.00	1.70	911.68				0.00	0.00
48	BR6	Storage Node	902.92	913.75	0.00		0.00	1.81	905.17				0.00	0.00
49	BR7	Storage Node	895.77	901.73	0.00		0.00	7.21	900.87				0.00	0.00
50	BR8	Storage Node	900.16	910.55	0.00		0.00	14.20	902.08				0.00	0.00

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Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	(ft)		(min)	
1	P01	Pipe	O1	SDMH01	102.69	916.83	916.58	0.2400	12.000	0.0130	0.00	1.76	0.00	0.00	0.00	0.00	0.00	Calculated
2	P02	Pipe	SDMH01	J01	198.58	916.48	913.15	1.6800	12.000	0.0130	0.00	4.61	0.00	0.00	0.00	0.00	0.00	Calculated
3	P03	Pipe	J01	BR2	18.00	913.15	912.85	1.6700	12.000	0.0130	0.00	4.60	0.00	0.00	0.00	0.00	0.00	Calculated
4	P04	Pipe	O2	SDMH02	111.00	909.85	909.58	0.2400	12.000	0.0130	0.59	1.76	0.33	2.01	0.39	0.40	0.00	Calculated
5	P05	Pipe	SDMH02	SDMH03	160.94	909.48	909.08	0.2500	12.000	0.0130	0.58	1.78	0.33	2.03	0.39	0.39	0.00	Calculated
6	P06	Pipe	J02	SDMH03	99.00	907.89	907.64	0.2500	12.000	0.0130	1.90	1.79	1.06	2.71	1.00	1.00	12.00	SURCHARGED
7	P07	Pipe	SDMH03	SDMH04	74.09	907.54	907.36	0.2400	12.000	0.0130	1.83	1.76	1.04	2.65	0.93	0.93	0.00	> CAPACITY
8	P08	Pipe	O5	SDMH05	66.52	907.79	907.63	0.2400	12.000	0.0130	0.34	1.75	0.19	1.72	0.30	0.30	0.00	Calculated
9	P09	Pipe	SDMH05	SDMH04	70.26	907.53	907.36	0.2400	12.000	0.0130	0.34	1.75	0.19	1.72	0.30	0.30	0.00	Calculated
10	P10	Pipe	SDMH04	BR6	92.00	907.26	903.48	4.1100	12.000	0.0130	1.81	7.22	0.25	7.69	0.34	0.34	0.00	Calculated
11	P11	Pipe	O6	BR7	74.00	901.23	897.49	5.0500	12.000	0.0130	1.80	8.01	0.22	8.22	0.32	0.32	0.00	Calculated
12	P12	Pipe	O3A	J03	141.00	915.23	914.88	0.2500	12.000	0.0130	0.00	1.78	0.00	0.00	0.00	0.00	0.00	Calculated
13	P13	Pipe	J03	BR3B	25.00	914.78	914.72	0.2400	12.000	0.0130	1.02	1.75	0.59	2.31	0.55	0.55	0.00	Calculated
14	P14	Pipe	O3B	J04	83.00	911.08	910.66	0.5100	12.000	0.0130	0.98	2.53	0.39	3.02	0.43	0.43	0.00	Calculated
15	P15	Pipe	J04	BR3C	23.00	910.56	910.45	0.4800	12.000	0.0150	2.26	2.14	1.06	3.12	1.00	1.00	4.00	SURCHARGED
16	P16	Pipe	O3C	SDMH06	102.00	906.09	905.75	0.3300	12.000	0.0130	0.41	2.06	0.20	2.05	0.30	0.30	0.00	Calculated
17	P17	Pipe	SDMH06	SDMH07	99.00	905.75	905.43	0.3200	12.000	0.0130	0.41	2.03	0.20	2.03	0.30	0.31	0.00	Calculated
18	P18	Pipe	SDMH07	BR4	31.00	905.33	905.23	0.3200	12.000	0.0130	0.41	2.02	0.20	2.02	0.30	0.31	0.00	Calculated
19	P19	Pipe	O4	SDMH08	50.02	902.98	902.85	0.2600	18.000	0.0130	1.19	5.36	0.22	2.44	0.48	0.32	0.00	Calculated
20	P20	Pipe	SDMH08	SDMH09	83.99	902.75	902.54	0.2500	18.000	0.0130	1.19	5.25	0.23	2.41	0.48	0.32	0.00	Calculated
21	P21	Pipe	J05	SDMH09	30.00	902.68	902.60	0.2700	12.000	0.0130	0.50	1.84	0.27	1.99	0.36	0.36	0.00	Calculated
22	P22	Pipe	SDMH09	SDMH10	331.00	901.44	900.61	0.2500	18.000	0.0130	1.65	5.26	0.31	2.68	0.57	0.38	0.00	Calculated
23	P23	Pipe	J06	SDMH10	32.00	902.12	900.61	4.7200	12.000	0.0130	1.77	7.74	0.23	7.98	0.32	0.32	0.00	Calculated
24	P24	Pipe	SDMH10	BR7	89.00	900.51	897.23	3.6900	18.000	0.0130	3.31	20.17	0.16	8.43	0.41	0.27	0.00	Calculated
25	P25	Pipe	O7	J10	62.00	888.27	887.17	1.7700	12.000	0.0130	0.00	4.75	0.00	0.00	0.00	0.00	0.00	Calculated
26	P26	Pipe	O8A	SDMH12	130.00	894.34	893.85	0.3800	12.000	0.0130	0.00	2.19	0.00	0.00	0.00	0.00	0.00	Calculated
27	P27	Pipe	J07	SDMH11	39.00	895.73	894.95	2.0000	12.000	0.0130	2.79	5.04	0.55	6.57	0.53	0.53	0.00	Calculated
28	P28	Pipe	SDMH11	SDMH12	333.48	894.85	893.85	0.3000	18.000	0.0130	2.75	5.75	0.48	3.27	0.73	0.49	0.00	Calculated
29	P29	Pipe	SDMH12	SDMH14	208.00	893.85	893.23	0.3000	18.000	0.0130	2.74	5.73	0.48	3.23	0.72	0.49	0.00	Calculated
30	P30	Pipe	J09	SDMH13	16.00	898.06	897.74	2.0000	12.000	0.0130	1.49	5.04	0.30	5.58	0.37	0.37	0.00	Calculated
31	P31	Pipe	J08	SDMH13	28.00	898.06	897.50	2.0000	12.000	0.0130	1.03	5.04	0.20	5.04	0.31	0.31	0.00	Calculated
32	P32	Pipe	SDMH13	SDMH14	93.00	897.40	895.07	2.5100	18.000	0.0130	2.50	16.63	0.15	6.79	0.39	0.26	0.00	Calculated
33	P33	Pipe	SDMH14	SDMH15	745.00	893.13	886.22	0.9300	18.000	0.0130	5.10	10.12	0.50	5.84	0.74	0.50	0.00	Calculated
34	P34	Pipe	J10	SDMH15	39.00	886.32	886.12	0.5100	18.000	0.0130	6.09	7.52	0.81	4.75	1.03	0.68	0.00	Calculated
35	P35	Pipe	SDMH15	SDMH16	200.04	886.12	885.72	0.2000	24.000	0.0130	10.73	10.12	1.06	3.78	1.86	0.93	0.00	> CAPACITY
36	P36	Pipe	SDMH16	SDMH17	328.00	885.50	884.68	0.2500	24.000	0.0130	10.57	11.31	0.93	4.19	1.51	0.76	0.00	Calculated
37	P37	Pipe	SDMH17	OUT1	63.00	884.58	884.42	0.2500	24.000	0.0130	10.57	11.40	0.93	4.13	1.47	0.76	0.00	Calculated
38	OR1	Orifice	BR1	O1		918.02	916.83		24.000		0.00							
39	OR2	Orifice	BR2	O2		911.79	909.85		24.000		0.59							
40	OR3A	Orifice	BR3A	O3A		918.54	915.23		24.000		0.00							
41	OR3B	Orifice	BR3B	O3B		914.16	911.08		24.000		0.98							
42	OR3C	Orifice	BR3C	O3C		909.39	906.09		24.000		0.41							
43	OR4	Orifice	BR4	O4		904.17	902.98		24.000		1.19							
44	OR5	Orifice	BR5	O5		909.06	907.79		24.000		0.34							
45	OR6	Orifice	BR6	O6		902.92	901.23		24.000		1.80							
46	OR7B	Orifice	BR7	O7		895.77	888.27		24.000		0.00							
47	OR8A	Orifice	BR8	O8A		900.16	894.34		24.000		0.00							

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Subbasin Hydrology

Subbasin : A01

Input Data

Area (ac) 0.92
Weighted Curve Number 90.57
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	0.24	D	95.00
Urban commercial, 85% imp	0.68	A	89.00
Composite Area & Weighted CN	0.92		90.57

Time of Concentration

TOC Method : SCS TR-55

Sheet Flow Equation :

Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))

Where :

Tc = Time of Concentration (hr)
n = Manning's roughness
Lf = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation :

V = 16.1345 * (Sf^0.5) (unpaved surface)
V = 20.3282 * (Sf^0.5) (paved surface)
V = 15.0 * (Sf^0.5) (grassed waterway surface)
V = 10.0 * (Sf^0.5) (nearly bare & untilled surface)
V = 9.0 * (Sf^0.5) (cultivated straight rows surface)
V = 7.0 * (Sf^0.5) (short grass pasture surface)
V = 5.0 * (Sf^0.5) (woodland surface)
V = 2.5 * (Sf^0.5) (forest w/heavy litter surface)
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hr)
Lf = Flow Length (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)

Channel Flow Equation :

V = (1.49 * (R^(2/3)) * (Sf^0.5)) / n
R = Aq / Wp
Tc = (Lf / V) / (3600 sec/hr)

Where :

Tc = Time of Concentration (hr)
Lf = Flow Length (ft)
R = Hydraulic Radius (ft)
Aq = Flow Area (ft²)
Wp = Wetted Perimeter (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)
n = Manning's roughness

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

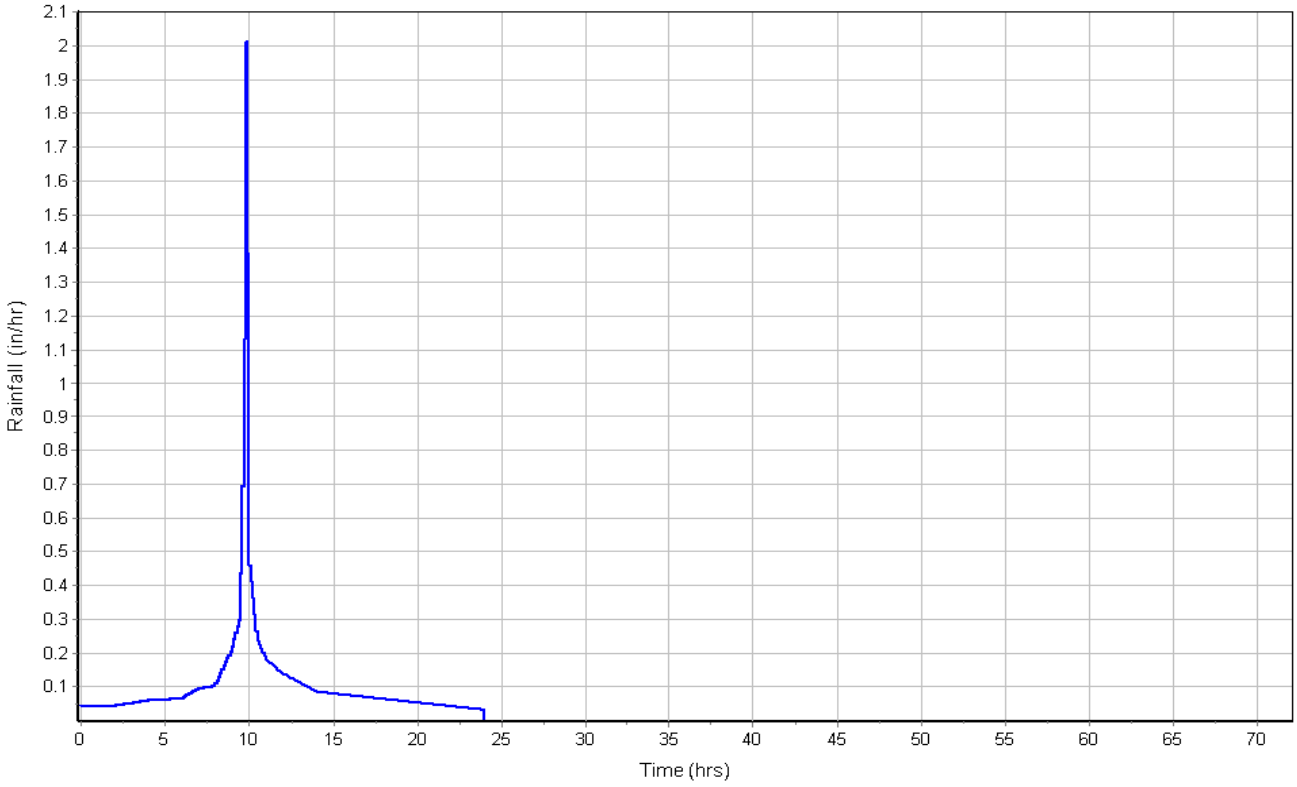
Total Rainfall (in) 2.67
Total Runoff (in) 1.73
Peak Runoff (cfs) 1.13
Weighted Curve Number 90.57
Time of Concentration (days hh:mm:ss) 0 00:10:00

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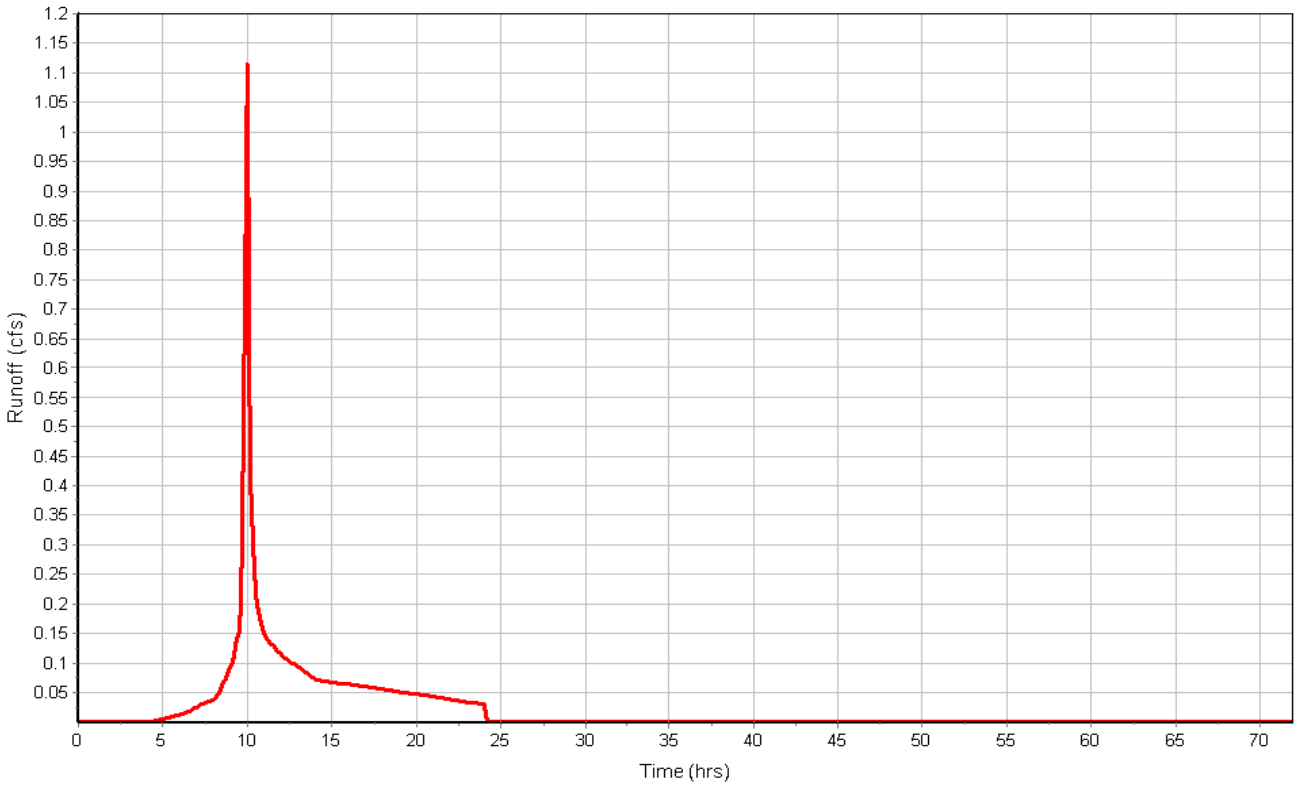
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Subbasin : A01

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A02

Input Data

Area (ac) 2.31
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	2.31	A	89.00
Composite Area & Weighted CN	2.31		89.00

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

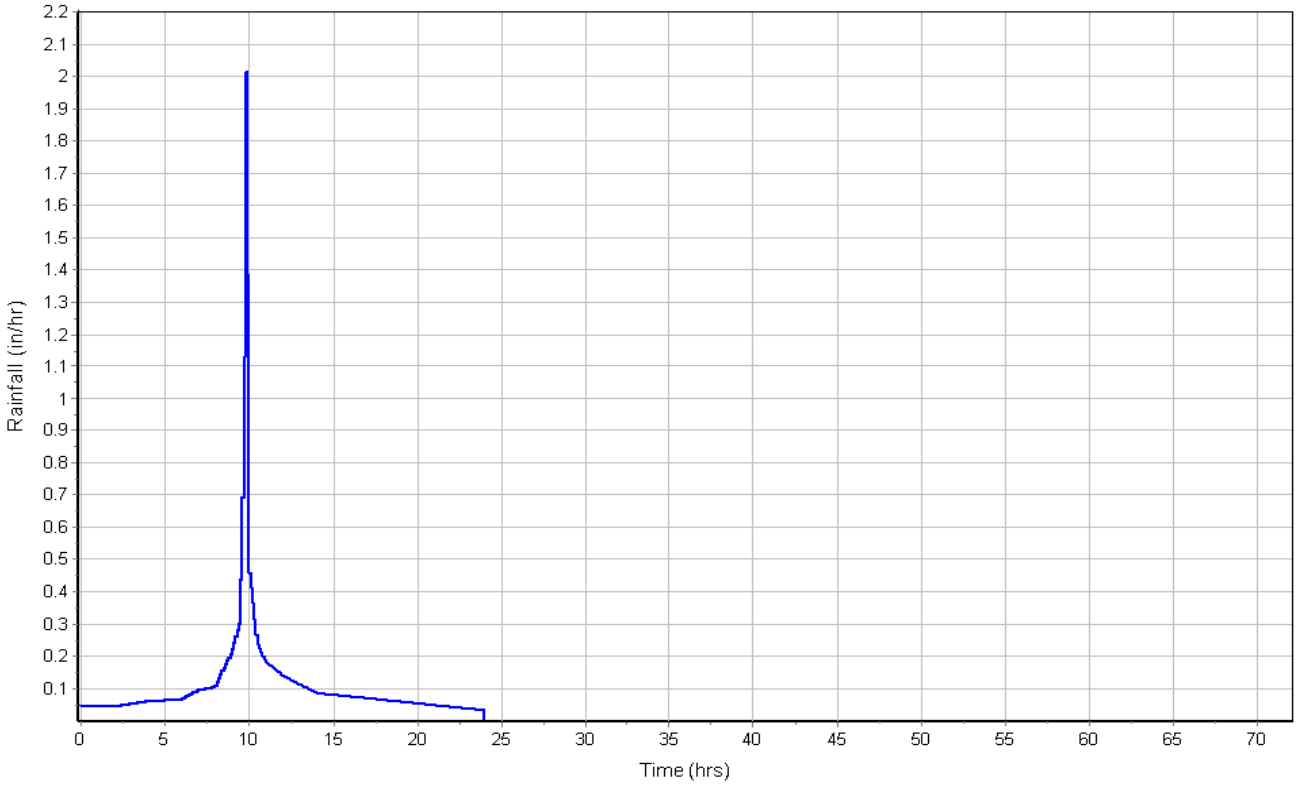
Total Rainfall (in) 2.67
Total Runoff (in) 1.60
Peak Runoff (cfs) 2.60
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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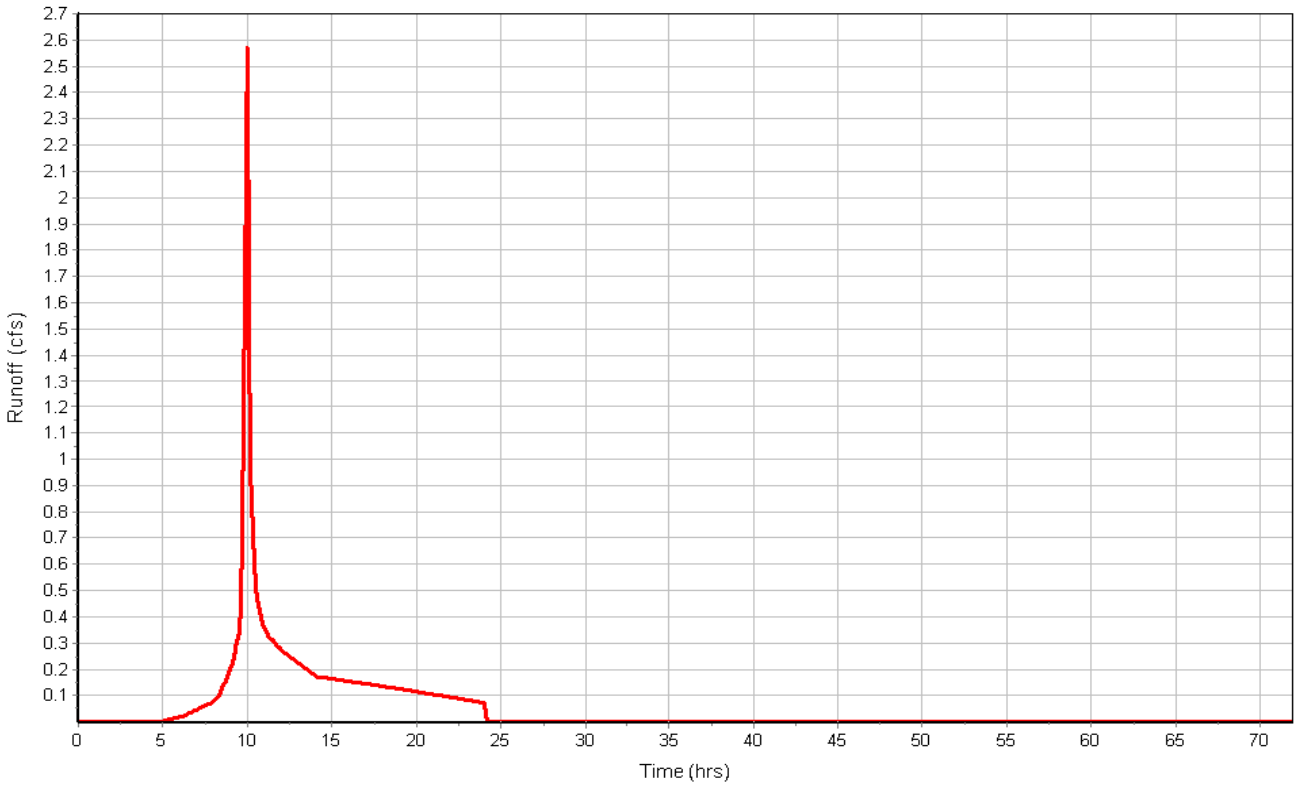
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Subbasin : A02

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A04

Input Data

Area (ac) 1.11
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	1.11	A	89.00
Composite Area & Weighted CN	1.11		89.00

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

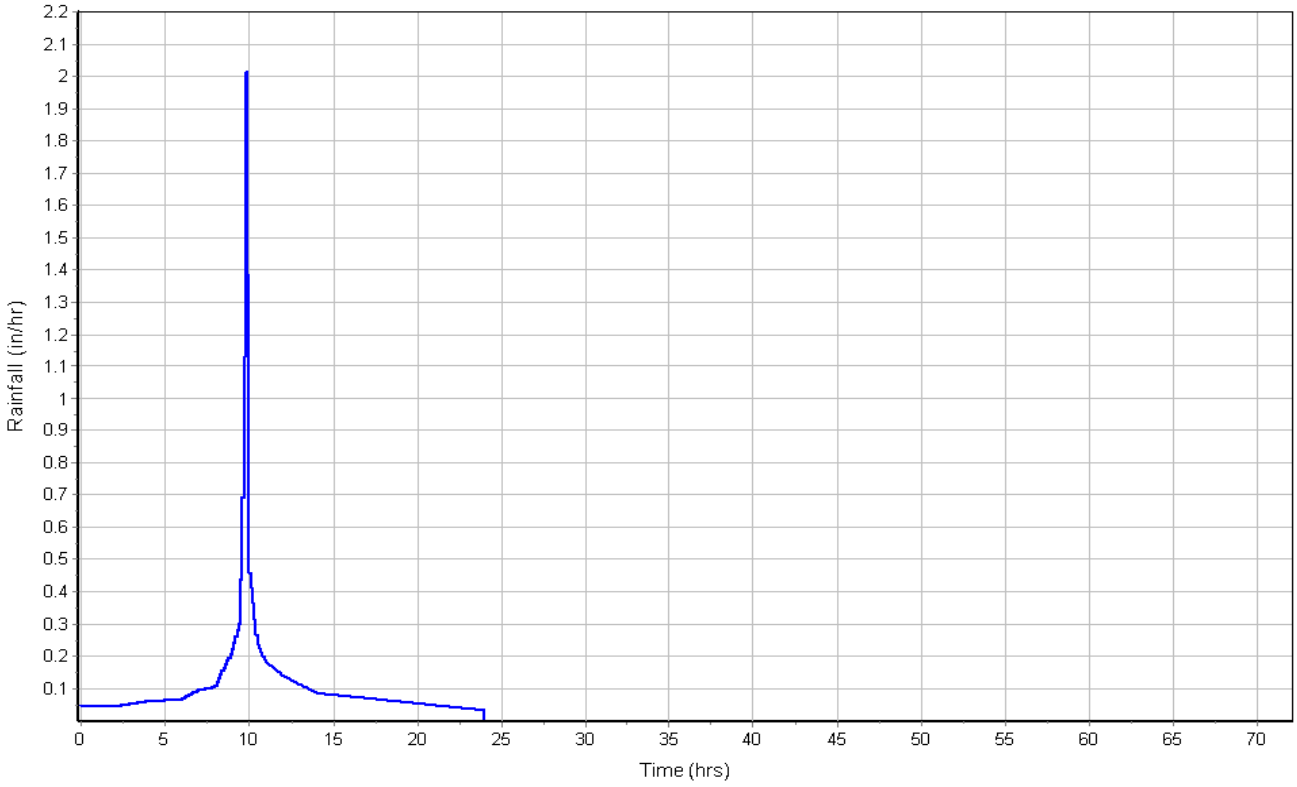
Total Rainfall (in) 2.67
Total Runoff (in) 1.60
Peak Runoff (cfs) 1.24
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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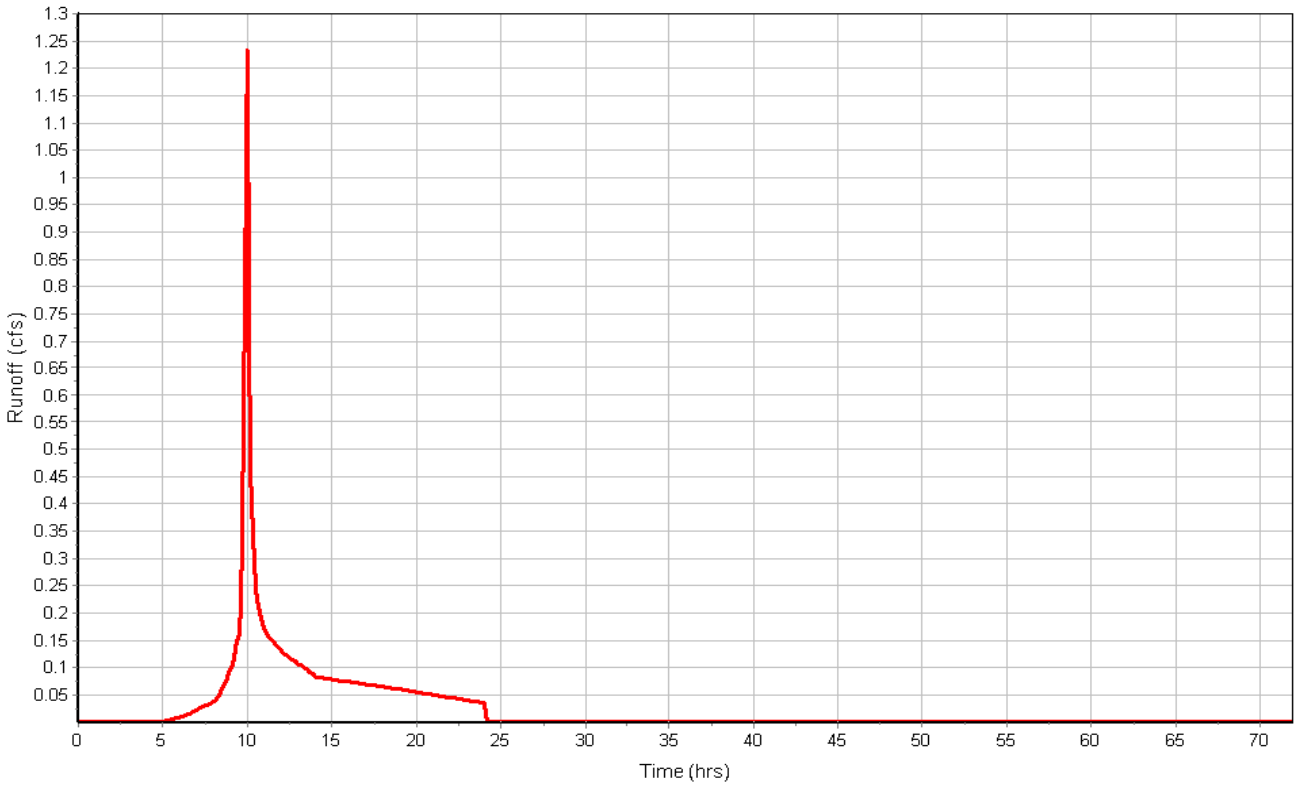
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Subbasin : A04

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A05

Input Data

Area (ac) 2.33
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	2.33	A	89.00
Composite Area & Weighted CN	2.33		89.00

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

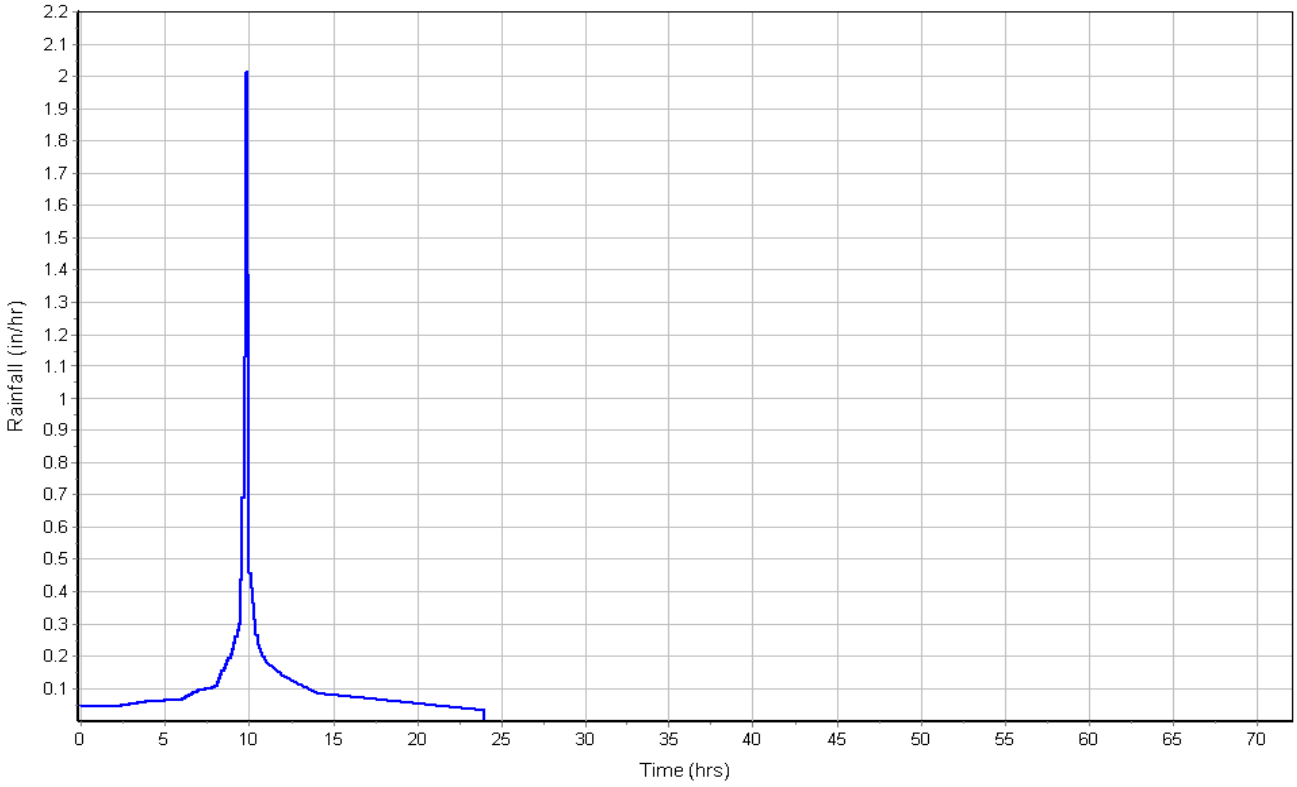
Total Rainfall (in) 2.67
Total Runoff (in) 1.60
Peak Runoff (cfs) 2.62
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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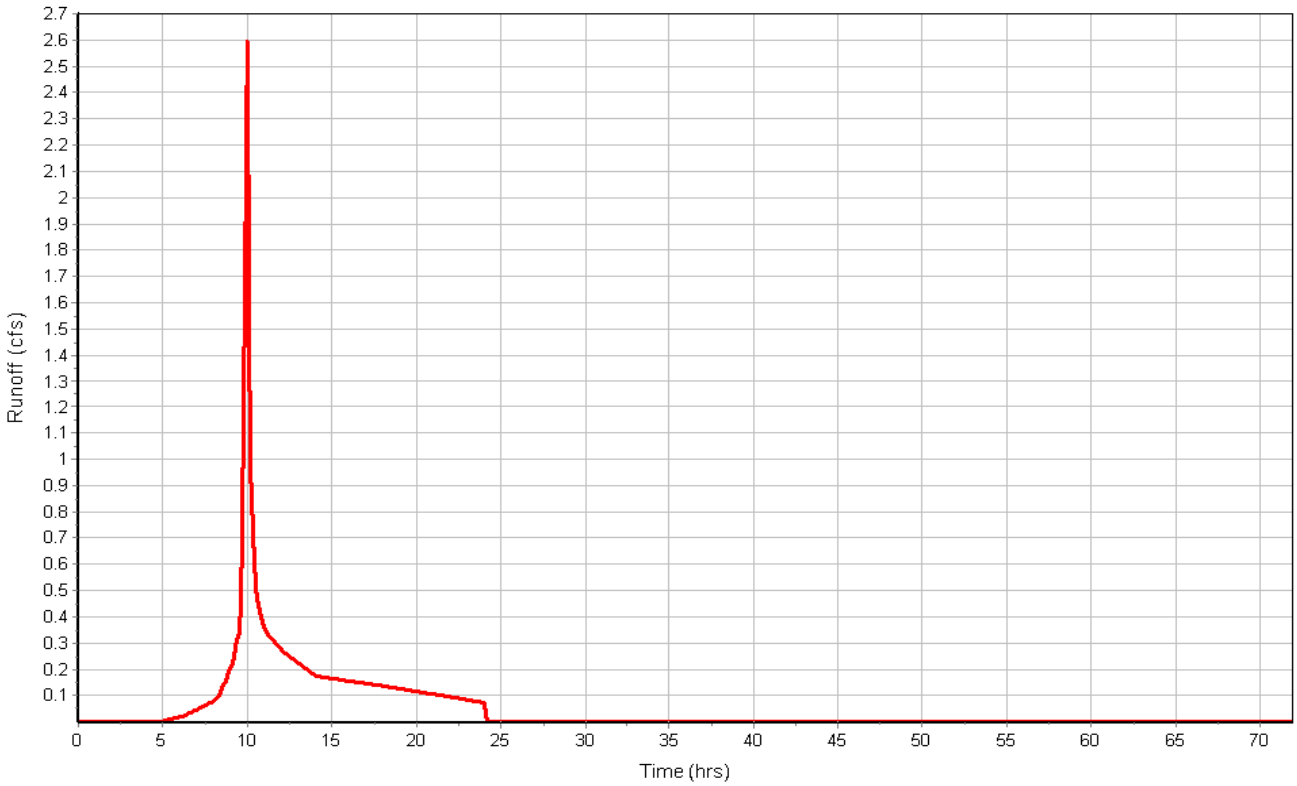
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Subbasin : A05

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Subbasin : A06

Input Data

Area (ac) 1.52
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	1.52	A	89.00
Composite Area & Weighted CN	1.52		89.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

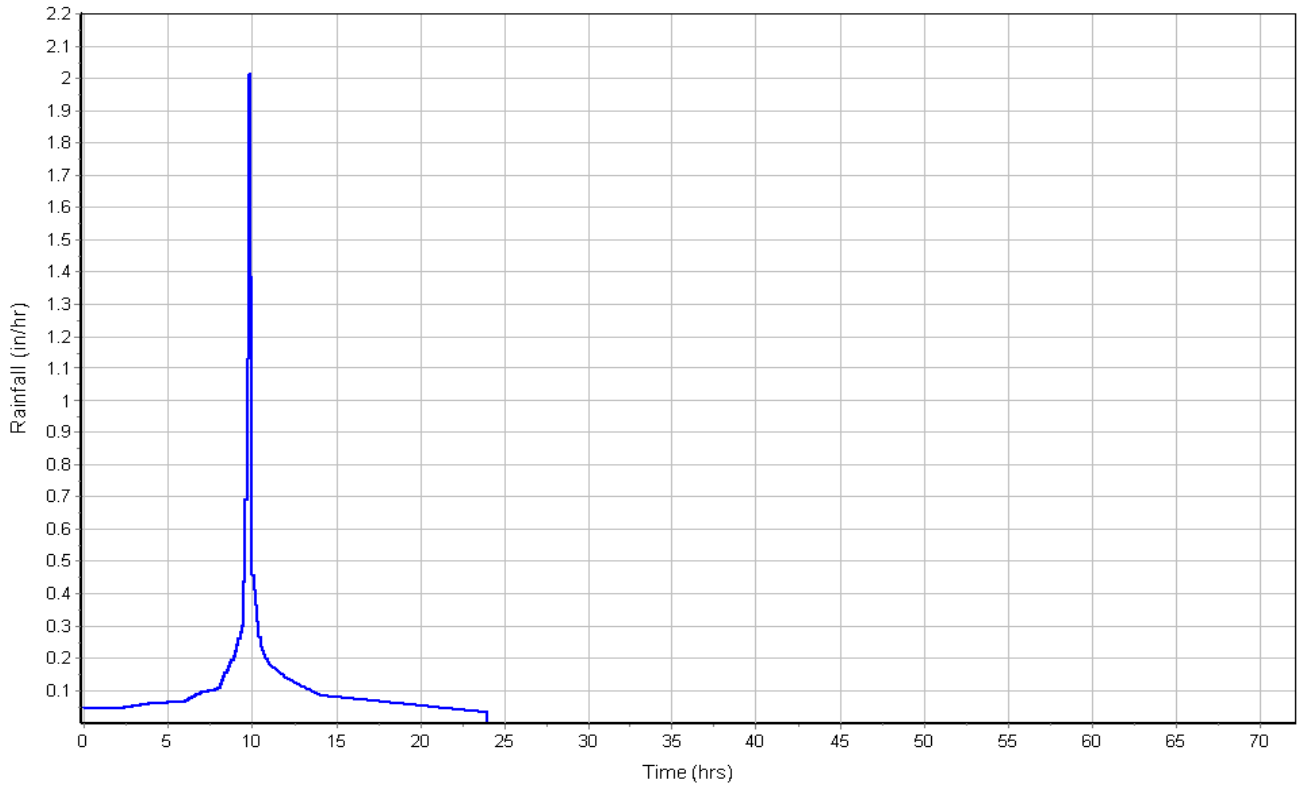
Total Rainfall (in) 2.67
Total Runoff (in) 1.60
Peak Runoff (cfs) 1.71
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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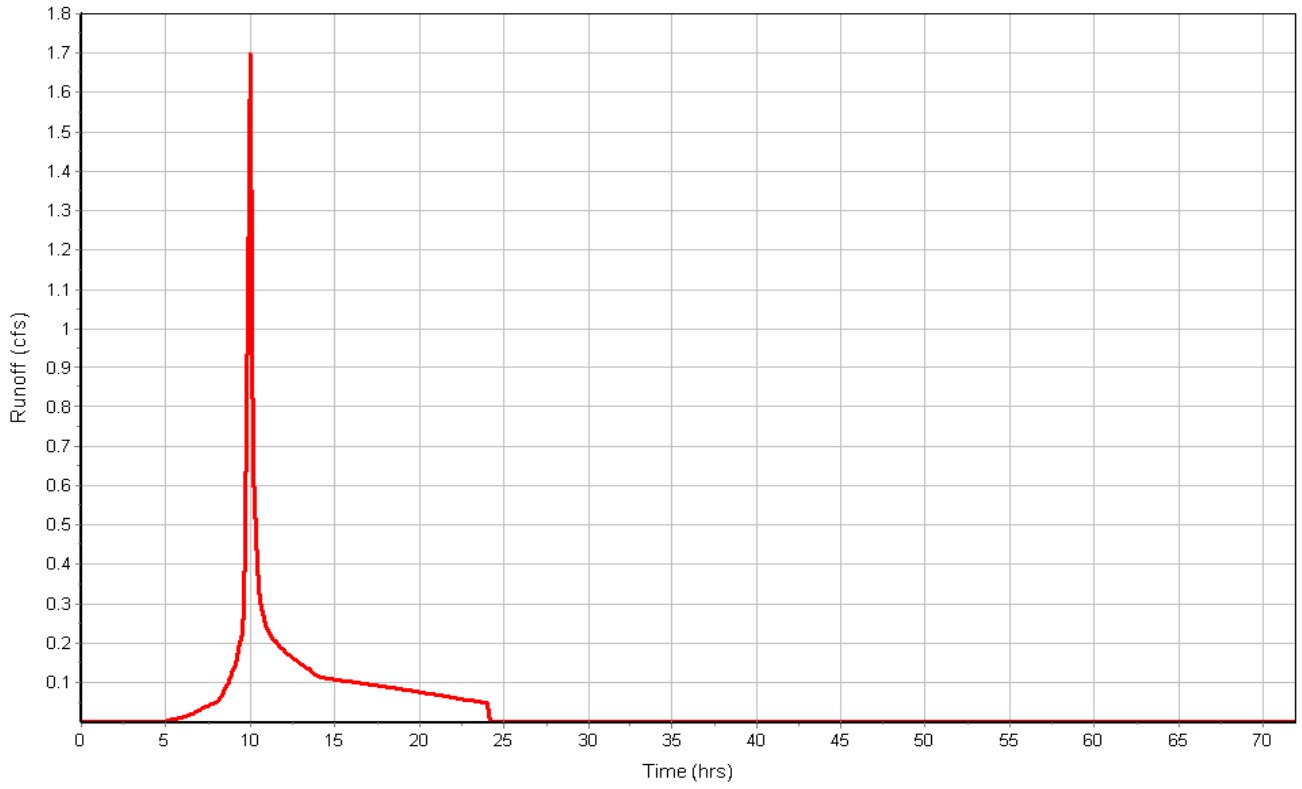
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Subbasin : A06

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Subbasin : A07

Input Data

Area (ac) 0.45
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	0.45	A	89.00
Composite Area & Weighted CN	0.45		89.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

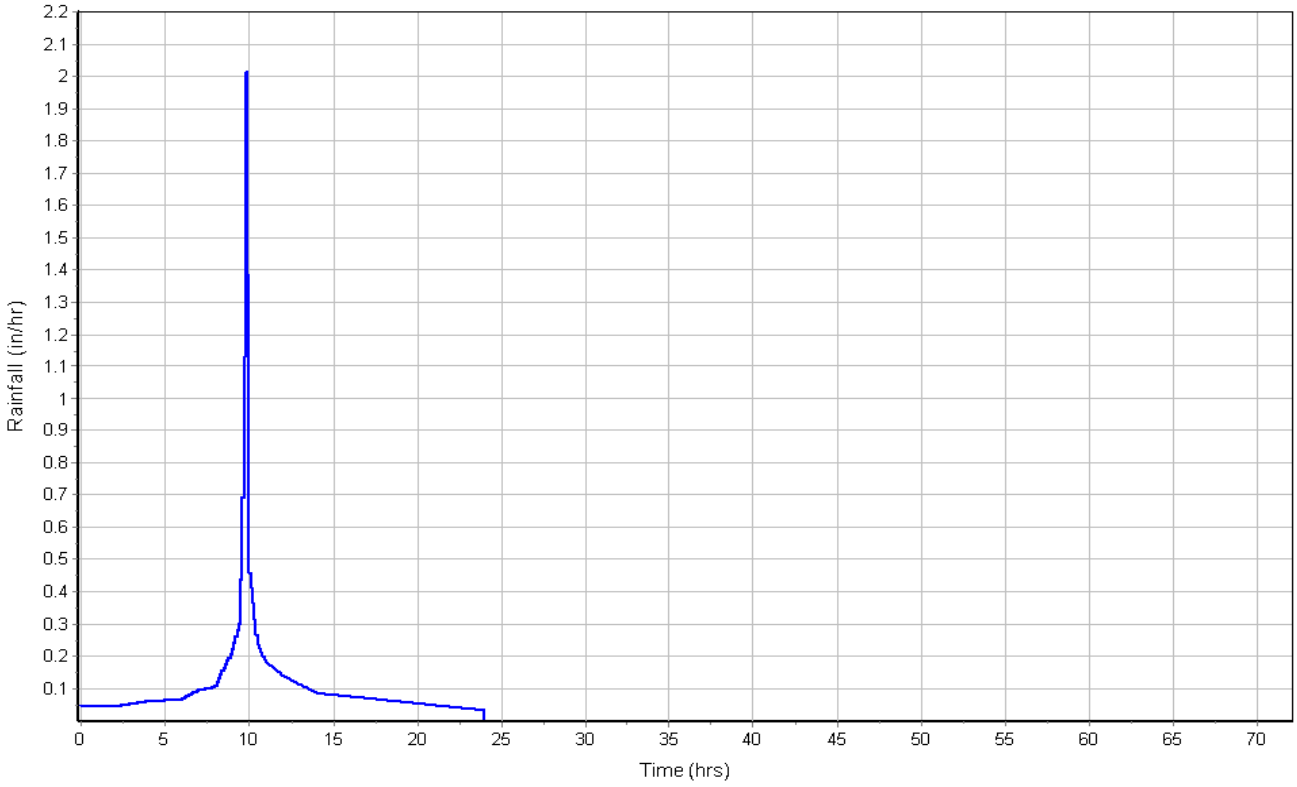
Total Rainfall (in) 2.67
Total Runoff (in) 1.60
Peak Runoff (cfs) 0.50
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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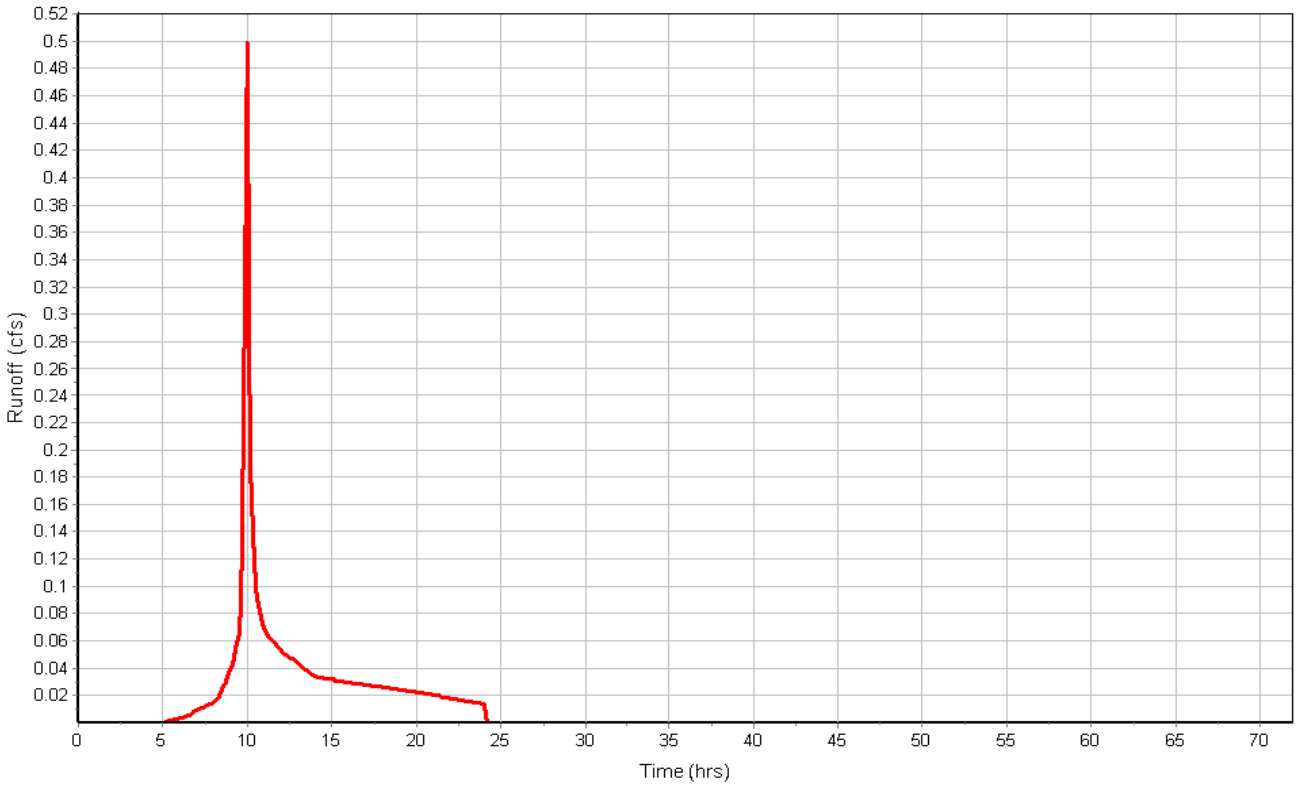
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Subbasin : A07

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Subbasin : A08

Input Data

Area (ac)	1.59
Weighted Curve Number	89.00
Rain Gage ID	Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	1.59	A	89.00
Composite Area & Weighted CN	1.59		89.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

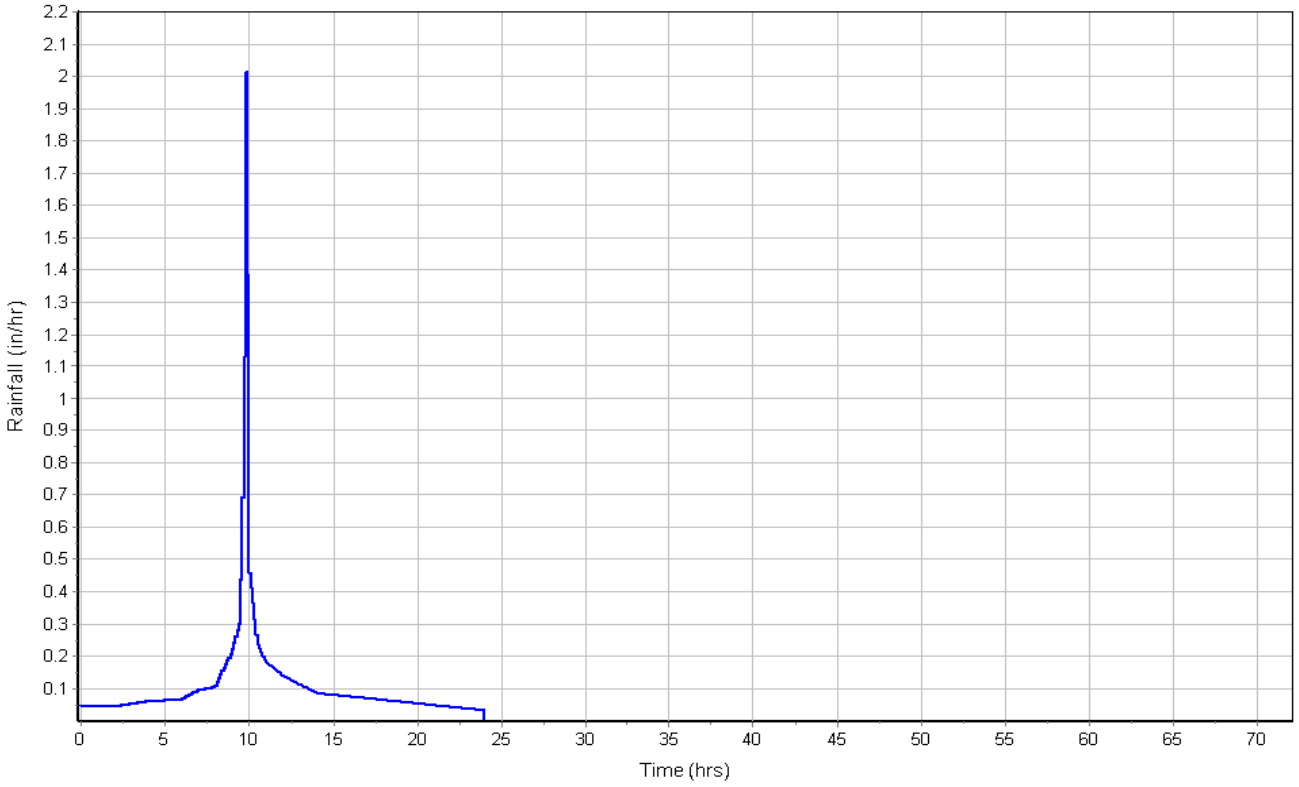
Total Rainfall (in)	2.67
Total Runoff (in)	1.60
Peak Runoff (cfs)	1.78
Weighted Curve Number	89.00
Time of Concentration (days hh:mm:ss)	0 00:10:00

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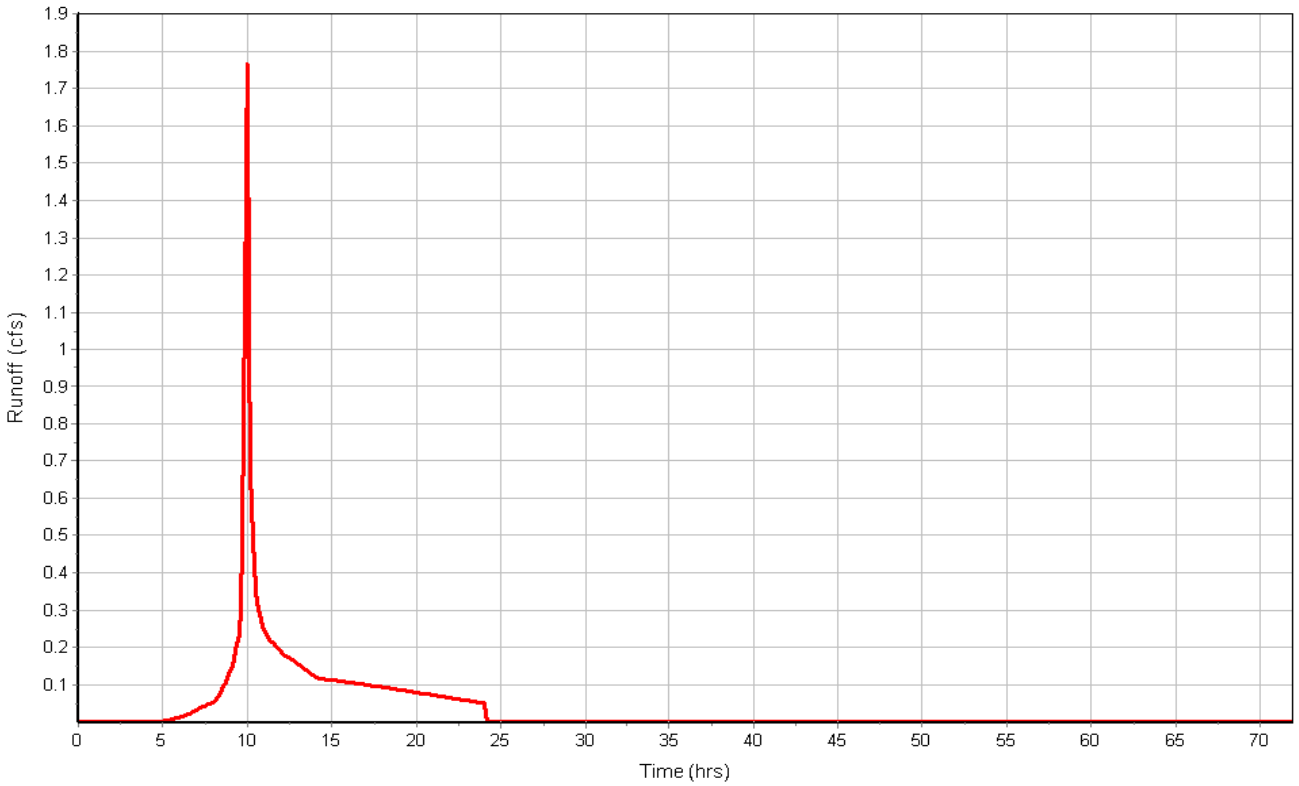
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Subbasin : A08

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Subbasin : A09

Input Data

Area (ac) 1.94
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	1.94	A	89.00
Composite Area & Weighted CN	1.94		89.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

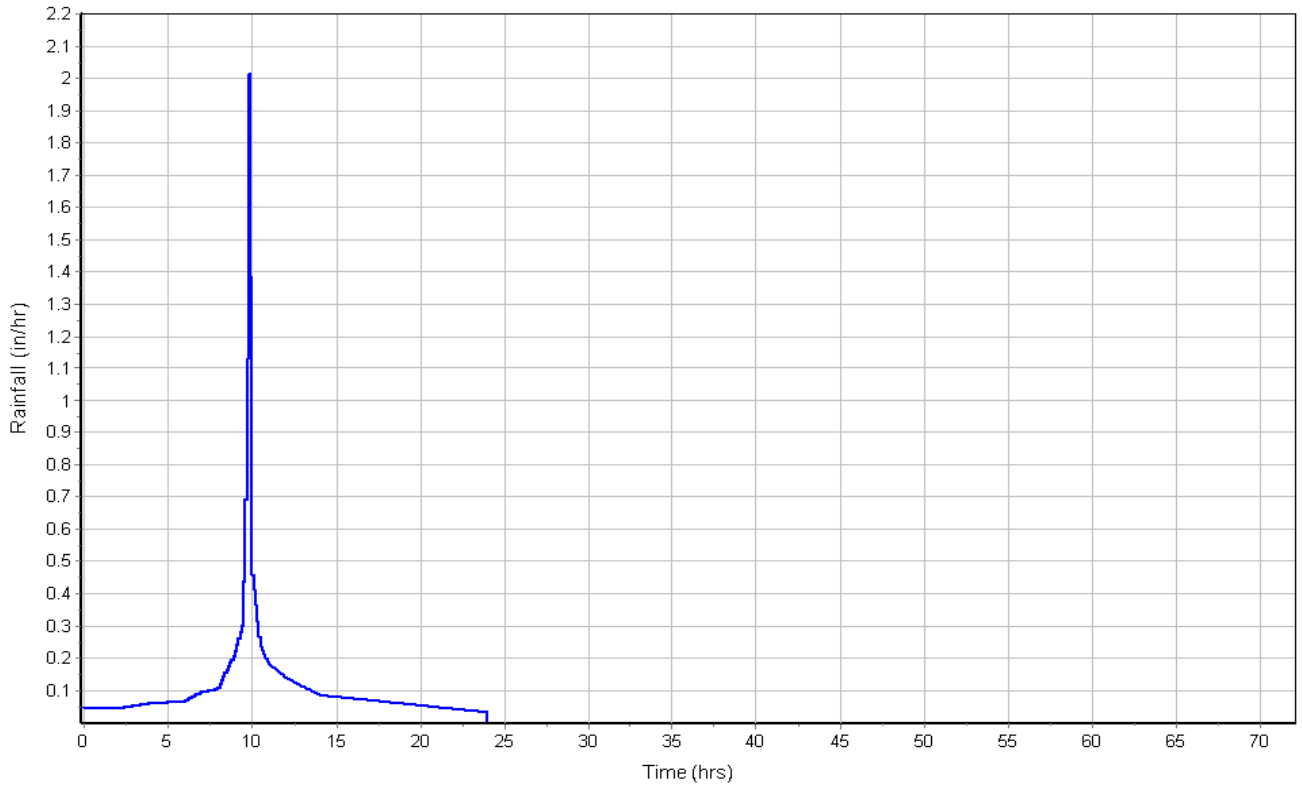
Total Rainfall (in) 2.67
Total Runoff (in) 1.60
Peak Runoff (cfs) 2.18
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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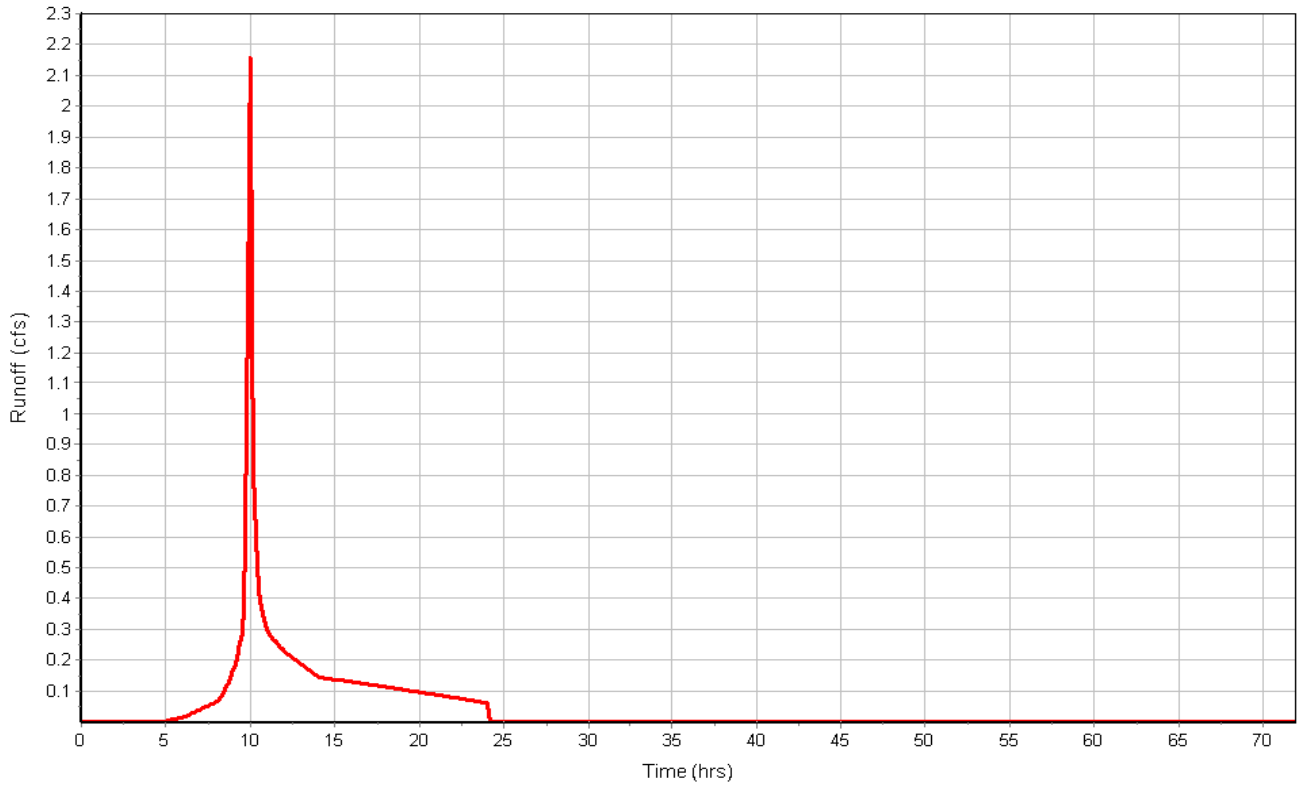
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Subbasin : A10

Input Data

Area (ac) 16.37
Weighted Curve Number 84.72
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban industrial, 72% imp	11.29	A	81.00
Urban industrial, 72% imp	5.08	D	93.00
Composite Area & Weighted CN	16.37		84.72

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

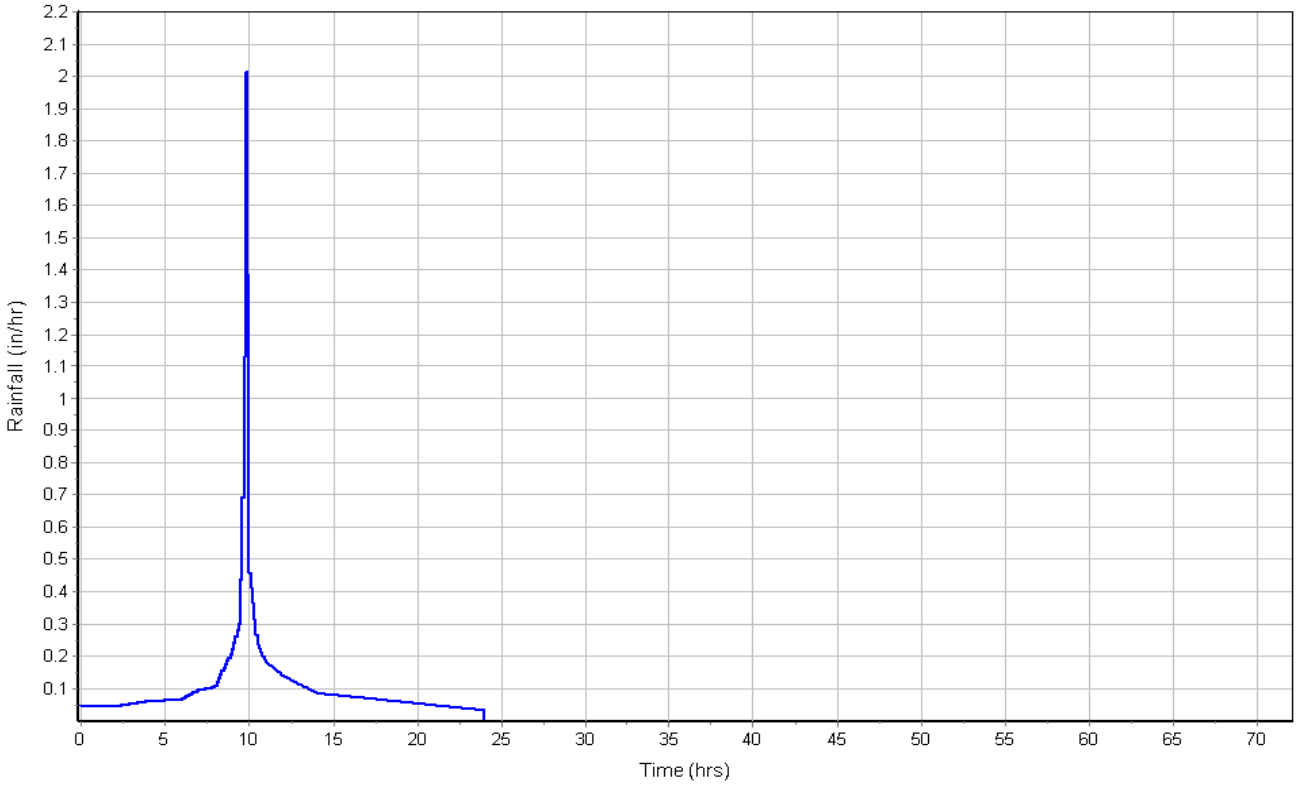
Total Rainfall (in) 2.67
Total Runoff (in) 1.30
Peak Runoff (cfs) 14.26
Weighted Curve Number 84.72
Time of Concentration (days hh:mm:ss) 0 00:10:00

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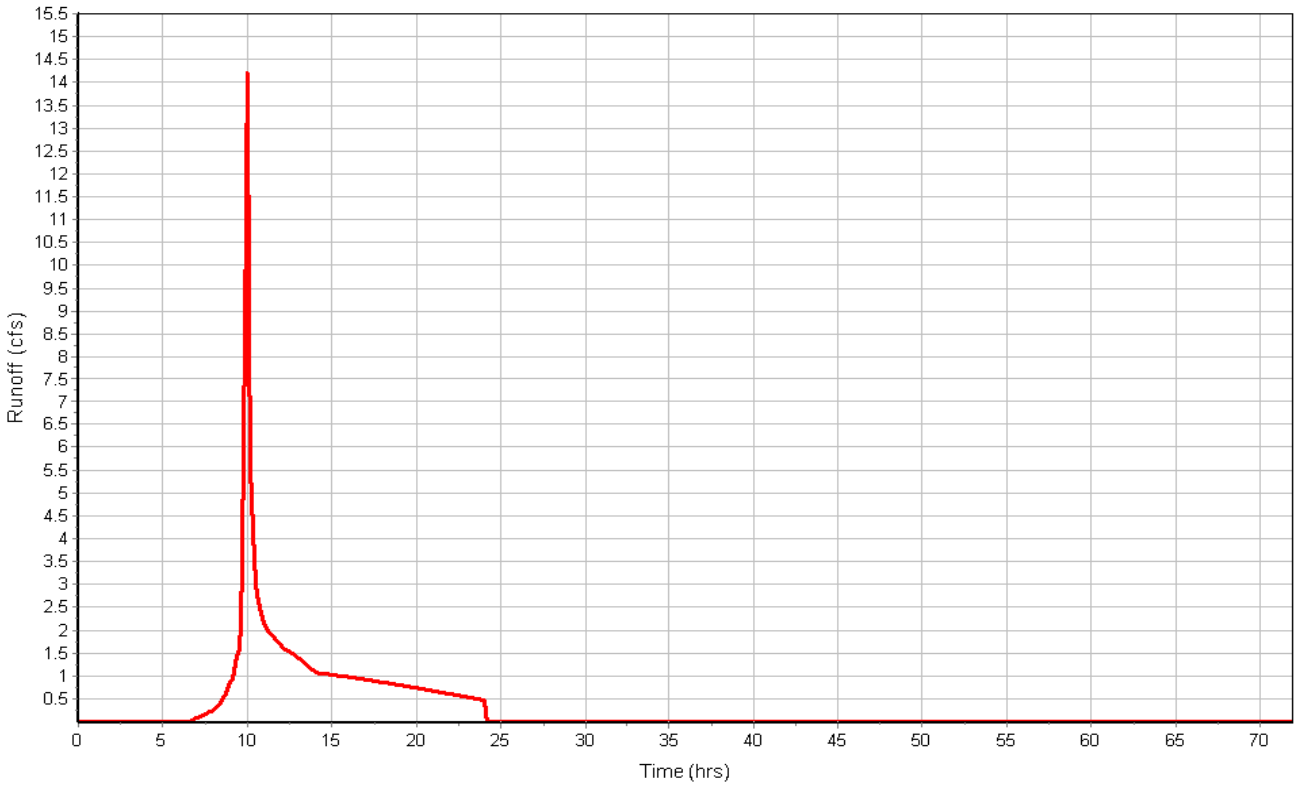
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Subbasin : A10

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Subbasin : A11a

Input Data

Area (ac) 0.92
Weighted Curve Number 98.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	0.52	A	98.00
Paved parking & roofs	0.40	D	98.00
Composite Area & Weighted CN	0.92		98.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

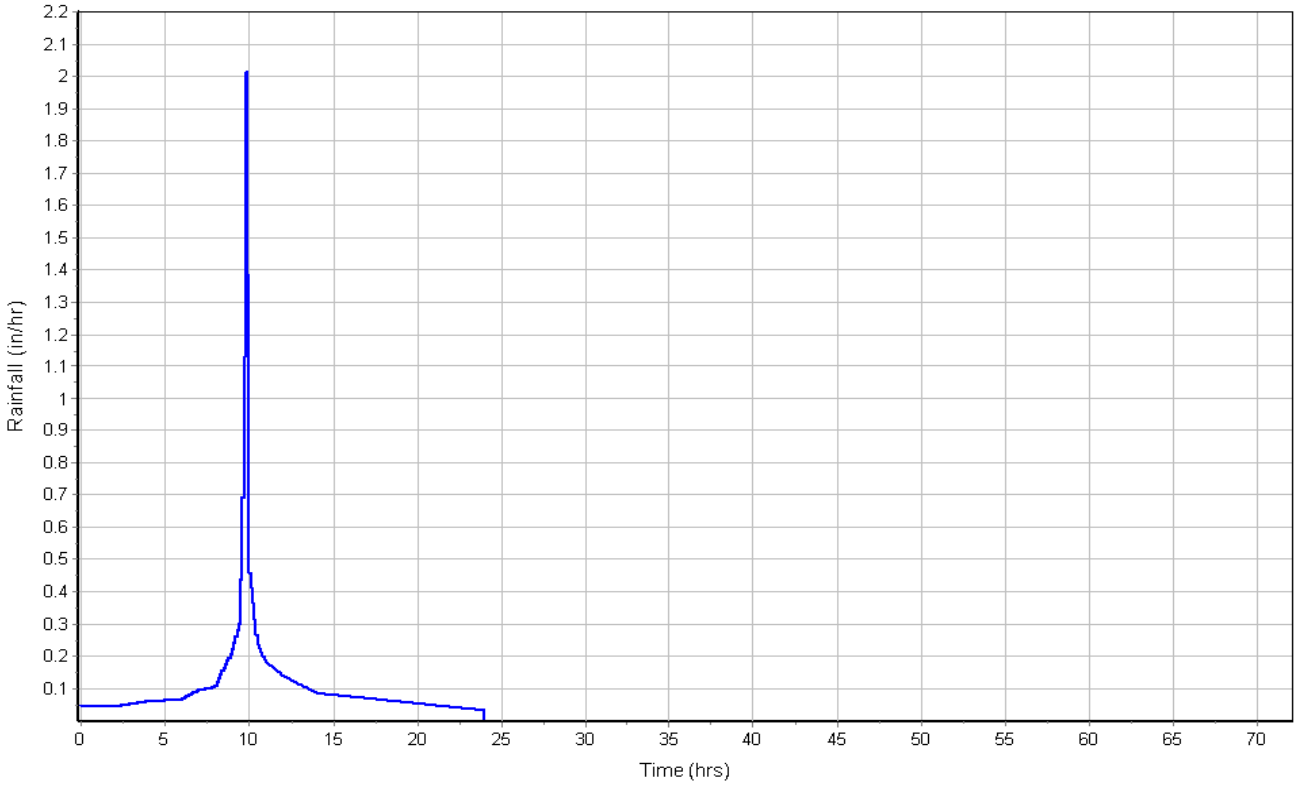
Total Rainfall (in) 2.67
Total Runoff (in) 2.44
Peak Runoff (cfs) 1.53
Weighted Curve Number 98.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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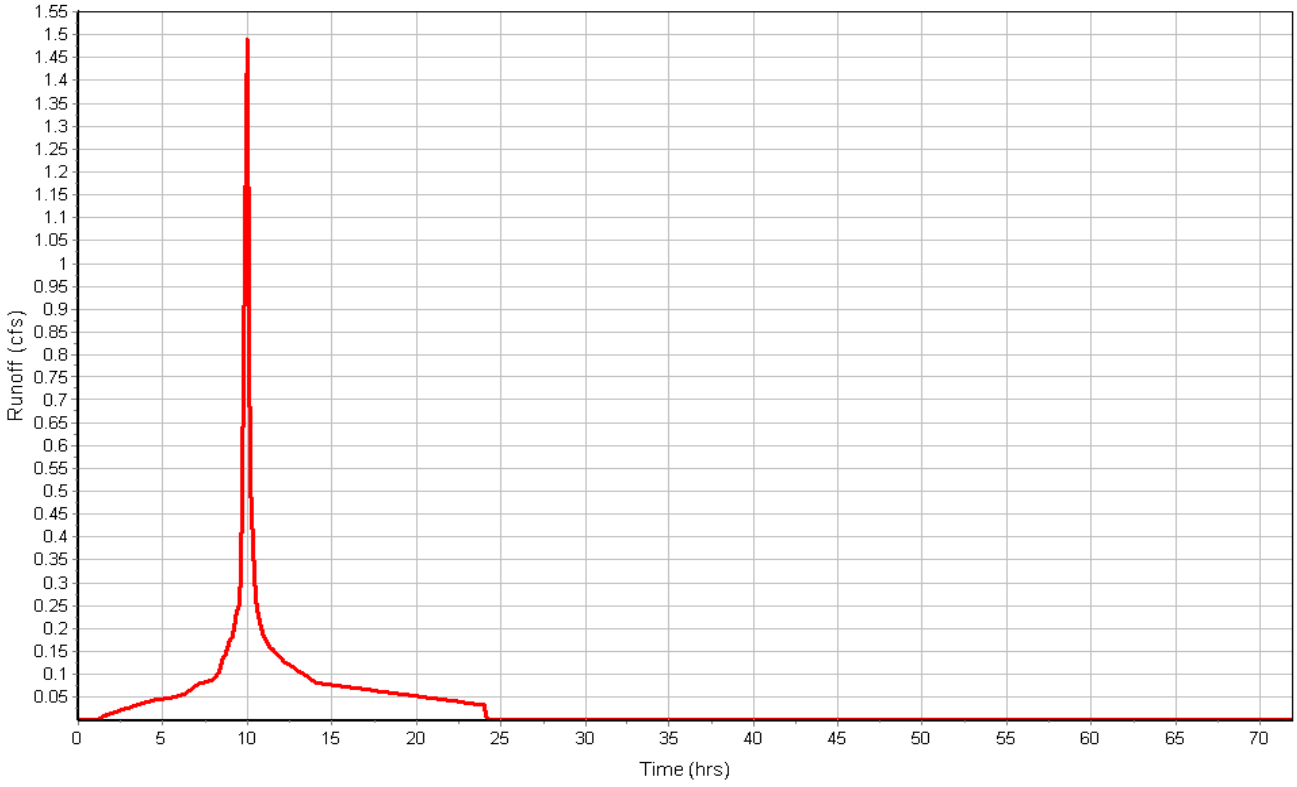
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Subbasin : A11a

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Subbasin : A11b

Input Data

Area (ac) 0.64
Weighted Curve Number 98.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	0.43	A	98.00
Paved parking & roofs	0.21	D	98.00
Composite Area & Weighted CN	0.64		98.00

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

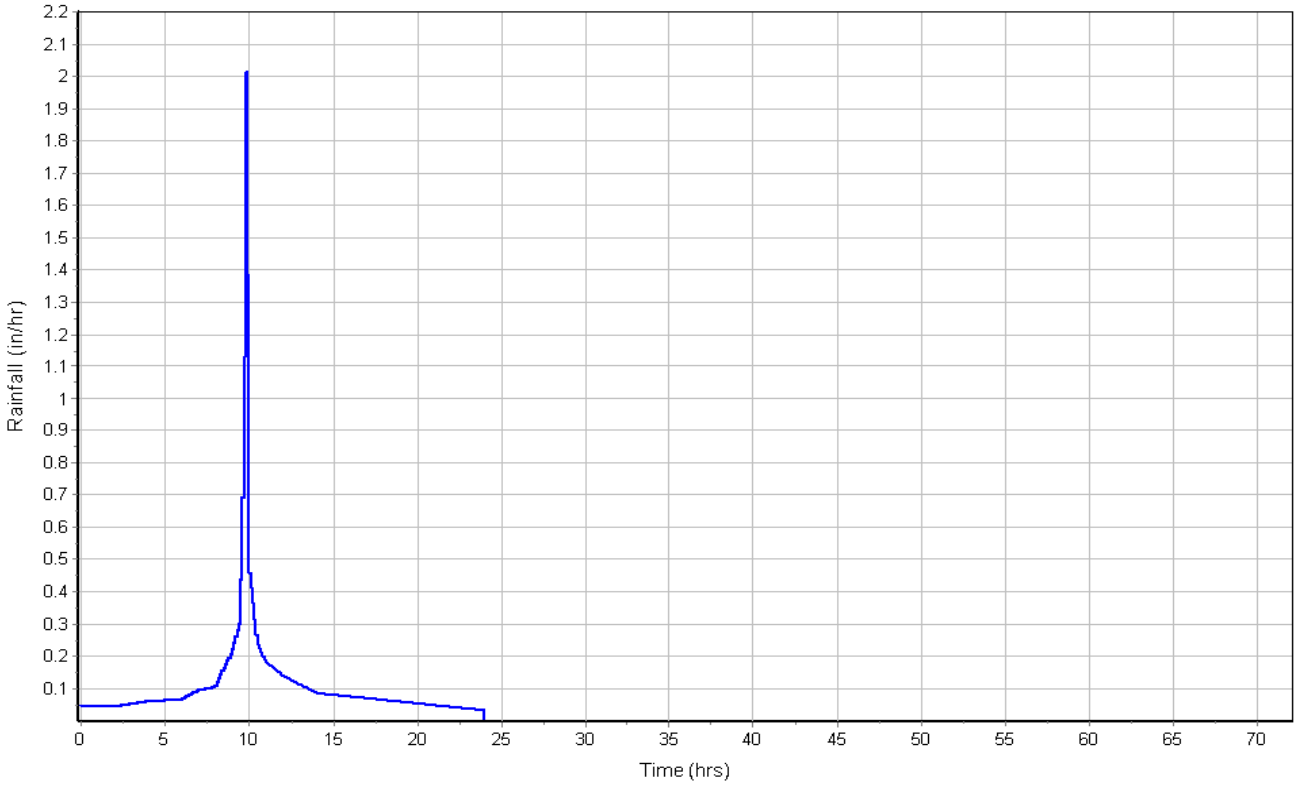
Total Rainfall (in) 2.67
Total Runoff (in) 2.44
Peak Runoff (cfs) 1.06
Weighted Curve Number 98.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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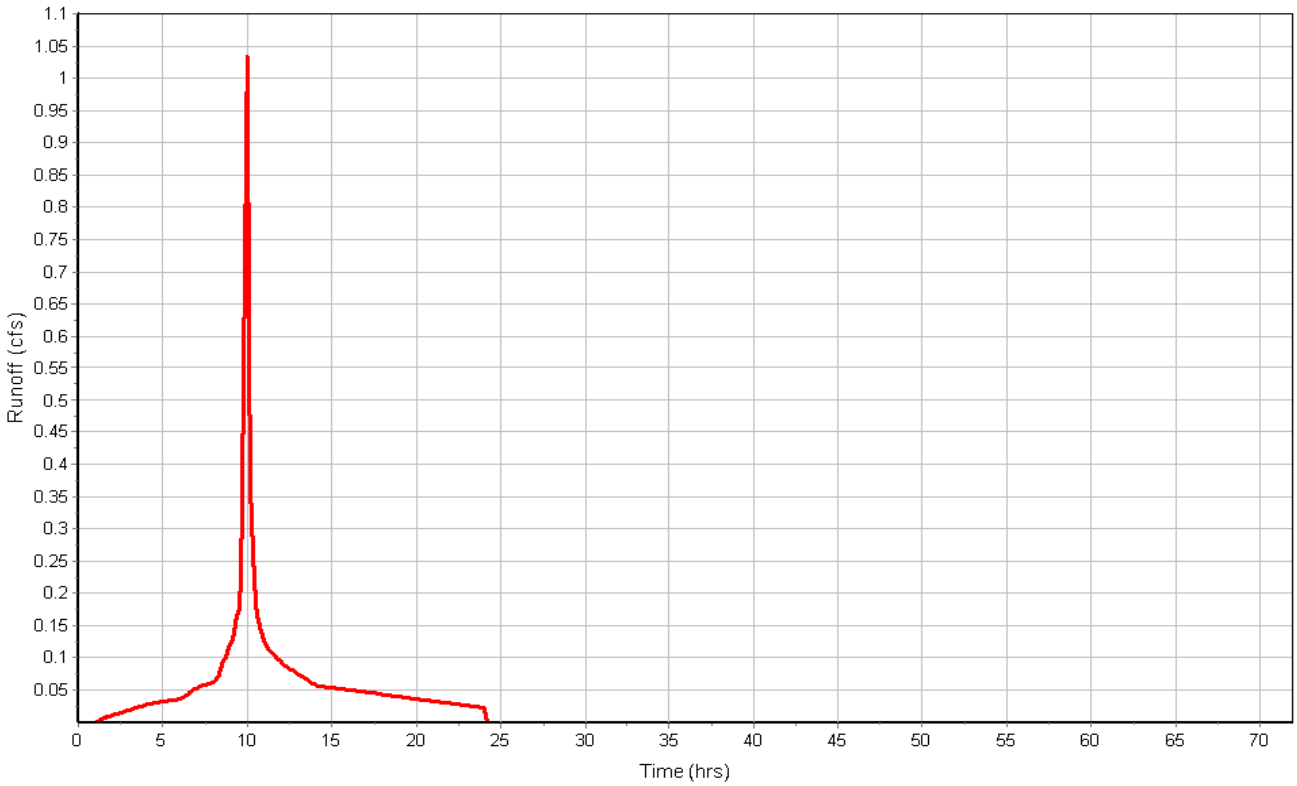
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Subbasin : A11b

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A12

Input Data

Area (ac)	1.73
Weighted Curve Number	98.00
Rain Gage ID	Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	1.73	A	98.00
Composite Area & Weighted CN	1.73		98.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

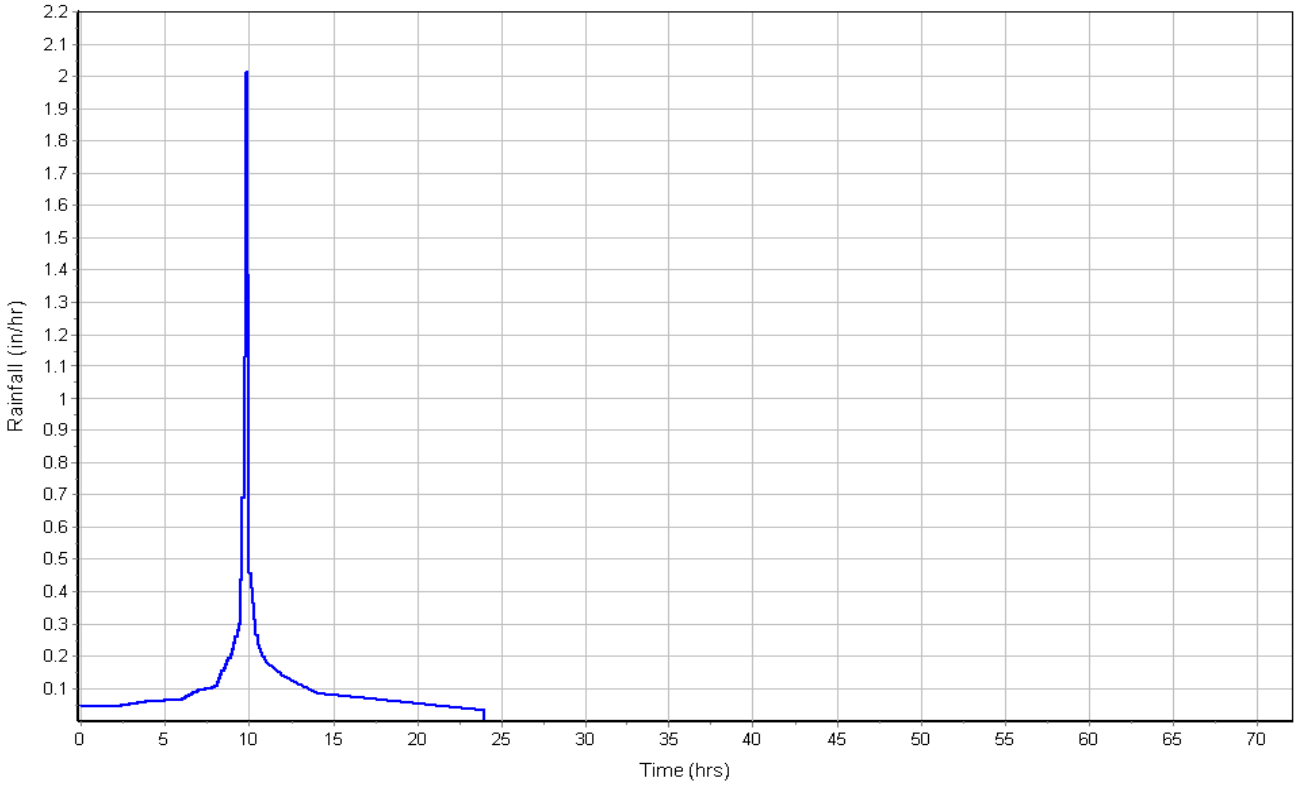
Total Rainfall (in)	2.67
Total Runoff (in)	2.44
Peak Runoff (cfs)	2.86
Weighted Curve Number	98.00
Time of Concentration (days hh:mm:ss)	0 00:10:00

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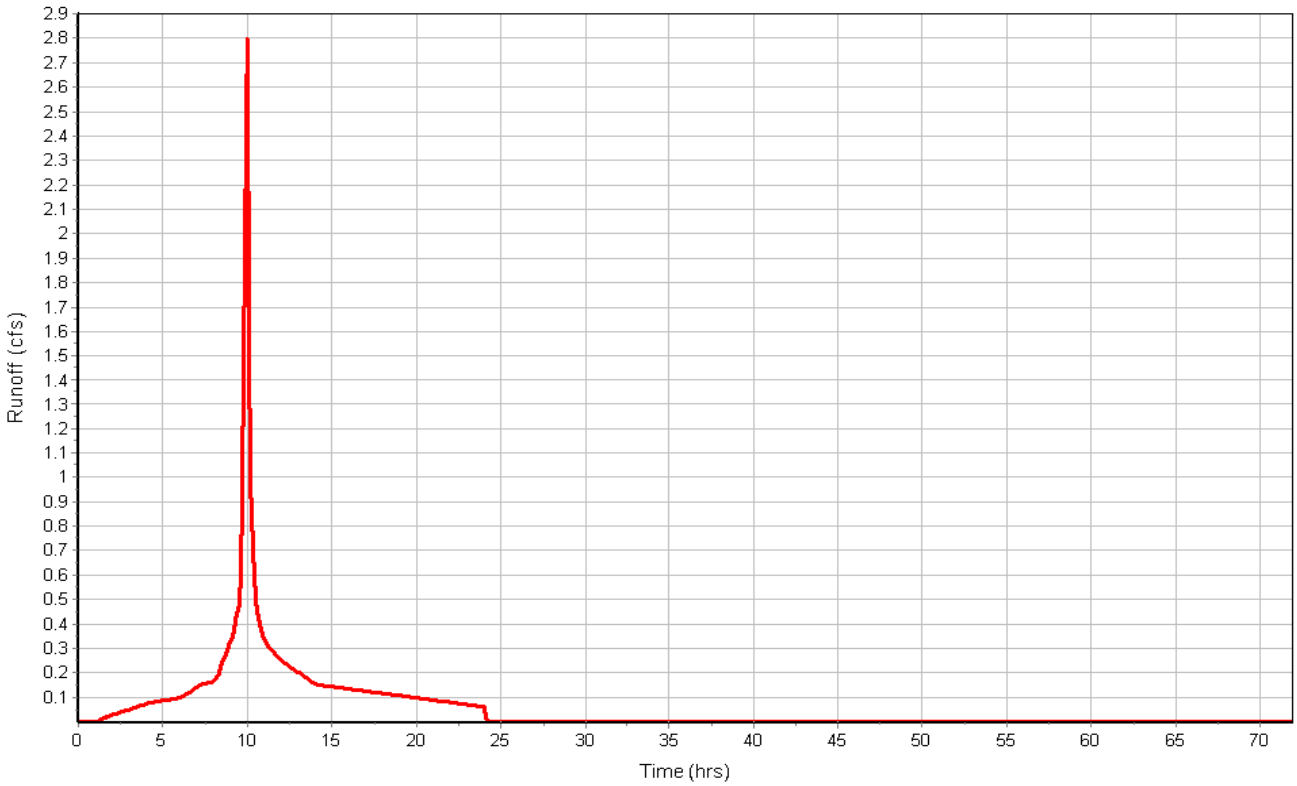
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Subbasin : A12

Rainfall Intensity Graph



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Subbasin : A13

Input Data

Area (ac) 3.78
Weighted Curve Number 98.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved roads with curbs & sewers	3.78	A	98.00
Composite Area & Weighted CN	3.78		98.00

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

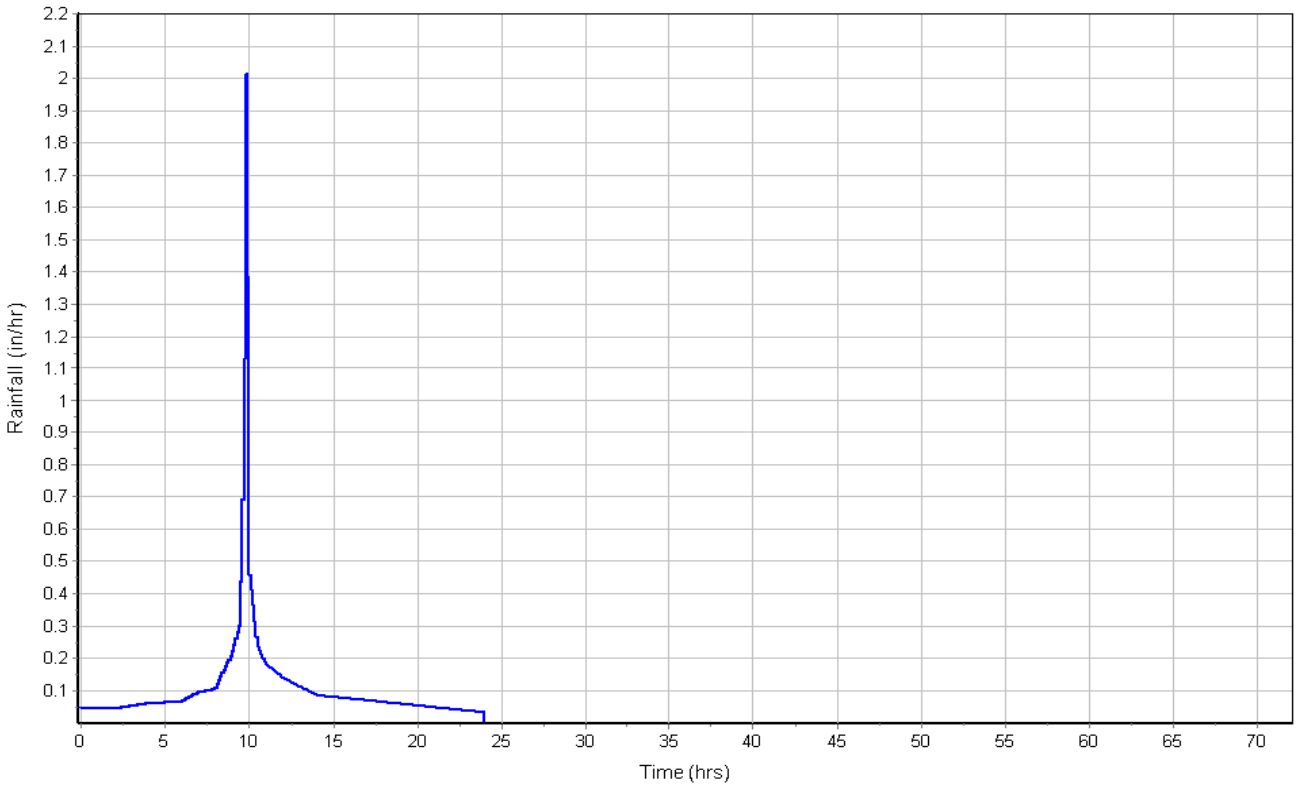
Total Rainfall (in) 2.67
Total Runoff (in) 2.44
Peak Runoff (cfs) 6.26
Weighted Curve Number 98.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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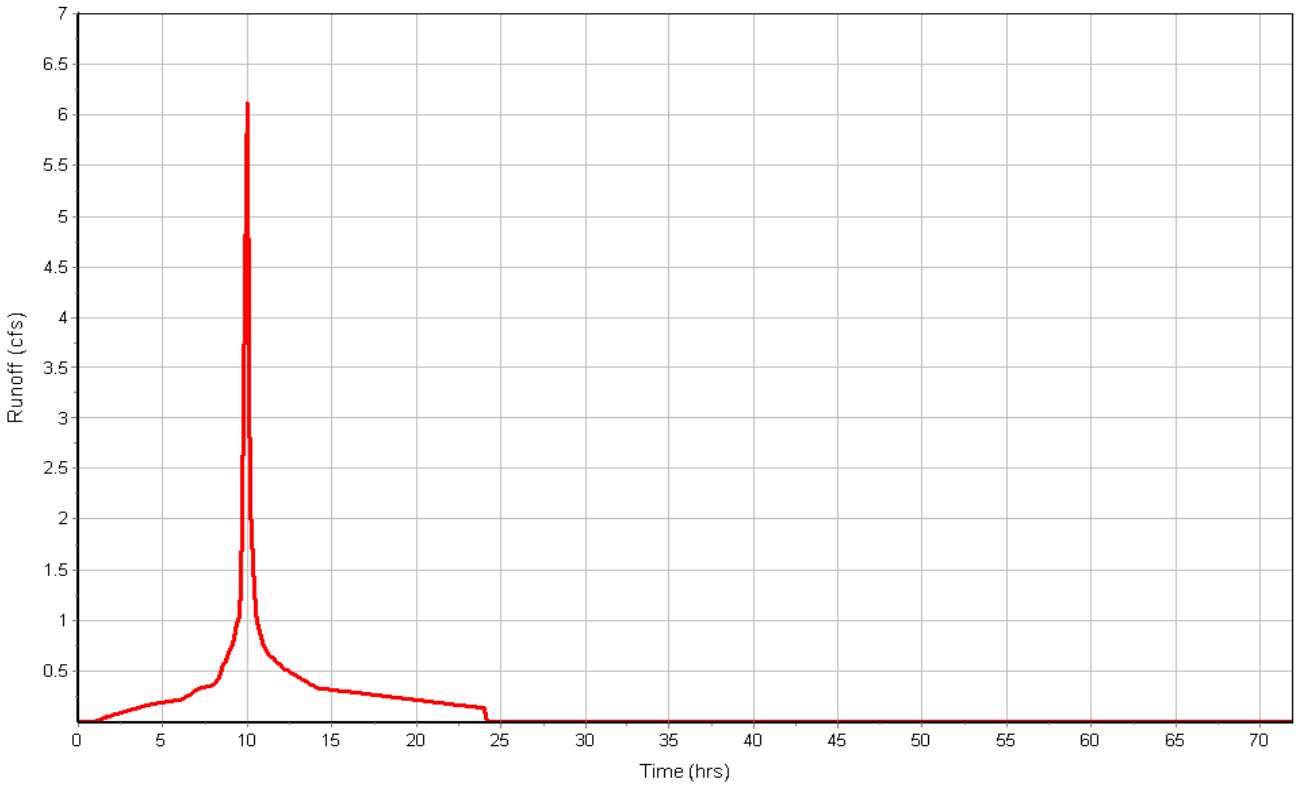
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Subbasin : A13

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A3A

Input Data

Area (ac) 0.54
Weighted Curve Number 95.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	0.54	D	95.00
Composite Area & Weighted CN	0.54		95.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

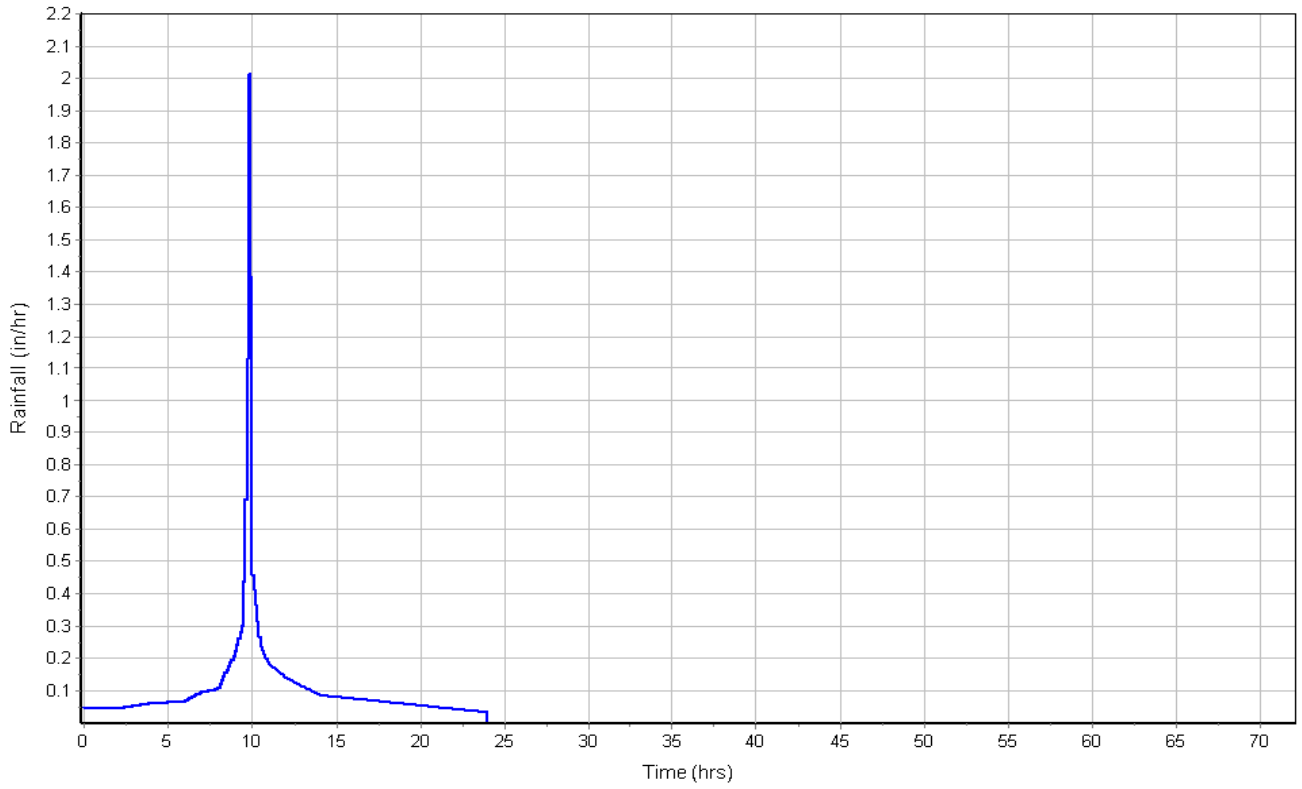
Total Rainfall (in) 2.67
Total Runoff (in) 2.13
Peak Runoff (cfs) 0.81
Weighted Curve Number 95.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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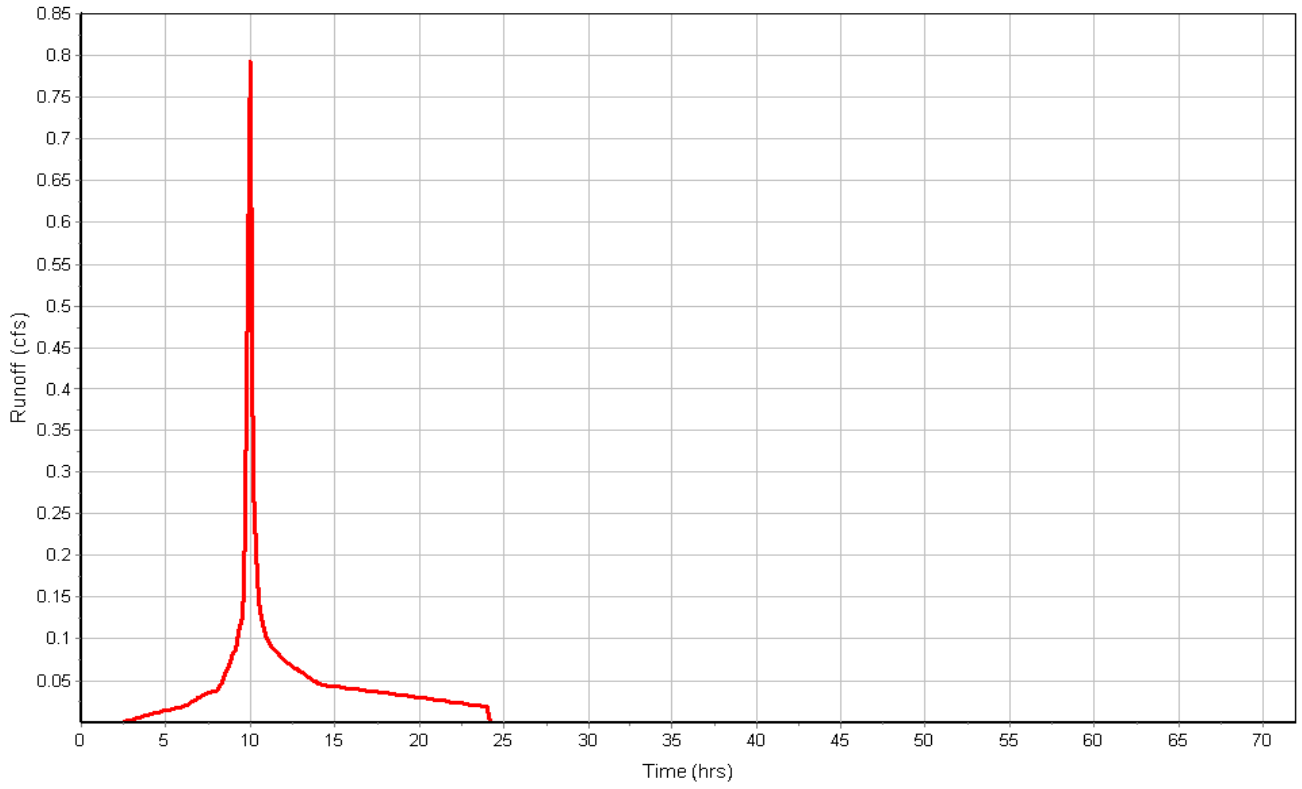
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Subbasin : A3A

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A3B

Input Data

Area (ac) 0.80
Weighted Curve Number 91.77
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	0.43	A	89.00
Urban commercial, 85% imp	0.37	D	95.00
Composite Area & Weighted CN	0.80		91.77

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

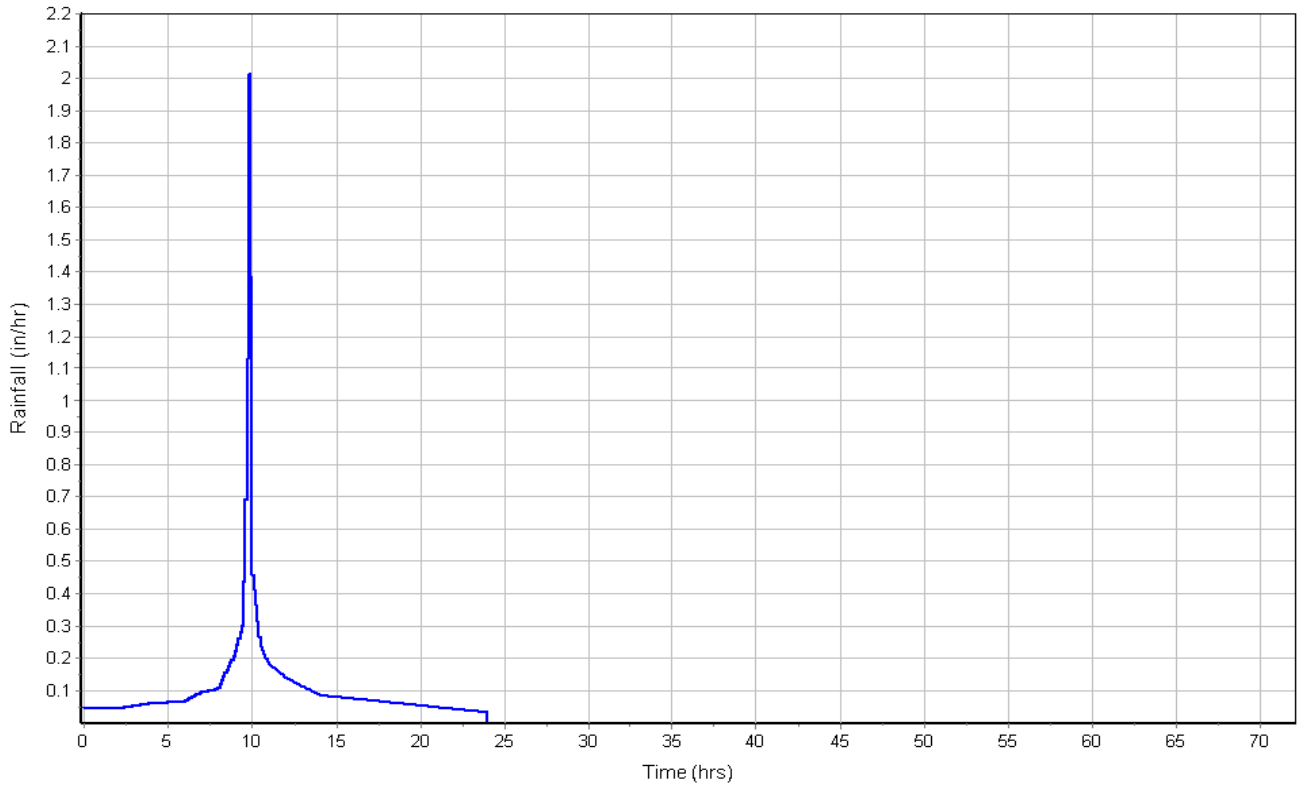
Total Rainfall (in) 2.67
Total Runoff (in) 1.83
Peak Runoff (cfs) 1.04
Weighted Curve Number 91.77
Time of Concentration (days hh:mm:ss) 0 00:10:00

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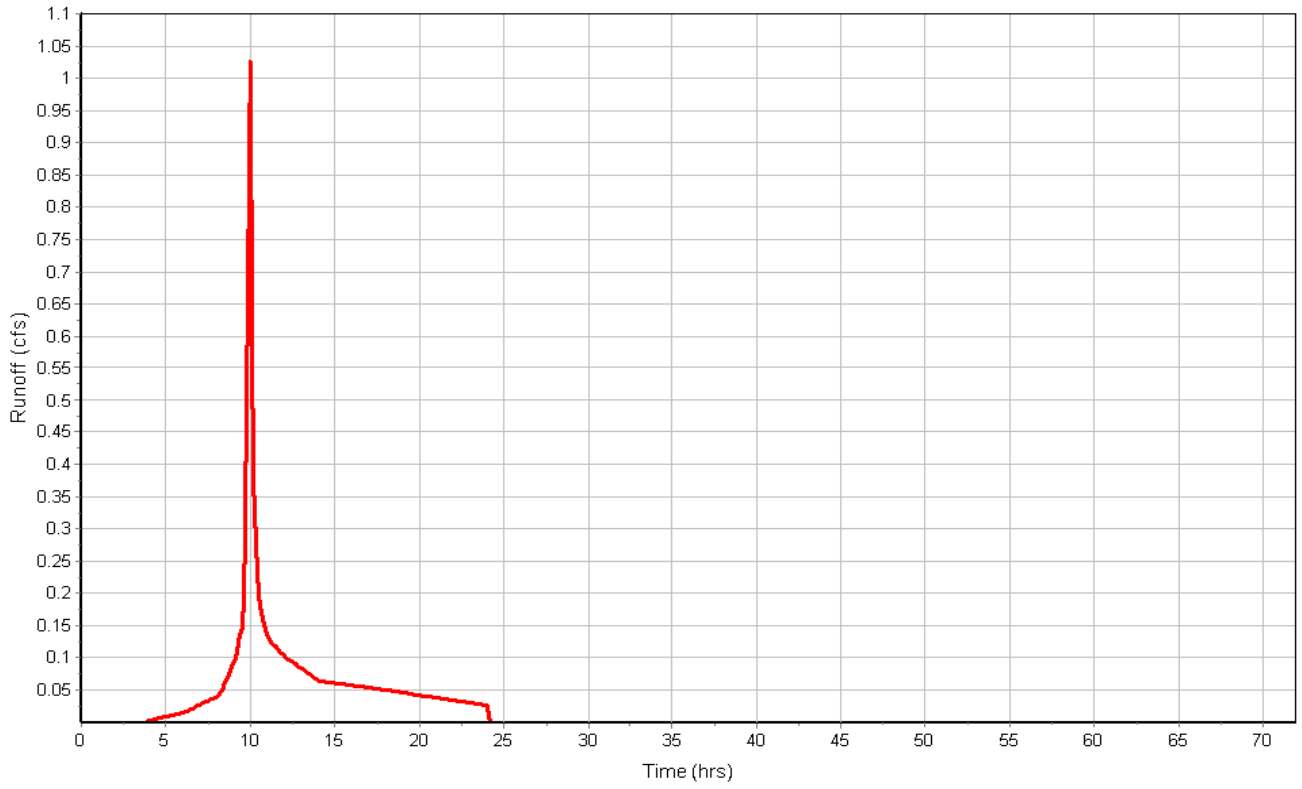
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Subbasin : A3B

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A3C

Input Data

Area (ac) 1.34
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	1.34	A	89.00
Composite Area & Weighted CN	1.34		89.00

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

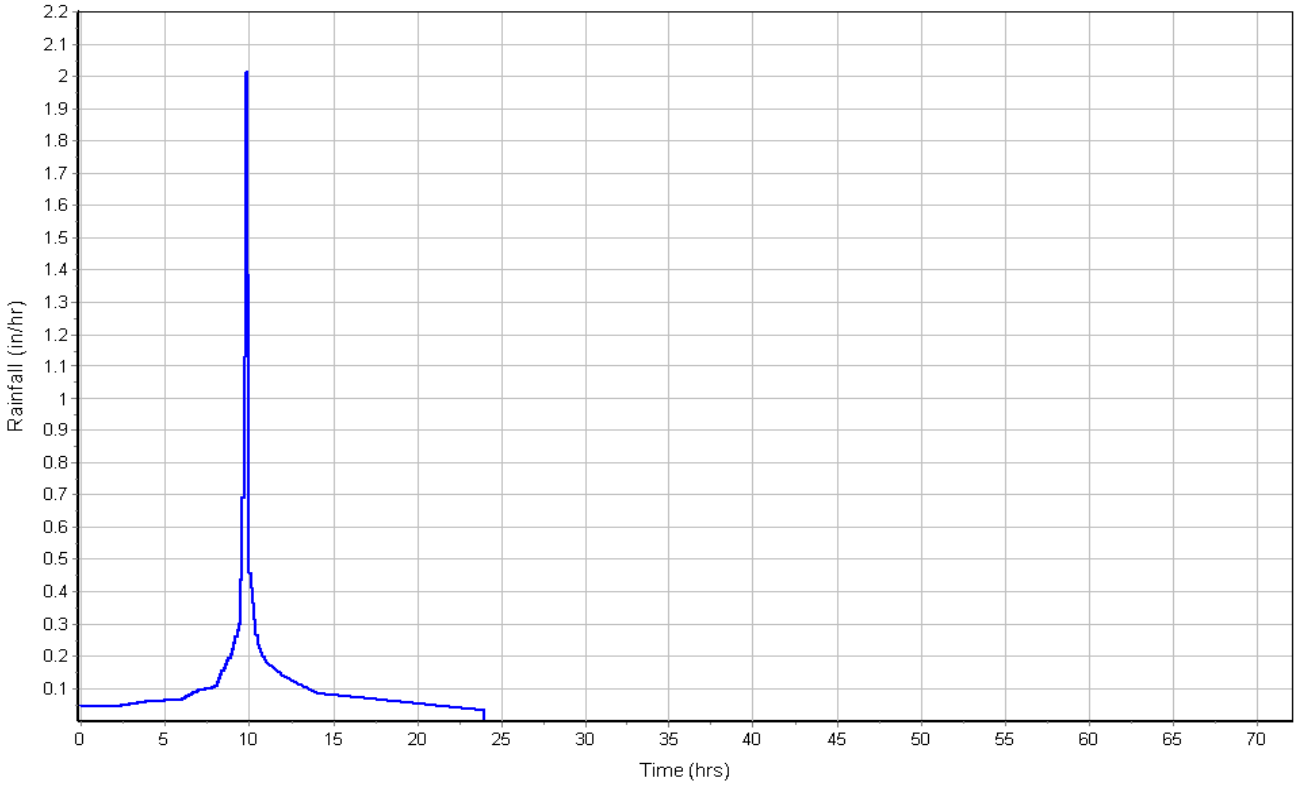
Total Rainfall (in) 2.67
Total Runoff (in) 1.60
Peak Runoff (cfs) 1.50
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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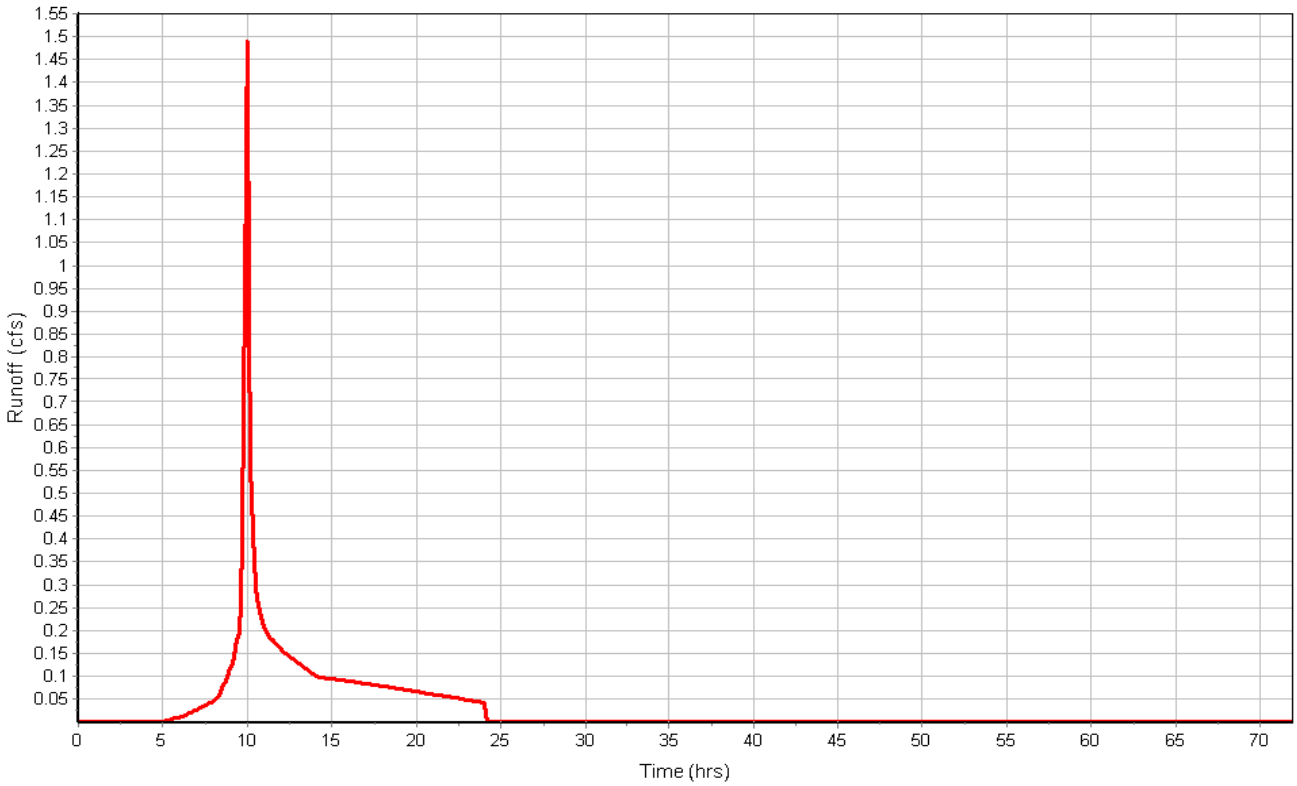
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Subbasin : A3C

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : RVPREDEV

Input Data

Area (ac) 16.37
Weighted Curve Number 70.76
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Desert shrub range, Poor	11.29	A	63.00
Desert shrub range, Poor	5.08	D	88.00
Composite Area & Weighted CN	16.37		70.76

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.13	0.00	0.00
Flow Length (ft) :	1228	0.00	0.00
Slope (%) :	2.0	0.00	0.00
2 yr, 24 hr Rainfall (in) :	1.33	0.00	0.00
Velocity (ft/sec) :	0.20	0.00	0.00
Computed Flow Time (min) :	100.79	0.00	0.00

Total TOC (min) 100.79

Subbasin Runoff Results

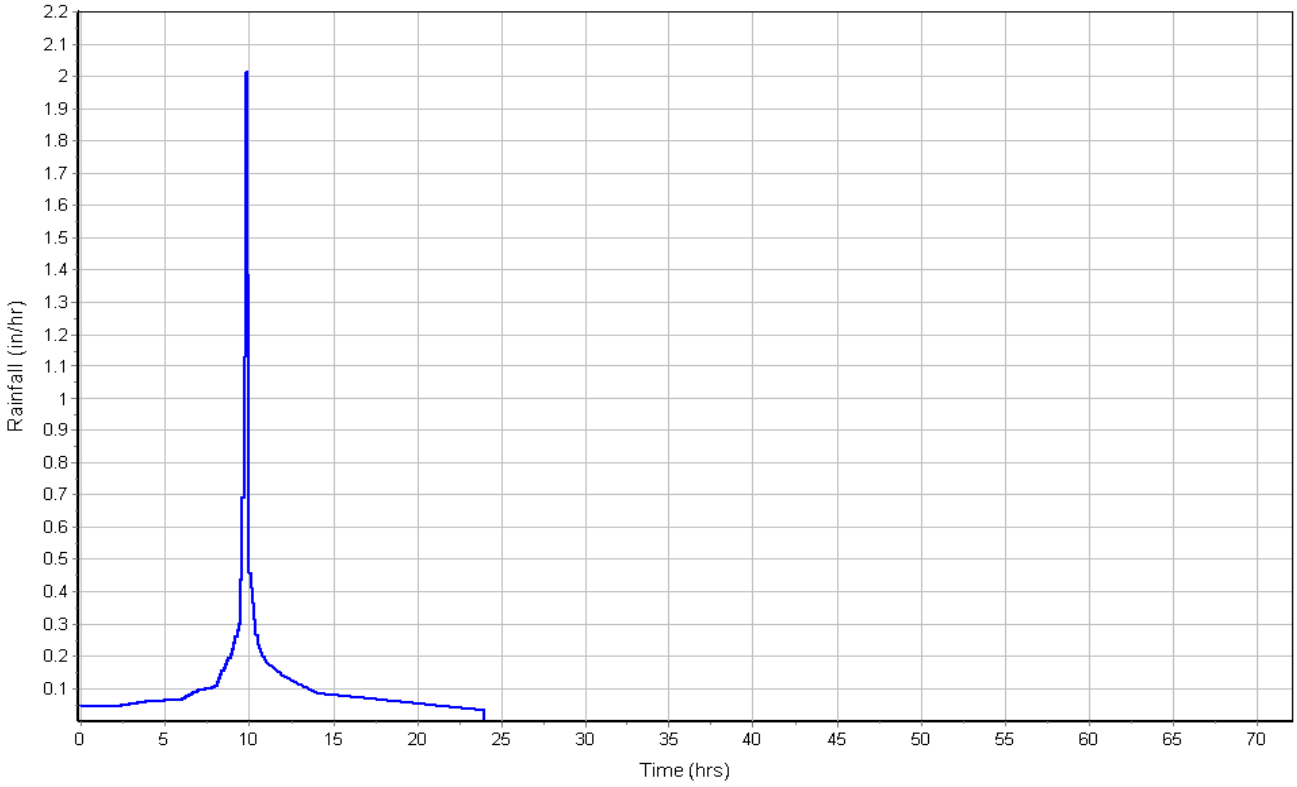
Total Rainfall (in) 2.67
Total Runoff (in) 0.57
Peak Runoff (cfs) 1.34
Weighted Curve Number 70.76
Time of Concentration (days hh:mm:ss) 0 01:40:47

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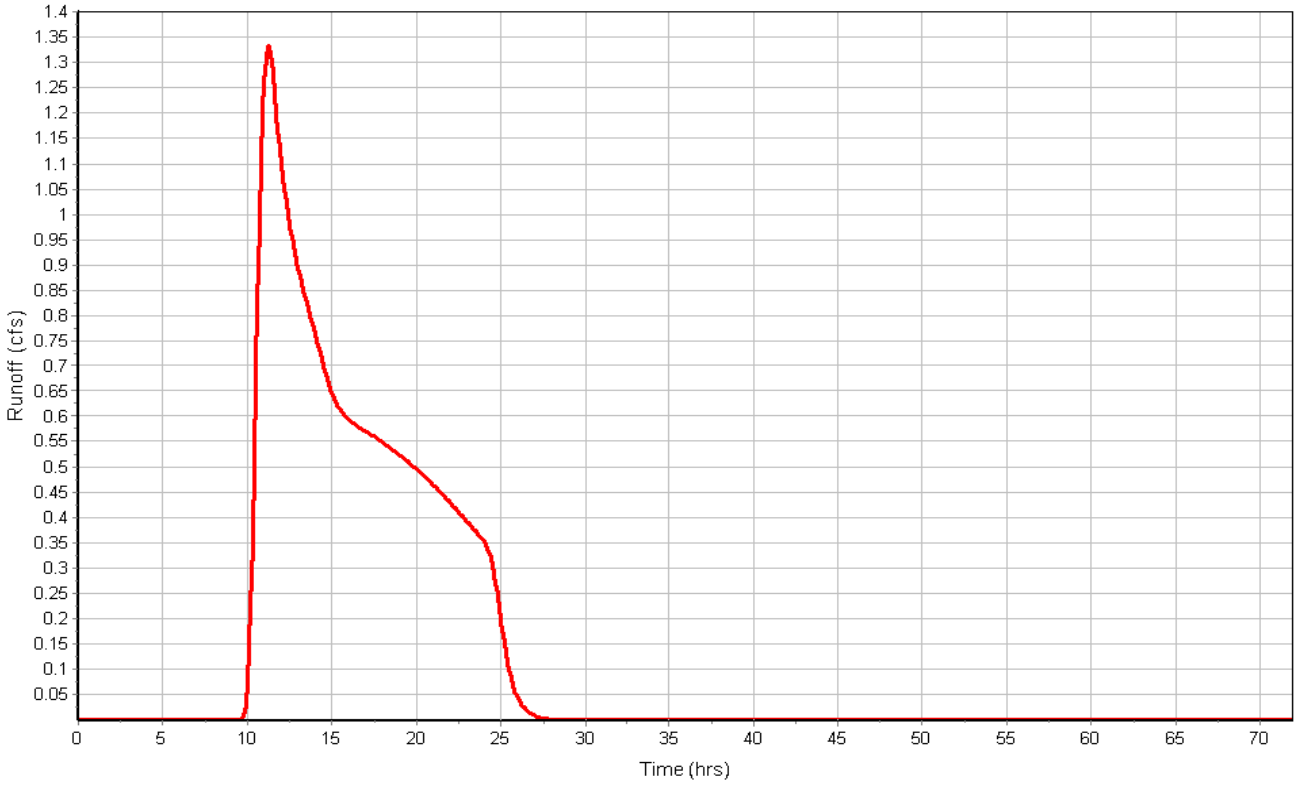
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Subbasin : RVPREDEV

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : TS-PREDEV

Input Data

Area (ac) 21.91
Weighted Curve Number 65.01
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Desert shrub range, Poor	1.76	D	88.00
Desert shrub range, Poor	20.14	A	63.00
Composite Area & Weighted CN	21.90		65.01

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.13	0.00	0.00
Flow Length (ft) :	1326	0.00	0.00
Slope (%) :	2.0	0.00	0.00
2 yr, 24 hr Rainfall (in) :	1.33	0.00	0.00
Velocity (ft/sec) :	0.21	0.00	0.00
Computed Flow Time (min) :	107.18	0.00	0.00

Total TOC (min) 107.18

Subbasin Runoff Results

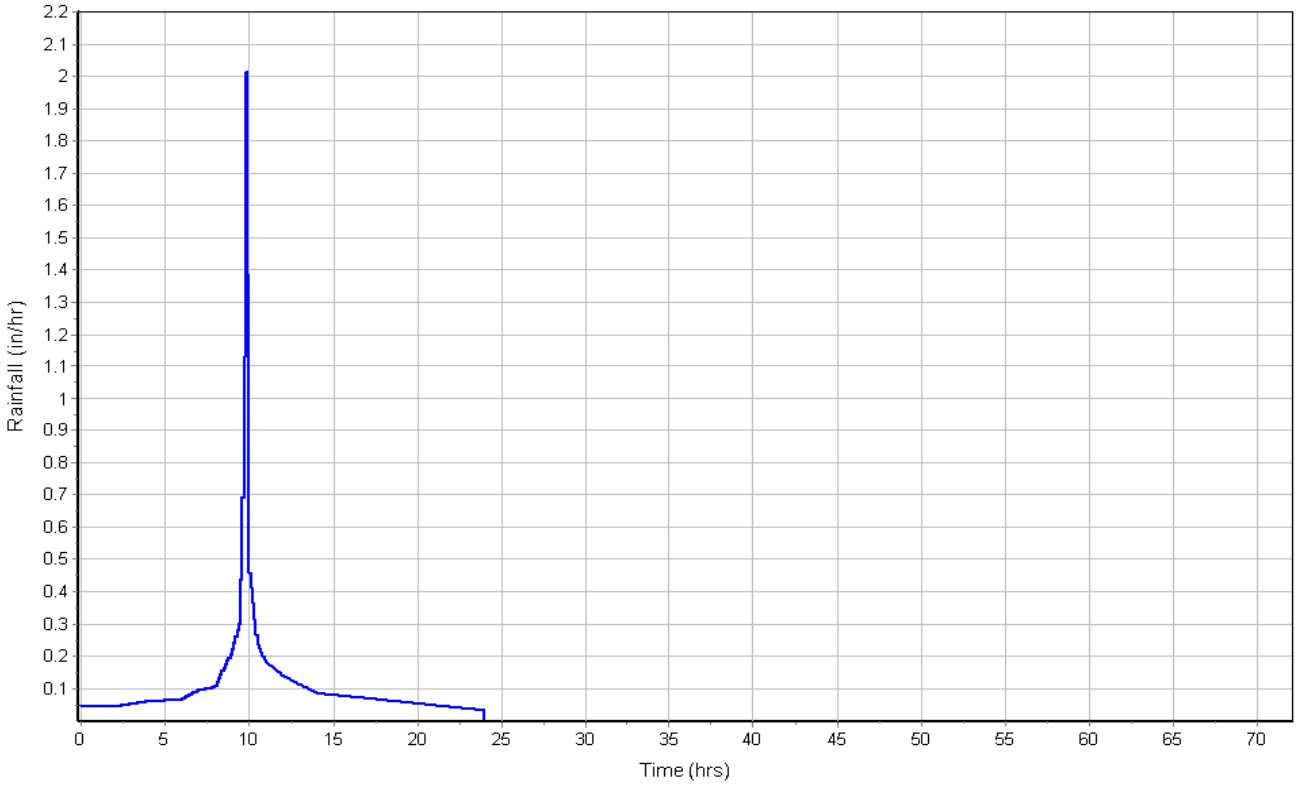
Total Rainfall (in) 2.67
Total Runoff (in) 0.36
Peak Runoff (cfs) 0.78
Weighted Curve Number 65.01
Time of Concentration (days hh:mm:ss) 0 01:47:11

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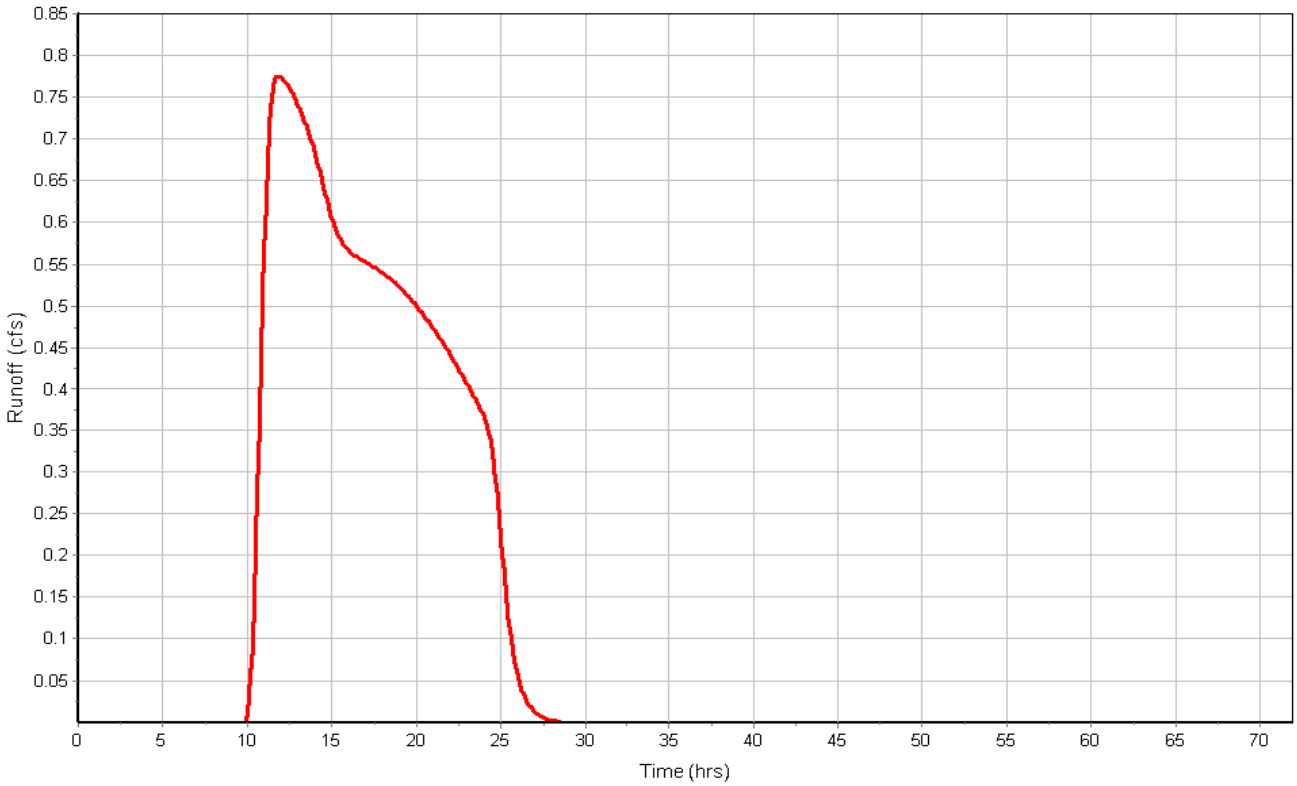
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Subbasin : TS-PREDEV

Rainfall Intensity Graph



Runoff Hydrograph



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Junction Input

SN	Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft²)	Minimum Pipe Cover (in)
1	J01	913.15	914.89	1.74	913.15	0.00	0.00	-914.89	0.00	8.88
2	J02	907.89	912.64	4.75	907.89	0.00	0.00	-912.64	0.00	45.00
3	J03	914.78	917.97	3.19	914.78	0.00	0.00	-917.97	0.00	25.08
4	J04	910.56	914.38	3.82	910.56	0.00	0.00	-914.38	0.00	32.64
5	J05	902.68	907.43	4.75	902.68	0.00	0.00	-907.43	0.00	45.00
6	J06	902.12	906.87	4.75	902.12	0.00	0.00	-906.87	0.00	45.00
7	J07	895.73	900.98	5.25	895.73	0.00	0.00	-900.98	0.00	51.00
8	J08	898.06	902.31	4.25	898.06	0.00	0.00	-902.31	0.00	39.00
9	J09	898.06	902.31	4.25	898.06	0.00	0.00	-902.31	0.00	39.00
10	J10	886.32	890.92	4.60	886.32	0.00	0.00	-890.92	0.00	33.00
11	O1	916.83	921.08	4.25	916.83	0.00	0.00	-921.08	0.00	0.00
12	O2	909.85	914.85	5.00	909.85	0.00	0.00	-914.85	0.00	0.00
13	O3A	915.23	921.60	6.37	915.23	0.00	0.00	-921.60	0.00	0.00
14	O3B	911.08	916.72	5.64	911.08	0.00	0.00	-916.72	0.00	0.00
15	O3C	906.09	912.24	6.15	906.09	0.00	0.00	-912.24	0.00	0.00
16	O4	902.98	906.80	3.82	902.98	0.00	0.00	-906.80	0.00	0.00
17	O5	907.79	912.12	4.33	907.79	0.00	0.00	-912.12	0.00	0.00
18	O6	901.23	905.48	4.25	901.23	0.00	0.00	-905.48	0.00	0.00
19	O7	888.27	901.23	12.96	888.27	0.00	0.00	-901.23	0.00	0.00
20	O8A	894.34	903.66	9.32	894.34	0.00	0.00	-903.66	0.00	0.00
21	SDMH01	916.48	921.15	4.67	916.48	0.00	0.00	-921.15	0.00	42.84
22	SDMH02	909.48	914.04	4.56	909.48	0.00	0.00	-914.04	0.00	41.52
23	SDMH03	907.54	914.70	7.16	907.54	0.00	0.00	-914.70	0.00	55.44
24	SDMH04	907.26	914.39	7.13	907.26	0.00	0.00	-914.39	0.00	72.36
25	SDMH05	907.53	914.79	7.26	907.53	0.00	0.00	-914.79	0.00	73.92
26	SDMH06	905.75	910.18	4.43	905.75	0.00	0.00	-910.18	0.00	41.16
27	SDMH07	905.33	909.05	3.72	905.33	0.00	0.00	-909.05	0.00	31.44
28	SDMH08	902.75	909.14	6.39	902.75	0.00	0.00	-909.14	0.00	57.48
29	SDMH09	901.44	907.96	6.52	901.44	0.00	0.00	-907.96	0.00	47.04
30	SDMH10	900.51	907.70	7.19	900.51	0.00	0.00	-907.70	0.00	67.08
31	SDMH11	894.85	901.92	7.07	894.85	0.00	0.00	-901.92	0.00	66.84
32	SDMH12	893.85	903.70	9.85	893.85	0.00	0.00	-903.70	0.00	100.20
33	SDMH13	897.40	902.76	5.36	897.40	0.00	0.00	-902.76	0.00	46.32
34	SDMH14	893.13	902.49	9.36	893.13	0.00	0.00	-902.49	0.00	71.04
35	SDMH15	886.12	891.87	5.75	886.12	0.00	0.00	-891.87	0.00	45.00
36	SDMH16	885.50	893.01	7.51	885.50	0.00	0.00	-893.01	0.00	63.48
37	SDMH17	884.58	889.78	5.20	884.58	0.00	0.00	-889.78	0.00	37.20

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Junction Results

SN	Element ID	Peak Inflow (cfs)	Peak Lateral Inflow (cfs)	Max HGL Elevation Attained (ft)	Max HGL Depth Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Average HGL Elevation Attained (ft)	Average HGL Depth Attained (ft)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	J01	0.00	0.00	913.15	0.00	0.00	1.74	913.15	0.00	0 00:00	0 00:00	0.00	0.00
2	J02	2.59	2.59	912.64	4.75	0.00	0.00	907.96	0.07	0 09:58	0 10:06	0.10	15.00
3	J03	1.03	1.03	915.33	0.55	0.00	2.64	914.89	0.11	0 10:06	0 00:00	0.00	0.00
4	J04	2.44	1.49	914.38	3.82	0.00	0.00	910.69	0.13	0 10:03	0 10:06	0.02	7.00
5	J05	0.50	0.50	903.04	0.36	0.00	4.39	902.70	0.02	0 10:06	0 00:00	0.00	0.00
6	J06	1.77	1.77	902.44	0.32	0.00	4.43	902.14	0.02	0 10:06	0 00:00	0.00	0.00
7	J07	2.79	2.79	896.26	0.53	0.00	4.72	895.77	0.04	0 10:06	0 00:00	0.00	0.00
8	J08	1.03	1.03	898.37	0.31	0.00	3.94	898.08	0.02	0 10:06	0 00:00	0.00	0.00
9	J09	1.49	1.49	898.43	0.37	0.00	3.88	898.09	0.03	0 10:06	0 00:00	0.00	0.00
10	J10	6.11	6.11	887.35	1.03	0.00	3.57	887.17	0.85	0 10:06	0 00:00	0.00	0.00
11	O1	0.00	0.00	916.83	0.00	0.00	4.25	916.83	0.00	0 00:00	0 00:00	0.00	0.00
12	O2	0.59	0.00	910.25	0.40	0.00	4.60	909.89	0.04	0 10:32	0 00:00	0.00	0.00
13	O3A	0.00	0.00	915.23	0.00	0.00	6.37	915.23	0.00	0 00:00	0 00:00	0.00	0.00
14	O3B	0.98	0.00	911.51	0.43	0.00	5.21	911.10	0.02	0 10:07	0 00:00	0.00	0.00
15	O3C	0.41	0.00	906.39	0.30	0.00	5.85	906.10	0.01	0 10:31	0 00:00	0.00	0.00
16	O4	1.19	0.00	903.46	0.48	0.00	3.34	903.01	0.03	0 10:07	0 00:00	0.00	0.00
17	O5	0.34	0.00	908.09	0.30	0.00	4.03	907.82	0.03	0 10:35	0 00:00	0.00	0.00
18	O6	1.80	0.00	901.55	0.32	0.00	3.93	901.26	0.03	0 10:14	0 00:00	0.00	0.00
19	O7	0.00	0.00	888.27	0.00	0.00	12.96	888.27	0.00	0 00:00	0 00:00	0.00	0.00
20	O8A	0.00	0.00	894.34	0.00	0.00	9.32	894.34	0.00	0 00:00	0 00:00	0.00	0.00
21	SDMH01	0.00	0.00	916.58	0.10	0.00	4.57	916.58	0.10	0 00:00	0 00:00	0.00	0.00
22	SDMH02	0.59	0.00	909.98	0.50	0.00	4.06	909.62	0.14	0 10:33	0 00:00	0.00	0.00
23	SDMH03	1.90	0.00	914.70	7.16	0.00	0.00	909.14	1.60	0 09:59	0 10:13	0.01	16.00
24	SDMH04	1.83	0.00	908.22	0.96	0.00	6.17	907.43	0.17	0 10:13	0 00:00	0.00	0.00
25	SDMH05	0.34	0.00	907.93	0.40	0.00	6.86	907.66	0.13	0 10:36	0 00:00	0.00	0.00
26	SDMH06	0.41	0.00	906.06	0.31	0.00	4.12	905.76	0.01	0 10:32	0 00:00	0.00	0.00
27	SDMH07	0.41	0.00	905.74	0.41	0.00	3.31	905.44	0.11	0 10:33	0 00:00	0.00	0.00
28	SDMH08	1.19	0.00	903.33	0.58	0.00	5.81	902.88	0.13	0 10:07	0 00:00	0.00	0.00
29	SDMH09	1.66	0.00	903.02	1.58	0.00	4.94	902.63	1.19	0 10:07	0 00:00	0.00	0.00
30	SDMH10	3.31	0.00	901.19	0.68	0.00	6.51	900.65	0.14	0 10:08	0 00:00	0.00	0.00
31	SDMH11	2.79	0.00	895.59	0.74	0.00	6.33	894.99	0.14	0 10:06	0 00:00	0.00	0.00
32	SDMH12	2.75	0.00	894.58	0.73	0.00	9.12	893.90	0.05	0 10:07	0 00:00	0.00	0.00
33	SDMH13	2.52	0.00	898.11	0.71	0.00	4.65	897.77	0.37	0 10:06	0 00:00	0.00	0.00
34	SDMH14	5.15	0.00	895.46	2.33	0.00	7.03	895.10	1.97	0 10:06	0 00:00	0.00	0.00
35	SDMH15	10.95	0.00	891.87	5.75	0.00	0.00	886.30	0.18	0 10:03	0 10:06	0.05	7.00
36	SDMH16	10.73	0.00	887.50	2.00	0.00	5.51	885.83	0.33	0 10:09	0 00:00	0.00	0.00
37	SDMH17	10.57	0.00	886.21	1.63	0.00	3.57	884.78	0.20	0 10:10	0 00:00	0.00	0.00

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Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
1	P01	102.69	916.83	0.00	916.58	0.10	0.25	0.2400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
2	P02	198.58	916.48	0.00	913.15	0.00	3.33	1.6800	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
3	P03	18.00	913.15	0.00	912.85	1.06	0.30	1.6700	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
4	P04	111.00	909.85	0.00	909.58	0.10	0.27	0.2400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
5	P05	160.94	909.48	0.00	909.08	1.54	0.40	0.2500	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
6	P06	99.00	907.89	0.00	907.64	0.10	0.25	0.2500	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
7	P07	74.09	907.54	0.00	907.36	0.10	0.18	0.2400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
8	P08	66.52	907.79	0.00	907.63	0.10	0.16	0.2400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
9	P09	70.26	907.53	0.00	907.36	0.10	0.17	0.2400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
10	P10	92.00	907.26	0.00	903.48	0.56	3.78	4.1100	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
11	P11	74.00	901.23	0.00	897.49	1.72	3.74	5.0500	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
12	P12	141.00	915.23	0.00	914.88	0.10	0.35	0.2500	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
13	P13	25.00	914.78	0.00	914.72	0.56	0.06	0.2400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
14	P14	83.00	911.08	0.00	910.66	0.10	0.42	0.5100	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
15	P15	23.00	910.56	0.00	910.45	1.06	0.11	0.4800	CIRCULAR	12.000	12.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
16	P16	102.00	906.09	0.00	905.75	0.00	0.34	0.3300	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
17	P17	99.00	905.75	0.00	905.43	0.10	0.32	0.3200	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
18	P18	31.00	905.33	0.00	905.23	1.06	0.10	0.3200	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
19	P19	50.02	902.98	0.00	902.85	0.10	0.13	0.2600	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
20	P20	83.99	902.75	0.00	902.54	1.10	0.21	0.2500	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
21	P21	30.00	902.68	0.00	902.60	1.16	0.08	0.2700	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
22	P22	331.00	901.44	0.00	900.61	0.10	0.83	0.2500	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
23	P23	32.00	902.12	0.00	900.61	0.10	1.51	4.7200	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
24	P24	89.00	900.51	0.00	897.23	1.46	3.28	3.6900	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
25	P25	62.00	888.27	0.00	887.17	0.85	1.10	1.7700	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
26	P26	130.00	894.34	0.00	893.85	0.00	0.49	0.3800	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
27	P27	39.00	895.73	0.00	894.95	0.10	0.78	2.0000	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
28	P28	333.48	894.85	0.00	893.85	0.00	1.00	0.3000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
29	P29	208.00	893.85	0.00	893.23	0.10	0.62	0.3000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
30	P30	16.00	898.06	0.00	897.74	0.34	0.32	2.0000	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
31	P31	28.00	898.06	0.00	897.50	0.10	0.56	2.0000	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
32	P32	93.00	897.40	0.00	895.07	1.94	2.33	2.5100	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
33	P33	745.00	893.13	0.00	886.22	0.10	6.91	0.9300	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
34	P34	39.00	886.32	0.00	886.12	0.00	0.20	0.5100	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
35	P35	200.04	886.12	0.00	885.72	0.22	0.40	0.2000	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
36	P36	328.00	885.50	0.00	884.68	0.10	0.82	0.2500	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
37	P37	63.00	884.58	0.00	884.42	0.00	0.16	0.2500	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1

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Pipe Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	P01	0.00	0 00:00	1.76	0.00	0.00		0.00	0.00	0.00		Calculated
2	P02	0.00	0 00:00	4.61	0.00	0.00		0.00	0.00	0.00		Calculated
3	P03	0.00	0 00:00	4.60	0.00	0.00		0.00	0.00	0.00		Calculated
4	P04	0.59	0 10:33	1.76	0.33	2.01	0.92	0.39	0.40	0.00		Calculated
5	P05	0.58	0 10:34	1.78	0.33	2.03	1.32	0.39	0.39	0.00		Calculated
6	P06	1.90	0 10:13	1.79	1.06	2.71	0.61	1.00	1.00	12.00		SURCHARGED
7	P07	1.83	0 10:13	1.76	1.04	2.65	0.47	0.93	0.93	0.00		> CAPACITY
8	P08	0.34	0 10:36	1.75	0.19	1.72	0.64	0.30	0.30	0.00		Calculated
9	P09	0.34	0 10:36	1.75	0.19	1.72	0.68	0.30	0.30	0.00		Calculated
10	P10	1.81	0 10:13	7.22	0.25	7.69	0.20	0.34	0.34	0.00		Calculated
11	P11	1.80	0 10:14	8.01	0.22	8.22	0.15	0.32	0.32	0.00		Calculated
12	P12	0.00	0 00:00	1.78	0.00	0.00		0.00	0.00	0.00		Calculated
13	P13	1.02	0 10:06	1.75	0.59	2.31	0.18	0.55	0.55	0.00		Calculated
14	P14	0.98	0 10:07	2.53	0.39	3.02	0.46	0.43	0.43	0.00		Calculated
15	P15	2.26	0 10:04	2.14	1.06	3.12	0.12	1.00	1.00	4.00		SURCHARGED
16	P16	0.41	0 10:32	2.06	0.20	2.05	0.83	0.30	0.30	0.00		Calculated
17	P17	0.41	0 10:33	2.03	0.20	2.03	0.81	0.30	0.31	0.00		Calculated
18	P18	0.41	0 10:33	2.02	0.20	2.02	0.26	0.30	0.31	0.00		Calculated
19	P19	1.19	0 10:07	5.36	0.22	2.44	0.34	0.48	0.32	0.00		Calculated
20	P20	1.19	0 10:07	5.25	0.23	2.41	0.58	0.48	0.32	0.00		Calculated
21	P21	0.50	0 10:06	1.84	0.27	1.99	0.25	0.36	0.36	0.00		Calculated
22	P22	1.65	0 10:08	5.26	0.31	2.68	2.06	0.57	0.38	0.00		Calculated
23	P23	1.77	0 10:06	7.74	0.23	7.98	0.07	0.32	0.32	0.00		Calculated
24	P24	3.31	0 10:06	20.17	0.16	8.43	0.18	0.41	0.27	0.00		Calculated
25	P25	0.00	0 00:00	4.75	0.00	0.00		0.00	0.00	0.00		Calculated
26	P26	0.00	0 00:00	2.19	0.00	0.00		0.00	0.00	0.00		Calculated
27	P27	2.79	0 10:06	5.04	0.55	6.57	0.10	0.53	0.53	0.00		Calculated
28	P28	2.75	0 10:07	5.75	0.48	3.27	1.70	0.73	0.49	0.00		Calculated
29	P29	2.74	0 10:07	5.73	0.48	3.23	1.07	0.72	0.49	0.00		Calculated
30	P30	1.49	0 10:06	5.04	0.30	5.58	0.05	0.37	0.37	0.00		Calculated
31	P31	1.03	0 10:06	5.04	0.20	5.04	0.09	0.31	0.31	0.00		Calculated
32	P32	2.50	0 10:06	16.63	0.15	6.79	0.23	0.39	0.26	0.00		Calculated
33	P33	5.10	0 10:08	10.12	0.50	5.84	2.13	0.74	0.50	0.00		Calculated
34	P34	6.09	0 10:06	7.52	0.81	4.75	0.14	1.03	0.68	0.00		Calculated
35	P35	10.73	0 10:09	10.12	1.06	3.78	0.88	1.86	0.93	0.00		> CAPACITY
36	P36	10.57	0 10:10	11.31	0.93	4.19	1.30	1.51	0.76	0.00		Calculated
37	P37	10.57	0 10:10	11.40	0.93	4.13	0.25	1.47	0.76	0.00		Calculated

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Storage Nodes

Storage Node : BR1

Input Data

Invert Elevation (ft)	918.02
Max (Rim) Elevation (ft)	922.46
Max (Rim) Offset (ft)	4.44
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-918.02
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

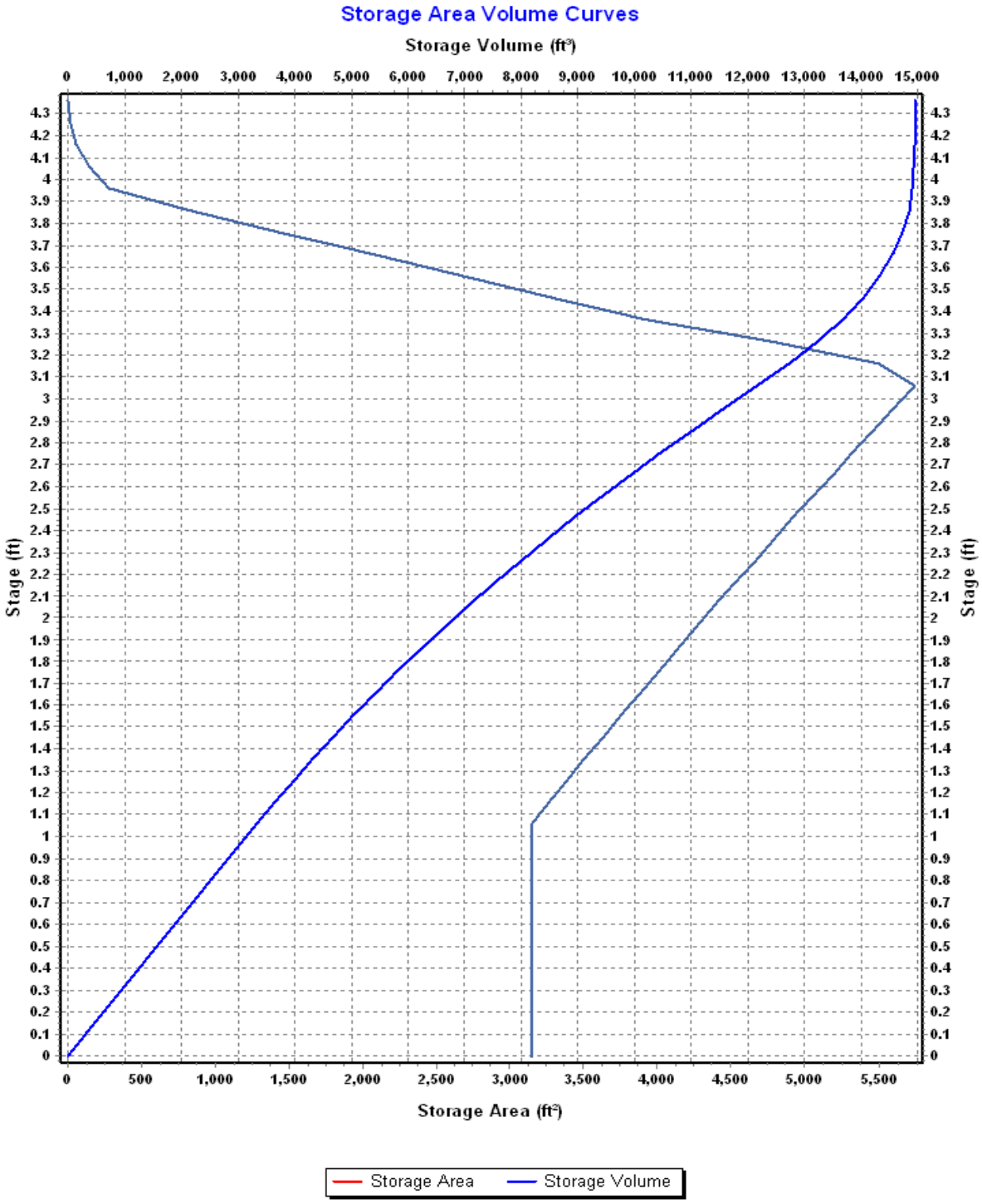
Exfiltration Rate (in/hr)	3.6500

Storage Area Volume Curves

Storage Curve : BR1

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	3141	0.000
1.06	3141.89	3329.93
1.16	3262.83	3650.17
1.26	3385.2	3982.57
1.36	3508.5	4327.26
1.46	3632.69	4684.32
1.56	3757.77	5053.84
1.66	3883.75	5435.92
1.76	4010.63	5830.64
1.86	4138.42	6238.09
1.96	4267.16	6658.37
2.06	4396.87	7091.57
2.16	4527.56	7537.79
2.26	4659.22	7997.13
2.36	4791.85	8469.68
2.46	4925.44	8955.54
2.56	5060	9454.81
2.66	5195.53	9967.59
2.76	5332.02	10493.97
2.86	5469.48	11034.05
2.96	5607.91	11587.92
3.06	5744.57	12155.54
3.16	5498	12717.67
3.26	4752.13	13230.18
3.36	3925.58	13664.07
3.46	3303.77	14025.54
3.56	2676.06	14324.53
3.66	2043.84	14560.53
3.76	1427.82	14734.11
3.86	837.63	14847.38
3.96	281.34	14903.33
4.06	149.84	14924.89
4.16	60.48	14935.41
4.26	15.53	14939.21
4.36	0.9	14940.03

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Storage Node : BR1 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR1	Bottom	CIRCULAR	No	24.00			920.58	0.61

Output Summary Results

Peak Inflow (cfs)	1.11
Peak Lateral Inflow (cfs)	1.11
Peak Outflow (cfs)	0.00
Peak Exfiltration Flow Rate (cfm)	15.92
Max HGL Elevation Attained (ft)	918.30
Max HGL Depth Attained (ft)	0.28
Average HGL Elevation Attained (ft)	918.03
Average HGL Depth Attained (ft)	0.01
Time of Max HGL Occurrence (days hh:mm)	0 10:30
Total Exfiltration Volume (1000-ft³)	2.675
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR2

Input Data

Invert Elevation (ft)	911.79
Max (Rim) Elevation (ft)	915.12
Max (Rim) Offset (ft)	3.33
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-911.79
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

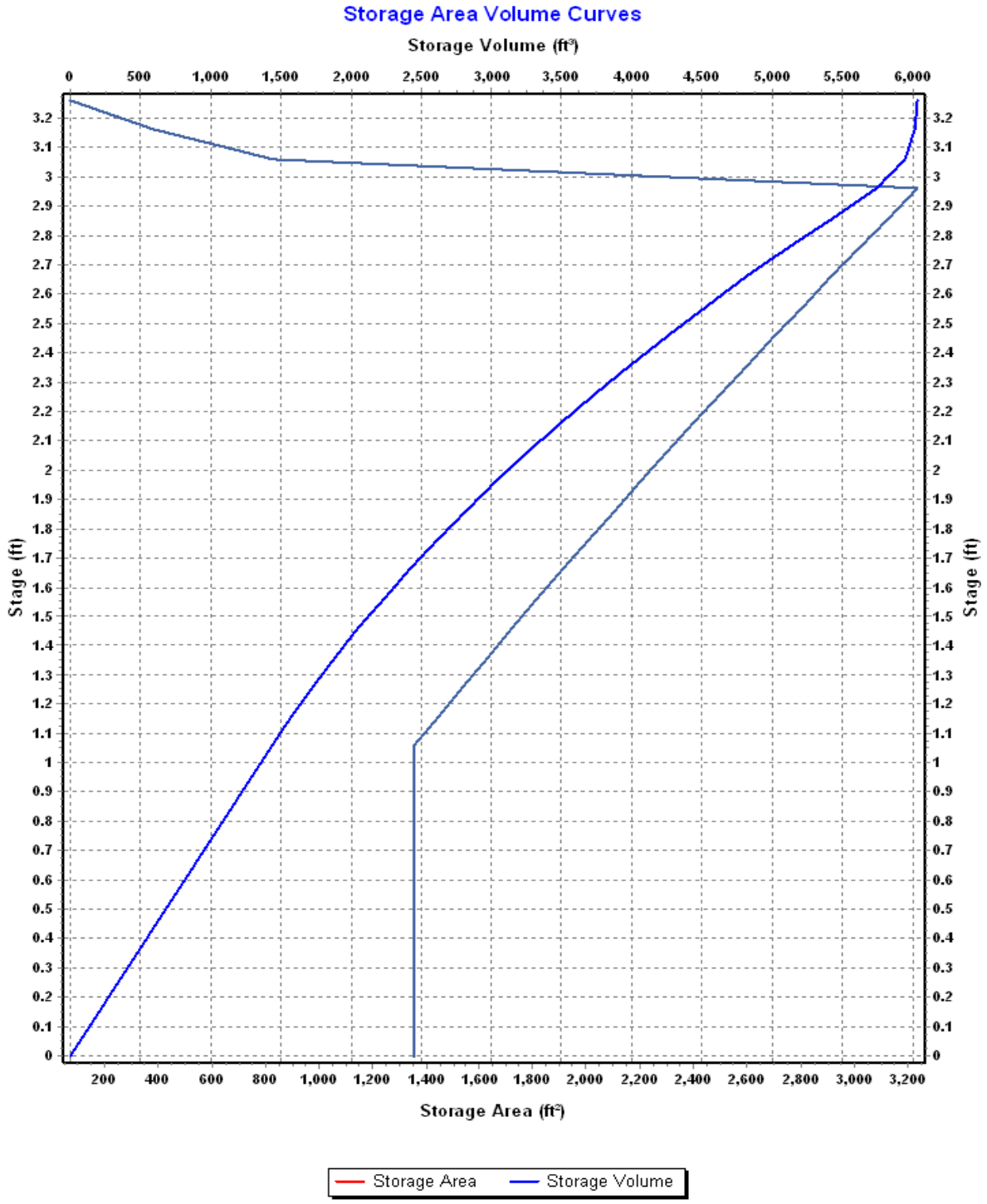
Exfiltration Rate (in/hr)	0.2500

Storage Area Volume Curves

Storage Curve : BR2

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	1355	0.000
1.06	1355.93	1436.79
1.16	1445.99	1576.89
1.26	1537.04	1726.04
1.36	1629.07	1884.35
1.46	1722.08	2051.91
1.56	1816.08	2228.82
1.66	1911.06	2415.18
1.76	2007.02	2611.08
1.86	2103.96	2816.63
1.96	2201.89	3031.92
2.06	2300.8	3257.05
2.16	2400.7	3492.13
2.26	2501.57	3737.24
2.36	2603.43	3992.49
2.46	2706.28	4257.98
2.56	2810.1	4533.80
2.66	2914.91	4820.05
2.76	3020.7	5116.83
2.86	3127.48	5424.24
2.96	3235.24	5742.38
3.06	833.86	5945.84
3.16	385.92	6006.83
3.26	72.94	6029.77

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Storage Node : BR2 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR2	Bottom	CIRCULAR	No	24.00			914.35	0.61

Output Summary Results

Peak Inflow (cfs)	2.57
Peak Lateral Inflow (cfs)	2.57
Peak Outflow (cfs)	0.59
Peak Exfiltration Flow Rate (cfm)	1.01
Max HGL Elevation Attained (ft)	914.44
Max HGL Depth Attained (ft)	2.65
Average HGL Elevation Attained (ft)	913.70
Average HGL Depth Attained (ft)	1.91
Time of Max HGL Occurrence (days hh:mm)	0 10:32
Total Exfiltration Volume (1000-ft³)	3.280
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR3A

Input Data

Invert Elevation (ft)	918.54
Max (Rim) Elevation (ft)	922.87
Max (Rim) Offset (ft)	4.33
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-918.54
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

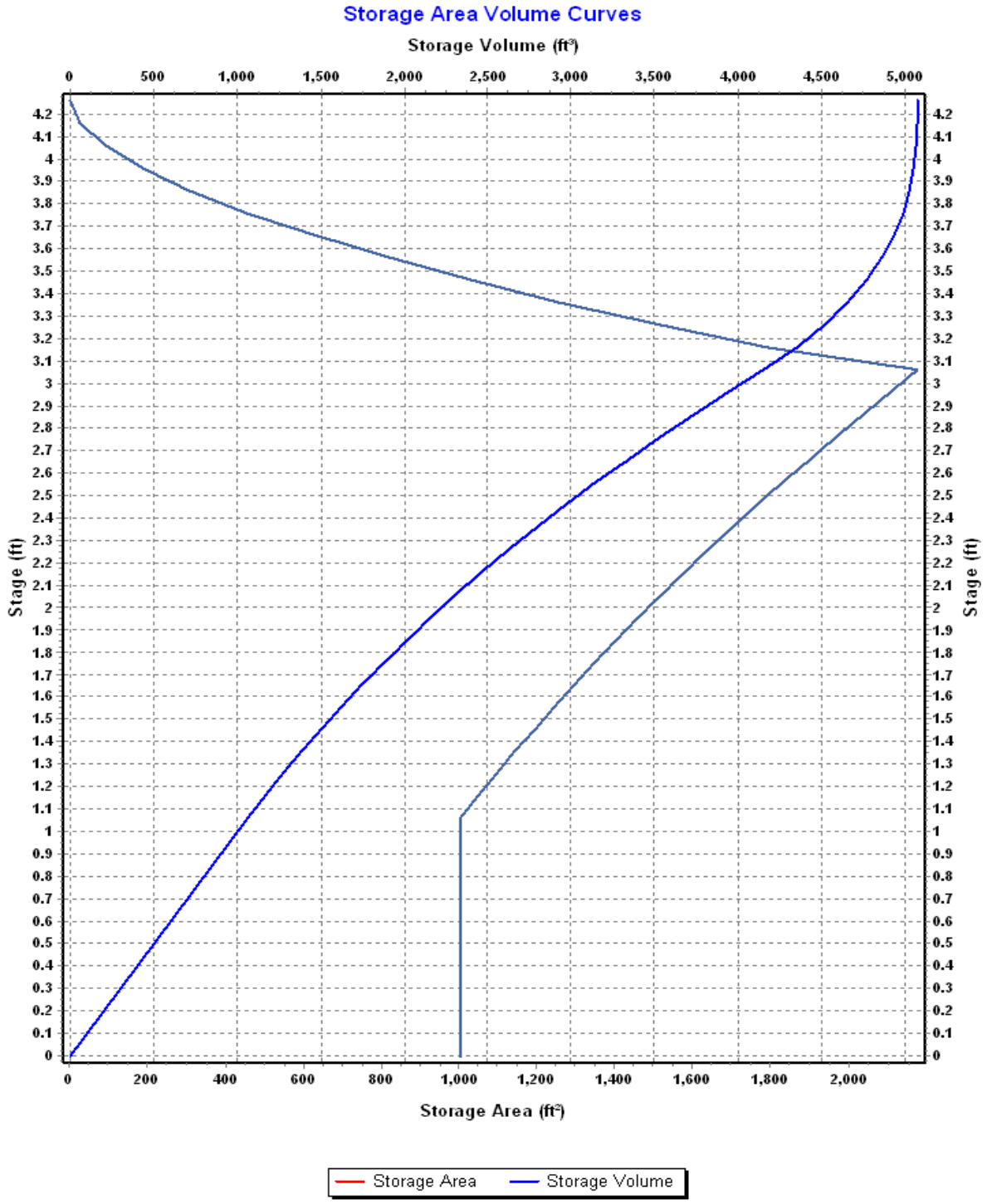
Exfiltration Rate (in/hr)	1.0000

Storage Area Volume Curves

Storage Curve : BR3A

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	1003	0.000
1.06	1003.24	1063.31
1.16	1049.23	1165.93
1.26	1096.69	1273.23
1.36	1145.31	1385.33
1.46	1195.09	1502.35
1.56	1246.03	1624.41
1.66	1298.19	1751.62
1.76	1351.67	1884.11
1.86	1406.49	2022.02
1.96	1462.89	2165.49
2.06	1520.96	2314.68
2.16	1580.66	2469.76
2.26	1641.67	2630.88
2.36	1704.02	2798.16
2.46	1767.77	2971.75
2.56	1832.91	3151.78
2.66	1899.44	3338.40
2.76	1967.37	3531.74
2.86	2036.69	3731.94
2.96	2107.4	3939.14
3.06	2176.53	4153.34
3.16	1787.16	4351.52
3.26	1515.95	4516.68
3.36	1252.64	4655.11
3.46	1029.78	4769.23
3.56	818.92	4861.67
3.66	625.41	4933.89
3.76	455.66	4987.94
3.86	307.6	5026.10
3.96	187.02	5050.83
4.06	94.69	5064.92
4.16	26.99	5071.00
4.26	2.5	5072.47

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Storage Node : BR3A (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR3A	Bottom	CIRCULAR	No	24.00			921.10	0.61

Output Summary Results

Peak Inflow (cfs)	0.79
Peak Lateral Inflow (cfs)	0.79
Peak Outflow (cfs)	0.00
Peak Exfiltration Flow Rate (cfm)	2.04
Max HGL Elevation Attained (ft)	920.51
Max HGL Depth Attained (ft)	1.97
Average HGL Elevation Attained (ft)	919.20
Average HGL Depth Attained (ft)	0.66
Time of Max HGL Occurrence (days hh:mm)	0 18:26
Total Exfiltration Volume (1000-ft³)	3.987
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR3B

Input Data

Invert Elevation (ft)	914.16
Max (Rim) Elevation (ft)	917.97
Max (Rim) Offset (ft)	3.81
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-914.16
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

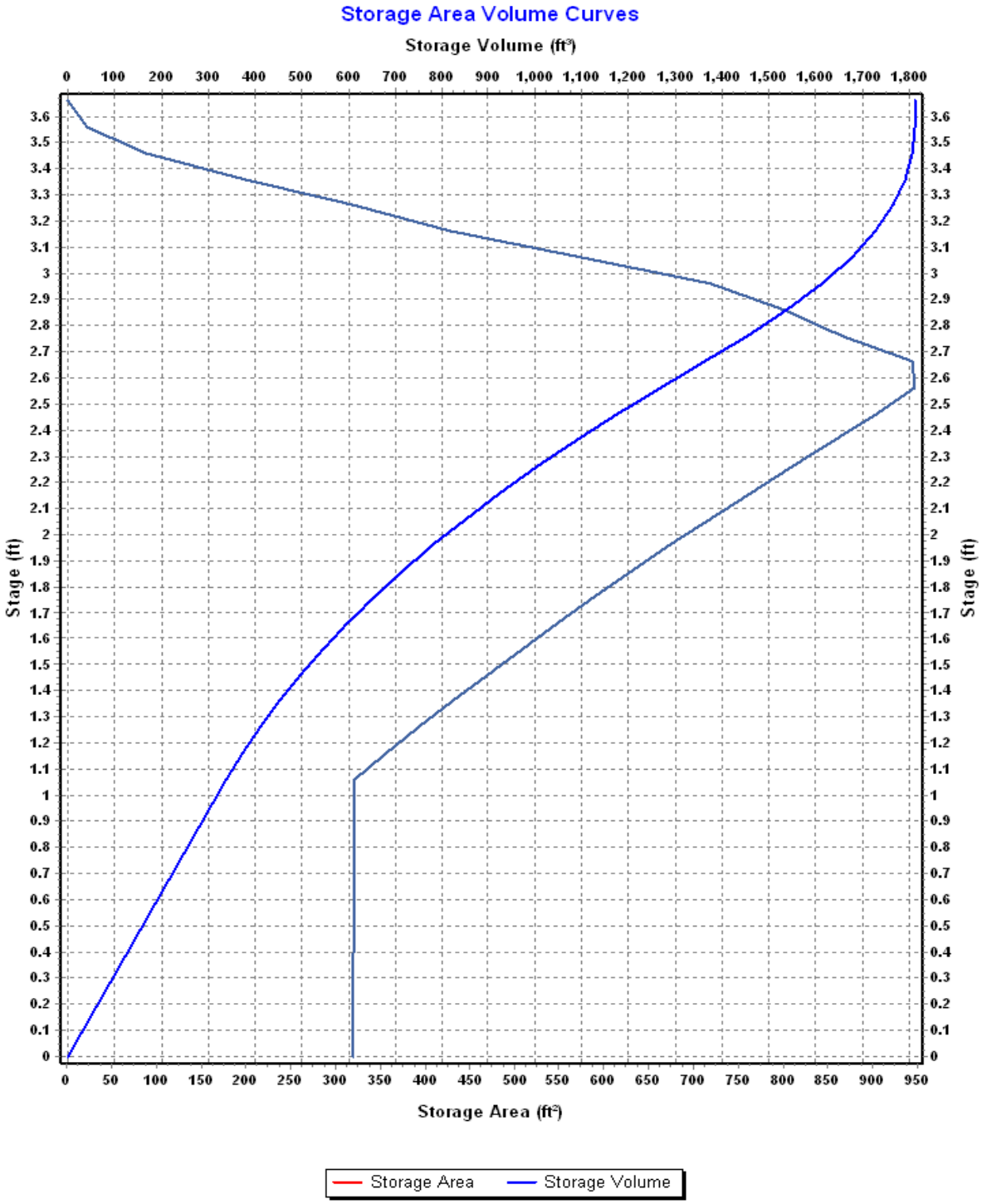
Exfiltration Rate (in/hr)	1.0000

Storage Area Volume Curves

Storage Curve : BR3B

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	320	0.000
1.06	320.79	339.62
1.16	356.4	373.48
1.26	392.93	410.95
1.36	430.38	452.12
1.46	468.77	497.08
1.56	508.1	545.92
1.66	548.38	598.74
1.76	589.6	655.64
1.86	631.77	716.71
1.96	674.88	782.04
2.06	718.94	851.73
2.16	763.94	925.87
2.26	809.88	1004.56
2.36	856.77	1087.89
2.46	904.6	1175.96
2.56	946.68	1268.52
2.66	943.54	1363.03
2.76	865.89	1453.50
2.86	800.8	1536.83
2.96	718.52	1612.80
3.06	573.23	1677.39
3.16	427.46	1727.42
3.26	317.49	1764.67
3.36	199.57	1790.52
3.46	88.48	1804.92
3.56	23.36	1810.51
3.66	1.54	1811.76

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Storage Node : BR3B (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR3B	Bottom	CIRCULAR	No	24.00			916.22	0.61

Output Summary Results

Peak Inflow (cfs)	1.02
Peak Lateral Inflow (cfs)	0.00
Peak Outflow (cfs)	0.98
Peak Exfiltration Flow Rate (cfm)	1.08
Max HGL Elevation Attained (ft)	916.35
Max HGL Depth Attained (ft)	2.19
Average HGL Elevation Attained (ft)	914.96
Average HGL Depth Attained (ft)	0.8
Time of Max HGL Occurrence (days hh:mm)	0 10:07
Total Exfiltration Volume (1000-ft³)	1.868
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR3C

Input Data

Invert Elevation (ft)	909.39
Max (Rim) Elevation (ft)	912.45
Max (Rim) Offset (ft)	3.06
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-909.39
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

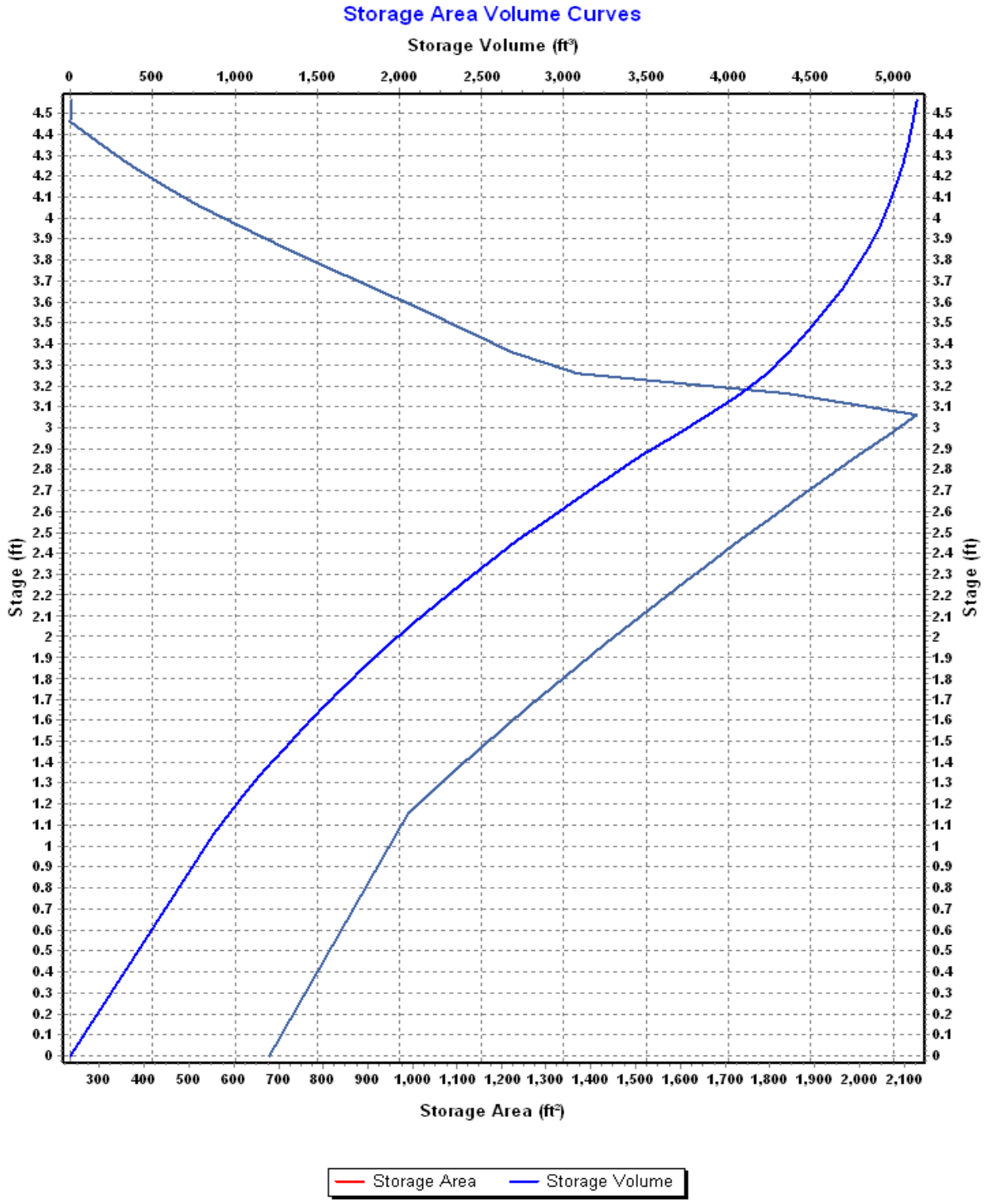
Exfiltration Rate (in/hr)	4.1500

Storage Area Volume Curves

Storage Curve : BR3C

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	681	0.000
1.06	963.86	871.78
1.16	990.19	969.48
1.26	1041.36	1071.06
1.36	1093.51	1177.80
1.46	1146.65	1289.81
1.56	1200.78	1407.18
1.66	1255.89	1530.01
1.76	1311.99	1658.40
1.86	1369.08	1792.45
1.96	1427.16	1932.26
2.06	1486.28	2077.93
2.16	1546.33	2229.56
2.26	1607.29	2387.24
2.36	1669.16	2551.06
2.46	1731.95	2721.12
2.56	1795.65	2897.50
2.66	1860.27	3080.30
2.76	1925.8	3269.60
2.86	1992.24	3465.50
2.96	2059.6	3668.09
3.06	2127.88	3877.46
3.16	1839.41	4075.82
3.26	1368.28	4236.20
3.36	1223.76	4365.80
3.46	1122.78	4483.13
3.56	1021.82	4590.36
3.66	920.87	4687.49
3.76	814.21	4774.24
3.86	709.9	4850.45
3.96	612.13	4916.55
4.06	521.34	4973.22
4.16	437.93	5021.18
4.26	362.17	5061.19
4.36	294.31	5094.01
4.46	234.5	5120.45
4.56	237.57	5144.05

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Storage Node : BR3C (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR3C	Bottom	CIRCULAR	No	24.00			911.95	0.61

Output Summary Results

Peak Inflow (cfs)	2.26
Peak Lateral Inflow (cfs)	0.00
Peak Outflow (cfs)	0.41
Peak Exfiltration Flow Rate (cfm)	10.62
Max HGL Elevation Attained (ft)	912.02
Max HGL Depth Attained (ft)	2.63
Average HGL Elevation Attained (ft)	909.88
Average HGL Depth Attained (ft)	0.49
Time of Max HGL Occurrence (days hh:mm)	0 10:31
Total Exfiltration Volume (1000-ft³)	9.462
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR4

Input Data

Invert Elevation (ft)	904.17
Max (Rim) Elevation (ft)	908.79
Max (Rim) Offset (ft)	4.62
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-904.17
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

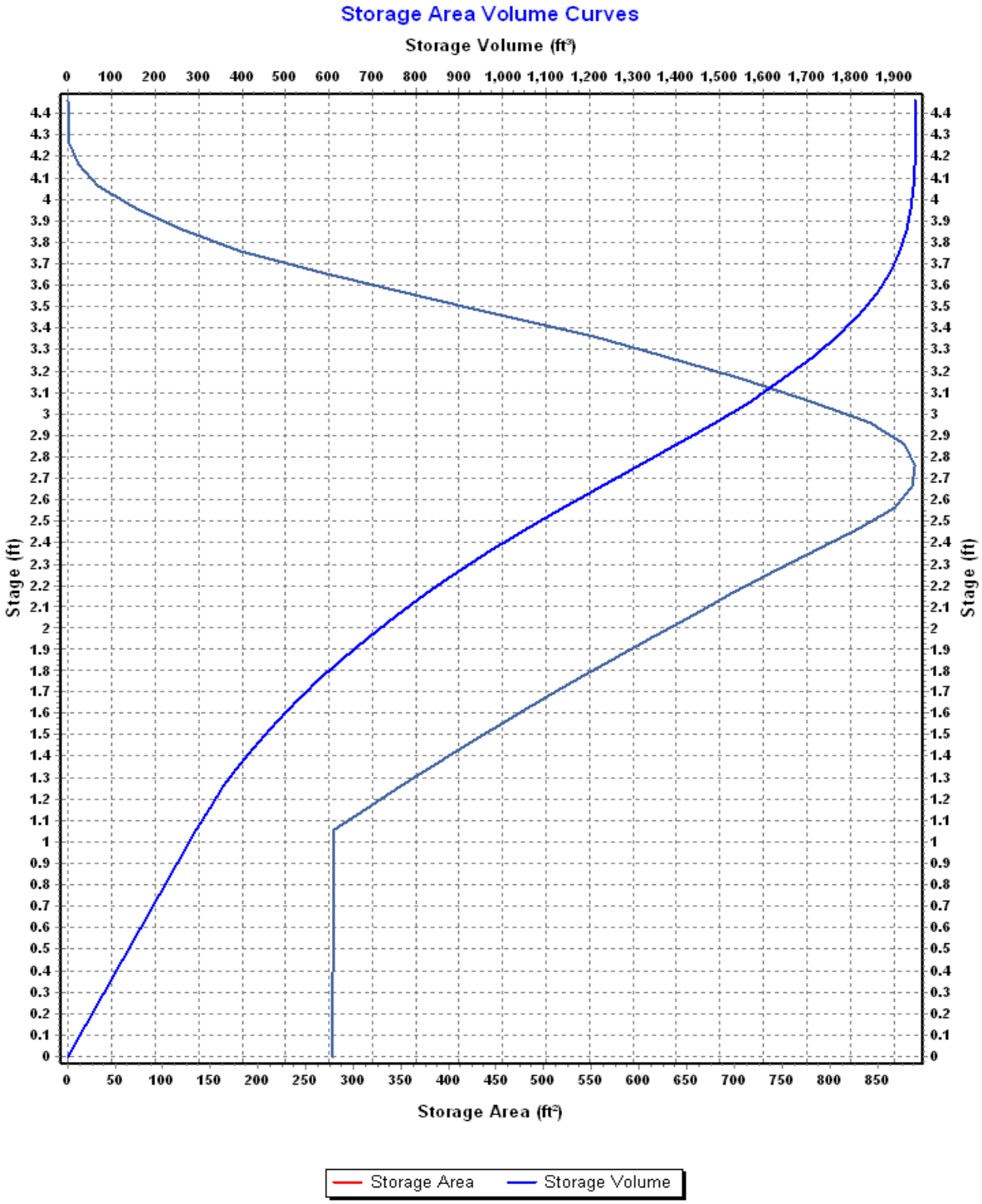
Exfiltration Rate (in/hr)	0.7500

Storage Area Volume Curves

Storage Curve : BR4

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	278	0.000
1.06	278.97	295.19
1.16	314.62	324.87
1.26	349.57	358.08
1.36	384.97	394.81
1.46	421.01	435.11
1.56	457.86	479.05
1.66	495.61	526.72
1.76	534.26	578.21
1.86	573.81	633.61
1.96	614.24	693.01
2.06	655.56	756.50
2.16	697.78	824.17
2.26	740.89	896.10
2.36	784.89	972.39
2.46	829.78	1053.12
2.56	868.08	1138.01
2.66	885.77	1225.70
2.76	889.34	1314.46
2.86	877.29	1402.79
2.96	841.77	1488.74
3.06	779.1	1569.78
3.16	707	1644.09
3.26	629.62	1710.92
3.36	551	1769.95
3.46	453.39	1820.17
3.56	357.92	1860.74
3.66	265.64	1891.92
3.76	181.58	1914.28
3.86	121.01	1929.41
3.96	71.61	1939.04
4.06	32.12	1944.23
4.16	12.15	1946.44
4.26	1.89	1947.14
4.36	1.39	1947.30
4.46	0.53	1947.40

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Storage Node : BR4 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR4	Bottom	CIRCULAR	No	24.00			906.23	0.61

Output Summary Results

Peak Inflow (cfs)	1.23
Peak Lateral Inflow (cfs)	1.23
Peak Outflow (cfs)	1.19
Peak Exfiltration Flow Rate (cfm)	0.75
Max HGL Elevation Attained (ft)	906.38
Max HGL Depth Attained (ft)	2.21
Average HGL Elevation Attained (ft)	905.09
Average HGL Depth Attained (ft)	0.92
Time of Max HGL Occurrence (days hh:mm)	0 10:07
Total Exfiltration Volume (1000-ft³)	1.446
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR5

Input Data

Invert Elevation (ft)	909.06
Max (Rim) Elevation (ft)	912.12
Max (Rim) Offset (ft)	3.06
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-909.06
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

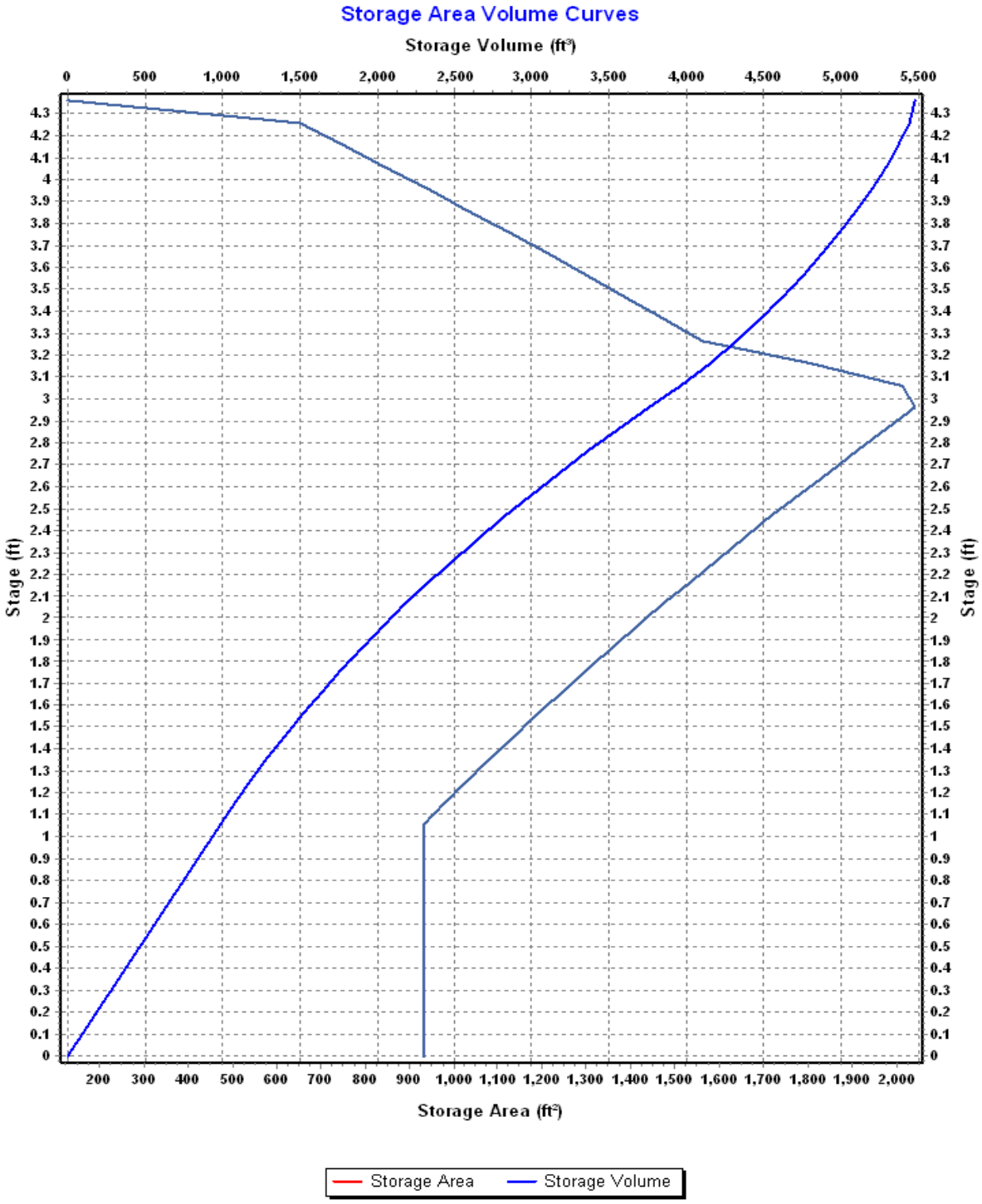
Exfiltration Rate (in/hr)	0.7000

Storage Area Volume Curves

Storage Curve : BR5

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	932	0.000
1.06	932.46	988.16
1.16	981.61	1083.86
1.26	1031.83	1184.53
1.36	1083.12	1290.28
1.46	1135.48	1401.21
1.56	1188.91	1517.43
1.66	1243.41	1639.05
1.76	1298.98	1766.17
1.86	1355.61	1898.90
1.96	1413.23	2037.34
2.06	1471.77	2181.59
2.16	1531.25	2331.74
2.26	1591.66	2487.89
2.36	1653	2650.12
2.46	1715.29	2818.53
2.56	1778.51	2993.22
2.66	1842.66	3174.28
2.76	1907.75	3361.80
2.86	1973.78	3555.88
2.96	2040.74	3756.61
3.06	2014.36	3959.37
3.16	1806.31	4150.40
3.26	1561.66	4318.80
3.36	1476.5	4470.71
3.46	1390.03	4614.04
3.56	1302.24	4748.65
3.66	1213.13	4874.42
3.76	1122.71	4991.21
3.86	1030.97	5098.89
3.96	937.91	5197.33
4.06	843.53	5286.40
4.16	747.83	5365.97
4.26	650.82	5435.90
4.36	128.99	5474.89

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Storage Node : BR5 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR5	Bottom	CIRCULAR	No	24.00			911.62	0.61

Output Summary Results

Peak Inflow (cfs)	1.70
Peak Lateral Inflow (cfs)	1.70
Peak Outflow (cfs)	0.34
Peak Exfiltration Flow Rate (cfm)	1.77
Max HGL Elevation Attained (ft)	911.68
Max HGL Depth Attained (ft)	2.62
Average HGL Elevation Attained (ft)	910.37
Average HGL Depth Attained (ft)	1.31
Time of Max HGL Occurrence (days hh:mm)	0 10:35
Total Exfiltration Volume (1000-ft³)	4.690
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR6

Input Data

Invert Elevation (ft)	902.92
Max (Rim) Elevation (ft)	913.75
Max (Rim) Offset (ft)	10.83
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-902.92
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

Exfiltration Rate (in/hr)	0.3500

Storage Area Volume Curves

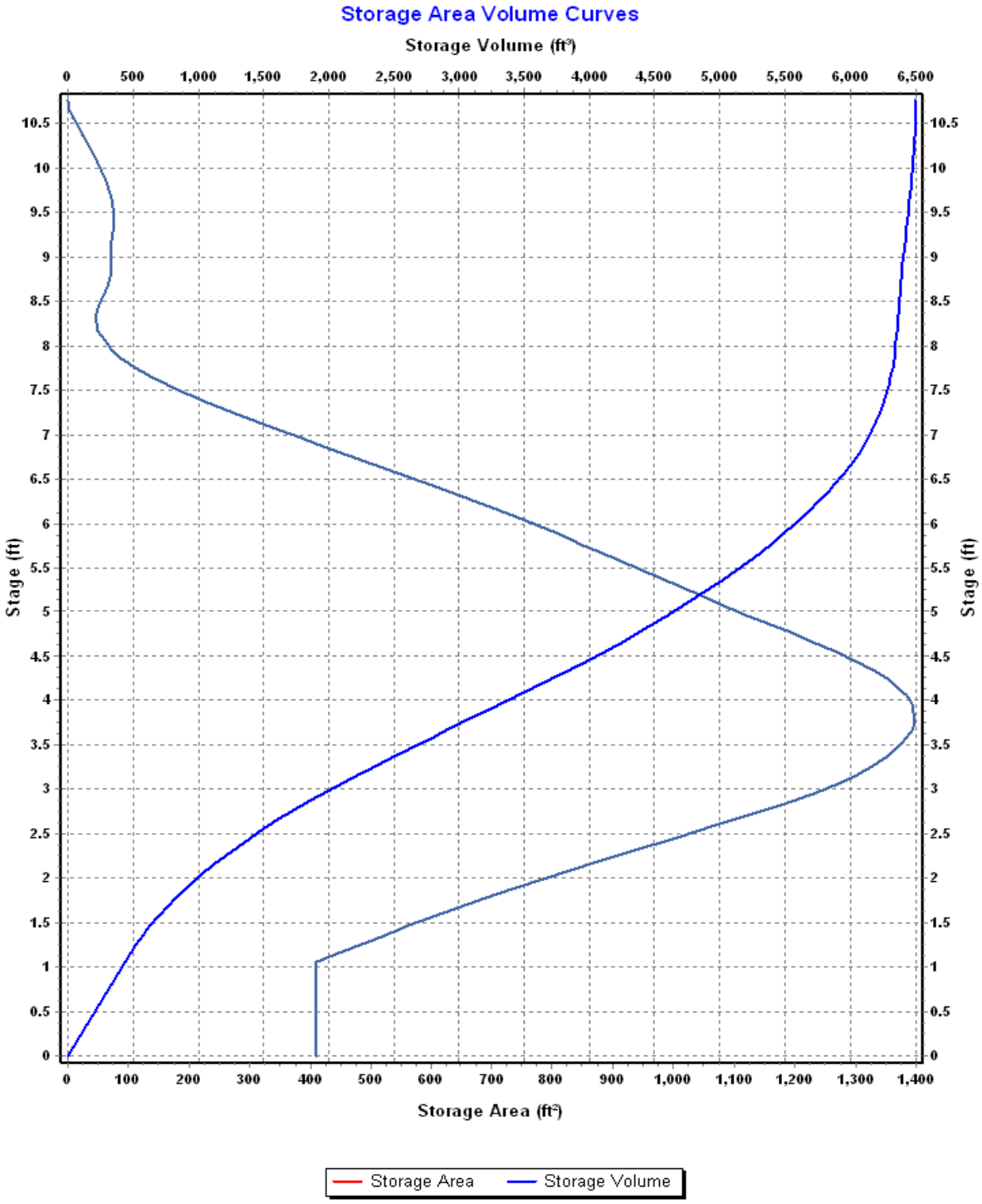
Storage Curve : BR6

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	410	0.000
1.06	410.77	435.01
1.16	446.75	477.89
1.26	483.71	524.41
1.36	521.65	574.68
1.46	560.56	628.79
1.56	600.46	686.84
1.66	641.33	748.93
1.76	683.18	815.16
1.86	726.02	885.62
1.96	769.83	960.41
2.06	814.61	1039.63
2.16	860.38	1123.38
2.26	907.13	1211.76
2.36	954.85	1304.86
2.46	1003.56	1402.78
2.56	1053.18	1505.62
2.66	1101.86	1613.37
2.76	1148.67	1725.90
2.86	1192.86	1842.98
2.96	1232.75	1964.26
3.06	1269.59	2089.38
3.16	1301.43	2217.93
3.26	1326.89	2349.35
3.36	1348.19	2483.10
3.46	1366.12	2618.82
3.56	1380.19	2756.14
3.66	1393.25	2894.81
3.76	1397.78	3034.36
3.86	1396.52	3174.08
3.96	1393.9	3313.60
4.06	1383.32	3452.46
4.16	1367.08	3589.98
4.26	1349.42	3725.81
4.36	1325.23	3859.54
4.46	1296.47	3990.63
4.56	1266.42	4118.77
4.66	1232.15	4243.70
4.76	1195.31	4365.07
4.86	1157.16	4482.69
4.96	1117.9	4596.44
5.06	1085.76	4706.62
5.16	1053.22	4813.57
5.26	1020.26	4917.24
5.36	986.9	5017.60
5.46	953.13	5114.60
5.56	918.95	5208.20
5.66	884.36	5298.37
5.76	849.37	5385.06
5.86	813.96	5468.23
5.96	778.15	5547.84
6.06	741.93	5623.84
6.16	705.08	5696.19
6.26	666.84	5764.79
6.36	628.22	5829.54
6.46	588.79	5890.39
6.56	548.05	5947.23
6.66	507.07	5999.99
6.76	465.94	6048.64
6.86	424.78	6093.18
6.96	383.49	6133.59
7.06	343.09	6169.92
7.16	303.81	6202.27
7.26	265.15	6230.72
7.36	229.45	6255.45
7.46	195.88	6276.72
7.56	163.53	6294.69
7.66	136.12	6309.67

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7.76	111.42	6322.05
7.86	88.83	6332.06
7.96	72.96	6340.15
8.06	60.06	6346.80
8.16	50.27	6352.32
8.26	47.61	6357.21
8.36	48.49	6362.02
8.46	53.24	6367.11
8.56	58.59	6372.70
8.66	64.53	6378.86
8.76	69.87	6385.58
8.86	71.43	6392.65
8.96	72.11	6399.83
9.06	72.32	6407.05
9.16	72.64	6414.30
9.26	74.98	6421.68
9.36	76.22	6429.24
9.46	76.74	6436.89
9.56	75.34	6444.49
9.66	72.1	6451.86
9.76	68.49	6458.89
9.86	63.88	6465.51
9.96	56.95	6471.55
10.06	50.1	6476.90
10.16	43.32	6481.57
10.26	34.16	6485.44
10.36	25.48	6488.42
10.46	17.32	6490.56
10.56	9.08	6491.88
10.66	3.27	6492.50
10.76	0.36	6492.68

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Storage Node : BR6 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR6	Bottom	CIRCULAR	No	24.00			904.98	0.61

Output Summary Results

Peak Inflow (cfs)	1.81
Peak Lateral Inflow (cfs)	0.00
Peak Outflow (cfs)	1.80
Peak Exfiltration Flow Rate (cfm)	0.44
Max HGL Elevation Attained (ft)	905.17
Max HGL Depth Attained (ft)	2.25
Average HGL Elevation Attained (ft)	904.31
Average HGL Depth Attained (ft)	1.39
Time of Max HGL Occurrence (days hh:mm)	0 10:14
Total Exfiltration Volume (1000-ft³)	1.196
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR7

Input Data

Invert Elevation (ft)	895.77
Max (Rim) Elevation (ft)	901.73
Max (Rim) Offset (ft)	5.96
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-895.77
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

Exfiltration Rate (in/hr)	0.3500

Storage Area Volume Curves

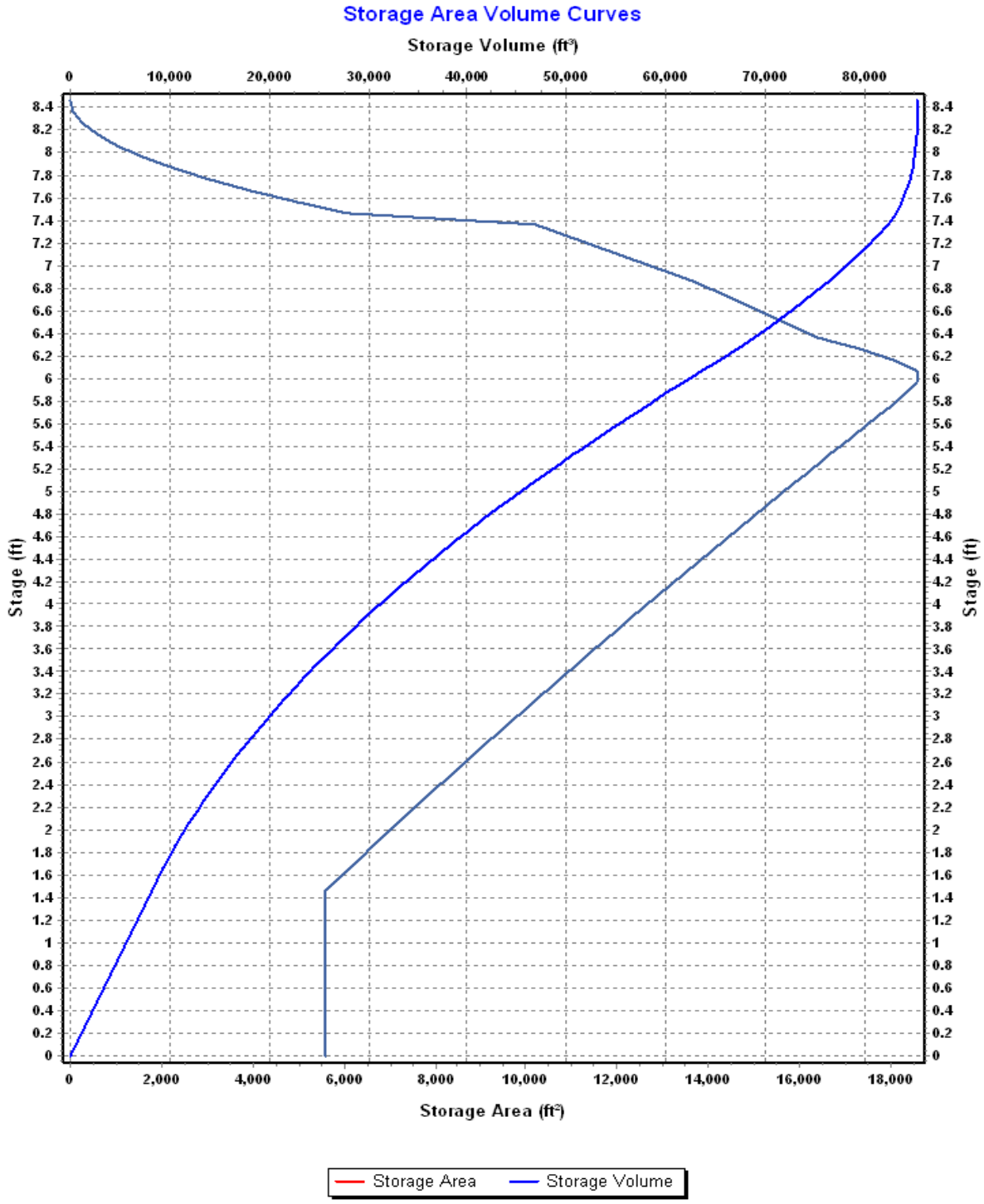
Storage Curve : BR7

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	5595	0.000
1.46	5595.13	8168.79
1.56	5856.73	8741.38
1.66	6119.66	9340.20
1.76	6383.94	9965.38
1.86	6649.55	10617.05
1.96	6916.5	11295.35
2.06	7184.79	12000.41
2.16	7454.41	12732.37
2.26	7725.38	13491.36
2.36	7997.69	14277.51
2.46	8271.33	15090.96
2.56	8546.31	15931.84
2.66	8822.63	16800.29
2.76	9100.3	17696.44
2.86	9379.31	18620.42
2.96	9659.68	19572.37
3.06	9941.38	20552.42
3.16	10224.44	21560.71
3.26	10508.84	22597.37
3.36	10794.59	23662.54
3.46	11081.69	24756.35
3.56	11370.12	25878.94
3.66	11659.61	27030.43
3.76	11950.17	28210.92
3.86	12241.84	29420.52
3.96	12534.6	30659.34
4.06	12828.48	31927.49
4.16	13123.45	33225.09
4.26	13419.52	34552.24
4.36	13716.7	35909.05
4.46	14014.97	37295.63
4.56	14314.29	38712.09
4.66	14614.69	40158.54
4.76	14916.14	41635.08
4.86	15218.67	43141.82
4.96	15522.25	44678.87
5.06	15826.91	46246.33
5.16	16132.63	47844.31
5.26	16439.41	49472.91
5.32	16623.99	50464.81
5.36	16747.26	51132.24
5.46	17056.17	52822.41
5.56	17366.15	54543.53
5.66	17677.19	56295.70
5.76	17989.3	58079.02
5.86	18302.47	59893.61
5.96	18561.7	61736.82
6.06	18563.99	63593.10
6.16	18028.51	65422.73
6.26	17266.47	67187.48
6.36	16354.62	68868.53
6.46	15821.95	70477.36
6.56	15283.77	72032.65
6.66	14740.05	73533.84
6.76	14190.76	74980.38
6.86	13635.89	76371.71
6.96	12950.52	77701.03
7.06	12263.14	78961.71
7.16	11573.75	80153.55
7.26	10882.35	81276.36
7.36	10188.94	82329.92
7.46	6084.34	83143.58
7.56	4958.1	83695.70
7.66	3945.56	84140.88
7.76	3046.43	84490.48
7.86	2260.65	84755.83
7.96	1588.12	84948.27

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8.06	1028.71	85079.11
8.16	592.94	85160.19
8.26	270.69	85203.37
8.36	49.56	85219.38
8.46	2.12	85221.96

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Storage Node : BR7 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR7B	Bottom	CIRCULAR	No	24.00			901.23	0.61

Output Summary Results

Peak Inflow (cfs)	7.21
Peak Lateral Inflow (cfs)	2.16
Peak Outflow (cfs)	0.00
Peak Exfiltration Flow Rate (cfm)	7.75
Max HGL Elevation Attained (ft)	900.87
Max HGL Depth Attained (ft)	5.1
Average HGL Elevation Attained (ft)	899.54
Average HGL Depth Attained (ft)	3.77
Time of Max HGL Occurrence (days hh:mm)	1 00:19
Total Exfiltration Volume (1000-ft³)	25.498
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR8

Input Data

Invert Elevation (ft)	900.16
Max (Rim) Elevation (ft)	910.55
Max (Rim) Offset (ft)	10.39
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-900.16
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

Exfiltration Rate (in/hr)	0.2500

Storage Area Volume Curves

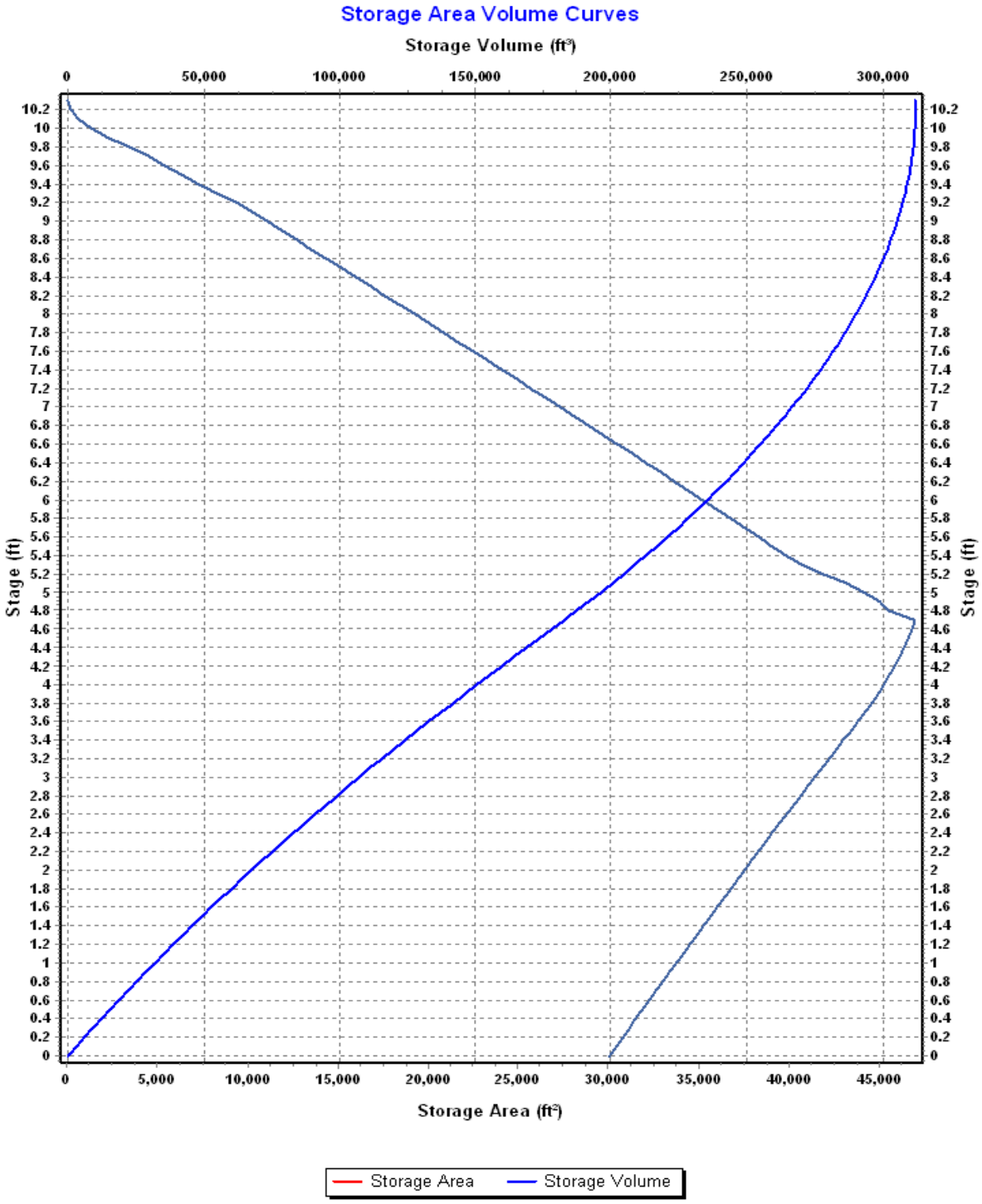
Storage Curve : RB

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	30060.38	0.000
0.1	30423.69	3024.20
0.2	30787.95	6084.78
0.3	31153.19	9181.84
0.4	31519.45	12315.47
0.5	31886.76	15485.78
0.6	32255.10	18692.87
0.7	32624.50	21936.85
0.8	32994.93	25217.82
0.9	33366.41	28535.89
1	33738.93	31891.16
1.1	34112.50	35283.73
1.2	34487.11	38713.71
1.3	34862.77	42181.20
1.4	35239.47	45686.31
1.5	35617.21	49229.14
1.6	35996.00	52809.80
1.7	36375.83	56428.39
1.8	36756.70	60085.02
1.9	37138.62	63779.79
2	37521.58	67512.80
2.1	37905.58	71284.16
2.2	38290.63	75093.97
2.3	38676.72	78942.34
2.4	39063.86	82829.37
2.46	39296.65	85180.19
2.5	39452.06	86755.16
2.6	39841.31	90719.83
2.7	40231.63	94723.48
2.8	40623.00	98766.21
2.9	41015.43	102848.13
3	41408.92	106969.35
3.1	41803.47	111129.97
3.2	42199.08	115330.10
3.3	42595.75	119569.84
3.4	42993.48	123849.30
3.5	43391.60	128168.55
3.6	43782.14	132527.24
3.7	44164.57	136924.58
3.8	44540.20	141359.82
3.9	44901.66	145831.91
4	45239.40	150338.96
4.1	45563.92	154879.13
4.2	45871.31	159450.89
4.3	46138.45	164051.38
4.4	46386.90	168677.65
4.5	46616.67	173327.83
4.6	46811.15	177999.22
4.7	46971.49	182688.35
4.8	45485.74	187311.21
4.9	45023.21	191836.66
5	44212.48	196298.44
5.1	43110.78	200664.60
5.2	41818.89	204911.08
5.3	40592.21	209031.64
5.4	39822.87	213052.39
5.5	39051.68	216996.12
5.6	38278.65	220862.64
5.7	37503.79	224651.76
5.8	36727.15	228363.31
5.9	35948.71	231997.10
6	35168.56	235552.96
6.1	34386.68	239030.72
6.2	33603.09	242430.21
6.3	32817.87	245751.26
6.4	32030.97	248993.70
6.5	31242.50	252157.37
6.6	30452.43	255242.12

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6.7	29660.78	258247.78
6.8	28867.64	261174.20
6.9	28072.95	264021.23
7	27276.82	266788.72
7.1	26479.23	269476.52
7.2	25680.17	272084.49
7.3	24879.78	274612.49
7.4	24077.96	277060.38
7.5	23274.83	279428.02
7.6	22470.38	281715.28
7.7	21664.58	283922.03
7.8	20857.60	286048.14
7.9	20049.29	288093.48
8	19239.75	290057.93
8.1	18429.02	291941.37
8.2	17617.00	293743.67
8.3	16803.95	295464.72
8.4	15989.67	297104.40
8.5	15174.27	298662.60
8.6	14357.79	300139.20
8.7	13540.07	301534.09
8.8	12721.38	302847.16
8.9	11901.56	304078.31
9	11080.62	305227.42
9.1	10258.76	306294.39
9.2	9327.55	307273.71
9.3	8324.12	308156.29
9.4	7321.13	308938.55
9.5	6362.76	309622.74
9.6	5439.54	310212.86
9.7	4519.10	310710.79
9.8	3459.55	311109.72
9.9	2336.41	311399.52
10	1375.60	311585.12
10.1	669.19	311687.36
10.2	186.39	311730.14
10.3	61.67	311742.54

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Storage Node : BR8 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR8A	Bottom	CIRCULAR	No	24.00			903.16	0.61

Output Summary Results

Peak Inflow (cfs)	14.20
Peak Lateral Inflow (cfs)	14.20
Peak Outflow (cfs)	0.00
Peak Exfiltration Flow Rate (cfm)	12.93
Max HGL Elevation Attained (ft)	902.08
Max HGL Depth Attained (ft)	1.92
Average HGL Elevation Attained (ft)	901.40
Average HGL Depth Attained (ft)	1.24
Time of Max HGL Occurrence (days hh:mm)	1 00:14
Total Exfiltration Volume (1000-ft³)	47.189
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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50-year/24-hour Rainfall Event Simulation Results

Project Description

File Name 20230.SPF

Project Options

Flow Units	CFS
Elevation Type	Elevation
Hydrology Method	SCS TR-55
Time of Concentration (TOC) Method	SCS TR-55
Link Routing Method	Kinematic Wave
Enable Overflow Ponding at Nodes	YES
Skip Steady State Analysis Time Periods	YES

Analysis Options

Start Analysis On	Oct 27, 2020	00:00:00
End Analysis On	Oct 30, 2020	00:00:00
Start Reporting On	Oct 27, 2020	00:00:00
Antecedent Dry Days	0	days
Runoff (Dry Weather) Time Step	0 01:00:00	days hh:mm:ss
Runoff (Wet Weather) Time Step	0 00:05:00	days hh:mm:ss
Reporting Time Step	0 00:06:00	days hh:mm:ss
Routing Time Step	30	seconds

Number of Elements

	Qty
Rain Gages	1
Subbasins	18
Nodes	50
Junctions	37
Outfalls	3
Flow Diversions	0
Inlets	0
Storage Nodes	10
Links	47
Channels	0
Pipes	37
Pumps	0
Orifices	10
Weirs	0
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1	Project	Time Series	50YR24HR	Cumulative	inches	California	San Bernardino (Victorville)	50	3.07	SCS Type I 24-hr

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Subbasin Summary

SN	Subbasin ID	Area (ac)	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	A01	0.92	90.57	3.07	2.10	1.93	1.37	0 00:10:00
2	A02	2.31	89.00	3.07	1.96	4.53	3.20	0 00:10:00
3	A04	1.11	89.00	3.07	1.96	2.18	1.53	0 00:10:00
4	A05	2.33	89.00	3.07	1.96	4.57	3.23	0 00:10:00
5	A06	1.52	89.00	3.07	1.96	2.98	2.11	0 00:10:00
6	A07	0.45	89.00	3.07	1.96	0.88	0.62	0 00:10:00
7	A08	1.59	89.00	3.07	1.96	3.12	2.20	0 00:10:00
8	A09	1.94	89.00	3.07	1.96	3.81	2.69	0 00:10:00
9	A10	16.37	84.72	3.07	1.63	26.62	18.24	0 00:10:00
10	A11a	0.92	98.00	3.07	2.84	2.61	1.76	0 00:10:00
11	A11b	0.64	98.00	3.07	2.84	1.82	1.22	0 00:10:00
12	A12	1.73	98.00	3.07	2.84	4.91	3.31	0 00:10:00
13	A13	3.78	98.00	3.07	2.84	10.73	7.24	0 00:10:00
14	A3A	0.54	95.00	3.07	2.52	1.36	0.95	0 00:10:00
15	A3B	0.80	91.77	3.07	2.21	1.76	1.25	0 00:10:00
16	A3C	1.34	89.00	3.07	1.96	2.63	1.85	0 00:10:00
17	RVPREDEV	16.37	70.76	3.07	0.79	12.92	2.12	0 01:40:47
18	TS-PREDEV	21.91	65.01	3.07	0.54	11.81	1.42	0 01:47:10

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Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft²)	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	J01	Junction	913.15	914.89	913.15	0.00	0.00	0.00	913.15	0.00	1.74	0 00:00	0.00	0.00
2	J02	Junction	907.89	912.64	907.89	0.00	0.00	3.19	912.64	0.00	0.00	0 10:06	0.24	19.00
3	J03	Junction	914.78	917.97	914.78	0.00	0.00	1.24	915.40	0.00	2.57	0 00:00	0.00	0.00
4	J04	Junction	910.56	914.38	910.56	0.00	0.00	2.99	914.38	0.00	0.00	0 10:06	0.11	14.00
5	J05	Junction	902.68	907.43	902.68	0.00	0.00	0.61	903.08	0.00	4.35	0 00:00	0.00	0.00
6	J06	Junction	902.12	906.87	902.12	0.00	0.00	2.17	902.48	0.00	4.39	0 00:00	0.00	0.00
7	J07	Junction	895.73	900.98	895.73	0.00	0.00	3.23	896.31	0.00	4.67	0 00:00	0.00	0.00
8	J08	Junction	898.06	902.31	898.06	0.00	0.00	1.20	898.39	0.00	3.92	0 00:00	0.00	0.00
9	J09	Junction	898.06	902.31	898.06	0.00	0.00	1.72	898.46	0.00	3.85	0 00:00	0.00	0.00
10	J10	Junction	886.32	890.92	886.32	0.00	0.00	7.05	887.47	0.00	3.45	0 00:00	0.00	0.00
11	O1	Junction	916.83	921.08	916.83	0.00	0.00	0.00	916.83	0.00	4.25	0 00:00	0.00	0.00
12	O2	Junction	909.85	914.85	909.85	0.00	0.00	1.68	910.63	0.00	4.22	0 00:00	0.00	0.00
13	O3A	Junction	915.23	921.60	915.23	0.00	0.00	0.00	915.23	0.00	6.37	0 00:00	0.00	0.00
14	O3B	Junction	911.08	916.72	911.08	0.00	0.00	1.19	911.56	0.00	5.16	0 00:00	0.00	0.00
15	O3C	Junction	906.09	912.24	906.09	0.00	0.00	1.18	906.63	0.00	5.61	0 00:00	0.00	0.00
16	O4	Junction	902.98	906.80	902.98	0.00	0.00	1.71	903.56	0.00	3.24	0 00:00	0.00	0.00
17	O5	Junction	907.79	912.12	907.79	0.00	0.00	1.05	908.35	0.00	3.77	0 00:00	0.00	0.00
18	O6	Junction	901.23	905.48	901.23	0.00	0.00	2.77	901.64	0.00	3.84	0 00:00	0.00	0.00
19	O7	Junction	888.27	901.23	888.27	0.00	0.00	0.44	888.48	0.00	12.75	0 00:00	0.00	0.00
20	O8A	Junction	894.34	903.66	894.34	0.00	0.00	0.00	894.34	0.00	9.32	0 00:00	0.00	0.00
21	SDMH01	Junction	916.48	921.15	916.48	0.00	0.00	0.00	916.58	0.00	4.57	0 00:00	0.00	0.00
22	SDMH02	Junction	909.48	914.04	909.48	0.00	0.00	1.68	910.36	0.00	3.68	0 00:00	0.00	0.00
23	SDMH03	Junction	907.54	914.70	907.54	0.00	0.00	3.50	914.70	0.00	0.00	0 10:15	0.26	33.00
24	SDMH04	Junction	907.26	914.39	907.26	0.00	0.00	2.80	908.36	0.00	6.03	0 00:00	0.00	0.00
25	SDMH05	Junction	907.53	914.79	907.53	0.00	0.00	1.05	908.19	0.00	6.60	0 00:00	0.00	0.00
26	SDMH06	Junction	905.75	910.18	905.75	0.00	0.00	1.18	906.30	0.00	3.88	0 00:00	0.00	0.00
27	SDMH07	Junction	905.33	909.05	905.33	0.00	0.00	1.18	905.98	0.00	3.07	0 00:00	0.00	0.00
28	SDMH08	Junction	902.75	909.14	902.75	0.00	0.00	1.71	903.43	0.00	5.71	0 00:00	0.00	0.00
29	SDMH09	Junction	901.44	907.96	901.44	0.00	0.00	2.05	903.13	0.00	4.83	0 00:00	0.00	0.00
30	SDMH10	Junction	900.51	907.70	900.51	0.00	0.00	4.08	901.26	0.00	6.44	0 00:00	0.00	0.00
31	SDMH11	Junction	894.85	901.92	894.85	0.00	0.00	3.22	895.65	0.00	6.27	0 00:00	0.00	0.00
32	SDMH12	Junction	893.85	903.70	893.85	0.00	0.00	3.19	894.65	0.00	9.05	0 00:00	0.00	0.00
33	SDMH13	Junction	897.40	902.76	897.40	0.00	0.00	2.91	898.14	0.00	4.62	0 00:00	0.00	0.00
34	SDMH14	Junction	893.13	902.49	893.13	0.00	0.00	5.94	895.49	0.00	7.00	0 00:00	0.00	0.00
35	SDMH15	Junction	886.12	891.87	886.12	0.00	0.00	12.69	891.87	0.00	0.00	0 10:06	0.28	12.00
36	SDMH16	Junction	885.50	893.01	885.50	0.00	0.00	10.83	887.72	0.00	5.29	0 00:00	0.00	0.00
37	SDMH17	Junction	884.58	889.78	884.58	0.00	0.00	10.67	886.23	0.00	3.55	0 00:00	0.00	0.00
38	OUT1	Outfall	884.42					10.57	885.94					
39	RVPRE	Outfall	0.00					2.11	0.00					
40	TSPRE	Outfall	0.00					1.42	0.00					
41	BR1	Storage Node	918.02	922.46	0.00		0.00	1.35	918.41				0.00	0.00
42	BR2	Storage Node	911.79	915.12	0.00		0.00	3.16	914.54				0.00	0.00
43	BR3A	Storage Node	918.54	922.87	0.00		0.00	0.93	920.83				0.00	0.00
44	BR3B	Storage Node	914.16	917.97	0.00		0.00	1.23	916.37				0.00	0.00
45	BR3C	Storage Node	909.39	912.45	0.00		0.00	2.23	912.10				0.00	0.00
46	BR4	Storage Node	904.17	908.79	0.00		0.00	1.75	906.42				0.00	0.00
47	BR5	Storage Node	909.06	912.12	0.00		0.00	2.08	911.76				0.00	0.00
48	BR6	Storage Node	902.92	913.75	0.00		0.00	2.80	905.24				0.00	0.00
49	BR7	Storage Node	895.77	901.73	0.00		0.00	8.48	901.31				0.00	0.00
50	BR8	Storage Node	900.16	910.55	0.00		0.00	18.13	902.57				0.00	0.00

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Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	(ft)		(min)	
1	P01	Pipe	O1	SDMH01	102.69	916.83	916.58	0.2400	12.000	0.0130	0.00	1.76	0.00	0.00	0.00	0.00	0.00	Calculated
2	P02	Pipe	SDMH01	J01	198.58	916.48	913.15	1.6800	12.000	0.0130	0.00	4.61	0.00	0.00	0.00	0.00	0.00	Calculated
3	P03	Pipe	J01	BR2	18.00	913.15	912.85	1.6700	12.000	0.0130	0.00	4.60	0.00	0.00	0.00	0.00	0.00	Calculated
4	P04	Pipe	O2	SDMH02	111.00	909.85	909.58	0.2400	12.000	0.0130	1.68	1.76	0.95	2.57	0.74	0.78	0.00	Calculated
5	P05	Pipe	SDMH02	SDMH03	160.94	909.48	909.08	0.2500	12.000	0.0130	1.67	1.78	0.94	2.61	0.75	0.77	0.00	Calculated
6	P06	Pipe	J02	SDMH03	99.00	907.89	907.64	0.2500	12.000	0.0130	1.91	1.79	1.07	2.74	1.00	1.00	17.00	SURCHARGED
7	P07	Pipe	SDMH03	SDMH04	74.09	907.54	907.36	0.2400	12.000	0.0130	1.84	1.76	1.05	2.62	1.00	1.00	17.00	SURCHARGED
8	P08	Pipe	O5	SDMH05	66.52	907.79	907.63	0.2400	12.000	0.0130	1.05	1.75	0.60	2.33	0.53	0.56	0.00	Calculated
9	P09	Pipe	SDMH05	SDMH04	70.26	907.53	907.36	0.2400	12.000	0.0130	1.05	1.75	0.60	2.33	0.54	0.56	0.00	Calculated
10	P10	Pipe	SDMH04	BR6	92.00	907.26	903.48	4.1100	12.000	0.0130	2.80	7.22	0.39	8.61	0.43	0.43	0.00	Calculated
11	P11	Pipe	O6	BR7	74.00	901.23	897.49	5.0500	12.000	0.0130	2.77	8.01	0.35	9.26	0.41	0.41	0.00	Calculated
12	P12	Pipe	O3A	J03	141.00	915.23	914.88	0.2500	12.000	0.0130	0.00	1.78	0.00	0.00	0.00	0.00	0.00	Calculated
13	P13	Pipe	J03	BR3B	25.00	914.78	914.72	0.2400	12.000	0.0130	1.23	1.75	0.70	2.41	0.62	0.62	0.00	Calculated
14	P14	Pipe	O3B	J04	83.00	911.08	910.66	0.5100	12.000	0.0130	1.18	2.53	0.47	3.18	0.48	0.48	0.00	Calculated
15	P15	Pipe	J04	BR3C	23.00	910.56	910.45	0.4800	12.000	0.0150	2.23	2.14	1.05	3.14	1.00	1.00	12.00	SURCHARGED
16	P16	Pipe	O3C	SDMH06	102.00	906.09	905.75	0.3300	12.000	0.0130	1.18	2.06	0.57	2.72	0.54	0.54	0.00	Calculated
17	P17	Pipe	SDMH06	SDMH07	99.00	905.75	905.43	0.3200	12.000	0.0130	1.18	2.03	0.58	2.69	0.55	0.55	0.00	Calculated
18	P18	Pipe	SDMH07	BR4	31.00	905.33	905.23	0.3200	12.000	0.0130	1.18	2.02	0.58	2.67	0.54	0.55	0.00	Calculated
19	P19	Pipe	O4	SDMH08	50.02	902.98	902.85	0.2600	18.000	0.0130	1.71	5.36	0.32	2.69	0.57	0.39	0.00	Calculated
20	P20	Pipe	SDMH08	SDMH09	83.99	902.75	902.54	0.2500	18.000	0.0130	1.71	5.25	0.33	2.66	0.57	0.39	0.00	Calculated
21	P21	Pipe	J05	SDMH09	30.00	902.68	902.60	0.2700	12.000	0.0130	0.61	1.84	0.33	2.10	0.40	0.40	0.00	Calculated
22	P22	Pipe	SDMH09	SDMH10	331.00	901.44	900.61	0.2500	18.000	0.0130	2.03	5.26	0.39	2.82	0.64	0.43	0.00	Calculated
23	P23	Pipe	J06	SDMH10	32.00	902.12	900.61	4.7200	12.000	0.0130	2.17	7.74	0.28	8.45	0.36	0.36	0.00	Calculated
24	P24	Pipe	SDMH10	BR7	89.00	900.51	897.23	3.6900	18.000	0.0130	4.08	20.17	0.20	8.93	0.46	0.31	0.00	Calculated
25	P25	Pipe	O7	J10	62.00	888.27	887.17	1.7700	12.000	0.0130	0.44	4.75	0.09	3.79	0.21	0.21	0.00	Calculated
26	P26	Pipe	O8A	SDMH12	130.00	894.34	893.85	0.3800	12.000	0.0130	0.00	2.19	0.00	0.00	0.00	0.00	0.00	Calculated
27	P27	Pipe	J07	SDMH11	39.00	895.73	894.95	2.0000	12.000	0.0130	3.22	5.04	0.64	6.80	0.58	0.58	0.00	Calculated
28	P28	Pipe	SDMH11	SDMH12	333.48	894.85	893.85	0.3000	18.000	0.0130	3.19	5.75	0.55	3.40	0.79	0.53	0.00	Calculated
29	P29	Pipe	SDMH12	SDMH14	208.00	893.85	893.23	0.3000	18.000	0.0130	3.18	5.73	0.55	3.35	0.78	0.53	0.00	Calculated
30	P30	Pipe	J09	SDMH13	16.00	898.06	897.74	2.0000	12.000	0.0130	1.71	5.04	0.34	5.79	0.40	0.40	0.00	Calculated
31	P31	Pipe	J08	SDMH13	28.00	898.06	897.50	2.0000	12.000	0.0130	1.20	5.04	0.24	5.25	0.33	0.33	0.00	Calculated
32	P32	Pipe	SDMH13	SDMH14	93.00	897.40	895.07	2.5100	18.000	0.0130	2.90	16.63	0.17	7.05	0.42	0.28	0.00	Calculated
33	P33	Pipe	SDMH14	SDMH15	745.00	893.13	886.22	0.9300	18.000	0.0130	5.90	10.12	0.58	6.06	0.81	0.55	0.00	Calculated
34	P34	Pipe	J10	SDMH15	39.00	886.32	886.12	0.5100	18.000	0.0130	7.03	7.52	0.93	4.85	1.15	0.77	0.00	Calculated
35	P35	Pipe	SDMH15	SDMH16	200.04	886.12	885.72	0.2000	24.000	0.0130	10.83	10.12	1.07	3.85	2.00	1.00	8.00	SURCHARGED
36	P36	Pipe	SDMH16	SDMH17	328.00	885.50	884.68	0.2500	24.000	0.0130	10.67	11.31	0.94	4.24	1.49	0.77	0.00	Calculated
37	P37	Pipe	SDMH17	OUT1	63.00	884.58	884.42	0.2500	24.000	0.0130	10.57	11.40	0.93	4.15	1.48	0.76	0.00	Calculated
38	OR1	Orifice	BR1	O1		918.02	916.83		24.000		0.00							
39	OR2	Orifice	BR2	O2		911.79	909.85		24.000		1.68							
40	OR3A	Orifice	BR3A	O3A		918.54	915.23		24.000		0.00							
41	OR3B	Orifice	BR3B	O3B		914.16	911.08		24.000		1.19							
42	OR3C	Orifice	BR3C	O3C		909.39	906.09		24.000		1.18							
43	OR4	Orifice	BR4	O4		904.17	902.98		24.000		1.71							
44	OR5	Orifice	BR5	O5		909.06	907.79		24.000		1.05							
45	OR6	Orifice	BR6	O6		902.92	901.23		24.000		2.77							
46	OR7B	Orifice	BR7	O7		895.77	888.27		24.000		0.44							
47	OR8A	Orifice	BR8	O8A		900.16	894.34		24.000		0.00							

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Subbasin Hydrology

Subbasin : A01

Input Data

Area (ac) 0.92
Weighted Curve Number 90.57
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	0.24	D	95.00
Urban commercial, 85% imp	0.68	A	89.00
Composite Area & Weighted CN	0.92		90.57

Time of Concentration

TOC Method : SCS TR-55

Sheet Flow Equation :

Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))

Where :

Tc = Time of Concentration (hr)
n = Manning's roughness
Lf = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation :

V = 16.1345 * (Sf^0.5) (unpaved surface)
V = 20.3282 * (Sf^0.5) (paved surface)
V = 15.0 * (Sf^0.5) (grassed waterway surface)
V = 10.0 * (Sf^0.5) (nearly bare & untilled surface)
V = 9.0 * (Sf^0.5) (cultivated straight rows surface)
V = 7.0 * (Sf^0.5) (short grass pasture surface)
V = 5.0 * (Sf^0.5) (woodland surface)
V = 2.5 * (Sf^0.5) (forest w/heavy litter surface)
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hr)
Lf = Flow Length (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)

Channel Flow Equation :

V = (1.49 * (R^(2/3)) * (Sf^0.5)) / n
R = Aq / Wp
Tc = (Lf / V) / (3600 sec/hr)

Where :

Tc = Time of Concentration (hr)
Lf = Flow Length (ft)
R = Hydraulic Radius (ft)
Aq = Flow Area (ft²)
Wp = Wetted Perimeter (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)
n = Manning's roughness

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

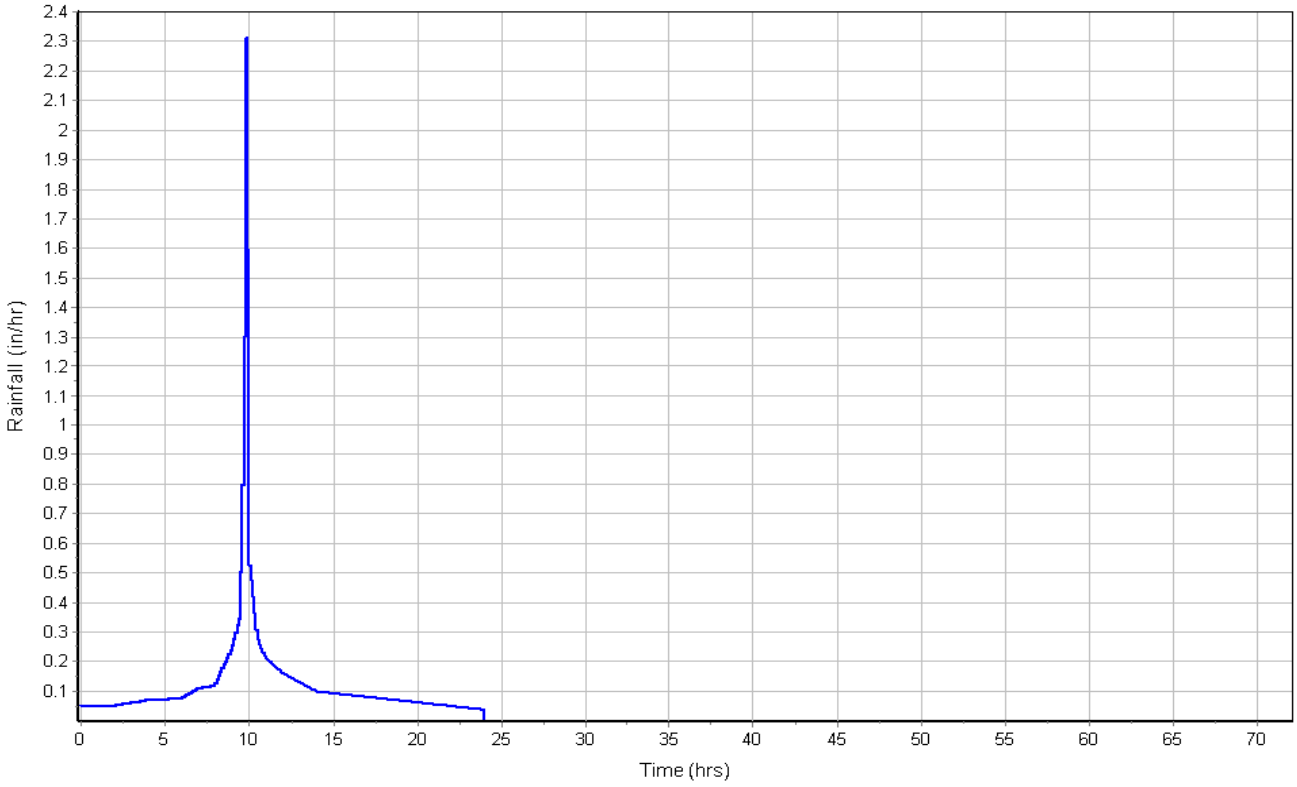
Total Rainfall (in) 3.07
Total Runoff (in) 2.10
Peak Runoff (cfs) 1.37
Weighted Curve Number 90.57
Time of Concentration (days hh:mm:ss) 0 00:10:00

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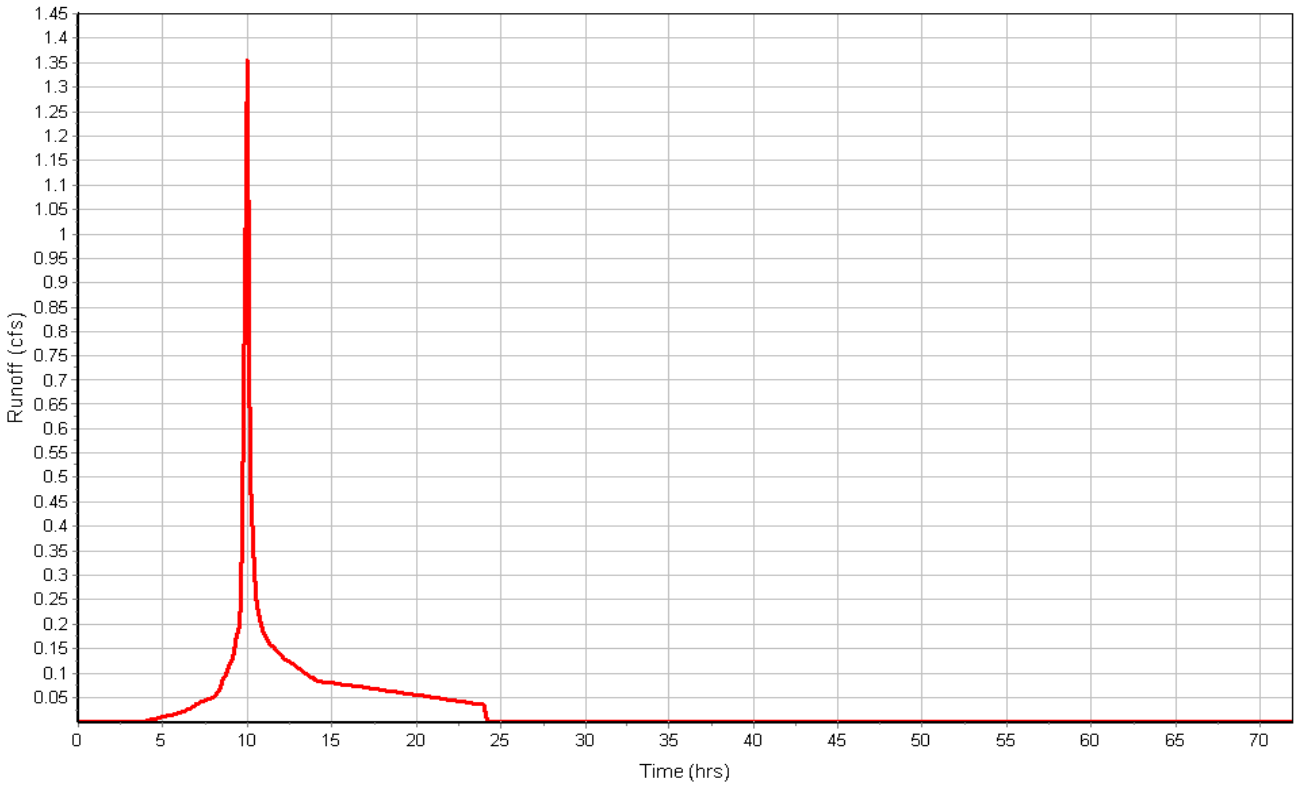
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Subbasin : A01

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A02

Input Data

Area (ac) 2.31
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	2.31	A	89.00
Composite Area & Weighted CN	2.31		89.00

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

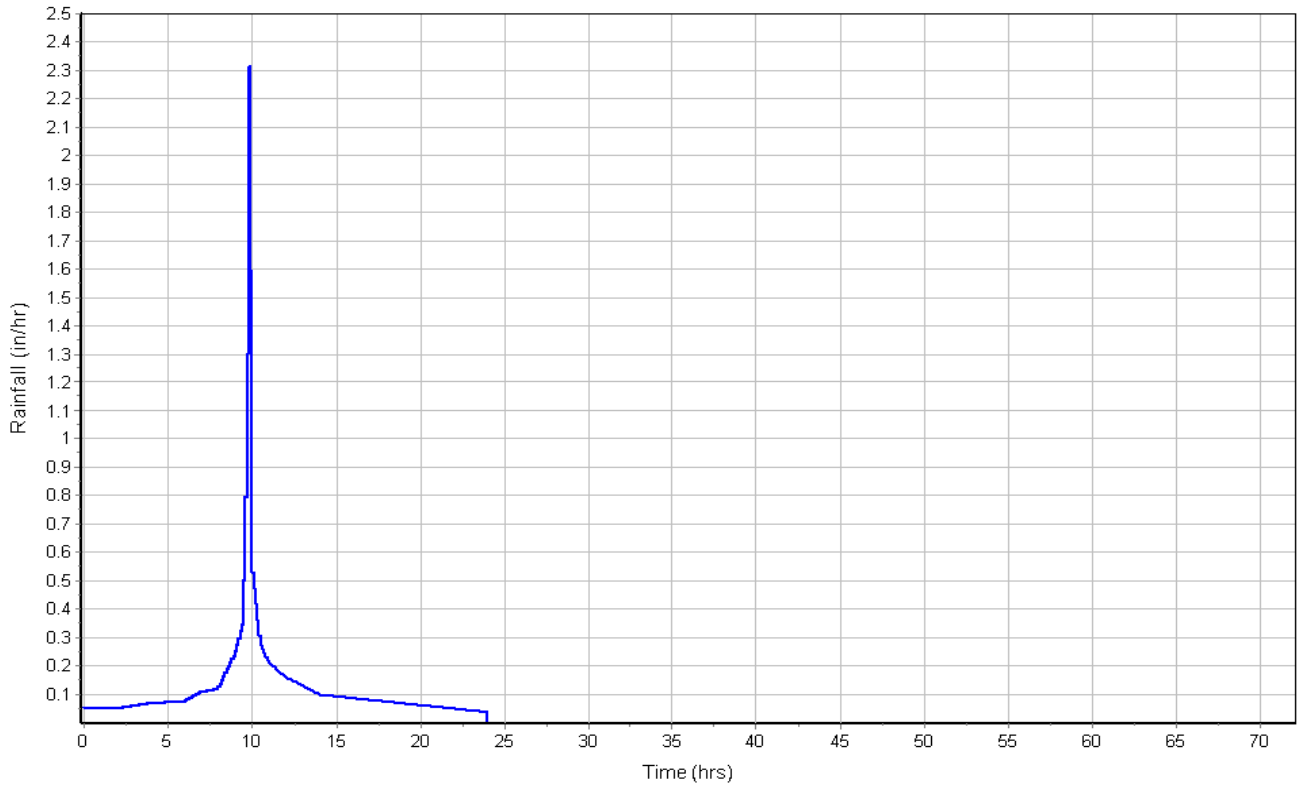
Total Rainfall (in) 3.07
Total Runoff (in) 1.96
Peak Runoff (cfs) 3.20
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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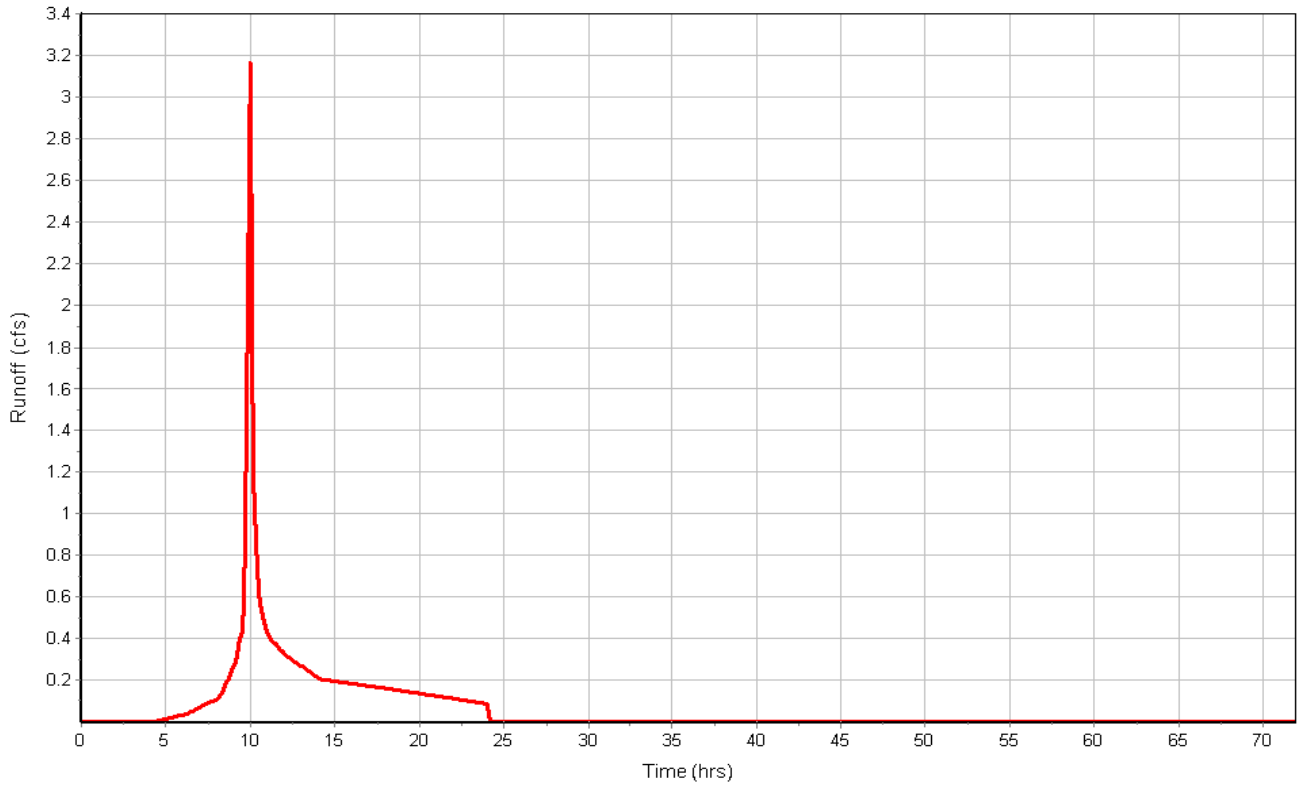
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Subbasin : A02

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A04

Input Data

Area (ac) 1.11
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	1.11	A	89.00
Composite Area & Weighted CN	1.11		89.00

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

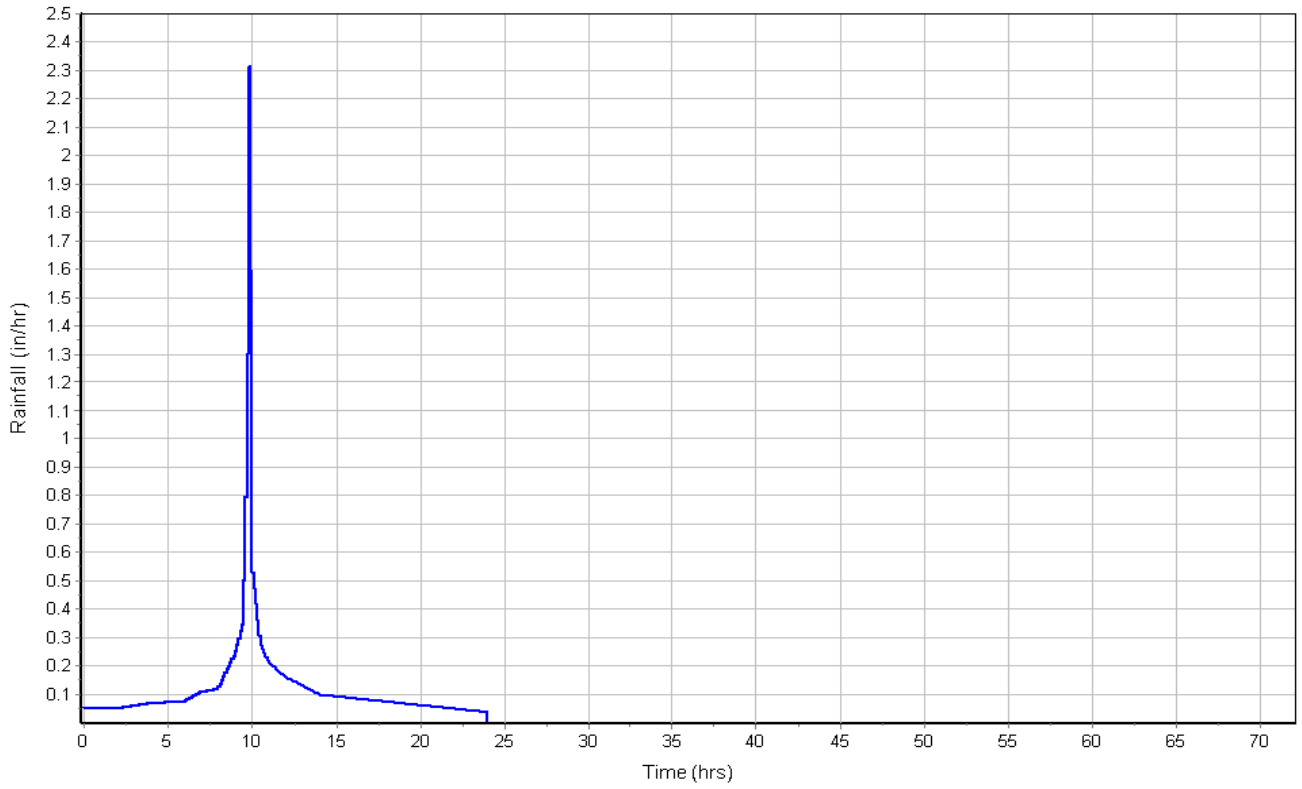
Total Rainfall (in) 3.07
Total Runoff (in) 1.96
Peak Runoff (cfs) 1.53
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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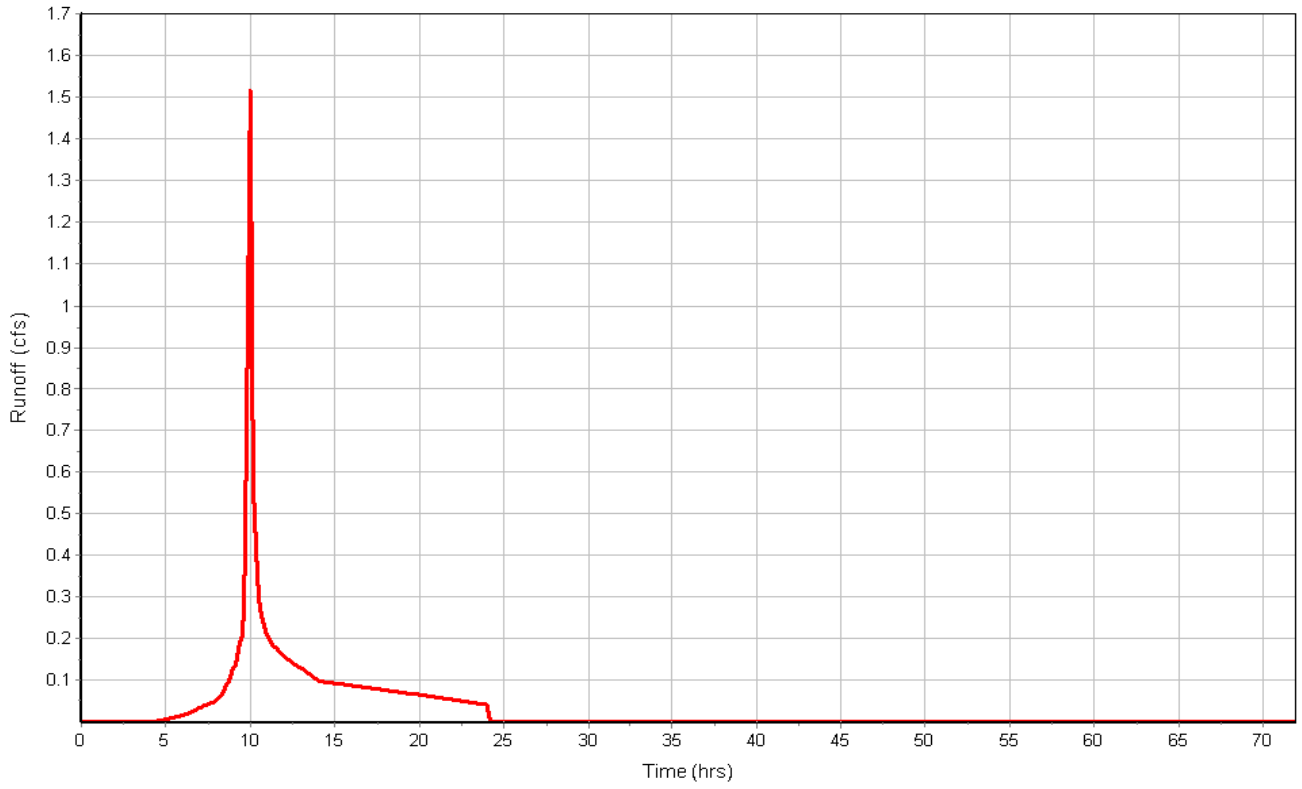
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Subbasin : A04

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A05

Input Data

Area (ac) 2.33
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	2.33	A	89.00
Composite Area & Weighted CN	2.33		89.00

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

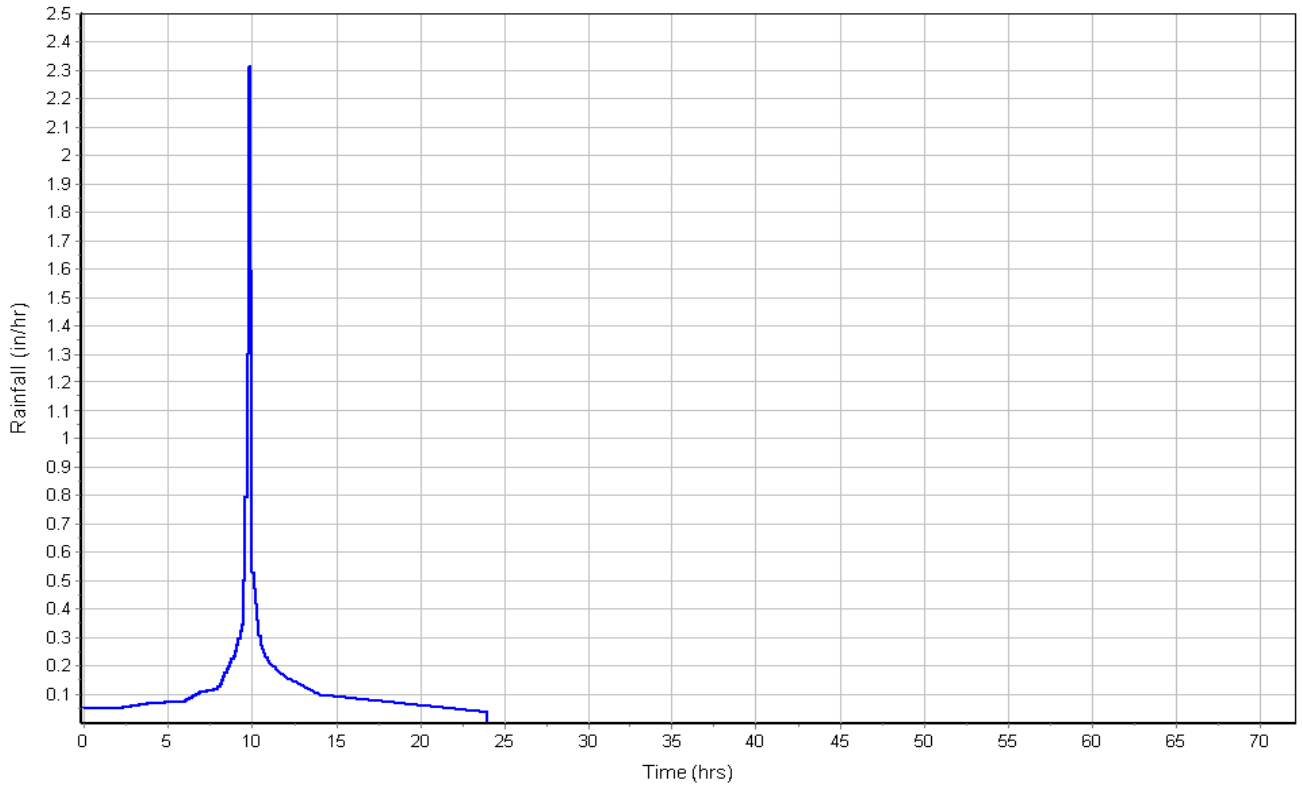
Total Rainfall (in) 3.07
Total Runoff (in) 1.96
Peak Runoff (cfs) 3.23
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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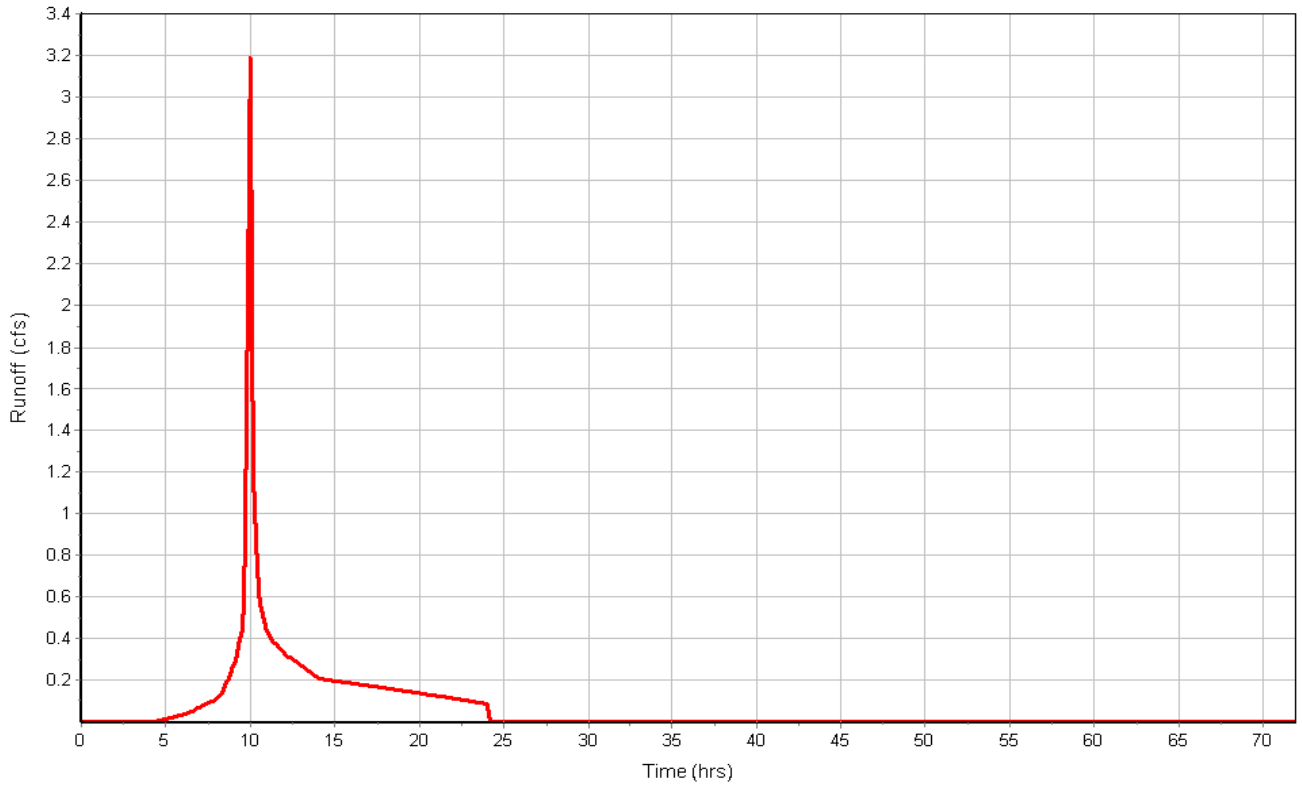
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Subbasin : A05

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Subbasin : A06

Input Data

Area (ac) 1.52
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	1.52	A	89.00
Composite Area & Weighted CN	1.52		89.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

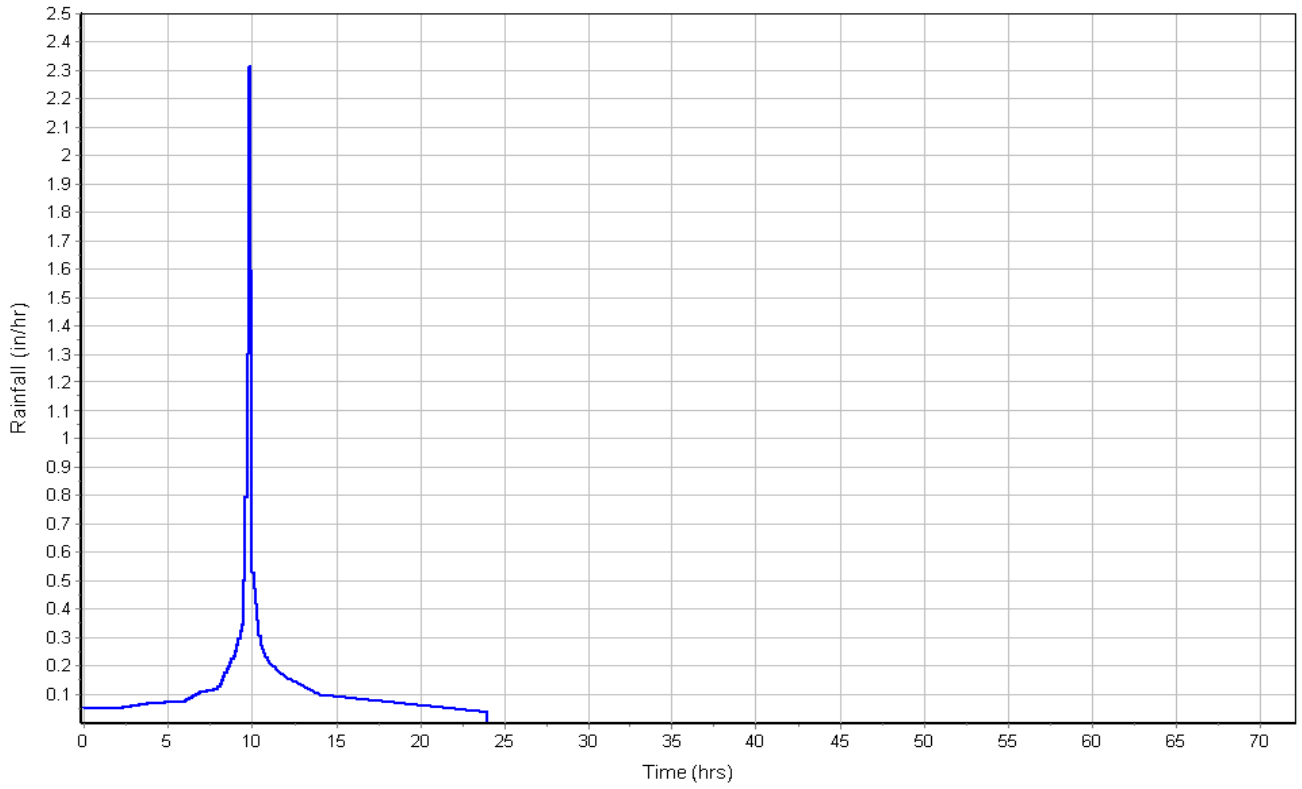
Total Rainfall (in) 3.07
Total Runoff (in) 1.96
Peak Runoff (cfs) 2.11
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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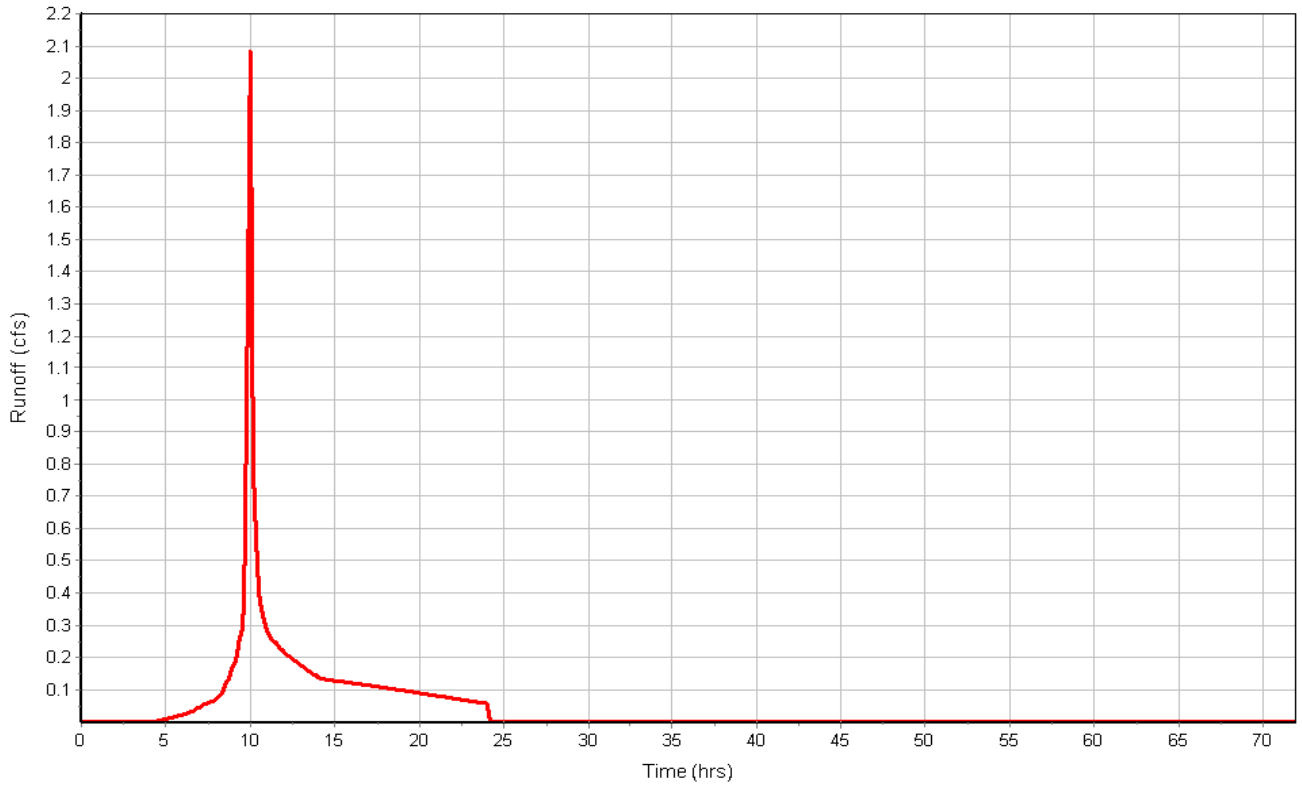
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Subbasin : A07

Input Data

Area (ac) 0.45
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	0.45	A	89.00
Composite Area & Weighted CN	0.45		89.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

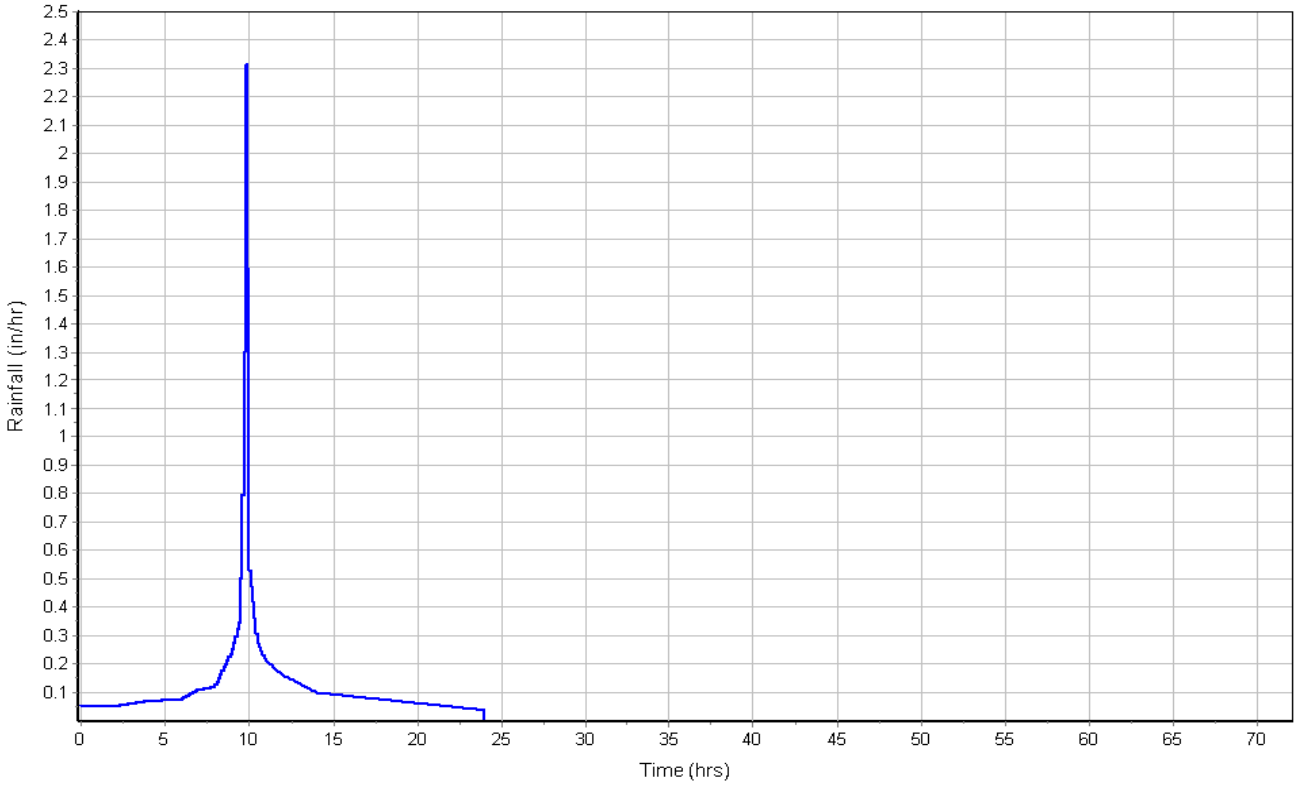
Total Rainfall (in) 3.07
Total Runoff (in) 1.96
Peak Runoff (cfs) 0.62
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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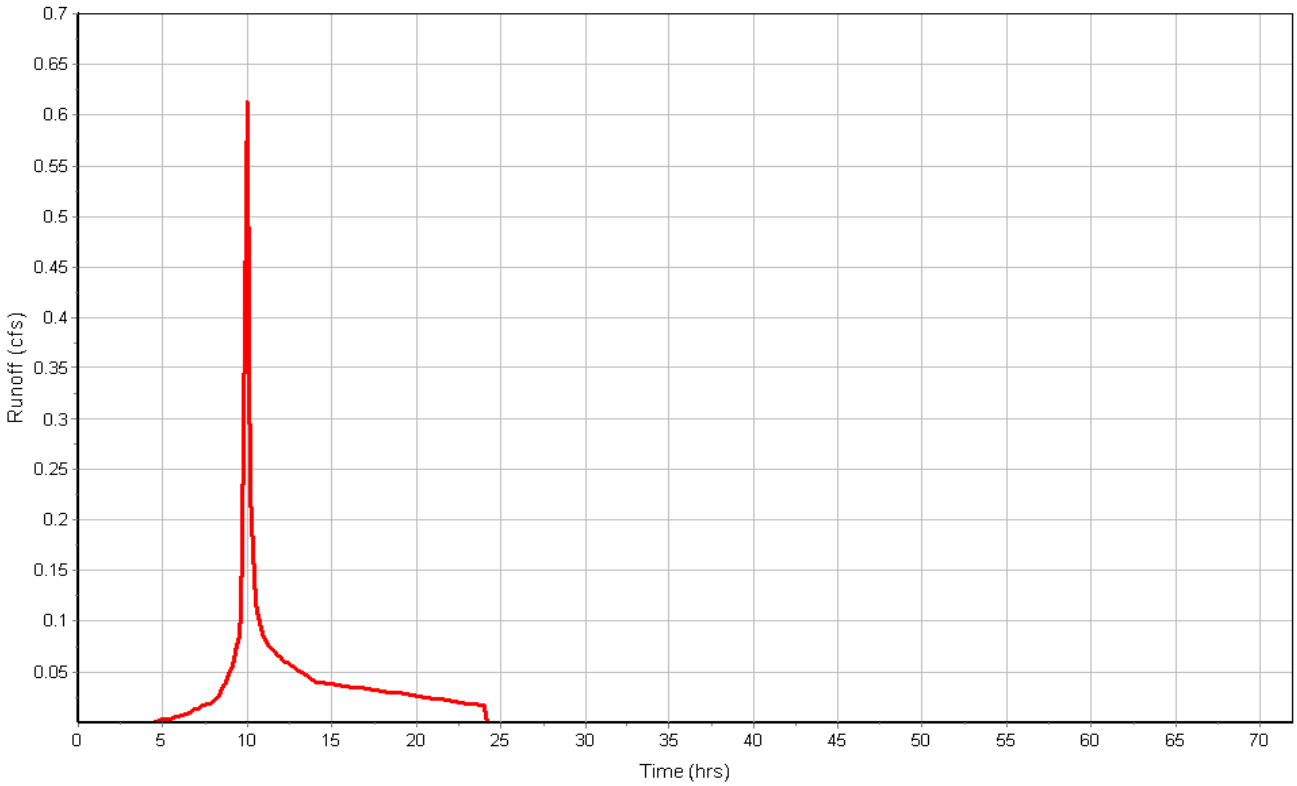
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Subbasin : A08

Input Data

Area (ac) 1.59
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	1.59	A	89.00
Composite Area & Weighted CN	1.59		89.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

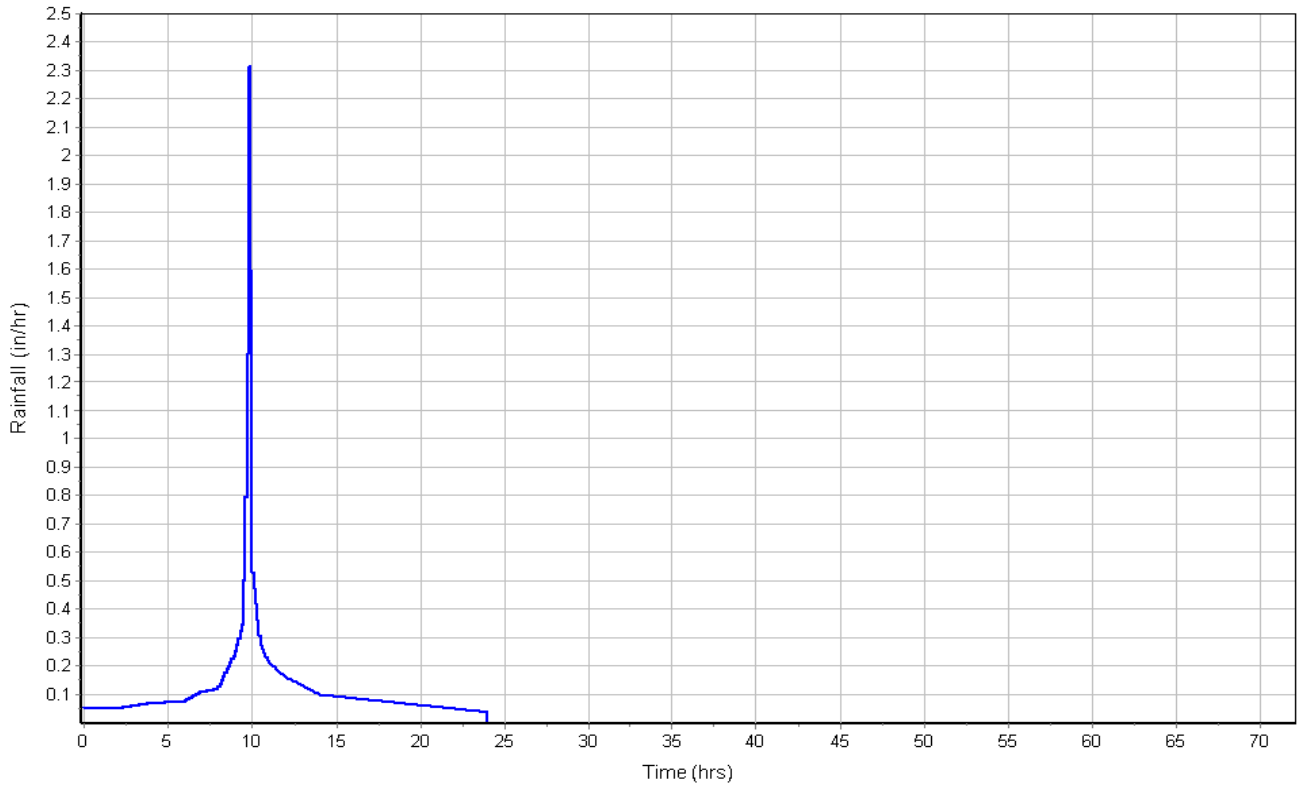
Total Rainfall (in) 3.07
Total Runoff (in) 1.96
Peak Runoff (cfs) 2.20
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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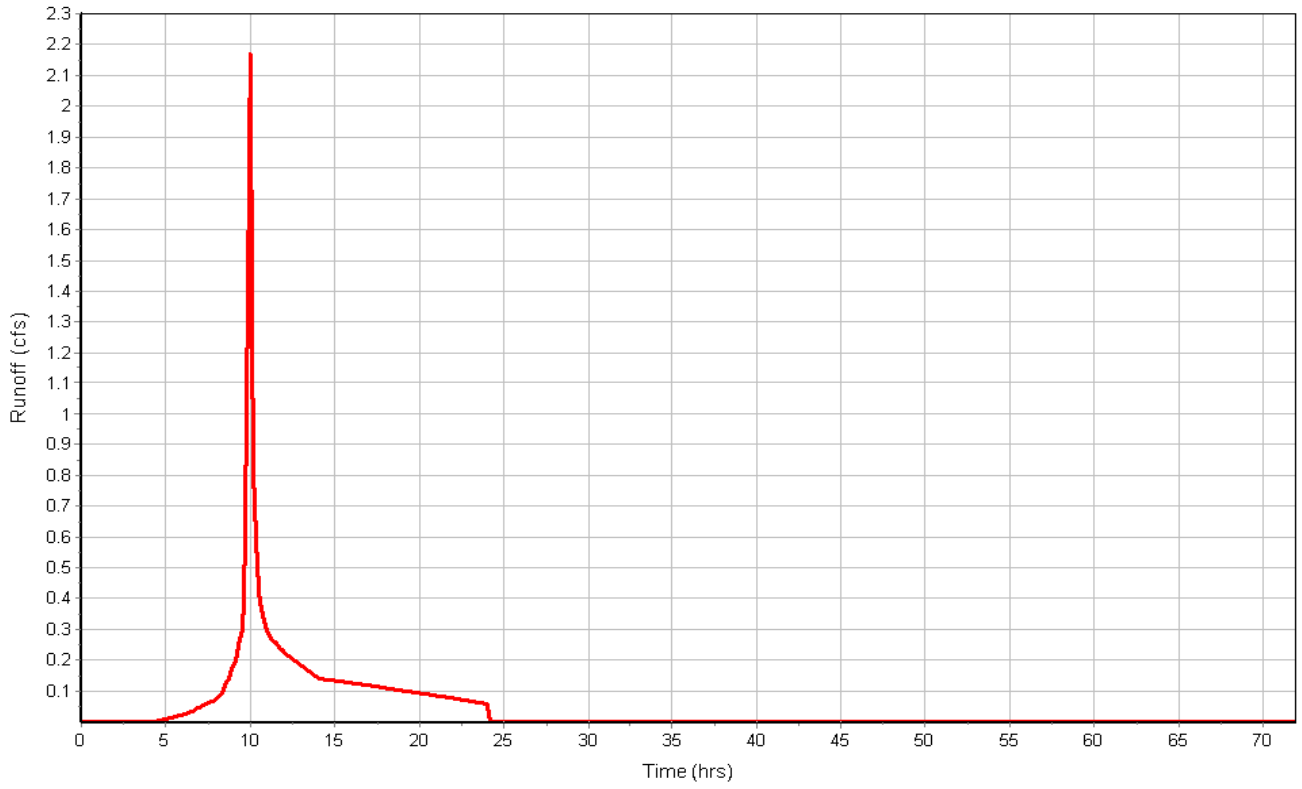
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Subbasin : A08

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Subbasin : A09

Input Data

Area (ac) 1.94
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	1.94	A	89.00
Composite Area & Weighted CN	1.94		89.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

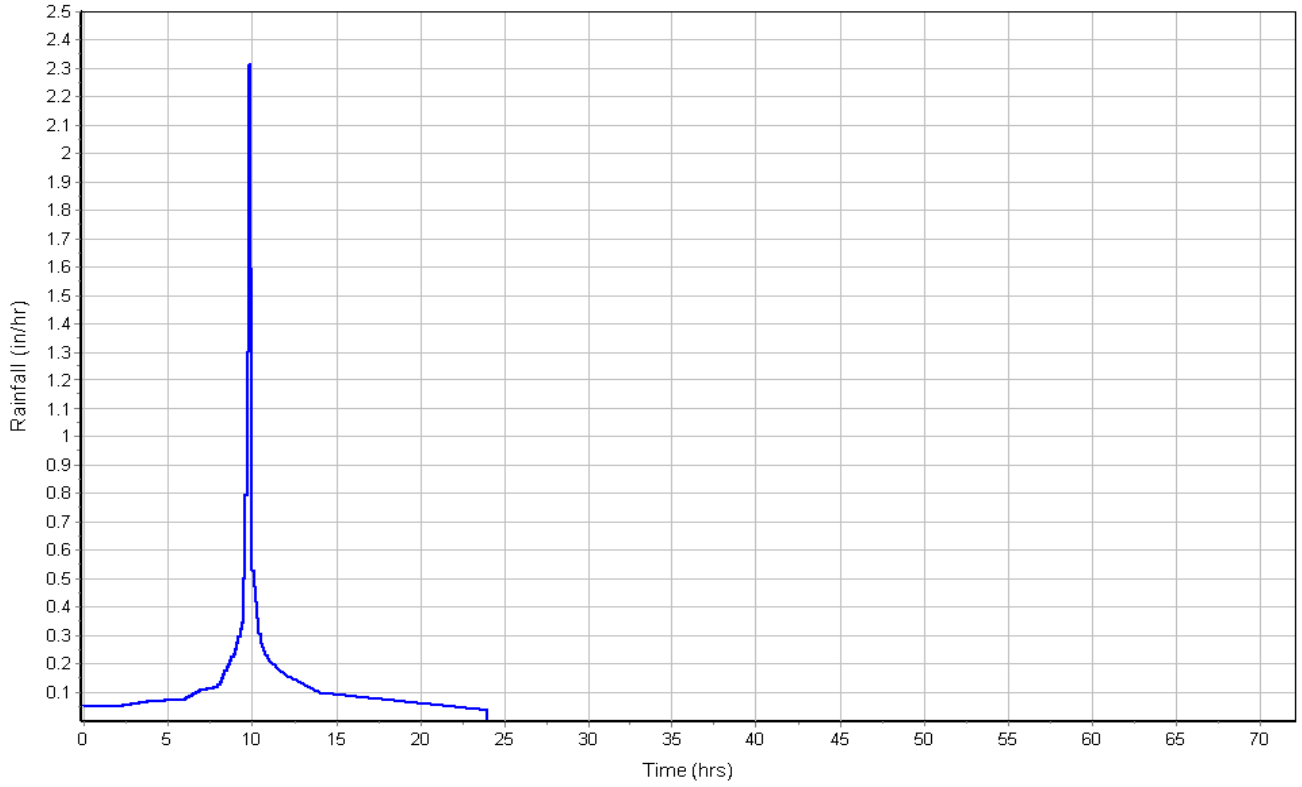
Total Rainfall (in) 3.07
Total Runoff (in) 1.96
Peak Runoff (cfs) 2.69
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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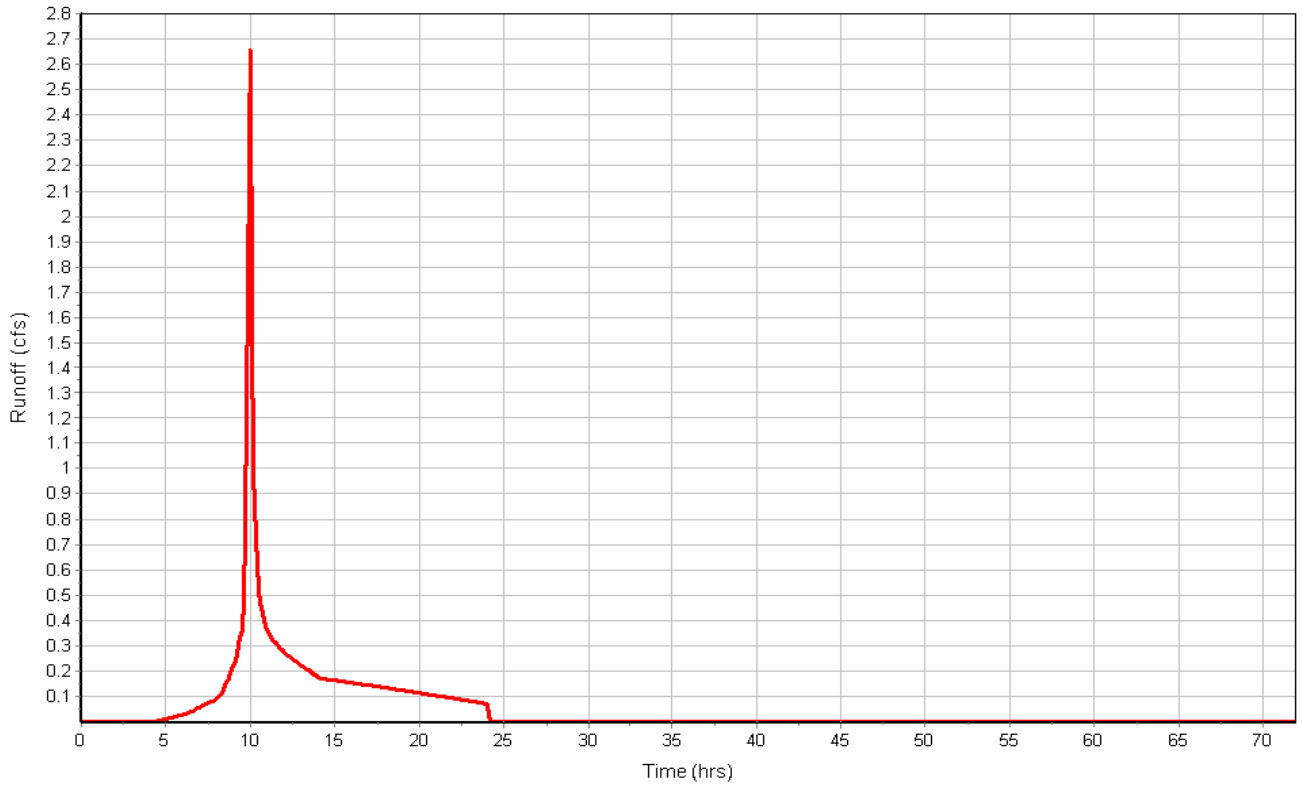
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Subbasin : A09

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A10

Input Data

Area (ac) 16.37
Weighted Curve Number 84.72
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban industrial, 72% imp	11.29	A	81.00
Urban industrial, 72% imp	5.08	D	93.00
Composite Area & Weighted CN	16.37		84.72

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

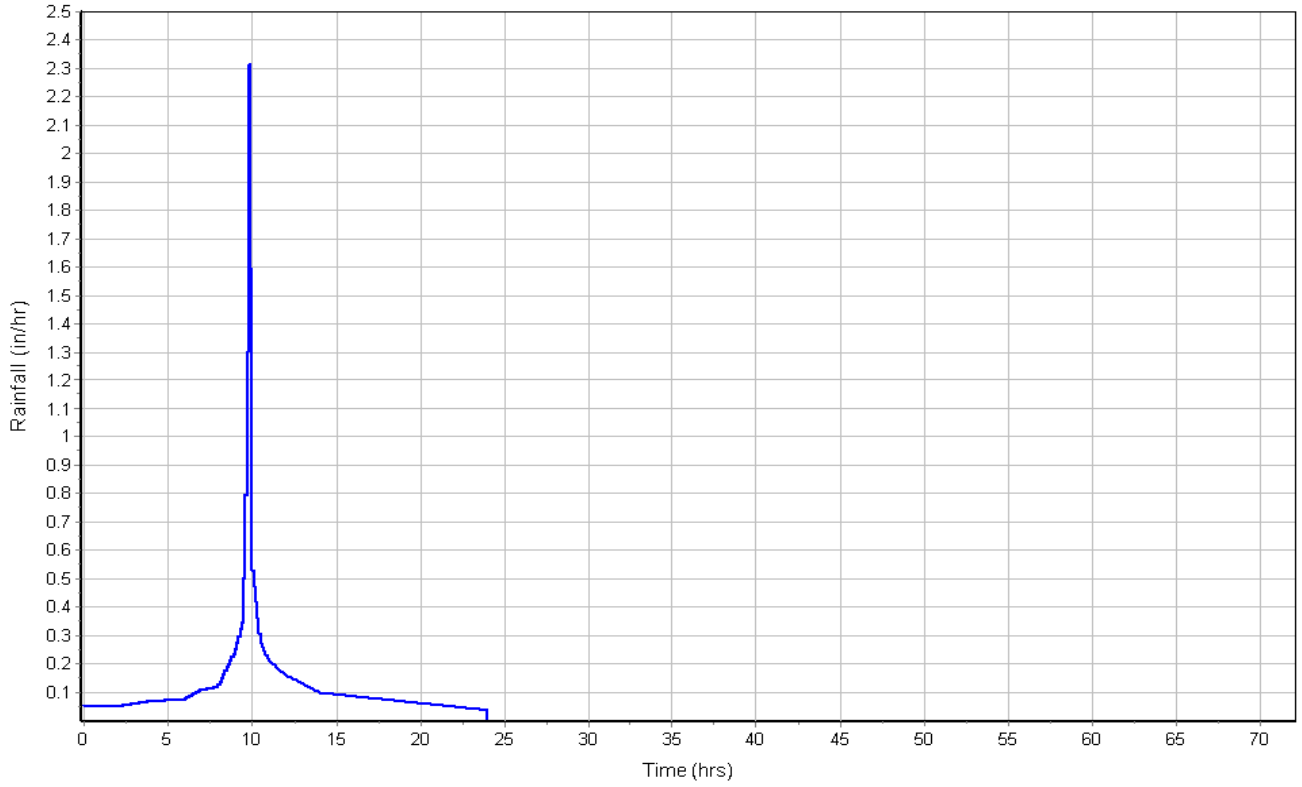
Total Rainfall (in) 3.07
Total Runoff (in) 1.63
Peak Runoff (cfs) 18.24
Weighted Curve Number 84.72
Time of Concentration (days hh:mm:ss) 0 00:10:00

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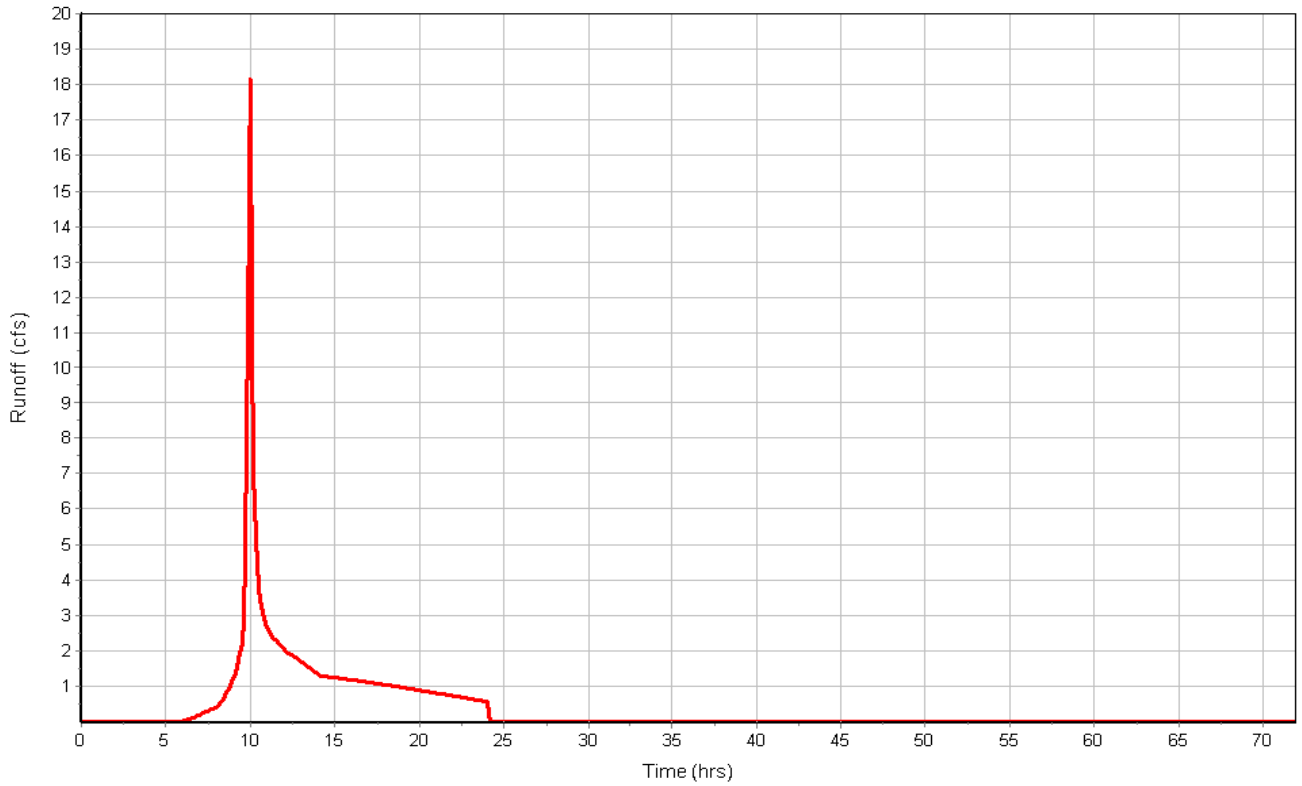
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Subbasin : A10

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A11a

Input Data

Area (ac) 0.92
Weighted Curve Number 98.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	0.52	A	98.00
Paved parking & roofs	0.40	D	98.00
Composite Area & Weighted CN	0.92		98.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

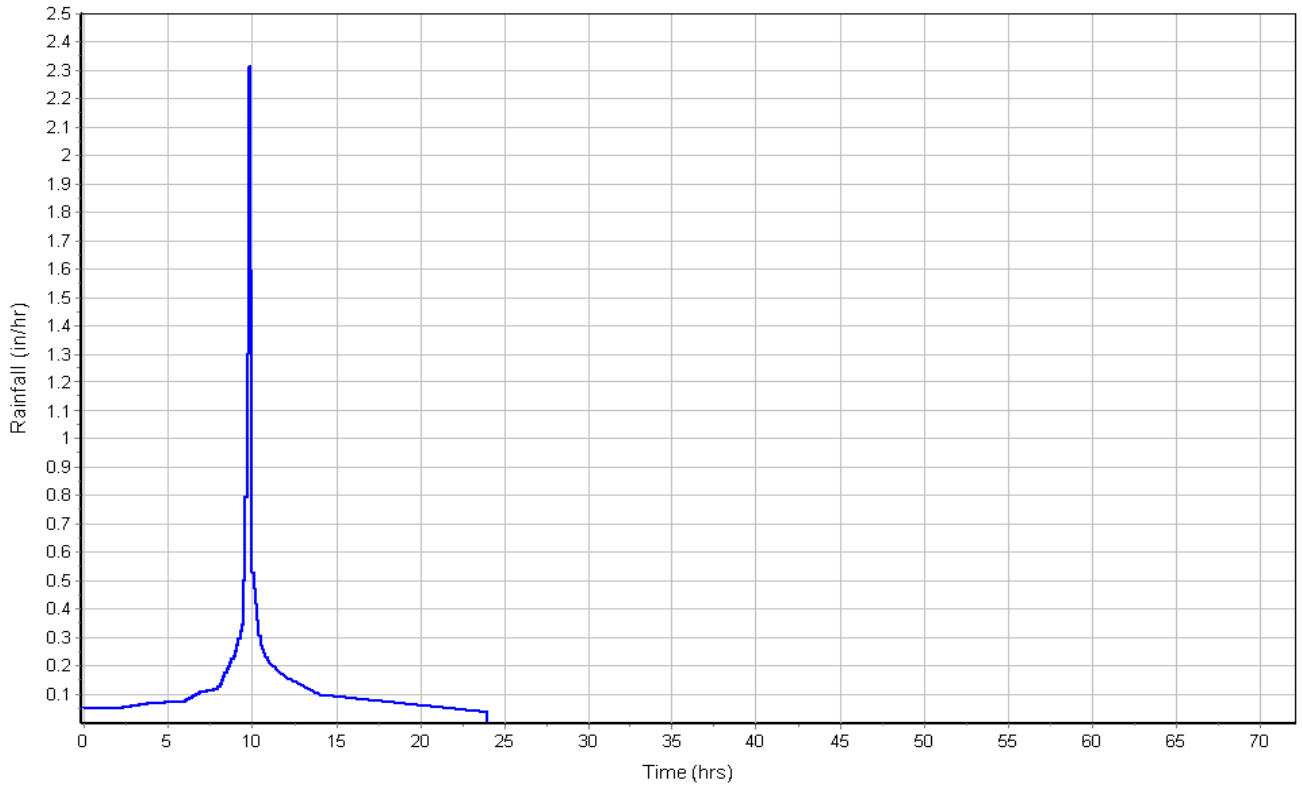
Total Rainfall (in) 3.07
Total Runoff (in) 2.84
Peak Runoff (cfs) 1.76
Weighted Curve Number 98.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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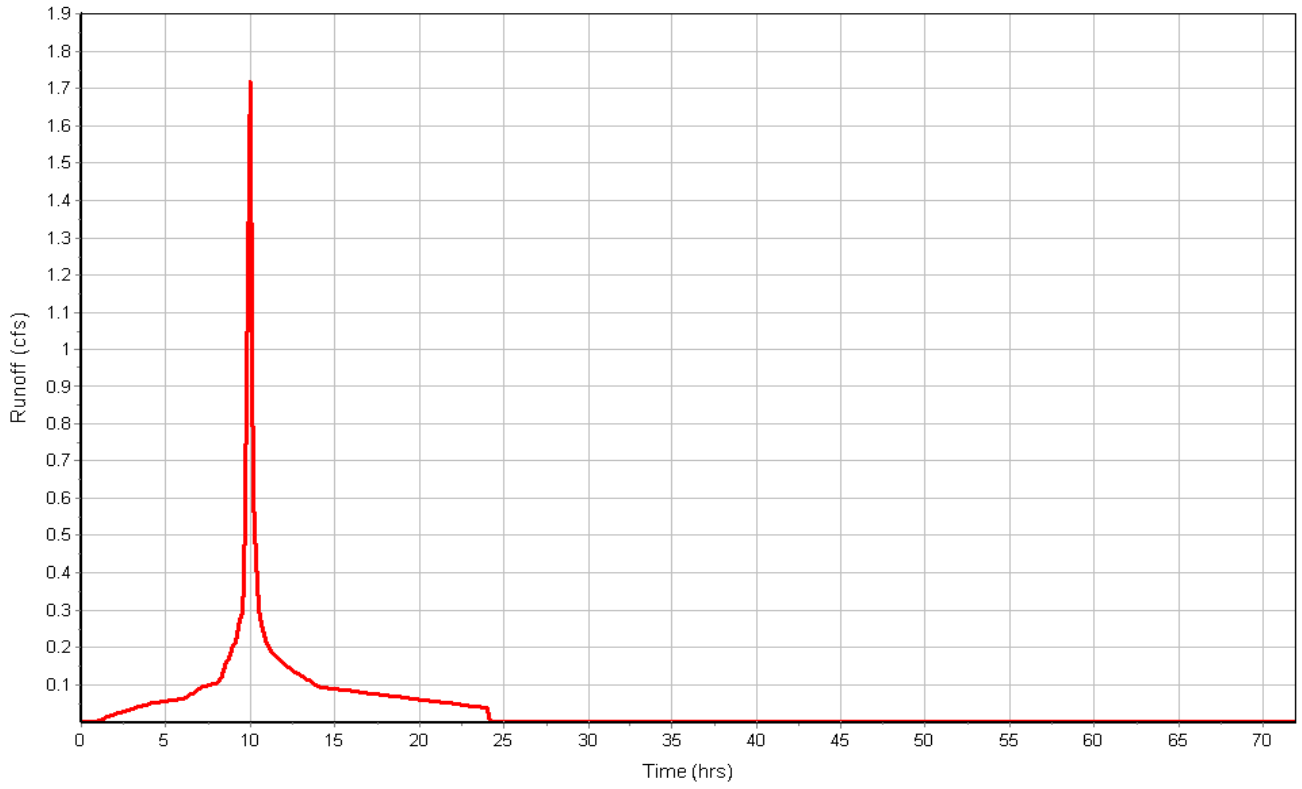
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Subbasin : A11a

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A11b

Input Data

Area (ac)	0.64
Weighted Curve Number	98.00
Rain Gage ID	Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	0.43	A	98.00
Paved parking & roofs	0.21	D	98.00
Composite Area & Weighted CN	0.64		98.00

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

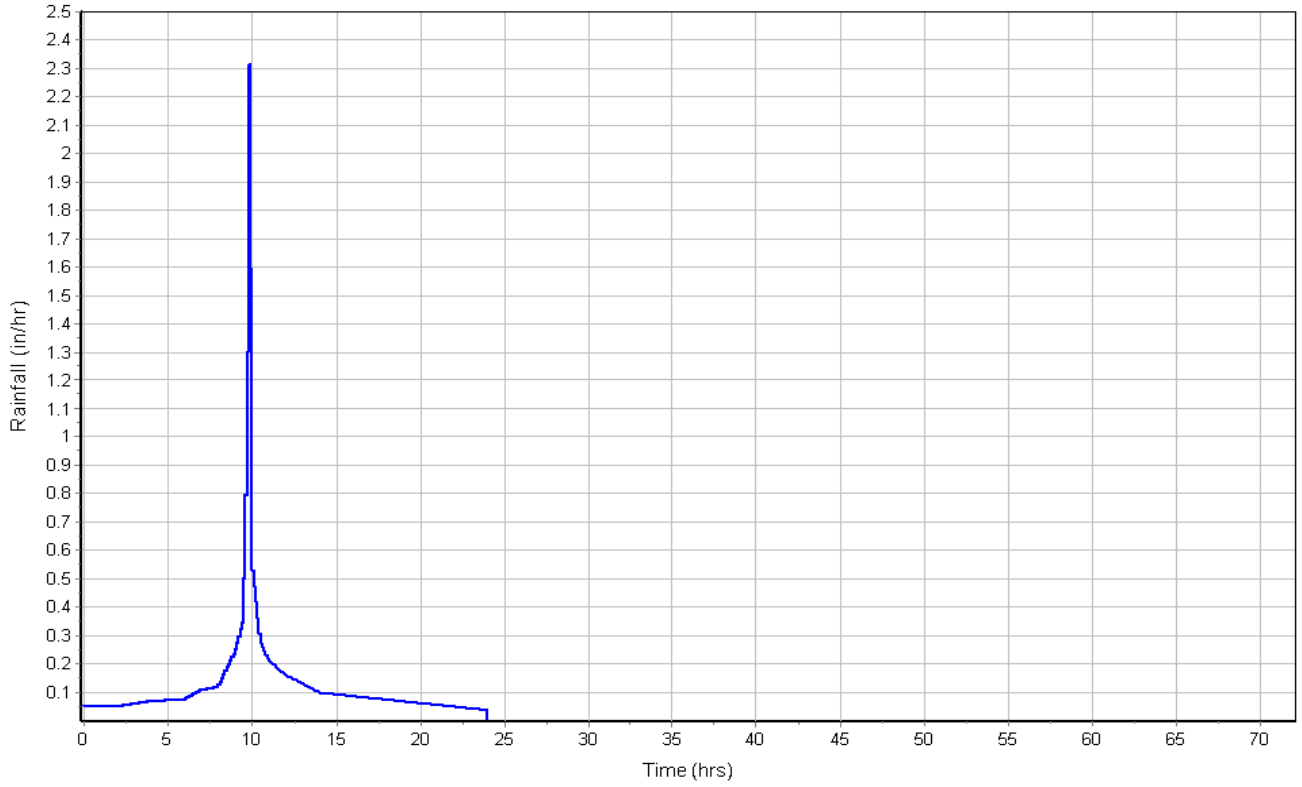
Total Rainfall (in)	3.07
Total Runoff (in)	2.84
Peak Runoff (cfs)	1.22
Weighted Curve Number	98.00
Time of Concentration (days hh:mm:ss)	0 00:10:00

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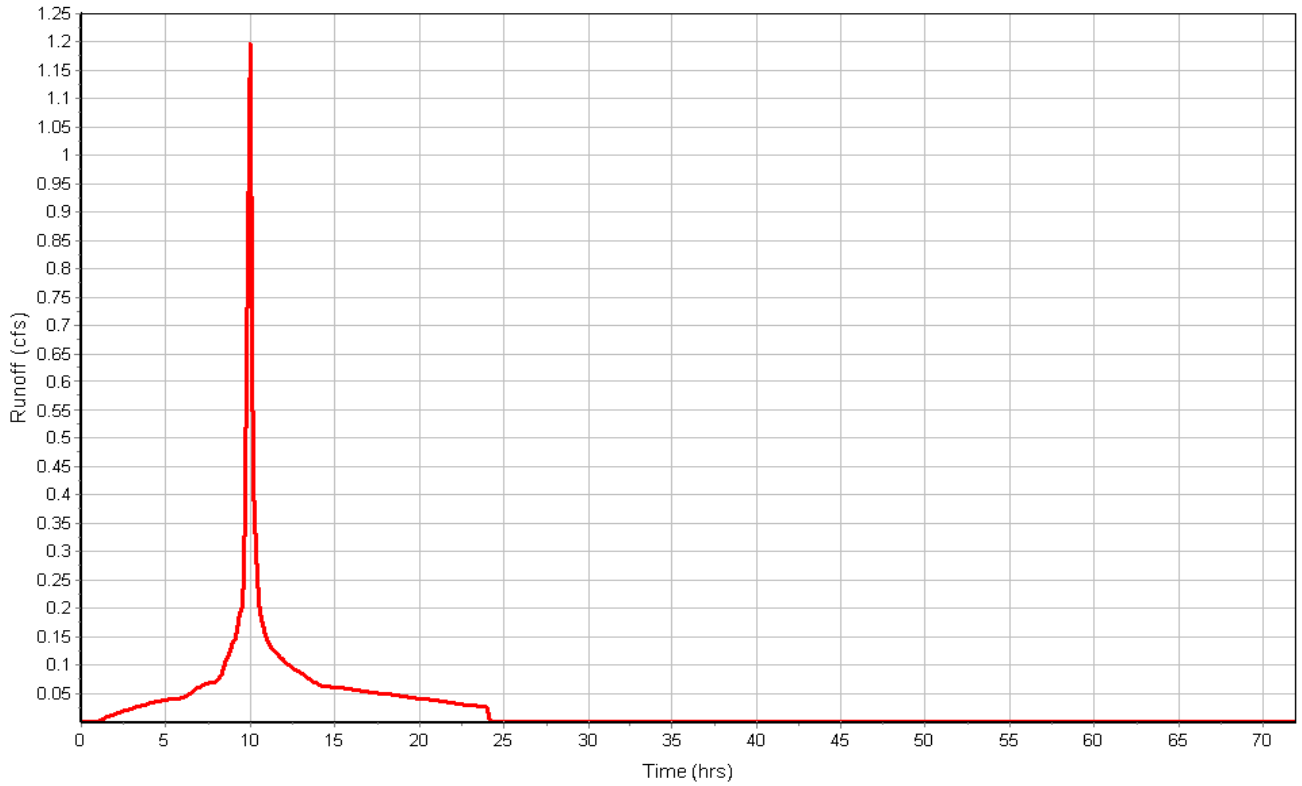
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Subbasin : A11b

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A12

Input Data

Area (ac)	1.73
Weighted Curve Number	98.00
Rain Gage ID	Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	1.73	A	98.00
Composite Area & Weighted CN	1.73		98.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

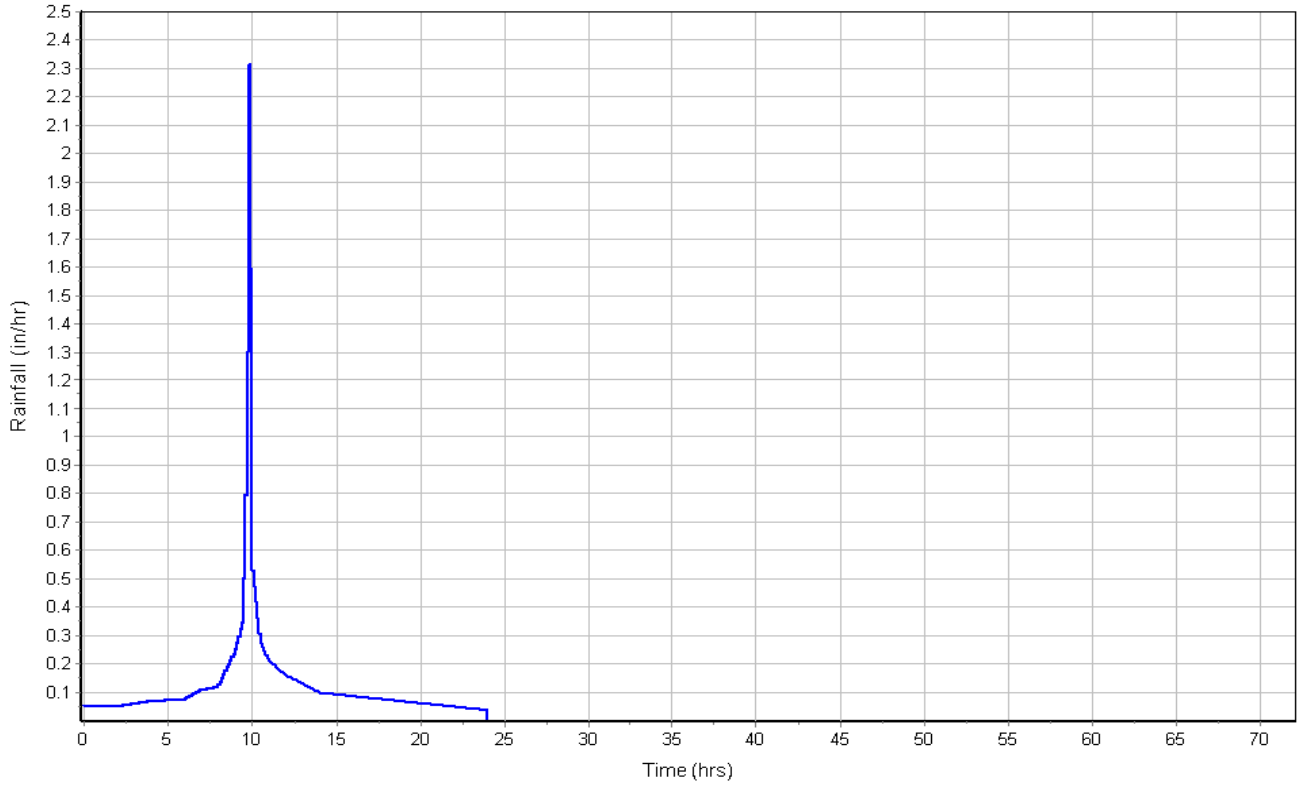
Total Rainfall (in)	3.07
Total Runoff (in)	2.84
Peak Runoff (cfs)	3.31
Weighted Curve Number	98.00
Time of Concentration (days hh:mm:ss)	0 00:10:00

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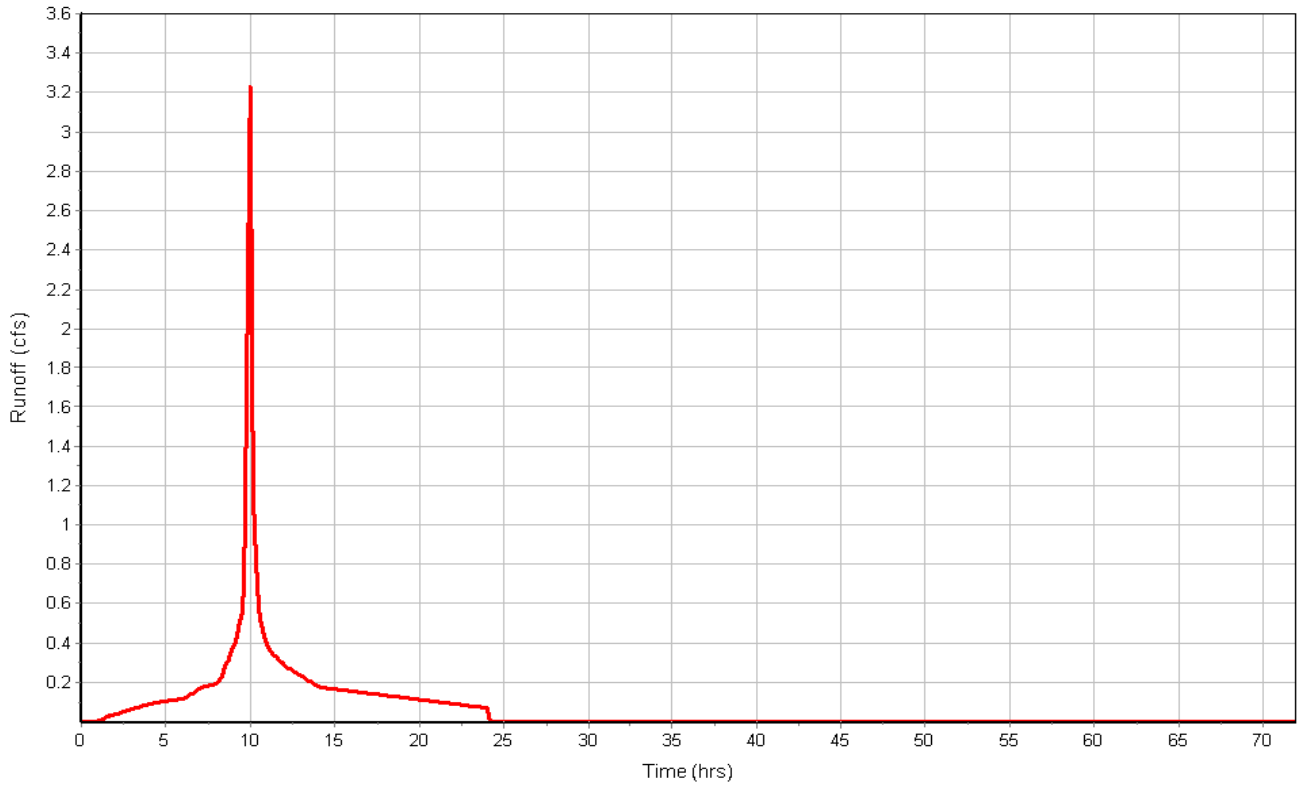
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Subbasin : A12

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A13

Input Data

Area (ac) 3.78
Weighted Curve Number 98.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved roads with curbs & sewers	3.78	A	98.00
Composite Area & Weighted CN	3.78		98.00

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

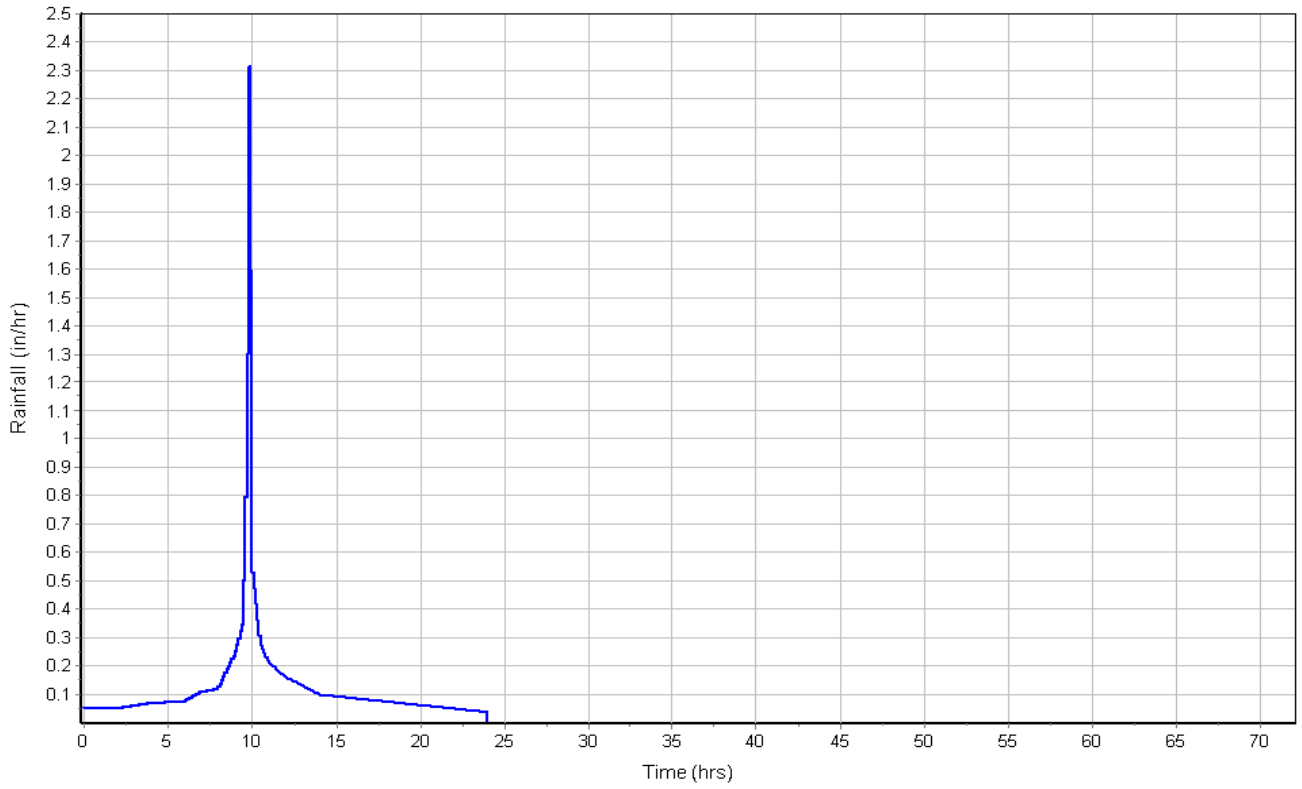
Total Rainfall (in) 3.07
Total Runoff (in) 2.84
Peak Runoff (cfs) 7.24
Weighted Curve Number 98.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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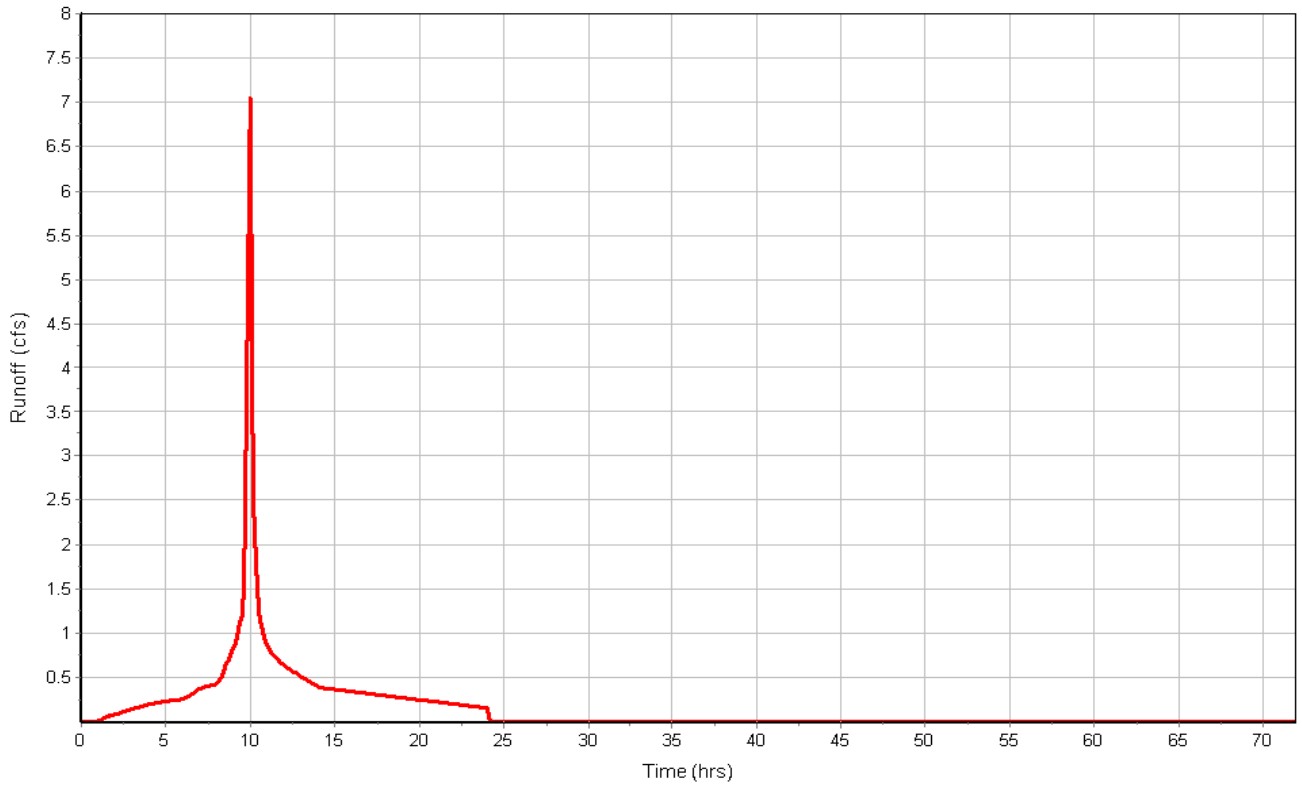
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Subbasin : A13

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A3A

Input Data

Area (ac) 0.54
Weighted Curve Number 95.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	0.54	D	95.00
Composite Area & Weighted CN	0.54		95.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

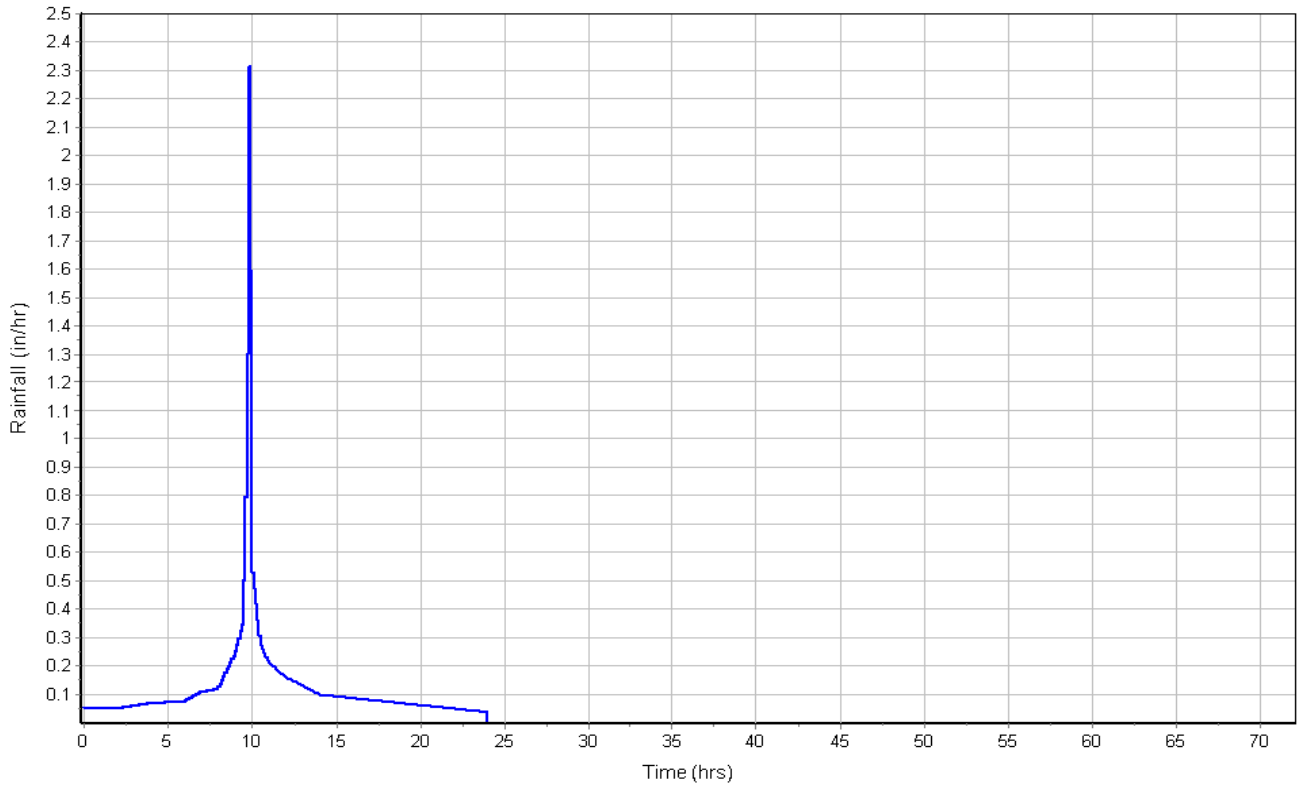
Total Rainfall (in) 3.07
Total Runoff (in) 2.52
Peak Runoff (cfs) 0.95
Weighted Curve Number 95.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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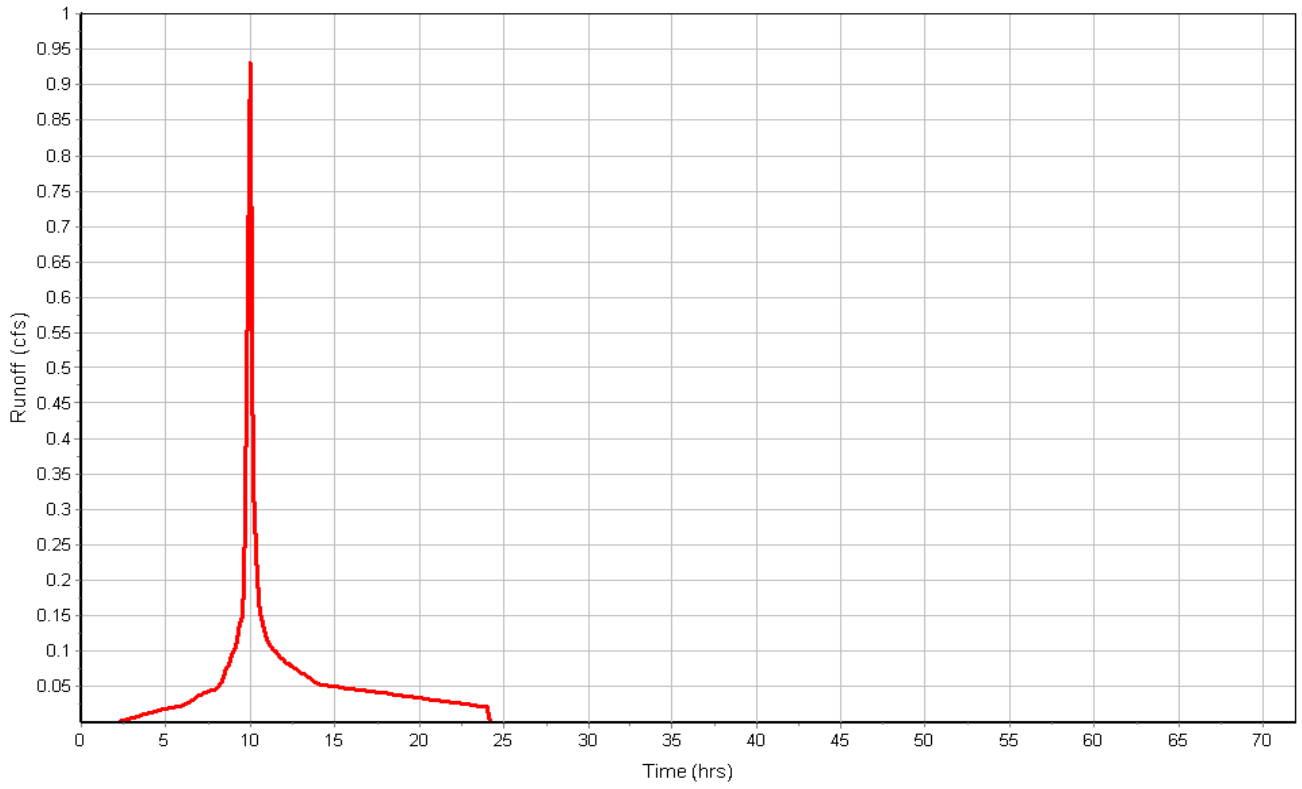
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Subbasin : A3A

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A3B

Input Data

Area (ac) 0.80
Weighted Curve Number 91.77
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	0.43	A	89.00
Urban commercial, 85% imp	0.37	D	95.00
Composite Area & Weighted CN	0.80		91.77

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

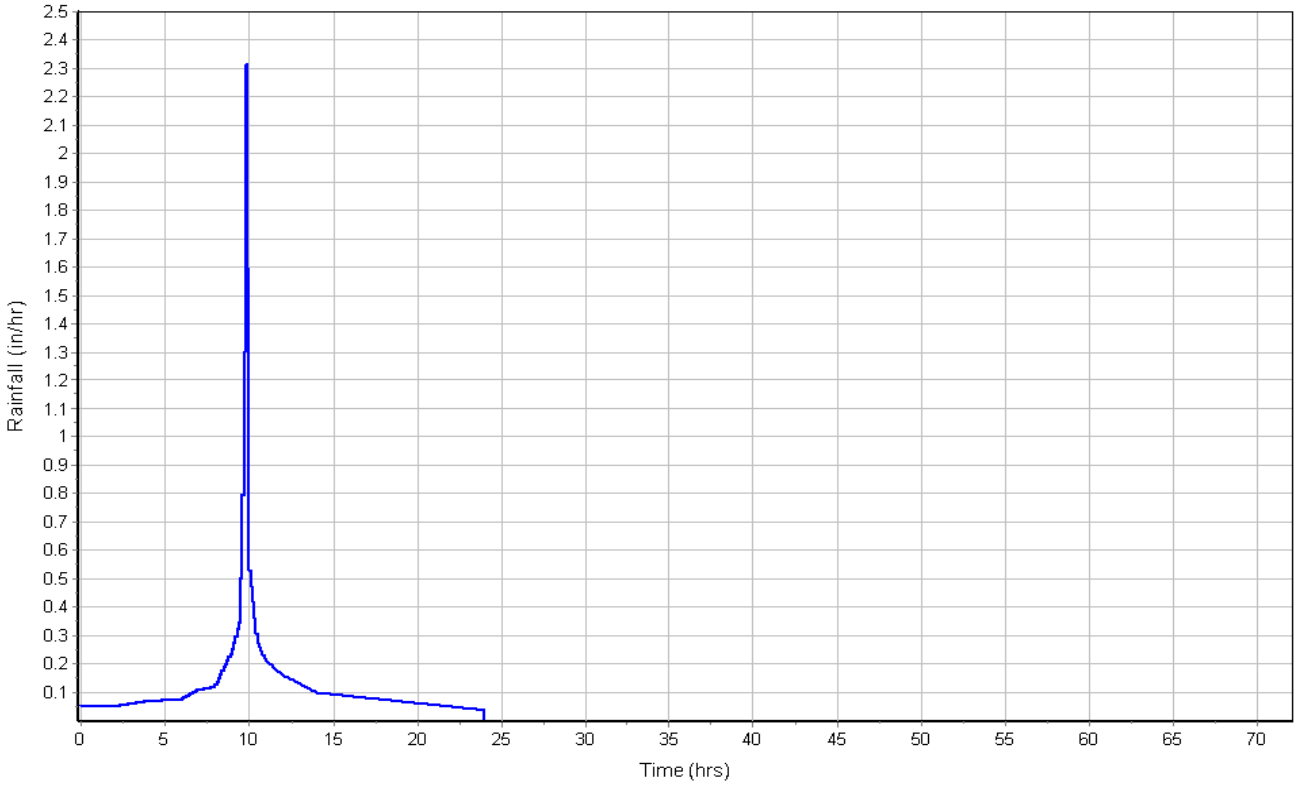
Total Rainfall (in) 3.07
Total Runoff (in) 2.21
Peak Runoff (cfs) 1.25
Weighted Curve Number 91.77
Time of Concentration (days hh:mm:ss) 0 00:10:00

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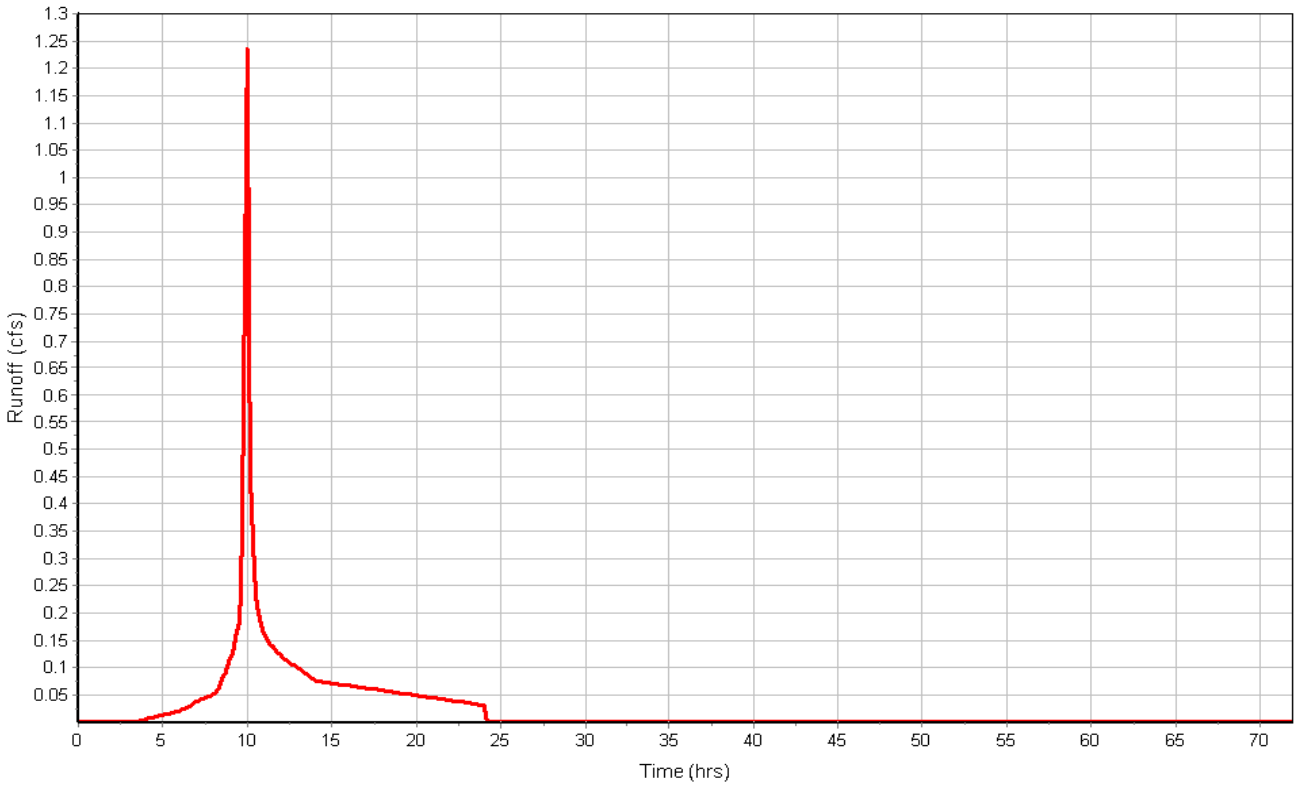
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Subbasin : A3B

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A3C

Input Data

Area (ac) 1.34
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	1.34	A	89.00
Composite Area & Weighted CN	1.34		89.00

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

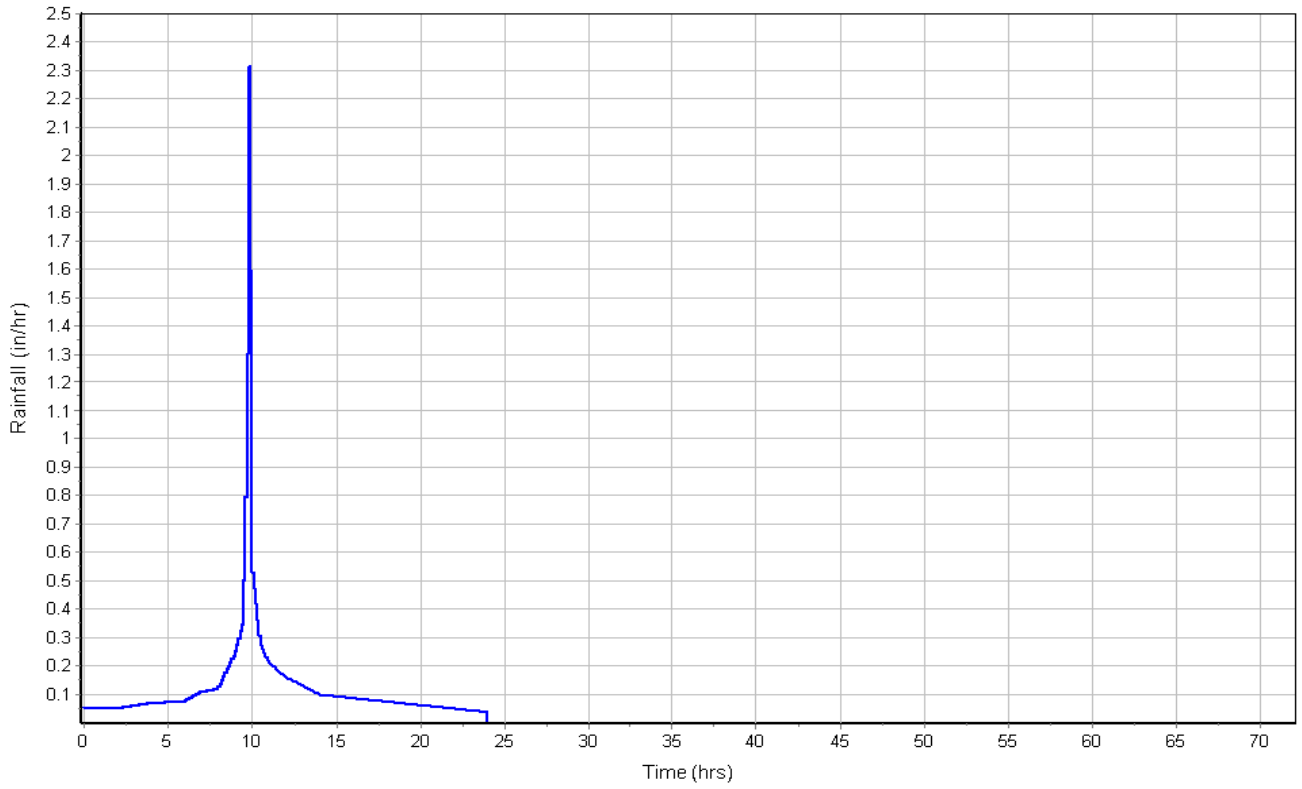
Total Rainfall (in) 3.07
Total Runoff (in) 1.96
Peak Runoff (cfs) 1.85
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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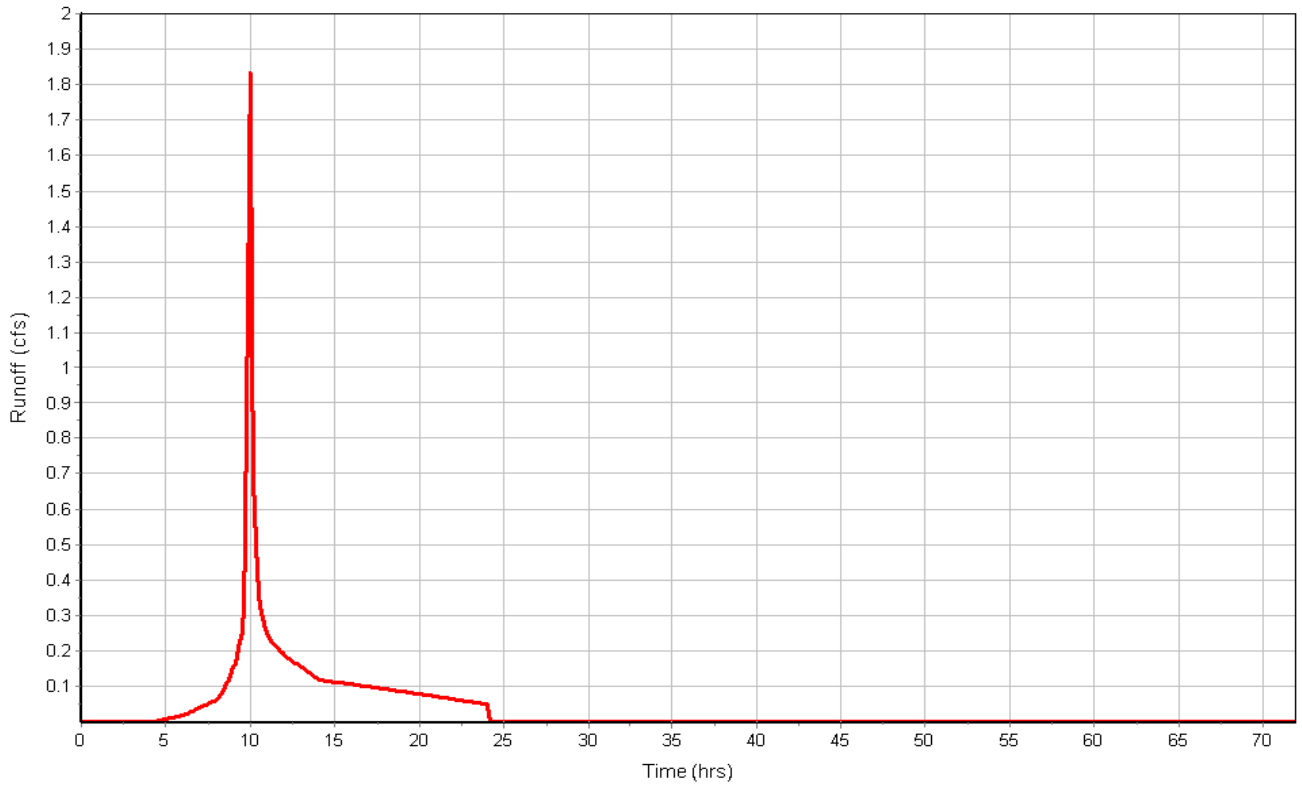
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Subbasin : A3C

Rainfall Intensity Graph



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Subbasin : RVPREDEV

Input Data

Area (ac) 16.37
Weighted Curve Number 70.76
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Desert shrub range, Poor	11.29	A	63.00
Desert shrub range, Poor	5.08	D	88.00
Composite Area & Weighted CN	16.37		70.76

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.13	0.00	0.00
Flow Length (ft) :	1228	0.00	0.00
Slope (%) :	2.0	0.00	0.00
2 yr, 24 hr Rainfall (in) :	1.33	0.00	0.00
Velocity (ft/sec) :	0.20	0.00	0.00
Computed Flow Time (min) :	100.79	0.00	0.00

Total TOC (min) 100.79

Subbasin Runoff Results

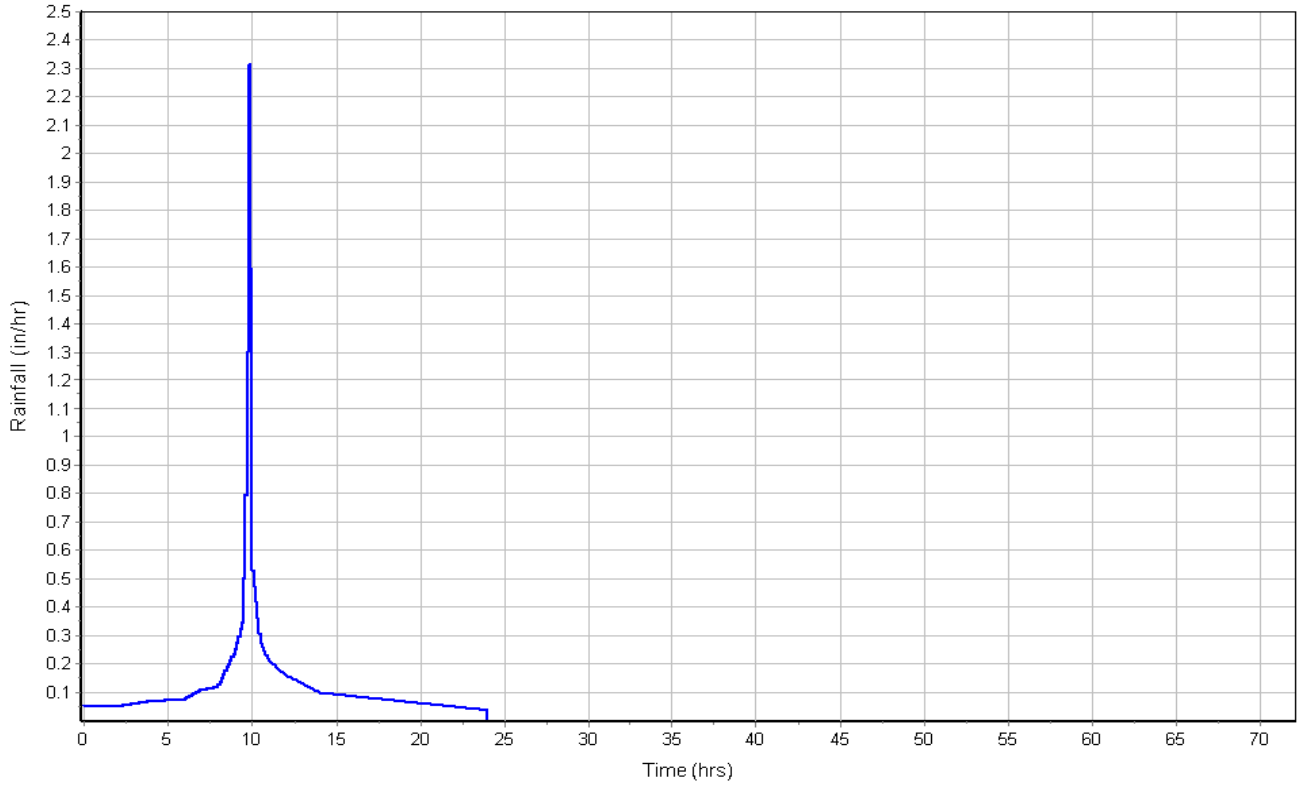
Total Rainfall (in) 3.07
Total Runoff (in) 0.79
Peak Runoff (cfs) 2.12
Weighted Curve Number 70.76
Time of Concentration (days hh:mm:ss) 0 01:40:47

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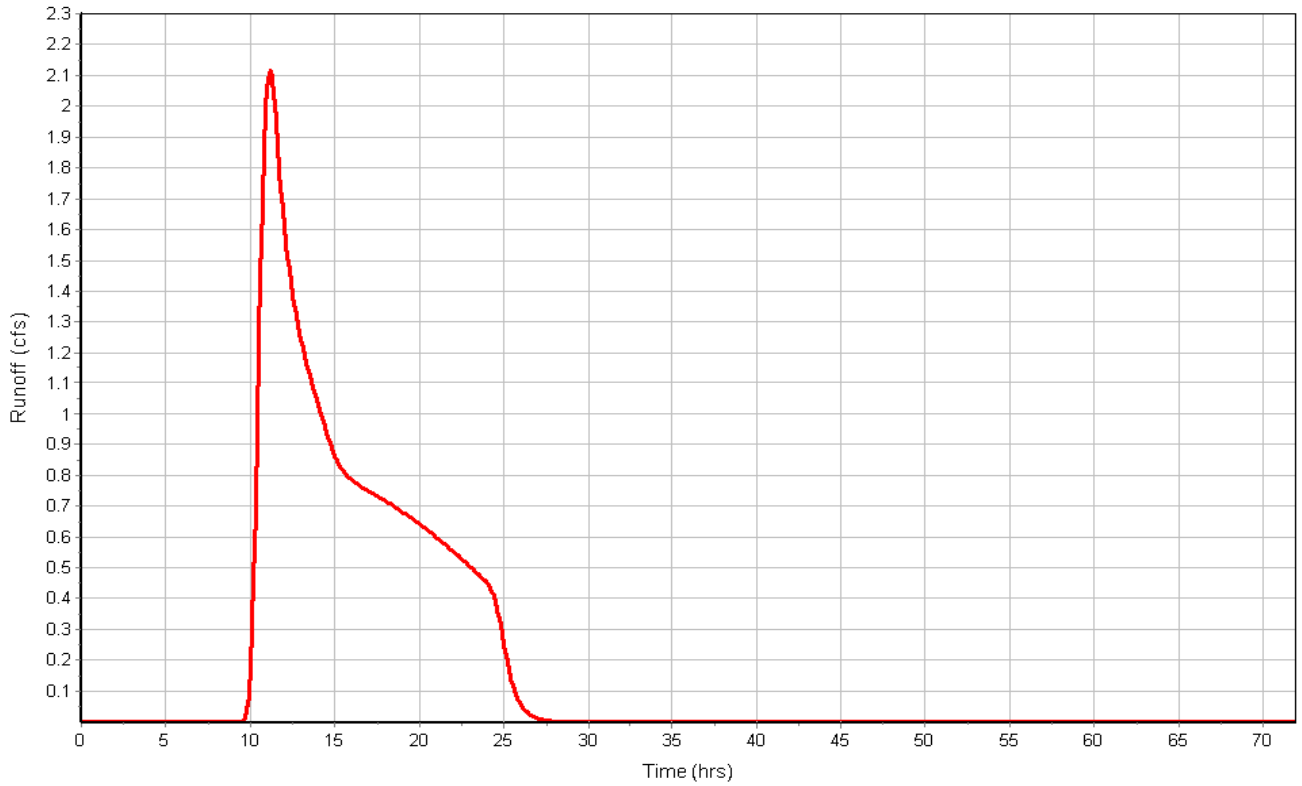
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Subbasin : RVPREDEV

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : TS-PREDEV

Input Data

Area (ac) 21.91
Weighted Curve Number 65.01
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Desert shrub range, Poor	1.76	D	88.00
Desert shrub range, Poor	20.14	A	63.00
Composite Area & Weighted CN	21.90		65.01

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.13	0.00	0.00
Flow Length (ft) :	1326	0.00	0.00
Slope (%) :	2.0	0.00	0.00
2 yr, 24 hr Rainfall (in) :	1.33	0.00	0.00
Velocity (ft/sec) :	0.21	0.00	0.00
Computed Flow Time (min) :	107.18	0.00	0.00

Total TOC (min) 107.18

Subbasin Runoff Results

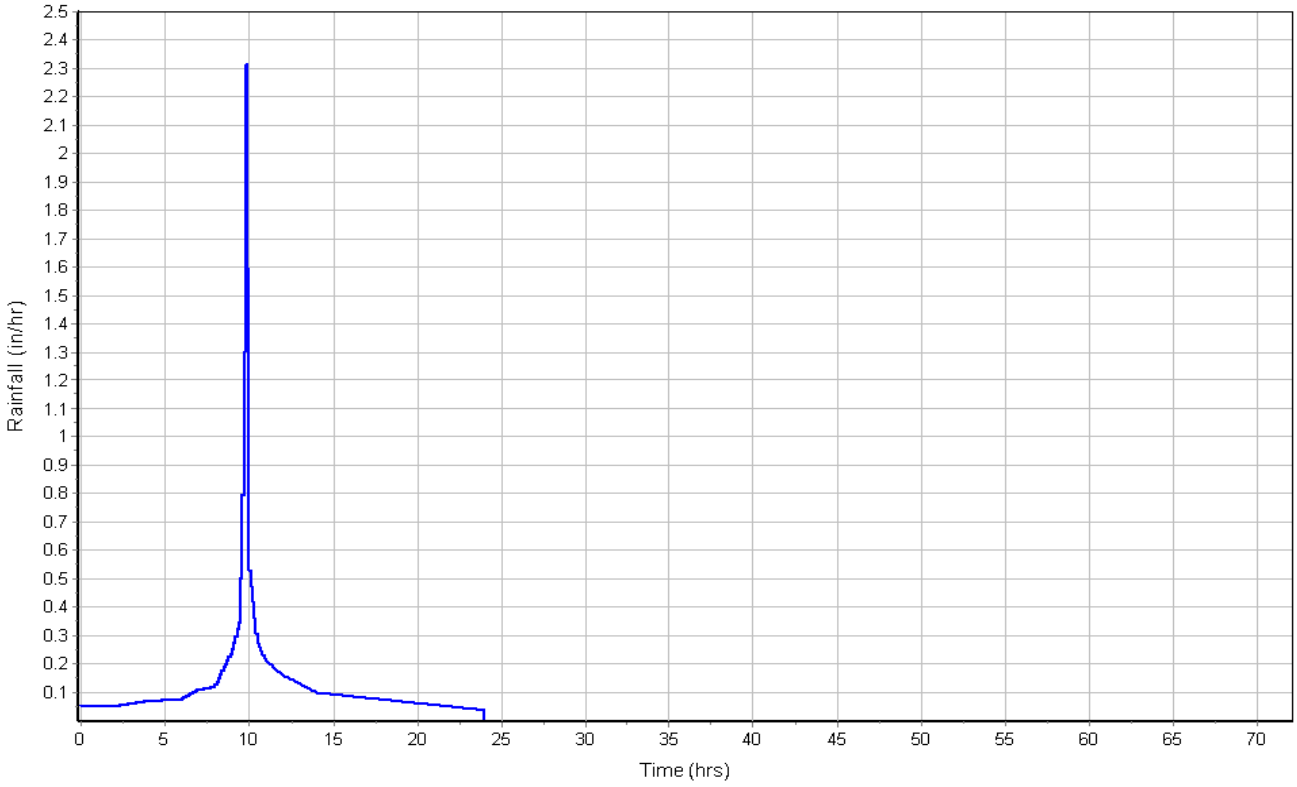
Total Rainfall (in) 3.07
Total Runoff (in) 0.54
Peak Runoff (cfs) 1.42
Weighted Curve Number 65.01
Time of Concentration (days hh:mm:ss) 0 01:47:11

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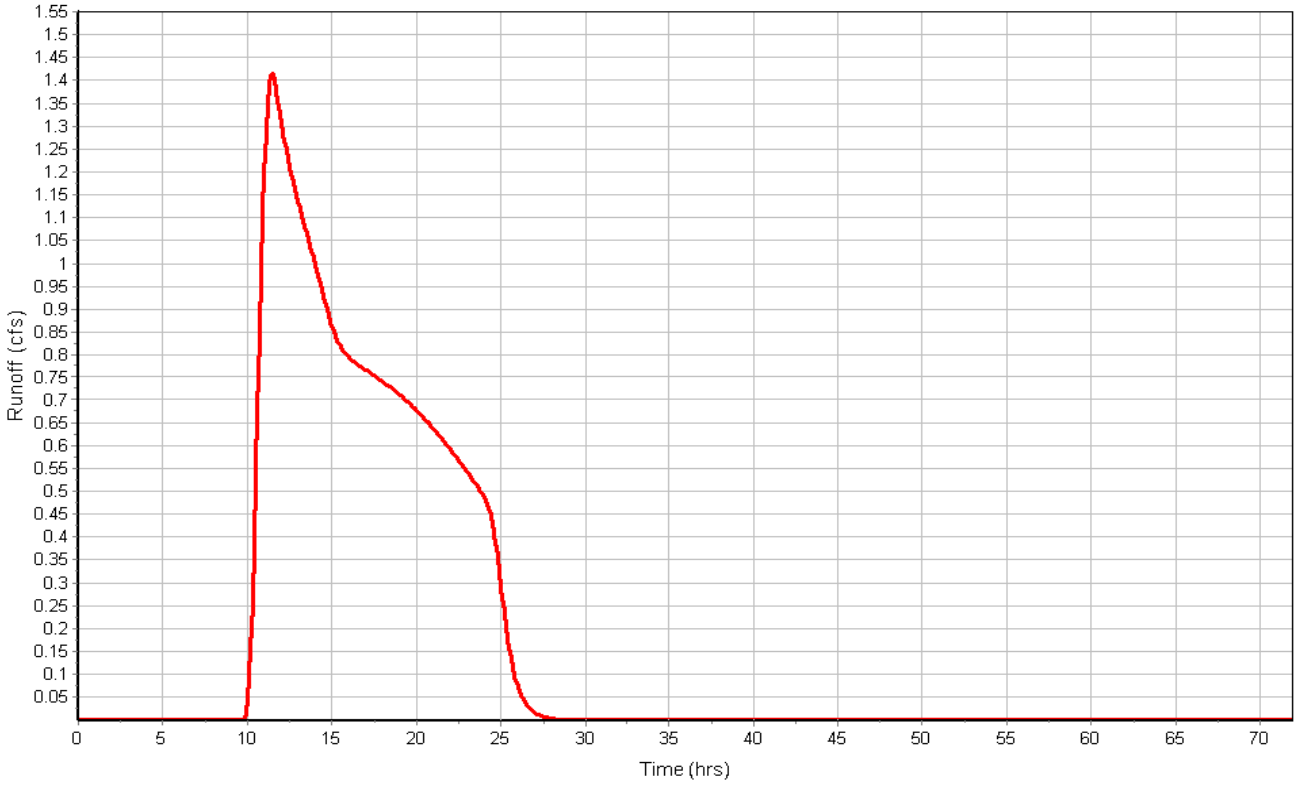
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Subbasin : TS-PREDEV

Rainfall Intensity Graph



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Junction Input

SN	Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft²)	Minimum Pipe Cover (in)
1	J01	913.15	914.89	1.74	913.15	0.00	0.00	-914.89	0.00	8.88
2	J02	907.89	912.64	4.75	907.89	0.00	0.00	-912.64	0.00	45.00
3	J03	914.78	917.97	3.19	914.78	0.00	0.00	-917.97	0.00	25.08
4	J04	910.56	914.38	3.82	910.56	0.00	0.00	-914.38	0.00	32.64
5	J05	902.68	907.43	4.75	902.68	0.00	0.00	-907.43	0.00	45.00
6	J06	902.12	906.87	4.75	902.12	0.00	0.00	-906.87	0.00	45.00
7	J07	895.73	900.98	5.25	895.73	0.00	0.00	-900.98	0.00	51.00
8	J08	898.06	902.31	4.25	898.06	0.00	0.00	-902.31	0.00	39.00
9	J09	898.06	902.31	4.25	898.06	0.00	0.00	-902.31	0.00	39.00
10	J10	886.32	890.92	4.60	886.32	0.00	0.00	-890.92	0.00	33.00
11	O1	916.83	921.08	4.25	916.83	0.00	0.00	-921.08	0.00	0.00
12	O2	909.85	914.85	5.00	909.85	0.00	0.00	-914.85	0.00	0.00
13	O3A	915.23	921.60	6.37	915.23	0.00	0.00	-921.60	0.00	0.00
14	O3B	911.08	916.72	5.64	911.08	0.00	0.00	-916.72	0.00	0.00
15	O3C	906.09	912.24	6.15	906.09	0.00	0.00	-912.24	0.00	0.00
16	O4	902.98	906.80	3.82	902.98	0.00	0.00	-906.80	0.00	0.00
17	O5	907.79	912.12	4.33	907.79	0.00	0.00	-912.12	0.00	0.00
18	O6	901.23	905.48	4.25	901.23	0.00	0.00	-905.48	0.00	0.00
19	O7	888.27	901.23	12.96	888.27	0.00	0.00	-901.23	0.00	0.00
20	O8A	894.34	903.66	9.32	894.34	0.00	0.00	-903.66	0.00	0.00
21	SDMH01	916.48	921.15	4.67	916.48	0.00	0.00	-921.15	0.00	42.84
22	SDMH02	909.48	914.04	4.56	909.48	0.00	0.00	-914.04	0.00	41.52
23	SDMH03	907.54	914.70	7.16	907.54	0.00	0.00	-914.70	0.00	55.44
24	SDMH04	907.26	914.39	7.13	907.26	0.00	0.00	-914.39	0.00	72.36
25	SDMH05	907.53	914.79	7.26	907.53	0.00	0.00	-914.79	0.00	73.92
26	SDMH06	905.75	910.18	4.43	905.75	0.00	0.00	-910.18	0.00	41.16
27	SDMH07	905.33	909.05	3.72	905.33	0.00	0.00	-909.05	0.00	31.44
28	SDMH08	902.75	909.14	6.39	902.75	0.00	0.00	-909.14	0.00	57.48
29	SDMH09	901.44	907.96	6.52	901.44	0.00	0.00	-907.96	0.00	47.04
30	SDMH10	900.51	907.70	7.19	900.51	0.00	0.00	-907.70	0.00	67.08
31	SDMH11	894.85	901.92	7.07	894.85	0.00	0.00	-901.92	0.00	66.84
32	SDMH12	893.85	903.70	9.85	893.85	0.00	0.00	-903.70	0.00	100.20
33	SDMH13	897.40	902.76	5.36	897.40	0.00	0.00	-902.76	0.00	46.32
34	SDMH14	893.13	902.49	9.36	893.13	0.00	0.00	-902.49	0.00	71.04
35	SDMH15	886.12	891.87	5.75	886.12	0.00	0.00	-891.87	0.00	45.00
36	SDMH16	885.50	893.01	7.51	885.50	0.00	0.00	-893.01	0.00	63.48
37	SDMH17	884.58	889.78	5.20	884.58	0.00	0.00	-889.78	0.00	37.20

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Junction Results

SN	Element ID	Peak Inflow (cfs)	Peak Lateral Inflow (cfs)	Max HGL Elevation Attained (ft)	Max HGL Depth Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Average HGL Elevation Attained (ft)	Average HGL Depth Attained (ft)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	J01	0.00	0.00	913.15	0.00	0.00	1.74	913.15	0.00	0 00:00	0 00:00	0.00	0.00
2	J02	3.19	3.19	912.64	4.75	0.00	0.00	907.97	0.08	0 09:56	0 10:06	0.24	19.00
3	J03	1.24	1.24	915.40	0.62	0.00	2.57	914.89	0.11	0 10:06	0 00:00	0.00	0.00
4	J04	2.99	1.83	914.38	3.82	0.00	0.00	910.70	0.14	0 09:59	0 10:06	0.11	14.00
5	J05	0.61	0.61	903.08	0.40	0.00	4.35	902.71	0.03	0 10:06	0 00:00	0.00	0.00
6	J06	2.17	2.17	902.48	0.36	0.00	4.39	902.14	0.02	0 10:06	0 00:00	0.00	0.00
7	J07	3.23	3.23	896.31	0.58	0.00	4.67	895.77	0.04	0 10:06	0 00:00	0.00	0.00
8	J08	1.20	1.20	898.39	0.33	0.00	3.92	898.09	0.03	0 10:06	0 00:00	0.00	0.00
9	J09	1.72	1.72	898.46	0.40	0.00	3.85	898.09	0.03	0 10:06	0 00:00	0.00	0.00
10	J10	7.05	7.05	887.47	1.15	0.00	3.45	887.19	0.87	0 10:06	0 00:00	0.00	0.00
11	O1	0.00	0.00	916.83	0.00	0.00	4.25	916.83	0.00	0 00:00	0 00:00	0.00	0.00
12	O2	1.68	0.00	910.63	0.78	0.00	4.22	909.89	0.04	0 10:15	0 00:00	0.00	0.00
13	O3A	0.00	0.00	915.23	0.00	0.00	6.37	915.23	0.00	0 00:00	0 00:00	0.00	0.00
14	O3B	1.19	0.00	911.56	0.48	0.00	5.16	911.10	0.02	0 10:07	0 00:00	0.00	0.00
15	O3C	1.18	0.00	906.63	0.54	0.00	5.61	906.10	0.01	0 10:17	0 00:00	0.00	0.00
16	O4	1.71	0.00	903.56	0.58	0.00	3.24	903.01	0.03	0 10:19	0 00:00	0.00	0.00
17	O5	1.05	0.00	908.35	0.56	0.00	3.77	907.82	0.03	0 10:15	0 00:00	0.00	0.00
18	O6	2.77	0.00	901.64	0.41	0.00	3.84	901.27	0.04	0 10:18	0 00:00	0.00	0.00
19	O7	0.44	0.00	888.48	0.21	0.00	12.75	888.29	0.02	0 20:30	0 00:00	0.00	0.00
20	O8A	0.00	0.00	894.34	0.00	0.00	9.32	894.34	0.00	0 00:00	0 00:00	0.00	0.00
21	SDMH01	0.00	0.00	916.58	0.10	0.00	4.57	916.58	0.10	0 00:00	0 00:00	0.00	0.00
22	SDMH02	1.68	0.00	910.36	0.88	0.00	3.68	909.62	0.14	0 10:16	0 00:00	0.00	0.00
23	SDMH03	3.50	0.00	914.70	7.16	0.00	0.00	909.16	1.62	0 09:57	0 10:15	0.26	33.00
24	SDMH04	2.80	0.00	908.36	1.10	0.00	6.03	907.44	0.18	0 10:11	0 00:00	0.00	0.00
25	SDMH05	1.05	0.00	908.19	0.66	0.00	6.60	907.66	0.13	0 10:16	0 00:00	0.00	0.00
26	SDMH06	1.18	0.00	906.30	0.55	0.00	3.88	905.76	0.01	0 10:18	0 00:00	0.00	0.00
27	SDMH07	1.18	0.00	905.98	0.65	0.00	3.07	905.44	0.11	0 10:18	0 00:00	0.00	0.00
28	SDMH08	1.71	0.00	903.43	0.68	0.00	5.71	902.88	0.13	0 10:19	0 00:00	0.00	0.00
29	SDMH09	2.05	0.00	903.13	1.69	0.00	4.83	902.63	1.19	0 10:20	0 00:00	0.00	0.00
30	SDMH10	4.08	0.00	901.26	0.75	0.00	6.44	900.65	0.14	0 10:08	0 00:00	0.00	0.00
31	SDMH11	3.22	0.00	895.65	0.80	0.00	6.27	894.99	0.14	0 10:06	0 00:00	0.00	0.00
32	SDMH12	3.19	0.00	894.65	0.80	0.00	9.05	893.91	0.06	0 10:07	0 00:00	0.00	0.00
33	SDMH13	2.91	0.00	898.14	0.74	0.00	4.62	897.77	0.37	0 10:06	0 00:00	0.00	0.00
34	SDMH14	5.94	0.00	895.49	2.36	0.00	7.00	895.10	1.97	0 10:06	0 00:00	0.00	0.00
35	SDMH15	12.69	0.00	891.87	5.75	0.00	0.00	886.32	0.20	0 10:00	0 10:06	0.28	12.00
36	SDMH16	10.83	0.00	887.72	2.22	0.00	5.29	885.85	0.35	0 10:04	0 00:00	0.00	0.00
37	SDMH17	10.67	0.00	886.23	1.65	0.00	3.55	884.80	0.22	0 10:03	0 00:00	0.00	0.00

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Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
1	P01	102.69	916.83	0.00	916.58	0.10	0.25	0.2400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
2	P02	198.58	916.48	0.00	913.15	0.00	3.33	1.6800	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
3	P03	18.00	913.15	0.00	912.85	1.06	0.30	1.6700	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
4	P04	111.00	909.85	0.00	909.58	0.10	0.27	0.2400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
5	P05	160.94	909.48	0.00	909.08	1.54	0.40	0.2500	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
6	P06	99.00	907.89	0.00	907.64	0.10	0.25	0.2500	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
7	P07	74.09	907.54	0.00	907.36	0.10	0.18	0.2400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
8	P08	66.52	907.79	0.00	907.63	0.10	0.16	0.2400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
9	P09	70.26	907.53	0.00	907.36	0.10	0.17	0.2400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
10	P10	92.00	907.26	0.00	903.48	0.56	3.78	4.1100	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
11	P11	74.00	901.23	0.00	897.49	1.72	3.74	5.0500	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
12	P12	141.00	915.23	0.00	914.88	0.10	0.35	0.2500	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
13	P13	25.00	914.78	0.00	914.72	0.56	0.06	0.2400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
14	P14	83.00	911.08	0.00	910.66	0.10	0.42	0.5100	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
15	P15	23.00	910.56	0.00	910.45	1.06	0.11	0.4800	CIRCULAR	12.000	12.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
16	P16	102.00	906.09	0.00	905.75	0.00	0.34	0.3300	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
17	P17	99.00	905.75	0.00	905.43	0.10	0.32	0.3200	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
18	P18	31.00	905.33	0.00	905.23	1.06	0.10	0.3200	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
19	P19	50.02	902.98	0.00	902.85	0.10	0.13	0.2600	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
20	P20	83.99	902.75	0.00	902.54	1.10	0.21	0.2500	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
21	P21	30.00	902.68	0.00	902.60	1.16	0.08	0.2700	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
22	P22	331.00	901.44	0.00	900.61	0.10	0.83	0.2500	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
23	P23	32.00	902.12	0.00	900.61	0.10	1.51	4.7200	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
24	P24	89.00	900.51	0.00	897.23	1.46	3.28	3.6900	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
25	P25	62.00	888.27	0.00	887.17	0.85	1.10	1.7700	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
26	P26	130.00	894.34	0.00	893.85	0.00	0.49	0.3800	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
27	P27	39.00	895.73	0.00	894.95	0.10	0.78	2.0000	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
28	P28	333.48	894.85	0.00	893.85	0.00	1.00	0.3000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
29	P29	208.00	893.85	0.00	893.23	0.10	0.62	0.3000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
30	P30	16.00	898.06	0.00	897.74	0.34	0.32	2.0000	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
31	P31	28.00	898.06	0.00	897.50	0.10	0.56	2.0000	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
32	P32	93.00	897.40	0.00	895.07	1.94	2.33	2.5100	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
33	P33	745.00	893.13	0.00	886.22	0.10	6.91	0.9300	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
34	P34	39.00	886.32	0.00	886.12	0.00	0.20	0.5100	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
35	P35	200.04	886.12	0.00	885.72	0.22	0.40	0.2000	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
36	P36	328.00	885.50	0.00	884.68	0.10	0.82	0.2500	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
37	P37	63.00	884.58	0.00	884.42	0.00	0.16	0.2500	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1

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Pipe Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	P01	0.00	0 00:00	1.76	0.00	0.00		0.00	0.00	0.00		Calculated
2	P02	0.00	0 00:00	4.61	0.00	0.00		0.00	0.00	0.00		Calculated
3	P03	0.00	0 00:00	4.60	0.00	0.00		0.00	0.00	0.00		Calculated
4	P04	1.68	0 10:16	1.76	0.95	2.57	0.72	0.74	0.78	0.00		Calculated
5	P05	1.67	0 10:17	1.78	0.94	2.61	1.03	0.75	0.77	0.00		Calculated
6	P06	1.91	0 09:57	1.79	1.07	2.74	0.60	1.00	1.00	17.00		SURCHARGED
7	P07	1.84	0 10:28	1.76	1.05	2.62	0.47	1.00	1.00	17.00		SURCHARGED
8	P08	1.05	0 10:16	1.75	0.60	2.33	0.48	0.53	0.56	0.00		Calculated
9	P09	1.05	0 10:16	1.75	0.60	2.33	0.50	0.54	0.56	0.00		Calculated
10	P10	2.80	0 10:17	7.22	0.39	8.61	0.18	0.43	0.43	0.00		Calculated
11	P11	2.77	0 10:18	8.01	0.35	9.26	0.13	0.41	0.41	0.00		Calculated
12	P12	0.00	0 00:00	1.78	0.00	0.00		0.00	0.00	0.00		Calculated
13	P13	1.23	0 10:06	1.75	0.70	2.41	0.17	0.62	0.62	0.00		Calculated
14	P14	1.18	0 10:07	2.53	0.47	3.18	0.44	0.48	0.48	0.00		Calculated
15	P15	2.23	0 10:00	2.14	1.05	3.14	0.12	1.00	1.00	12.00		SURCHARGED
16	P16	1.18	0 10:18	2.06	0.57	2.72	0.63	0.54	0.54	0.00		Calculated
17	P17	1.18	0 10:18	2.03	0.58	2.69	0.61	0.55	0.55	0.00		Calculated
18	P18	1.18	0 10:18	2.02	0.58	2.67	0.19	0.54	0.55	0.00		Calculated
19	P19	1.71	0 10:19	5.36	0.32	2.69	0.31	0.57	0.39	0.00		Calculated
20	P20	1.71	0 10:20	5.25	0.33	2.66	0.53	0.57	0.39	0.00		Calculated
21	P21	0.61	0 10:06	1.84	0.33	2.10	0.24	0.40	0.40	0.00		Calculated
22	P22	2.03	0 10:08	5.26	0.39	2.82	1.96	0.64	0.43	0.00		Calculated
23	P23	2.17	0 10:06	7.74	0.28	8.45	0.06	0.36	0.36	0.00		Calculated
24	P24	4.08	0 10:06	20.17	0.20	8.93	0.17	0.46	0.31	0.00		Calculated
25	P25	0.44	0 20:30	4.75	0.09	3.79	0.27	0.21	0.21	0.00		Calculated
26	P26	0.00	0 00:00	2.19	0.00	0.00		0.00	0.00	0.00		Calculated
27	P27	3.22	0 10:06	5.04	0.64	6.80	0.10	0.58	0.58	0.00		Calculated
28	P28	3.19	0 10:07	5.75	0.55	3.40	1.63	0.79	0.53	0.00		Calculated
29	P29	3.18	0 10:07	5.73	0.55	3.35	1.03	0.78	0.53	0.00		Calculated
30	P30	1.71	0 10:06	5.04	0.34	5.79	0.05	0.40	0.40	0.00		Calculated
31	P31	1.20	0 10:06	5.04	0.24	5.25	0.09	0.33	0.33	0.00		Calculated
32	P32	2.90	0 10:06	16.63	0.17	7.05	0.22	0.42	0.28	0.00		Calculated
33	P33	5.90	0 10:08	10.12	0.58	6.06	2.05	0.81	0.55	0.00		Calculated
34	P34	7.03	0 10:06	7.52	0.93	4.85	0.13	1.15	0.77	0.00		Calculated
35	P35	10.83	0 10:12	10.12	1.07	3.85	0.87	2.00	1.00	8.00		SURCHARGED
36	P36	10.67	0 10:03	11.31	0.94	4.24	1.29	1.49	0.77	0.00		Calculated
37	P37	10.57	0 10:04	11.40	0.93	4.15	0.25	1.48	0.76	0.00		Calculated

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Storage Nodes

Storage Node : BR1

Input Data

Invert Elevation (ft)	918.02
Max (Rim) Elevation (ft)	922.46
Max (Rim) Offset (ft)	4.44
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-918.02
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

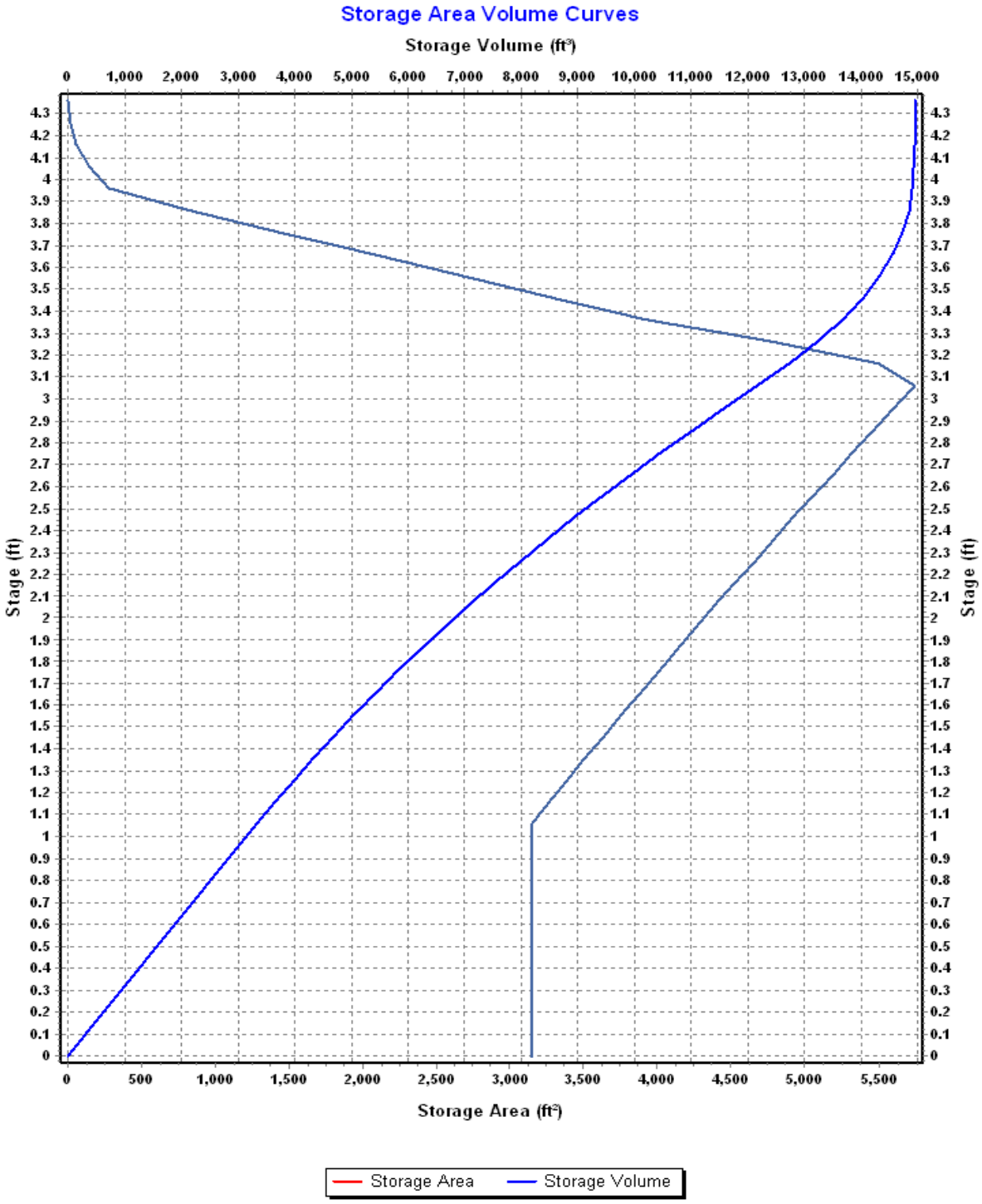
Exfiltration Rate (in/hr)	3.6500

Storage Area Volume Curves

Storage Curve : BR1

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	3141	0.000
1.06	3141.89	3329.93
1.16	3262.83	3650.17
1.26	3385.2	3982.57
1.36	3508.5	4327.26
1.46	3632.69	4684.32
1.56	3757.77	5053.84
1.66	3883.75	5435.92
1.76	4010.63	5830.64
1.86	4138.42	6238.09
1.96	4267.16	6658.37
2.06	4396.87	7091.57
2.16	4527.56	7537.79
2.26	4659.22	7997.13
2.36	4791.85	8469.68
2.46	4925.44	8955.54
2.56	5060	9454.81
2.66	5195.53	9967.59
2.76	5332.02	10493.97
2.86	5469.48	11034.05
2.96	5607.91	11587.92
3.06	5744.57	12155.54
3.16	5498	12717.67
3.26	4752.13	13230.18
3.36	3925.58	13664.07
3.46	3303.77	14025.54
3.56	2676.06	14324.53
3.66	2043.84	14560.53
3.76	1427.82	14734.11
3.86	837.63	14847.38
3.96	281.34	14903.33
4.06	149.84	14924.89
4.16	60.48	14935.41
4.26	15.53	14939.21
4.36	0.9	14940.03

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Storage Node : BR1 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR1	Bottom	CIRCULAR	No	24.00			920.58	0.61

Output Summary Results

Peak Inflow (cfs)	1.35
Peak Lateral Inflow (cfs)	1.35
Peak Outflow (cfs)	0.00
Peak Exfiltration Flow Rate (cfm)	15.92
Max HGL Elevation Attained (ft)	918.41
Max HGL Depth Attained (ft)	0.39
Average HGL Elevation Attained (ft)	918.03
Average HGL Depth Attained (ft)	0.01
Time of Max HGL Occurrence (days hh:mm)	0 10:38
Total Exfiltration Volume (1000-ft³)	3.631
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR2

Input Data

Invert Elevation (ft)	911.79
Max (Rim) Elevation (ft)	915.12
Max (Rim) Offset (ft)	3.33
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-911.79
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

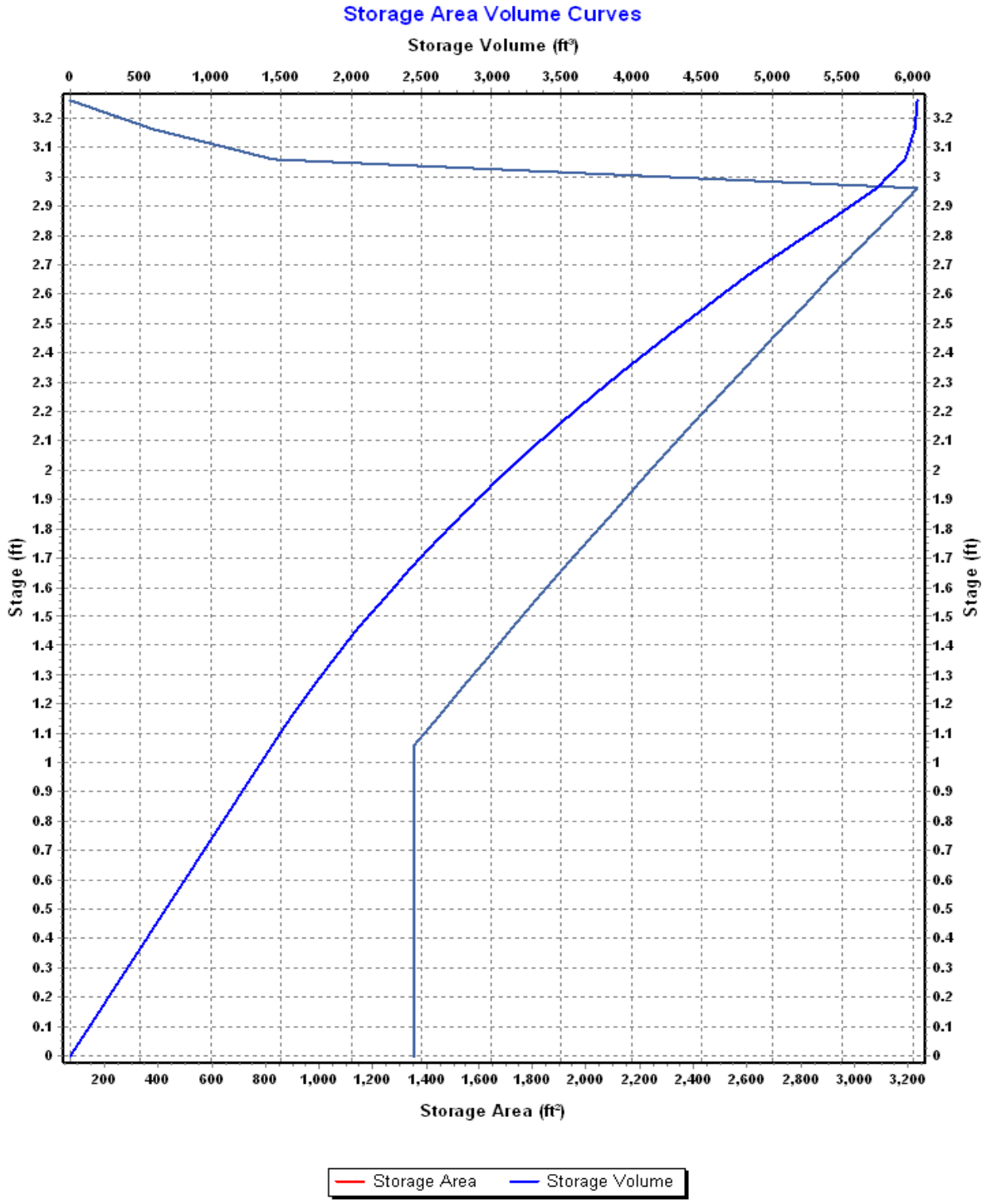
Exfiltration Rate (in/hr)	0.2500

Storage Area Volume Curves

Storage Curve : BR2

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	1355	0.000
1.06	1355.93	1436.79
1.16	1445.99	1576.89
1.26	1537.04	1726.04
1.36	1629.07	1884.35
1.46	1722.08	2051.91
1.56	1816.08	2228.82
1.66	1911.06	2415.18
1.76	2007.02	2611.08
1.86	2103.96	2816.63
1.96	2201.89	3031.92
2.06	2300.8	3257.05
2.16	2400.7	3492.13
2.26	2501.57	3737.24
2.36	2603.43	3992.49
2.46	2706.28	4257.98
2.56	2810.1	4533.80
2.66	2914.91	4820.05
2.76	3020.7	5116.83
2.86	3127.48	5424.24
2.96	3235.24	5742.38
3.06	833.86	5945.84
3.16	385.92	6006.83
3.26	72.94	6029.77

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Storage Node : BR2 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR2	Bottom	CIRCULAR	No	24.00			914.35	0.61

Output Summary Results

Peak Inflow (cfs)	3.16
Peak Lateral Inflow (cfs)	3.16
Peak Outflow (cfs)	1.68
Peak Exfiltration Flow Rate (cfm)	1.04
Max HGL Elevation Attained (ft)	914.54
Max HGL Depth Attained (ft)	2.75
Average HGL Elevation Attained (ft)	913.71
Average HGL Depth Attained (ft)	1.92
Time of Max HGL Occurrence (days hh:mm)	0 10:15
Total Exfiltration Volume (1000-ft³)	3.304
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR3A

Input Data

Invert Elevation (ft)	918.54
Max (Rim) Elevation (ft)	922.87
Max (Rim) Offset (ft)	4.33
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-918.54
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

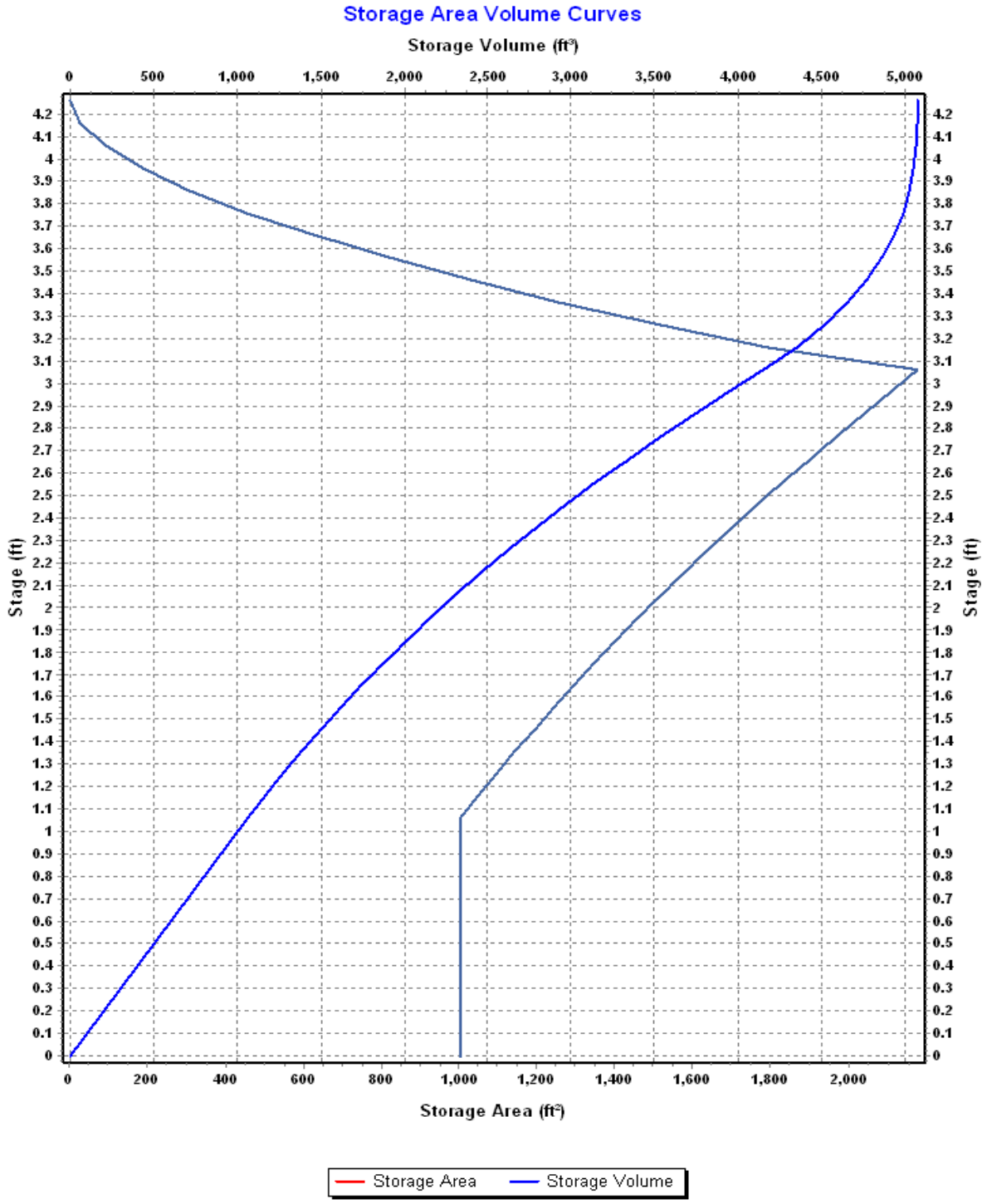
Exfiltration Rate (in/hr)	1.0000

Storage Area Volume Curves

Storage Curve : BR3A

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	1003	0.000
1.06	1003.24	1063.31
1.16	1049.23	1165.93
1.26	1096.69	1273.23
1.36	1145.31	1385.33
1.46	1195.09	1502.35
1.56	1246.03	1624.41
1.66	1298.19	1751.62
1.76	1351.67	1884.11
1.86	1406.49	2022.02
1.96	1462.89	2165.49
2.06	1520.96	2314.68
2.16	1580.66	2469.76
2.26	1641.67	2630.88
2.36	1704.02	2798.16
2.46	1767.77	2971.75
2.56	1832.91	3151.78
2.66	1899.44	3338.40
2.76	1967.37	3531.74
2.86	2036.69	3731.94
2.96	2107.4	3939.14
3.06	2176.53	4153.34
3.16	1787.16	4351.52
3.26	1515.95	4516.68
3.36	1252.64	4655.11
3.46	1029.78	4769.23
3.56	818.92	4861.67
3.66	625.41	4933.89
3.76	455.66	4987.94
3.86	307.6	5026.10
3.96	187.02	5050.83
4.06	94.69	5064.92
4.16	26.99	5071.00
4.26	2.5	5072.47

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Storage Node : BR3A (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR3A	Bottom	CIRCULAR	No	24.00			921.10	0.61

Output Summary Results

Peak Inflow (cfs)	0.93
Peak Lateral Inflow (cfs)	0.93
Peak Outflow (cfs)	0.00
Peak Exfiltration Flow Rate (cfm)	2.31
Max HGL Elevation Attained (ft)	920.83
Max HGL Depth Attained (ft)	2.29
Average HGL Elevation Attained (ft)	919.38
Average HGL Depth Attained (ft)	0.84
Time of Max HGL Occurrence (days hh:mm)	0 18:52
Total Exfiltration Volume (1000-ft³)	4.741
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR3B

Input Data

Invert Elevation (ft)	914.16
Max (Rim) Elevation (ft)	917.97
Max (Rim) Offset (ft)	3.81
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-914.16
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

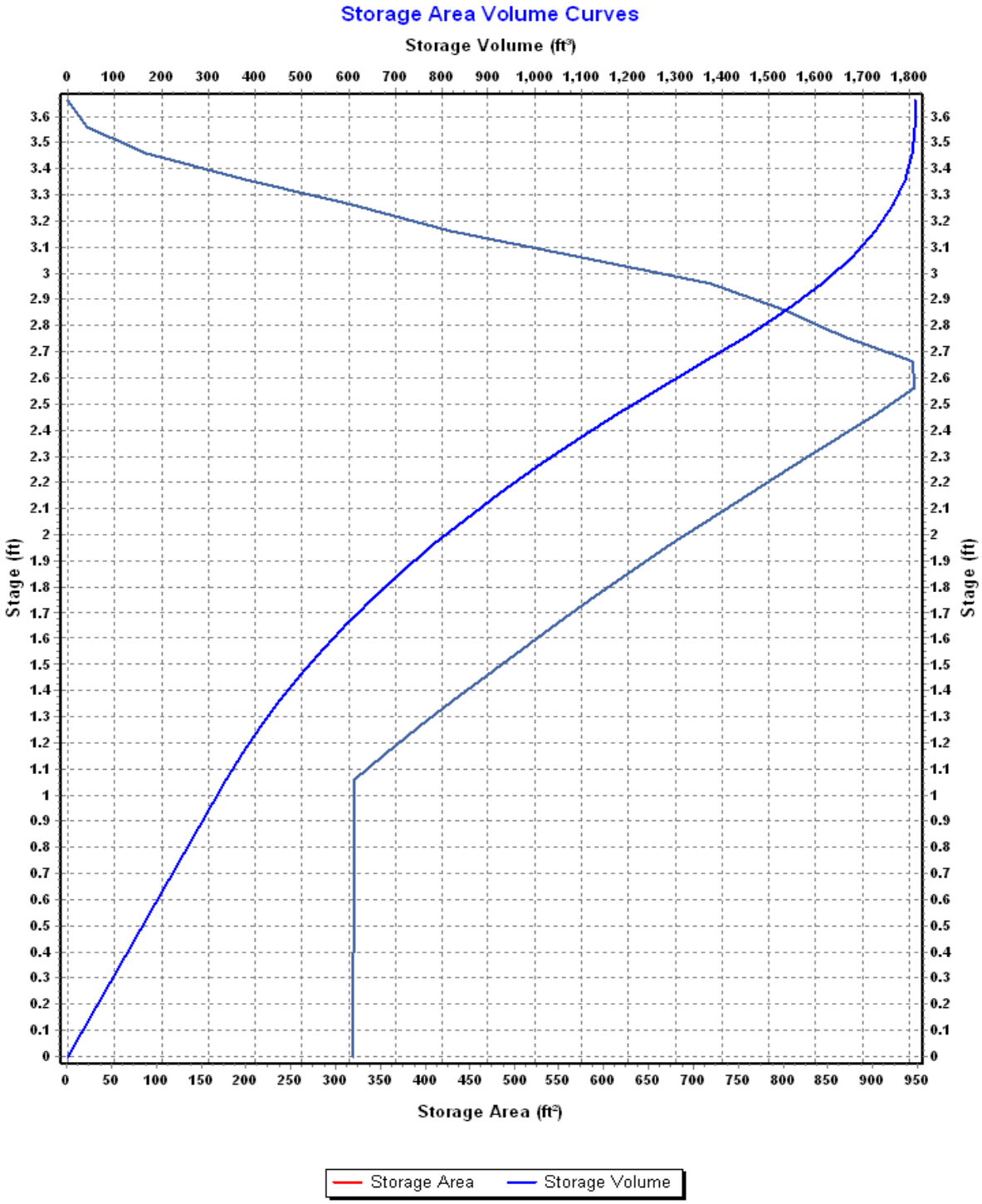
Exfiltration Rate (in/hr)	1.0000

Storage Area Volume Curves

Storage Curve : BR3B

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	320	0.000
1.06	320.79	339.62
1.16	356.4	373.48
1.26	392.93	410.95
1.36	430.38	452.12
1.46	468.77	497.08
1.56	508.1	545.92
1.66	548.38	598.74
1.76	589.6	655.64
1.86	631.77	716.71
1.96	674.88	782.04
2.06	718.94	851.73
2.16	763.94	925.87
2.26	809.88	1004.56
2.36	856.77	1087.89
2.46	904.6	1175.96
2.56	946.68	1268.52
2.66	943.54	1363.03
2.76	865.89	1453.50
2.86	800.8	1536.83
2.96	718.52	1612.80
3.06	573.23	1677.39
3.16	427.46	1727.42
3.26	317.49	1764.67
3.36	199.57	1790.52
3.46	88.48	1804.92
3.56	23.36	1810.51
3.66	1.54	1811.76

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Storage Node : BR3B (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR3B	Bottom	CIRCULAR	No	24.00			916.22	0.61

Output Summary Results

Peak Inflow (cfs)	1.23
Peak Lateral Inflow (cfs)	0.00
Peak Outflow (cfs)	1.19
Peak Exfiltration Flow Rate (cfm)	1.09
Max HGL Elevation Attained (ft)	916.37
Max HGL Depth Attained (ft)	2.21
Average HGL Elevation Attained (ft)	914.98
Average HGL Depth Attained (ft)	0.82
Time of Max HGL Occurrence (days hh:mm)	0 10:07
Total Exfiltration Volume (1000-ft³)	1.899
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR3C

Input Data

Invert Elevation (ft)	909.39
Max (Rim) Elevation (ft)	912.45
Max (Rim) Offset (ft)	3.06
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-909.39
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

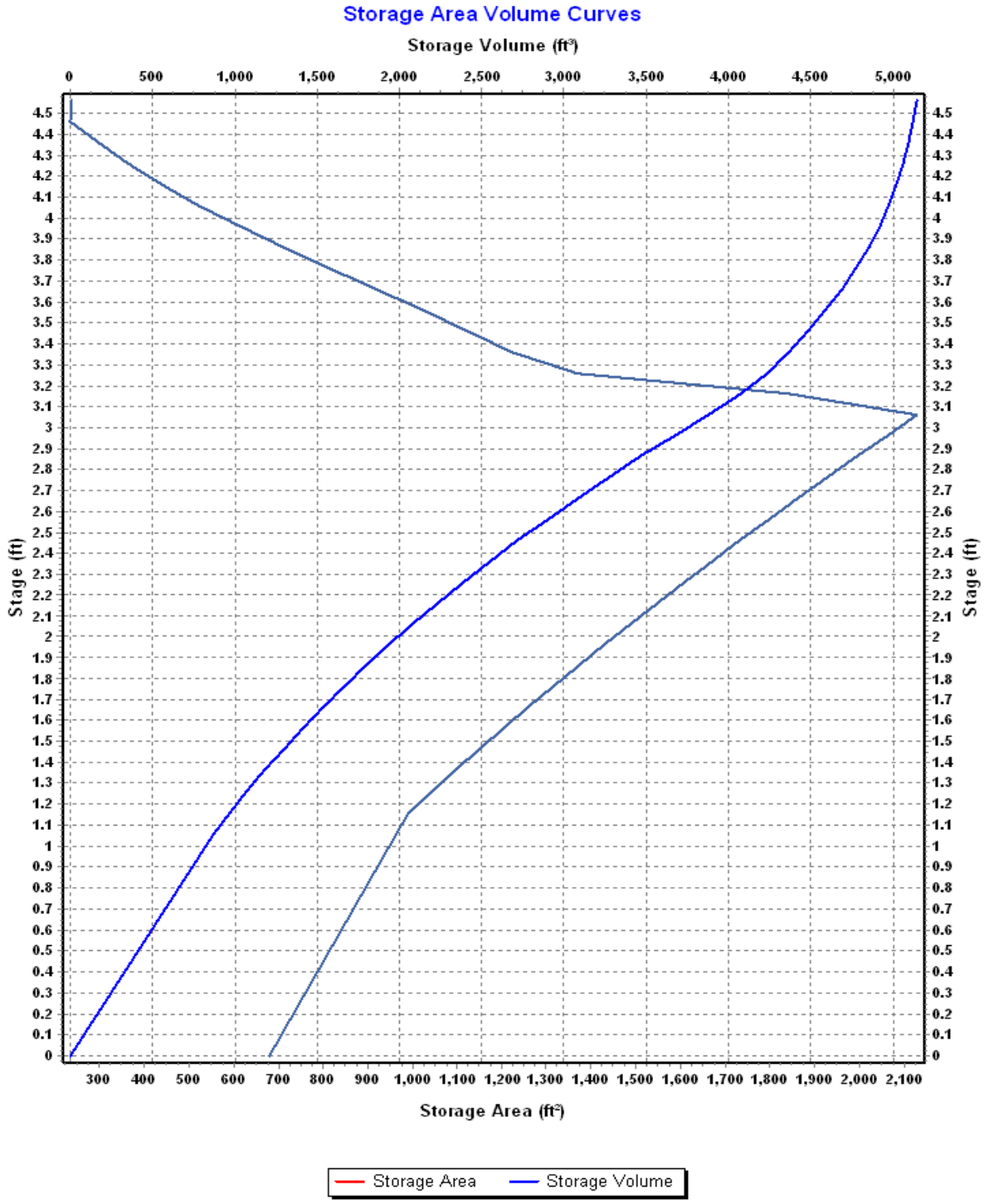
Exfiltration Rate (in/hr)	4.1500

Storage Area Volume Curves

Storage Curve : BR3C

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	681	0.000
1.06	963.86	871.78
1.16	990.19	969.48
1.26	1041.36	1071.06
1.36	1093.51	1177.80
1.46	1146.65	1289.81
1.56	1200.78	1407.18
1.66	1255.89	1530.01
1.76	1311.99	1658.40
1.86	1369.08	1792.45
1.96	1427.16	1932.26
2.06	1486.28	2077.93
2.16	1546.33	2229.56
2.26	1607.29	2387.24
2.36	1669.16	2551.06
2.46	1731.95	2721.12
2.56	1795.65	2897.50
2.66	1860.27	3080.30
2.76	1925.8	3269.60
2.86	1992.24	3465.50
2.96	2059.6	3668.09
3.06	2127.88	3877.46
3.16	1839.41	4075.82
3.26	1368.28	4236.20
3.36	1223.76	4365.80
3.46	1122.78	4483.13
3.56	1021.82	4590.36
3.66	920.87	4687.49
3.76	814.21	4774.24
3.86	709.9	4850.45
3.96	612.13	4916.55
4.06	521.34	4973.22
4.16	437.93	5021.18
4.26	362.17	5061.19
4.36	294.31	5094.01
4.46	234.5	5120.45
4.56	237.57	5144.05

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Storage Node : BR3C (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR3C	Bottom	CIRCULAR	No	24.00			911.95	0.61

Output Summary Results

Peak Inflow (cfs)	2.23
Peak Lateral Inflow (cfs)	0.00
Peak Outflow (cfs)	1.18
Peak Exfiltration Flow Rate (cfm)	10.90
Max HGL Elevation Attained (ft)	912.10
Max HGL Depth Attained (ft)	2.71
Average HGL Elevation Attained (ft)	909.93
Average HGL Depth Attained (ft)	0.54
Time of Max HGL Occurrence (days hh:mm)	0 10:17
Total Exfiltration Volume (1000-ft³)	10.369
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR4

Input Data

Invert Elevation (ft)	904.17
Max (Rim) Elevation (ft)	908.79
Max (Rim) Offset (ft)	4.62
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-904.17
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

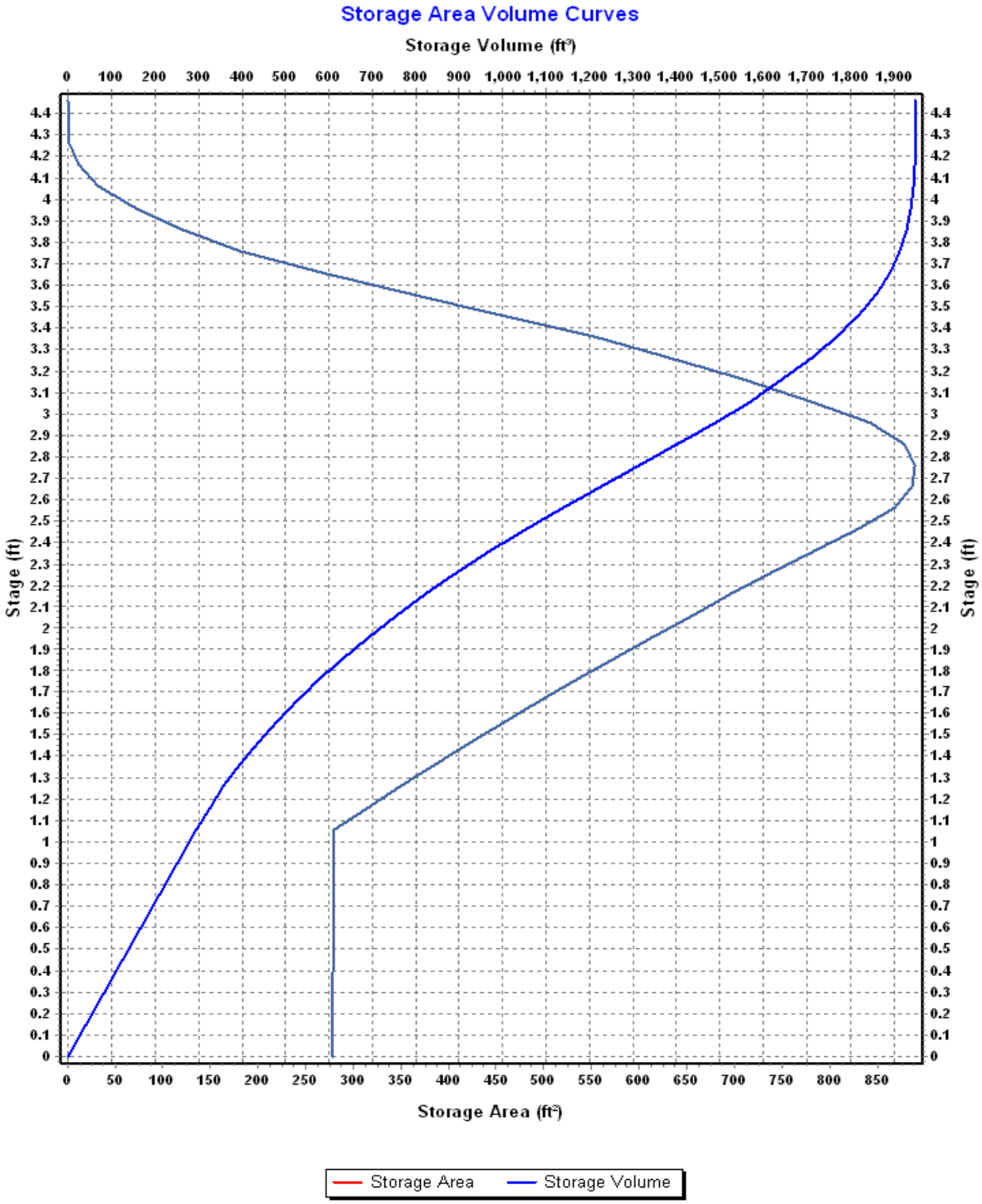
Exfiltration Rate (in/hr)	0.7500

Storage Area Volume Curves

Storage Curve : BR4

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	278	0.000
1.06	278.97	295.19
1.16	314.62	324.87
1.26	349.57	358.08
1.36	384.97	394.81
1.46	421.01	435.11
1.56	457.86	479.05
1.66	495.61	526.72
1.76	534.26	578.21
1.86	573.81	633.61
1.96	614.24	693.01
2.06	655.56	756.50
2.16	697.78	824.17
2.26	740.89	896.10
2.36	784.89	972.39
2.46	829.78	1053.12
2.56	868.08	1138.01
2.66	885.77	1225.70
2.76	889.34	1314.46
2.86	877.29	1402.79
2.96	841.77	1488.74
3.06	779.1	1569.78
3.16	707	1644.09
3.26	629.62	1710.92
3.36	551	1769.95
3.46	453.39	1820.17
3.56	357.92	1860.74
3.66	265.64	1891.92
3.76	181.58	1914.28
3.86	121.01	1929.41
3.96	71.61	1939.04
4.06	32.12	1944.23
4.16	12.15	1946.44
4.26	1.89	1947.14
4.36	1.39	1947.30
4.46	0.53	1947.40

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Storage Node : BR4 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR4	Bottom	CIRCULAR	No	24.00			906.23	0.61

Output Summary Results

Peak Inflow (cfs)	1.75
Peak Lateral Inflow (cfs)	1.52
Peak Outflow (cfs)	1.71
Peak Exfiltration Flow Rate (cfm)	0.77
Max HGL Elevation Attained (ft)	906.42
Max HGL Depth Attained (ft)	2.25
Average HGL Elevation Attained (ft)	905.11
Average HGL Depth Attained (ft)	0.94
Time of Max HGL Occurrence (days hh:mm)	0 10:19
Total Exfiltration Volume (1000-ft³)	1.470
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR5

Input Data

Invert Elevation (ft)	909.06
Max (Rim) Elevation (ft)	912.12
Max (Rim) Offset (ft)	3.06
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-909.06
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

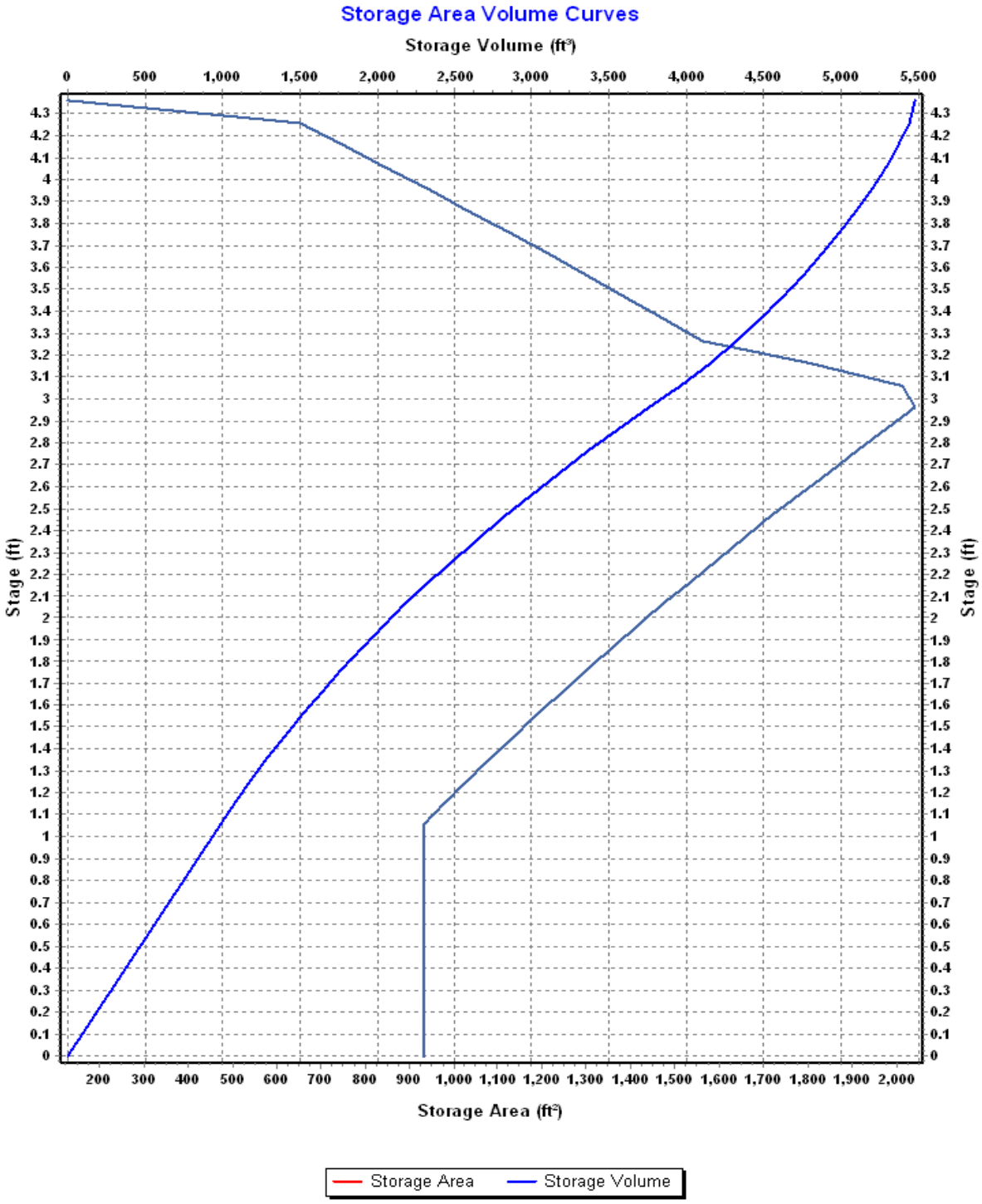
Exfiltration Rate (in/hr)	0.7000

Storage Area Volume Curves

Storage Curve : BR5

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	932	0.000
1.06	932.46	988.16
1.16	981.61	1083.86
1.26	1031.83	1184.53
1.36	1083.12	1290.28
1.46	1135.48	1401.21
1.56	1188.91	1517.43
1.66	1243.41	1639.05
1.76	1298.98	1766.17
1.86	1355.61	1898.90
1.96	1413.23	2037.34
2.06	1471.77	2181.59
2.16	1531.25	2331.74
2.26	1591.66	2487.89
2.36	1653	2650.12
2.46	1715.29	2818.53
2.56	1778.51	2993.22
2.66	1842.66	3174.28
2.76	1907.75	3361.80
2.86	1973.78	3555.88
2.96	2040.74	3756.61
3.06	2014.36	3959.37
3.16	1806.31	4150.40
3.26	1561.66	4318.80
3.36	1476.5	4470.71
3.46	1390.03	4614.04
3.56	1302.24	4748.65
3.66	1213.13	4874.42
3.76	1122.71	4991.21
3.86	1030.97	5098.89
3.96	937.91	5197.33
4.06	843.53	5286.40
4.16	747.83	5365.97
4.26	650.82	5435.90
4.36	128.99	5474.89

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Storage Node : BR5 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR5	Bottom	CIRCULAR	No	24.00			911.62	0.61

Output Summary Results

Peak Inflow (cfs)	2.08
Peak Lateral Inflow (cfs)	2.08
Peak Outflow (cfs)	1.05
Peak Exfiltration Flow Rate (cfm)	1.81
Max HGL Elevation Attained (ft)	911.76
Max HGL Depth Attained (ft)	2.7
Average HGL Elevation Attained (ft)	910.38
Average HGL Depth Attained (ft)	1.32
Time of Max HGL Occurrence (days hh:mm)	0 10:15
Total Exfiltration Volume (1000-ft³)	4.739
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR6

Input Data

Invert Elevation (ft)	902.92
Max (Rim) Elevation (ft)	913.75
Max (Rim) Offset (ft)	10.83
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-902.92
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

Exfiltration Rate (in/hr)	0.3500

Storage Area Volume Curves

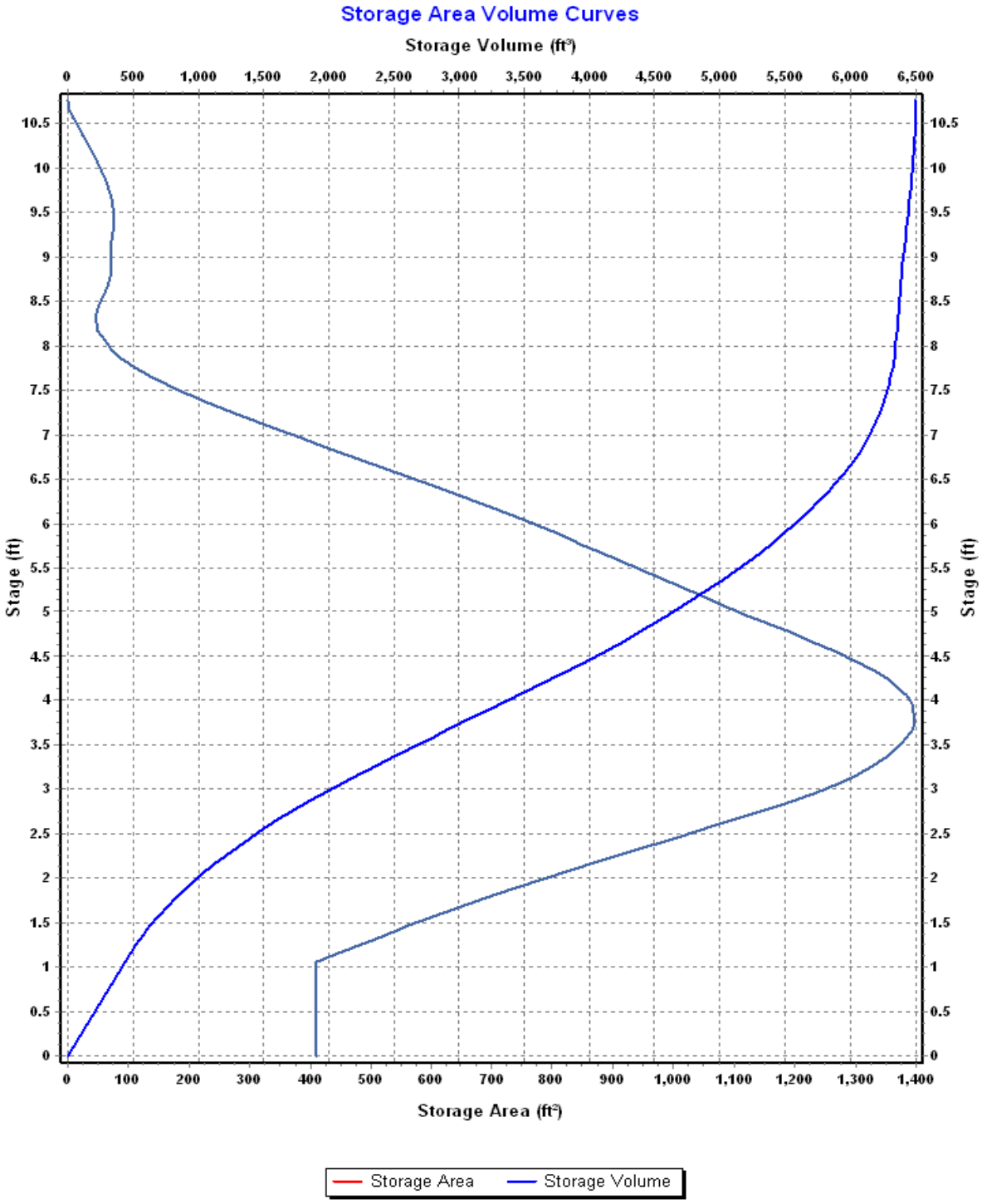
Storage Curve : BR6

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	410	0.000
1.06	410.77	435.01
1.16	446.75	477.89
1.26	483.71	524.41
1.36	521.65	574.68
1.46	560.56	628.79
1.56	600.46	686.84
1.66	641.33	748.93
1.76	683.18	815.16
1.86	726.02	885.62
1.96	769.83	960.41
2.06	814.61	1039.63
2.16	860.38	1123.38
2.26	907.13	1211.76
2.36	954.85	1304.86
2.46	1003.56	1402.78
2.56	1053.18	1505.62
2.66	1101.86	1613.37
2.76	1148.67	1725.90
2.86	1192.86	1842.98
2.96	1232.75	1964.26
3.06	1269.59	2089.38
3.16	1301.43	2217.93
3.26	1326.89	2349.35
3.36	1348.19	2483.10
3.46	1366.12	2618.82
3.56	1380.19	2756.14
3.66	1393.25	2894.81
3.76	1397.78	3034.36
3.86	1396.52	3174.08
3.96	1393.9	3313.60
4.06	1383.32	3452.46
4.16	1367.08	3589.98
4.26	1349.42	3725.81
4.36	1325.23	3859.54
4.46	1296.47	3990.63
4.56	1266.42	4118.77
4.66	1232.15	4243.70
4.76	1195.31	4365.07
4.86	1157.16	4482.69
4.96	1117.9	4596.44
5.06	1085.76	4706.62
5.16	1053.22	4813.57
5.26	1020.26	4917.24
5.36	986.9	5017.60
5.46	953.13	5114.60
5.56	918.95	5208.20
5.66	884.36	5298.37
5.76	849.37	5385.06
5.86	813.96	5468.23
5.96	778.15	5547.84
6.06	741.93	5623.84
6.16	705.08	5696.19
6.26	666.84	5764.79
6.36	628.22	5829.54
6.46	588.79	5890.39
6.56	548.05	5947.23
6.66	507.07	5999.99
6.76	465.94	6048.64
6.86	424.78	6093.18
6.96	383.49	6133.59
7.06	343.09	6169.92
7.16	303.81	6202.27
7.26	265.15	6230.72
7.36	229.45	6255.45
7.46	195.88	6276.72
7.56	163.53	6294.69
7.66	136.12	6309.67

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7.76	111.42	6322.05
7.86	88.83	6332.06
7.96	72.96	6340.15
8.06	60.06	6346.80
8.16	50.27	6352.32
8.26	47.61	6357.21
8.36	48.49	6362.02
8.46	53.24	6367.11
8.56	58.59	6372.70
8.66	64.53	6378.86
8.76	69.87	6385.58
8.86	71.43	6392.65
8.96	72.11	6399.83
9.06	72.32	6407.05
9.16	72.64	6414.30
9.26	74.98	6421.68
9.36	76.22	6429.24
9.46	76.74	6436.89
9.56	75.34	6444.49
9.66	72.1	6451.86
9.76	68.49	6458.89
9.86	63.88	6465.51
9.96	56.95	6471.55
10.06	50.1	6476.90
10.16	43.32	6481.57
10.26	34.16	6485.44
10.36	25.48	6488.42
10.46	17.32	6490.56
10.56	9.08	6491.88
10.66	3.27	6492.50
10.76	0.36	6492.68

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Storage Node : BR6 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR6	Bottom	CIRCULAR	No	24.00			904.98	0.61

Output Summary Results

Peak Inflow (cfs)	2.80
Peak Lateral Inflow (cfs)	0.00
Peak Outflow (cfs)	2.77
Peak Exfiltration Flow Rate (cfm)	0.45
Max HGL Elevation Attained (ft)	905.24
Max HGL Depth Attained (ft)	2.32
Average HGL Elevation Attained (ft)	904.33
Average HGL Depth Attained (ft)	1.41
Time of Max HGL Occurrence (days hh:mm)	0 10:18
Total Exfiltration Volume (1000-ft³)	1.212
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR7

Input Data

Invert Elevation (ft)	895.77
Max (Rim) Elevation (ft)	901.73
Max (Rim) Offset (ft)	5.96
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-895.77
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

Exfiltration Rate (in/hr)	0.3500

Storage Area Volume Curves

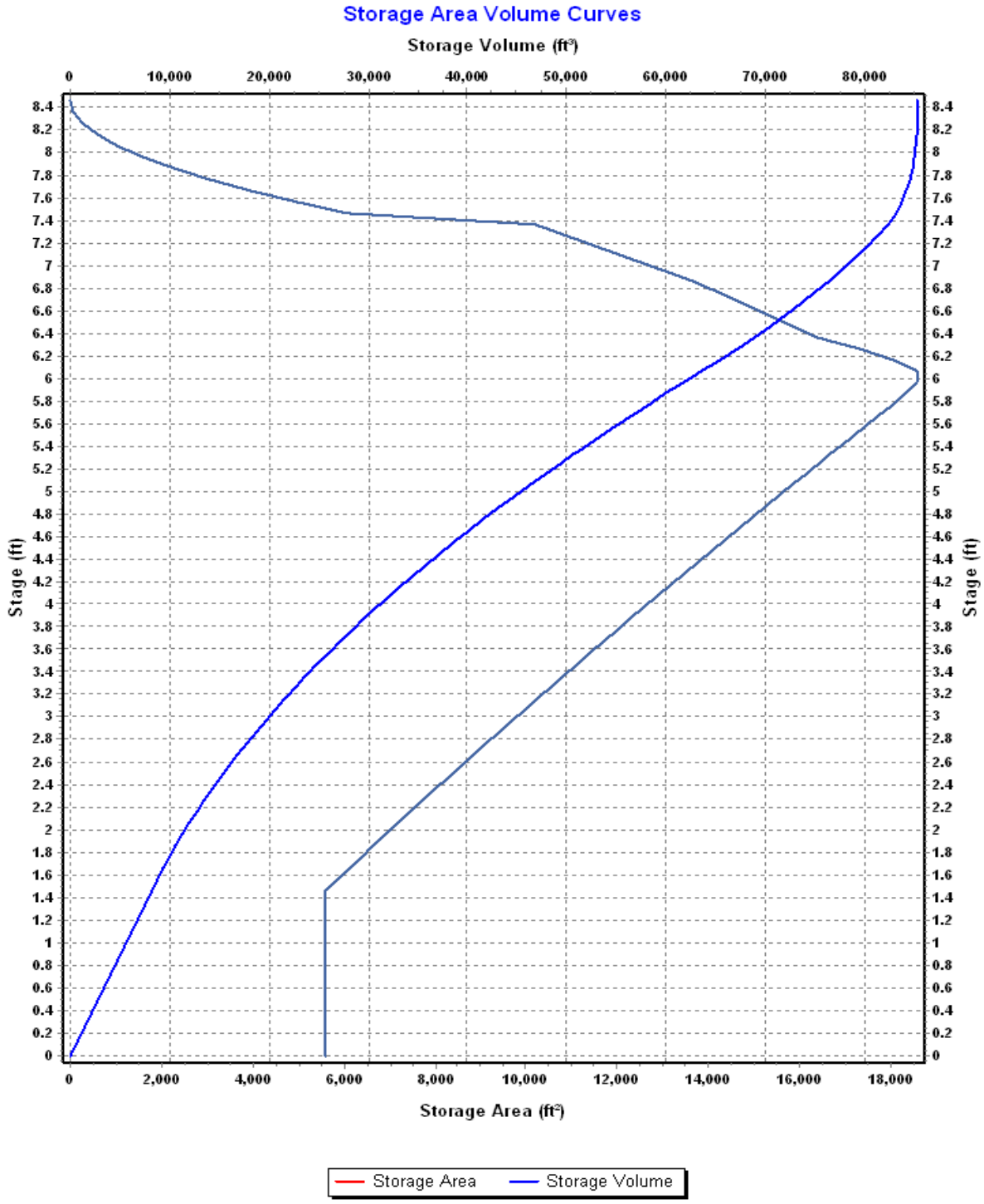
Storage Curve : BR7

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	5595	0.000
1.46	5595.13	8168.79
1.56	5856.73	8741.38
1.66	6119.66	9340.20
1.76	6383.94	9965.38
1.86	6649.55	10617.05
1.96	6916.5	11295.35
2.06	7184.79	12000.41
2.16	7454.41	12732.37
2.26	7725.38	13491.36
2.36	7997.69	14277.51
2.46	8271.33	15090.96
2.56	8546.31	15931.84
2.66	8822.63	16800.29
2.76	9100.3	17696.44
2.86	9379.31	18620.42
2.96	9659.68	19572.37
3.06	9941.38	20552.42
3.16	10224.44	21560.71
3.26	10508.84	22597.37
3.36	10794.59	23662.54
3.46	11081.69	24756.35
3.56	11370.12	25878.94
3.66	11659.61	27030.43
3.76	11950.17	28210.92
3.86	12241.84	29420.52
3.96	12534.6	30659.34
4.06	12828.48	31927.49
4.16	13123.45	33225.09
4.26	13419.52	34552.24
4.36	13716.7	35909.05
4.46	14014.97	37295.63
4.56	14314.29	38712.09
4.66	14614.69	40158.54
4.76	14916.14	41635.08
4.86	15218.67	43141.82
4.96	15522.25	44678.87
5.06	15826.91	46246.33
5.16	16132.63	47844.31
5.26	16439.41	49472.91
5.32	16623.99	50464.81
5.36	16747.26	51132.24
5.46	17056.17	52822.41
5.56	17366.15	54543.53
5.66	17677.19	56295.70
5.76	17989.3	58079.02
5.86	18302.47	59893.61
5.96	18561.7	61736.82
6.06	18563.99	63593.10
6.16	18028.51	65422.73
6.26	17266.47	67187.48
6.36	16354.62	68868.53
6.46	15821.95	70477.36
6.56	15283.77	72032.65
6.66	14740.05	73533.84
6.76	14190.76	74980.38
6.86	13635.89	76371.71
6.96	12950.52	77701.03
7.06	12263.14	78961.71
7.16	11573.75	80153.55
7.26	10882.35	81276.36
7.36	10188.94	82329.92
7.46	6084.34	83143.58
7.56	4958.1	83695.70
7.66	3945.56	84140.88
7.76	3046.43	84490.48
7.86	2260.65	84755.83
7.96	1588.12	84948.27

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8.06	1028.71	85079.11
8.16	592.94	85160.19
8.26	270.69	85203.37
8.36	49.56	85219.38
8.46	2.12	85221.96

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Storage Node : BR7 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR7B	Bottom	CIRCULAR	No	24.00			901.23	0.61

Output Summary Results

Peak Inflow (cfs)	8.48
Peak Lateral Inflow (cfs)	2.65
Peak Outflow (cfs)	0.44
Peak Exfiltration Flow Rate (cfm)	8.41
Max HGL Elevation Attained (ft)	901.31
Max HGL Depth Attained (ft)	5.54
Average HGL Elevation Attained (ft)	899.94
Average HGL Depth Attained (ft)	4.17
Time of Max HGL Occurrence (days hh:mm)	0 20:30
Total Exfiltration Volume (1000-ft³)	28.070
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR8

Input Data

Invert Elevation (ft)	900.16
Max (Rim) Elevation (ft)	910.55
Max (Rim) Offset (ft)	10.39
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-900.16
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

Exfiltration Rate (in/hr)	0.2500

Storage Area Volume Curves

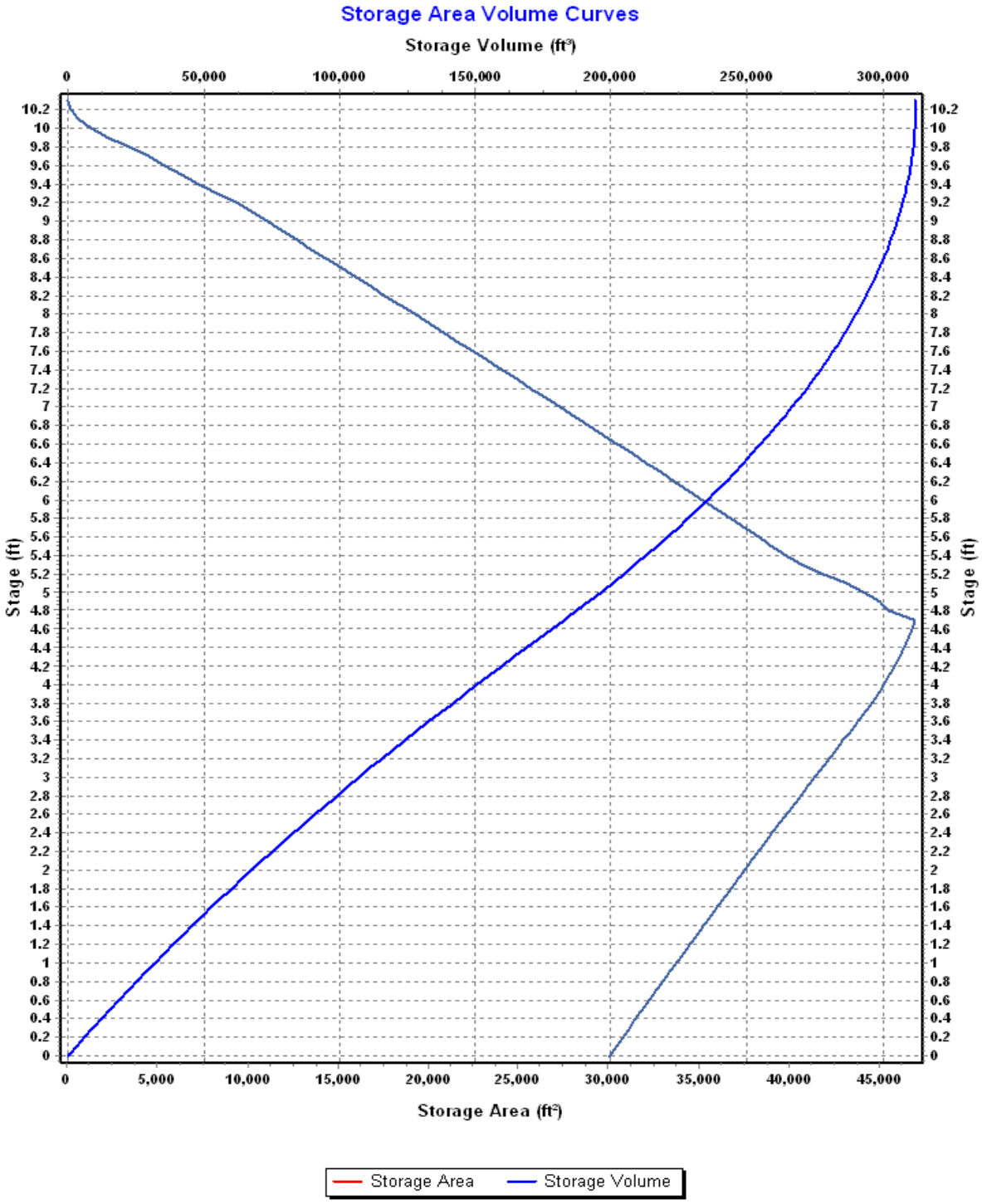
Storage Curve : RB

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	30060.38	0.000
0.1	30423.69	3024.20
0.2	30787.95	6084.78
0.3	31153.19	9181.84
0.4	31519.45	12315.47
0.5	31886.76	15485.78
0.6	32255.10	18692.87
0.7	32624.50	21936.85
0.8	32994.93	25217.82
0.9	33366.41	28535.89
1	33738.93	31891.16
1.1	34112.50	35283.73
1.2	34487.11	38713.71
1.3	34862.77	42181.20
1.4	35239.47	45686.31
1.5	35617.21	49229.14
1.6	35996.00	52809.80
1.7	36375.83	56428.39
1.8	36756.70	60085.02
1.9	37138.62	63779.79
2	37521.58	67512.80
2.1	37905.58	71284.16
2.2	38290.63	75093.97
2.3	38676.72	78942.34
2.4	39063.86	82829.37
2.46	39296.65	85180.19
2.5	39452.06	86755.16
2.6	39841.31	90719.83
2.7	40231.63	94723.48
2.8	40623.00	98766.21
2.9	41015.43	102848.13
3	41408.92	106969.35
3.1	41803.47	111129.97
3.2	42199.08	115330.10
3.3	42595.75	119569.84
3.4	42993.48	123849.30
3.5	43391.60	128168.55
3.6	43782.14	132527.24
3.7	44164.57	136924.58
3.8	44540.20	141359.82
3.9	44901.66	145831.91
4	45239.40	150338.96
4.1	45563.92	154879.13
4.2	45871.31	159450.89
4.3	46138.45	164051.38
4.4	46386.90	168677.65
4.5	46616.67	173327.83
4.6	46811.15	177999.22
4.7	46971.49	182688.35
4.8	45485.74	187311.21
4.9	45023.21	191836.66
5	44212.48	196298.44
5.1	43110.78	200664.60
5.2	41818.89	204911.08
5.3	40592.21	209031.64
5.4	39822.87	213052.39
5.5	39051.68	216996.12
5.6	38278.65	220862.64
5.7	37503.79	224651.76
5.8	36727.15	228363.31
5.9	35948.71	231997.10
6	35168.56	235552.96
6.1	34386.68	239030.72
6.2	33603.09	242430.21
6.3	32817.87	245751.26
6.4	32030.97	248993.70
6.5	31242.50	252157.37
6.6	30452.43	255242.12

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6.7	29660.78	258247.78
6.8	28867.64	261174.20
6.9	28072.95	264021.23
7	27276.82	266788.72
7.1	26479.23	269476.52
7.2	25680.17	272084.49
7.3	24879.78	274612.49
7.4	24077.96	277060.38
7.5	23274.83	279428.02
7.6	22470.38	281715.28
7.7	21664.58	283922.03
7.8	20857.60	286048.14
7.9	20049.29	288093.48
8	19239.75	290057.93
8.1	18429.02	291941.37
8.2	17617.00	293743.67
8.3	16803.95	295464.72
8.4	15989.67	297104.40
8.5	15174.27	298662.60
8.6	14357.79	300139.20
8.7	13540.07	301534.09
8.8	12721.38	302847.16
8.9	11901.56	304078.31
9	11080.62	305227.42
9.1	10258.76	306294.39
9.2	9327.55	307273.71
9.3	8324.12	308156.29
9.4	7321.13	308938.55
9.5	6362.76	309622.74
9.6	5439.54	310212.86
9.7	4519.10	310710.79
9.8	3459.55	311109.72
9.9	2336.41	311399.52
10	1375.60	311585.12
10.1	669.19	311687.36
10.2	186.39	311730.14
10.3	61.67	311742.54

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Storage Node : BR8 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR8A	Bottom	CIRCULAR	No	24.00			903.16	0.61

Output Summary Results

Peak Inflow (cfs)	18.13
Peak Lateral Inflow (cfs)	18.13
Peak Outflow (cfs)	0.00
Peak Exfiltration Flow Rate (cfm)	13.58
Max HGL Elevation Attained (ft)	902.57
Max HGL Depth Attained (ft)	2.41
Average HGL Elevation Attained (ft)	901.81
Average HGL Depth Attained (ft)	1.65
Time of Max HGL Occurrence (days hh:mm)	1 00:15
Total Exfiltration Volume (1000-ft³)	49.948
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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100-year/24-hour Rainfall Event Simulation Results

Project Description

File Name 20230.SPF

Project Options

Flow Units	CFS
Elevation Type	Elevation
Hydrology Method	SCS TR-55
Time of Concentration (TOC) Method	SCS TR-55
Link Routing Method	Kinematic Wave
Enable Overflow Ponding at Nodes	YES
Skip Steady State Analysis Time Periods	YES

Analysis Options

Start Analysis On	Oct 27, 2020	00:00:00
End Analysis On	Oct 30, 2020	00:00:00
Start Reporting On	Oct 27, 2020	00:00:00
Antecedent Dry Days	0	days
Runoff (Dry Weather) Time Step	0 01:00:00	days hh:mm:ss
Runoff (Wet Weather) Time Step	0 00:05:00	days hh:mm:ss
Reporting Time Step	0 00:06:00	days hh:mm:ss
Routing Time Step	30	seconds

Number of Elements

	Qty
Rain Gages	1
Subbasins	18
Nodes	50
Junctions	37
Outfalls	3
Flow Diversions	0
Inlets	0
Storage Nodes	10
Links	47
Channels	0
Pipes	37
Pumps	0
Orifices	10
Weirs	0
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1	Project	Time Series	100YR24HR	Cumulative	inches	California	San Bernardino (Victorville)	100	3.48	SCS Type I 24-hr

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Subbasin Summary

SN	Subbasin ID	Area (ac)	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	A01	0.92	90.57	3.48	2.48	2.28	1.63	0 00:10:00
2	A02	2.31	89.00	3.48	2.34	5.40	3.83	0 00:10:00
3	A04	1.11	89.00	3.48	2.34	2.60	1.84	0 00:10:00
4	A05	2.33	89.00	3.48	2.34	5.45	3.86	0 00:10:00
5	A06	1.52	89.00	3.48	2.34	3.56	2.53	0 00:10:00
6	A07	0.45	89.00	3.48	2.34	1.05	0.74	0 00:10:00
7	A08	1.59	89.00	3.48	2.34	3.72	2.63	0 00:10:00
8	A09	1.94	89.00	3.48	2.34	4.54	3.21	0 00:10:00
9	A10	16.37	84.72	3.48	1.98	32.35	22.46	0 00:10:00
10	A11a	0.92	98.00	3.48	3.25	2.99	2.01	0 00:10:00
11	A11b	0.64	98.00	3.48	3.25	2.08	1.39	0 00:10:00
12	A12	1.73	98.00	3.48	3.25	5.62	3.77	0 00:10:00
13	A13	3.78	98.00	3.48	3.25	12.27	8.24	0 00:10:00
14	A3A	0.54	95.00	3.48	2.92	1.58	1.10	0 00:10:00
15	A3B	0.80	91.77	3.48	2.60	2.08	1.47	0 00:10:00
16	A3C	1.34	89.00	3.48	2.34	3.13	2.22	0 00:10:00
17	RVPREDEV	16.37	70.76	3.48	1.04	16.99	3.04	0 01:40:47
18	TS-PREDEV	21.91	65.01	3.48	0.74	16.26	2.26	0 01:47:10

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Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft²)	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	J01	Junction	913.15	914.89	913.15	0.00	0.00	0.00	913.15	0.00	1.74	0 00:00	0.00	0.00
2	J02	Junction	907.89	912.64	907.89	0.00	0.00	3.81	912.64	0.00	0.00	0 10:06	0.39	23.00
3	J03	Junction	914.78	917.97	914.78	0.00	0.00	1.45	915.48	0.00	2.49	0 00:00	0.00	0.00
4	J04	Junction	910.56	914.38	910.56	0.00	0.00	3.56	914.38	0.00	0.00	0 10:06	0.23	18.00
5	J05	Junction	902.68	907.43	902.68	0.00	0.00	0.73	903.12	0.00	4.31	0 00:00	0.00	0.00
6	J06	Junction	902.12	906.87	902.12	0.00	0.00	2.60	902.52	0.00	4.35	0 00:00	0.00	0.00
7	J07	Junction	895.73	900.98	895.73	0.00	0.00	3.67	896.36	0.00	4.62	0 00:00	0.00	0.00
8	J08	Junction	898.06	902.31	898.06	0.00	0.00	1.36	898.41	0.00	3.90	0 00:00	0.00	0.00
9	J09	Junction	898.06	902.31	898.06	0.00	0.00	1.96	898.49	0.00	3.82	0 00:00	0.00	0.00
10	J10	Junction	886.32	890.92	886.32	0.00	0.00	8.03	890.92	0.00	0.00	0 10:06	0.02	4.00
11	O1	Junction	916.83	921.08	916.83	0.00	0.00	0.00	916.83	0.00	4.25	0 00:00	0.00	0.00
12	O2	Junction	909.85	914.85	909.85	0.00	0.00	2.89	914.85	0.00	0.00	0 10:11	0.16	15.00
13	O3A	Junction	915.23	921.60	915.23	0.00	0.00	0.01	915.28	0.00	6.32	0 00:00	0.00	0.00
14	O3B	Junction	911.08	916.72	911.08	0.00	0.00	1.40	911.61	0.00	5.11	0 00:00	0.00	0.00
15	O3C	Junction	906.09	912.24	906.09	0.00	0.00	1.86	906.84	0.00	5.40	0 00:00	0.00	0.00
16	O4	Junction	902.98	906.80	902.98	0.00	0.00	2.74	903.74	0.00	3.06	0 00:00	0.00	0.00
17	O5	Junction	907.79	912.12	907.79	0.00	0.00	1.94	912.12	0.00	0.00	0 10:10	0.01	6.00
18	O6	Junction	901.23	905.48	901.23	0.00	0.00	3.53	901.69	0.00	3.79	0 00:00	0.00	0.00
19	O7	Junction	888.27	901.23	888.27	0.00	0.00	0.84	888.56	0.00	12.67	0 00:00	0.00	0.00
20	O8A	Junction	894.34	903.66	894.34	0.00	0.00	0.00	894.34	0.00	9.32	0 00:00	0.00	0.00
21	SDMH01	Junction	916.48	921.15	916.48	0.00	0.00	0.00	916.58	0.00	4.57	0 00:00	0.00	0.00
22	SDMH02	Junction	909.48	914.04	909.48	0.00	0.00	1.87	914.04	0.00	0.00	0 10:20	0.00	3.00
23	SDMH03	Junction	907.54	914.70	907.54	0.00	0.00	3.65	914.70	0.00	0.00	0 10:16	0.55	40.00
24	SDMH04	Junction	907.26	914.39	907.26	0.00	0.00	3.59	908.36	0.00	6.03	0 00:00	0.00	0.00
25	SDMH05	Junction	907.53	914.79	907.53	0.00	0.00	1.85	914.79	0.00	0.00	0 10:09	0.00	5.00
26	SDMH06	Junction	905.75	910.18	905.75	0.00	0.00	1.86	906.50	0.00	3.68	0 00:00	0.00	0.00
27	SDMH07	Junction	905.33	909.05	905.33	0.00	0.00	1.86	906.18	0.00	2.87	0 00:00	0.00	0.00
28	SDMH08	Junction	902.75	909.14	902.75	0.00	0.00	2.74	903.61	0.00	5.53	0 00:00	0.00	0.00
29	SDMH09	Junction	901.44	907.96	901.44	0.00	0.00	3.12	903.31	0.00	4.65	0 00:00	0.00	0.00
30	SDMH10	Junction	900.51	907.70	900.51	0.00	0.00	4.90	901.44	0.00	6.26	0 00:00	0.00	0.00
31	SDMH11	Junction	894.85	901.92	894.85	0.00	0.00	3.66	895.72	0.00	6.20	0 00:00	0.00	0.00
32	SDMH12	Junction	893.85	903.70	893.85	0.00	0.00	3.62	894.72	0.00	8.98	0 00:00	0.00	0.00
33	SDMH13	Junction	897.40	902.76	897.40	0.00	0.00	3.32	898.17	0.00	4.59	0 00:00	0.00	0.00
34	SDMH14	Junction	893.13	902.49	893.13	0.00	0.00	6.78	895.52	0.00	6.97	0 00:00	0.00	0.00
35	SDMH15	Junction	886.12	891.87	886.12	0.00	0.00	14.47	891.87	0.00	0.00	0 10:06	0.62	16.00
36	SDMH16	Junction	885.50	893.01	885.50	0.00	0.00	10.78	887.72	0.00	5.29	0 00:00	0.00	0.00
37	SDMH17	Junction	884.58	889.78	884.58	0.00	0.00	10.61	886.22	0.00	3.56	0 00:00	0.00	0.00
38	OUT1	Outfall	884.42					10.51	885.94					
39	RVPRE	Outfall	0.00					3.03	0.00					
40	TSPRE	Outfall	0.00					2.25	0.00					
41	BR1	Storage Node	918.02	922.46	0.00		0.00	1.60	918.54				0.00	0.00
42	BR2	Storage Node	911.79	915.12	0.00		0.00	3.78	914.62				0.00	0.00
43	BR3A	Storage Node	918.54	922.87	0.00		0.00	1.08	921.11				0.00	0.00
44	BR3B	Storage Node	914.16	917.97	0.00		0.00	1.44	916.38				0.00	0.00
45	BR3C	Storage Node	909.39	912.45	0.00		0.00	2.26	912.15				0.00	0.00
46	BR4	Storage Node	904.17	908.79	0.00		0.00	2.76	906.49				0.00	0.00
47	BR5	Storage Node	909.06	912.12	0.00		0.00	2.49	911.83				0.00	0.00
48	BR6	Storage Node	902.92	913.75	0.00		0.00	3.57	905.29				0.00	0.00
49	BR7	Storage Node	895.77	901.73	0.00		0.00	10.46	901.35				0.00	0.00
50	BR8	Storage Node	900.16	910.55	0.00		0.00	22.28	903.07				0.00	0.00

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Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	(ft)		(min)	
1	P01	Pipe	O1	SDMH01	102.69	916.83	916.58	0.2400	12.000	0.0130	0.00	1.76	0.00	0.00	0.00	0.00	0.00	Calculated
2	P02	Pipe	SDMH01	J01	198.58	916.48	913.15	1.6800	12.000	0.0130	0.00	4.61	0.00	0.00	0.00	0.00	0.00	Calculated
3	P03	Pipe	J01	BR2	18.00	913.15	912.85	1.6700	12.000	0.0130	0.00	4.60	0.00	0.00	0.00	0.00	0.00	Calculated
4	P04	Pipe	O2	SDMH02	111.00	909.85	909.58	0.2400	12.000	0.0130	1.87	1.76	1.07	2.67	1.00	1.00	13.00	SURCHARGED
5	P05	Pipe	SDMH02	SDMH03	160.94	909.48	909.08	0.2500	12.000	0.0130	1.86	1.78	1.05	2.68	0.81	0.89	0.00	> CAPACITY
6	P06	Pipe	J02	SDMH03	99.00	907.89	907.64	0.2500	12.000	0.0130	1.89	1.79	1.05	2.74	1.00	1.00	20.00	SURCHARGED
7	P07	Pipe	SDMH03	SDMH04	74.09	907.54	907.36	0.2400	12.000	0.0130	1.86	1.76	1.06	2.60	1.00	1.00	28.00	SURCHARGED
8	P08	Pipe	O5	SDMH05	66.52	907.79	907.63	0.2400	12.000	0.0130	1.85	1.75	1.06	2.60	1.00	1.00	2.00	SURCHARGED
9	P09	Pipe	SDMH05	SDMH04	70.26	907.53	907.36	0.2400	12.000	0.0130	1.83	1.75	1.04	2.61	0.82	0.92	0.00	> CAPACITY
10	P10	Pipe	SDMH04	BR6	92.00	907.26	903.48	4.1100	12.000	0.0130	3.57	7.22	0.49	9.19	0.49	0.50	0.00	Calculated
11	P11	Pipe	O6	BR7	74.00	901.23	897.49	5.0500	12.000	0.0130	3.52	8.01	0.44	9.88	0.46	0.46	0.00	Calculated
12	P12	Pipe	O3A	J03	141.00	915.23	914.88	0.2500	12.000	0.0130	0.01	1.78	0.00	0.57	0.05	0.05	0.00	Calculated
13	P13	Pipe	J03	BR3B	25.00	914.78	914.72	0.2400	12.000	0.0130	1.44	1.75	0.83	2.49	0.69	0.69	0.00	Calculated
14	P14	Pipe	O3B	J04	83.00	911.08	910.66	0.5100	12.000	0.0130	1.39	2.53	0.55	3.31	0.52	0.53	0.00	Calculated
15	P15	Pipe	J04	BR3C	23.00	910.56	910.45	0.4800	12.000	0.0150	2.26	2.14	1.06	3.15	1.00	1.00	16.00	SURCHARGED
16	P16	Pipe	O3C	SDMH06	102.00	906.09	905.75	0.3300	12.000	0.0130	1.86	2.06	0.90	2.98	0.68	0.75	0.00	Calculated
17	P17	Pipe	SDMH06	SDMH07	99.00	905.75	905.43	0.3200	12.000	0.0130	1.86	2.03	0.92	2.94	0.71	0.75	0.00	Calculated
18	P18	Pipe	SDMH07	BR4	31.00	905.33	905.23	0.3200	12.000	0.0130	1.85	2.02	0.92	2.92	0.72	0.75	0.00	Calculated
19	P19	Pipe	O4	SDMH08	50.02	902.98	902.85	0.2600	18.000	0.0130	2.74	5.36	0.51	3.05	0.73	0.51	0.00	Calculated
20	P20	Pipe	SDMH08	SDMH09	83.99	902.75	902.54	0.2500	18.000	0.0130	2.74	5.25	0.52	3.01	0.75	0.51	0.00	Calculated
21	P21	Pipe	J05	SDMH09	30.00	902.68	902.60	0.2700	12.000	0.0130	0.73	1.84	0.40	2.21	0.44	0.44	0.00	Calculated
22	P22	Pipe	SDMH09	SDMH10	331.00	901.44	900.61	0.2500	18.000	0.0130	3.10	5.26	0.59	3.15	0.81	0.55	0.00	Calculated
23	P23	Pipe	J06	SDMH10	32.00	902.12	900.61	4.7200	12.000	0.0130	2.60	7.74	0.34	8.87	0.40	0.40	0.00	Calculated
24	P24	Pipe	SDMH10	BR7	89.00	900.51	897.23	3.6900	18.000	0.0130	4.90	20.17	0.24	9.40	0.50	0.34	0.00	Calculated
25	P25	Pipe	O7	J10	62.00	888.27	887.17	1.7700	12.000	0.0130	0.84	4.75	0.18	4.55	0.29	0.29	0.00	Calculated
26	P26	Pipe	O8A	SDMH12	130.00	894.34	893.85	0.3800	12.000	0.0130	0.00	2.19	0.00	0.00	0.00	0.00	0.00	Calculated
27	P27	Pipe	J07	SDMH11	39.00	895.73	894.95	2.0000	12.000	0.0130	3.66	5.04	0.73	6.99	0.63	0.63	0.00	Calculated
28	P28	Pipe	SDMH11	SDMH12	333.48	894.85	893.85	0.3000	18.000	0.0130	3.62	5.75	0.63	3.50	0.86	0.57	0.00	Calculated
29	P29	Pipe	SDMH12	SDMH14	208.00	893.85	893.23	0.3000	18.000	0.0130	3.60	5.73	0.63	3.45	0.85	0.57	0.00	Calculated
30	P30	Pipe	J09	SDMH13	16.00	898.06	897.74	2.0000	12.000	0.0130	1.96	5.04	0.39	6.01	0.43	0.43	0.00	Calculated
31	P31	Pipe	J08	SDMH13	28.00	898.06	897.50	2.0000	12.000	0.0130	1.36	5.04	0.27	5.44	0.35	0.35	0.00	Calculated
32	P32	Pipe	SDMH13	SDMH14	93.00	897.40	895.07	2.5100	18.000	0.0130	3.31	16.63	0.20	7.34	0.45	0.30	0.00	Calculated
33	P33	Pipe	SDMH14	SDMH15	745.00	893.13	886.22	0.9300	18.000	0.0130	6.71	10.12	0.66	6.24	0.88	0.59	0.00	Calculated
34	P34	Pipe	J10	SDMH15	39.00	886.32	886.12	0.5100	18.000	0.0130	8.03	7.52	1.07	4.91	1.47	1.00	0.00	> CAPACITY
35	P35	Pipe	SDMH15	SDMH16	200.04	886.12	885.72	0.2000	24.000	0.0130	10.78	10.12	1.07	3.88	2.00	1.00	12.00	SURCHARGED
36	P36	Pipe	SDMH16	SDMH17	328.00	885.50	884.68	0.2500	24.000	0.0130	10.61	11.31	0.94	4.26	1.48	0.76	0.00	Calculated
37	P37	Pipe	SDMH17	OUT1	63.00	884.58	884.42	0.2500	24.000	0.0130	10.51	11.40	0.92	4.14	1.47	0.76	0.00	Calculated
38	OR1	Orifice	BR1	O1		918.02	916.83		24.000		0.00							
39	OR2	Orifice	BR2	O2		911.79	909.85		24.000		2.89							
40	OR3A	Orifice	BR3A	O3A		918.54	915.23		24.000		0.01							
41	OR3B	Orifice	BR3B	O3B		914.16	911.08		24.000		1.40							
42	OR3C	Orifice	BR3C	O3C		909.39	906.09		24.000		1.86							
43	OR4	Orifice	BR4	O4		904.17	902.98		24.000		2.74							
44	OR5	Orifice	BR5	O5		909.06	907.79		24.000		1.94							
45	OR6	Orifice	BR6	O6		902.92	901.23		24.000		3.53							
46	OR7B	Orifice	BR7	O7		895.77	888.27		24.000		0.84							
47	OR8A	Orifice	BR8	O8A		900.16	894.34		24.000		0.00							

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Subbasin Hydrology

Subbasin : A01

Input Data

Area (ac) 0.92
Weighted Curve Number 90.57
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	0.24	D	95.00
Urban commercial, 85% imp	0.68	A	89.00
Composite Area & Weighted CN	0.92		90.57

Time of Concentration

TOC Method : SCS TR-55

Sheet Flow Equation :

Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))

Where :

Tc = Time of Concentration (hr)
n = Manning's roughness
Lf = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation :

V = 16.1345 * (Sf^0.5) (unpaved surface)
V = 20.3282 * (Sf^0.5) (paved surface)
V = 15.0 * (Sf^0.5) (grassed waterway surface)
V = 10.0 * (Sf^0.5) (nearly bare & untilled surface)
V = 9.0 * (Sf^0.5) (cultivated straight rows surface)
V = 7.0 * (Sf^0.5) (short grass pasture surface)
V = 5.0 * (Sf^0.5) (woodland surface)
V = 2.5 * (Sf^0.5) (forest w/heavy litter surface)
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hr)
Lf = Flow Length (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)

Channel Flow Equation :

V = (1.49 * (R^(2/3)) * (Sf^0.5)) / n
R = Aq / Wp
Tc = (Lf / V) / (3600 sec/hr)

Where :

Tc = Time of Concentration (hr)
Lf = Flow Length (ft)
R = Hydraulic Radius (ft)
Aq = Flow Area (ft²)
Wp = Wetted Perimeter (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)
n = Manning's roughness

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

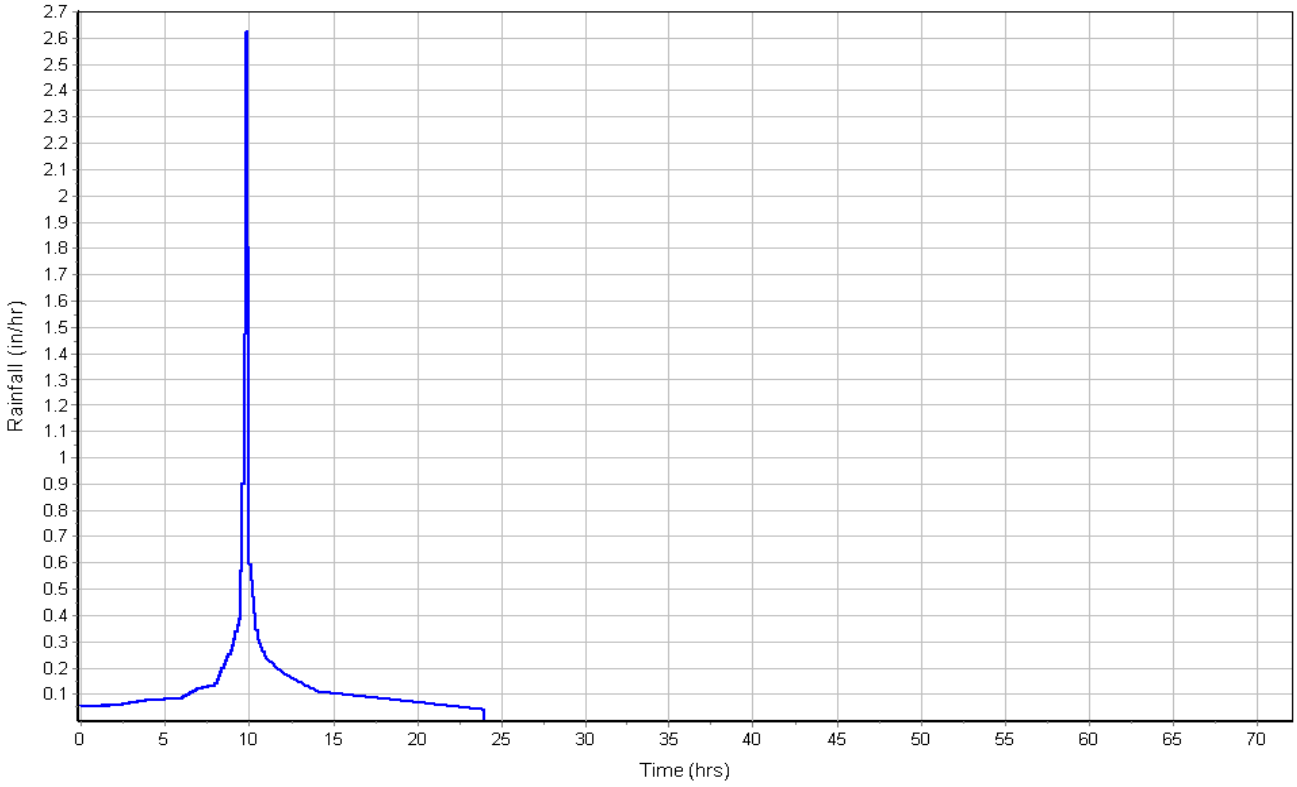
Total Rainfall (in) 3.48
Total Runoff (in) 2.48
Peak Runoff (cfs) 1.63
Weighted Curve Number 90.57
Time of Concentration (days hh:mm:ss) 0 00:10:00

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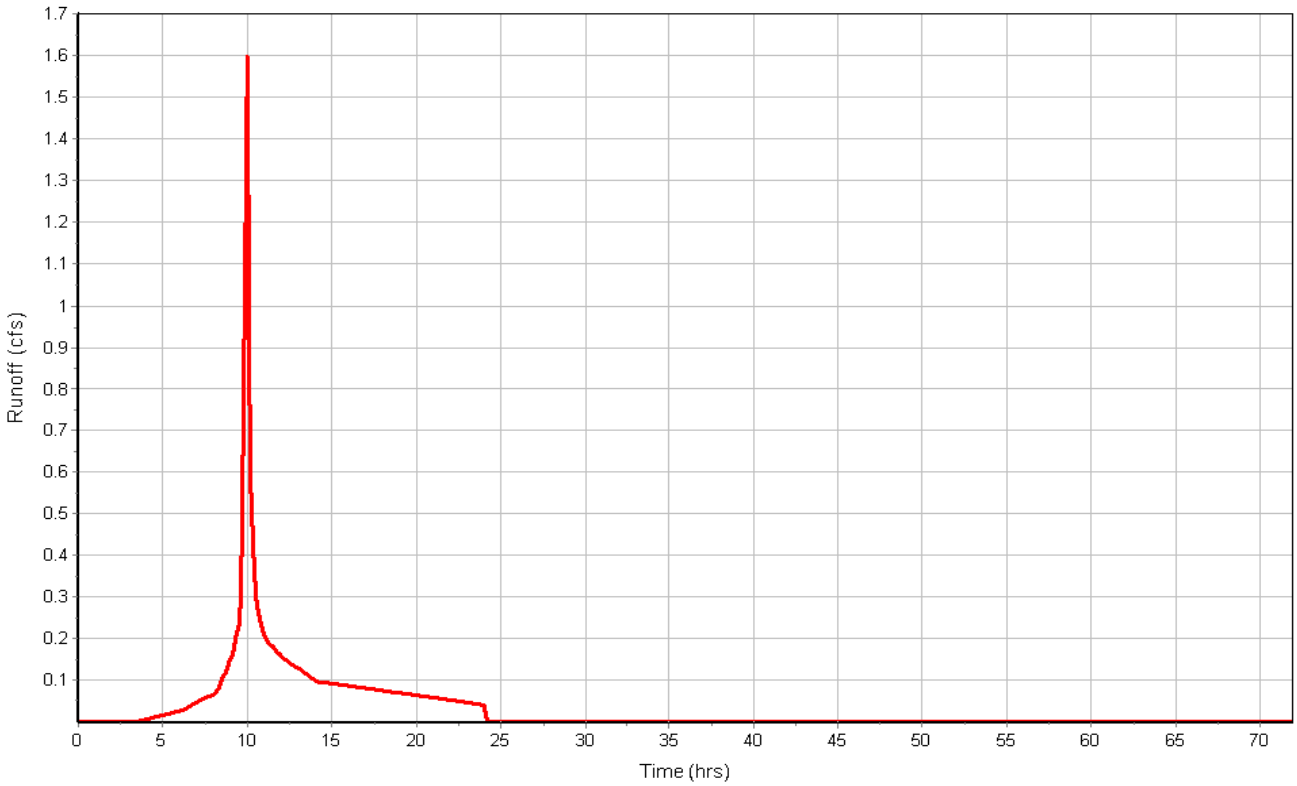
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Subbasin : A01

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A02

Input Data

Area (ac) 2.31
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	2.31	A	89.00
Composite Area & Weighted CN	2.31		89.00

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

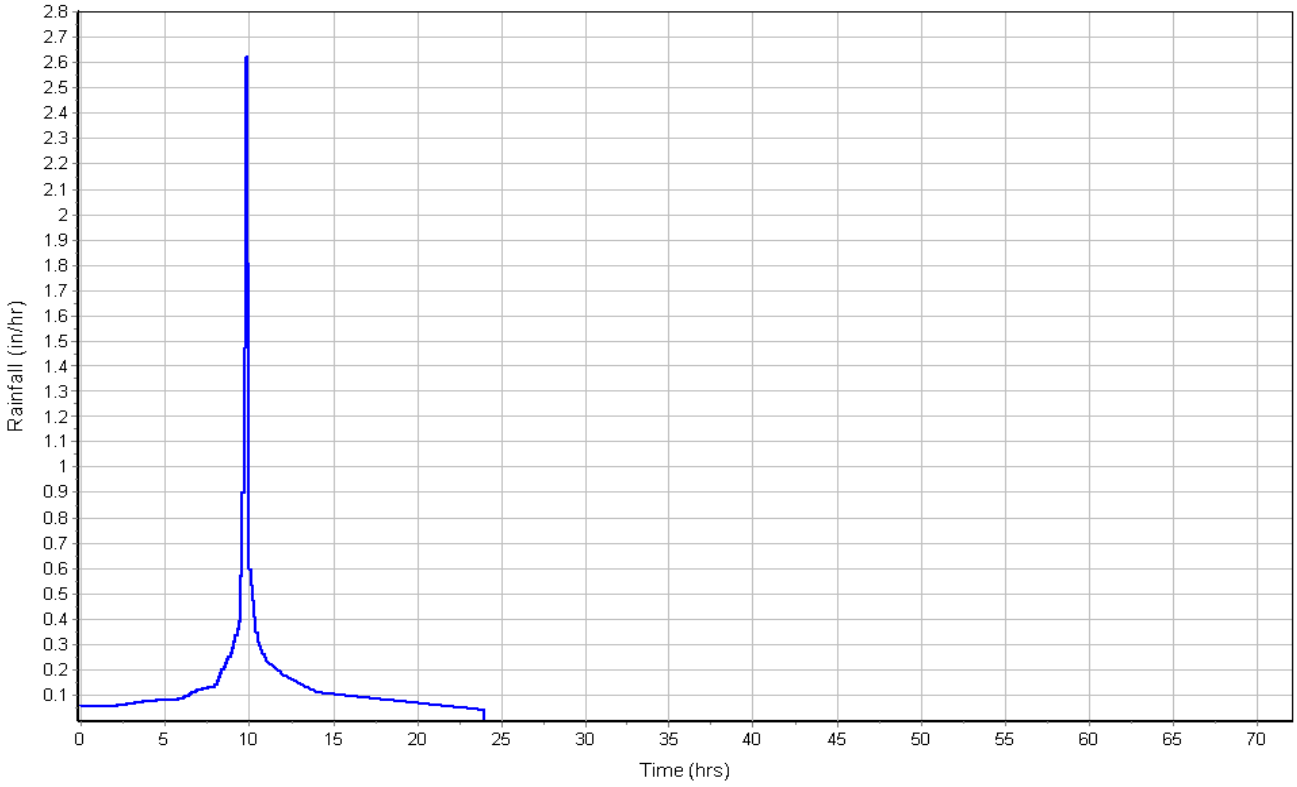
Total Rainfall (in) 3.48
Total Runoff (in) 2.34
Peak Runoff (cfs) 3.83
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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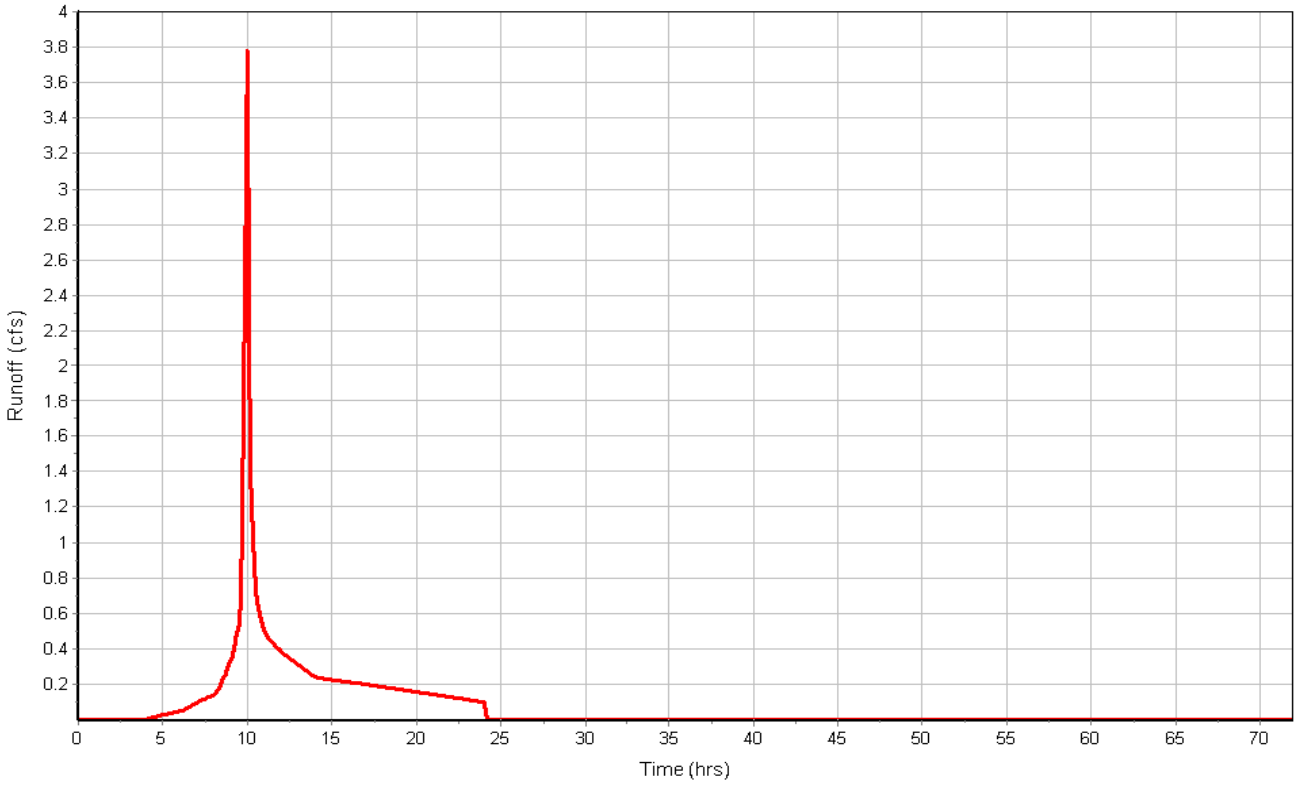
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Subbasin : A02

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A04

Input Data

Area (ac) 1.11
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	1.11	A	89.00
Composite Area & Weighted CN	1.11		89.00

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

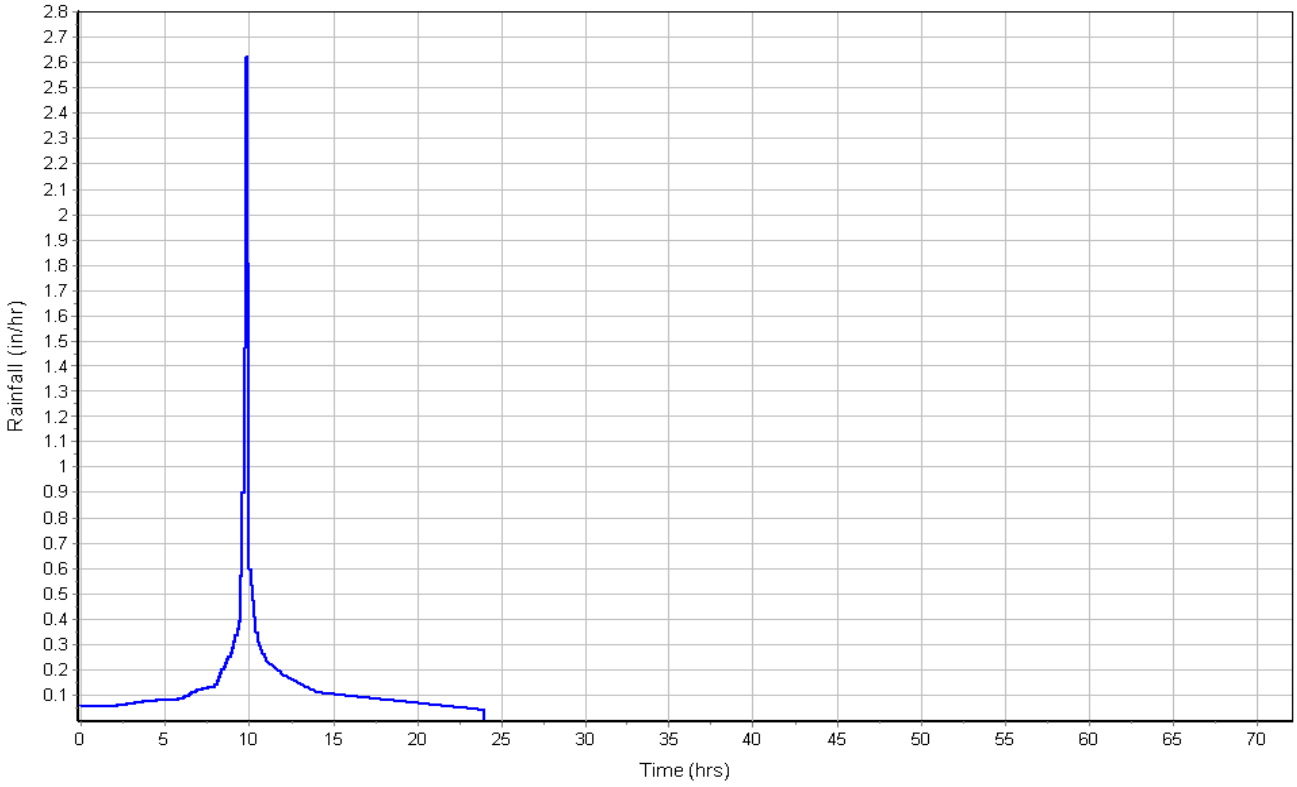
Total Rainfall (in) 3.48
Total Runoff (in) 2.34
Peak Runoff (cfs) 1.84
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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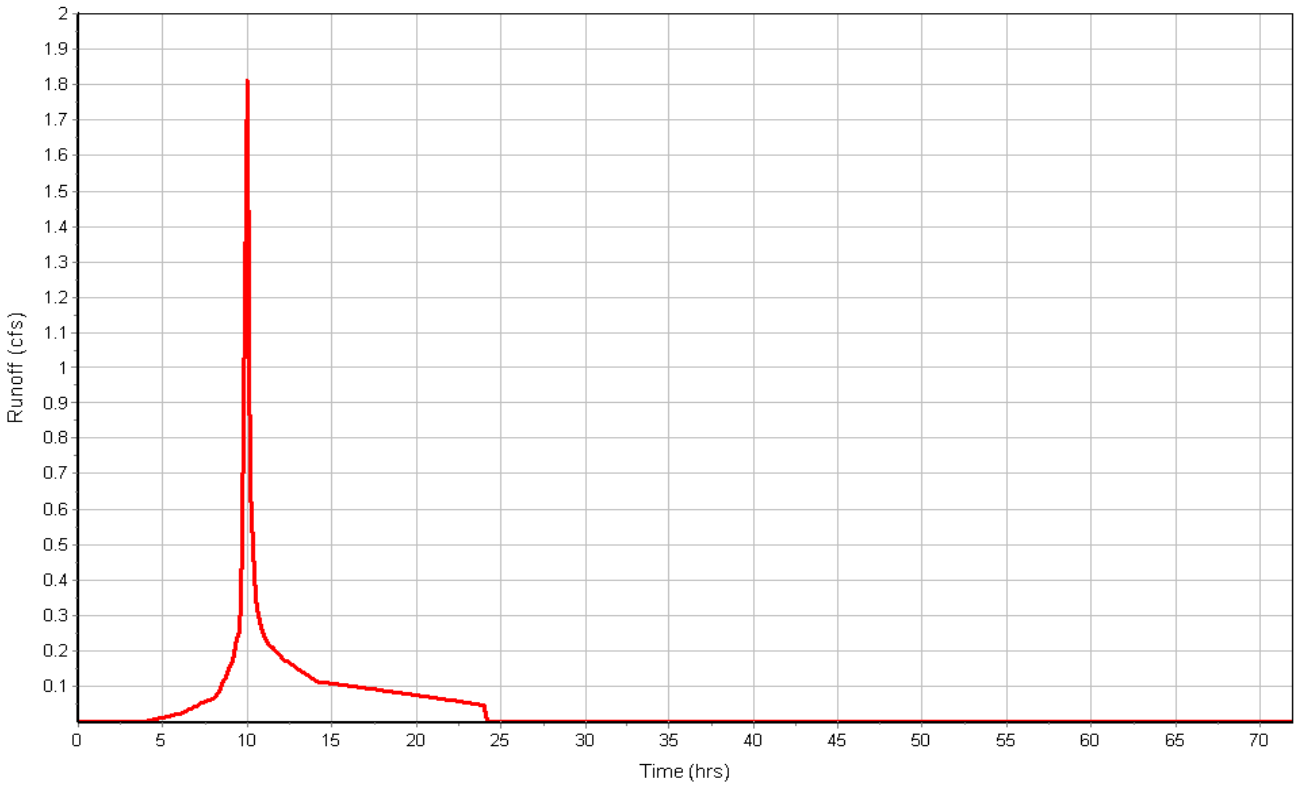
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Subbasin : A04

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A05

Input Data

Area (ac)	2.33
Weighted Curve Number	89.00
Rain Gage ID	Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	2.33	A	89.00
Composite Area & Weighted CN	2.33		89.00

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

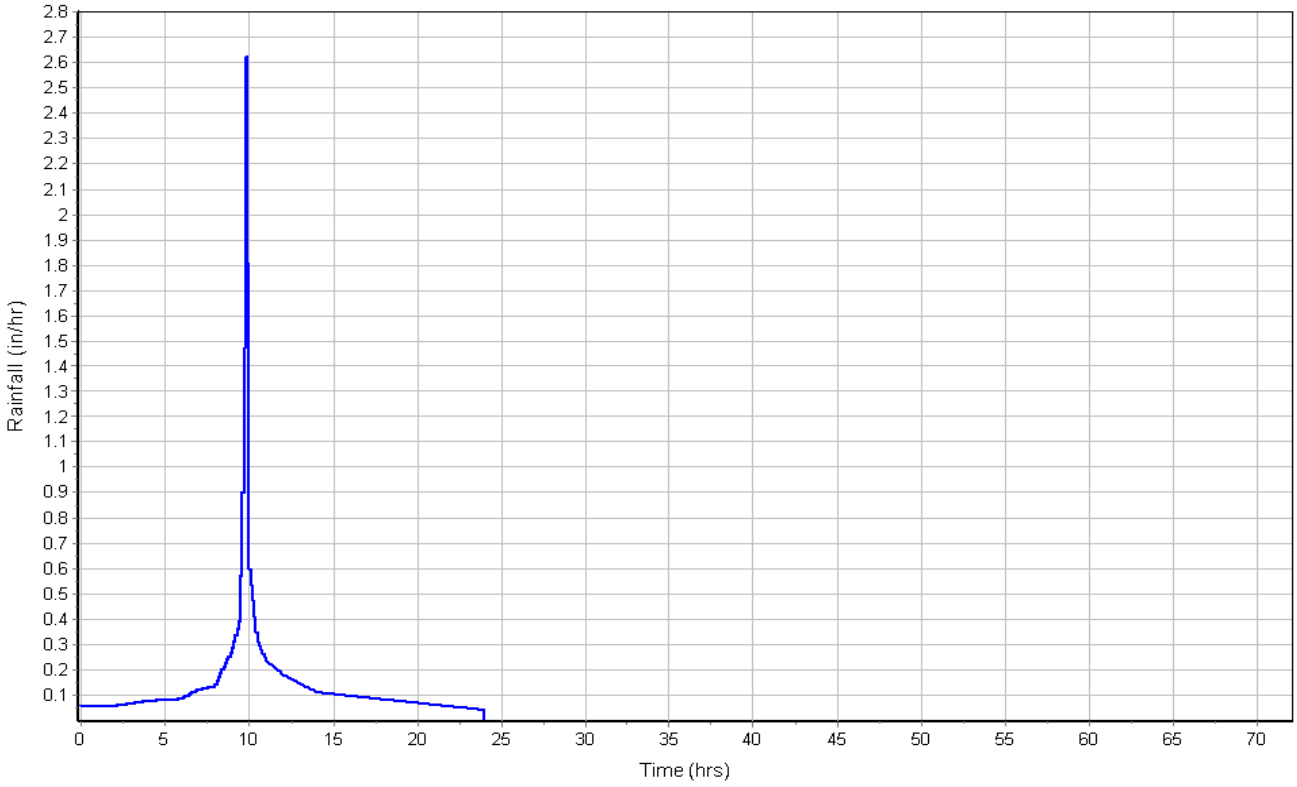
Total Rainfall (in)	3.48
Total Runoff (in)	2.34
Peak Runoff (cfs)	3.86
Weighted Curve Number	89.00
Time of Concentration (days hh:mm:ss)	0 00:10:00

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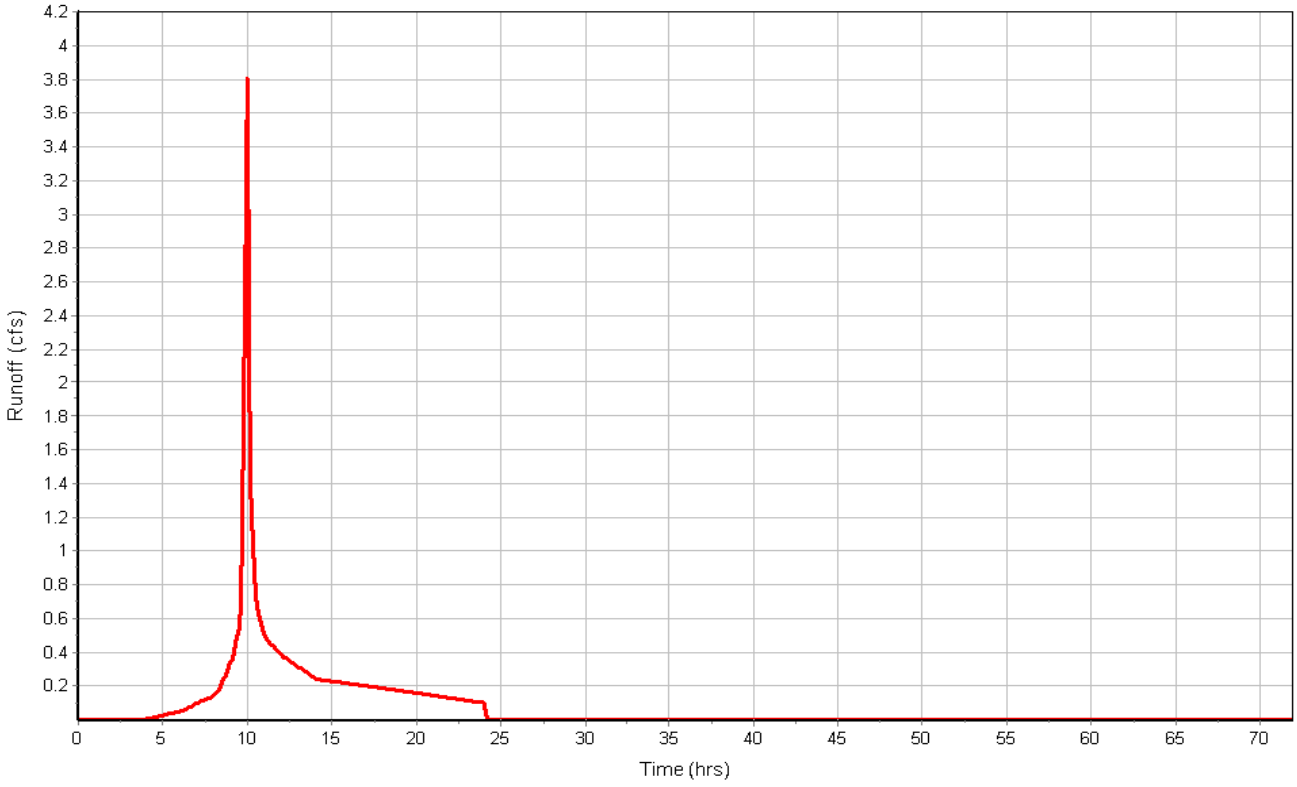
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Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A06

Input Data

Area (ac) 1.52
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	1.52	A	89.00
Composite Area & Weighted CN	1.52		89.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

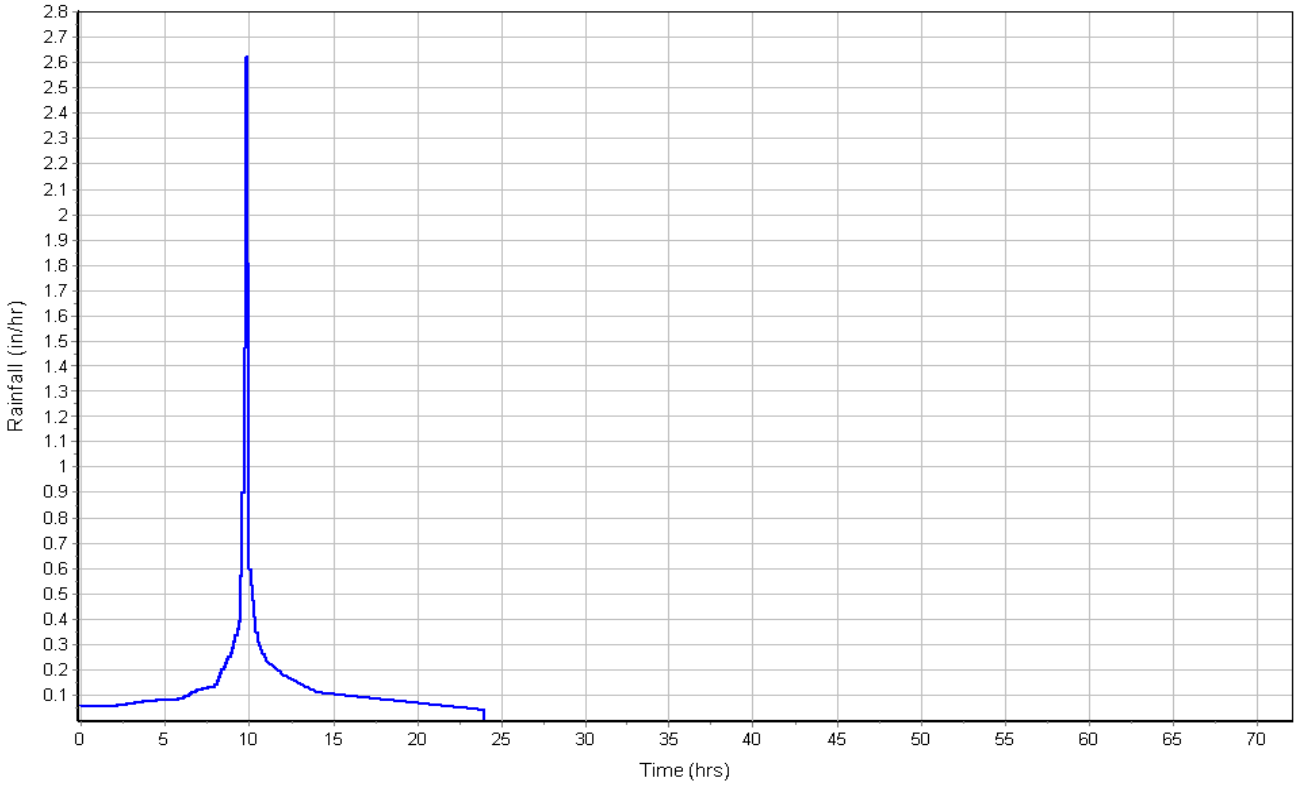
Total Rainfall (in) 3.48
Total Runoff (in) 2.34
Peak Runoff (cfs) 2.53
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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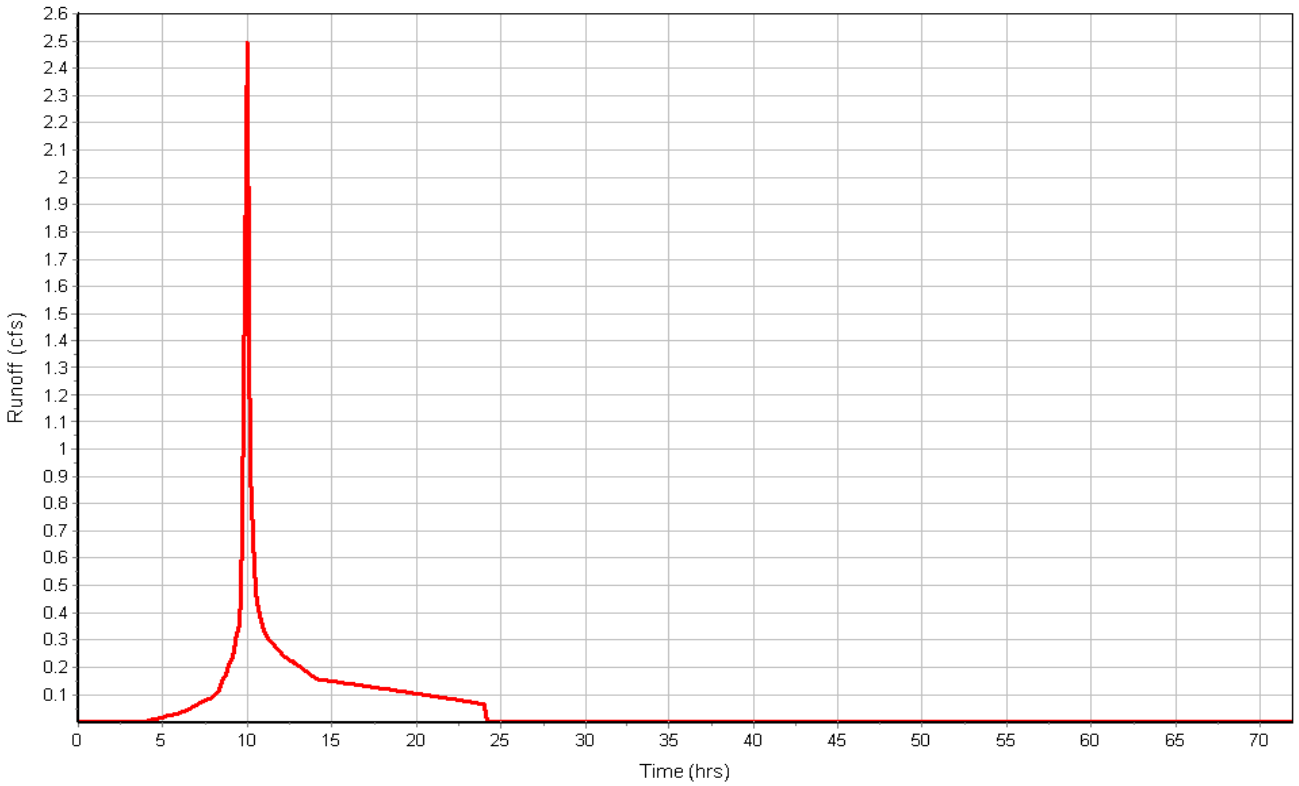
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Subbasin : A06

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A07

Input Data

Area (ac) 0.45
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	0.45	A	89.00
Composite Area & Weighted CN	0.45		89.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

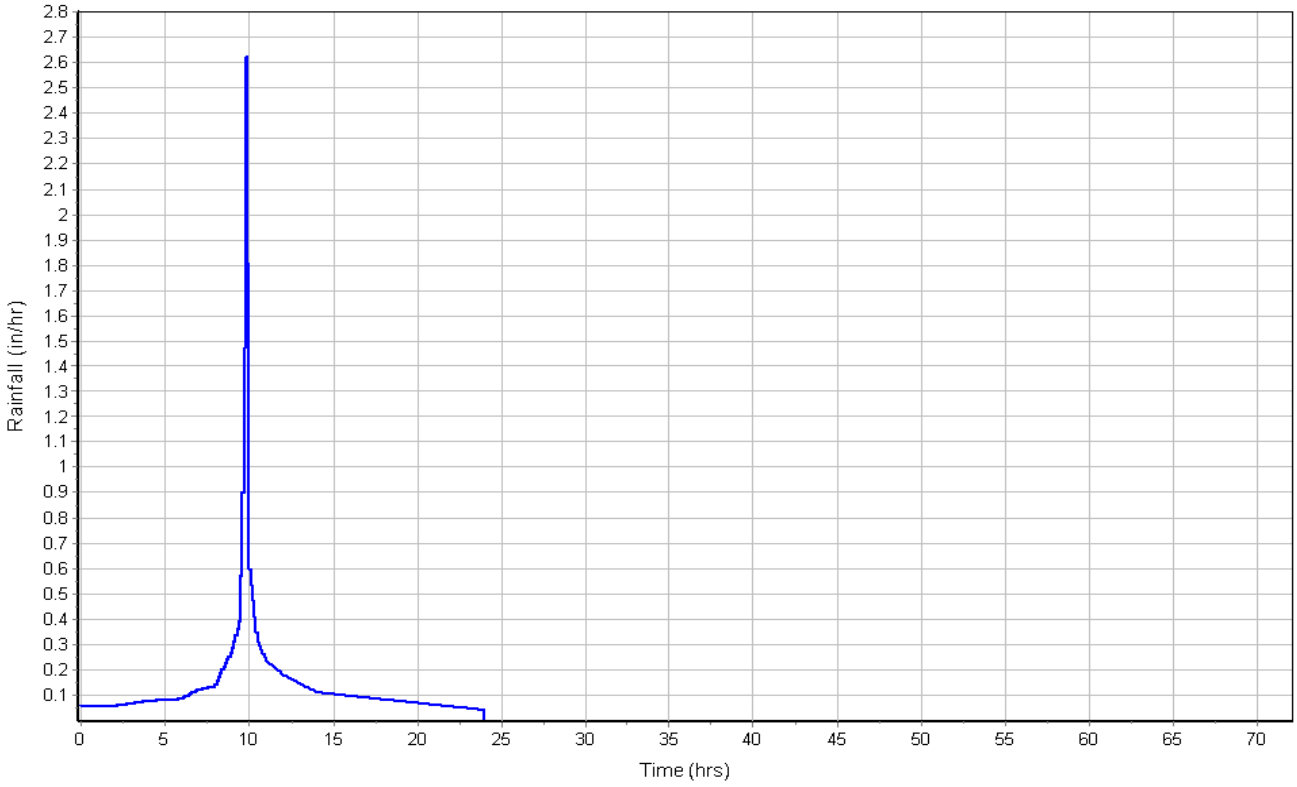
Total Rainfall (in) 3.48
Total Runoff (in) 2.34
Peak Runoff (cfs) 0.74
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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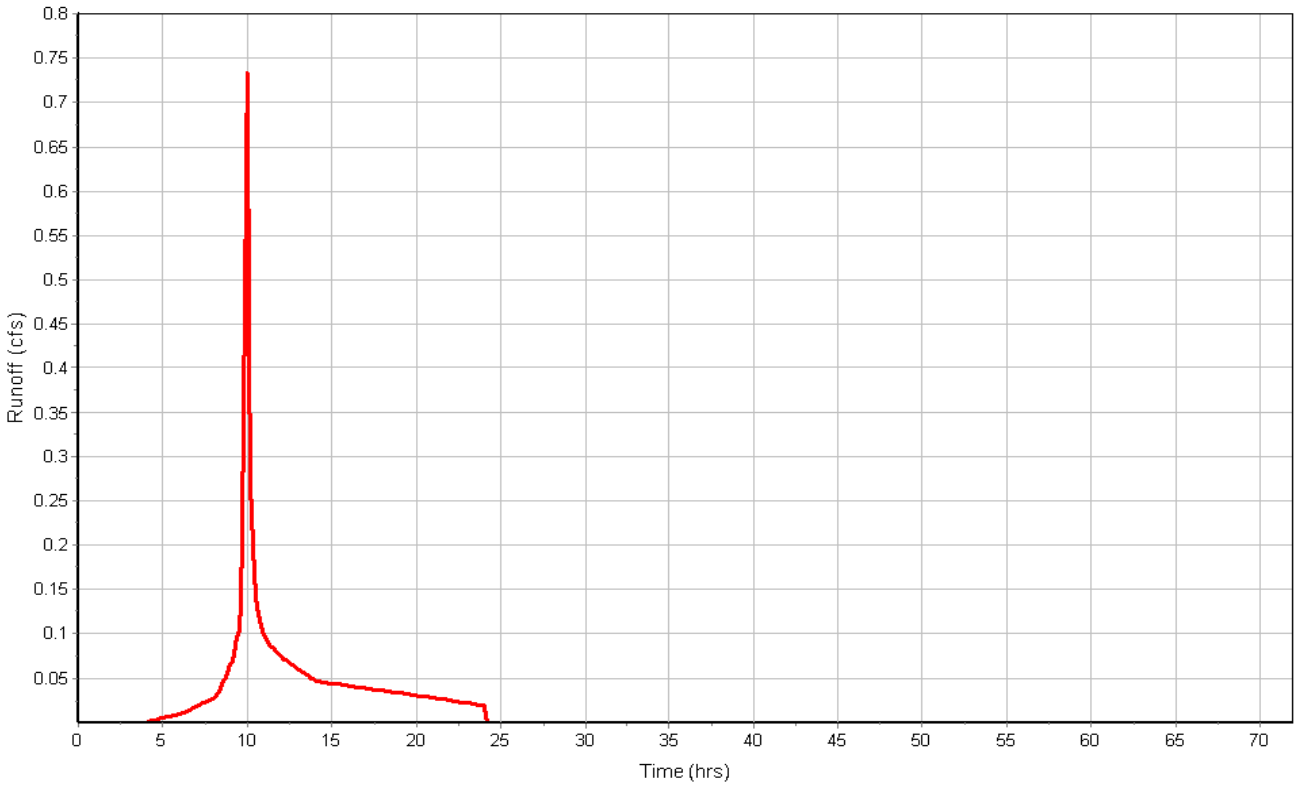
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Subbasin : A07

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A08

Input Data

Area (ac) 1.59
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	1.59	A	89.00
Composite Area & Weighted CN	1.59		89.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

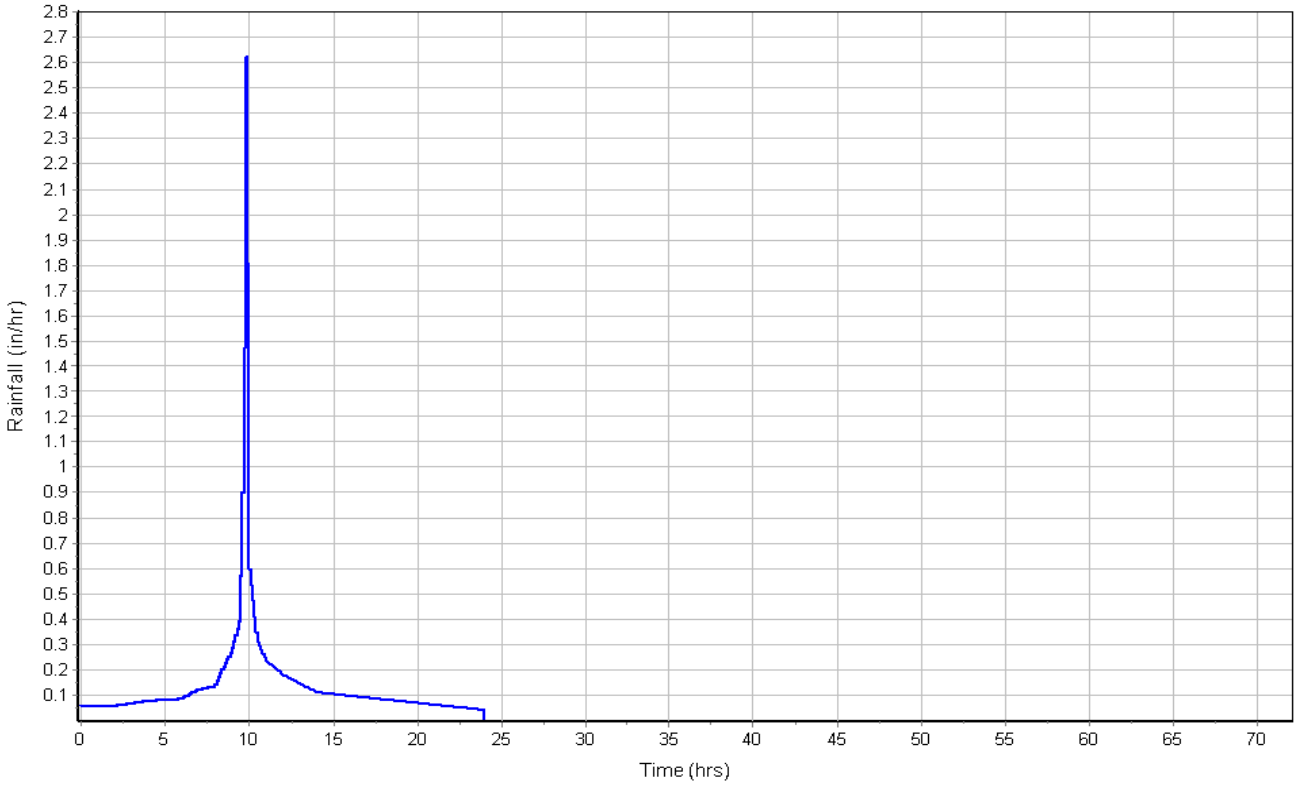
Total Rainfall (in) 3.48
Total Runoff (in) 2.34
Peak Runoff (cfs) 2.63
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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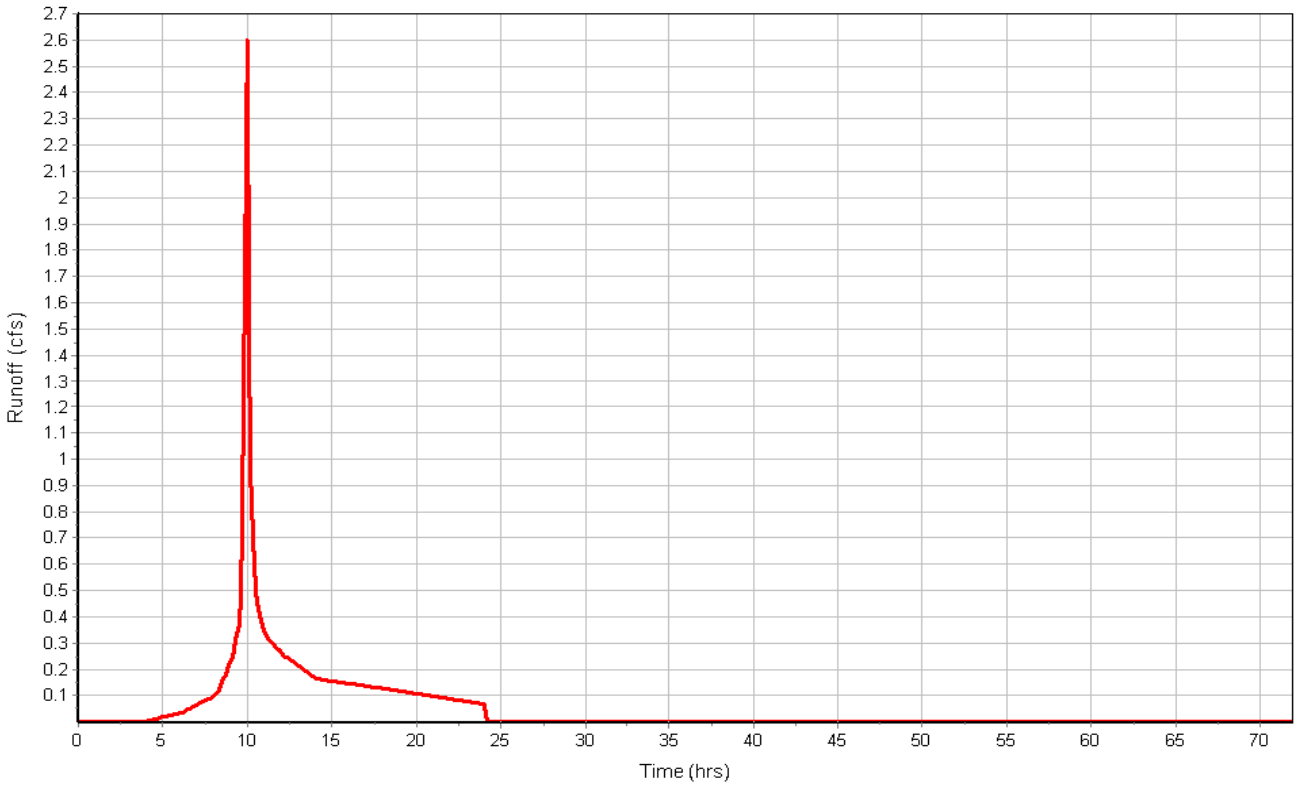
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Subbasin : A08

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A09

Input Data

Area (ac)	1.94
Weighted Curve Number	89.00
Rain Gage ID	Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	1.94	A	89.00
Composite Area & Weighted CN	1.94		89.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

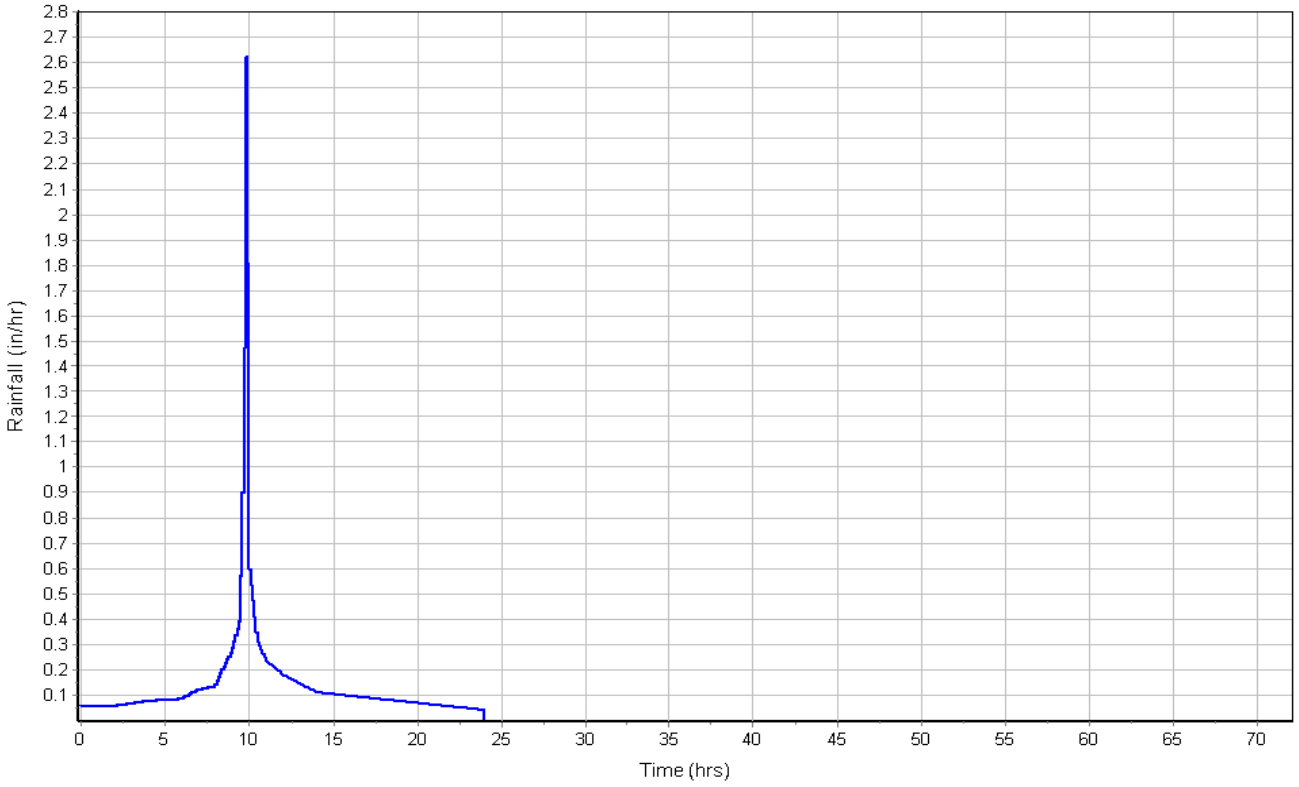
Total Rainfall (in)	3.48
Total Runoff (in)	2.34
Peak Runoff (cfs)	3.21
Weighted Curve Number	89.00
Time of Concentration (days hh:mm:ss)	0 00:10:00

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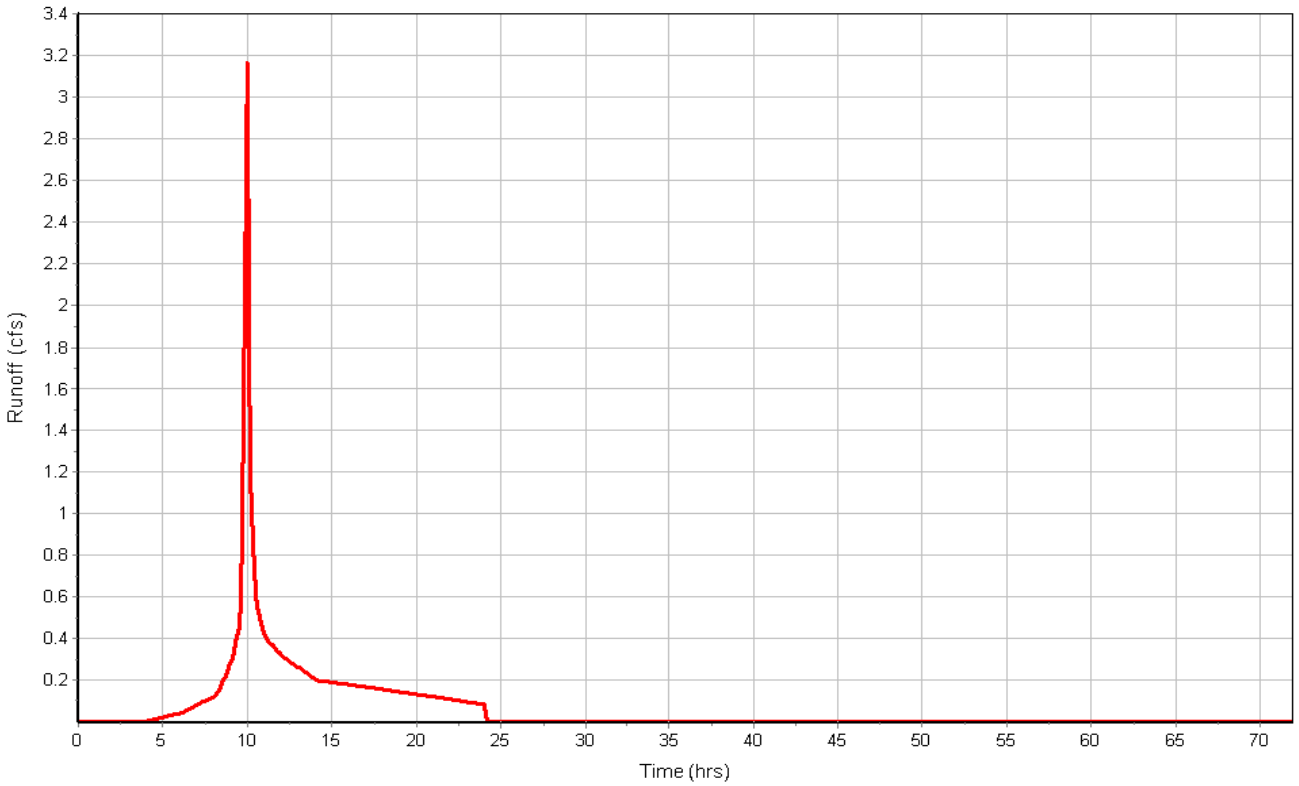
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Subbasin : A09

Rainfall Intensity Graph



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Subbasin : A10

Input Data

Area (ac) 16.37
Weighted Curve Number 84.72
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban industrial, 72% imp	11.29	A	81.00
Urban industrial, 72% imp	5.08	D	93.00
Composite Area & Weighted CN	16.37		84.72

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

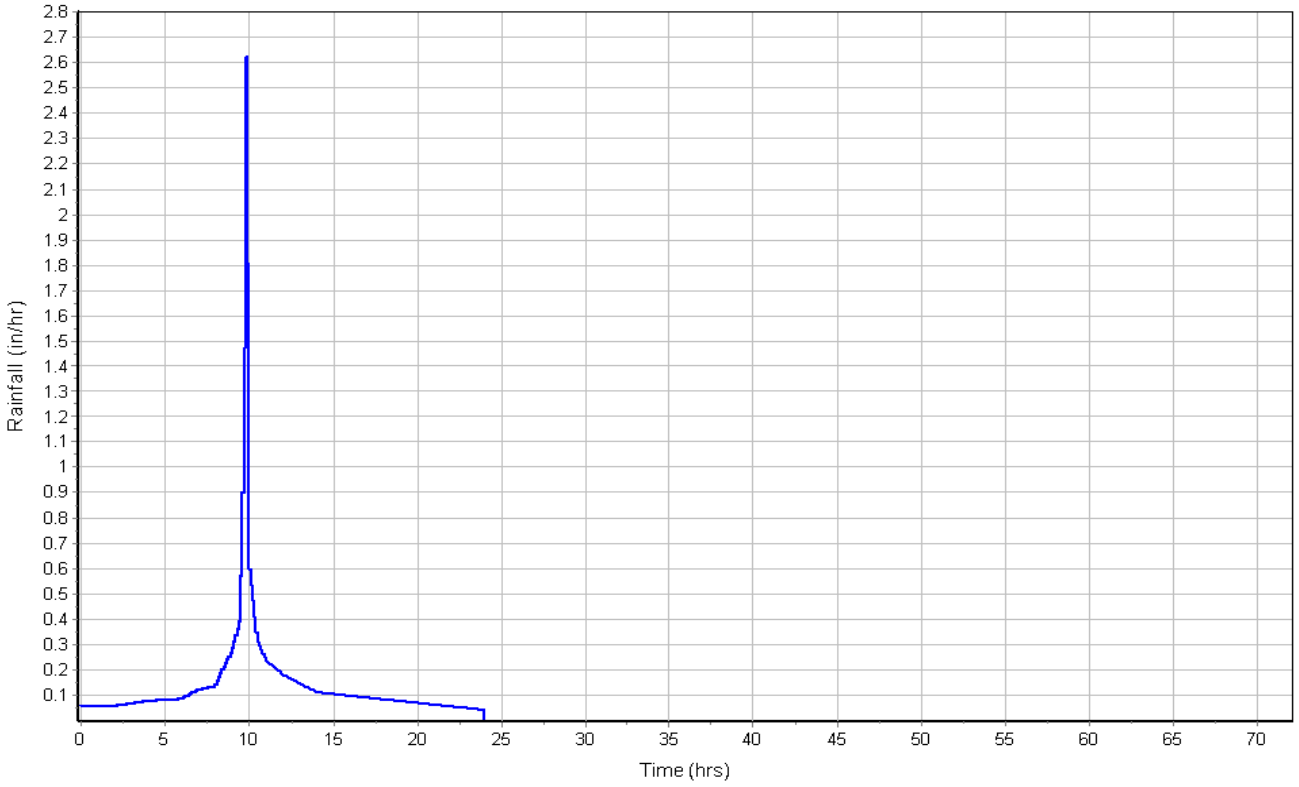
Total Rainfall (in) 3.48
Total Runoff (in) 1.98
Peak Runoff (cfs) 22.46
Weighted Curve Number 84.72
Time of Concentration (days hh:mm:ss) 0 00:10:00

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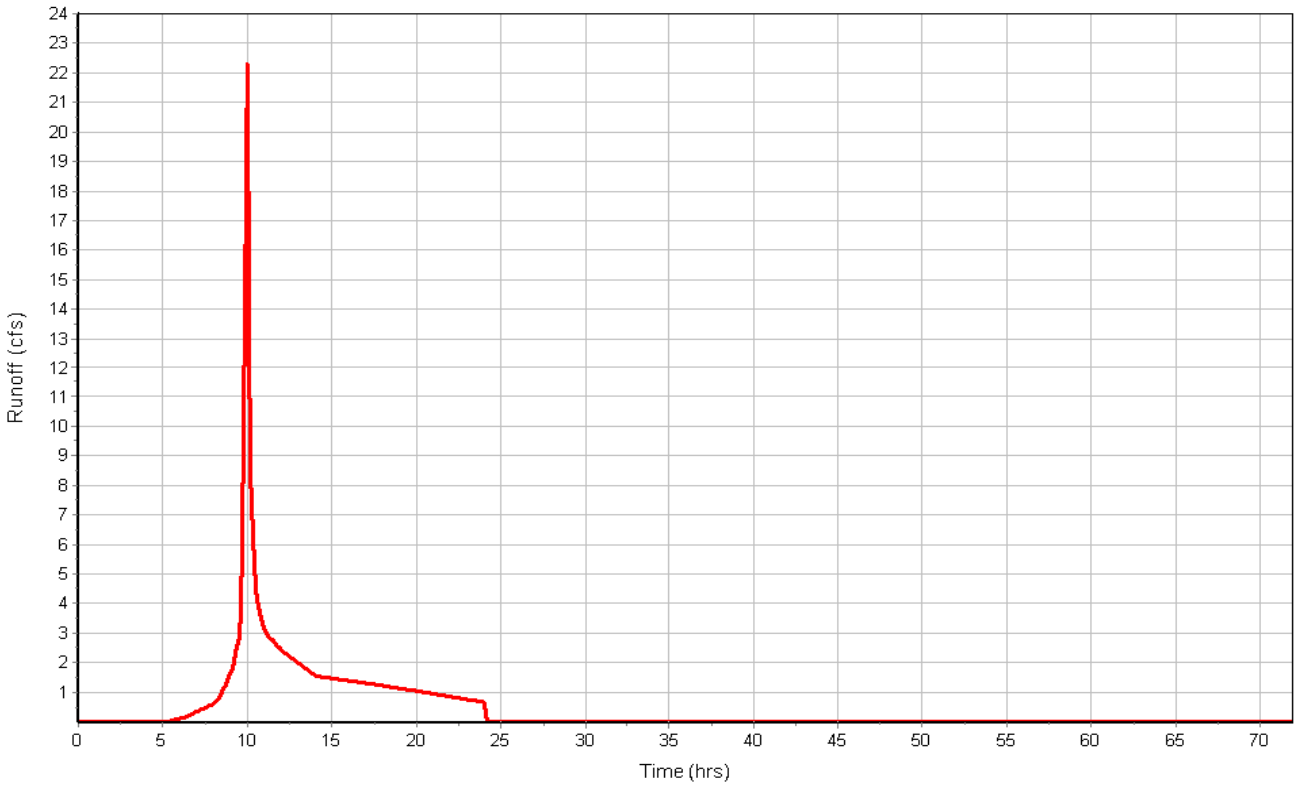
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Subbasin : A10

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A11a

Input Data

Area (ac)	0.92
Weighted Curve Number	98.00
Rain Gage ID	Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	0.52	A	98.00
Paved parking & roofs	0.40	D	98.00
Composite Area & Weighted CN	0.92		98.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

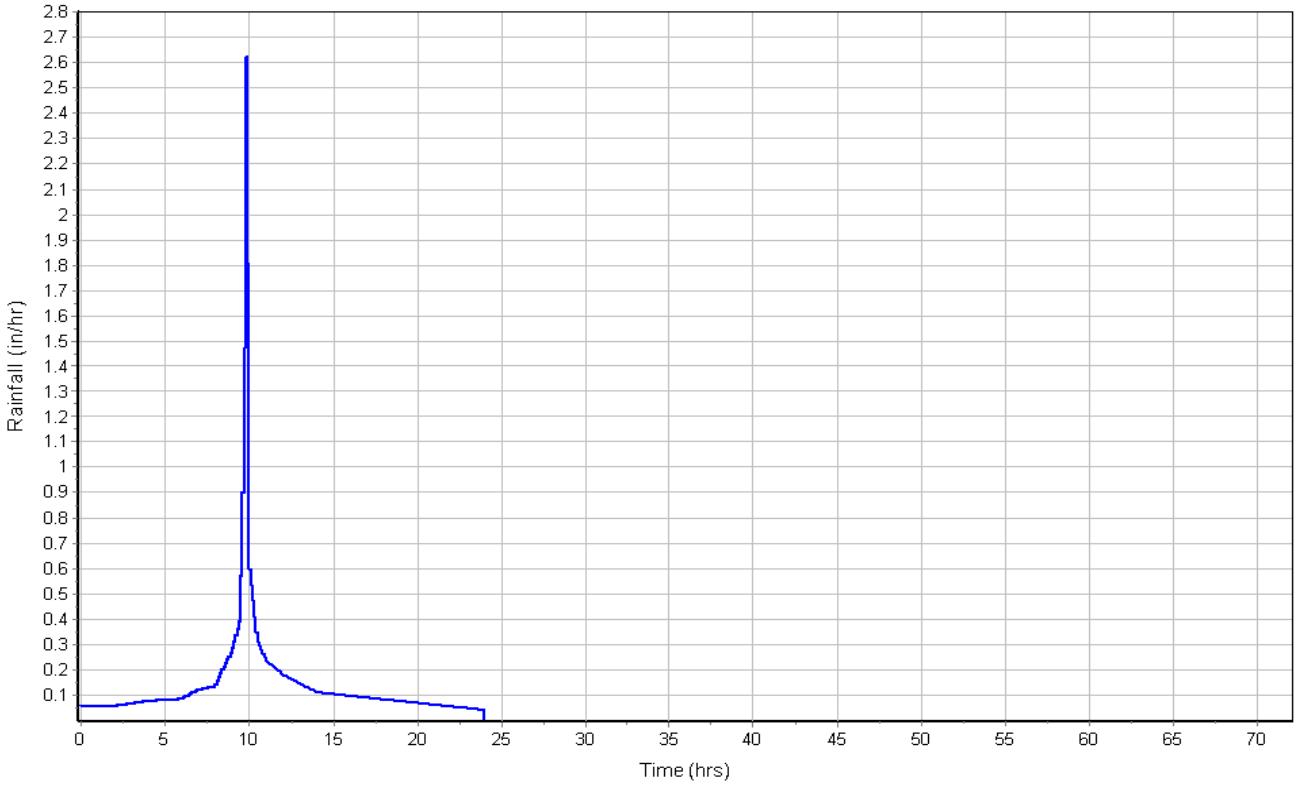
Total Rainfall (in)	3.48
Total Runoff (in)	3.25
Peak Runoff (cfs)	2.01
Weighted Curve Number	98.00
Time of Concentration (days hh:mm:ss)	0 00:10:00

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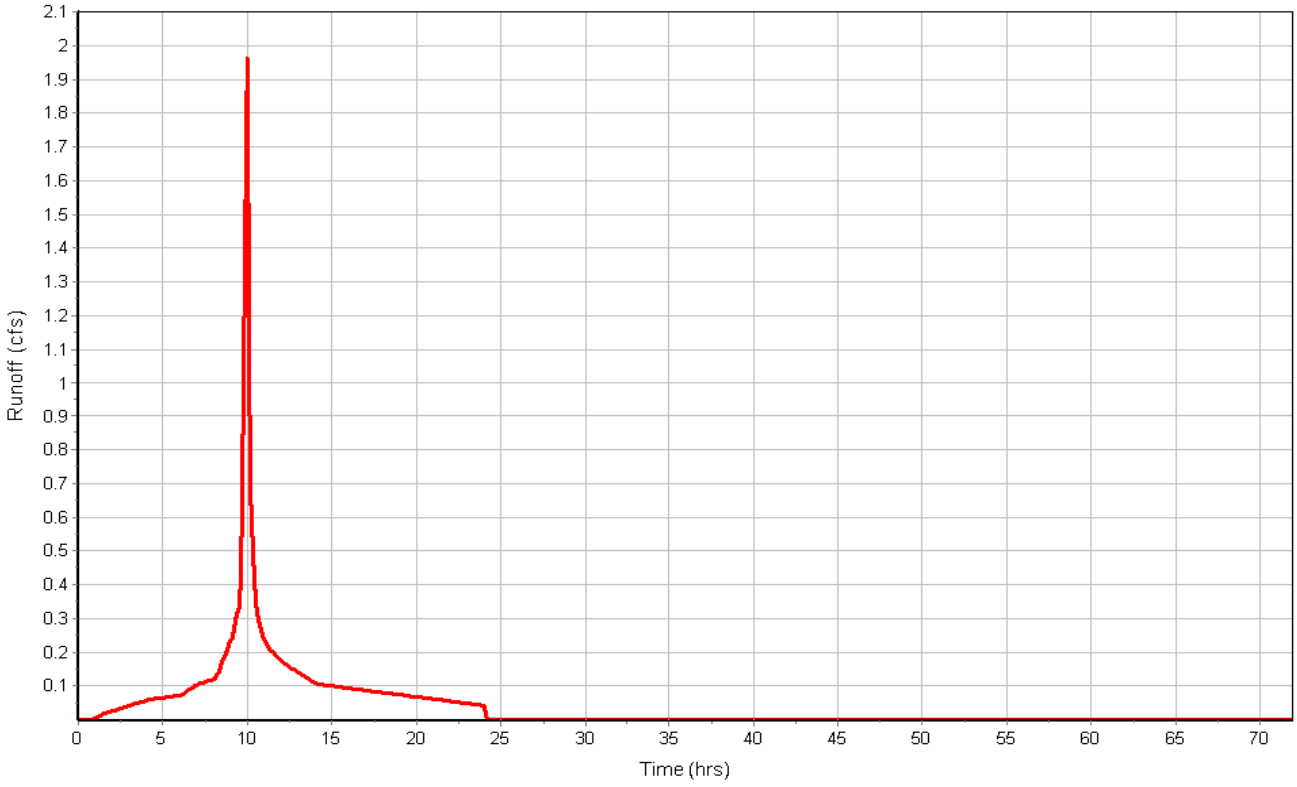
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Subbasin : A11a

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A11b

Input Data

Area (ac)	0.64
Weighted Curve Number	98.00
Rain Gage ID	Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	0.43	A	98.00
Paved parking & roofs	0.21	D	98.00
Composite Area & Weighted CN	0.64		98.00

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

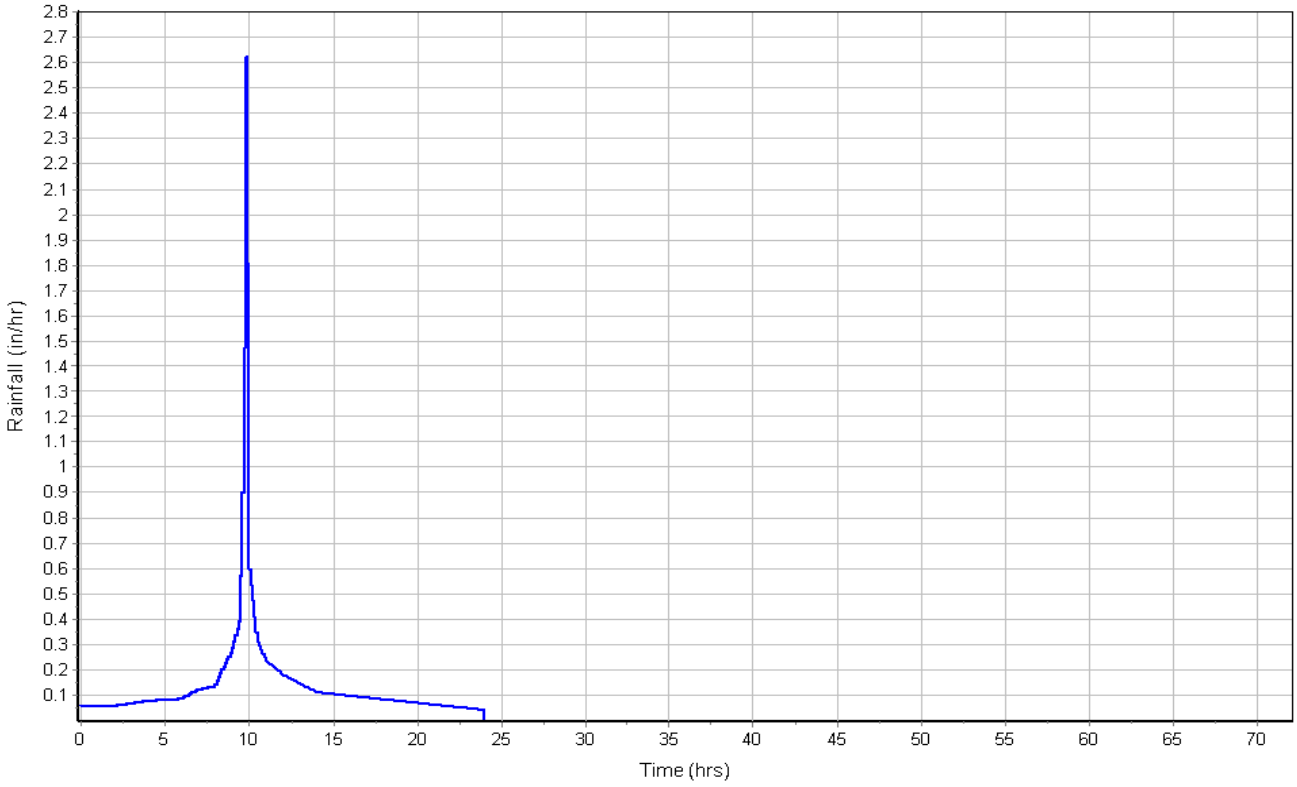
Total Rainfall (in)	3.48
Total Runoff (in)	3.25
Peak Runoff (cfs)	1.39
Weighted Curve Number	98.00
Time of Concentration (days hh:mm:ss)	0 00:10:00

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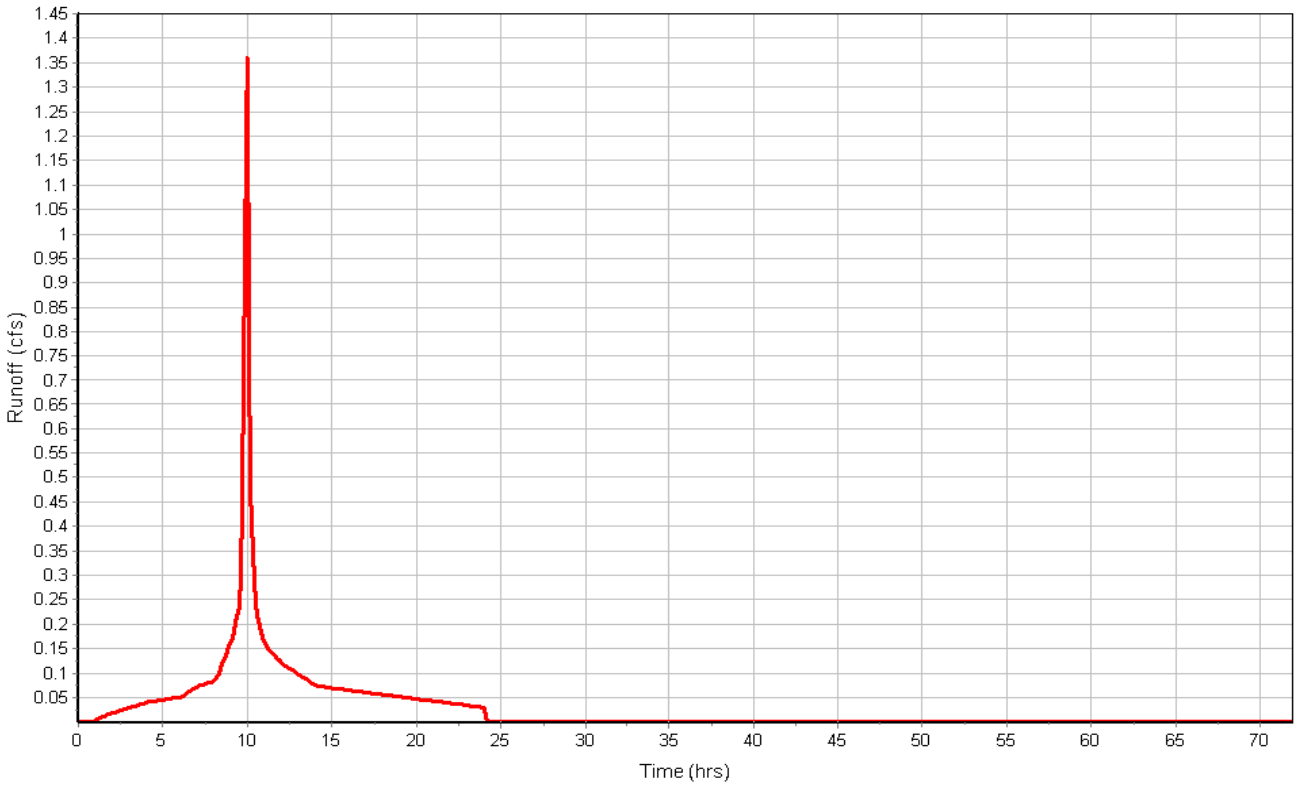
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Subbasin : A11b

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : A12

Input Data

Area (ac) 1.73
Weighted Curve Number 98.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	1.73	A	98.00
Composite Area & Weighted CN	1.73		98.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

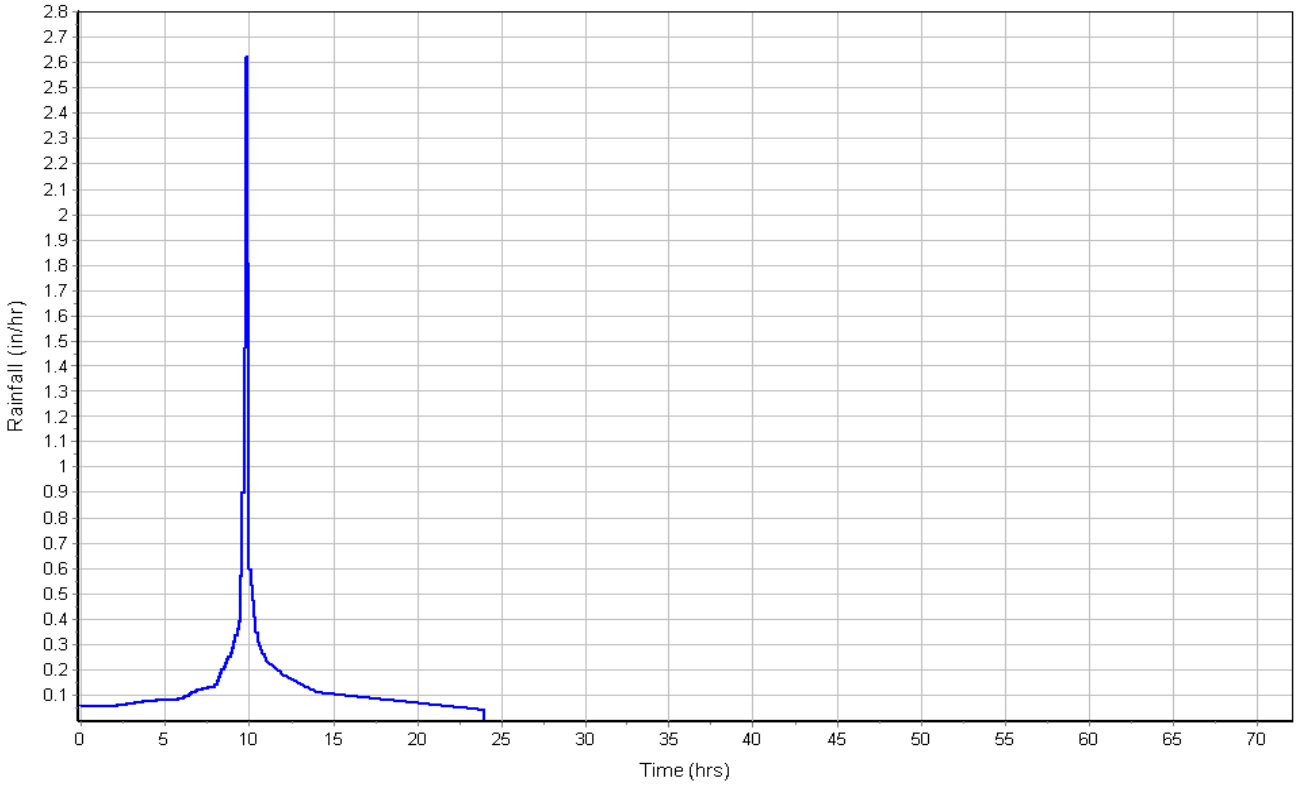
Total Rainfall (in) 3.48
Total Runoff (in) 3.25
Peak Runoff (cfs) 3.77
Weighted Curve Number 98.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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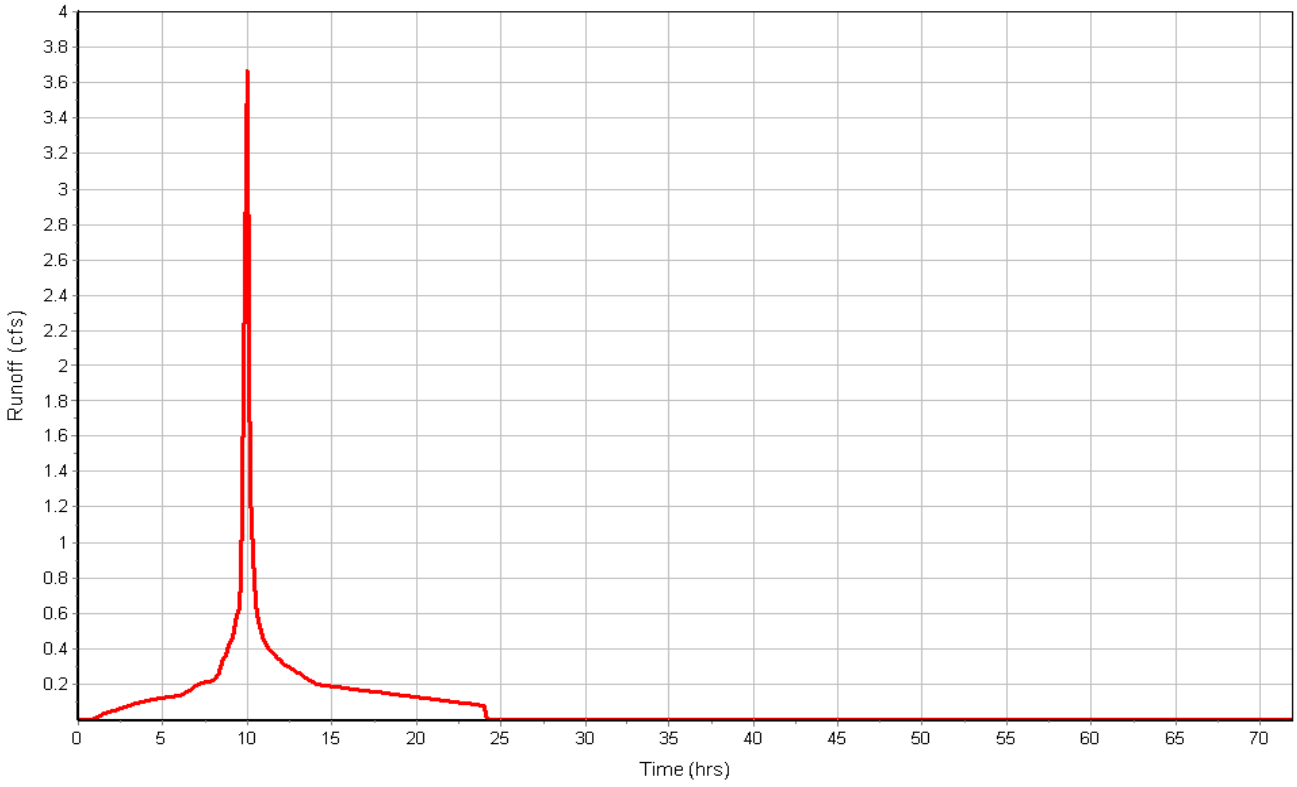
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Subbasin : A12

Rainfall Intensity Graph



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Subbasin : A13

Input Data

Area (ac) 3.78
Weighted Curve Number 98.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved roads with curbs & sewers	3.78	A	98.00
Composite Area & Weighted CN	3.78		98.00

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

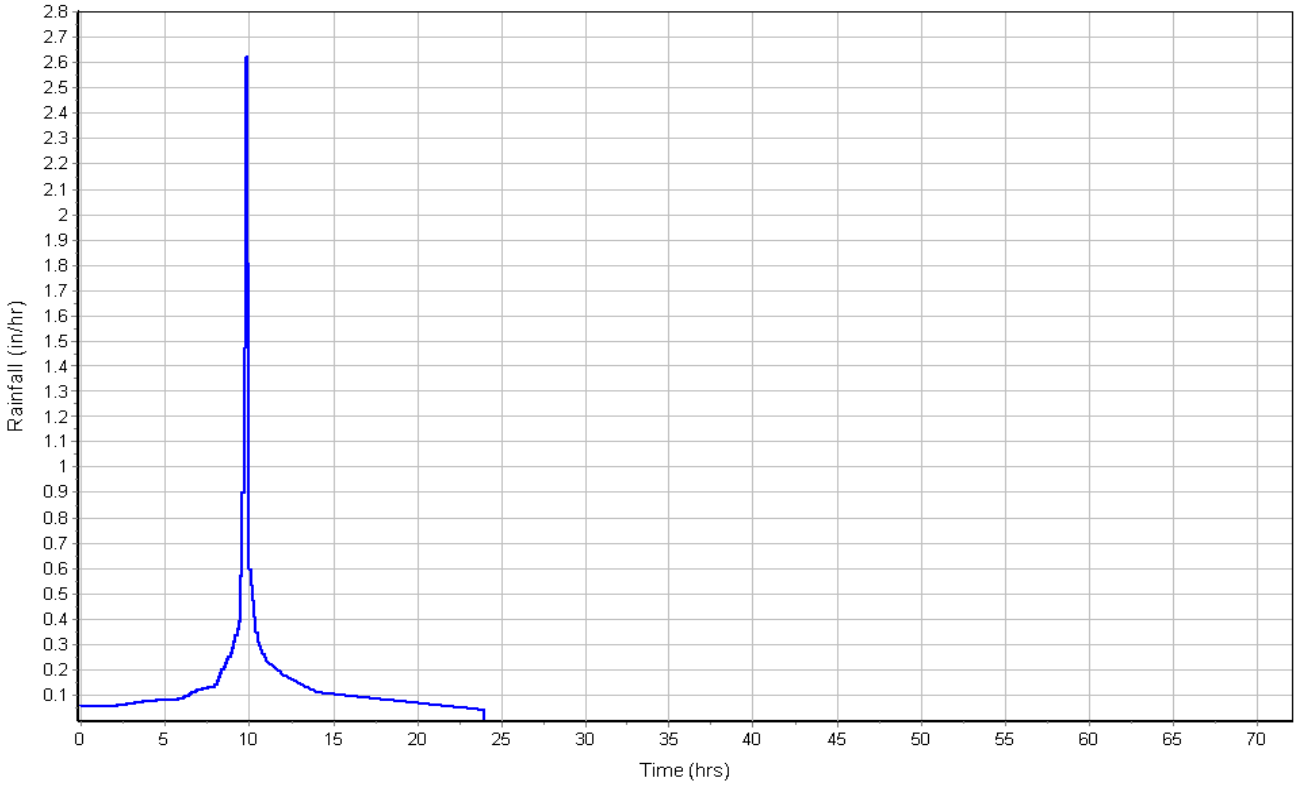
Total Rainfall (in) 3.48
Total Runoff (in) 3.25
Peak Runoff (cfs) 8.24
Weighted Curve Number 98.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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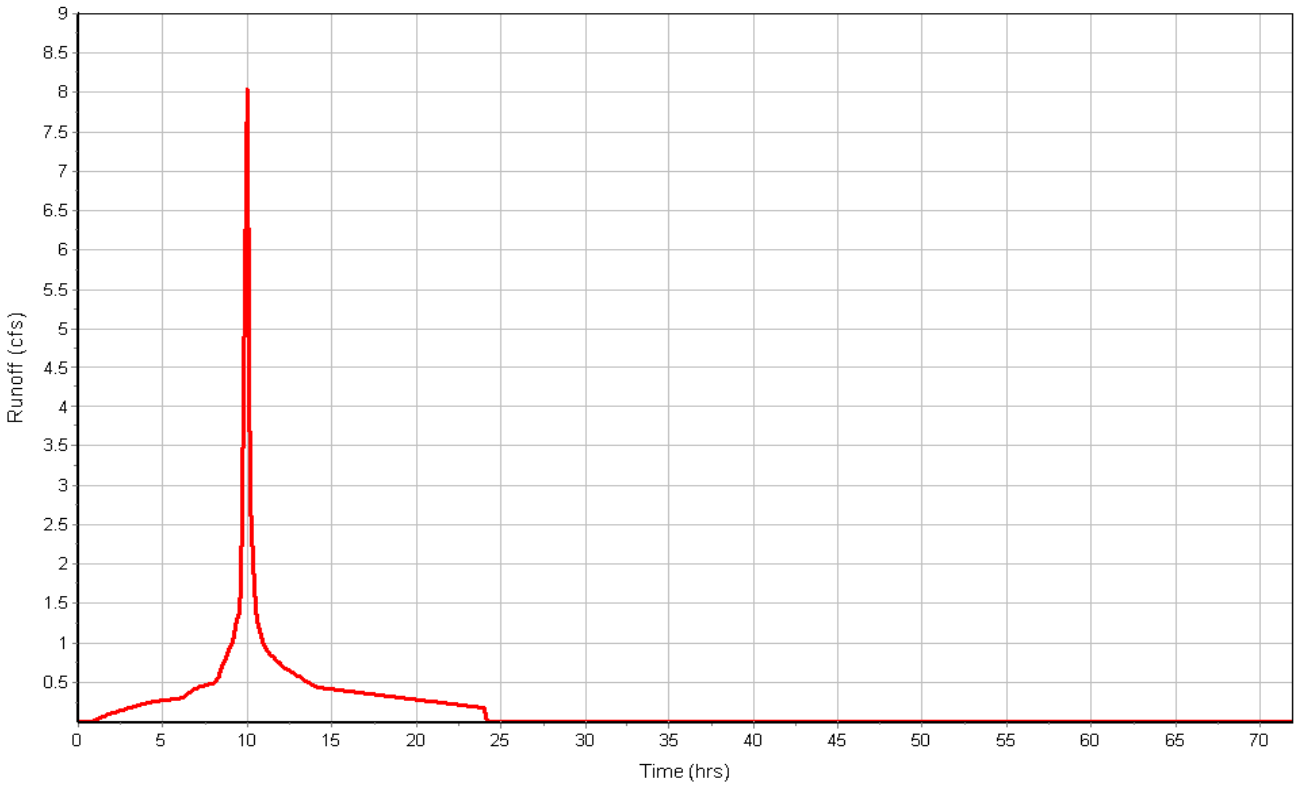
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Subbasin : A13

Rainfall Intensity Graph



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Subbasin : A3A

Input Data

Area (ac) 0.54
Weighted Curve Number 95.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	0.54	D	95.00
Composite Area & Weighted CN	0.54		95.00

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

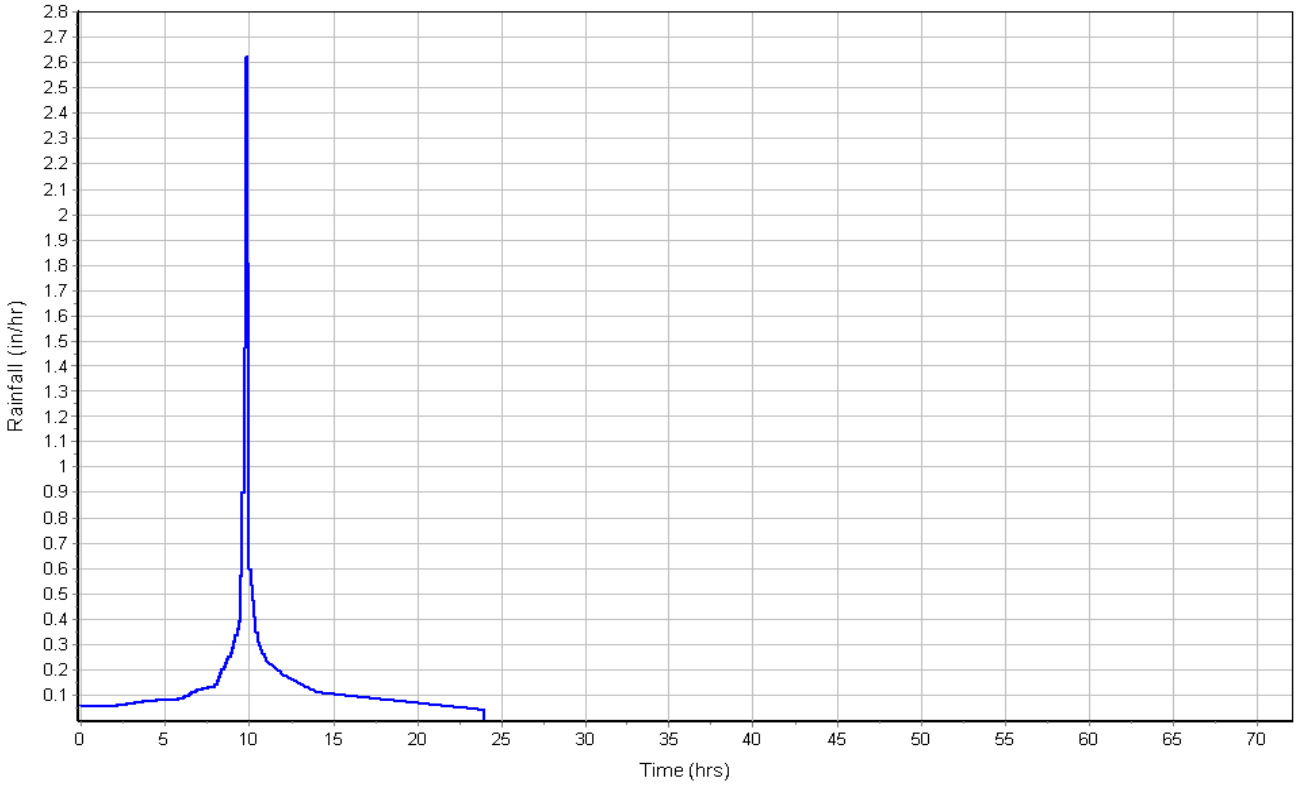
Total Rainfall (in) 3.48
Total Runoff (in) 2.92
Peak Runoff (cfs) 1.10
Weighted Curve Number 95.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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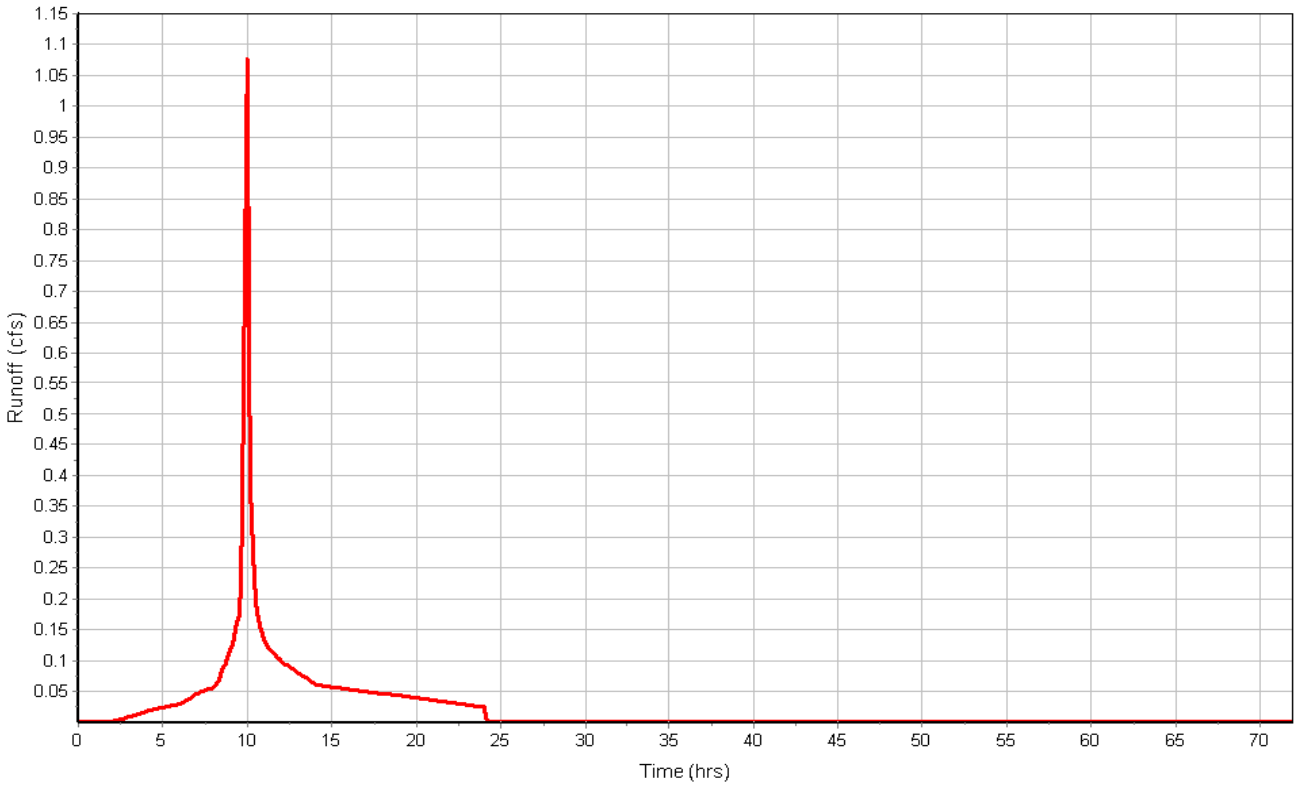
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Subbasin : A3A

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Subbasin : A3B

Input Data

Area (ac) 0.80
Weighted Curve Number 91.77
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	0.43	A	89.00
Urban commercial, 85% imp	0.37	D	95.00
Composite Area & Weighted CN	0.80		91.77

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

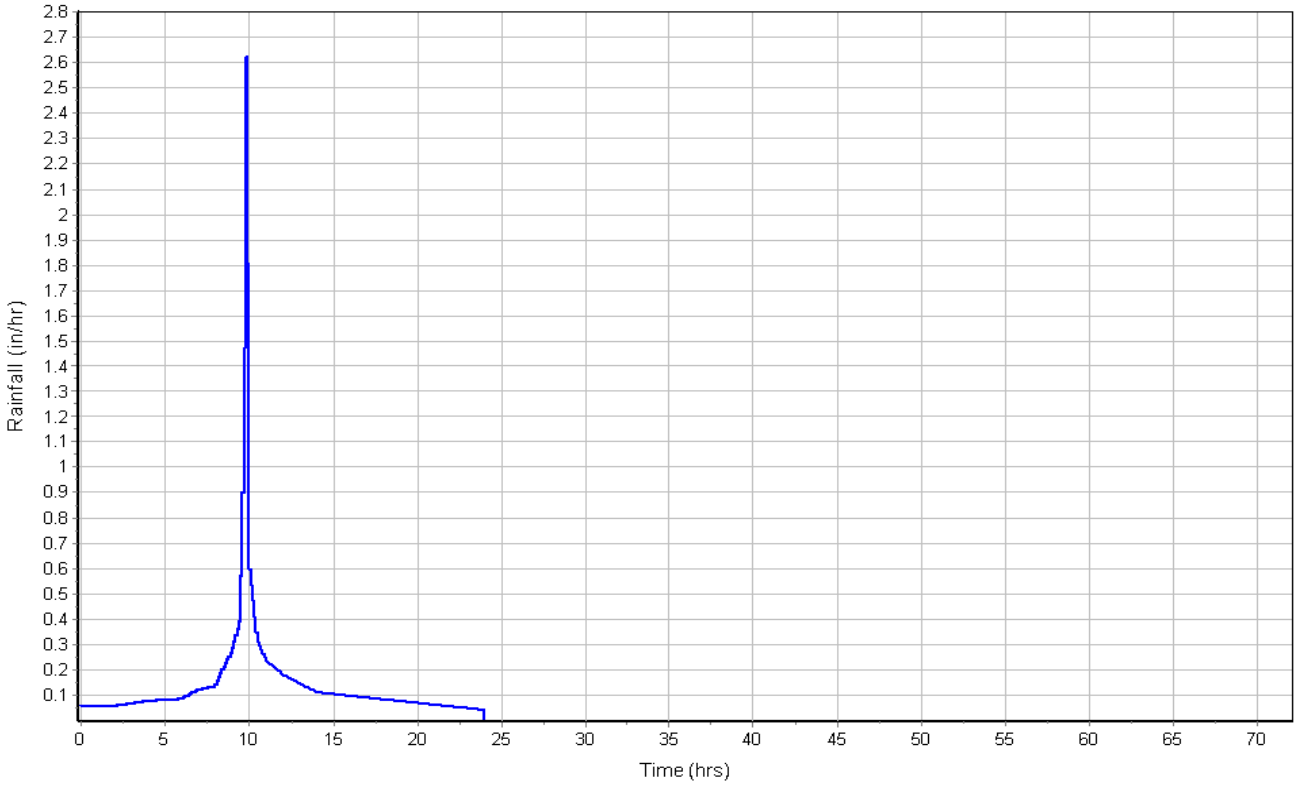
Total Rainfall (in) 3.48
Total Runoff (in) 2.60
Peak Runoff (cfs) 1.47
Weighted Curve Number 91.77
Time of Concentration (days hh:mm:ss) 0 00:10:00

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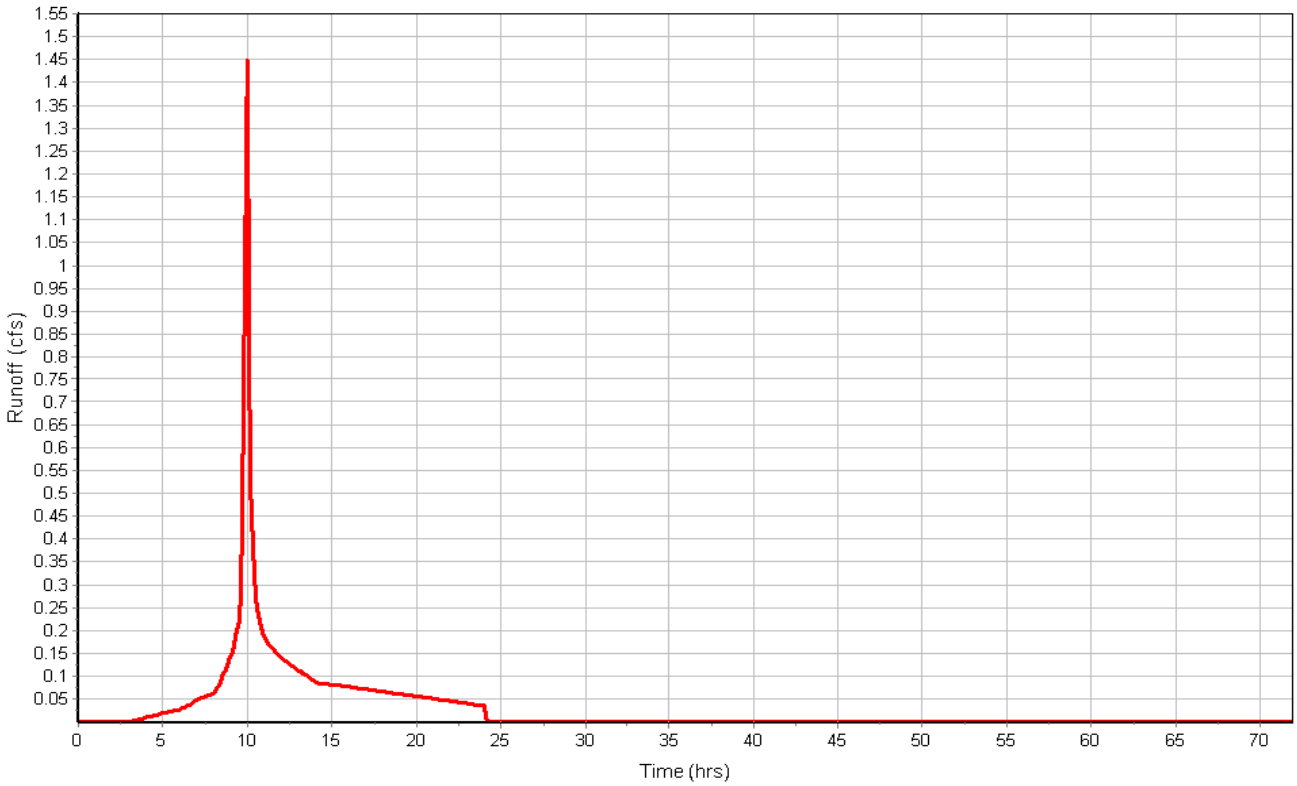
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Subbasin : A3B

Rainfall Intensity Graph



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Subbasin : A3C

Input Data

Area (ac) 1.34
Weighted Curve Number 89.00
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Urban commercial, 85% imp	1.34	A	89.00
Composite Area & Weighted CN	1.34		89.00

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

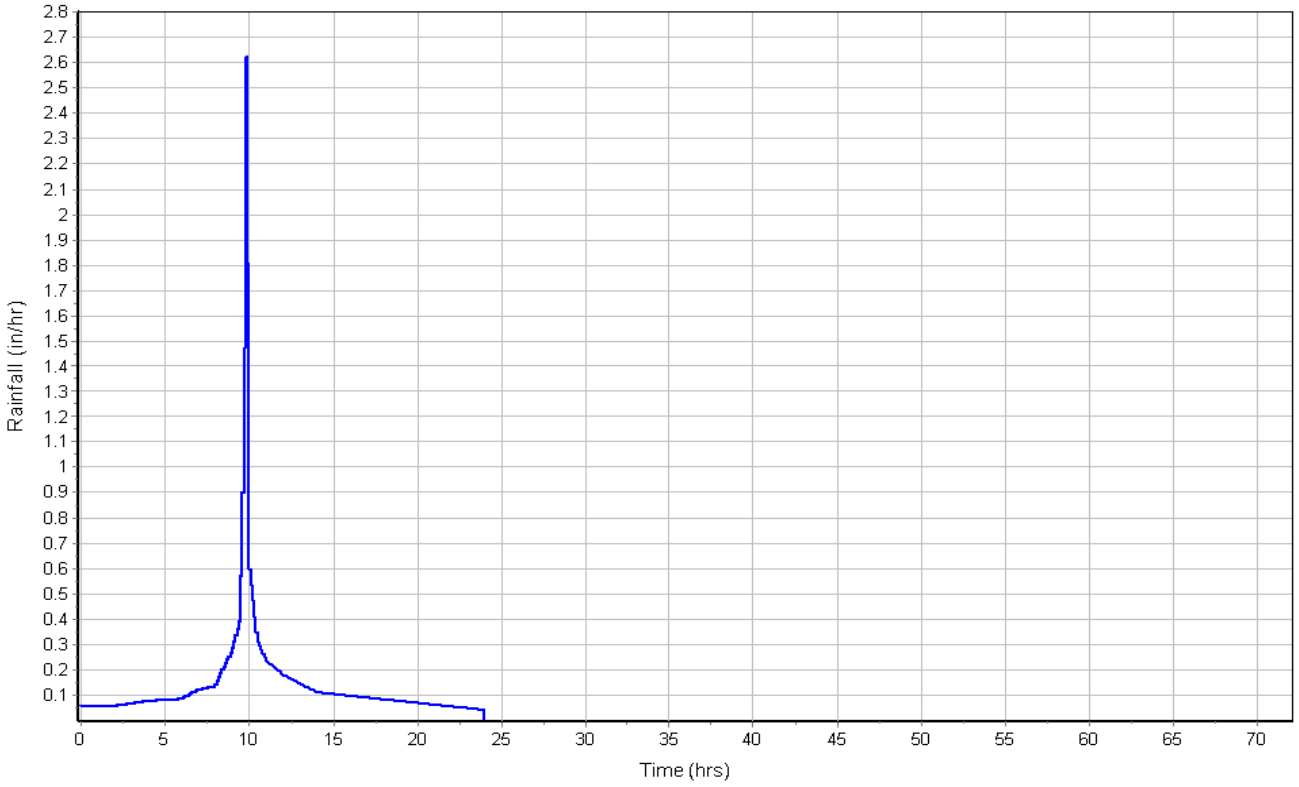
Total Rainfall (in) 3.48
Total Runoff (in) 2.34
Peak Runoff (cfs) 2.22
Weighted Curve Number 89.00
Time of Concentration (days hh:mm:ss) 0 00:10:00

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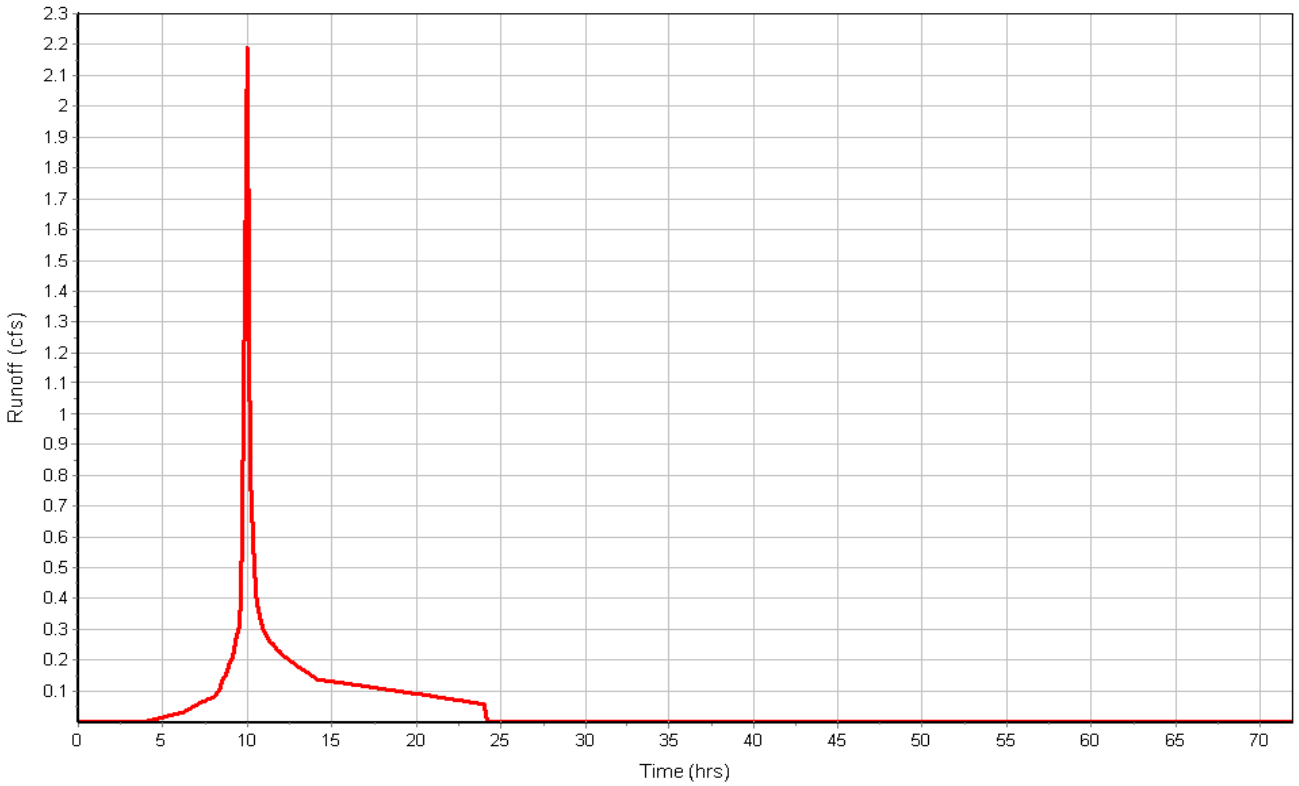
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Subbasin : A3C

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Subbasin : RVPREDEV

Input Data

Area (ac) 16.37
Weighted Curve Number 70.76
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Desert shrub range, Poor	11.29	A	63.00
Desert shrub range, Poor	5.08	D	88.00
Composite Area & Weighted CN	16.37		70.76

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.13	0.00	0.00
Flow Length (ft) :	1228	0.00	0.00
Slope (%) :	2.0	0.00	0.00
2 yr, 24 hr Rainfall (in) :	1.33	0.00	0.00
Velocity (ft/sec) :	0.20	0.00	0.00
Computed Flow Time (min) :	100.79	0.00	0.00

Total TOC (min) 100.79

Subbasin Runoff Results

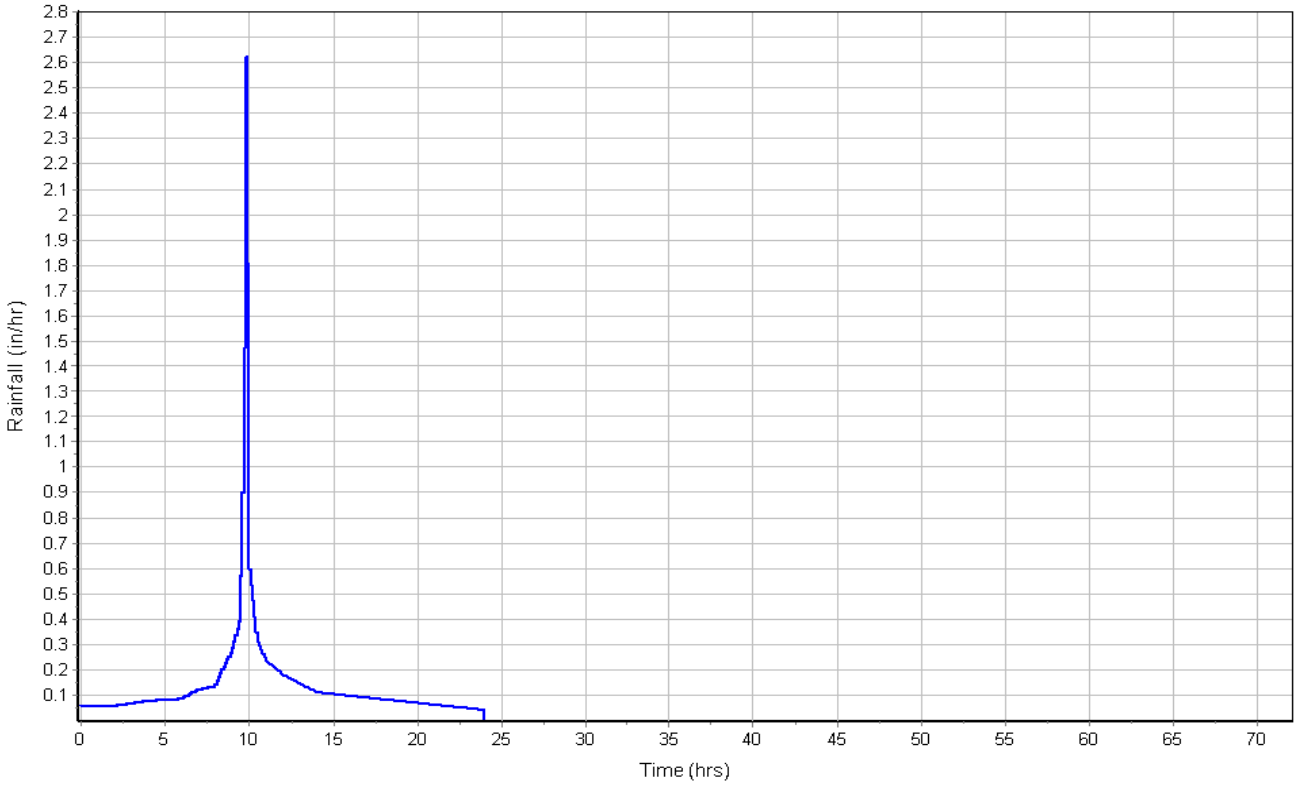
Total Rainfall (in) 3.48
Total Runoff (in) 1.04
Peak Runoff (cfs) 3.04
Weighted Curve Number 70.76
Time of Concentration (days hh:mm:ss) 0 01:40:47

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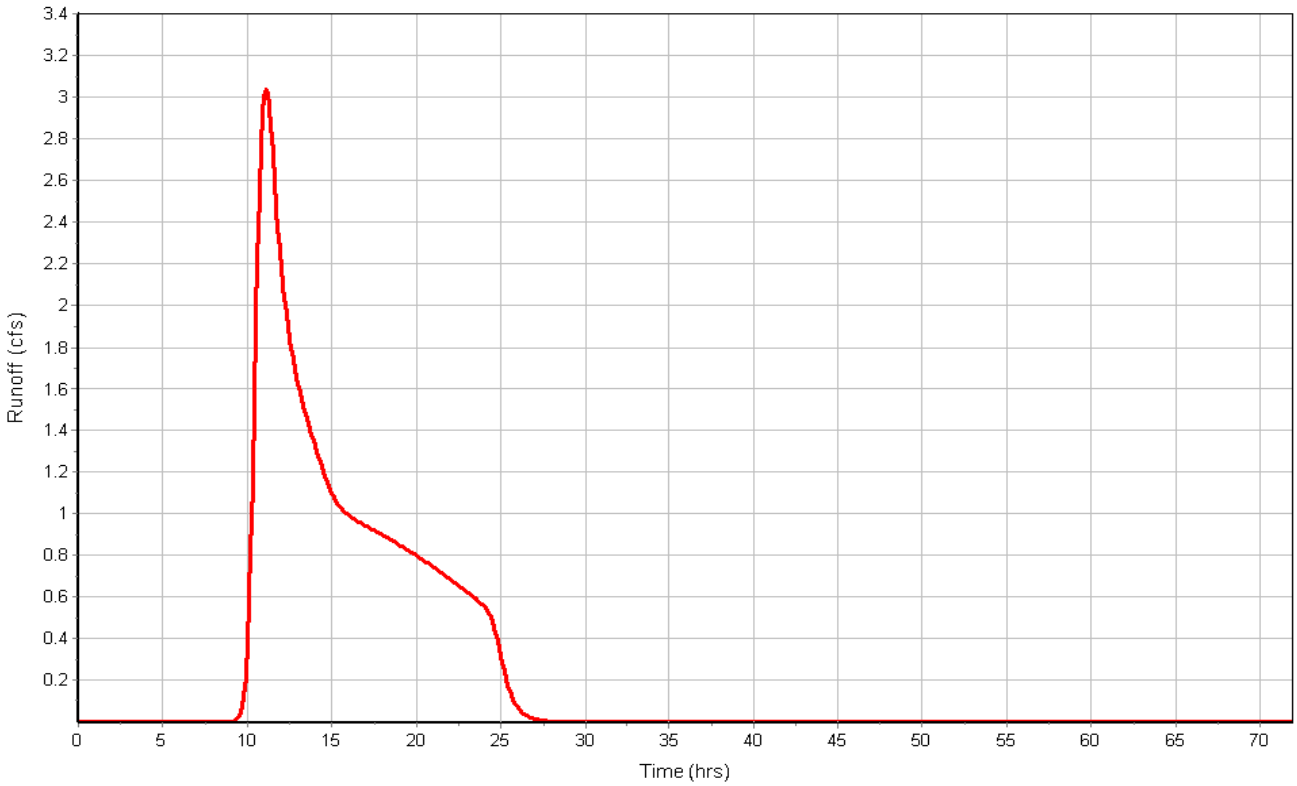
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Subbasin : RVPREDEV

Rainfall Intensity Graph



Runoff Hydrograph



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Subbasin : TS-PREDEV

Input Data

Area (ac) 21.91
Weighted Curve Number 65.01
Rain Gage ID ..... Project

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Desert shrub range, Poor	1.76	D	88.00
Desert shrub range, Poor	20.14	A	63.00
Composite Area & Weighted CN	21.90		65.01

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.13	0.00	0.00
Flow Length (ft) :	1326	0.00	0.00
Slope (%) :	2.0	0.00	0.00
2 yr, 24 hr Rainfall (in) :	1.33	0.00	0.00
Velocity (ft/sec) :	0.21	0.00	0.00
Computed Flow Time (min) :	107.18	0.00	0.00

Total TOC (min) 107.18

Subbasin Runoff Results

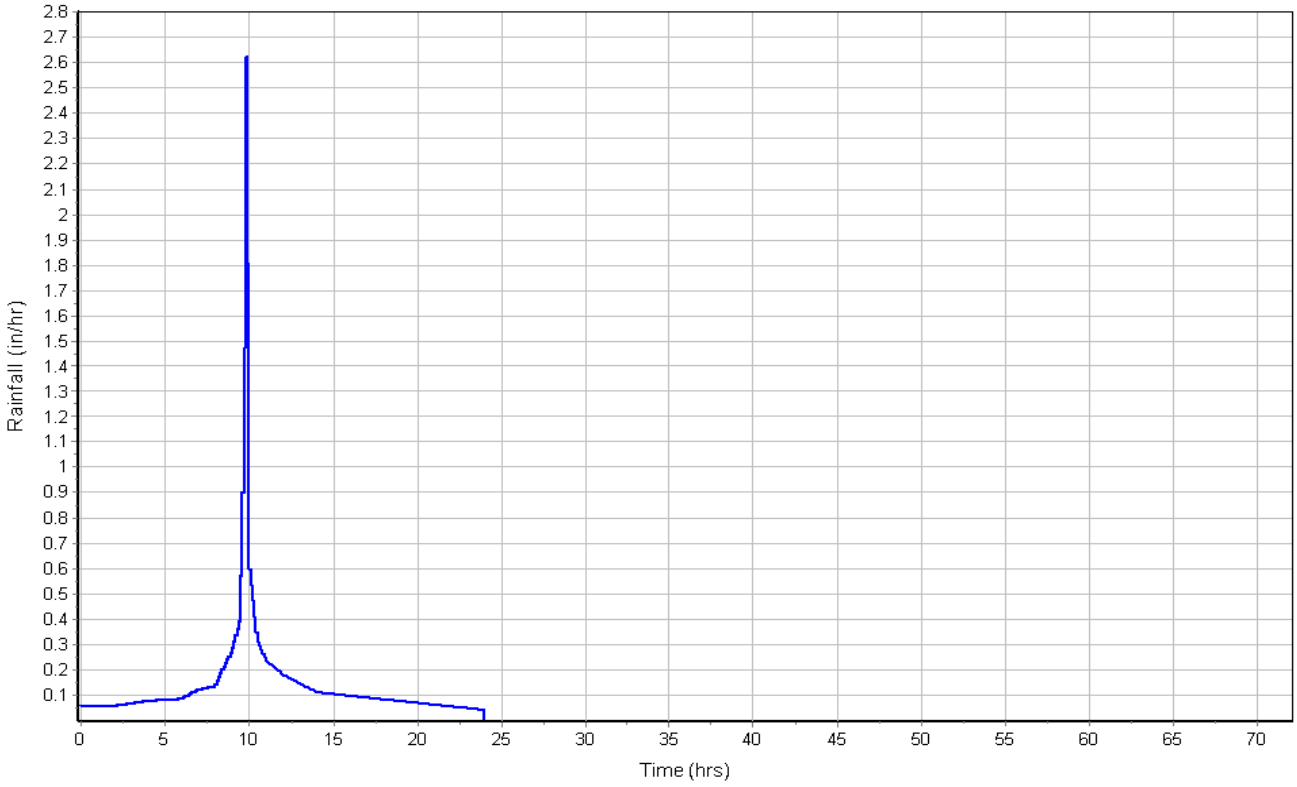
Total Rainfall (in) 3.48
Total Runoff (in) 0.74
Peak Runoff (cfs) 2.26
Weighted Curve Number 65.01
Time of Concentration (days hh:mm:ss) 0 01:47:11

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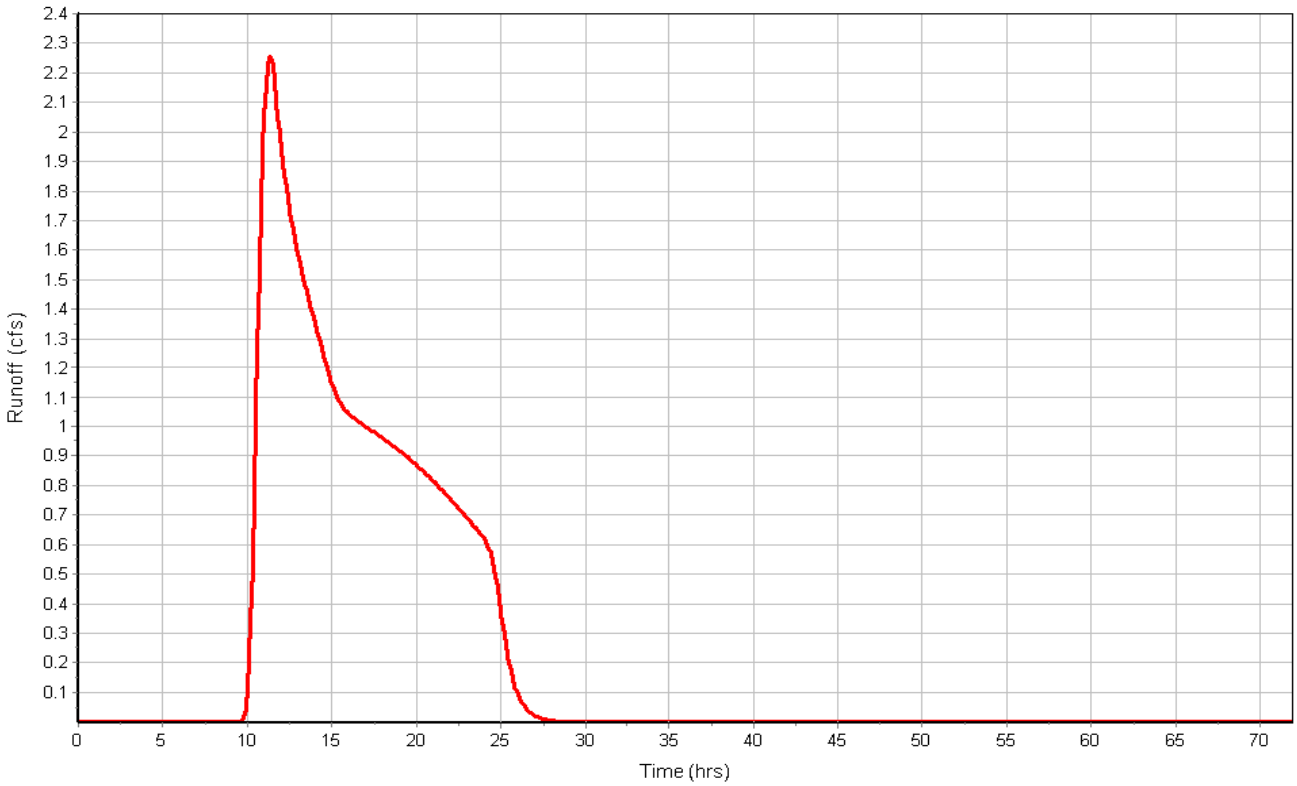
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Subbasin : TS-PREDEV

Rainfall Intensity Graph



Runoff Hydrograph



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Junction Input

SN	Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft²)	Minimum Pipe Cover (in)
1	J01	913.15	914.89	1.74	913.15	0.00	0.00	-914.89	0.00	8.88
2	J02	907.89	912.64	4.75	907.89	0.00	0.00	-912.64	0.00	45.00
3	J03	914.78	917.97	3.19	914.78	0.00	0.00	-917.97	0.00	25.08
4	J04	910.56	914.38	3.82	910.56	0.00	0.00	-914.38	0.00	32.64
5	J05	902.68	907.43	4.75	902.68	0.00	0.00	-907.43	0.00	45.00
6	J06	902.12	906.87	4.75	902.12	0.00	0.00	-906.87	0.00	45.00
7	J07	895.73	900.98	5.25	895.73	0.00	0.00	-900.98	0.00	51.00
8	J08	898.06	902.31	4.25	898.06	0.00	0.00	-902.31	0.00	39.00
9	J09	898.06	902.31	4.25	898.06	0.00	0.00	-902.31	0.00	39.00
10	J10	886.32	890.92	4.60	886.32	0.00	0.00	-890.92	0.00	33.00
11	O1	916.83	921.08	4.25	916.83	0.00	0.00	-921.08	0.00	0.00
12	O2	909.85	914.85	5.00	909.85	0.00	0.00	-914.85	0.00	0.00
13	O3A	915.23	921.60	6.37	915.23	0.00	0.00	-921.60	0.00	0.00
14	O3B	911.08	916.72	5.64	911.08	0.00	0.00	-916.72	0.00	0.00
15	O3C	906.09	912.24	6.15	906.09	0.00	0.00	-912.24	0.00	0.00
16	O4	902.98	906.80	3.82	902.98	0.00	0.00	-906.80	0.00	0.00
17	O5	907.79	912.12	4.33	907.79	0.00	0.00	-912.12	0.00	0.00
18	O6	901.23	905.48	4.25	901.23	0.00	0.00	-905.48	0.00	0.00
19	O7	888.27	901.23	12.96	888.27	0.00	0.00	-901.23	0.00	0.00
20	O8A	894.34	903.66	9.32	894.34	0.00	0.00	-903.66	0.00	0.00
21	SDMH01	916.48	921.15	4.67	916.48	0.00	0.00	-921.15	0.00	42.84
22	SDMH02	909.48	914.04	4.56	909.48	0.00	0.00	-914.04	0.00	41.52
23	SDMH03	907.54	914.70	7.16	907.54	0.00	0.00	-914.70	0.00	55.44
24	SDMH04	907.26	914.39	7.13	907.26	0.00	0.00	-914.39	0.00	72.36
25	SDMH05	907.53	914.79	7.26	907.53	0.00	0.00	-914.79	0.00	73.92
26	SDMH06	905.75	910.18	4.43	905.75	0.00	0.00	-910.18	0.00	41.16
27	SDMH07	905.33	909.05	3.72	905.33	0.00	0.00	-909.05	0.00	31.44
28	SDMH08	902.75	909.14	6.39	902.75	0.00	0.00	-909.14	0.00	57.48
29	SDMH09	901.44	907.96	6.52	901.44	0.00	0.00	-907.96	0.00	47.04
30	SDMH10	900.51	907.70	7.19	900.51	0.00	0.00	-907.70	0.00	67.08
31	SDMH11	894.85	901.92	7.07	894.85	0.00	0.00	-901.92	0.00	66.84
32	SDMH12	893.85	903.70	9.85	893.85	0.00	0.00	-903.70	0.00	100.20
33	SDMH13	897.40	902.76	5.36	897.40	0.00	0.00	-902.76	0.00	46.32
34	SDMH14	893.13	902.49	9.36	893.13	0.00	0.00	-902.49	0.00	71.04
35	SDMH15	886.12	891.87	5.75	886.12	0.00	0.00	-891.87	0.00	45.00
36	SDMH16	885.50	893.01	7.51	885.50	0.00	0.00	-893.01	0.00	63.48
37	SDMH17	884.58	889.78	5.20	884.58	0.00	0.00	-889.78	0.00	37.20

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Junction Results

SN	Element ID	Peak Inflow (cfs)	Peak Lateral Inflow (cfs)	Max HGL Elevation Attained (ft)	Max HGL Depth Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Average HGL Elevation Attained (ft)	Average HGL Depth Attained (ft)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	J01	0.00	0.00	913.15	0.00	0.00	1.74	913.15	0.00	0 00:00	0 00:00	0.00	0.00
2	J02	3.81	3.81	912.64	4.75	0.00	0.00	907.98	0.09	0 09:54	0 10:06	0.39	23.00
3	J03	1.45	1.45	915.48	0.70	0.00	2.49	914.89	0.11	0 10:06	0 00:00	0.00	0.00
4	J04	3.56	2.19	914.38	3.82	0.00	0.00	910.70	0.14	0 09:57	0 10:06	0.23	18.00
5	J05	0.73	0.73	903.12	0.44	0.00	4.31	902.71	0.03	0 10:06	0 00:00	0.00	0.00
6	J06	2.60	2.60	902.52	0.40	0.00	4.35	902.15	0.03	0 10:06	0 00:00	0.00	0.00
7	J07	3.67	3.67	896.36	0.63	0.00	4.62	895.77	0.04	0 10:06	0 00:00	0.00	0.00
8	J08	1.36	1.36	898.41	0.35	0.00	3.90	898.09	0.03	0 10:06	0 00:00	0.00	0.00
9	J09	1.96	1.96	898.49	0.43	0.00	3.82	898.09	0.03	0 10:06	0 00:00	0.00	0.00
10	J10	8.03	8.03	890.92	4.60	0.00	0.00	887.21	0.89	0 10:04	0 10:06	0.02	4.00
11	O1	0.00	0.00	916.83	0.00	0.00	4.25	916.83	0.00	0 00:00	0 00:00	0.00	0.00
12	O2	2.89	0.00	914.85	5.00	0.00	0.00	909.91	0.06	0 10:06	0 10:11	0.16	15.00
13	O3A	0.01	0.00	915.28	0.05	0.00	6.32	915.23	0.00	0 17:01	0 00:00	0.00	0.00
14	O3B	1.40	0.00	911.61	0.53	0.00	5.11	911.11	0.03	0 10:07	0 00:00	0.00	0.00
15	O3C	1.86	0.00	906.84	0.75	0.00	5.40	906.11	0.02	0 10:15	0 00:00	0.00	0.00
16	O4	2.74	0.00	903.74	0.76	0.00	3.06	903.02	0.04	0 10:15	0 00:00	0.00	0.00
17	O5	1.94	0.00	912.12	4.33	0.00	0.00	907.83	0.04	0 10:08	0 10:10	0.01	6.00
18	O6	3.53	0.00	901.69	0.46	0.00	3.79	901.27	0.04	0 10:14	0 00:00	0.00	0.00
19	O7	0.84	0.00	888.56	0.29	0.00	12.67	888.30	0.03	0 16:14	0 00:00	0.00	0.00
20	O8A	0.00	0.00	894.34	0.00	0.00	9.32	894.34	0.00	0 00:00	0 00:00	0.00	0.00
21	SDMH01	0.00	0.00	916.58	0.10	0.00	4.57	916.58	0.10	0 00:00	0 00:00	0.00	0.00
22	SDMH02	1.87	0.00	914.04	4.56	0.00	0.00	909.63	0.15	0 10:06	0 10:20	0.00	3.00
23	SDMH03	3.65	0.00	914.70	7.16	0.00	0.00	909.18	1.64	0 09:55	0 10:16	0.55	40.00
24	SDMH04	3.59	0.00	908.36	1.10	0.00	6.03	907.45	0.19	0 10:05	0 00:00	0.00	0.00
25	SDMH05	1.85	0.00	914.79	7.26	0.00	0.00	907.67	0.14	0 10:08	0 10:09	0.00	5.00
26	SDMH06	1.86	0.00	906.50	0.75	0.00	3.68	905.77	0.02	0 10:16	0 00:00	0.00	0.00
27	SDMH07	1.86	0.00	906.18	0.85	0.00	2.87	905.45	0.12	0 10:16	0 00:00	0.00	0.00
28	SDMH08	2.74	0.00	903.61	0.86	0.00	5.53	902.89	0.14	0 10:16	0 00:00	0.00	0.00
29	SDMH09	3.12	0.00	903.31	1.87	0.00	4.65	902.63	1.19	0 10:16	0 00:00	0.00	0.00
30	SDMH10	4.90	0.00	901.44	0.93	0.00	6.26	900.66	0.15	0 10:16	0 00:00	0.00	0.00
31	SDMH11	3.66	0.00	895.72	0.87	0.00	6.20	894.99	0.14	0 10:06	0 00:00	0.00	0.00
32	SDMH12	3.62	0.00	894.72	0.87	0.00	8.98	893.91	0.06	0 10:07	0 00:00	0.00	0.00
33	SDMH13	3.32	0.00	898.17	0.77	0.00	4.59	897.77	0.37	0 10:06	0 00:00	0.00	0.00
34	SDMH14	6.78	0.00	895.52	2.39	0.00	6.97	895.11	1.98	0 10:06	0 00:00	0.00	0.00
35	SDMH15	14.47	0.00	891.87	5.75	0.00	0.00	886.35	0.23	0 09:59	0 10:06	0.62	16.00
36	SDMH16	10.78	0.00	887.72	2.22	0.00	5.29	885.87	0.37	0 10:01	0 00:00	0.00	0.00
37	SDMH17	10.61	0.00	886.22	1.64	0.00	3.56	884.82	0.24	0 10:01	0 00:00	0.00	0.00

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Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
1	P01	102.69	916.83	0.00	916.58	0.10	0.25	0.2400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
2	P02	198.58	916.48	0.00	913.15	0.00	3.33	1.6800	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
3	P03	18.00	913.15	0.00	912.85	1.06	0.30	1.6700	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
4	P04	111.00	909.85	0.00	909.58	0.10	0.27	0.2400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
5	P05	160.94	909.48	0.00	909.08	1.54	0.40	0.2500	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
6	P06	99.00	907.89	0.00	907.64	0.10	0.25	0.2500	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
7	P07	74.09	907.54	0.00	907.36	0.10	0.18	0.2400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
8	P08	66.52	907.79	0.00	907.63	0.10	0.16	0.2400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
9	P09	70.26	907.53	0.00	907.36	0.10	0.17	0.2400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
10	P10	92.00	907.26	0.00	903.48	0.56	3.78	4.1100	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
11	P11	74.00	901.23	0.00	897.49	1.72	3.74	5.0500	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
12	P12	141.00	915.23	0.00	914.88	0.10	0.35	0.2500	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
13	P13	25.00	914.78	0.00	914.72	0.56	0.06	0.2400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
14	P14	83.00	911.08	0.00	910.66	0.10	0.42	0.5100	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
15	P15	23.00	910.56	0.00	910.45	1.06	0.11	0.4800	CIRCULAR	12.000	12.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
16	P16	102.00	906.09	0.00	905.75	0.00	0.34	0.3300	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
17	P17	99.00	905.75	0.00	905.43	0.10	0.32	0.3200	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
18	P18	31.00	905.33	0.00	905.23	1.06	0.10	0.3200	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
19	P19	50.02	902.98	0.00	902.85	0.10	0.13	0.2600	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
20	P20	83.99	902.75	0.00	902.54	1.10	0.21	0.2500	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
21	P21	30.00	902.68	0.00	902.60	1.16	0.08	0.2700	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
22	P22	331.00	901.44	0.00	900.61	0.10	0.83	0.2500	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
23	P23	32.00	902.12	0.00	900.61	0.10	1.51	4.7200	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
24	P24	89.00	900.51	0.00	897.23	1.46	3.28	3.6900	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
25	P25	62.00	888.27	0.00	887.17	0.85	1.10	1.7700	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
26	P26	130.00	894.34	0.00	893.85	0.00	0.49	0.3800	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
27	P27	39.00	895.73	0.00	894.95	0.10	0.78	2.0000	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
28	P28	333.48	894.85	0.00	893.85	0.00	1.00	0.3000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
29	P29	208.00	893.85	0.00	893.23	0.10	0.62	0.3000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
30	P30	16.00	898.06	0.00	897.74	0.34	0.32	2.0000	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
31	P31	28.00	898.06	0.00	897.50	0.10	0.56	2.0000	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
32	P32	93.00	897.40	0.00	895.07	1.94	2.33	2.5100	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
33	P33	745.00	893.13	0.00	886.22	0.10	6.91	0.9300	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
34	P34	39.00	886.32	0.00	886.12	0.00	0.20	0.5100	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
35	P35	200.04	886.12	0.00	885.72	0.22	0.40	0.2000	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
36	P36	328.00	885.50	0.00	884.68	0.10	0.82	0.2500	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
37	P37	63.00	884.58	0.00	884.42	0.00	0.16	0.2500	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1

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Pipe Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	P01	0.00	0 00:00	1.76	0.00	0.00		0.00	0.00	0.00		Calculated
2	P02	0.00	0 00:00	4.61	0.00	0.00		0.00	0.00	0.00		Calculated
3	P03	0.00	0 00:00	4.60	0.00	0.00		0.00	0.00	0.00		Calculated
4	P04	1.87	0 10:20	1.76	1.07	2.67	0.69	1.00	1.00	13.00		SURCHARGED
5	P05	1.86	0 10:21	1.78	1.05	2.68	1.00	0.81	0.89	0.00		> CAPACITY
6	P06	1.89	0 10:16	1.79	1.05	2.74	0.60	1.00	1.00	20.00		SURCHARGED
7	P07	1.86	0 10:05	1.76	1.06	2.60	0.47	1.00	1.00	28.00		SURCHARGED
8	P08	1.85	0 10:12	1.75	1.06	2.60	0.43	1.00	1.00	2.00		SURCHARGED
9	P09	1.83	0 10:14	1.75	1.04	2.61	0.45	0.82	0.92	0.00		> CAPACITY
10	P10	3.57	0 10:09	7.22	0.49	9.19	0.17	0.49	0.50	0.00		Calculated
11	P11	3.52	0 10:14	8.01	0.44	9.88	0.12	0.46	0.46	0.00		Calculated
12	P12	0.01	0 17:04	1.78	0.00	0.57	4.12	0.05	0.05	0.00		Calculated
13	P13	1.44	0 10:06	1.75	0.83	2.49	0.17	0.69	0.69	0.00		Calculated
14	P14	1.39	0 10:07	2.53	0.55	3.31	0.42	0.52	0.53	0.00		Calculated
15	P15	2.26	0 09:58	2.14	1.06	3.15	0.12	1.00	1.00	16.00		SURCHARGED
16	P16	1.86	0 10:16	2.06	0.90	2.98	0.57	0.68	0.75	0.00		Calculated
17	P17	1.86	0 10:16	2.03	0.92	2.94	0.56	0.71	0.75	0.00		Calculated
18	P18	1.85	0 10:16	2.02	0.92	2.92	0.18	0.72	0.75	0.00		Calculated
19	P19	2.74	0 10:16	5.36	0.51	3.05	0.27	0.73	0.51	0.00		Calculated
20	P20	2.74	0 10:16	5.25	0.52	3.01	0.47	0.75	0.51	0.00		Calculated
21	P21	0.73	0 10:06	1.84	0.40	2.21	0.23	0.44	0.44	0.00		Calculated
22	P22	3.10	0 10:16	5.26	0.59	3.15	1.75	0.81	0.55	0.00		Calculated
23	P23	2.60	0 10:06	7.74	0.34	8.87	0.06	0.40	0.40	0.00		Calculated
24	P24	4.90	0 10:06	20.17	0.24	9.40	0.16	0.50	0.34	0.00		Calculated
25	P25	0.84	0 16:14	4.75	0.18	4.55	0.23	0.29	0.29	0.00		Calculated
26	P26	0.00	0 00:00	2.19	0.00	0.00		0.00	0.00	0.00		Calculated
27	P27	3.66	0 10:06	5.04	0.73	6.99	0.09	0.63	0.63	0.00		Calculated
28	P28	3.62	0 10:07	5.75	0.63	3.50	1.59	0.86	0.57	0.00		Calculated
29	P29	3.60	0 10:07	5.73	0.63	3.45	1.00	0.85	0.57	0.00		Calculated
30	P30	1.96	0 10:06	5.04	0.39	6.01	0.04	0.43	0.43	0.00		Calculated
31	P31	1.36	0 10:06	5.04	0.27	5.44	0.09	0.35	0.35	0.00		Calculated
32	P32	3.31	0 10:06	16.63	0.20	7.34	0.21	0.45	0.30	0.00		Calculated
33	P33	6.71	0 10:08	10.12	0.66	6.24	1.99	0.88	0.59	0.00		Calculated
34	P34	8.03	0 10:06	7.52	1.07	4.91	0.13	1.47	1.00	0.00		> CAPACITY
35	P35	10.78	0 10:00	10.12	1.07	3.88	0.86	2.00	1.00	12.00		SURCHARGED
36	P36	10.61	0 10:01	11.31	0.94	4.26	1.28	1.48	0.76	0.00		Calculated
37	P37	10.51	0 10:01	11.40	0.92	4.14	0.25	1.47	0.76	0.00		Calculated

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Storage Nodes

Storage Node : BR1

Input Data

Invert Elevation (ft)	918.02
Max (Rim) Elevation (ft)	922.46
Max (Rim) Offset (ft)	4.44
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-918.02
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

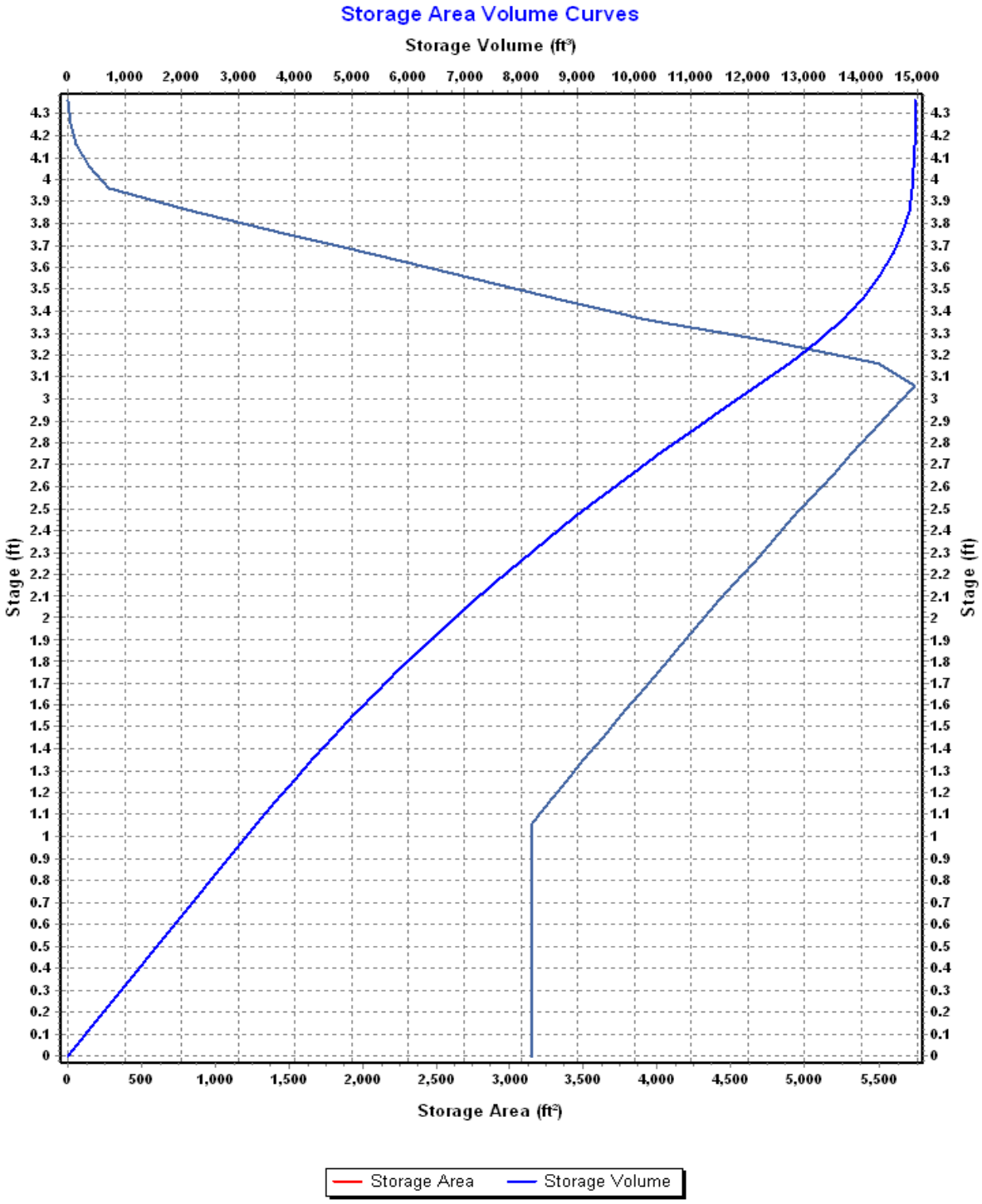
Exfiltration Rate (in/hr)	3.6500

Storage Area Volume Curves

Storage Curve : BR1

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	3141	0.000
1.06	3141.89	3329.93
1.16	3262.83	3650.17
1.26	3385.2	3982.57
1.36	3508.5	4327.26
1.46	3632.69	4684.32
1.56	3757.77	5053.84
1.66	3883.75	5435.92
1.76	4010.63	5830.64
1.86	4138.42	6238.09
1.96	4267.16	6658.37
2.06	4396.87	7091.57
2.16	4527.56	7537.79
2.26	4659.22	7997.13
2.36	4791.85	8469.68
2.46	4925.44	8955.54
2.56	5060	9454.81
2.66	5195.53	9967.59
2.76	5332.02	10493.97
2.86	5469.48	11034.05
2.96	5607.91	11587.92
3.06	5744.57	12155.54
3.16	5498	12717.67
3.26	4752.13	13230.18
3.36	3925.58	13664.07
3.46	3303.77	14025.54
3.56	2676.06	14324.53
3.66	2043.84	14560.53
3.76	1427.82	14734.11
3.86	837.63	14847.38
3.96	281.34	14903.33
4.06	149.84	14924.89
4.16	60.48	14935.41
4.26	15.53	14939.21
4.36	0.9	14940.03

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Storage Node : BR1 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR1	Bottom	CIRCULAR	No	24.00			920.58	0.61

Output Summary Results

Peak Inflow (cfs)	1.60
Peak Lateral Inflow (cfs)	1.60
Peak Outflow (cfs)	0.00
Peak Exfiltration Flow Rate (cfm)	15.93
Max HGL Elevation Attained (ft)	918.54
Max HGL Depth Attained (ft)	0.52
Average HGL Elevation Attained (ft)	918.04
Average HGL Depth Attained (ft)	0.02
Time of Max HGL Occurrence (days hh:mm)	0 10:45
Total Exfiltration Volume (1000-ft³)	4.777
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR2

Input Data

Invert Elevation (ft)	911.79
Max (Rim) Elevation (ft)	915.12
Max (Rim) Offset (ft)	3.33
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-911.79
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

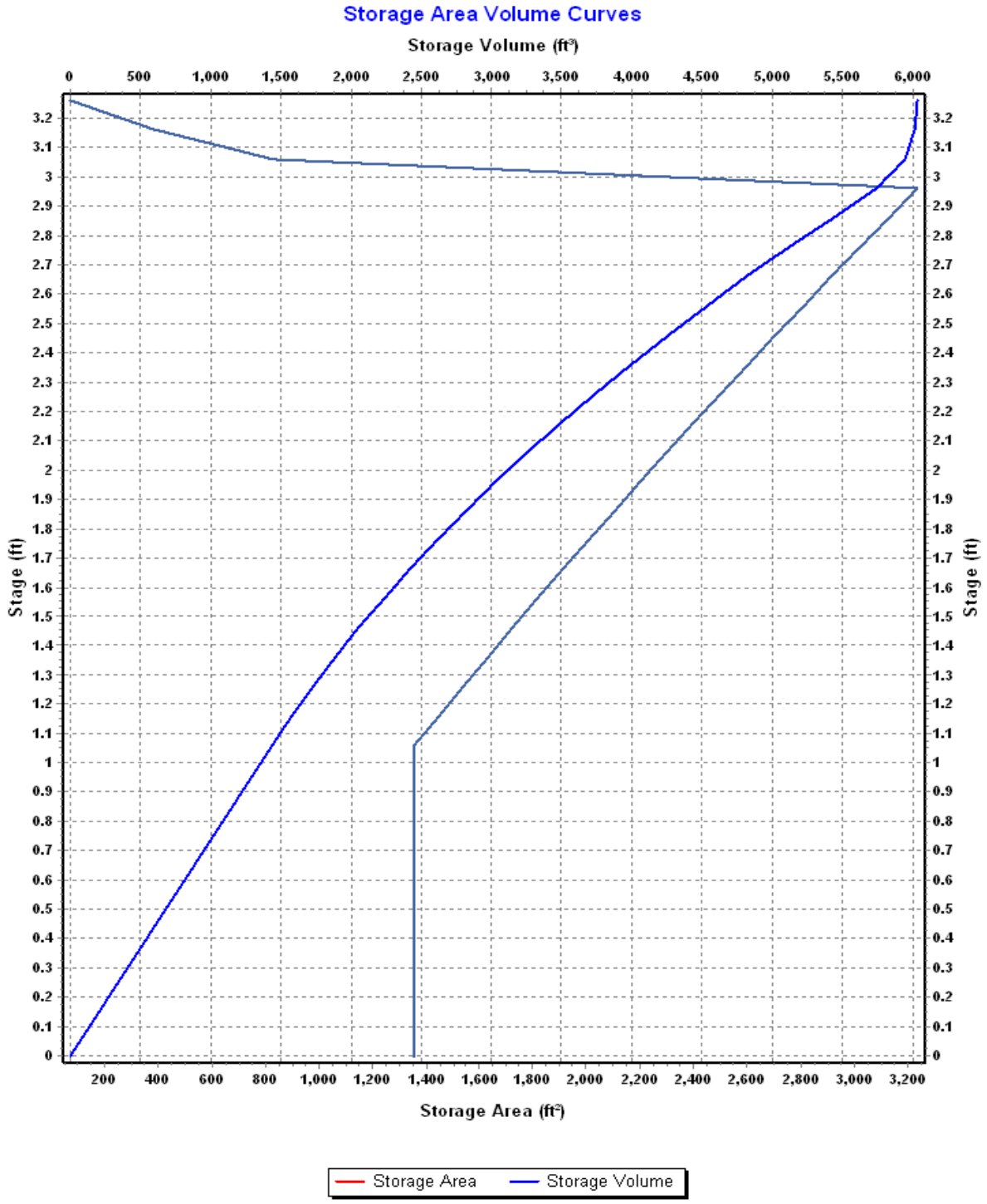
Exfiltration Rate (in/hr)	0.2500

Storage Area Volume Curves

Storage Curve : BR2

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	1355	0.000
1.06	1355.93	1436.79
1.16	1445.99	1576.89
1.26	1537.04	1726.04
1.36	1629.07	1884.35
1.46	1722.08	2051.91
1.56	1816.08	2228.82
1.66	1911.06	2415.18
1.76	2007.02	2611.08
1.86	2103.96	2816.63
1.96	2201.89	3031.92
2.06	2300.8	3257.05
2.16	2400.7	3492.13
2.26	2501.57	3737.24
2.36	2603.43	3992.49
2.46	2706.28	4257.98
2.56	2810.1	4533.80
2.66	2914.91	4820.05
2.76	3020.7	5116.83
2.86	3127.48	5424.24
2.96	3235.24	5742.38
3.06	833.86	5945.84
3.16	385.92	6006.83
3.26	72.94	6029.77

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Storage Node : BR2 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR2	Bottom	CIRCULAR	No	24.00			914.35	0.61

Output Summary Results

Peak Inflow (cfs)	3.78
Peak Lateral Inflow (cfs)	3.78
Peak Outflow (cfs)	2.89
Peak Exfiltration Flow Rate (cfm)	1.07
Max HGL Elevation Attained (ft)	914.62
Max HGL Depth Attained (ft)	2.83
Average HGL Elevation Attained (ft)	913.72
Average HGL Depth Attained (ft)	1.93
Time of Max HGL Occurrence (days hh:mm)	0 10:11
Total Exfiltration Volume (1000-ft³)	3.327
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR3A

Input Data

Invert Elevation (ft)	918.54
Max (Rim) Elevation (ft)	922.87
Max (Rim) Offset (ft)	4.33
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-918.54
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

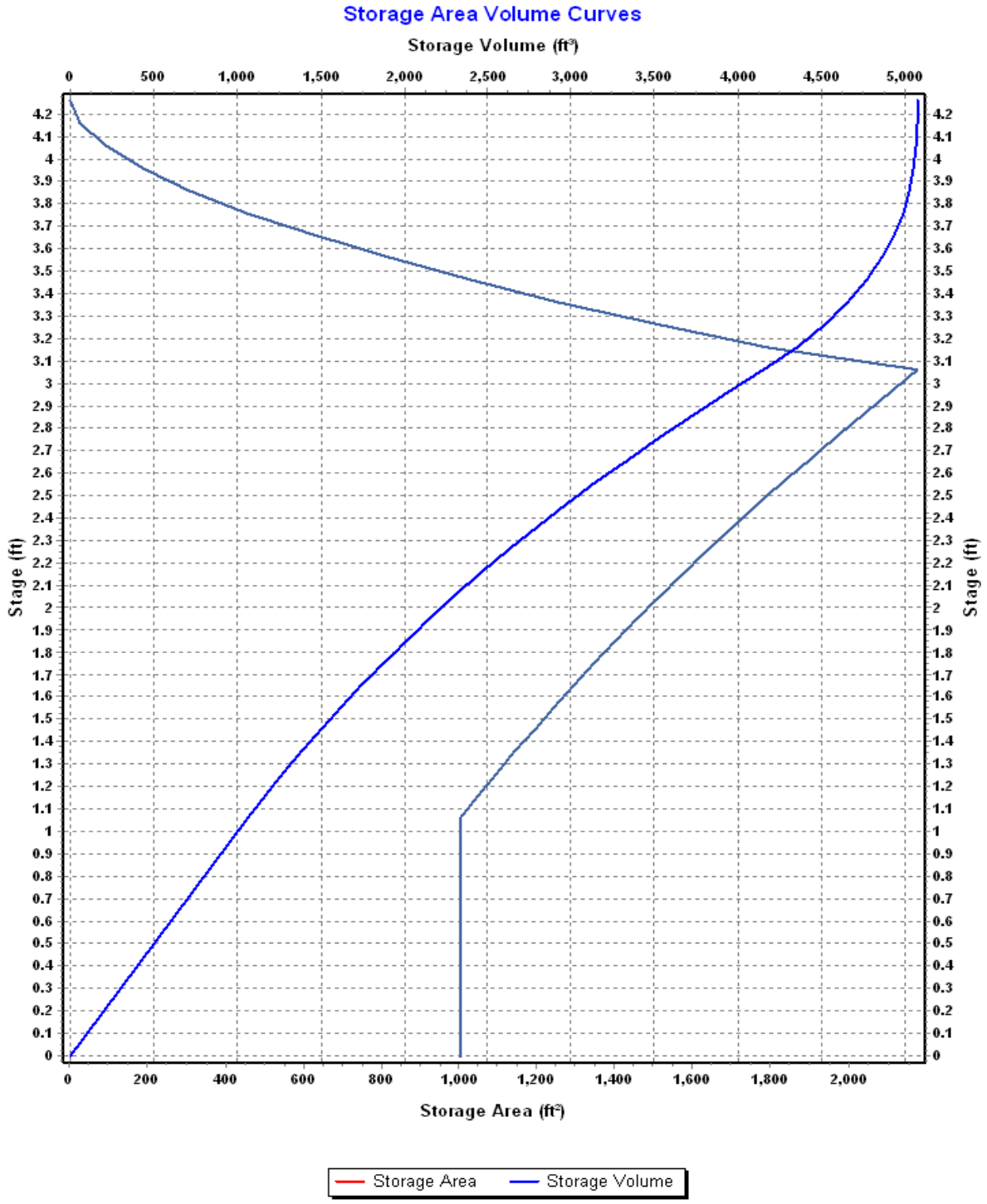
Exfiltration Rate (in/hr)	1.0000

Storage Area Volume Curves

Storage Curve : BR3A

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	1003	0.000
1.06	1003.24	1063.31
1.16	1049.23	1165.93
1.26	1096.69	1273.23
1.36	1145.31	1385.33
1.46	1195.09	1502.35
1.56	1246.03	1624.41
1.66	1298.19	1751.62
1.76	1351.67	1884.11
1.86	1406.49	2022.02
1.96	1462.89	2165.49
2.06	1520.96	2314.68
2.16	1580.66	2469.76
2.26	1641.67	2630.88
2.36	1704.02	2798.16
2.46	1767.77	2971.75
2.56	1832.91	3151.78
2.66	1899.44	3338.40
2.76	1967.37	3531.74
2.86	2036.69	3731.94
2.96	2107.4	3939.14
3.06	2176.53	4153.34
3.16	1787.16	4351.52
3.26	1515.95	4516.68
3.36	1252.64	4655.11
3.46	1029.78	4769.23
3.56	818.92	4861.67
3.66	625.41	4933.89
3.76	455.66	4987.94
3.86	307.6	5026.10
3.96	187.02	5050.83
4.06	94.69	5064.92
4.16	26.99	5071.00
4.26	2.5	5072.47

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Storage Node : BR3A (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR3A	Bottom	CIRCULAR	No	24.00			921.10	0.61

Output Summary Results

Peak Inflow (cfs)	1.08
Peak Lateral Inflow (cfs)	1.08
Peak Outflow (cfs)	0.01
Peak Exfiltration Flow Rate (cfm)	2.55
Max HGL Elevation Attained (ft)	921.11
Max HGL Depth Attained (ft)	2.57
Average HGL Elevation Attained (ft)	919.55
Average HGL Depth Attained (ft)	1.01
Time of Max HGL Occurrence (days hh:mm)	0 17:01
Total Exfiltration Volume (1000-ft³)	5.508
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR3B

Input Data

Invert Elevation (ft)	914.16
Max (Rim) Elevation (ft)	917.97
Max (Rim) Offset (ft)	3.81
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-914.16
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

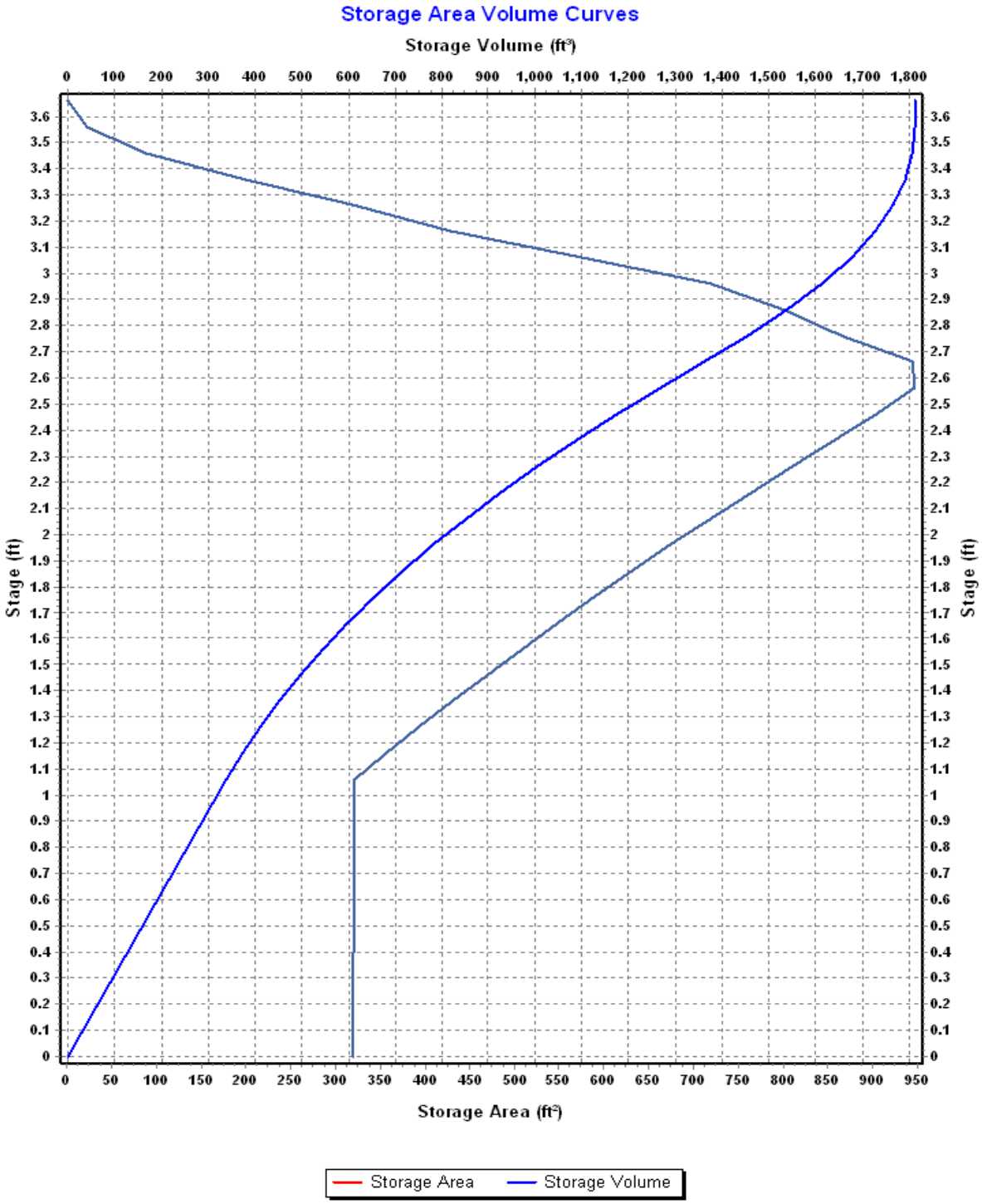
Exfiltration Rate (in/hr)	1.0000

Storage Area Volume Curves

Storage Curve : BR3B

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	320	0.000
1.06	320.79	339.62
1.16	356.4	373.48
1.26	392.93	410.95
1.36	430.38	452.12
1.46	468.77	497.08
1.56	508.1	545.92
1.66	548.38	598.74
1.76	589.6	655.64
1.86	631.77	716.71
1.96	674.88	782.04
2.06	718.94	851.73
2.16	763.94	925.87
2.26	809.88	1004.56
2.36	856.77	1087.89
2.46	904.6	1175.96
2.56	946.68	1268.52
2.66	943.54	1363.03
2.76	865.89	1453.50
2.86	800.8	1536.83
2.96	718.52	1612.80
3.06	573.23	1677.39
3.16	427.46	1727.42
3.26	317.49	1764.67
3.36	199.57	1790.52
3.46	88.48	1804.92
3.56	23.36	1810.51
3.66	1.54	1811.76

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Storage Node : BR3B (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR3B	Bottom	CIRCULAR	No	24.00			916.22	0.61

Output Summary Results

Peak Inflow (cfs)	1.44
Peak Lateral Inflow (cfs)	0.00
Peak Outflow (cfs)	1.40
Peak Exfiltration Flow Rate (cfm)	1.10
Max HGL Elevation Attained (ft)	916.38
Max HGL Depth Attained (ft)	2.22
Average HGL Elevation Attained (ft)	914.99
Average HGL Depth Attained (ft)	0.83
Time of Max HGL Occurrence (days hh:mm)	0 10:07
Total Exfiltration Volume (1000-ft³)	1.929
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR3C

Input Data

Invert Elevation (ft)	909.39
Max (Rim) Elevation (ft)	912.45
Max (Rim) Offset (ft)	3.06
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-909.39
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

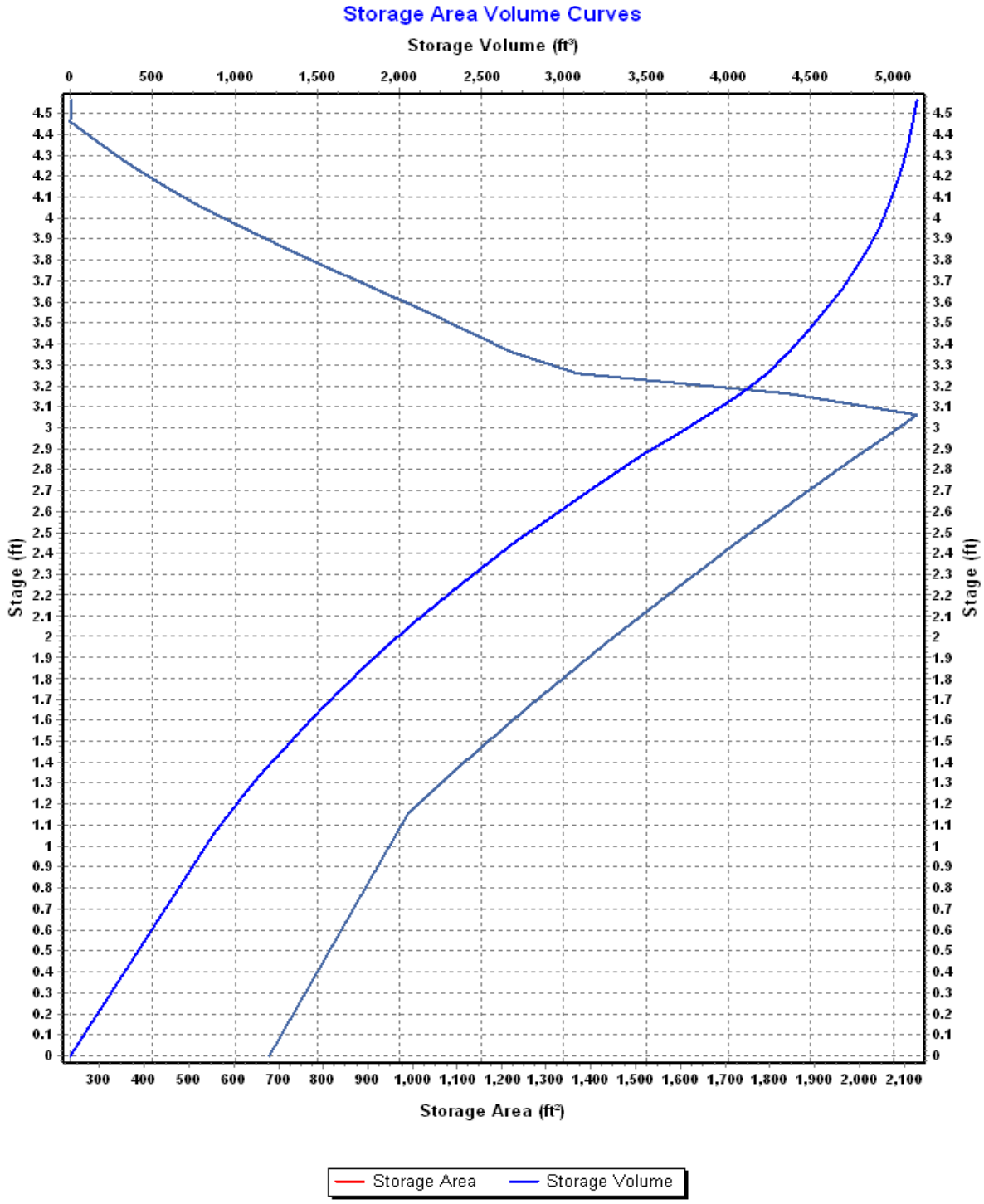
Exfiltration Rate (in/hr)	4.1500

Storage Area Volume Curves

Storage Curve : BR3C

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	681	0.000
1.06	963.86	871.78
1.16	990.19	969.48
1.26	1041.36	1071.06
1.36	1093.51	1177.80
1.46	1146.65	1289.81
1.56	1200.78	1407.18
1.66	1255.89	1530.01
1.76	1311.99	1658.40
1.86	1369.08	1792.45
1.96	1427.16	1932.26
2.06	1486.28	2077.93
2.16	1546.33	2229.56
2.26	1607.29	2387.24
2.36	1669.16	2551.06
2.46	1731.95	2721.12
2.56	1795.65	2897.50
2.66	1860.27	3080.30
2.76	1925.8	3269.60
2.86	1992.24	3465.50
2.96	2059.6	3668.09
3.06	2127.88	3877.46
3.16	1839.41	4075.82
3.26	1368.28	4236.20
3.36	1223.76	4365.80
3.46	1122.78	4483.13
3.56	1021.82	4590.36
3.66	920.87	4687.49
3.76	814.21	4774.24
3.86	709.9	4850.45
3.96	612.13	4916.55
4.06	521.34	4973.22
4.16	437.93	5021.18
4.26	362.17	5061.19
4.36	294.31	5094.01
4.46	234.5	5120.45
4.56	237.57	5144.05

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Storage Node : BR3C (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR3C	Bottom	CIRCULAR	No	24.00			911.95	0.61

Output Summary Results

Peak Inflow (cfs)	2.26
Peak Lateral Inflow (cfs)	0.00
Peak Outflow (cfs)	1.86
Peak Exfiltration Flow Rate (cfm)	11.10
Max HGL Elevation Attained (ft)	912.15
Max HGL Depth Attained (ft)	2.76
Average HGL Elevation Attained (ft)	909.97
Average HGL Depth Attained (ft)	0.58
Time of Max HGL Occurrence (days hh:mm)	0 10:15
Total Exfiltration Volume (1000-ft³)	11.250
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR4

Input Data

Invert Elevation (ft)	904.17
Max (Rim) Elevation (ft)	908.79
Max (Rim) Offset (ft)	4.62
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-904.17
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

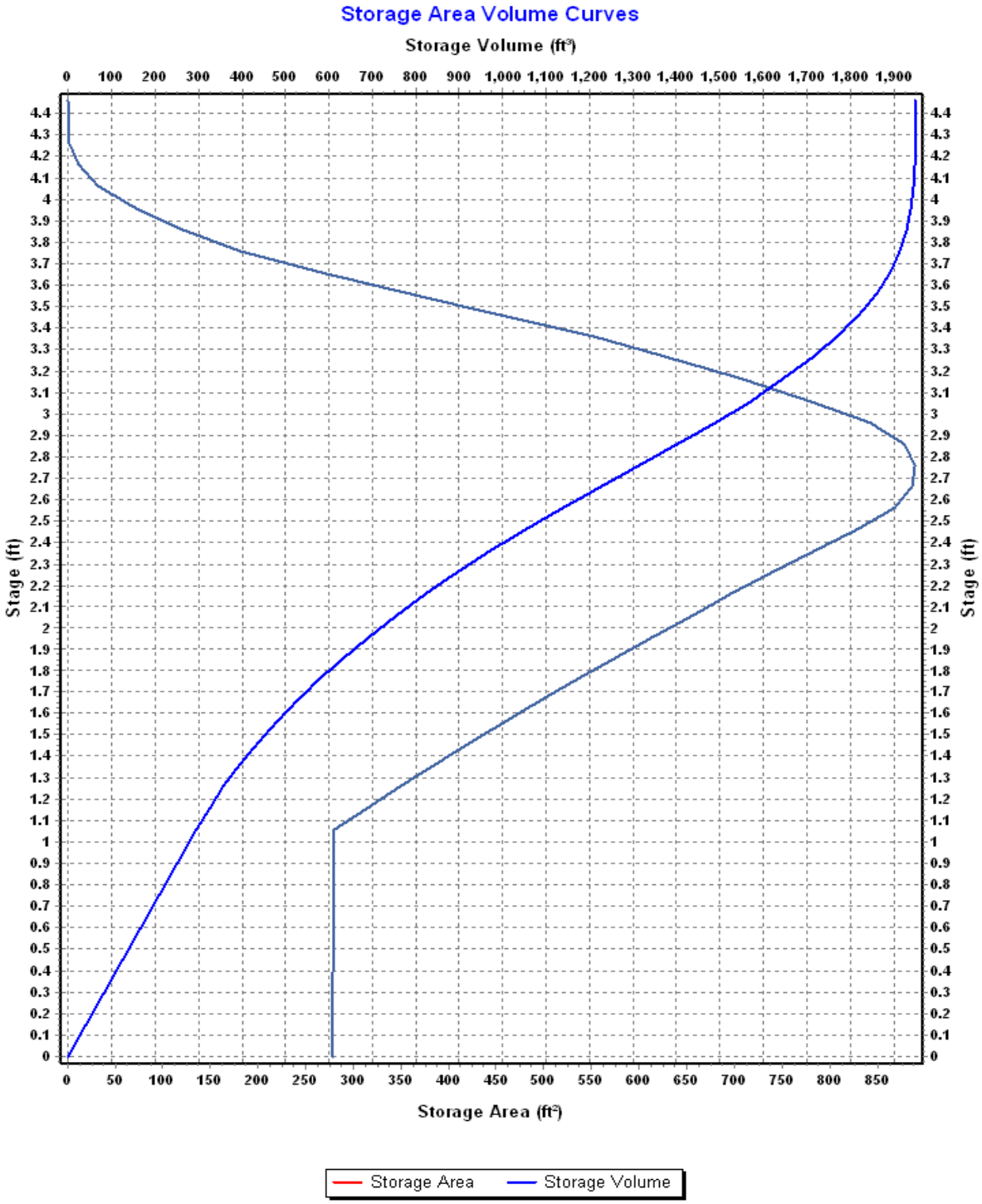
Exfiltration Rate (in/hr)	0.7500

Storage Area Volume Curves

Storage Curve : BR4

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	278	0.000
1.06	278.97	295.19
1.16	314.62	324.87
1.26	349.57	358.08
1.36	384.97	394.81
1.46	421.01	435.11
1.56	457.86	479.05
1.66	495.61	526.72
1.76	534.26	578.21
1.86	573.81	633.61
1.96	614.24	693.01
2.06	655.56	756.50
2.16	697.78	824.17
2.26	740.89	896.10
2.36	784.89	972.39
2.46	829.78	1053.12
2.56	868.08	1138.01
2.66	885.77	1225.70
2.76	889.34	1314.46
2.86	877.29	1402.79
2.96	841.77	1488.74
3.06	779.1	1569.78
3.16	707	1644.09
3.26	629.62	1710.92
3.36	551	1769.95
3.46	453.39	1820.17
3.56	357.92	1860.74
3.66	265.64	1891.92
3.76	181.58	1914.28
3.86	121.01	1929.41
3.96	71.61	1939.04
4.06	32.12	1944.23
4.16	12.15	1946.44
4.26	1.89	1947.14
4.36	1.39	1947.30
4.46	0.53	1947.40

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Storage Node : BR4 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR4	Bottom	CIRCULAR	No	24.00			906.23	0.61

Output Summary Results

Peak Inflow (cfs)	2.76
Peak Lateral Inflow (cfs)	1.81
Peak Outflow (cfs)	2.74
Peak Exfiltration Flow Rate (cfm)	0.80
Max HGL Elevation Attained (ft)	906.49
Max HGL Depth Attained (ft)	2.32
Average HGL Elevation Attained (ft)	905.13
Average HGL Depth Attained (ft)	0.96
Time of Max HGL Occurrence (days hh:mm)	0 10:15
Total Exfiltration Volume (1000-ft³)	1.493
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR5

Input Data

Invert Elevation (ft)	909.06
Max (Rim) Elevation (ft)	912.12
Max (Rim) Offset (ft)	3.06
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-909.06
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

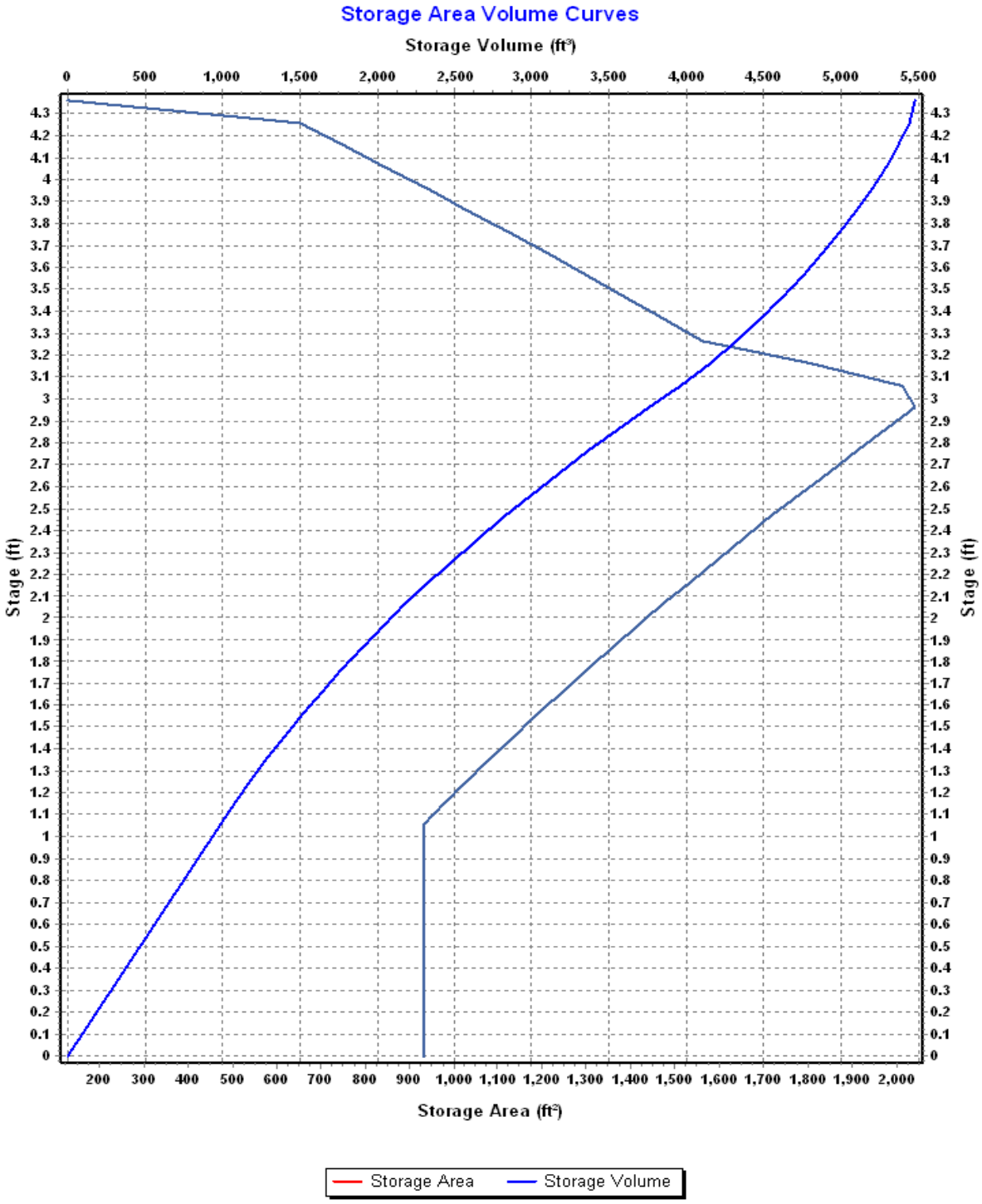
Exfiltration Rate (in/hr)	0.7000

Storage Area Volume Curves

Storage Curve : BR5

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	932	0.000
1.06	932.46	988.16
1.16	981.61	1083.86
1.26	1031.83	1184.53
1.36	1083.12	1290.28
1.46	1135.48	1401.21
1.56	1188.91	1517.43
1.66	1243.41	1639.05
1.76	1298.98	1766.17
1.86	1355.61	1898.90
1.96	1413.23	2037.34
2.06	1471.77	2181.59
2.16	1531.25	2331.74
2.26	1591.66	2487.89
2.36	1653	2650.12
2.46	1715.29	2818.53
2.56	1778.51	2993.22
2.66	1842.66	3174.28
2.76	1907.75	3361.80
2.86	1973.78	3555.88
2.96	2040.74	3756.61
3.06	2014.36	3959.37
3.16	1806.31	4150.40
3.26	1561.66	4318.80
3.36	1476.5	4470.71
3.46	1390.03	4614.04
3.56	1302.24	4748.65
3.66	1213.13	4874.42
3.76	1122.71	4991.21
3.86	1030.97	5098.89
3.96	937.91	5197.33
4.06	843.53	5286.40
4.16	747.83	5365.97
4.26	650.82	5435.90
4.36	128.99	5474.89

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Storage Node : BR5 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR5	Bottom	CIRCULAR	No	24.00			911.62	0.61

Output Summary Results

Peak Inflow (cfs)	2.49
Peak Lateral Inflow (cfs)	2.49
Peak Outflow (cfs)	1.94
Peak Exfiltration Flow Rate (cfm)	1.86
Max HGL Elevation Attained (ft)	911.83
Max HGL Depth Attained (ft)	2.77
Average HGL Elevation Attained (ft)	910.39
Average HGL Depth Attained (ft)	1.33
Time of Max HGL Occurrence (days hh:mm)	0 10:10
Total Exfiltration Volume (1000-ft³)	4.788
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR6

Input Data

Invert Elevation (ft)	902.92
Max (Rim) Elevation (ft)	913.75
Max (Rim) Offset (ft)	10.83
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-902.92
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

Exfiltration Rate (in/hr)	0.3500

Storage Area Volume Curves

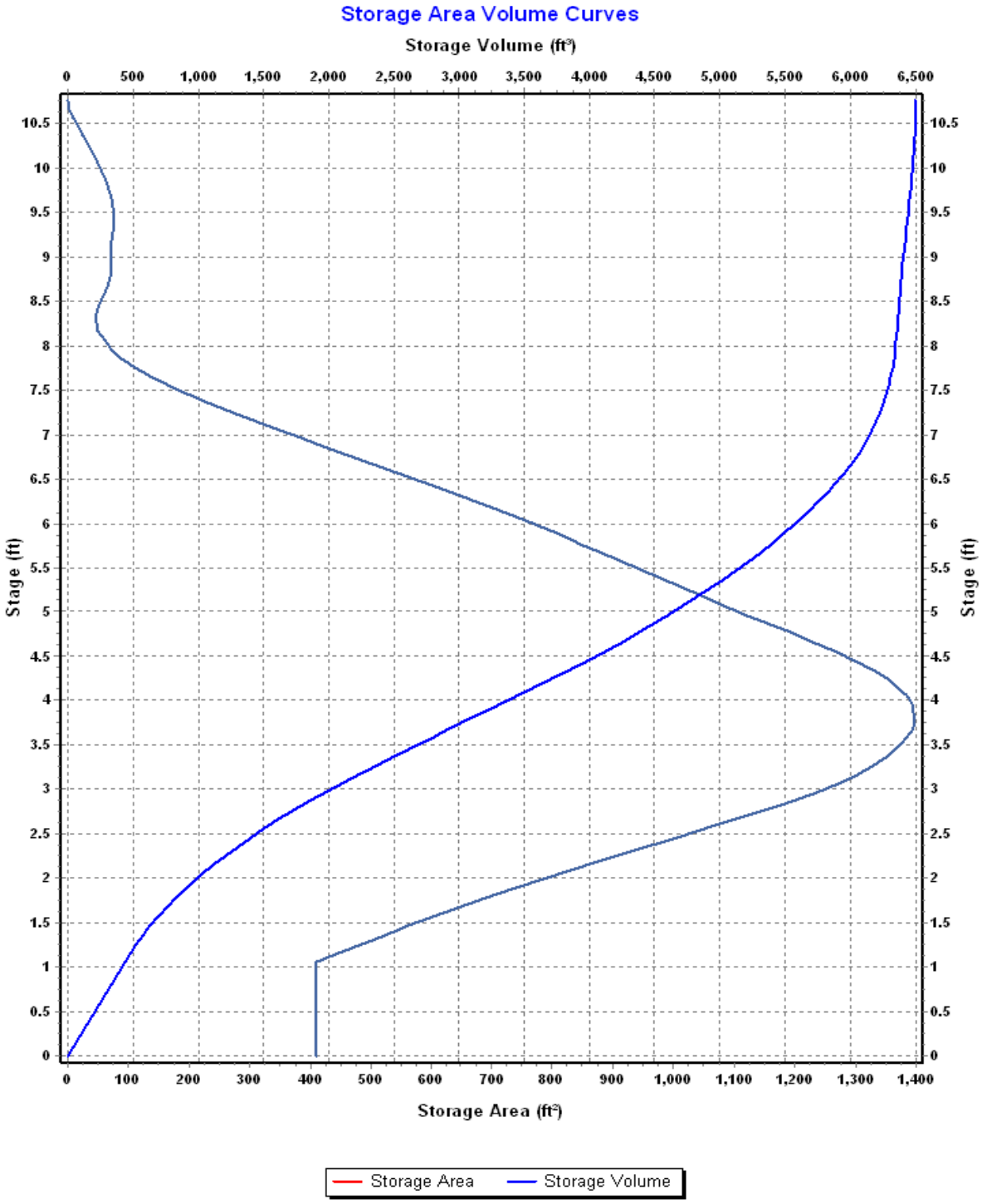
Storage Curve : BR6

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	410	0.000
1.06	410.77	435.01
1.16	446.75	477.89
1.26	483.71	524.41
1.36	521.65	574.68
1.46	560.56	628.79
1.56	600.46	686.84
1.66	641.33	748.93
1.76	683.18	815.16
1.86	726.02	885.62
1.96	769.83	960.41
2.06	814.61	1039.63
2.16	860.38	1123.38
2.26	907.13	1211.76
2.36	954.85	1304.86
2.46	1003.56	1402.78
2.56	1053.18	1505.62
2.66	1101.86	1613.37
2.76	1148.67	1725.90
2.86	1192.86	1842.98
2.96	1232.75	1964.26
3.06	1269.59	2089.38
3.16	1301.43	2217.93
3.26	1326.89	2349.35
3.36	1348.19	2483.10
3.46	1366.12	2618.82
3.56	1380.19	2756.14
3.66	1393.25	2894.81
3.76	1397.78	3034.36
3.86	1396.52	3174.08
3.96	1393.9	3313.60
4.06	1383.32	3452.46
4.16	1367.08	3589.98
4.26	1349.42	3725.81
4.36	1325.23	3859.54
4.46	1296.47	3990.63
4.56	1266.42	4118.77
4.66	1232.15	4243.70
4.76	1195.31	4365.07
4.86	1157.16	4482.69
4.96	1117.9	4596.44
5.06	1085.76	4706.62
5.16	1053.22	4813.57
5.26	1020.26	4917.24
5.36	986.9	5017.60
5.46	953.13	5114.60
5.56	918.95	5208.20
5.66	884.36	5298.37
5.76	849.37	5385.06
5.86	813.96	5468.23
5.96	778.15	5547.84
6.06	741.93	5623.84
6.16	705.08	5696.19
6.26	666.84	5764.79
6.36	628.22	5829.54
6.46	588.79	5890.39
6.56	548.05	5947.23
6.66	507.07	5999.99
6.76	465.94	6048.64
6.86	424.78	6093.18
6.96	383.49	6133.59
7.06	343.09	6169.92
7.16	303.81	6202.27
7.26	265.15	6230.72
7.36	229.45	6255.45
7.46	195.88	6276.72
7.56	163.53	6294.69
7.66	136.12	6309.67

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7.76	111.42	6322.05
7.86	88.83	6332.06
7.96	72.96	6340.15
8.06	60.06	6346.80
8.16	50.27	6352.32
8.26	47.61	6357.21
8.36	48.49	6362.02
8.46	53.24	6367.11
8.56	58.59	6372.70
8.66	64.53	6378.86
8.76	69.87	6385.58
8.86	71.43	6392.65
8.96	72.11	6399.83
9.06	72.32	6407.05
9.16	72.64	6414.30
9.26	74.98	6421.68
9.36	76.22	6429.24
9.46	76.74	6436.89
9.56	75.34	6444.49
9.66	72.1	6451.86
9.76	68.49	6458.89
9.86	63.88	6465.51
9.96	56.95	6471.55
10.06	50.1	6476.90
10.16	43.32	6481.57
10.26	34.16	6485.44
10.36	25.48	6488.42
10.46	17.32	6490.56
10.56	9.08	6491.88
10.66	3.27	6492.50
10.76	0.36	6492.68

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Storage Node : BR6 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR6	Bottom	CIRCULAR	No	24.00			904.98	0.61

Output Summary Results

Peak Inflow (cfs)	3.57
Peak Lateral Inflow (cfs)	0.00
Peak Outflow (cfs)	3.53
Peak Exfiltration Flow Rate (cfm)	0.47
Max HGL Elevation Attained (ft)	905.29
Max HGL Depth Attained (ft)	2.37
Average HGL Elevation Attained (ft)	904.35
Average HGL Depth Attained (ft)	1.43
Time of Max HGL Occurrence (days hh:mm)	0 10:14
Total Exfiltration Volume (1000-ft³)	1.226
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR7

Input Data

Invert Elevation (ft)	895.77
Max (Rim) Elevation (ft)	901.73
Max (Rim) Offset (ft)	5.96
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-895.77
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

Exfiltration Rate (in/hr)	0.3500

Storage Area Volume Curves

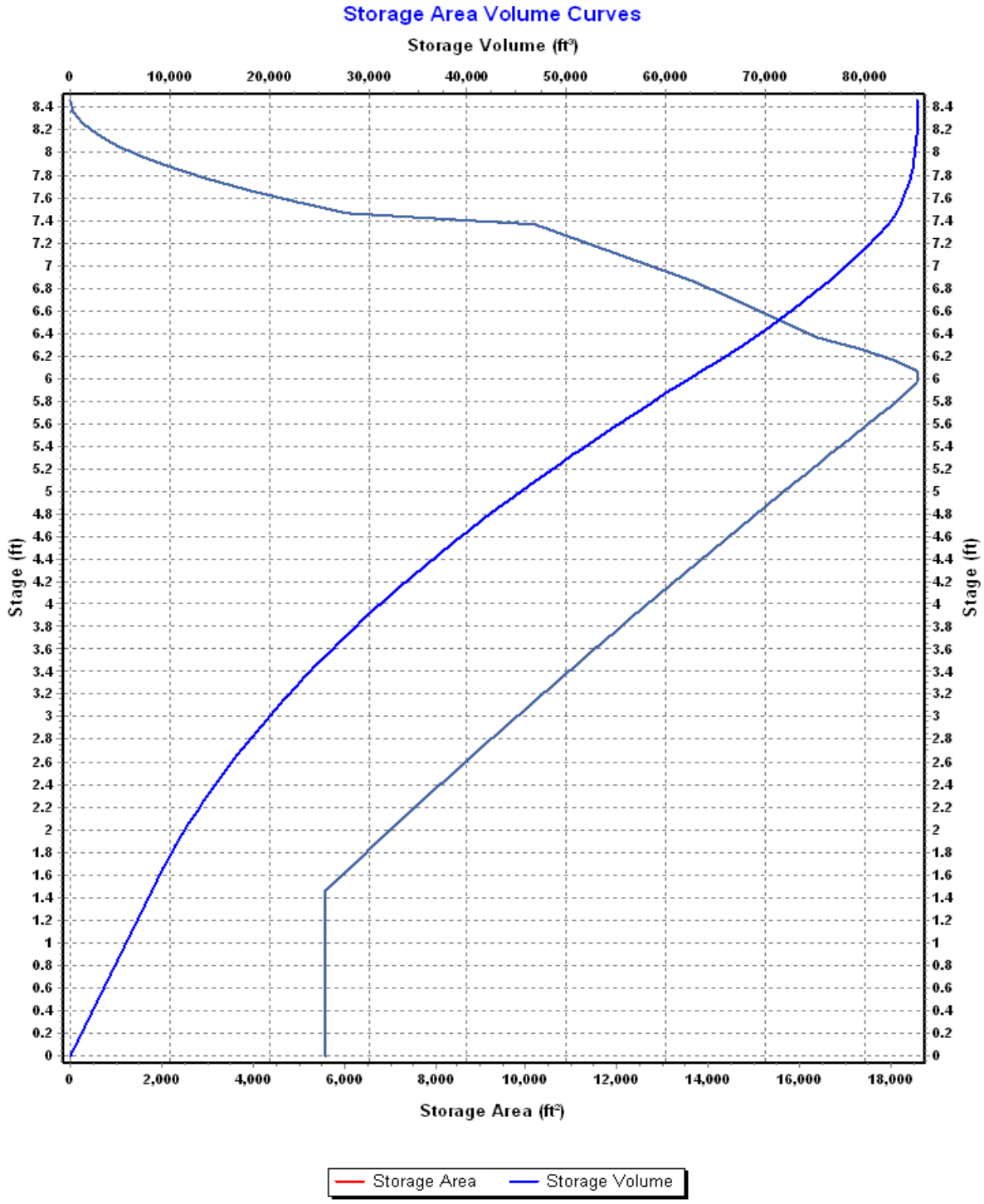
Storage Curve : BR7

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	5595	0.000
1.46	5595.13	8168.79
1.56	5856.73	8741.38
1.66	6119.66	9340.20
1.76	6383.94	9965.38
1.86	6649.55	10617.05
1.96	6916.5	11295.35
2.06	7184.79	12000.41
2.16	7454.41	12732.37
2.26	7725.38	13491.36
2.36	7997.69	14277.51
2.46	8271.33	15090.96
2.56	8546.31	15931.84
2.66	8822.63	16800.29
2.76	9100.3	17696.44
2.86	9379.31	18620.42
2.96	9659.68	19572.37
3.06	9941.38	20552.42
3.16	10224.44	21560.71
3.26	10508.84	22597.37
3.36	10794.59	23662.54
3.46	11081.69	24756.35
3.56	11370.12	25878.94
3.66	11659.61	27030.43
3.76	11950.17	28210.92
3.86	12241.84	29420.52
3.96	12534.6	30659.34
4.06	12828.48	31927.49
4.16	13123.45	33225.09
4.26	13419.52	34552.24
4.36	13716.7	35909.05
4.46	14014.97	37295.63
4.56	14314.29	38712.09
4.66	14614.69	40158.54
4.76	14916.14	41635.08
4.86	15218.67	43141.82
4.96	15522.25	44678.87
5.06	15826.91	46246.33
5.16	16132.63	47844.31
5.26	16439.41	49472.91
5.32	16623.99	50464.81
5.36	16747.26	51132.24
5.46	17056.17	52822.41
5.56	17366.15	54543.53
5.66	17677.19	56295.70
5.76	17989.3	58079.02
5.86	18302.47	59893.61
5.96	18561.7	61736.82
6.06	18563.99	63593.10
6.16	18028.51	65422.73
6.26	17266.47	67187.48
6.36	16354.62	68868.53
6.46	15821.95	70477.36
6.56	15283.77	72032.65
6.66	14740.05	73533.84
6.76	14190.76	74980.38
6.86	13635.89	76371.71
6.96	12950.52	77701.03
7.06	12263.14	78961.71
7.16	11573.75	80153.55
7.26	10882.35	81276.36
7.36	10188.94	82329.92
7.46	6084.34	83143.58
7.56	4958.1	83695.70
7.66	3945.56	84140.88
7.76	3046.43	84490.48
7.86	2260.65	84755.83
7.96	1588.12	84948.27

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8.06	1028.71	85079.11
8.16	592.94	85160.19
8.26	270.69	85203.37
8.36	49.56	85219.38
8.46	2.12	85221.96

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Storage Node : BR7 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR7B	Bottom	CIRCULAR	No	24.00			901.23	0.61

Output Summary Results

Peak Inflow (cfs)	10.46
Peak Lateral Inflow (cfs)	3.17
Peak Outflow (cfs)	0.84
Peak Exfiltration Flow Rate (cfm)	8.47
Max HGL Elevation Attained (ft)	901.35
Max HGL Depth Attained (ft)	5.58
Average HGL Elevation Attained (ft)	900.01
Average HGL Depth Attained (ft)	4.24
Time of Max HGL Occurrence (days hh:mm)	0 16:14
Total Exfiltration Volume (1000-ft³)	28.582
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Storage Node : BR8

Input Data

Invert Elevation (ft)	900.16
Max (Rim) Elevation (ft)	910.55
Max (Rim) Offset (ft)	10.39
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-900.16
Ponded Area (ft²)	0.00
Evaporation Loss	0.00

Infiltration/Exfiltration

Exfiltration Rate (in/hr)	0.2500

Storage Area Volume Curves

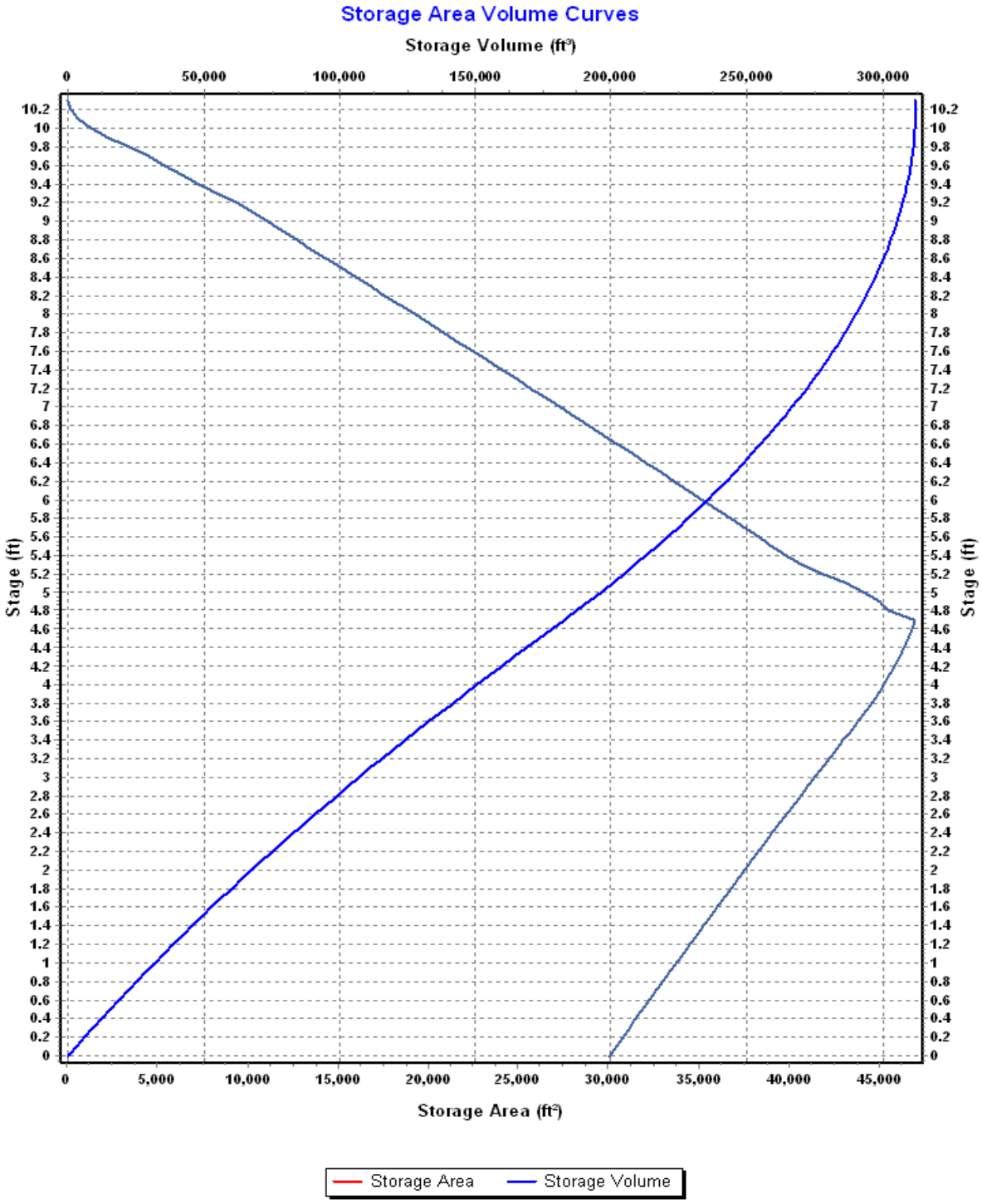
Storage Curve : RB

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	30060.38	0.000
0.1	30423.69	3024.20
0.2	30787.95	6084.78
0.3	31153.19	9181.84
0.4	31519.45	12315.47
0.5	31886.76	15485.78
0.6	32255.10	18692.87
0.7	32624.50	21936.85
0.8	32994.93	25217.82
0.9	33366.41	28535.89
1	33738.93	31891.16
1.1	34112.50	35283.73
1.2	34487.11	38713.71
1.3	34862.77	42181.20
1.4	35239.47	45686.31
1.5	35617.21	49229.14
1.6	35996.00	52809.80
1.7	36375.83	56428.39
1.8	36756.70	60085.02
1.9	37138.62	63779.79
2	37521.58	67512.80
2.1	37905.58	71284.16
2.2	38290.63	75093.97
2.3	38676.72	78942.34
2.4	39063.86	82829.37
2.46	39296.65	85180.19
2.5	39452.06	86755.16
2.6	39841.31	90719.83
2.7	40231.63	94723.48
2.8	40623.00	98766.21
2.9	41015.43	102848.13
3	41408.92	106969.35
3.1	41803.47	111129.97
3.2	42199.08	115330.10
3.3	42595.75	119569.84
3.4	42993.48	123849.30
3.5	43391.60	128168.55
3.6	43782.14	132527.24
3.7	44164.57	136924.58
3.8	44540.20	141359.82
3.9	44901.66	145831.91
4	45239.40	150338.96
4.1	45563.92	154879.13
4.2	45871.31	159450.89
4.3	46138.45	164051.38
4.4	46386.90	168677.65
4.5	46616.67	173327.83
4.6	46811.15	177999.22
4.7	46971.49	182688.35
4.8	45485.74	187311.21
4.9	45023.21	191836.66
5	44212.48	196298.44
5.1	43110.78	200664.60
5.2	41818.89	204911.08
5.3	40592.21	209031.64
5.4	39822.87	213052.39
5.5	39051.68	216996.12
5.6	38278.65	220862.64
5.7	37503.79	224651.76
5.8	36727.15	228363.31
5.9	35948.71	231997.10
6	35168.56	235552.96
6.1	34386.68	239030.72
6.2	33603.09	242430.21
6.3	32817.87	245751.26
6.4	32030.97	248993.70
6.5	31242.50	252157.37
6.6	30452.43	255242.12

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6.7	29660.78	258247.78
6.8	28867.64	261174.20
6.9	28072.95	264021.23
7	27276.82	266788.72
7.1	26479.23	269476.52
7.2	25680.17	272084.49
7.3	24879.78	274612.49
7.4	24077.96	277060.38
7.5	23274.83	279428.02
7.6	22470.38	281715.28
7.7	21664.58	283922.03
7.8	20857.60	286048.14
7.9	20049.29	288093.48
8	19239.75	290057.93
8.1	18429.02	291941.37
8.2	17617.00	293743.67
8.3	16803.95	295464.72
8.4	15989.67	297104.40
8.5	15174.27	298662.60
8.6	14357.79	300139.20
8.7	13540.07	301534.09
8.8	12721.38	302847.16
8.9	11901.56	304078.31
9	11080.62	305227.42
9.1	10258.76	306294.39
9.2	9327.55	307273.71
9.3	8324.12	308156.29
9.4	7321.13	308938.55
9.5	6362.76	309622.74
9.6	5439.54	310212.86
9.7	4519.10	310710.79
9.8	3459.55	311109.72
9.9	2336.41	311399.52
10	1375.60	311585.12
10.1	669.19	311687.36
10.2	186.39	311730.14
10.3	61.67	311742.54

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Storage Node : BR8 (continued)

Outflow Orifices

SN	Element ID	Orifice Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	OR8A	Bottom	CIRCULAR	No	24.00			903.16	0.61

Output Summary Results

Peak Inflow (cfs)	22.28
Peak Lateral Inflow (cfs)	22.28
Peak Outflow (cfs)	0.00
Peak Exfiltration Flow Rate (cfm)	14.26
Max HGL Elevation Attained (ft)	903.07
Max HGL Depth Attained (ft)	2.91
Average HGL Elevation Attained (ft)	902.23
Average HGL Depth Attained (ft)	2.07
Time of Max HGL Occurrence (days hh:mm)	1 00:16
Total Exfiltration Volume (1000-ft³)	52.668
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

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Appendix D

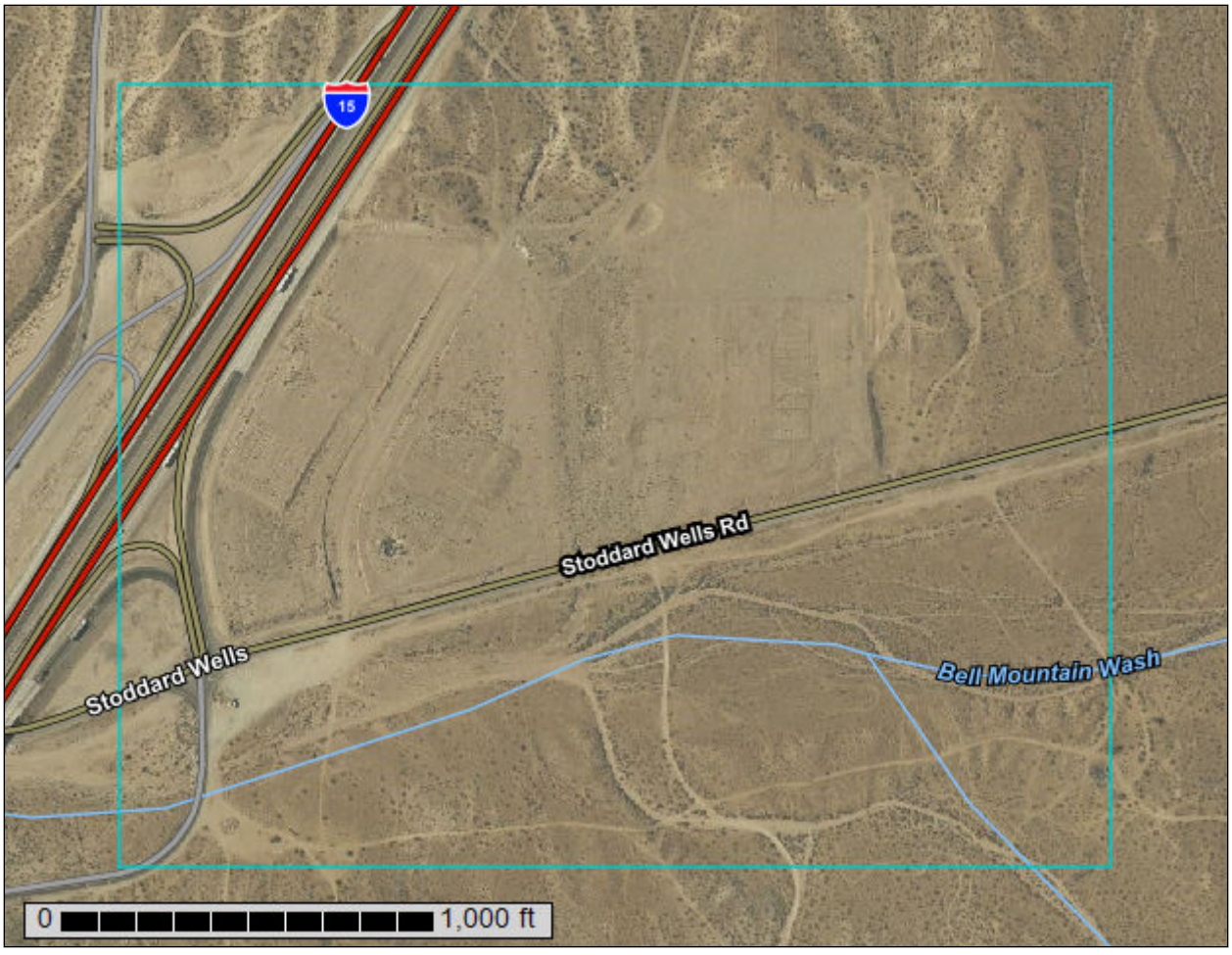
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for San Bernardino County, California, Mojave River Area



October 22, 2020

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

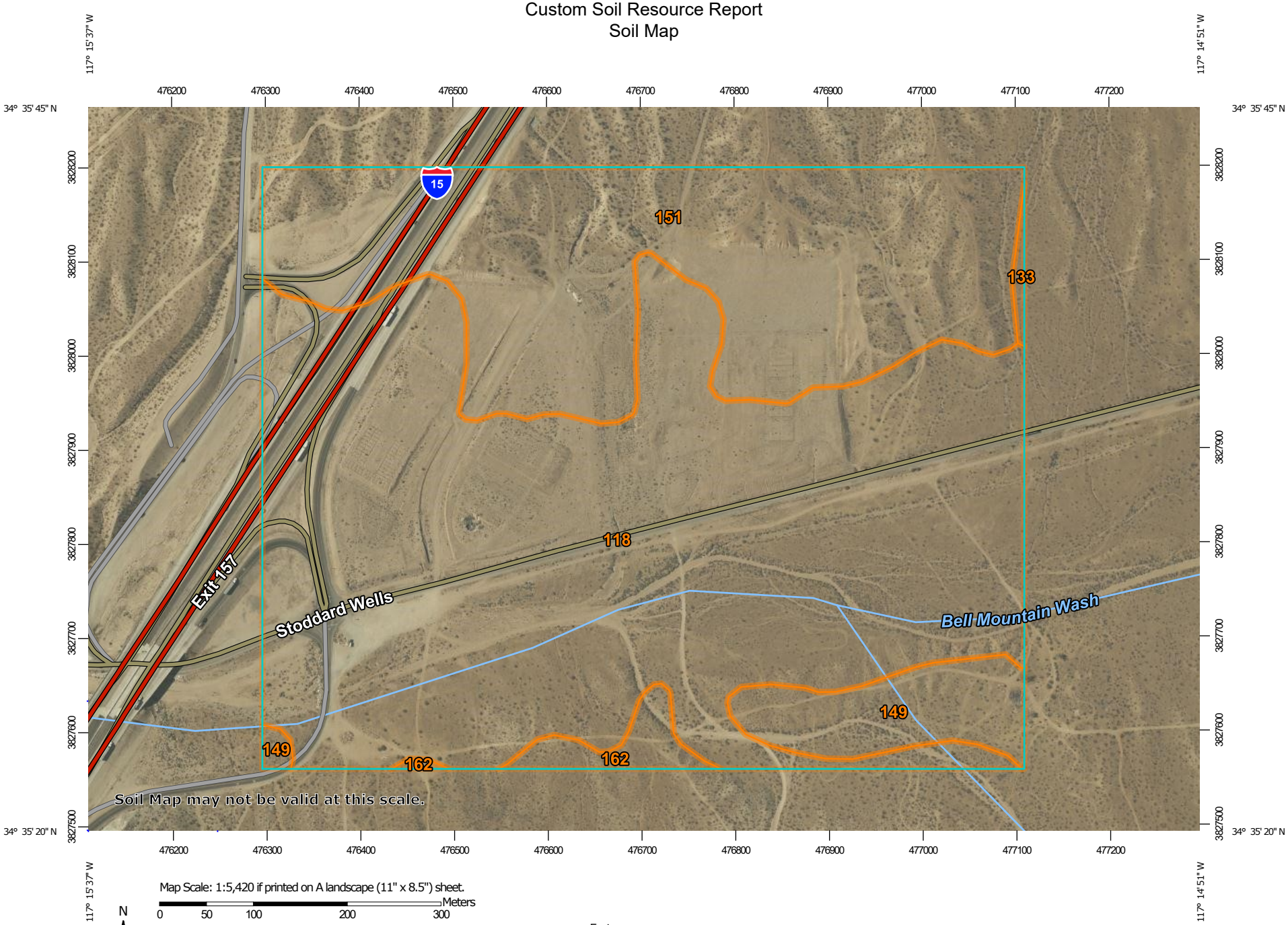
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: San Bernardino County, California, Mojave River Area
Survey Area Data: Version 12, May 27, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 26, 2019—Jul 8, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND

MAP INFORMATION

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
118	CAJON-ARIZO COMPLEX, 2 TO 15 PERCENT SLOPES*	81.0	62.8%
133	HELENDALE-BRYMAN LOAMY SANDS, 2 TO 5 PERCENT SLOPES*	0.3	0.3%
149	MIRAGE-JOSHUA COMPLEX, 2 TO 5 PERCENT SLOPES*	6.4	4.9%
151	NEBONA-CUDDEBACK COMPLEX, 2 TO 9 PERCENT SLOPES*	39.2	30.4%
162	SPARKHULE-ROCK OUTCROP COMPLEX, 15 TO 50 PERCENT SLOPES*	2.0	1.6%
Totals for Area of Interest		**129.0**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not

mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

San Bernardino County, California, Mojave River Area

118—CAJON-ARIZO COMPLEX, 2 TO 15 PERCENT SLOPES*

Map Unit Setting

National map unit symbol: hkrq
Elevation: 2,800 to 3,300 feet
Mean annual precipitation: 3 to 6 inches
Mean annual air temperature: 59 to 66 degrees F
Frost-free period: 180 to 290 days
Farmland classification: Not prime farmland

Map Unit Composition

Cajon, gravelly surface, and similar soils: 55 percent
Arizo and similar soils: 30 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cajon, Gravelly Surface

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite sources

Typical profile

H1 - 0 to 6 inches: gravelly sand
H2 - 6 to 60 inches: gravelly sand

Properties and qualities

Slope: 2 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum content: 1 percent
Available water capacity: Very low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): 4s
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: R030XF028CA - COBBLY SANDY
Hydric soil rating: No

Description of Arizo

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite sources

Typical profile

H1 - 0 to 6 inches: gravelly loamy sand
H2 - 6 to 60 inches: extremely gravelly loamy coarse sand

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: OccasionalNone
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water capacity: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: A
Ecological site: R030XF025CA - GRAVELLY COARSE LOAMY
Hydric soil rating: No

Minor Components

Helendale

Percent of map unit: 4 percent
Hydric soil rating: No

Bryman

Percent of map unit: 4 percent
Hydric soil rating: No

Joshua

Percent of map unit: 4 percent
Hydric soil rating: No

Cajon, clayey substratum

Percent of map unit: 3 percent

133—HELENDALE-BRYMAN LOAMY SANDS, 2 TO 5 PERCENT SLOPES*

Map Unit Setting

National map unit symbol: hks6

Elevation: 2,500 to 4,000 feet
Mean annual precipitation: 3 to 6 inches
Mean annual air temperature: 59 to 63 degrees F
Frost-free period: 180 to 280 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Helendale and similar soils: 50 percent
Bryman and similar soils: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Helendale

Setting

Landform: Fan remnants
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite sources

Typical profile

H1 - 0 to 6 inches: loamy sand
H2 - 6 to 30 inches: sandy loam
H3 - 30 to 66 inches: sandy loam
H4 - 66 to 99 inches: loamy sand, sandy loam
H4 - 66 to 99 inches:

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water capacity: Low (about 5.8 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: R030XF012CA - Sandy
Hydric soil rating: No

Description of Bryman

Setting

Landform: Fan remnants
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear

Parent material: Alluvium derived from granite sources

Typical profile

H1 - 0 to 8 inches: loamy sand
H2 - 8 to 12 inches: sandy loam
H3 - 12 to 44 inches: sandy clay loam
H4 - 44 to 60 inches: loamy sand, coarse sandy loam
H4 - 44 to 60 inches:

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water capacity: Moderate (about 8.2 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: R030XF012CA - Sandy
Hydric soil rating: No

Minor Components

Cajon

Percent of map unit: 5 percent
Hydric soil rating: No

Unnamed soils

Percent of map unit: 5 percent
Hydric soil rating: No

Mohave variant

Percent of map unit: 5 percent
Hydric soil rating: No

149—MIRAGE-JOSHUA COMPLEX, 2 TO 5 PERCENT SLOPES*

Map Unit Setting

National map unit symbol: hksq
Elevation: 2,600 to 3,400 feet
Mean annual precipitation: 3 to 5 inches
Mean annual air temperature: 63 to 66 degrees F
Frost-free period: 200 to 290 days

Farmland classification: Not prime farmland

Map Unit Composition

Mirage and similar soils: 50 percent
Joshua and similar soils: 30 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mirage

Setting

Landform: Fan remnants
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite sources

Typical profile

H1 - 0 to 5 inches: sandy loam
H2 - 5 to 21 inches: sandy clay loam, gravelly sandy clay loam, clay loam
H2 - 5 to 21 inches: gravelly sandy loam, gravelly sandy clay loam
H2 - 5 to 21 inches: gravelly loamy sand, very gravelly sand
H3 - 21 to 39 inches:
H3 - 21 to 39 inches:
H4 - 39 to 60 inches:
H4 - 39 to 60 inches:

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Strongly saline (16.0 mmhos/cm)
Available water capacity: Low (about 5.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: R030XG024CA - DESERT PAVEMENT
Hydric soil rating: No

Description of Joshua

Setting

Landform: Fan remnants
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from mixed sources

Typical profile

H1 - 0 to 3 inches: loam
H2 - 3 to 20 inches: gravelly sandy clay loam, gravelly sandy loam
H2 - 3 to 20 inches: very gravelly loamy coarse sand, very gravelly coarse sandy loam
H3 - 20 to 55 inches:
H3 - 20 to 55 inches:

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Slightly saline to strongly saline (4.0 to 16.0 mmhos/cm)
Available water capacity: Low (about 5.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: R030XG024CA - DESERT PAVEMENT
Hydric soil rating: No

Minor Components

Unnamed soils

Percent of map unit: 10 percent
Hydric soil rating: No

Cuddeback

Percent of map unit: 5 percent
Hydric soil rating: No

Nebona

Percent of map unit: 5 percent
Hydric soil rating: No

151—NEBONA-CUDDEBACK COMPLEX, 2 TO 9 PERCENT SLOPES*

Map Unit Setting

National map unit symbol: hkss
Elevation: 1,800 to 3,400 feet
Mean annual precipitation: 3 to 5 inches
Mean annual air temperature: 63 to 66 degrees F
Frost-free period: 200 to 290 days

Farmland classification: Not prime farmland

Map Unit Composition

Nebona and similar soils: 60 percent
Cuddeback and similar soils: 20 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Nebona

Setting

Landform: Fan remnants
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from mixed sources

Typical profile

H1 - 0 to 2 inches: sandy loam
H2 - 2 to 8 inches: fine sandy loam, sandy loam
H2 - 2 to 8 inches: stratified gravelly sand to loam
H4 - 12 to 65 inches:

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: 6 to 14 inches to duripan
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Slightly saline to strongly saline (4.0 to 16.0 mmhos/cm)
Available water capacity: Very low (about 1.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: R030XF030CA - DESERT PAVEMENT
Hydric soil rating: No

Description of Cuddeback

Setting

Landform: Inset fans
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from mixed sources

Typical profile

H1 - 0 to 3 inches: sandy loam
H2 - 3 to 6 inches: sandy loam
H3 - 6 to 17 inches: gravelly sandy clay loam, sandy clay loam

H3 - 6 to 17 inches: loamy sand, gravelly sandy loam
H4 - 17 to 34 inches:
H4 - 17 to 34 inches:

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: 20 to 40 inches to duripan
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)
Available water capacity: Low (about 6.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: R030XG024CA - DESERT PAVEMENT
Hydric soil rating: No

Minor Components

Unnamed soils

Percent of map unit: 19 percent
Hydric soil rating: No

Unnamed

Percent of map unit: 1 percent
Landform: Playas
Hydric soil rating: Yes

162—SPARKHULE-ROCK OUTCROP COMPLEX, 15 TO 50 PERCENT SLOPES*

Map Unit Setting

National map unit symbol: hkt4
Elevation: 650 to 4,500 feet
Mean annual precipitation: 3 to 6 inches
Mean annual air temperature: 59 to 66 degrees F
Frost-free period: 180 to 290 days
Farmland classification: Not prime farmland

Map Unit Composition

Sparkhule and similar soils: 60 percent
Rock outcrop: 35 percent

Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sparkhule

Setting

Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Colluvium derived from and/or residuum weathered from dacite

Typical profile

H1 - 0 to 2 inches: gravelly sandy loam
H2 - 2 to 18 inches: gravelly sandy clay loam, sandy clay loam, gravelly clay loam
H2 - 2 to 18 inches:
H2 - 2 to 18 inches:

Properties and qualities

Slope: 15 to 50 percent
Depth to restrictive feature: 14 to 20 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water capacity: Moderate (about 7.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: R030XF033CA - GRAVELLY LOAM
Hydric soil rating: No

Description of Rock Outcrop

Setting

Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Concave

Properties and qualities

Slope: 15 to 50 percent
Depth to restrictive feature: 0 inches to lithic bedrock

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: No

Minor Components

Unnamed, sl-grscl subsoil

Percent of map unit: 5 percent
Hydric soil rating: No

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Hydrologic Soil Group

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

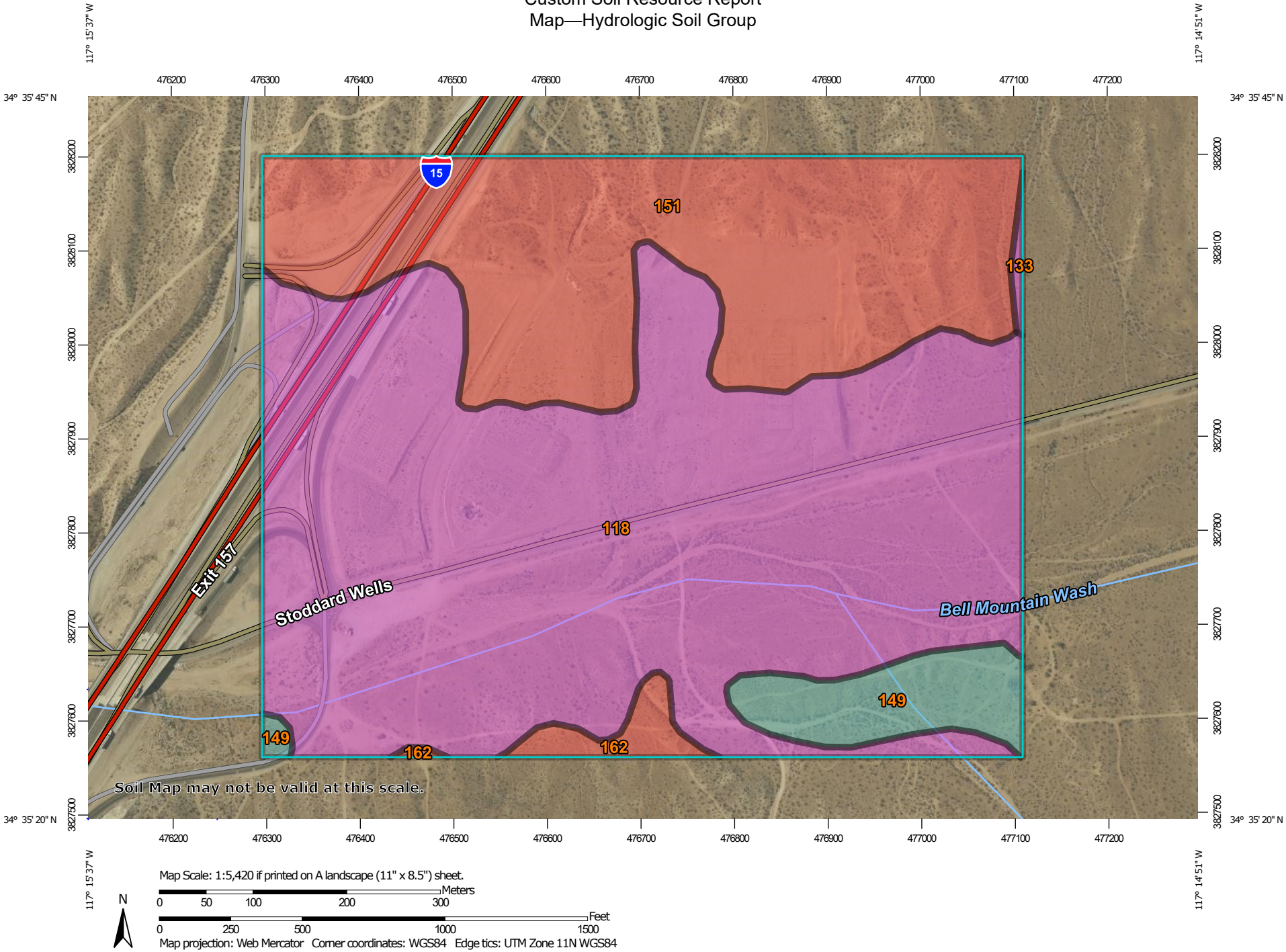
Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Custom Soil Resource Report
Map—Hydrologic Soil Group



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: San Bernardino County, California, Mojave River Area
Survey Area Data: Version 12, May 27, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 26, 2019—Jul 8, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND	MAP INFORMATION
	imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
118	CAJON-ARIZO COMPLEX, 2 TO 15 PERCENT SLOPES*	A	81.0	62.8%
133	HELENDALE-BRYMAN LOAMY SANDS, 2 TO 5 PERCENT SLOPES*	A	0.3	0.3%
149	MIRAGE-JOSHUA COMPLEX, 2 TO 5 PERCENT SLOPES*	C	6.4	4.9%
151	NEBONA-CUDDEBACK COMPLEX, 2 TO 9 PERCENT SLOPES*	D	39.2	30.4%
162	SPARKHULE-ROCK OUTCROP COMPLEX, 15 TO 50 PERCENT SLOPES*	D	2.0	1.6%
Totals for Area of Interest			**129.0**	**100.0%**

Rating Options—Hydrologic Soil Group

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

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Appendix E

Geotechnical Engineering Report

Love's Travel Stop-Apple Valley
Apple Valley, San Bernardino County, CA
February 10, 2021
Terracon Project No. CB205149

Prepared for:
Love's Travel Stops & Country Stores, Inc.
Oklahoma City, Oklahoma

Prepared by:
Terracon Consultants, Inc.
Colton, CA

February 10, 2021

Love's Travel Stops & Country Stores, Inc.
10601 North Pennsylvania Ave.
Oklahoma City, Oklahoma 73120

Attn: Mr. Rick Shuffield
P: (405) 302 6646
E: Rick.Shuffield@ loves.com

Re: Geotechnical Engineering Report
Love's Travel Stop-Apple Valley
NEC of Stoddard Wells Road and I-5 North
Apple Valley, San Bernardino County, CA
Terracon Project No. CB205149

Dear Mr. Shuffield:

We have completed the Geotechnical Engineering services for the above referenced project. This study was performed in general accordance with Terracon Proposal No. PCB205149 dated November 20, 2020. This report presents the findings of the subsurface exploration and provides geotechnical recommendations concerning earthwork, pavements, foundations, and floor slabs for the proposed structures.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further service, please contact us.

Sincerely,
Terracon Consultants, Inc.

Keith P. Askew, P.E., G.E.
Department Manager

Jay J. Martin, E.G.
Principal Geologist

REPORT TOPICS

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SITE CONDITIONS 1
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FLOOR SLABS 22
LATERAL EARTH PRESSURES 23
PAVEMENTS 23
GENERAL COMMENTS 30

Note: This report was originally delivered in a web-based format. For more interactive features, please view your project online at client.terracon.com.

ATTACHMENTS

EXPLORATION AND TESTING PROCEDURES
PHOTOGRAPHY LOG
SITE LOCATION AND EXPLORATION PLANS
EXPLORATION RESULTS
SUPPORTING INFORMATION

Note: Refer to each individual Attachment for a listing of contents.

Geotechnical Engineering Report

Love's Travel Stop-Apple Valley
NEC of Stoddard Wells Road and I-5 North
Apple Valley, San Bernardino County, CA

Terracon Project No. CB205149
February 10, 2021

INTRODUCTION

This report presents the results of our subsurface exploration and geotechnical engineering services performed for the proposed Love's Travel Stop to be located at NEC of Stoddard Wells Road and I-5 North in Apple Valley, San Bernardino County, CA. The purpose of these services is to provide information and geotechnical engineering recommendations relative to:

- Subsurface soil conditions
- Groundwater conditions
- Site preparation and earthwork
- Excavation considerations
- Pavement design and construction
- Foundation design and construction
- Floor slab design and construction
- Seismic site classification per CBC
- Lateral earth pressures

The geotechnical engineering Scope of Services for this project included drilling 22 test borings (B-1 through B-16, and B-18 through B-23) to depths ranging from approximately 5 to 51½ feet below the existing ground surface (bgs), excavating 11 test pits (T-1 though T-11) ranging from 3½ to 11 feet bgs, 7 field percolation tests, field resistivity testing, laboratory testing, and preparation of this report.

Maps showing the site and boring locations are shown in the **Site Location** and **Exploration Plan** sections, respectively. The results of the laboratory testing performed on soil samples obtained from the site during the field exploration are included on the boring logs and as separate graphs in the **Exploration Results** section.

SITE CONDITIONS

The following description of site conditions is derived from our site visit in association with the field exploration and our review of publicly available geologic and topographic maps.

Item	Description
Parcel Information	The project is located at the NEC of Stoddard Wells Road and I-15 North in Apple Valley, San Bernardino County, CA. The site is approximately 19.6 acres. 34.5928°N/117.2560°W (approximate). See **Site Location**
Existing Improvements	The site appears to have been graded for a previously proposed development. Based on Google Earth, materials were excavated from the northern portions and fill has been placed within the southern areas. A cut slope is apparent along the northern boundary, and we estimate that fill soils in the south could be on the order of 20 feet thick. Building pads were previously developed and underground utility lines appear to have been installed and abandoned. The elevations and dimensions of the previously graded pads vary across the site. There is an unpaved and unimproved roadway visible as street cuts extending through the central portion of the site. Significant erosion along with off-road vehicular traffic has occurred, and end dumped piles of debris are present.
Current Ground Cover	Earthen, light to moderate desert vegetation.
Existing Topography	Grades vary greatly due to the previous development. Elevations range from 2,925 feet in the north to 2,900 feet in the south.

We also collected photographs at the time of our field exploration program. Representative photos are provided in our **Photography Log**.

PROJECT DESCRIPTION

Our initial understanding of the project was provided in our proposal and was discussed during project planning.

Item	Description
Information Provided	Project information provided by Lane Engineers including site plan titled *Preliminary Grading Plan, New Travel Stop, Stoddard Wells Road*, undated.

Item	Description
Project Description	The proposed Love's Travel Stop will include the following: ■ A single-story convenience store/restaurant building ■ Canopies over the car and truck fuel dispensing islands ■ A high-rise sign ■ Above and below ground fuel tanks ■ Concrete and asphalt pavement ■ Retention basins
Proposed Structures	The project includes a single-story convenience store (Country Store) building and an attached drive through (fast food) restaurant with a combined footprint of about 12,000 square feet. The building will be slab-on-grade with no below-grade structures. Fuel island canopies are planned.
Building Construction	■ The Country Store will have isolated steel columns, load bearing masonry walls and a concrete slab-on-grade floor. ■ Fuel island canopies will be steel column and frame construction ■ High-rise sign will be supported on a deep foundation system (drilled pier)
Finished Floor Elevation	Proposed grades are anticipated to be near elevation 2,925 feet in the north to 2,902 feet in the southwest. Cuts and fills to achieve design grades are anticipated to be on the order of 5 and 15 feet, respectively, excluding requirements for remedial grading. Finish floor elevation for the Country Store is anticipated to be approximately 2,913 feet. Fuel stations are proposed to be approximately 2,910 feet for autos and 2,920 for trucks.
Maximum Loads (provided by Love's)	Country Store: ■ Columns: 25 kips ■ Walls: 1 kip per linear foot (klf) ■ Floor Slab: assumed 150 pounds per square foot (psf) Auto Fuel Canopy (40' by 80' in plan dimensions) foundations: ■ Axial compression: 23.07 kips (dead and live loads) ■ Axial uplift: 14.99 kips ■ Moment: 22.58 kip-feet Truck Fuel Canopy (25' height) foundations: ■ Axial compression: 22.59 kips (dead and live loads) ■ Axial uplift: 13.73 kips ■ Moment: 54.61 kip-feet

Item	Description
Grading/Slopes	Up to 5 feet of cut and 15 feet of fill may be required to develop final grade, excluding requirements for remedial grading. Slopes are proposed with a maximum of 5 feet in vertical height and inclinations of 2:1 (h:v) or flatter. An existing ascending cut slope with a vertical height on the order of 20 feet and inclination of approximately 2:1 (h:v) is adjacent to the northern property line.
Below-Grade Structures	Other than two underground storage tank (USTs) installations, no below grade structures are anticipated. Excavations for the fuel storage tanks are anticipated to extend to a depth of about 12 to 15 feet below final grade.
Free-Standing Retaining Walls	Retaining walls are not expected to be constructed as part of site development to achieve final grades.
Pavements	The Love's Travel Stop will include light-duty, medium-duty, heavy-duty, and extra heavy-duty pavement areas. The pavement design criteria are noted below (Tier 1/Tier 2): ■ Light-duty auto area: 1,000 cars per day ■ Medium-duty truck parking area: 150 trucks per day ■ Heavy-duty truck drives: 600 trucks per day ■ Extra heavy-duty truck drives: 1,000 trucks per day ■ 20-year design life
High-Rise Sign Access Road	An unpaved access road will extend to the high-rise sign. Vehicles expected to operate on the access road include concrete trucks and other construction equipment during construction of the sign foundation. Additionally, truck-mounted cranes used to erect and maintain the sign are expected to use the road. Cranes typically used vary in size and weight depending on the height of the sign and monopole weight. Vehicles operating on this road include: ■ Crane, large (350-ton capacity): 140-kip load, 6 axles, 50 ft. long by 9 ft. wide; ■ Crane, medium: 72-kip load, 4 or 6 axles, 40 ft. long by 9 ft. wide; ■ Tractor trailers, 80-kip load, 5 axles, 18 wheels, 70 ft. long by 9 ft. wide ■ Concrete trucks, 72-kip load, 10 wheels, 30 ft. long by 8 ft. wide.
Infiltration Systems	Based on information provided by Lane Engineers, Inc., on-site infiltration systems consisting of bioretention basins at six locations are proposed.

GEOTECHNICAL CHARACTERIZATION

Site Geology

The site is located within the Mojave Desert Geomorphic Province of California. The Mojave Desert is bounded on the southwest by the San Andreas fault and the Transverse Ranges and on the northeast by the Garlock fault. The Mojave Desert is an ancient feature formed in response to the inception of movement on the San Andreas and Garlock faults. Broad alluviated basins burying the previous mountainous topography characterize the region.

The site is located on a large, southeast-sloping alluvial fan derived from erosion of Quartzite Mountain, located northwest of the site. These alluvial deposits are generally very old, mapped as Pleistocene-age alluvium by Dibblee (1960). The older alluvium is well exposed in the existing south-facing cut slope along the northern site boundary. The older alluvium on the site consists of silty sands with gravel in a hard, consolidated condition. Pedogenic soil horizons observed include petrocalcic (carbonate) layers. Formation of such horizons require tens of thousands of years of subaerial exposure and are evidence of a late Pleistocene age. Bedding exposed in the cut slope dips gently to the southeast (slightly out of slope) with no evidence of deformation observed. No fine-grained beds were observed.

The older alluvium has been locally incised and reworked by a drainage known as Bell Mountain Wash, which flows to the southwest overall and eventually to the Mojave River to the southwest of the site. The wash includes very young alluvium of late Holocene age. The younger alluvium consists of silty sand with gravel. Stoddard Wells Road generally follows the alignment of the wash in the vicinity of the site.

In an effort to clarify the past use of the site, aerial photographic imagery available from Google Earth and from the Fairchild Collection at U.C. Santa Barbara was reviewed. The September 1994 Google Earth imagery shows the site and the adjacent parcel to the east as graded. Most of the existing site features including the pads, street cuts and "bin outlines" (see Subsurface Profile section below) are visible on this imagery.

The pre-grading imagery shows the older alluvial fan emanating from the northwest truncated at the surface by southwest-flowing Bell Mountain Wash.

Subsurface Profile

We have developed a general characterization of the subsurface soil and groundwater conditions based upon our review of the data and our understanding of the geologic setting and planned construction. The site is underlain with undocumented fill soils with thicknesses ranging from 1 to 11 feet. The fill is generally classified as silty sand with varying amounts of gravel and considered unsuitable for support of the proposed development in the current condition. The fill

overlies alluvium consisting of sand with varying amounts of silt and gravel, and relative density of loose to very dense.

The site currently contains underground utilities that have been abandoned. These utilities are remnants of the previous site development attempt and include an uncapped well, PVC water mains (fire mains?), and at least one stickup for a fire hydrant. These items, where noted in the field, are shown on the **Exploration Plan** with their approximate locations. In the area of trench T-5, ground features denote the outlines of bins or similar structures. Short sections of electrical conduit in the area of these outlines are present. We excavated one of these and found the conduits to consist of short, partially buried sections. It appears that they were intended to serve future electrical panels.

The geotechnical characterization forms the basis of our geotechnical calculations and evaluation of site preparation, foundation options and pavement options. As noted in **General Comments**, the characterization is based upon widely spaced exploration points across the site, and variations are likely. Conditions encountered at each boring location are indicated on the individual boring logs shown in the **Exploration Results** section and are attached to this report. Stratification boundaries on the boring logs represent the approximate location of changes in native soil types; in situ, the transition between materials may be gradual.

Groundwater

The borings were advanced using continuous flight auger drilling techniques that allow short-term groundwater observations to be made while drilling. Groundwater seepage was not observed within the maximum depths of 51 ½ feet during or at the completion of drilling. We do not anticipate groundwater will affect construction at this project site. Groundwater level fluctuations occur due to seasonal variations in the amount of rainfall, runoff and other factors not evident at the time the borings were performed.

According to data collected from the Water Data Library of California Department of Water Resources (DWR) from a nearby wells, historic groundwater levels are deeper than 100 feet. We attempted to measure the depth to water in the uncapped well on the site (southwest portion of the site) on December 30, 2020. The depth to water in the well was deeper than the length of cable on the sounder (200 feet), so no depth to water could be obtained.

Hydroconsolidation

To evaluate the potential deformation that may be caused by the addition of water to the subsurface soils, hydro-consolidation testing was performed on selected, relatively undisturbed samples. The results are presented in the Exploration Results section and indicate collapse potentials of 1.6% (B-1, 15 – 16.5 ft), 2.1% (B-2, 10 – 11.5 ft), 2.0% (B-3, 10 – 11.5 ft), 4.2% (B-

7, 15 – 16.5 ft) and 0.9% (B-8, 10 – 11.5 ft). The samples were saturated under a confining pressure of 2,000 psf.

SEISMIC CONSIDERATIONS

Based on the soil properties encountered at the site and as described on the exploration logs and results, it is our opinion that the Seismic Site Classification is D. The 2019 California Building Code (CBC) Seismic Design Parameters have been generated using the SEAOC/OSHPD Seismic Design Maps Tool. This web-based software application calculates seismic design parameters in accordance with ASCE 7-16 and 2019 CBC. The 2019 CBC requires that a site-specific ground motion study be performed in accordance with Section 11.4.8 of ASCE 7-16 for Site Class D sites with a mapped S_1 value greater than or equal 0.2.

However, Section 11.4.8 of ASCE 7-16 includes an exception from such analysis for specific structures on Site Class D sites. The commentary for Section 11 of ASCE 7-16 (Page 534 of Section C11 of ASCE 7-16) states that "In general, this exception effectively limits the requirements for site-specific hazard analysis to very tall and or flexible structures at Site Class D sites." Based on our understanding of the proposed structures, it is our assumption that the exception in Section 11.4.8 applies to the proposed structure. However, the structural engineer should verify the applicability of this exception.

Based on this exception, the spectral response accelerations presented below were calculated using the site coefficients (F_a and F_v) from Tables 1613.2.3(1) and 1613.2.3(2) presented in Section 16.4.4 of the 2019 CBC.

Description	Value
Site Classification (CBC) [1]	D [2]
Site Latitude (°N)	34.5928
Site Longitude (°W)	117.2560
S_s Spectral Acceleration for a 0.2-Second Period	1.014
S_1 Spectral Acceleration for a 1-Second Period	0.392
F_a Site Coefficient for a 0.2-Second Period	1.094
F_v Site Coefficient for a 1-Second Period	1.9
Site Modified Peak Ground Acceleration	0.508g
De-aggregated Mean Magnitude [3]	6.92

Description	Value
1. Seismic site classification in general accordance with the *2019 California Building Code*. 2. The 2019 California Building Code (CBC) requires a site soil profile determination extending to a depth of 100 feet for seismic site classification. The current scope does not include the required 100-foot soil profile determination. Our borings were extended to a maximum depth of 51 ½ feet. This seismic site class definition considers that similar or denser soils continue below the maximum depth of the subsurface exploration. Additional exploration to deeper depths would be required to confirm the conditions below the current depth of exploration. 3. These values were obtained using on-line Unified Hazard Tool by the USGS (https://earthquake.usgs.gov/hazards/interactive/) for return period of 2% in 50 years accessed	

A site-specific ground motion study may reduce design values and consequently construction costs. We recommend consulting with a structural engineer to evaluate the need for such study and its potential impact on construction costs. Terracon should be contacted if a site-specific ground motion study is desired.

Faulting and Estimated Ground Motions

The site is located in the seismically active southern California area. The type and magnitude of seismic hazards affecting the site are dependent on the distance to causative faults, the intensity, and the magnitude of the seismic event. As calculated using the USGS Unified Hazard Tool, the San Andreas (San Bernardino N) Fault, which is considered to have the most significant effect at the site from a design standpoint, has a maximum magnitude of 8.00 and is located approximately 39.97 kilometers from the site.

Based on the USGS Design Maps Summary Report, using the American Society of Civil Engineers (ASCE 7-16) standard, the peak ground acceleration (PGA_M) at the project site is expected to be 0.508 g. Based on the USGS Unified Hazard Tool, the project site has a de-aggregated mean magnitude of 6.92. Furthermore, the site is not located within an Alquist-Priolo Earthquake Fault Zone based on our review of the State Fault Hazard Maps.

LIQUEFACTION AND SEISMIC SETTLEMENT

Liquefaction Potential

Liquefaction is a mode of ground failure that results from the generation of high pore-water pressures during earthquake ground shaking, causing loss of shear strength, and is typically a hazard where loose sandy soils exist below groundwater. County of San Bernardino has designated certain areas as potential liquefaction hazard zones. These are areas considered at a risk of liquefaction-related ground failure during a seismic event, based upon mapped surficial deposits and the presence of a relatively shallow water table.

The subsurface materials generally consist of loose previously placed fill materials comprised of silty sand with gravel within the upper approximately 1 to 11 feet of existing grades, underlain by loose to very dense sand with varying amounts of silt and gravel extending to the depth of the borings. Groundwater was not encountered within the maximum depths of exploration during or at the completion of drilling. As measured in the well encountered on the site during the field investigation, groundwater was at least 200 feet below the ground surface.

According to the County of San Bernardino general plan, the site is located within an area having a low liquefaction potential. Based on this mapping, and the anticipated depth of groundwater, it is our opinion that the liquefaction potential at the site is low.

Seismic Settlement

To determine the amount of settlement of unsaturated sand during seismic shaking, we utilized the software "LiquefyPro" by CivilTech Software, using soil data combined from borings B-1, B-2, B-4, B-7, and B-8. A Peak Ground Acceleration (PGA) of 0.508g and the de-aggregated mean magnitude of 6.92 for the project site were used. Settlement analysis used the Ishihara / Yoshimine method and the fines percentage were corrected for liquefaction using the Modify Stark/Olson method.

Based on the calculation results, seismically induced settlement (dry sand settlement) is estimated to be less than 1 inch. We expect that the maximum differential seismic settlement could be at the order of half of total seismic settlement over a distance of 40 feet. Therefore, in our opinion, seismic settlement is not considered a significant geologic hazard at this site.

CORROSIVITY

The table below lists the results of laboratory soluble sulfate, soluble chloride, electrical resistivity, and pH testing. In addition, a field resistivity survey was performed at the Tank Pad location using the Wenner Array (4-pin) method per ASTM G57 and a digital ground resistance tester. The results of the field survey are provided in **Exploration and Testing Procedure** attachment.

The following values may be used to estimate potential corrosive characteristics of the on-site soils with respect to contact with the various underground materials which will be used for project construction.

Corrosivity Test Results Summary						
Boring	**Depth (feet)**	**Soluble Sulfate (mg/kg)**	**Soluble Chloride (mg/kg)**	**Electrical Resistivity (as-received) (Ω-cm)**	**Electrical Resistivity (saturated) (Ω-cm)**	**pH**
B-1	10.0-11.5	58	30	24,400	1,800	8.0
B-4	2.5-4.0	131	168	10,800	880	8.0

Results of soluble sulfate testing indicate samples of the on-site soils tested possess negligible sulfate concentrations when classified in accordance with Table 4.3.1 of the ACI Design Manual. Concrete should be designed in accordance with the provisions of the ACI Design Manual, Section 318, Chapter 4.

For protection against corrosion to buried metals, Terracon recommends that an experienced corrosion engineer be retained to design a suitable corrosion protection system for underground metal structures or components.

If corrosion of buried metal is critical, it should be protected using a non-corrosive backfill, wrapping, coating, sacrificial anodes, or a combination of these methods, as designed by a qualified corrosion engineer.

STORMWATER MANAGEMENT

Seven in-situ percolation tests were performed at approximate depths of 5 to 15 feet bgs. A 2-inch thick layer of 3/8 inch gravel was placed in the bottom of each boring after the borings were drilled to investigate the soil profile. A 3-inch diameter perforated pipe was installed on top of the gravel layer in each boring. Gravel was used to backfill between the perforated pipes and the boring sidewall. The borings were then filled with water for a pre-soak period. Testing began after a pre-soak period. At the beginning of the test, the pipes were refilled with water and readings were taken at standardized time intervals. Percolation rates are provided in the following table:

Test Location	Test Depth (ft.) [1]	Soil Type	Percolation Rate Average (in./hr.) [2]	Infiltration Rate Average (in./hr.) [3]
B-16	5	SM	13.0	0.5
B-18	10	SM	19.2	0.7
B-19	5	SP-SM	37.0	1.4
B-20	15	SW-SM	43.2	1.5
B-21	10	SW-SM	195.6	8.3
B-22	8	SM	52.8	2.0

Test Location	Test Depth (ft.) [1]	Soil Type	Percolation Rate Average (in./hr.) [2]	Infiltration Rate Average (in./hr.) [3]
B-23	5	SW-SM	139.5	7.3

1. Below existing ground surface.
2. Our percolation tests were performed generally following the well permeater test method described in the "Guidelines for Geotechnical Investigation and Reporting Low Impact Development Stormwater Infiltration", San Bernardino County Department of Public Works, 2017.
3. If proposed infiltration system will mainly rely on vertical downward seepage, the correlated infiltration rates should be used.

The above infiltration rates determined by the shallow percolation test method are based on field test results utilizing clear water. Infiltration rates can be affected by silt buildup, debris, degree of soil saturation, site variability and other factors. The rate obtained at specific location and depth is representative of the location and depth tested and may not be representative of the entire site. Application of an appropriate safety factor is prudent to account for subsoil inconsistencies, possible compaction related to site grading, and potential silting of the percolating soils, depending on the application.

The design engineer should also check with the local agency for the limitation of the infiltration rate allowed in the design. If the maximum allowable design infiltration rate is lower than the above recommended rate, the maximum allowable design infiltration rate should be used. The designer of the basins should also consider other possible site variability in the design.

Based on the soils encountered in our borings, we expect the percolation rates of the soils could be different than measured in the field due to variations in fines and gravel content. The design elevation and size of the proposed infiltration system should account for this expected variability in infiltration rates.

Infiltration testing should be performed after construction of the infiltration system to verify the design infiltration rates. It should be noted that siltation and vegetation growth along with other factors may affect the infiltration rates of the infiltration areas. The actual infiltration rate may vary from the values reported here. Infiltration systems should be located at least 10 feet from any existing or proposed foundation system.

GEOTECHNICAL OVERVIEW

The site is suitable for the proposed construction based upon geotechnical conditions encountered in the test borings and pits, provided that the recommendations provided in this report are implemented in the design and construction phases of this project.

Based on our field investigation and laboratory test results, it is our opinion that the site will be safe against hazards from landslide, settlement, or slippage provided that the recommendations presented in our report are followed. Also, provided that the recommendations presented in our report are followed, we find that the proposed grading will not adversely affect the geologic stability of the properties adjacent to the site. The existing cut slope along the northern boundary of the site consists of coarse-grained, dense to very dense, older alluvium with a slight out-of-slope bedding component. No fine-grained beds were observed and this slope exhibits satisfactory stability against failure.

Geotechnical engineering recommendations for foundation systems and other earth connected phases of the project are outlined below. The recommendations contained in this report are based upon the results of field and laboratory testing, engineering analyses, and our current understanding of the proposed project.

Based on the conditions encountered, we believe the proposed buildings can be supported on shallow foundations, such as spread footings. The recommendations contained in this report are based upon the results of field and laboratory testing (presented in the **Exploration Results** section), engineering analyses, and our current understanding of the proposed project.

The **General Comments** section provides an understanding of the report limitations.

EARTHWORK

The following recommendations include site preparation, excavation, subgrade preparation and placement of engineered fills on the project. The recommendations presented for design and construction of earth supported elements including foundations, slabs, and pavements are contingent upon following the recommendations outlined in this section.

Earthwork on the project should be observed and evaluated by Terracon. The evaluation of earthwork should include observation and testing of engineered fill, subgrade preparation, foundation bearing soils, and other geotechnical conditions exposed during the construction of the project.

Site Preparation

Strip and remove existing vegetation, debris and other deleterious materials from proposed building and pavement areas. Exposed surfaces should be free of mounds and depressions which could prevent uniform compaction. The site should be initially graded to create a relatively level surface to receive fill and provide for a relatively uniform thickness of fill beneath proposed building structures.

The ground surface of the site is generally earthen and bare; however, there are some native grasses and bushes. We recommend stripping vegetation to depths that exposed soils with less than 3 percent organics and no roots having a diameter greater than 1/8 inch. While the depth of the unsuitable soils should be expected to vary, the thickness of the topsoil layer may be estimated to be approximately 3 to 6 inches for construction budgeting purposes. The thickness of the vegetation layer was not determined during our field exploration; therefore, the actual depth of stripping should be verified by engineering observations made during the grading operations at the project. Exposed surfaces should be free of mounds and depressions which could prevent uniform compaction.

Stripped materials consisting of vegetation and organic materials should be removed from the site or used to revegetate landscaped areas or exposed slopes after completion of grading operations. If it is necessary to dispose of organic materials on site, they should be placed in non-structural areas, and in fill sections not exceeding 5 feet in height.

Our explorations indicate the site has undocumented fill soils with thicknesses varying and up to 11 feet in some areas, and we anticipate the fill may be on the order of 15 to 20 feet thick in some areas. Documentation to show if the grading operations were monitored or the fill materials have been compacted and tested are not available. We recommend that all fill soils be removed within the proposed building area and the excavation thoroughly cleaned prior to backfill placement and/or construction. If such documentation exists, Terracon should be notified and the recommendations in this report may be appropriately modified.

Although no evidence for underground facilities such as septic tanks, cesspools, or basements was observed during the site reconnaissance, such features could be encountered during construction. Buried utility lines and associated trenches are known to exist on the site. The full extent of these and other buried features will not be known until grading. All of the on-site fills, utility lines and associated trenches should be traced out and completely removed during grading. The resulting excavations should be thoroughly cleaned prior to backfill placement and/or construction.

One well with a steel casing was observed in the southwest portion of the site (see **Exploration Plan**). This well was uncapped at the time of our field investigation. This well should be abandoned in accordance with State and County requirements.

Subgrade Preparation

To provide a uniform compacted fill pad for the proposed structures, we recommend a shallow foundation system be supported on engineered compacted fill extending to a minimum depth of 2 feet below the bottom of foundations, or 3 feet beyond the thickness of existing undocumented fill soils and into the native alluvium, whichever is greater. Grading for each structure should include the footprint of the structure plus extend laterally a distance as projected by a 1:1

(horizontal:vertical) from the bottom outside edge of the perimeter footings to the depth of the fill soils.

Exposed areas which will receive fill, once properly cleared and benched where necessary, should be scarified to a minimum depth of 10 inches, moisture conditioned, and compacted per the compaction requirements in this report. The moisture content and compaction of subgrade soils should be maintained until the placement of compacted structural fill.

Based upon the subsurface conditions determined from the geotechnical exploration, subgrade soils exposed during construction are anticipated to be relatively workable. However, the workability of the subgrade may be affected by precipitation, repetitive construction traffic or other factors. If unworkable conditions develop, workability may be improved by scarifying and drying.

Excavation

We anticipate that excavations for the proposed construction can be accomplished with conventional earthmoving equipment.

Soils may consist of cohesionless sandy soils. Such soils have the tendency to cave and slough during excavations. Therefore, formwork may be needed for foundation excavations. The bottom of excavations should be thoroughly cleaned of loose soils and disturbed materials prior to backfill placement and/or construction.

We recommend that the underground storage tank excavations be over-excavated by about 2 feet in plan area to provide adequate access around the excavation for tank placement construction. The walls of the proposed excavation should be shored or sloped in conformance with OSHA excavation and trench safety standards. If any excavation is extended to a depth of more than 20 feet, it will be necessary to have the side slopes designed by a professional engineer.

Soils from the excavation should not be stockpiled higher than six 6 feet or within ten 10 feet of the edge of an open trench. Construction of open cuts adjacent to existing structures, including underground pipes, is not recommended within a 1½ H:1V plane extending beyond and down from the perimeter of the structure. Cuts that are proposed within five 5 feet of light standards, other utilities, underground structures, and pavement should be provided with temporary shoring.

It may be necessary for the contractor to retain the geotechnical engineer to monitor the soils exposed in all excavations and provide engineering services for slopes. This will provide an opportunity to monitor the soils encountered and to modify the excavation slopes as necessary. It also offers an opportunity to verify the stability of the excavation slopes during construction.

Individual contractors are responsible for designing and constructing stable, temporary excavations. Excavations should be sloped or shored in the interest of safety following local, and federal regulations, including current OSHA excavation and trench safety standards.

Fill Materials and Placement

All fill materials should be inorganic soils free of vegetation, debris, and fragments larger than 3 inches in size. Pea gravel or other similar non-cementitious, poorly-graded materials should not be used as fill or backfill without the prior approval of the geotechnical engineer.

Clean on-site soils or approved imported materials may be used as fill material for the following:

- general site grading
- foundation areas
- interior floor slab areas
- foundation backfill
- pavement areas
- exterior slab areas

Imported soils for use as fill material within proposed building and structure areas should conform to low volume change materials as indicated in the following specifications:

Gradation	Percent Finer by Weight (ASTM C 136)
3"	100
No. 4 Sieve	50-100
No. 200 Sieve	10-40

- Liquid Limit ..... 30 (max)
- Plasticity Index ..... 15 (max)
- Maximum expansion index* ..... 20 (max)

*ASTM D 4829

The contractor shall notify the Geotechnical Engineer of import sources sufficiently ahead of their use so that the sources can be observed and approved as to the physical characteristic of the import material. For all import material, the contractor shall also submit current verified reports from a recognized analytical laboratory indicating that the import has a "not applicable" (Class S0) potential for sulfate attack based upon current ACI criteria and is "mildly corrosive" to ferrous metal and copper. The reports shall be accompanied by a written statement from the contractor that the laboratory test results are representative of all import material that will be brought to the job.

Engineered fill should be placed and compacted in horizontal lifts, using equipment and procedures that will produce recommended moisture contents and densities throughout the lift. Fill lifts should not exceed 10 inches loose thickness.

Compaction Requirements

Recommended compaction and moisture content criteria for engineered fill materials are as follows:

Material Type and Location	Per the Modified Proctor Test (ASTM D 1557)		
	Minimum Compaction Requirement (%)	Range of Moisture Contents for Compaction Above Optimum	
		Minimum	Maximum
On-site soils and low volume change imported fill:			
Beneath foundations:	90	0%	+3%
Beneath interior slabs:	90	0%	+3%
Miscellaneous backfill and behind retain walls:	90	0%	+3%
Beneath pavements:	95	0%	+3%
Utility Trenches*:	90	0%	+3%
Bottom of excavation receiving fill:	90	0%	+3%
Aggregate base (beneath pavements):	95	0%	+3%

* Upper 12 inches should be compacted to 95% within pavement and structural areas.

Utility Trench Backfill

It is anticipated that the on-site soils and fill materials will provide suitable support for underground utilities and piping that may be installed. Any soft and/or unsuitable material encountered at the bottom of excavations should be removed and be replaced with an adequate bedding material. A non-expansive granular material with a sand equivalent greater than 30 should be used for bedding and shading of utilities, unless allowed or specified otherwise by the utility manufacturer.

On-site materials are considered suitable for backfill of utility and pipe trenches from one foot above the top of the pipe to the final ground surface, provided the material is free of organic matter and deleterious substances.

Trench backfill should be mechanically placed and compacted as discussed earlier in this report. Compaction of initial lifts should be accomplished with hand-operated tampers or other lightweight compactors. Where trenches are placed beneath slabs or footings, the backfill should satisfy the gradation and expansion index requirements of engineered fill discussed in this report. Flooding or jetting for placement and compaction of backfill is not recommended.

Grading and Drainage

All grades must provide effective drainage away from the building during and after construction and should be maintained throughout the life of the structure. Water retained next to the building can result in soil movements greater than those discussed in this report. Greater movements can

result in unacceptable differential floor slab and/or foundation movements, cracked slabs and walls, and roof leaks. The roof should have gutters/drains with downspouts that discharge onto splash blocks at a distance of at least 10 feet from the building.

Exposed ground should be sloped and maintained at a minimum 5% away from the building for at least 10 feet beyond the perimeter of the building. Locally, flatter grades may be necessary to transition ADA access requirements for flatwork. After building construction and landscaping have been completed, final grades should be verified to document effective drainage has been achieved. Grades around the structure should also be periodically inspected and adjusted, as necessary, as part of the structure's maintenance program. Where paving or flatwork abuts the structure, a maintenance program should be established to effectively seal and maintain joints and prevent surface water infiltration.

We recommend a minimum horizontal setback distance of 10 feet from the perimeter of any building and the high-water elevation of the nearest storm-water retention basin.

Roof drainage should discharge into splash blocks or extensions when the ground surface beneath such features is not protected by exterior slabs or paving. Sprinkler systems and landscaped irrigation should not be installed within 5 feet of foundation walls.

Earthwork Construction Considerations

Upon completion of placement of fill and grading, care should be taken to maintain the subgrade water content prior to construction of floor slabs. Construction traffic over the completed subgrades should be avoided. The site should also be graded to prevent ponding of surface water on the prepared subgrades or in excavations. Water collecting over or adjacent to construction areas should be removed. If the subgrade freezes, desiccates, saturates, or is disturbed, the affected material should be removed, or the materials should be scarified, moisture conditioned, and recompacted prior to floor slab construction.

As a minimum, excavations should be performed in accordance with OSHA 29 CFR, Part 1926, Subpart P, "Excavations" and its appendices, and in accordance with any applicable local, and/or state regulations.

Construction site safety is the sole responsibility of the contractor who controls the means, methods, and sequencing of construction operations. Under no circumstances shall the information provided herein be interpreted to mean Terracon is assuming responsibility for construction site safety, or the contractor's activities; such responsibility shall neither be implied nor inferred.

Construction Observation and Testing

The geotechnical engineer should be retained during the construction phase of the project to observe earthwork and to perform necessary tests and observations during subgrade preparation, proof-rolling, placement and compaction of controlled compacted fills, backfilling of excavations to the completed subgrade.

Each lift of compacted fill should be tested, evaluated, and reworked, as necessary, until approved by the Geotechnical Engineer prior to placement of additional lifts. Each lift of fill should be tested for density and water content at a frequency of at least one test for every 2,500 square feet of compacted fill in the building areas and 5,000 square feet in pavement areas. One density and water content test should be performed for every 50 linear feet of compacted utility trench backfill.

In areas of foundation excavations, the bearing subgrade should be evaluated under the direction of the Geotechnical Engineer. If unanticipated conditions are encountered, the Geotechnical Engineer should prescribe mitigation options.

In addition to the documentation of the essential parameters necessary for construction, the continuation of the Geotechnical Engineer into the construction phase of the project provides the continuity to maintain the Geotechnical Engineer's evaluation of subsurface conditions, including assessing variations and associated design changes.

SHALLOW FOUNDATIONS

If the site has been prepared in accordance with the requirements noted in **Earthwork**, the following design parameters are applicable for shallow foundations.

Design Parameters – Compressive Loads

DESCRIPTION	RECOMENDATION
Foundation Type	Spread footing foundations
Bearing Material	A minimum of 24 inches of compacted structural fill
Allowable Bearing Pressure	2,500 psf
Minimum Dimensions	Columns: 24 inches
Minimum Embedment Depth Below Finished Grade	18 inches
Total Estimated Static Settlement	1 inch
Estimated Differential Static Settlement	½ inch across 40 feet

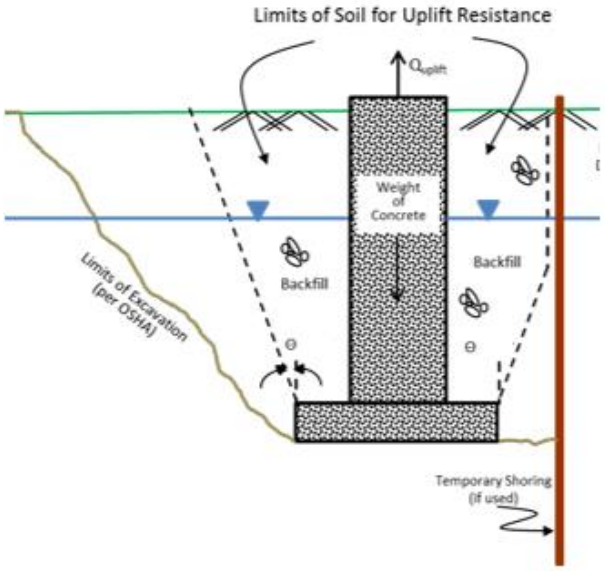
Finished grade is defined as the lowest adjacent grade within five feet of the foundation for perimeter (or exterior) footings.

The allowable foundation bearing pressure applies to dead loads plus design live load conditions. The design bearing pressure may be increased by one-third when considering total loads that include wind or seismic conditions. The weight of the foundation concrete below grade may be neglected in dead load computations.

Foundations should be reinforced as necessary to reduce the potential for distress caused by differential foundation movement. Foundation excavations should be observed by the geotechnical engineer. If the soil conditions encountered differ significantly from those presented in this report, supplemental recommendations will be required.

Design Parameters - Uplift Loads

Uplift resistance of spread footings can be developed from the effective weight of the footing and the overlying soils. As illustrated on the subsequent figure, the effective weight of the soil prism defined by diagonal planes extending up from the top of the perimeter of the foundation to the ground surface at an angle, θ, of 20 degrees from the vertical can be included in uplift resistance. The maximum allowable uplift capacity should be taken as a sum of the effective weight of soil plus the dead weight of the foundation, divided by an appropriate factor of safety. A maximum total unit weight of 130 pcf should be used for the backfill.



DEEP FOUNDATIONS

Drilled Shaft Design Recommendations

The proposed high-rise sign and canopy structures may be supported on drilled shafts. Total required embedment of the drilled shaft should be determined by the structural engineer based on structural loading and parameters provided in this report.

Based on our review of the subsurface conditions within the proposed location of the high-rise sign, canopies, and the Standard Penetration Test (SPT) results, engineering properties have been estimated for the anticipated soils conditions.

The allowable uplift capacities should only be based on the side friction of the shaft; however, the weight of the foundation should be added to these values to obtain the actual allowable uplift capacities for drilled shafts. Tensile reinforcement should extend to the bottom of shafts subjected to uplift loading. Buoyant unit weights of the soil and concrete should be used in the calculations below the highest anticipated groundwater elevation.

Recommended soil parameters for lateral analysis and axial load design of drilled shaft foundations are provided in the table below. Based on our review of the boring logs and the Standard Penetration Test (SPT) results, engineering properties have been estimated for the soil conditions as shown in the following table. Lateral and axial capacity of soils within the upper 2 feet should be neglected. We recommend that Terracon review the final drilled shaft design to verify that sufficient embedment is achieved.

L-Pile Design Input Parameters					Axial Design Parameters	
Layer	Bottom Depth of Layer (feet)	L-PILE Soil Types	Effective Unit Weight (pcf)	Friction Angle (degrees)	Allowable End Bearing Pressure (ksf)[4]	Allowable Compressive Side Shear (psf)
1	2	Sand	105	----	----	----
2	5	Sand	110	32	6	50
3	10	Sand	110	30	4	150
4	15	Sand	110		3.5	250
5	20	Sand	115		3.5	350
6	25	Sand	120		4	500
7	30	Sand	120	36	15	600
8	35	Sand	120		15	700
9	40	Sand	125	38	20	850
10	45	Sand	125		20	900
11	50	Sand	125		20	1,000

1. Design depth to subsurface water is greater than 50 feet.

L-Pile Design Input Parameters					Axial Design Parameters	
Layer	Bottom Depth of Layer (feet)	L-PILE Soil Types	Effective Unit Weight (pcf)	Friction Angle (degrees)	Allowable End Bearing Pressure (ksf)[4]	Allowable Compressive Side Shear (psf)

2. Factors of safety of 3.0 for end bearing pressure, 2.0 for compressive side shear were utilized.
3. For uplift conditions, allowable compressive side shear should be multiplied by 0.60.
4. Stratigraphy shown above is based on our interpretation of soil strength and may not correspond with the descriptive classifications shown on the boring logs. To make drilled shaft design simple, the cohesion values of sandy clayey soils are neglected and treated as sandy soils by increasing friction-angle values to compensate cohesion values.

The depth below ground surface indicated in the table above is referenced from the existing site surface at the time of the field exploration. If fill is placed to raise the site grades, the depths shown in the charts must be increased by the thickness of fill placed. The required depths of shaft embedment should also be determined for design lateral loads and overturning moments to determine the most critical design condition.

It should be noted that the loaded capacities provided herein are based on the stresses induced in the supporting soils. The structural capacity of the shafts should be checked to assure that they can safely accommodate the combined stresses induced by axial and lateral forces. Furthermore, the response of the drilled shaft foundations to lateral loads is dependent upon the soil/structure interaction as well as the shaft's actual diameter, length, stiffness and "fixity" (fixed or freehead condition).

Drilled Shaft Construction Considerations

Drilling to design depths should be possible with conventional single flight power augers. As lenses of cohesionless sands are expected, temporary steel casing will likely be required to properly drill and clean shafts prior to concrete placement, or the use of slurry drilling methods with polymers to keep the solids in suspension during the drilling may be needed.

Drilled shaft foundation concrete should be placed immediately after completion of drilling and cleaning. If foundation concrete cannot be placed in dry conditions, a tremie should be used for concrete placement. Due to potential sloughing and raveling, foundation concrete quantities may exceed calculated geometric volumes.

If casing is used for drilled shaft construction, it should be withdrawn in a slow continuous manner maintaining a sufficient head of concrete to prevent infiltration of water or the creation of voids in shaft concrete. Shaft concrete should have a relatively high fluidity when placed in cased shaft holes or through a tremie. Shaft concrete with slump in the range of 6 to 8 inches is recommended.

We recommend that all drilled shaft installations be observed on a full-time basis by an experienced geotechnical engineer in order to evaluate that the soils encountered are consistent with the recommended design parameters. If the subsurface soil conditions encountered differ significantly from those presented in this report, supplemental recommendations will be required.

The contractor should check for gas and/or oxygen deficiency prior to any workers entering the excavation for observation and manual cleanup. All necessary monitoring and safety precautions as required by OSHA, State or local codes should be strictly enforced by the owner and the EPC.

The drilled shaft installation process should be performed under the direction of the Geotechnical Engineer. The Geotechnical Engineer should document the shaft installation process including soil/rock and groundwater conditions encountered, consistency with expected conditions, and details of the installed shaft.

FLOOR SLABS

DESCRIPTION	RECOMMENDATION
Interior floor system	Slab-on-grade concrete
Floor slab support	Engineered fill extending to a minimum depth of 24 inches below the bottom of building footings.
Subbase	Minimum 4-inches of Aggregate Base
Modulus of subgrade reaction	200 pounds per square inch per inch (psi/in) (The modulus was obtained based on estimates obtained from NAVFAC 7.1 design charts). This value is for a small loaded area (1 Sq. ft or less) such as for forklift wheel loads or point loads and should be adjusted for larger loaded areas.

The use of a vapor retarder should be considered beneath concrete slabs on grade covered with wood, tile, carpet, or other moisture sensitive or impervious coverings, or when the slab will support equipment sensitive to moisture. When conditions warrant the use of a vapor retarder, the slab designer should refer to ACI 302 and/or ACI 360 for procedures and cautions regarding the use and placement of a vapor retarder.

Saw-cut control joints should be placed in the slab to help control the location and extent of cracking. For additional recommendations refer to the ACI Design Manual. Joints or cracks should be sealed with a water-proof, non-extruding compressible compound specifically recommended for heavy duty concrete pavement and wet environments.

Where floor slabs are tied to perimeter walls or turn-down slabs to meet structural or other construction objectives, our experience indicates differential movement between the walls and slabs will likely be observed in adjacent slab expansion joints or floor slab cracks beyond the length of the structural dowels. The Structural Engineer should account for potential differential settlement through use of sufficient control joints, appropriate reinforcing or other means.

LATERAL EARTH PRESSURES

Design Parameters

For engineered fill comprised of on-site soils above any free water surface, recommended equivalent fluid pressures for unrestrained foundation elements are:

ITEM	VALUE[a, b]
Active Case	40 psf/ft
Passive Case	390 psf/ft
At-Rest Case	60 psf/ft
Coefficient of Friction	0.35

[a]Note: The values are based on on-site soils used as backfill.
[b]Note: Uniform, horizontal backfill, compacted to at least 90% of the ASTM D 1557 maximum dry density, rendering a maximum unit weight of 125 pcf.

The lateral earth pressures herein do not include any factor of safety and are not applicable for submerged soils/hydrostatic loading. Additional recommendations may be necessary if such conditions are to be included in the design.

Fill against foundation and retaining walls should be compacted to densities specified in the Earthwork section of this report. Compaction of each lift adjacent to walls should be accomplished with hand-operated tampers or other lightweight compactors.

PAVEMENTS

General Pavement Comments

Both concrete and asphalt pavement design sections are requested for the proposed project. As noted in **Project Description**, pavement thickness design is dependent upon:

- the anticipated traffic conditions during the life of the pavement,
- subgrade and paving material characteristics, and
- climatic conditions of the region.

A critical aspect of pavement performance is site preparation. Pavement designs noted in this section must be applied to the site which has been prepared as recommended in the **Earthwork** section.

The pavement sections were designed using the American Association of State and Highway Transportation Officials (AASHTO) Guide for Design of Pavement Structures (1993).

Development of layer thicknesses, including the asphalt thickness for the geogrid reinforced alternatives, were determined using the layered elastic design methodology as outlined in the AASHTO 93 Design Guide, Part II, Section 3.1.5 Layered Design Analysis

Design Traffic Analysis

Traffic levels provided by the client were converted into flexible AASHTO pavement 18-kip equivalent single axle loads (ESALs) for use in Asphalt Concrete (AC) pavement thickness design, and into rigid AASHTO pavement 18-kip ESALs for Portland Cement Concrete (PCC) design, as noted in the following table. We understand that Love's Tier I traffic is experienced at this facility. Our office should be contacted if there are any changes in the reported traffic patterns or frequency to review the enclosed values.

Love's Tier 1 / Tier 2 Traffic Volumes	Light Duty	Medium Duty	Heavy Duty	Extra Heavy Duty
Traffic Level, vehicles per day [1]	1,000 cars	150 trucks	600 trucks	1,000 trucks
Flexible (AC) Pavement 18-Kip ESAL [2]	< 30,000	2.6 million	10.2 million	17 million
Rigid (PCC) Pavement 18 Kip ESAL [3]	< 30,000	4.2 million	17 million	29 million

1. Client provided values, based on a Tier 1 and 2 sites in accordance with Love's Travel Stops.
2. Assumes 20-year design life, 100% of traffic consisting of fully loaded 80-kip semi-tractor trailers with two 34-kips tandem axles and one 12-kip single front axle.
3. ESAL's for PCC design are not equivalent to ESAL's used for AC sections.

Pavement Subgrade Parameters

Based on the proposed grading as previously discussed in this report, pavement subgrades are expected to consist of native on-site soils at elevations roughly equivalent to existing grades. Accordingly, bulk samples of near surface soils were collected at depths of approximately 5 to 10 feet below existing grades for laboratory testing. B-12 bulk sample were selected for R-value testing resulting in value of 63. As such, a design R-value of 50 was used as the basis for pavement design taking into consideration the effects of seasonal and other climatic conditions at this site. This value corresponds to a subgrade Resilient Modulus (Mr) of 28,750 psi (pounds per square inch) for use for flexible pavement design, and an Effective Modulus of Subgrade Reaction (k) of 372 pci (pounds per cubic inch) for use in designing the rigid pavement sections with six inches of aggregate base.

Note that if actual subgrade conditions differ from the soil conditions and characteristics described here, we should be contacted to assess the construction conditions and review the pavement design recommendations.

Pavement Design Parameters

Analyses for the pavement design of the project have been based on the procedures of the AASHTO Guide for Design of Pavement Structures (1993). The following design parameters were utilized for pavement engineering analyses and the determination of design alternatives for the project:

Pavement Design Parameters		
Reliability	Level of Reliability	85%
	Flexible Overall Standard Deviation	0.45
	Rigid Overall Standard Deviation	0.35
Serviceability	Flexible Initial PSI	4.2
	Flexible Terminal PSI	2.0
	Rigid Initial PSI	4.5
	Rigid Terminal PSI	2.3
Subgrade Conditions	R-value	50
	Correlated Resilient Modulus, M_r	28,750 psi
	Effective Modulus of Subgrade Reaction, k	372 pci
Layer Properties	Asphalt Concrete (AC) Layer Coefficient	0.44
	Aggregate Base (ABC) Layer Coefficient	0.14
	Aggregate Base (ABC) Drainage Coefficient	1.0
	Aggregate Base (ABC) Resilient Modulus[1]	36,000 psi
	Reinforced Aggregate Base (ABC) Resilient Modulus[1]	50,000 psi
	Load Transfer Coefficient J[2]	2.8
	Compressive Strength of Concrete f'_c	4,000 psi

1. Reinforced AB Resilient Modulus values are limited to 5x the subgrade Resilient Modulus for the purposes of layered design analysis for flexible pavements.
2. Load transfer coefficient of 2.8 for dowel reinforced concrete joints.

The design period is considered the interval over which, with proper maintenance, the pavement will not require major repairs. We recommend a continuing regular maintenance program be implemented to maintain satisfactory serviceability over the design life. Please refer to **Pavement Maintenance** for additional information.

Asphalt Concrete Pavement Recommendations

Due to heavy truck traffic loading, Love's routinely uses geogrid reinforced flexible pavement designs in heavy traffic areas. Based on the site conditions and anticipated pavement subgrade, we believe that geogrids offer a cost-savings over unreinforced pavements. Accordingly, we have

designed the asphalt pavements to include BX2525 geogrid, using LEpave software provided by L.E. Geosolutions (LEGeo). The following table provides our recommended pavement sections for this project:

LAYER	Materials[2] (CalTrans)	Light Duty	Medium Duty	Heavy Duty	Extra Heavy Duty
		Thickness (in) [1]			
Surface[2]	1/2-inch HMA Type A PG 76-22 M	4	2½	2 ½	2 ½
Base[2]	3/4-inch HMA Type A PG 70-10	0	2½	2 ½	2 ½
Aggregate[3]	Class 2 Aggregate Base	6	6	6	6
Geogrid[4]	**LeGeo** BX2525 or equivalent	No[5]	No[5]	Yes	Yes
Total Pavement Section (in.)		**10**	**11**	**11 ½**	**12**
Design Traffic (ESALs)		< 30,000	2.6 million	10.2 million	17 million

1. The individual and total material thickness values presented herein represent minimum thickness values, not averages.
2. Refer to Section 39 Asphalt Concrete of the California Department of Transportation (Caltrans) "Standard Specifications" for Asphalt Concrete use and construction.
3. Refer to Section 26 Aggregate Bases of the California Department of Transportation (Caltrans) "Standard Specifications" for Aggregate Base Course use and construction.
4. Aggregate base reinforced with 1 layer of LEGeo BX-2525 geogrid or equivalent located at the bottom of the aggregate base. Alternative grid materials are not acceptable unless documented with applicable design procedure and appropriate performance-based specification and/or post construction validation.
5. Geogrid optional.

Reinforced pavement design procedures developed by LEGeo and others rely on product specific field and laboratory research. Alternate geogrids can be considered but will require independent design and should not be specified or accepted based on engineering properties, as these do not necessarily define reinforced pavement performance.

Asphalt Binder Selection

Terracon considered the weather conditions and traffic to determine the appropriate asphalt binder for this project. This was accomplished using the LTPPBind Version 3.1 Beta, dated September 15, 2015 software provided by the Federal Highway Administration (FHWA). This software utilizes historical temperature data from the 5 weather stations nearest the project and considers traffic speed and traffic loading to establish a recommended Performance Graded (PG)

binder grade of asphalt concrete. Terracon then compared the software output to the binders that were indicated to be locally available, based on the Caltrans website, to determine the recommended binder selection for the project. The number of binders selected was limited to two for this recommendation to reduce the number of mix designs needed to construct the pavements.

Aggregate Base Requirements

Aggregate Base shall comply with Section 26 Aggregate Base of the 2018 Caltrans Specifications. The Aggregate Base shall be Type 2 and shall meet the Caltrans Specifications. Aggregate Base or pavement materials should not be placed when the surface is wet. Surface drainage should be provided away from the edge of paved areas to minimize lateral moisture transmission into the subgrade.

Portland Cement Concrete Pavement Recommendations

It is our understanding that Love's prefers to use asphalt concrete for the majority of pavements at a Travel Stop site; however, Portland cement concrete (PCC) is occasionally selected as an alternate. Accordingly, we have included the following thickness recommendations for Jointed Plain Concrete Pavement (JPCP) with dowels:

LAYER	MATERIAL	LIGHT DUTY	MEDIUM DUTY	HEAVY DUTY	EXTRA HEAVY DUTY
		Thickness (in)[1]			
Surface	Portland Cement Concrete[2, 3]	5	8	10	11
Aggregate	Class 2 Aggregate Base[4]	0	6	6	6
Subgrade	Minimum 10 inches of properly prepared native soils				
Total Pavement Section[1]		**5**	**14**	**16**	**17**

1. The individual and total material thickness values presented herein represent minimum thickness values, not averages.
2. Refer to Section 40 Concrete Pavement and Section 90 Concrete of the California Department of Transportation (Caltrans) "Standard Specifications for concrete mixture requirements.
3. Medium duty concrete pavements should include 1 ¼ inch diameter by 15-inch long dowel bars spaced at 12 inches center to center in all longitudinal and transverse contraction joints. Heavy and extra heavy-duty concrete pavements should include 1 ½ inch diameter by 18-inch long dowel bars spaced at 12 inches center to center in all longitudinal and transverse contraction joints.
4. Refer to Section 26 Aggregate Bases of the California Department of Transportation (Caltrans) "Standard Specifications" for Aggregate Base Course use and construction.

The recommendations presented above require dowel reinforcement in longitudinal and transverse contraction joints as shown in ACI 330.2R-17. In locations where concrete slabs are used in isolated areas such as dumpster pads and short apron slabs approaching the tire shop, joint reinforcement is not required. In these locations however, an additional two inches should be added to the thicknesses presented in the table above to alleviate cracking of unsupported edges.

If Portland cement concrete is selected for use in general pavement areas, proper design and detailing of longitudinal and transverse control joints, tie bars and joint dowels will be required. In this situation, we should be contacted to provide more detailed recommendations and to review final jointing plans and details for the project. The following general recommendations are presented for doweled PCC pavements:

Item	Description
Contraction Joints	■ Joints should be reinforced with dowels in accordance with ACI 330.2R-17[1]. ■ Alternate joint reinforcement devices such as plate dowels will be considered if the device manufacturers recommendations showing they are equivalent to the dowel bar size and spacing presented in the concrete pavement section table above is submitted and approved by the engineer. ■ Joint cuts should be 1/5 of the depth of the concrete and should be cut as soon as the slab can support the weight of a man and the saw and can be cut without dislodging coarse aggregate particles from the surface. ■ Joints should have a maximum spacing no greater than 15 feet, as described in ACI 330.2R-17

Item	Description
Expansion (Isolation) Joints	■ Expansion joints are recommended to isolate fixed objects abutting or within the paved area, such as around light poles and drainage inlet structures. ■ Joints should be full depth and filled with pre-molded materials per ACI 330.2R-17. ■ Pavement edges at expansion joints located in areas that encounter wheel loads should be thickened by two inches wherever practical; the transition in thickness should occur over a minimum distance of five feet.
Construction Joints	■ Joints dowels should be provided at the same size and spacing as required for Contraction Joints as noted above. ■ For a butt end construction joint, an adequate number of ½ inch diameter (#4 bar) deformed steel tie bars, 30 inches in length and spaced no greater than 36 inches apart, are also recommended to tie the exterior curb and gutter to the outer concrete pavement edge to keep the outside slab from separating from the curb and gutter.

[1] *Guide for the Design and Construction of Concrete Site Paving for Industrial and Trucking Facilities, American Concrete Institute, ACI 330.2R-17.*

Pavement Drainage

Pavements should be sloped to provide rapid drainage of surface water. Water allowed to pond on or adjacent to the pavements could saturate the subgrade and contribute to premature pavement deterioration. In addition, the pavement subgrade should be graded to provide positive drainage within the granular base section. Appropriate sub-drainage or connection to a suitable daylight outlet should be provided to remove water from the granular subbase.

Pavement Maintenance

The pavement sections represent minimum recommended thicknesses and, as such, periodic maintenance should be anticipated. Therefore, preventive maintenance should be planned and provided for through an on-going pavement management program. Maintenance activities are intended to slow the rate of pavement deterioration and to preserve the pavement investment. Maintenance consists of both localized maintenance (e.g., crack and joint sealing and patching) and global maintenance (e.g., surface sealing). Preventive maintenance is usually the priority when implementing a pavement maintenance program. Additional engineering observation is

recommended to determine the type and extent of a cost-effective program. Even with periodic maintenance, some movements and related cracking may still occur and repairs may be required.

Pavement performance is affected by its surroundings. In addition to providing preventive maintenance, the civil engineer should consider the following recommendations in the design and layout of pavements:

1. Final grade adjacent to paved areas should slope down from the edges at a minimum 2%.
2. Subgrade and pavement surfaces should have a minimum 2% slope to promote proper surface drainage.
3. Install below pavement drainage systems surrounding areas anticipated for frequent wetting.
4. Install joint sealant and seal cracks immediately.
5. Seal all landscaped areas in or adjacent to pavements to reduce moisture migration to subgrade soils.
6. Place compacted, low permeability backfill against the exterior side of curb and gutter.
7. Place curb, gutter and/or sidewalk directly on clay subgrade soils rather than on unbound granular base course materials.

Unpaved Access Road

We understand that an unpaved access road will be constructed extending to the high-rise sign. Traffic on the access road will include the drilled shaft rig and concrete trucks during construction of the sign foundation and truck-mounted cranes used to erect and maintain the sign. Based on the relative strength characteristics of the subgrade soils and expected traffic loading, we recommend construction traffic bear on a minimum of 10 inches of scarified, moisture conditioned, and recompacted native soils.

The recommendation was developed to support the construction and maintenance traffic as it travels along the access road. Terracon's current scope of services does not include analysis for construction of a pad suitable to support the crane as it lifts a load. To analyze the required aggregate thickness for a crane pad, the contractor should provide specific information about the crane model, counterweight, outrigger positions and sizes, boom/jib configurations, weight of the maximum planned lift, load radius, and swing angle.

GENERAL COMMENTS

Our analysis and opinions are based upon our understanding of the project, the geotechnical conditions in the area, and the data obtained from our site exploration. Natural variations will occur between exploration point locations or due to the modifying effects of construction or weather.

The nature and extent of such variations may not become evident until during or after construction. Terracon should be retained as the Geotechnical Engineer, where noted in this report, to provide observation and testing services during pertinent construction phases. If variations appear, we can provide further evaluation and supplemental recommendations. If variations are noted in the absence of our observation and testing services on-site, we should be immediately notified so that we can provide evaluation and supplemental recommendations.

Our Scope of Services does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, bacteria) assessment of the site or identification or prevention of pollutants, hazardous materials or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

Our services and any correspondence or collaboration through this system are intended for the sole benefit and exclusive use of our client for specific application to the project discussed and are accomplished in accordance with generally accepted geotechnical engineering practices with no third-party beneficiaries intended. Any third-party access to services or correspondence is solely for information purposes to support the services provided by Terracon to our client. Reliance upon the services and any work product is limited to our client and is not intended for third parties. Any use or reliance of the provided information by third parties is done solely at their own risk. No warranties, either express or implied, are intended or made.

Site characteristics as provided are for design purposes and not to estimate excavation cost. Any use of our report in that regard is done at the sole risk of the excavating cost estimator as there may be variations on the site that are not apparent in the data that could significantly impact excavation cost. Any parties charged with estimating excavation costs should seek their own site characterization for specific purposes to obtain the specific level of detail necessary for costing. Site safety, and cost estimating including, excavation support, and dewatering requirements/design are the responsibility of others. If changes in the nature, design, or location of the project are planned, our conclusions and recommendations shall not be considered valid unless we review the changes and either verify or modify our conclusions in writing.

REFERENCES

Geologic References

Dibblee, T.W., 1960, Preliminary geologic map of the Victorville Quadrangle, California: U.S. Geological Survey Mineral Investigations Field Studies Map MF-229. Scale: 1:62,500.

Fairchild Collection, Monoscopic aerial photographs as follows:

January 21, 1953, Frame No. AXL-29K-46
June 23, 1959, Frame No. AXL-2W-162
July 26, 1959, Frame No AXL-1W-91.
May 29, 1994, Frame No. 6855-34.

ATTACHMENTS

EXPLORATION AND TESTING PROCEDURES

Field Exploration

Terracon conducted a total of twenty-two borings (B-1 through B-16, and B-18 through B-23) and eleven exploratory test pits (T-1 through T-11) as tabulated in the table below. B-17 was planned within an infiltration area that was eliminated subsequent to the issuance of our proposal.

Number of Borings	Boring Depth (feet) [1]	Planned Location
B-1	26 ½	Underground Storage Tank area
B-2	26 ½	Automobile Fuel Canopy
B-3	26 ½	Truck Fuel Canopy
B-4	26 ½	Country Store
B-5	26 ½	Tire Shop/Truck Parking
B-6	51 ½	90' Tall High-Rise Sign
B-7 & B-8	26 ½	Above Ground Storage Tanks
B-9	26 ½	Truck Scale
B-10 through B-15	11 to 11 ½	Truck Parking and Drive Areas
B-16 and B-18 through B-23	5 to 15	Retention Basins
T-1 through T-11	3 ½ to 11	Miscellaneous Areas

1. Below ground surface

Boring Layout and Elevations: Unless otherwise noted, Terracon personnel provided the boring layout. Coordinates were obtained with a handheld GPS unit (estimated horizontal accuracy of about ±10 feet). If elevations and a more precise boring layout are desired, we recommend borings be surveyed following completion of fieldwork.

Subsurface Exploration Procedures: We advanced the borings with a truck-mounted rotary drill rig using continuous flight augers (solid stem and/or hollow stem, as necessary, depending on soil conditions). Four samples were obtained in the upper 10 feet of each boring and at intervals of 5 feet thereafter. In the thin-walled tube sampling procedure, a thin-walled, seamless steel tube with a sharp cutting edge was pushed hydraulically into the soil to obtain a relatively undisturbed sample. In the split-barrel sampling procedure, a standard 2-inch outer diameter split-barrel sampling spoon was driven into the ground by a 140-pound automatic hammer falling a distance of 30 inches. The number of blows required to advance the sampling spoon the last 12 inches of a normal 18-inch penetration is recorded as the Standard Penetration Test (SPT) resistance value. The SPT resistance values, also referred to as N-values, are indicated on the boring logs at the test depths. A 3-inch O.D. split-barrel sampling spoon with 2.5-inch I.D. ring lined sampler was used for sampling

in the upper XX feet. Ring-lined, split-barrel sampling procedures are similar to standard split spoon sampling procedure; however, blow counts are typically recorded for 6-inch intervals for a total of 12 inches of penetration. We observed and recorded groundwater levels during drilling and sampling. For safety purposes, all borings were backfilled with auger cuttings after their completion.

The sampling depths, penetration distances, and other sampling information was recorded on the field boring logs. The samples were placed in appropriate containers and taken to our soil laboratory for testing and classification by a Geotechnical Engineer. Our exploration team prepared field boring logs as part of the drilling operations. These field logs included visual classifications of the materials encountered during drilling and our interpretation of the subsurface conditions between samples. Final boring logs were prepared from the field logs. The final boring logs represent the Geotechnical Engineer's interpretation of the field logs and include modifications based on observations and tests of the samples in our laboratory.

Electrical Resisitivity Testing: A field electrical resistivity (ER) survey was performed at the Tank Pad location using the Wenner Array (4-pin) method per ASTM G57 and a digital ground resistance tester. The area of investigation included two shallow resistivity lines which were located approximately perpendicular to each other in north-south and east-west configurations. The resistivity probe arrays had spacing of 1, 2, 4, 6, 10, 15, 20, 40, 50, 60, 80, 100 and 150 feet. Results are shown in the following table and presented with a visual representation of the array locations and directions in Exploration Results section. The results of the electrical resistivity survey are shown in the following table.

Electrode Spacing (ft)	Line 1 Apparent Resistivity (ohm-cm)	Line 2 Apparent Resistivity (ohm-cm)
1	21,400	23,500
2	16,700	12,400
4	8,150	8,440
6	6,270	6,930
10	5,560	5,140
15	6,000	5,180
20	6,250	6,630
40	8,050	8,090

50	8,590	7,780
60	9,330	8,050
80	10,000	8,620
100	11,100	8,890
150	12,200	12,000

Laboratory Testing

The project engineer reviewed the field data and assigned laboratory tests to understand the engineering properties of the various soil strata, as necessary, for this project. Procedural standards noted below are for reference to methodology in general. In some cases, variations to methods were applied because of local practice or professional judgment. Standards noted below include reference to other, related standards. Such references are not necessarily applicable to describe the specific test performed.

- ASTM D2216 Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
- ASTM D7263 Standard Test Methods for Laboratory Determination of Dry Density (Unit Weight) of Soil Specimens
- ASTM D4318 Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
- ASTM D422 Standard Test Method for Particle-Size Analysis of Soils
- ASTM D1140 Standard Test Methods for Determining the Amount of Material Finer than 75-µm (No. 200) Sieve in Soils by Washing
- ASTM D4546 Standard Test Methods for One-Dimensional Consolidation Properties of Soils Using Incremental Loading
- ASTM D1557 Standard Test Methods for Laboratory Compaction Characteristics of Soil using Modified Effort
- ASTM D3080 Standard Test Methods for Direct Shear Test of Soils
- ASTM D2844 Standard Test Method for Resistance R-Value and Expansion Pressure of Compacted Soils
- Corrosivity Testing will include pH, chlorides, sulfates, sulfides, Redox potential, and electrical lab resistivity

The laboratory testing program often included examination of soil samples by an engineer. Based on the material's texture and plasticity, we described and classified the soil samples in accordance with the Unified Soil Classification System.

PHOTOGRAPHY LOG



Photo 1 Cut slope of dense older alluvium located immediately north of the northerly property boundary.



Photo 2 Trench 2, exposing dense older alluvium except for fill near the top. Note well defined carbonate horizons in the older alluvium.



Photo 3 "Bin" area near Trench 5. Shallow trenches outline possible bins. The purpose is unknown.



Photo 4 Electrical stub-outs near Trench 5.



Photo 5 Gravelly fill in Trench 5. Note lack of visible lift boundaries and general lack of consolidation.



Photo 6 Trench 6. Fill lift boundaries are poor to not visible. Caving area near bottom is the native soil (wash deposits).



Photo 7 Approximate 8-inch diameter steel well near Boring 7. Water depth was greater than the length of the sounder cable (200 ft).



Photo 8 Suspected water main (fire?) valve located in the "road" north of Boring 8.

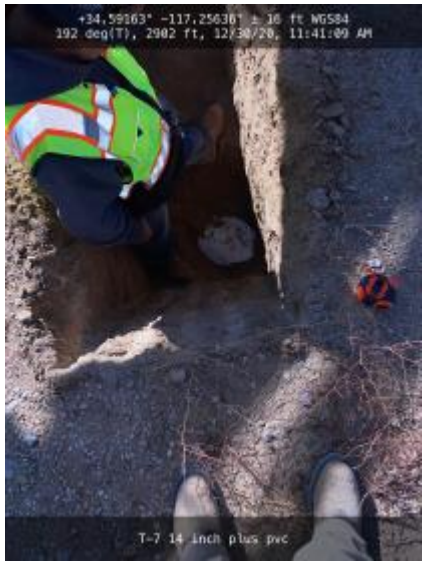


Photo 9 14-inch diameter (approximate) PVC water main located in the parkway near Trench 7.



Photo 10 Fill visible in the "borrow" area near Boring 1. Weathering enhances the lift boundaries.



Photo 11 Trench 8 with water main valve. Connects to 4" diameter PVC pipe.



Photo 12 Trench 9. Thinly bedded older alluvium near the surface.

SITE LOCATION AND EXPLORATION PLANS

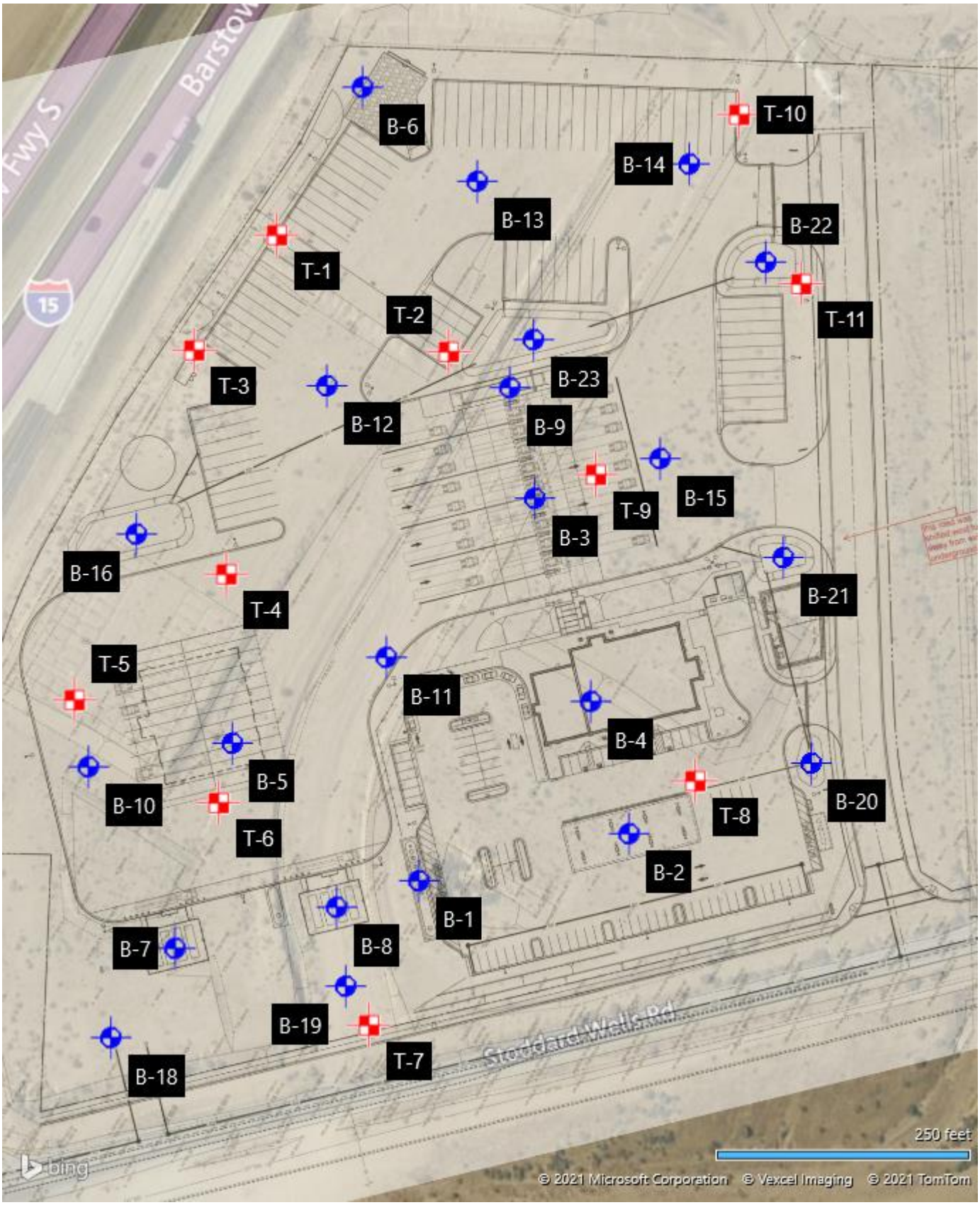
SITE LOCATION

Love's Travel Stop-Apple Valley ■ Apple Valley, San Bernardino County, CA
February 10, 2021 ■ Terracon Project No. CB205149



DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY MICROSOFT BING MAPS


B-6
T-10
B-14
B-13
B-22
T-1
T-2
T-11
T-3
B-23
B-12
B-9
B-15
T-9
B-3
B-16
B-21
T-4
T-5
B-11
B-4
B-5
B-10
B-20
T-8
T-6
B-2
B-1
B-7
B-8
B-19
T-7
B-18
Barstow
Fwy S
15
Stoddard Wells Rd
250 feet
© 2021 Microsoft Corporation © Vexcel Imaging © 2021 TomTom
bing
N

EXPLORATION RESULTS

BORING LOG NO. B-1

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5919° Longitude: -117.2562°

Surface Elev.: 2905 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1												
			FILL - SILTY SAND WITH GRAVEL (SM), fine to medium grained, brown, dense									
						X	18	18-18-15 N=33				
			light brown	5		X	18	11-15-19 N=34				
						■	18	26-32-30	3.4	120		
		10.0	2895	10								
2			**SILTY SAND WITH GRAVEL (SM)**, fine to medium grained, light brown, medium dense			■	18	13-10-13	2.4	112		
			fine grained, brown, loose	15		■	18	5-7-11	1.8	108		
		18.0	2887									
			SILTY SAND (SM), trace gravel, fine grained, brown, loose	20		X	12	3-4-5 N=9				
		23.0	2882									
			SILTY SAND WITH GRAVEL (SM), fine to coarse grained, brown, medium dense	25		X	18	8-10-12 N=22				
		26.5	2878.5									
			Boring Terminated at 26.5 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow-Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Boring Started: 12-30-2020 | Boring Completed: 12-30-2020

Drill Rig: B-61 | Driller: California Pacific Drilling

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

BORING LOG NO. B-2

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5921° Longitude: -117.2555°

Surface Elev.: 2908 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1												
			FILL - SILTY SAND WITH GRAVEL (SM), fine to medium grained, brown, very dense									
							18	29-42-50/6"				
			dense	5			18	22-30-30	4.1	117		
		7.5										
2			2900.5									
			SILTY SAND WITH GRAVEL (SM), fine to medium grained, brown, medium dense				18	12-22-18	3.3	117	NP	25
			brown, loose	10			18	9-9-8	2.7	111		
			medium dense	15			12	5-7-8 N=15				15
				20			18	3-5-6 N=11				
		23.0	2885									
			SILTY SAND (SM), brown, loose	25			18	3-3-3 N=6				
		26.5	2881.5									
			Boring Terminated at 26.5 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow-Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Boring Started: 12-30-2020 | Boring Completed: 12-30-2020

Drill Rig: B-61 | Driller: California Pacific Drilling

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

BORING LOG NO. B-3

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5930° Longitude: -117.2558°

Surface Elev.: 2913 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		0										
			FILL - SILTY SAND WITH GRAVEL (SM), fine to coarse grained, brown, medium dense									
		2.5	2910.5									
2			**WELL GRADED SAND WITH SILT AND GRAVEL (SW-SM)**, fine to coarse grained, brown, medium dense				18	9-15-15	4.3	112		
				5			18	10-11-13	3.2	120		
			loose				18	5-6-9	1.6	112	NP	6
			fine to medium grained	10			18	5-5-6	2.5	107		
			fine grained, medium dense	15			12	7-9-8 N=17				14
			fine to medium grained, very dense	20			18	18-22-32 N=54				
		26.5	2886.5	25			18	28-25-25 N=50				
			Boring Terminated at 26.5 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow-Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Boring Started: 12-30-2020 | Boring Completed: 12-30-2020

Drill Rig: B-61 | Driller: California Pacific Drilling

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

BORING LOG NO. B-4

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5924° Longitude: -117.2556°

Surface Elev.: 2913 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		0										
							18	12-17-24				
				5								
			dense				18	15-31-37	5.7	116		
		7.0	2906									
			SILTY SAND WITH GRAVEL (SM), fine grained, brown, medium dense				18	9-11-17	5.3	112		
				10			18	21-29-21				20
		13.0	2900									
2			**SILTY SAND (SM)**, trace gravel, fine grained, brown, medium dense									
				15			18	4-6-7 N=13				18
			loose	20			12	4-3-3 N=6				
				25			12	6-4-4 N=8				
		26.5	2886.5									
			Boring Terminated at 26.5 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow-Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Boring Started: 12-30-2020 | Boring Completed: 12-30-2020

Drill Rig: B-61 | Driller: California Pacific Drilling

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

BORING LOG NO. B-5

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5923° Longitude: -117.2568°

Surface Elev.: 2907 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1												
			FILL - SILTY SAND WITH GRAVEL (SM), fine to medium grained, brown, medium dense			X	14	9-14-14 N=28				
			dense	5		X	18	14-17-20 N=37				16
		7.5										
			SILTY SAND WITH GRAVEL (SM), fine to medium grained, brown, medium dense			■	18	11-27-21	4.3	121		
			fine grained	10		■	18	13-13-13	3.3	113		
		13.0										
2			**SILTY SAND (SM)**, fine grained, brown, loose	15		X	18	3-3-4 N=7				19
			trace gravel	20		X	18	3-4-4 N=8				
		26.5		25		X	18	3-3-4 N=7				
			Boring Terminated at 26.5 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow-Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Boring Started: 12-30-2020 | Boring Completed: 12-30-2020

Drill Rig: B-61 | Driller: California Pacific Drilling

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

BORING LOG NO. B-6

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5941° Longitude: -117.2564°

Surface Elev.: 2922 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1			**FILL - SILTY SAND WITH GRAVEL (SM)**, light brown									
		2.0	2920									
2			**SILTY SAND WITH GRAVEL (SM)**, brown, dense				18	28-32-43	6.7	118		
				5			18	20-27-35	5.3	119		
			very dense				12	28-50/6"				
			dense	10			18	21-32-32				
			very dense	15			12	22-50/6"				
			dense	20			18	22-30-41				
		23.0	2899									
			SILTY SAND (SM), trace gravel, brown, very dense	25			12	27-50/6"				
		28.0	2894									
			SILTY SAND WITH GRAVEL (SM), brown, very dense	30								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow-Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Boring Started: 12-30-2020 | Boring Completed: 12-30-2020

Drill Rig: B-61 | Driller: California Pacific Drilling

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

BORING LOG NO. B-6

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5941° Longitude: -117.2564°

Surface Elev.: 2922 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
2			**SILTY SAND WITH GRAVEL (SM)**, brown, very dense *(continued)*				18	24-30-50/6"				
		38.0	2884	35			17	28-42-50/5"				
			POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), brown, very dense	40			18	25-40-50/6"				
		43.0	2879									
			SILTY SAND WITH GRAVEL (SM), reddish brown, very dense	45			6	50/6"				
		48.0	2874									
			POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), reddish brown, very dense	50			18	20-30-50/6"				
		51.5	2870.5									
			Boring Terminated at 51.5 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow-Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Boring Started: 12-30-2020 | Boring Completed: 12-30-2020

Drill Rig: B-61 | Driller: California Pacific Drilling

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

BORING LOG NO. B-7

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5918° Longitude: -117.2570°

Surface Elev.: 2905 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1												
			FILL - SILTY SAND (SM), trace gravel, fine to medium grained, light brown, dense									
							18	8-16-20 N=36				
			brown	5			18	12-13-17 N=30				18
			medium dense				18	5-4-13 N=17				
		10.0	2895	10								
			SILTY SAND WITH GRAVEL (SM), fine to medium grained, light brown, dense				18	15-39-45	5.0	127		
		13.0	2892									
2			**SILTY SAND (SM)**, trace gravel, fine grained, brown, loose	15			18	6-5-5	5.7	100		
											18-15-3	29
			medium dense	20			12	5-4-6 N=10				
				25			6	9-8-9 N=17				
		26.5	2878.5									
			Boring Terminated at 26.5 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow-Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Boring Started: 12-30-2020 | Boring Completed: 12-30-2020

Drill Rig: B-61 | Driller: California Pacific Drilling

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

BORING LOG NO. B-8

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5919° Longitude: -117.2565°

Surface Elev.: 2899 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1			**FILL - SILTY SAND WITH GRAVEL (SM)**, fine to medium grained, brown, very dense									
							17	30-32-50/5"	4.1	116		
		4.5	2894.5									
			SILTY SAND WITH GRAVEL (SM), fine grained, brown, medium dense	5			18	20-20-20	4.6	115		
			loose				18	4-5-5				
				10			18	5-5-7	2.7	109		
		15.0	2884									
2			**WELL GRADED SAND WITH SILT (SW-SM)**, trace gravel, medium dense	15			16	6-8-6 N=14				6
			fine to coarse grained, dense	20			18	11-17-17 N=34				
				25			18	12-14-17 N=31				
		26.5	2872.5									
			Boring Terminated at 26.5 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow-Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Boring Started: 12-30-2020 | Boring Completed: 12-30-2020

Drill Rig: B-61 | Driller: California Pacific Drilling

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

BORING LOG NO. B-9

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5933° Longitude: -117.2559°

Surface Elev.: 2917 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
2		0										
							12	15-50/6"				
				5			18	14-15-25	3.0	123		
							18	17-27-35	3.1	125		
				10			18	21-25-36				
				15			18	14-21-21 N=42				
				20			18	17-21-21 N=42				
				25			18	13-18-17 N=35				
		26.5	2890.5									

SILTY SAND WITH GRAVEL (SM), fine to medium grained, brown, very dense

medium dense

dense

fine to coarse grained

Boring Terminated at 26.5 Feet

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow-Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Boring Started: 12-30-2020 | Boring Completed: 12-30-2020

Drill Rig: B-61 | Driller: California Pacific Drilling

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

BORING LOG NO. B-10

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5923° Longitude: -117.2573°

Surface Elev.: 2906 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		0	2906									
				5			18	20-30-32	7.1	118		
				10			12	30-50/6"	7.4	113		
		11.0	2895									

FILL - SILTY SAND WITH GRAVEL (SM), fine grained, light brown, dense

very dense

Boring Terminated at 11 Feet

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow-Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Boring Started: 12-29-2020 | Boring Completed: 12-29-2020

Drill Rig: B-61 | Driller: California Pacific Drilling

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

BORING LOG NO. B-11

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5925° Longitude: -117.2563°

Surface Elev.: 2907 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		0	2907									
				5								
							18	20-32-50/6"	5.2	124		
		7.0	2900									
2												
				10								
							18	6-6-7	3.3	106		
		11.5	2895.5									

FILL - SILTY SAND WITH GRAVEL (SM), fine grained, light brown, very dense

SILTY SAND WITH GRAVEL (SM), fine grained, light brown, loose

Boring Terminated at 11.5 Feet

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow-Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Boring Started: 12-29-2020 | Boring Completed: 12-29-2020

Drill Rig: B-61 | Driller: California Pacific Drilling

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

BORING LOG NO. B-12

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5933° Longitude: -117.2565°

Surface Elev.: 2914 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		0.5	2913.5									
			FILL - SILTY SAND WITH GRAVEL (SM), light brown									
2			**SILTY SAND (SM)**, trace gravel, light brown, dense	5			18	23-27-37				16
			very dense	10			12	18-50/6"	10.1	112		
		11.0	2903									
			Boring Terminated at 11 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow-Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Boring Started: 12-29-2020 | Boring Completed: 12-29-2020

Drill Rig: B-61 | Driller: California Pacific Drilling

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

BORING LOG NO. B-13

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5938° Longitude: -117.2560°

Surface Elev.: 2922 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		0	2922									
			FILL - SILTY SAND WITH GRAVEL (SM), light brown									
		1.0	2921									
2			**SILTY SAND (SM)**, trace gravel, light brown, medium dense									
				5			18	16-20-32	2.9			
			dense	10			18	16-25-41				21
		11.5	2910.5									
			Boring Terminated at 11.5 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow-Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Boring Started: 12-29-2020 | Boring Completed: 12-29-2020

Drill Rig: B-61 | Driller: California Pacific Drilling

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

BORING LOG NO. B-14

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5939° Longitude: -117.2553°

Surface Elev.: 2924 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		0.5	2923.5									
			FILL - SILTY SAND WITH GRAVEL (SM), light brown									
2			**POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM)**, light brown, dense	5			18	22-29-33	5.0	123		
				10			18	21-30-35				14
		11.5	2912.5									
			Boring Terminated at 11.5 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow-Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Boring Started: 12-29-2020 | Boring Completed: 12-29-2020

Drill Rig: B-61 | Driller: California Pacific Drilling

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

BORING LOG NO. B-15

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5931° Longitude: -117.2554°

Surface Elev.: 2917 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		0.5	2916.5									
			FILL - SILTY SAND WITH GRAVEL (SM), light brown									
2			**SILTY SAND WITH GRAVEL (SM)**, light brown, very dense	5			12	22-50/6"				
				10			18	24-38-50/6"				
		11.5	2905.5									
			Boring Terminated at 11.5 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow-Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Boring Started: 12-29-2020 | Boring Completed: 12-29-2020

Drill Rig: B-61 | Driller: California Pacific Drilling

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

BORING LOG NO. B-16

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan
Latitude: 34.5929° Longitude: -117.2570°
Surface Elev.: 2914 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	INSTALLATION DETAILS	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1			**FILL - SILTY SAND (SM)**, trace gravel, brown	3/4" gravel									19
		5.0	2909		5								
			Boring Terminated at 5 Feet										

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow-Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Boring Started: 12-31-2020 | Boring Completed: 12-31-2020

Drill Rig: B-61 | Driller: California Pacific Drilling

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

BORING LOG NO. B-18

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan
Latitude: 34.5915° Longitude: -117.2572°
Surface Elev.: 2905 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	INSTALLATION DETAILS	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		0.0	2905										
					5								
2		5.0	2900	3/4" gravel									20
		10.0	2895		10								

FILL - SILTY SAND WITH GRAVEL (SM), light brown

SILTY SAND (SM), trace gravel, brown

Boring Terminated at 10 Feet

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow-Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Boring Started: 12-31-2020 | Boring Completed: 12-31-2020

Drill Rig: B-61 | Driller: California Pacific Drilling

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

BORING LOG NO. B-19

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan
Latitude: 34.5917° Longitude: -117.2564°
Surface Elev.: 2896 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	INSTALLATION DETAILS	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1			**FILL - POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM)**, brown	3/4" gravel									13
		5.0	2891		5								
			Boring Terminated at 5 Feet										

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow-Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Boring Started: 12-31-2020 | Boring Completed: 12-31-2020
Drill Rig: B-61 | Driller: California Pacific Drilling
Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

BORING LOG NO. B-20

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan
Latitude: 34.5923° Longitude: -117.2549°
Surface Elev.: 2909 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	INSTALLATION DETAILS
1		0.0	2909	**FILL - SILTY SAND WITH GRAVEL (SM)**, light brown
		5.0	2904	
2		5.0	2904	**SILTY SAND (SM)**, trace gravel, brown
		10.0	2899	
		10.0	2899	**WELL GRADED SAND WITH SILT AND GRAVEL (SW-SM)**, light brown
				3/4" gravel
		15.0	2894	
		15.0	2894	***Boring Terminated at 15 Feet***

DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
5								
10								9
15								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow-Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Boring Started: 12-31-2020 | Boring Completed: 12-31-2020
Drill Rig: B-61 | Driller: California Pacific Drilling
Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

BORING LOG NO. B-21

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan
Latitude: 34.5928° Longitude: -117.2550°
Surface Elev.: 2915 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	INSTALLATION DETAILS
1		0		
		FILL - SILTY SAND WITH GRAVEL (SM), light brown		
		1.0	2914	
2		**WELL GRADED SAND WITH SILT AND GRAVEL (SW-SM)**, light brown		3/4" gravel
		10.0	2905	
		Boring Terminated at 10 Feet		

DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
5								12
10								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow-Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Boring Started: 12-31-2020 | Boring Completed: 12-31-2020
Drill Rig: B-61 | Driller: California Pacific Drilling
Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

BORING LOG NO. B-22

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan
Latitude: 34.5936° Longitude: -117.2550°
Surface Elev.: 2921 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	INSTALLATION DETAILS	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
2			**SILTY SAND (SM)**, trace gravel, brown	3/4" gravel	5								17
		8.0	2913										
			Boring Terminated at 8 Feet										

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow-Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Boring Started: 12-31-2020 | Boring Completed: 12-31-2020

Drill Rig: B-61 | Driller: California Pacific Drilling

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

BORING LOG NO. B-23

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan
Latitude: 34.5934° Longitude: -117.2557°
Surface Elev.: 2917 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	INSTALLATION DETAILS	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
2			**WELL GRADED SAND WITH SILT (SW-SM)**, trace gravel, brown	3/4" gravel									7
		5.0	2912		5								
			Boring Terminated at 5 Feet										

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow-Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Boring Started: 12-31-2020 | Boring Completed: 12-31-2020

Drill Rig: B-61 | Driller: California Pacific Drilling

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

TEST PIT LOG NO. T-1

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5937° Longitude: -117.2567°

Surface Elev.: 2921 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1			**FILL - SILTY SAND WITH GRAVEL (SM)**, fine to medium grained, light brown, with gravel up to 3"									
		2.0	2919									
2			**SILTY SAND (SM)**, fine to coarse grained, light brown									
		4.5	2916.5									
			fine to medium grained, carbonate cement ***Test Pit Terminated at 4.5 Feet***									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Backhoe

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Test Pit Started: 12-30-2020 | Test Pit Completed: 12-30-2020

Excavator: | Operator:

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

TEST PIT LOG NO. T-2

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5934° Longitude: -117.2560°

Surface Elev.: 2920 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DESCRIPTION
1		0.0	2920	**FILL - SILTY SAND WITH GRAVEL (SM)**, fine to medium grained, light brown, with gravel up to 3"
2		1.0	2919	**SILTY SAND WITH GRAVEL (SM)**, fine to coarse grained, light brown, wit gravel up to 2", carbonate cemented lenses
		3.8	2916.5	***Test Pit Terminated at 3.75 Feet***

DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Backhoe

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Test Pit Started: 12-30-2021 | Test Pit Completed: 12-30-2021

Excavator: | Operator:

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

TEST PIT LOG NO. T-3

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5933° Longitude: -117.2569°

Surface Elev.: 2915 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DESCRIPTION
1		0.5	2914.5	**FILL - SILTY SAND WITH GRAVEL (SM)**, fine to coarse grained, light brown, with gravel up to 2", few small brick pieces
2		3.5	2911.5	**SILTY SAND WITH GRAVEL (SM)**, fine to medium grained, light brown, with gravel up to 3", hard, poorly bedded
				Test Pit Terminated at 3.5 Feet

DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Backhoe

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Test Pit Started: 12-30-2021 | Test Pit Completed: 12-30-2021

Excavator: | Operator:

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

TEST PIT LOG NO. T-4

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5928° Longitude: -117.2568°

Surface Elev.: 2914 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		0										
			FILL - SILTY SAND WITH GRAVEL (SM), fine to medium grained, light brown, with gravel up to 3", small brick pieces									
		2.5	2911.5									
2			**POORLY GRADED SAND WITH GRAVEL (SP)**, fine to coarse grained, light brown, lift boundary at 4.5'	5								
		10.0	2904	10								
			SILTY SAND (SM), trace gravel, fine to medium grained, brown									
		11.0	2903									
			Test Pit Terminated at 11 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Backhoe

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Test Pit Started: 12-30-2021

Test Pit Completed: 12-30-2021

Excavator:

Operator:

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

TEST PIT LOG NO. T-5

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5924° Longitude: -117.2573°

Surface Elev.: 2914 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1			**FILL - SILTY SAND WITH GRAVEL (SM)**, fine to medium grained, light brown, with gravel up to 1"									
			fine to coarse grained, with gravel up to 2"	5								
		8.0	2906									
2			**SILTY SAND (SM)**, fine to medium grained, brown, loose	10								
		10.5	2903.5									
			Test Pit Terminated at 10.5 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Backhoe

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Test Pit Started: 12-30-2021 | Test Pit Completed: 12-30-2021

Excavator: | Operator:

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

TEST PIT LOG NO. T-6

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5922° Longitude: -117.2568°

Surface Elev.: 2906 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1			**FILL - SILTY SAND WITH GRAVEL (SM)**, fine to medium grained, light brown, with gravel up to 1"									
			gravel up to 2"	5								
		7.5										
2			2898.5 **SILTY SAND (SM)**, fine to medium grained, brown									
		10.0	2896	10								
			Test Pit Terminated at 10 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Backhoe

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Test Pit Started: 12-30-2021

Test Pit Completed: 12-30-2021

Excavator:

Operator:

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

TEST PIT LOG NO. T-7

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5915° Longitude: -117.2564°

Surface Elev.: 2895 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		0.0	2895	5								
			FILL - SILTY SAND WITH GRAVEL (SM), fine to medium grained, light brown, with gravel up to 2"									
		5.0	2890									
2			**SILTY SAND (SM)**, fine to medium grained, brown									
		8.8	2886									
			Test Pit Terminated at 8.8 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Backhoe

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Test Pit Started: 12-30-2021
Test Pit Completed: 12-30-2021
Excavator:
Operator:
Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

TEST PIT LOG NO. T-8

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5922° Longitude: -117.2553°

Surface Elev.: 2910 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DESCRIPTION
1		0.0	2910	**FILL - SILTY SAND WITH GRAVEL (SM)**, fine to medium grained, light brown, with gravel up to 2"
2		8.0	2902	**SILTY SAND (SM)**, fine to medium grained, brown
		10.0	2900	***Test Pit Terminated at 10 Feet***

DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
5								
10								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Backhoe

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Test Pit Started: 12-30-2021 | Test Pit Completed: 12-30-2021

Excavator: | Operator:

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

TEST PIT LOG NO. T-9

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5931° Longitude: -117.2556°

Surface Elev.: 2917 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DESCRIPTION
1		0.8	2916.5	**FILL - SILTY SAND WITH GRAVEL (SM)**, fine to coarse grained, light brown, with gravel up to 2"
2		6.0	2911	**SILTY SAND WITH GRAVEL (SM)**, fine to coarse grained, light brown, bedded/laminated in upper 2 feet
				Test Pit Terminated at 6 Feet

DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
5								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Backhoe

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Test Pit Started: 12-30-2021	Test Pit Completed: 12-30-2021
Excavator:	Operator:
Project No.: CB205149	

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

TEST PIT LOG NO. T-10

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5940° Longitude: -117.2551°

Surface Elev.: 2925 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		0.4	2924.5									
2			**FILL - SILTY SAND (SM)**, fine to coarse grained, light brown **SILTY SAND (SM)**, fine to medium grained, light brown, bedded									
		4.6	2920.5									
			Test Pit Terminated at 4.6 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Backhoe

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Test Pit Started: 12-30-2021 | Test Pit Completed: 12-30-2021

Excavator: | Operator:

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

TEST PIT LOG NO. T-11

PROJECT: Love's Travel Apple Valley

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

LOCATION See Exploration Plan

Latitude: 34.5936° Longitude: -117.2549°

Surface Elev.: 2920 (Ft.)

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1			**FILL - SILTY SAND (SM)**, trace gravel, fine to coarse grained, light brown									
		2.5	2917.5									
2			**SILTY SAND (SM)**, fine grained, interbedded with fine to coarse sand									
		4.4	2915.5									
			Test Pit Terminated at 4.4 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Backhoe

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

Test Pit Started: 12-30-2021

Test Pit Completed: 12-30-2021

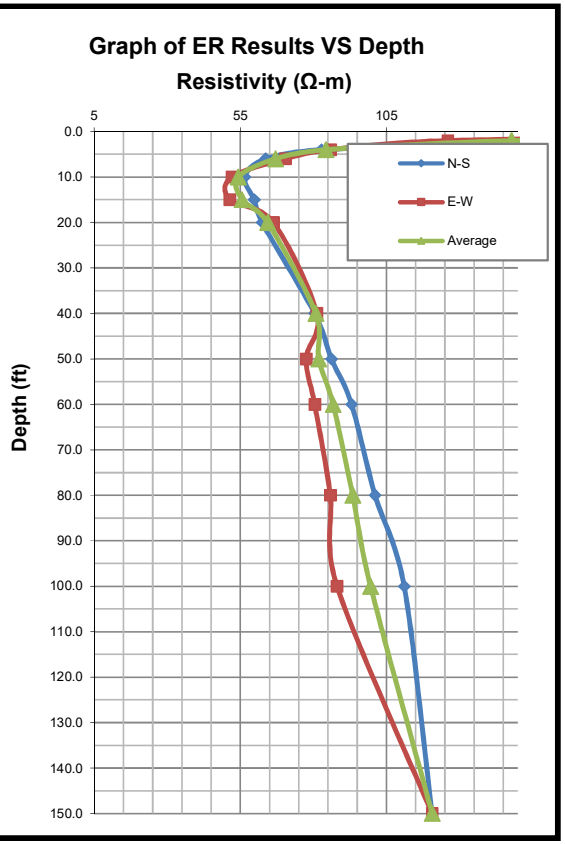
Excavator:

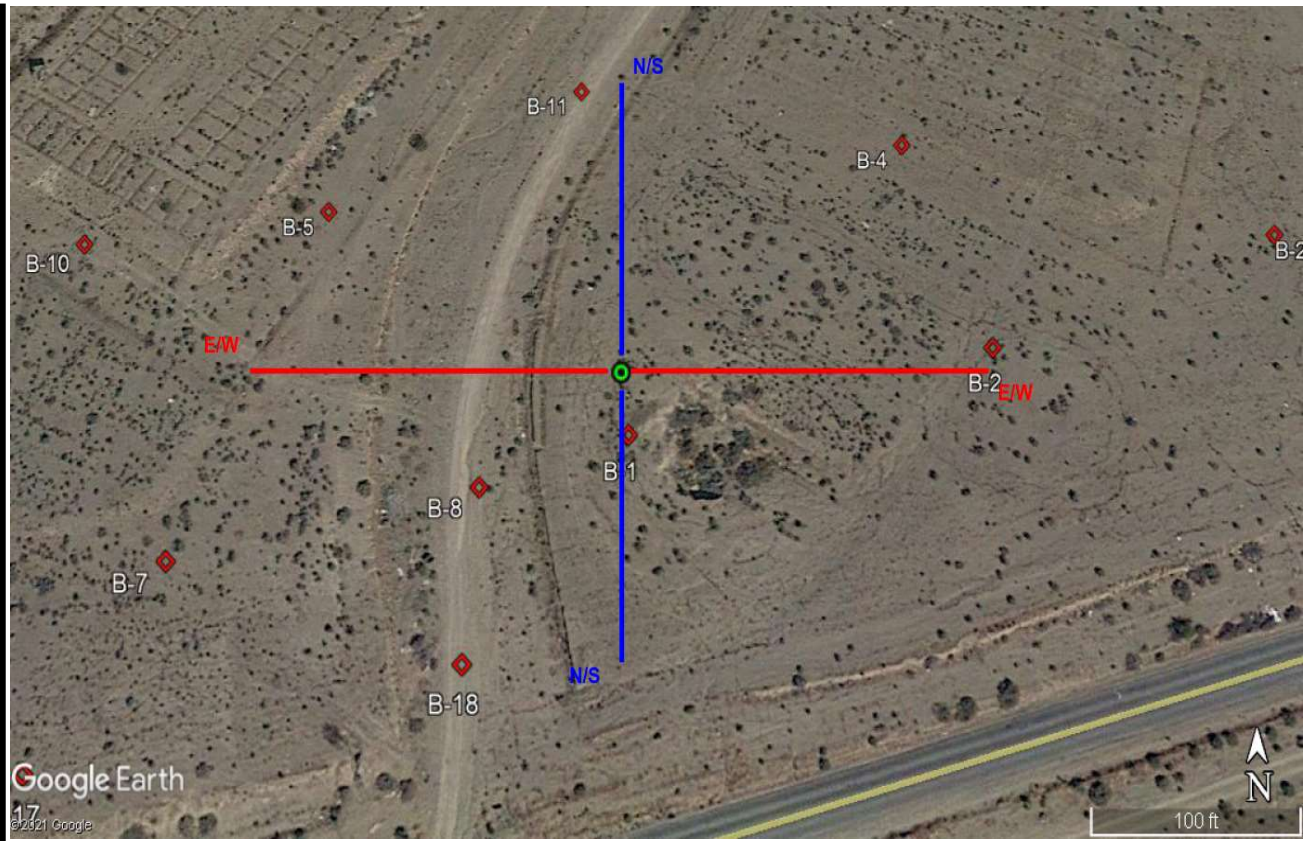
Operator:

Project No.: CB205149

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

34.5923°N, 117.2562°W	ARRAY	PARAMETER	SPACING (feet)											
			1.0	2.0	4.0	6.0	10.0	15.0	20.0	40.0	50.0	60.0	80.0	100.0	150.0
	N-S	Measured resistance (Ω)	114	44.3	10.8	5.54	2.95	2.08	1.63	1.05	0.9	0.81	0.66	0.58	0.42
		Calculated resistivity (Ω-m)	218	170	83	64	56	60	62	80	86	93	101	111	121
		Average resistivity (Ω-m)	**229**	**148**	**84**	**67**	**54**	**56**	**64**	**81**	**82**	**87**	**93**	**100**	**121**
	E-W	Measured resistance (Ω)	125	32.9	11.2	6.13	2.72	1.79	1.73	1.06	0.81	0.7	0.56	0.46	0.42
		Calculated resistivity (Ω-m)	239	126	86	70	52	51	66	81	78	80	86	88	121





Project Mgr:	AT	Project Number	Terracon	**FIELD ELECTRICAL RESISTIVITY TESTING RESULTS**
Prepared by:	SP	CB205149		**Love's Travel Stop - Apple Valley**
Checked by:	KA	Date: 2/4/2021	Consulting Engineers and Scientists Texas Registration 3272 1355 E. Cooley Drive, Suite C Colton, CA 92324 PH: (909) 824-7311 Fax. (909) 301-6016	**Apple Valley** **San Bernardino County, California**
Approved by:	KA			

Job No.: CB205149

PERCOLATION TEST DATA

BORING NUMBER: B-16
LOT No: N/A
TRACT No: N/A

CLIENT: Love's Travel Stops
PROJECT: Love's Travel Apple Valley

DATE OF DRILLING: December 30, 2020
DATE OF PRESOAK: December 30, 2020
DATE OF TEST: January 4, 2021
TESTED BY: SP

DEPTH BEFORE (ft.): 5.0
DEPTH AFTER (ft.): 4.7
PVC PIPE DIA. (in.): 3.0
PERC HOLE DIA. (in.): 8.0

Time Interval (min.)	Total Elapsed Time (min.)	Initial Water Level (in.)	Final Water Level (in.)	Change in Water Level (in.)	Initial Hole Depth (in.)	Final Hole Depth (in.)	Percolation Rate (in/hr)	Infiltration rate (Porchet Method) (in/hr)
287	287	5.0	53.4	48.4	60.0	56.4	10.1	0.62
10	297	7.0	10.0	3.0	60.0	56.4	18.0	0.67
10	307	10.0	12.0	2.0	60.0	56.4	12.0	0.47
10	317	12.0	14.0	2.0	60.0	56.4	12.0	0.49
10	327	14.0	16.5	2.5	60.0	56.4	15.0	0.64
10	337	6.0	8.0	2.0	60.0	56.4	12.0	0.44
10	347	8.0	10.0	2.0	60.0	56.4	12.0	0.45

Average of last 3 readings: 13.0 0.5

Job No.: CB205149

PERCOLATION TEST DATA

BORING NUMBER: B-18
LOT No: N/A
TRACT No: N/A

CLIENT: Love's Travel Stops
PROJECT: Love's Travel Apple Valley

DATE OF DRILLING: December 30, 2020
DATE OF PRESOAK: December 30, 2020
DATE OF TEST: January 4, 2021
TESTED BY: SP

DEPTH BEFORE (ft.): 10.0
DEPTH AFTER (ft.): 9.4
PVC PIPE DIA. (in.): 3.0
PERC HOLE DIA. (in.): 8.0

Time Interval (min.)	Total Elapsed Time (min.)	Initial Water Level (in.)	Final Water Level (in.)	Change in Water Level (in.)	Initial Hole Depth (in.)	Final Hole Depth (in.)	Percolation Rate (in/hr)	Infiltration rate (Porchet Method) (in/hr)
172	172	60.0	112.8	52.8	120.0	112.8	18.4	1.03
10	182	62.4	64.8	2.4	120.0	112.8	14.4	0.49
10	192	64.8	69.6	4.8	120.0	112.8	28.8	1.05
10	202	69.6	72.0	2.4	120.0	112.8	14.4	0.56
10	212	62.4	65.4	3.0	120.0	112.8	18.0	0.62
10	222	65.4	69.0	3.6	120.0	112.8	21.6	0.79
10	232	69.0	72.0	3.0	120.0	112.8	18.0	0.70
				Average of last 3 readings:			19.2	0.7

Job No.: CB205149

PERCOLATION TEST DATA

BORING NUMBER: B-19
LOT No: N/A
TRACT No: N/A

CLIENT: Love's Travel Stops
PROJECT: Love's Travel Apple Valley

DATE OF DRILLING: December 30, 2020
DATE OF PRESOAK: December 30, 2020
DATE OF TEST: December 30, 2020
TESTED BY: SP

DEPTH BEFORE (ft.): 5.0
DEPTH AFTER (ft.): 4.9
PVC PIPE DIA. (in.): 3.0
PERC HOLE DIA. (in.): 8.0

Time Interval (min.)	Total Elapsed Time (min.)	Initial Water Level (in.)	Final Water Level (in.)	Change in Water Level (in.)	Initial Hole Depth (in.)	Final Hole Depth (in.)	Percolation Rate (in/hr)	Infiltration rate (Porchet Method) (in/hr)
183	183	4.0	58.8	54.8	60.0	58.8	18.0	1.17
10	193	4.0	11.5	7.5	60.0	58.8	45.0	1.66
10	203	4.5	11.5	7.0	60.0	58.8	42.0	1.56
10	213	5.0	10.5	5.5	60.0	58.8	33.0	1.22
10	223	4.0	11.0	7.0	60.0	58.8	42.0	1.54
10	233	5.5	11.0	5.5	60.0	58.8	33.0	1.23
10	243	4.5	10.5	6.0	60.0	58.8	36.0	1.32
				Average of last 3 readings:			37.0	1.4

Job No.: CB205149

PERCOLATION TEST DATA

BORING NUMBER: B-20
LOT No: N/A
TRACT No: N/A

CLIENT: Love's Travel Stops
PROJECT: Love's Travel Apple Valley

DATE OF DRILLING: December 30, 2020
DATE OF PRESOAK: December 30, 2020
DATE OF TEST: January 4, 2021
TESTED BY: SP

DEPTH BEFORE (ft.): 15.0
DEPTH AFTER (ft.): 13.8
PVC PIPE DIA. (in.): 3.0
PERC HOLE DIA. (in.): 8.0

Time Interval (min.)	Total Elapsed Time (min.)	Initial Water Level (in.)	Final Water Level (in.)	Change in Water Level (in.)	Initial Hole Depth (in.)	Final Hole Depth (in.)	Percolation Rate (in/hr)	Infiltration rate (Porchet Method) (in/hr)
118	118	84.0	165.6	81.6	180.0	165.6	41.5	1.45
10	128	121.2	132.0	10.8	180.0	165.6	64.8	2.34
10	138	122.4	133.2	10.8	180.0	165.6	64.8	2.39
10	148	120.6	129.0	8.4	180.0	165.6	50.4	1.76
10	158	121.2	129.6	8.4	180.0	165.6	50.4	1.78
10	168	120.6	127.8	7.2	180.0	165.6	43.2	1.49
10	178	121.2	127.2	6.0	180.0	165.6	36.0	1.25
				Average of last 3 readings:			43.2	1.5

Job No.: CB205149

PERCOLATION TEST DATA

BORING NUMBER: B-21
LOT No: N/A
TRACT No: N/A

CLIENT: Love's Travel Stops
PROJECT: Love's Travel Apple Valley

DATE OF DRILLING: December 30, 2020
DATE OF PRESOAK: December 30, 2020
DATE OF TEST: December 30, 2020
TESTED BY: SP

DEPTH BEFORE (ft.): 10.0
DEPTH AFTER (ft.): 9.3
PVC PIPE DIA. (in.): 3.0
PERC HOLE DIA. (in.): 8.0

Time Interval (min.)	Total Elapsed Time (min.)	Initial Water Level (in.)	Final Water Level (in.)	Change in Water Level (in.)	Initial Hole Depth (in.)	Final Hole Depth (in.)	Percolation Rate (in/hr)	Infiltration rate (Porchet Method) (in/hr)
210	210	54.0	111.6	57.6	120.0	111.6	16.5	0.84
10	220	51.6	92.4	40.8	120.0	111.6	244.8	9.79
10	230	52.8	93.0	40.2	120.0	111.6	241.2	9.82
10	240	64.8	98.4	33.6	120.0	111.6	201.6	9.98
10	250	57.6	91.8	34.2	120.0	111.6	205.2	8.68
10	260	57.0	89.4	32.4	120.0	111.6	194.4	7.97
10	270	61.2	92.4	31.2	120.0	111.6	187.2	8.28

Average of last 3 readings: 195.6 8.3

Job No.: CB205149

PERCOLATION TEST DATA

BORING NUMBER: B-22
LOT No: N/A
TRACT No: N/A

CLIENT: Love's Travel Stops
PROJECT: Love's Travel Apple Valley

DATE OF DRILLING: December 30, 2020
DATE OF PRESOAK: December 30, 2020
DATE OF TEST: December 30, 2020
TESTED BY: SP

DEPTH BEFORE (ft.): 8.0
DEPTH AFTER (ft.): 7.6
PVC PIPE DIA. (in.): 3.0
PERC HOLE DIA. (in.): 8.0

Time Interval (min.)	Total Elapsed Time (min.)	Initial Water Level (in.)	Final Water Level (in.)	Change in Water Level (in.)	Initial Hole Depth (in.)	Final Hole Depth (in.)	Percolation Rate (in/hr)	Infiltration rate (Porchet Method) (in/hr)
230	230	42.0	90.6	48.6	96.0	90.6	12.7	0.80
10	240	30.6	43.2	12.6	96.0	90.6	75.6	2.47
10	250	35.4	45.6	10.2	96.0	90.6	61.2	2.13
10	260	35.4	46.2	10.8	96.0	90.6	64.8	2.27
10	270	39.6	49.2	9.6	96.0	90.6	57.6	2.15
10	280	43.2	51.6	8.4	96.0	90.6	50.4	1.99
10	290	43.2	51.6	8.4	96.0	90.6	50.4	1.99

Average of last 3 readings: 52.8 2.0

Job No.: CB205149

PERCOLATION TEST DATA

BORING NUMBER: B-23
LOT No: N/A
TRACT No: N/A

CLIENT: Love's Travel Stops
PROJECT: Love's Travel Apple Valley

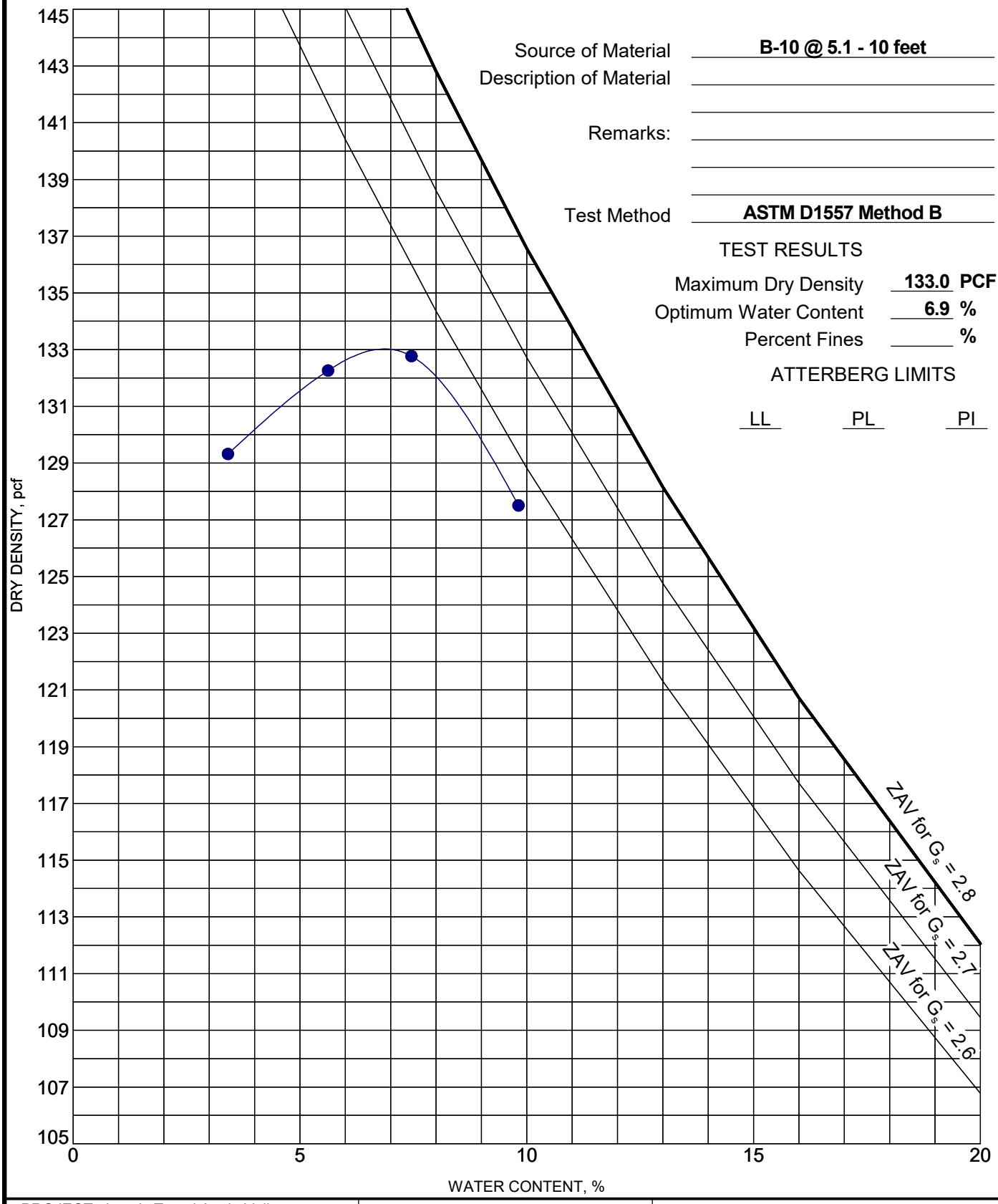
DATE OF DRILLING: December 30, 2020
DATE OF PRESOAK: December 30, 2020
DATE OF TEST: December 30, 2020
TESTED BY: SP

DEPTH BEFORE (ft.): 5.0
DEPTH AFTER (ft.): 4.7
PVC PIPE DIA. (in.): 3.0
PERC HOLE DIA. (in.): 8.0

Time Interval (min.)	Total Elapsed Time (min.)	Initial Water Level (in.)	Final Water Level (in.)	Change in Water Level (in.)	Initial Hole Depth (in.)	Final Hole Depth (in.)	Percolation Rate (in/hr)	Infiltration rate (Porchet Method) (in/hr)
231	231	6.0	56.4	50.4	60.0	56.4	13.1	0.85
10	241	13.0	37.2	24.2	60.0	56.4	145.2	7.87
10	251	13.5	37.2	23.7	60.0	56.4	142.2	7.76
10	261	12.8	36.0	23.3	60.0	56.4	139.5	7.42
10	271	10.3	36.0	25.8	60.0	56.4	154.5	7.95
10	281	13.8	35.4	21.6	60.0	56.4	129.6	6.93
10	291	13.0	35.4	22.4	60.0	56.4	134.4	7.11
				Average of last 3 readings:			139.5	7.3

MOISTURE-DENSITY RELATIONSHIP

ASTM D698/D1557



Source of Material: **B-10 @ 5.1 - 10 feet**

Description of Material:

Remarks:

Test Method: **ASTM D1557 Method B**

TEST RESULTS

Maximum Dry Density	**133.0**	**PCF**
Optimum Water Content	**6.9**	**%**
Percent Fines		**%**

ATTERBERG LIMITS

LL	PL	PI

PROJECT: Love's Travel Apple Valley

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

PROJECT NUMBER: CB205149

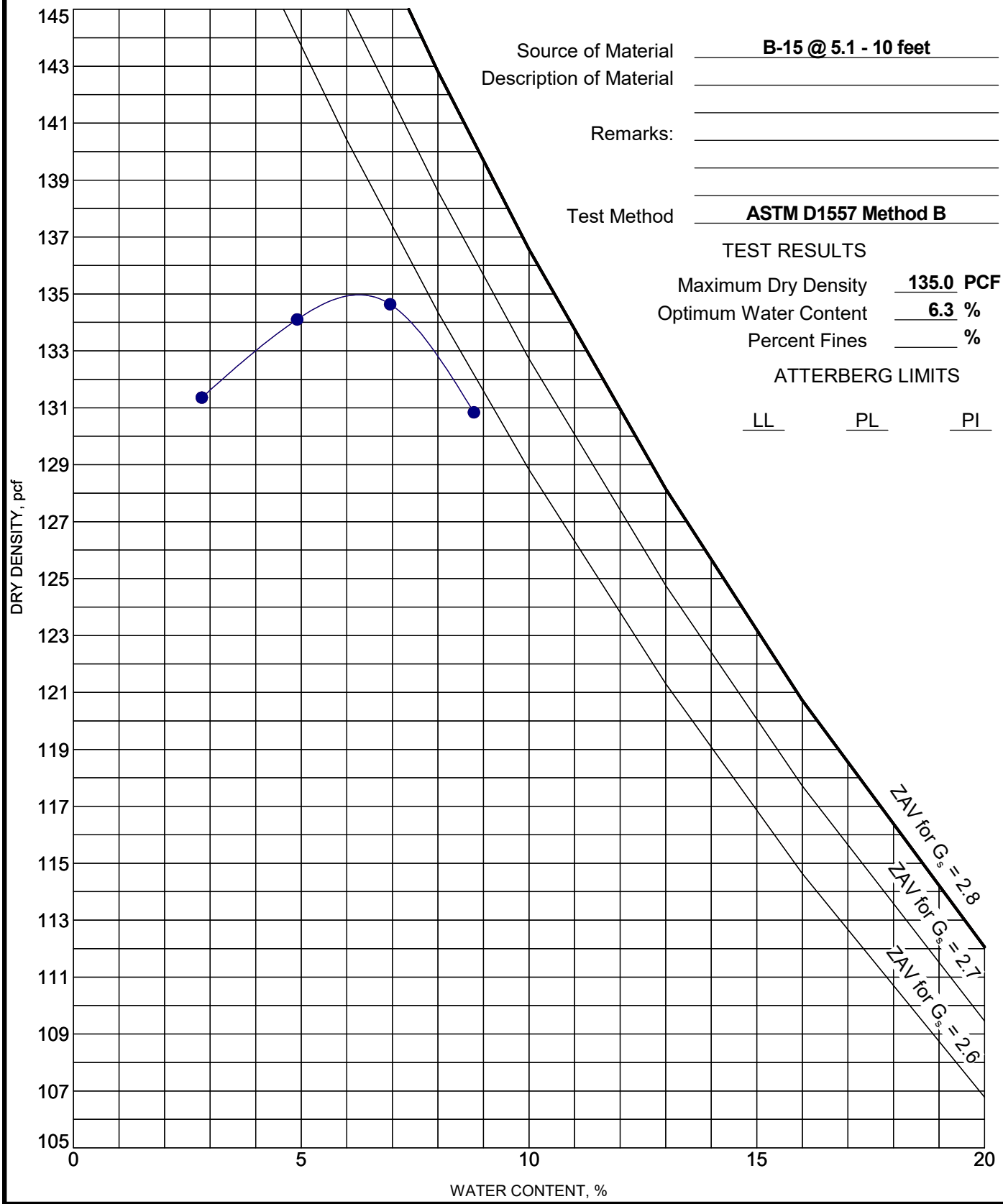
CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

EXHIBIT: B-1

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. COMPACTION - V1 CB205149 LOVE'S TRAVEL APP.GPJ 02195238 US 50 AND CHIPMAN.GPJ 1/26/21

MOISTURE-DENSITY RELATIONSHIP

ASTM D698/D1557



Source of Material: **B-15 @ 5.1 - 10 feet**

Description of Material:

Remarks:

Test Method: **ASTM D1557 Method B**

TEST RESULTS

Maximum Dry Density	**135.0**	**PCF**
Optimum Water Content	**6.3**	**%**
Percent Fines		**%**

ATTERBERG LIMITS

LL	PL	PI

PROJECT: Love's Travel Apple Valley

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

PROJECT NUMBER: CB205149

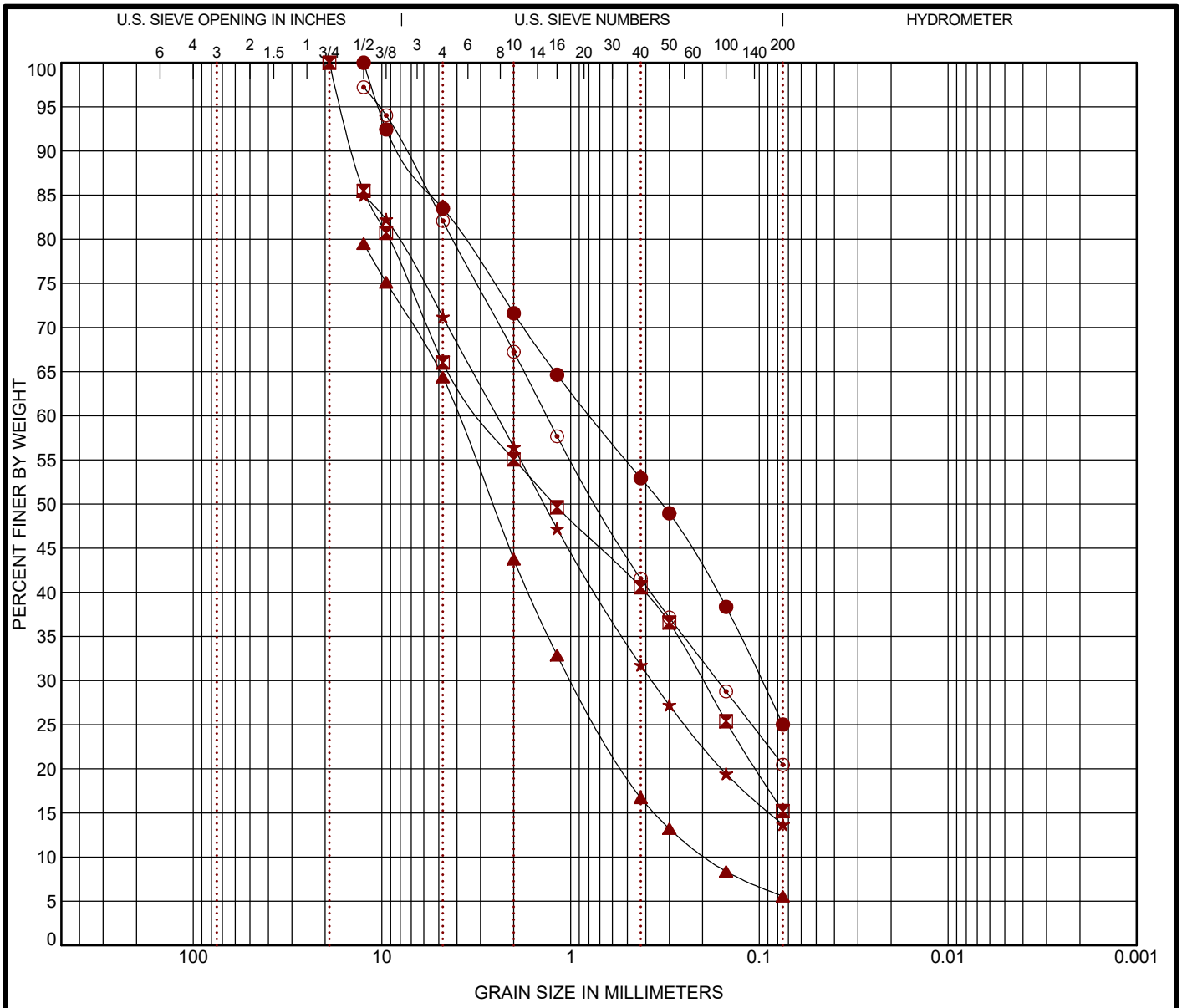
CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

EXHIBIT: B-1

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. COMPACTION - V1 CB205149 LOVE'S TRAVEL APP.GPJ 02195238 US 50 AND CHIPMAN.GPJ 1/26/21

GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Boring ID		Depth	USCS Classification	WC (%)	LL	PL	PI	Cc	Cu
●	B-2	7.5 - 9	SILTY SAND with GRAVEL (SM)	3.3	NP	NP	NP		
⊠	B-2	15 - 16.5							
▲	B-3	7.5 - 9	WELL-GRADED SAND with SILT and GRAVEL (SW-SM)	1.6	NP	NP	NP	1.30	20.91
★	B-3	15 - 16.5							
⊙	B-4	10 - 11.5							

Boring ID		Depth	D_{100}	D_{60}	D_{30}	D_{10}	%Cobbles	%Gravel	%Sand	%Silt	%Fines	%Clay
●	B-2	7.5 - 9	12.5	0.787	0.097		0.0	16.5	58.5		25.0	
⊠	B-2	15 - 16.5	19	2.953	0.2		0.0	34.0	50.8		15.2	
▲	B-3	7.5 - 9	12.5	3.953	0.984	0.189		15.1	58.8		5.6	
★	B-3	15 - 16.5	12.5	2.465	0.372			13.8	57.5		13.7	
⊙	B-4	10 - 11.5	12.5	1.342	0.166			15.1	61.6		20.5	

PROJECT: Love's Travel Apple Valley

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

PROJECT NUMBER: CB205149

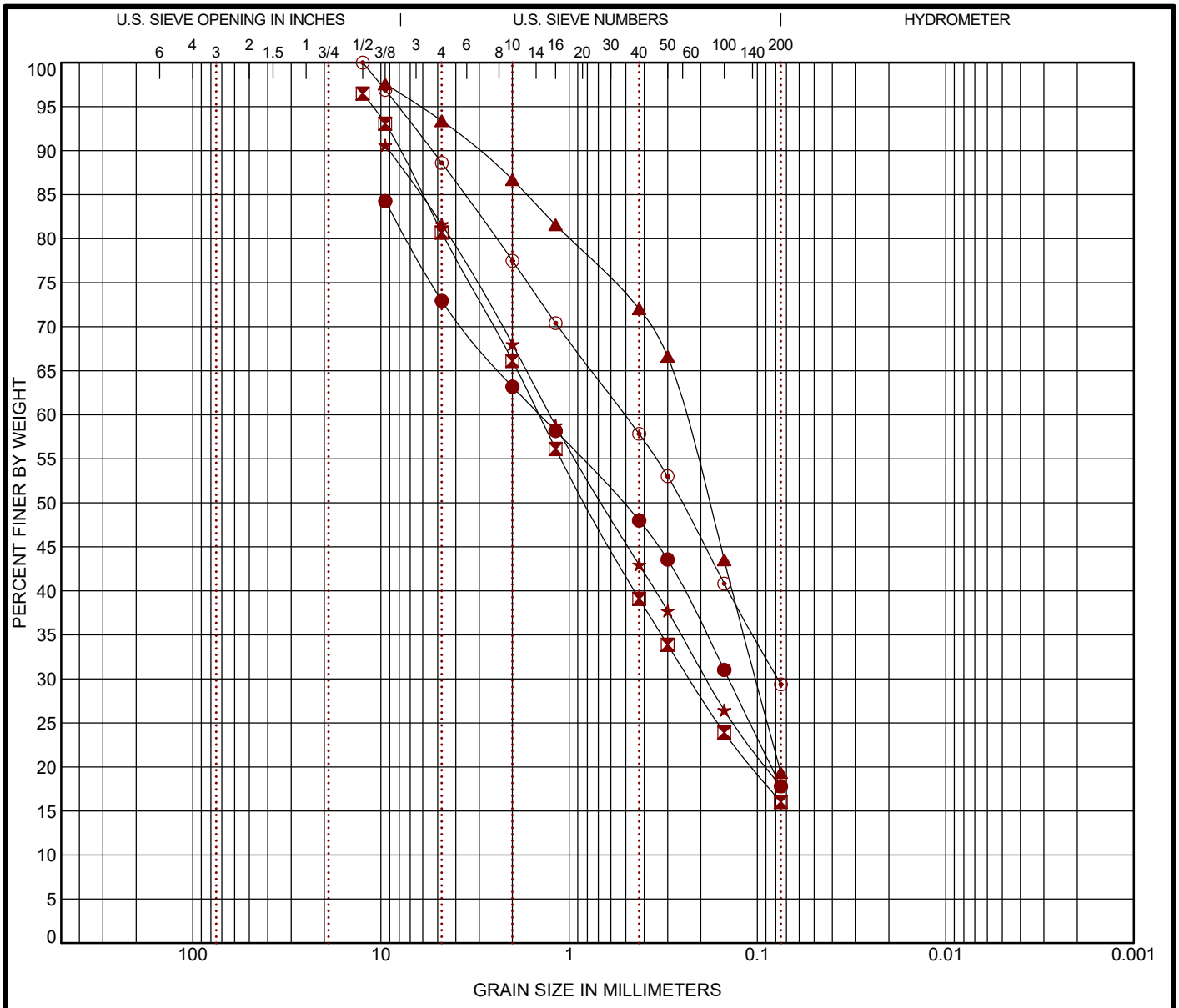
CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

EXHIBIT: B-1

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS-2 CB205149 LOVE'S TRAVEL APP.GPJ 02195238 US 50 AND CHIPMAN.GPJ 1/26/21

GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136



Boring ID	Depth	USCS Classification	WC (%)	LL	PL	PI	Cc	Cu
B-4	15 - 16.5							
B-5	5 - 6.5							
B-5	15 - 16.5							
B-7	5 - 6.5							
B-7	15.1 - 20	SILTY SAND (SM)		18	15	3		

Boring ID	Depth	D_{100}	D_{60}	D_{30}	D_{10}	%Cobbles	%Gravel	%Sand	%Silt	%Fines	%Clay
B-4	15 - 16.5	9.5	1.431	0.142			11.3	55.1		17.8	
B-5	5 - 6.5	12.5	1.448	0.229			15.8	64.7		16.0	
B-5	15 - 16.5	9.5	0.246	0.102			4.2	74.0		19.3	
B-7	5 - 6.5	9.5	1.265	0.187			9.0	63.8		17.8	
B-7	15.1 - 20	12.5	0.507	0.078		0.0	11.4	59.2		29.4	

PROJECT: Love's Travel Apple Valley

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

PROJECT NUMBER: CB205149

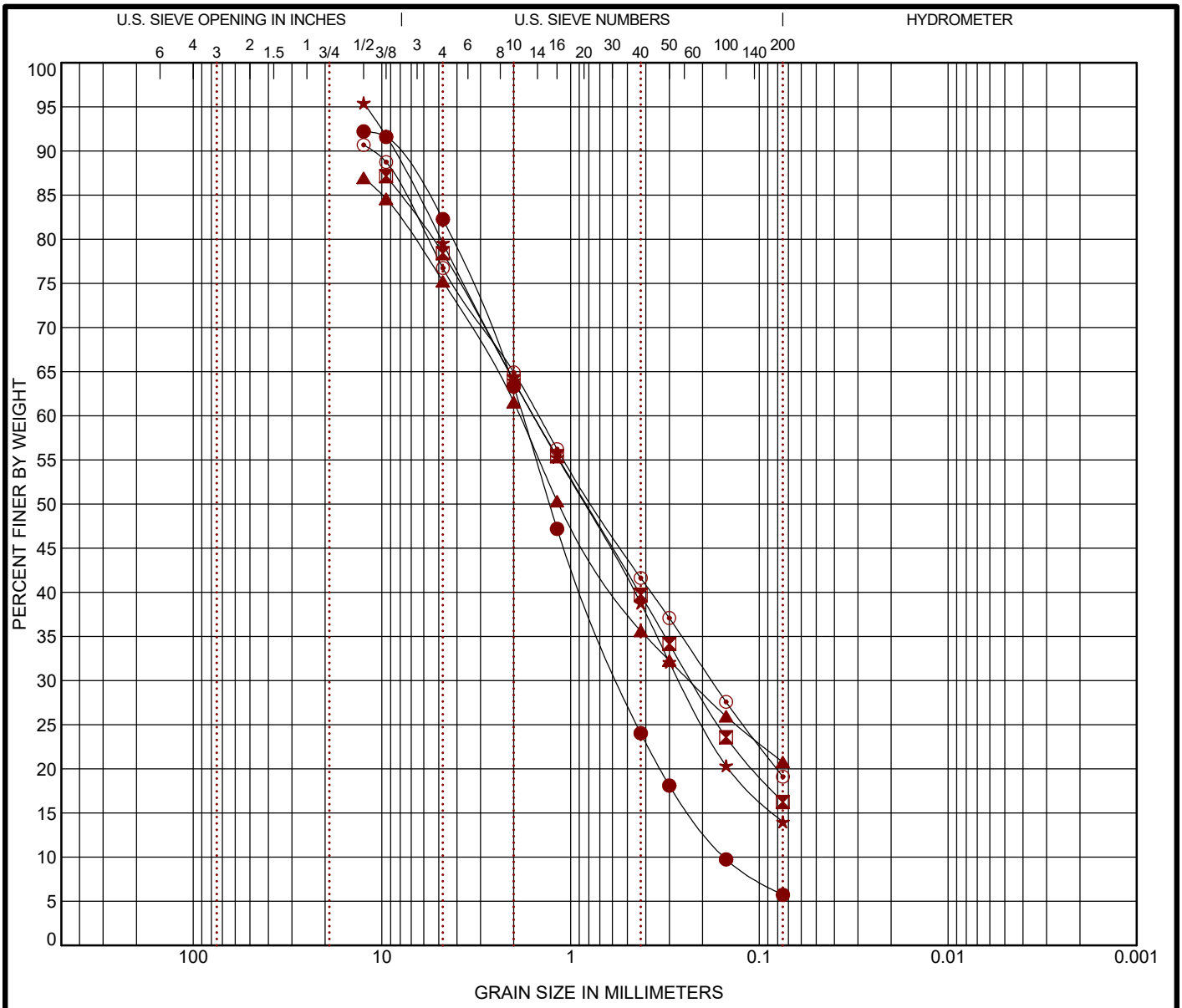
CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

EXHIBIT: B-2

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS-2 CB205149 LOVE'S TRAVEL APP.GPJ 02195238 US 50 AND CHIPMAN.GPJ 1/26/21

GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Boring ID		Depth	USCS Classification	WC (%)	LL	PL	PI	Cc	Cu
●	B-8	15 - 16.5						1.11	11.71
⊠	B-12	5 - 6.5							
▲	B-13	10 - 11.5							
★	B-14	10 - 11.5							
⊙	B-16	0 - 5							

Boring ID		Depth	D_{100}	D_{60}	D_{30}	D_{10}	%Cobbles	%Gravel	%Sand	%Silt	%Fines	%Clay
●	B-8	15 - 16.5	12.5	1.794	0.553	0.153		9.9	76.6		5.7	
⊠	B-12	5 - 6.5	9.5	1.568	0.229			8.7	62.2		16.2	
▲	B-13	10 - 11.5	12.5	1.86	0.234			11.7	54.5		20.8	
★	B-14	10 - 11.5	12.5	1.571	0.265			15.9	65.6		14.0	
⊙	B-16	0 - 5	12.5	1.484	0.179			13.9	57.6		19.1	

PROJECT: Love's Travel Apple Valley

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

PROJECT NUMBER: CB205149

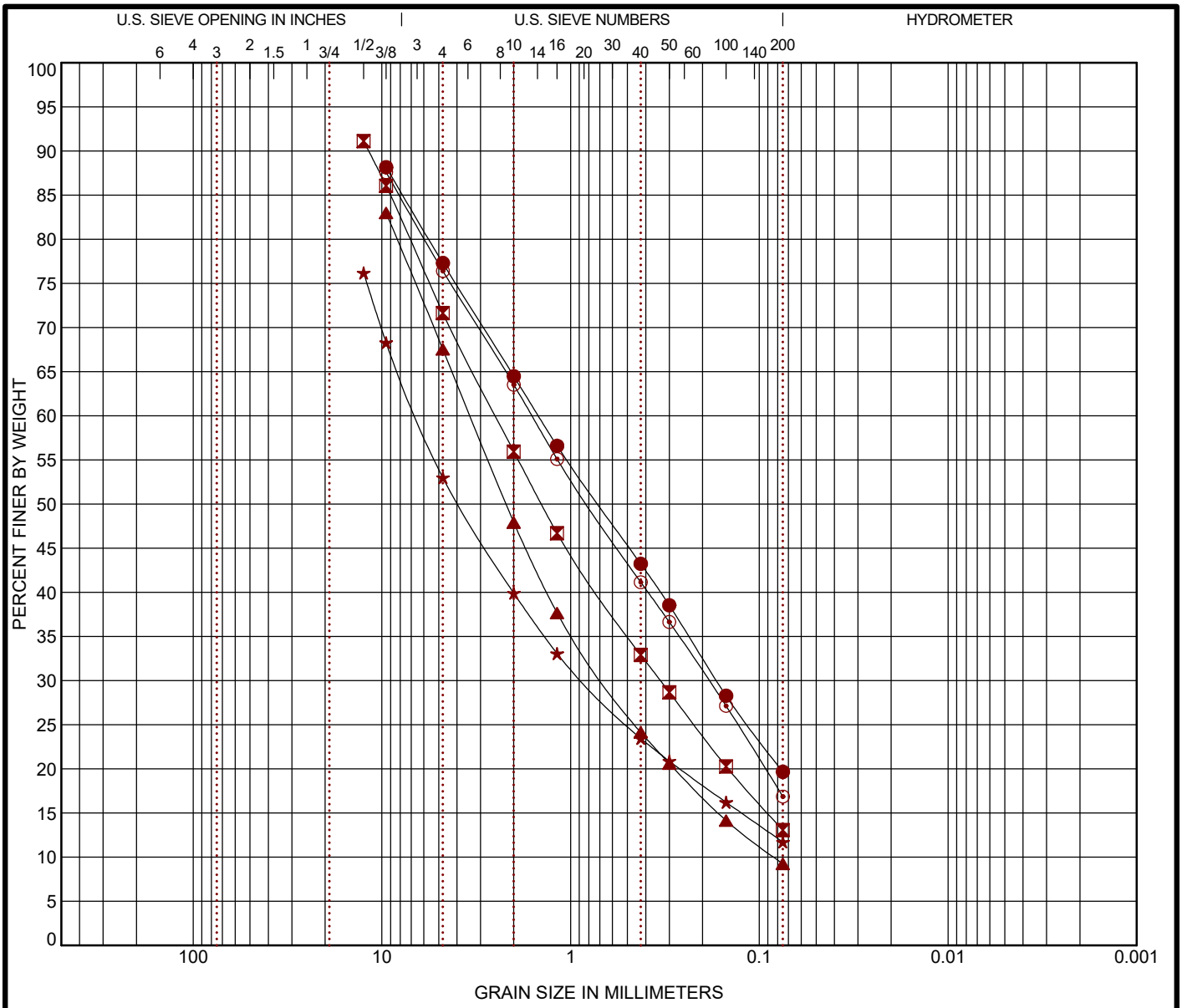
CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

EXHIBIT: B-3

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS-2 CB205149 LOVE'S TRAVEL APP.GPJ 02195238 US 50 AND CHIPMAN.GPJ 1/26/21

GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Boring ID		Depth	USCS Classification	WC (%)	LL	PL	PI	Cc	Cu
●	B-18	5 - 10							
⊠	B-19	0 - 5							
▲	B-20	10 - 15						1.54	40.80
★	B-21	5 - 10						1.93	113.08
⊙	B-22	3 - 8							

Boring ID		Depth	D_{100}	D_{60}	D_{30}	D_{10}	%Cobbles	%Gravel	%Sand	%Silt	%Fines	%Clay
●	B-18	5 - 10	9.5	1.482	0.169			10.9	57.6		19.7	
⊠	B-19	0 - 5	12.5	2.501	0.335			19.5	58.6		13.1	
▲	B-20	10 - 15	9.5	3.408	0.662	0.084		15.4	58.3		9.2	
★	B-21	5 - 10	12.5	6.525	0.852			23.2	41.3		11.7	
⊙	B-22	3 - 8	9.5	1.604	0.185			11.2	59.5		16.9	

PROJECT: Love's Travel Apple Valley

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

PROJECT NUMBER: CB205149

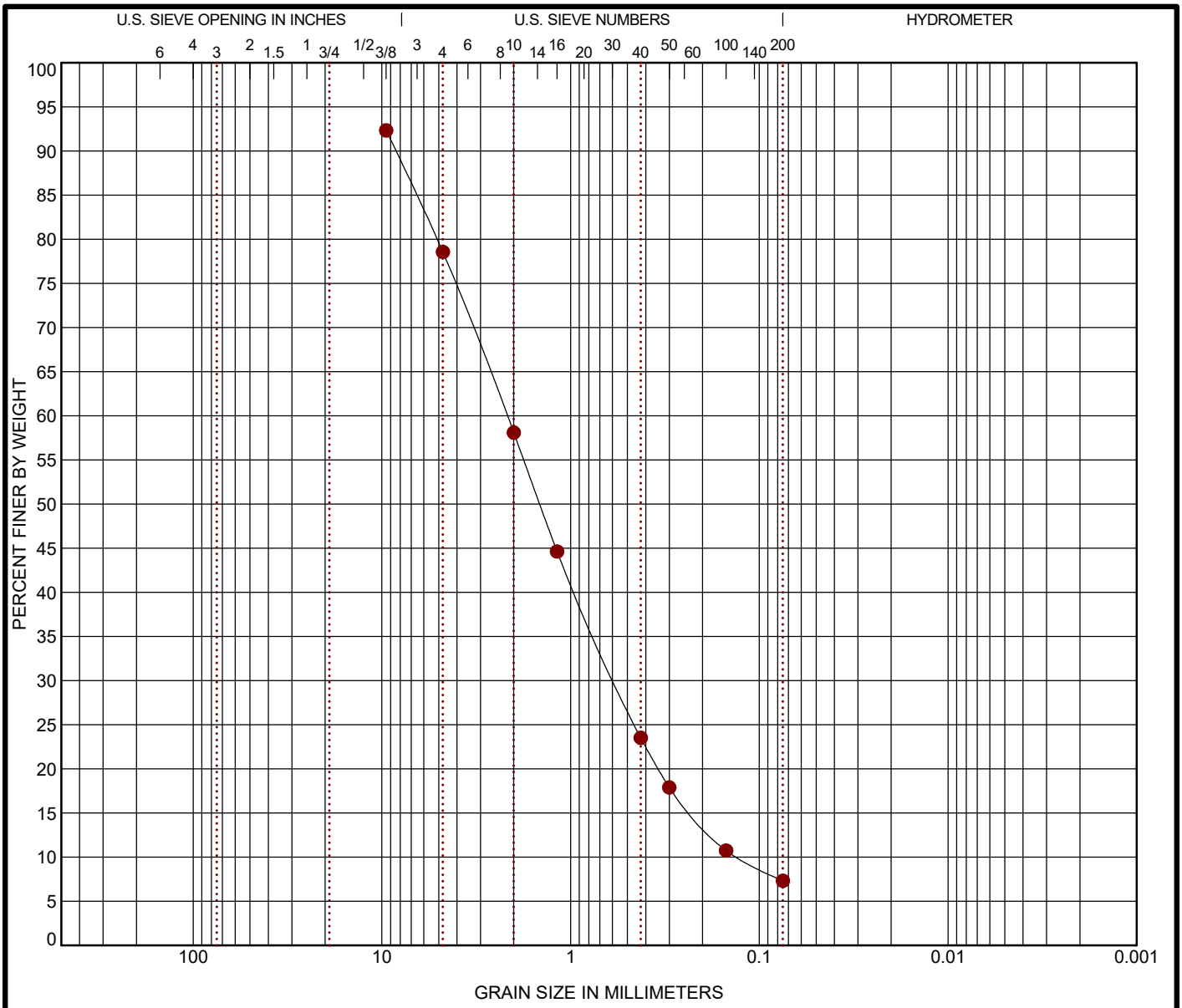
CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

EXHIBIT: B-4

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS-2 CB205149 LOVE'S TRAVEL APP.GPJ 02195238 US 50 AND CHIPMAN.GPJ 1/26/21

GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Boring ID	Depth	USCS Classification	WC (%)	LL	PL	PI	Cc	Cu
B-23	0 - 5						1.21	16.81

Boring ID	Depth	D_{100}	D_{60}	D_{30}	D_{10}	%Cobbles	%Gravel	%Sand	%Silt	%Fines	%Clay
B-23	0 - 5	9.5	2.168	0.582	0.129		13.8	71.2		7.3	

PROJECT: Love's Travel Apple Valley

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

PROJECT NUMBER: CB205149

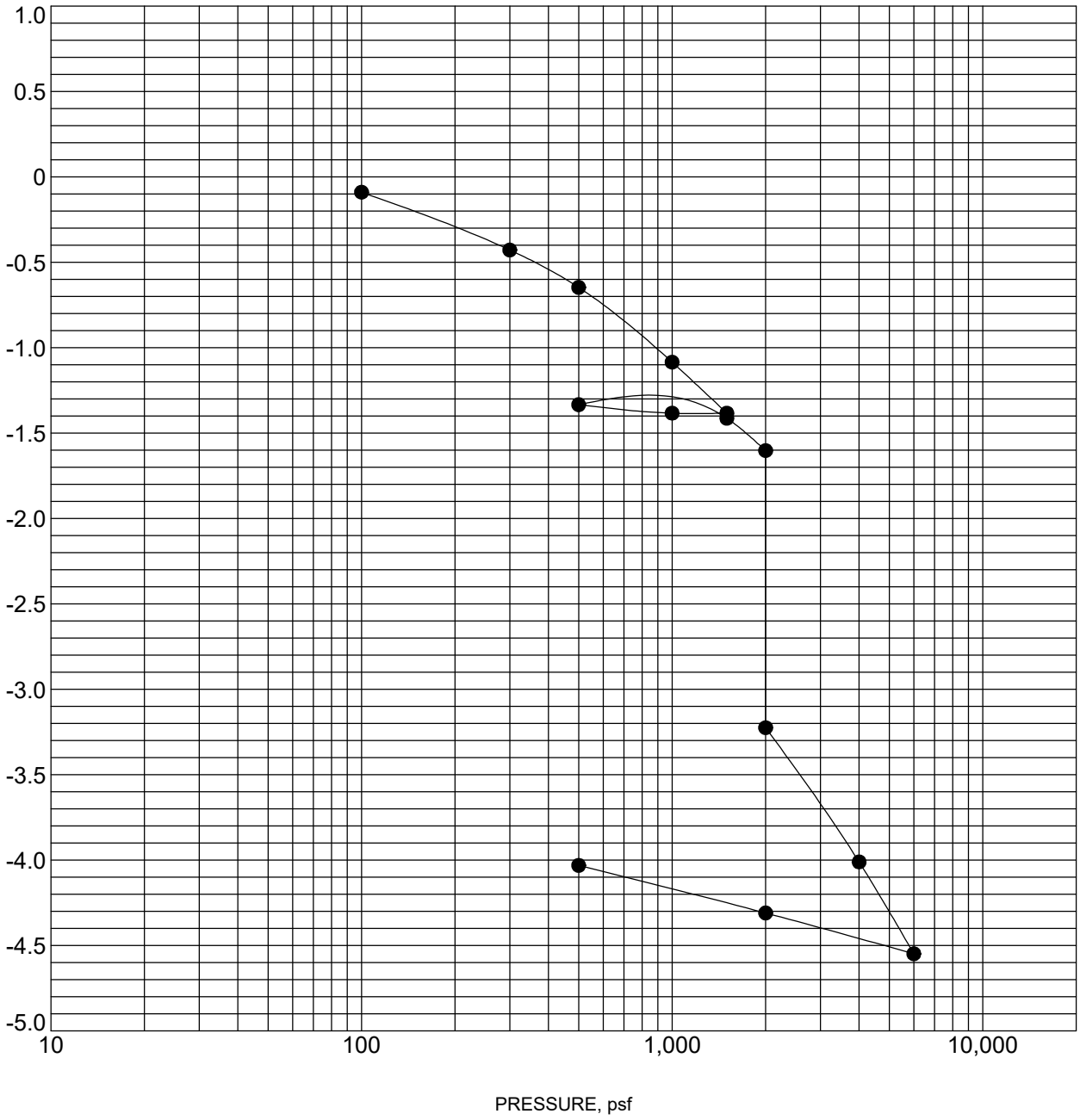
CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

EXHIBIT: B-5

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS-2 CB205149 LOVE'S TRAVEL APP.GPJ 02195238 US 50 AND CHIPMAN.GPJ 1/26/21

SWELL CONSOLIDATION TEST

ASTM D2435



Specimen Identification		Classification	γ_d, pcf	WC, %
●	B-1 15 - 16.5 ft		108	1.8

NOTES: Sample was saturated at 2,000 psf surcharge

PROJECT: Love's Travel Apple Valley

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

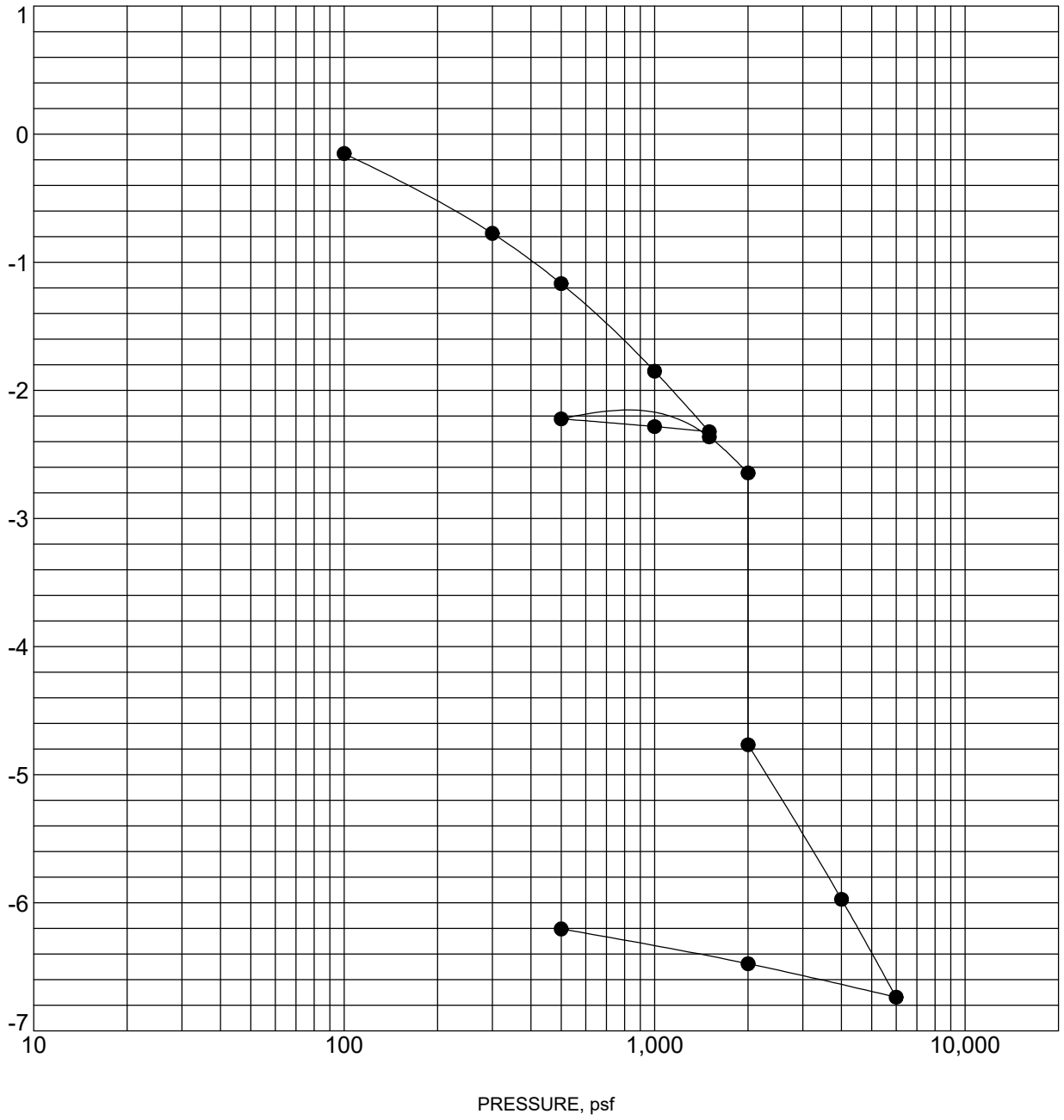
PROJECT NUMBER: CB205149

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. TC_CONSOL_STRAIN-USCS CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

SWELL CONSOLIDATION TEST

ASTM D2435



Specimen Identification			Classification	γ_d, pcf	WC, %
●	B-2	10 - 11.5 ft		111	2.7

NOTES: Sample was saturated at 2,000 psf surcharge

PROJECT: Love's Travel Apple Valley

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

Terracon
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Colton, CA

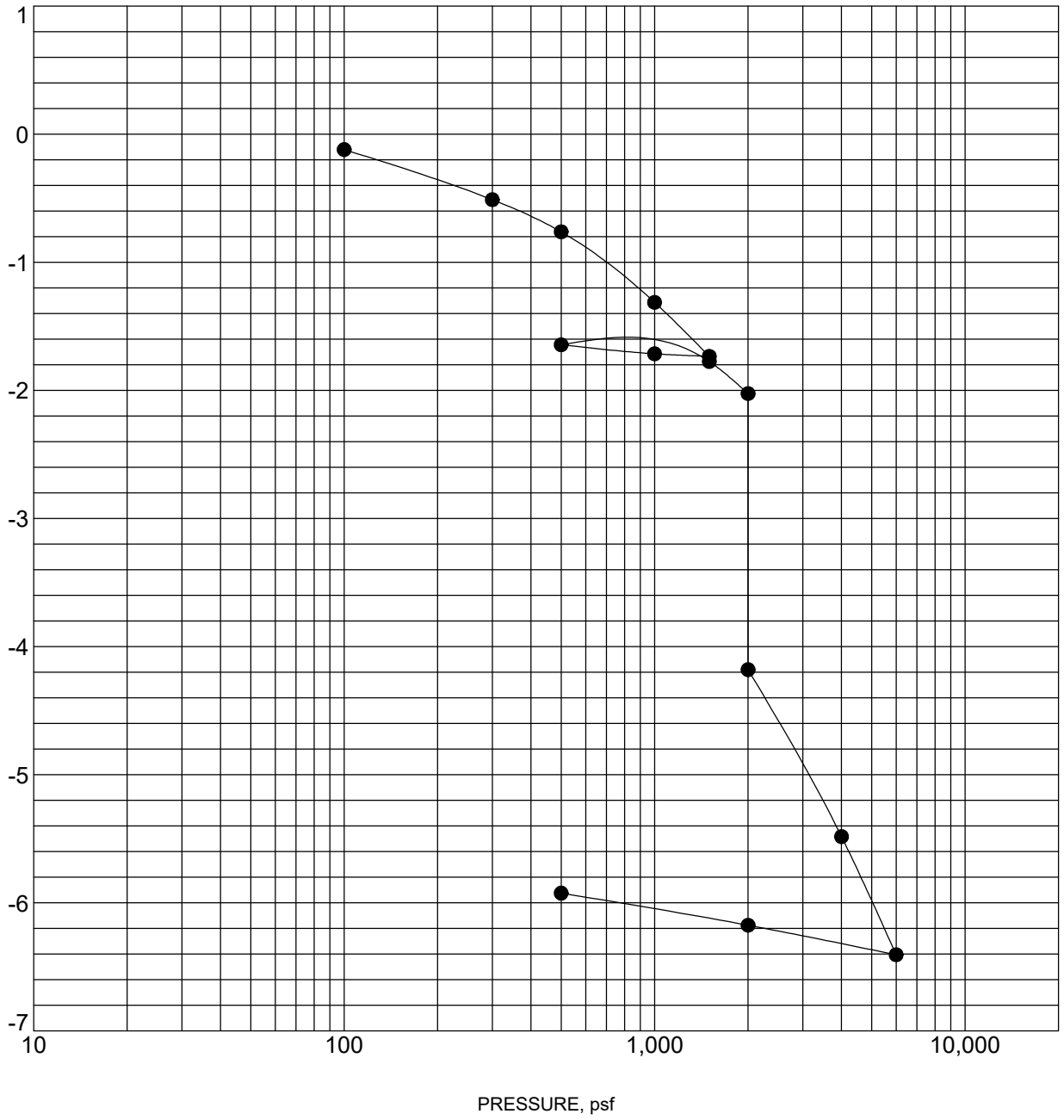
PROJECT NUMBER: CB205149

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. TC_CONSOL_STRAIN-USCS CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

SWELL CONSOLIDATION TEST

ASTM D2435



Specimen Identification		Classification	γ_d, pcf	WC, %
●	B-3 10 - 11.5 ft		107	2.5

NOTES: Sample was saturated at 2,000 psf surcharge

PROJECT: Love's Travel Apple Valley

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

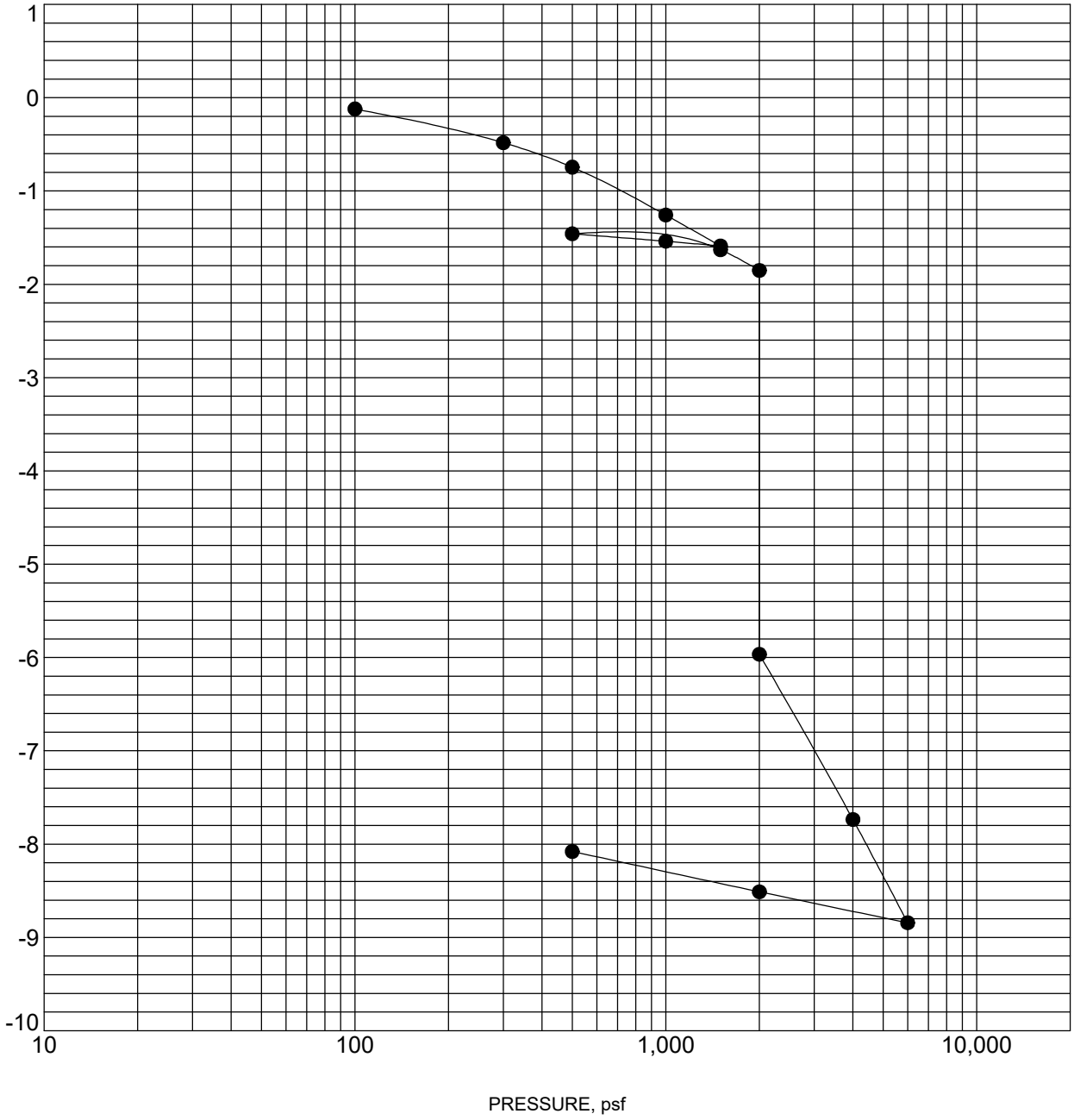
PROJECT NUMBER: CB205149

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. TC_CONSOL_STRAIN-USCS CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

SWELL CONSOLIDATION TEST

ASTM D2435



Specimen Identification			Classification	γ_d, pcf	WC, %
●	B-7	15 - 16.5 ft		100	5.7

NOTES: Sample was saturated at 2,000 psf surcharge

PROJECT: Love's Travel Apple Valley

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

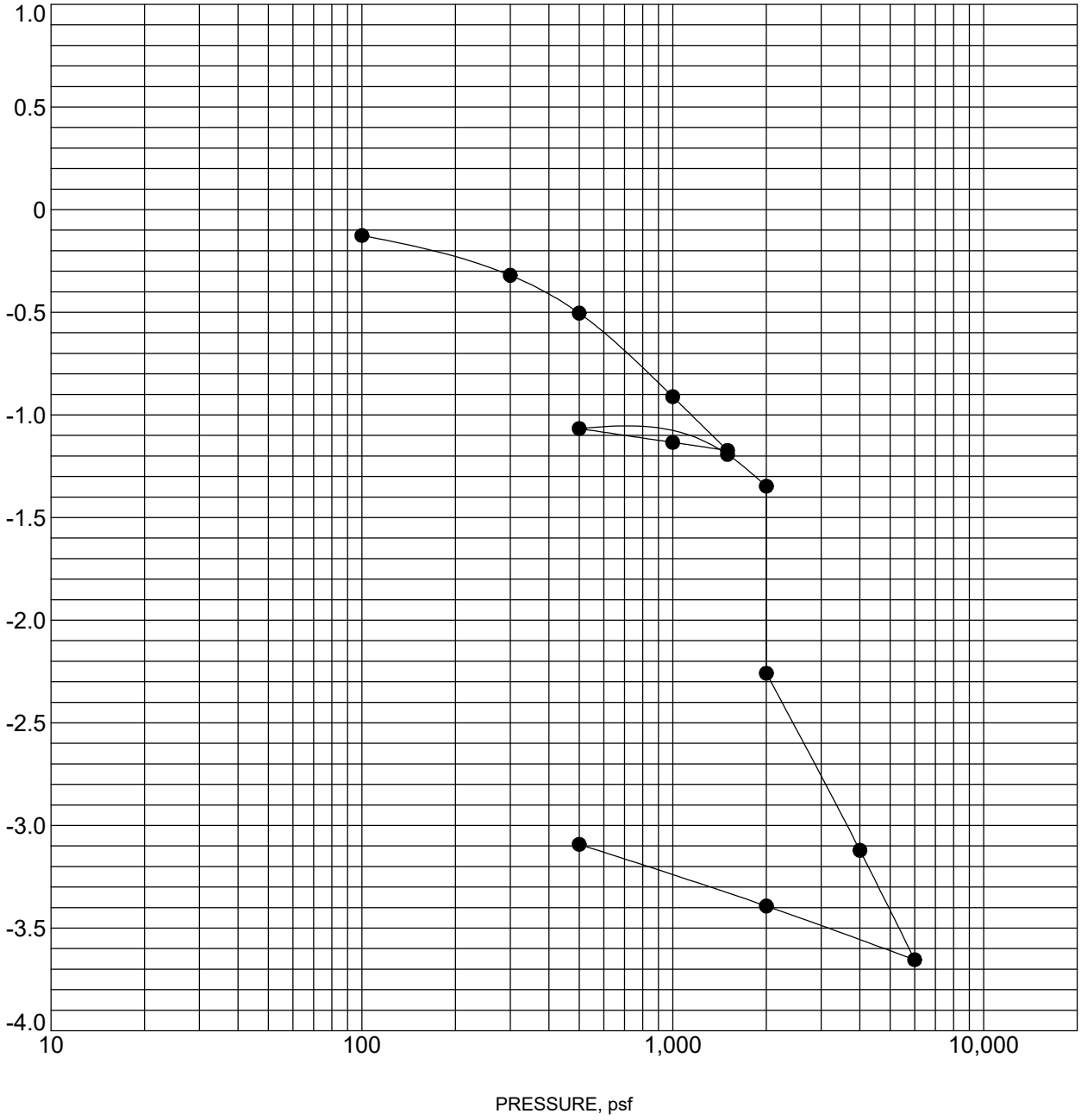
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1355 E Cooley Dr, Ste C
Colton, CA

PROJECT NUMBER: CB205149

CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. TC_CONSOL_STRAIN-USCS CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

SWELL CONSOLIDATION TEST
ASTM D2435



Specimen Identification		Classification	γ_d, pcf	WC, %
●	B-8 10 - 11.5 ft		109	2.7

NOTES: Sample was saturated at 2,000 psf surcharge

PROJECT: Love's Travel Apple Valley

SITE: Stoddard Wells Road at I-15
Apple Valley Area, CA

Terracon
1355 E Cooley Dr, Ste C
Colton, CA

PROJECT NUMBER: CB205149

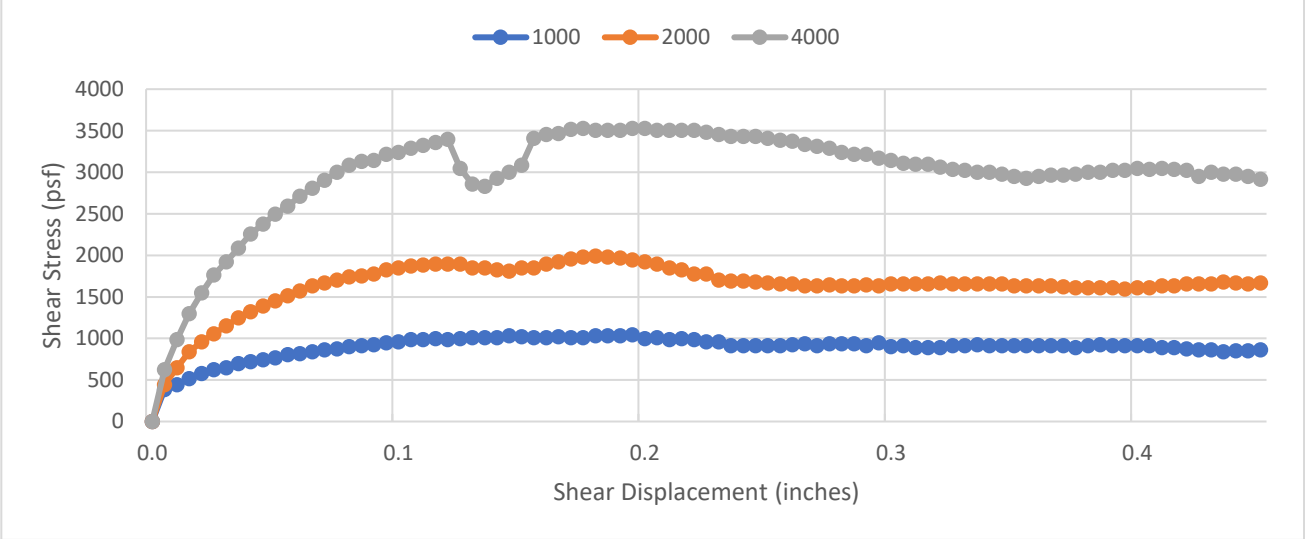
CLIENT: Love's Travel Stops & Country Stores Inc
Oklahoma City, OK

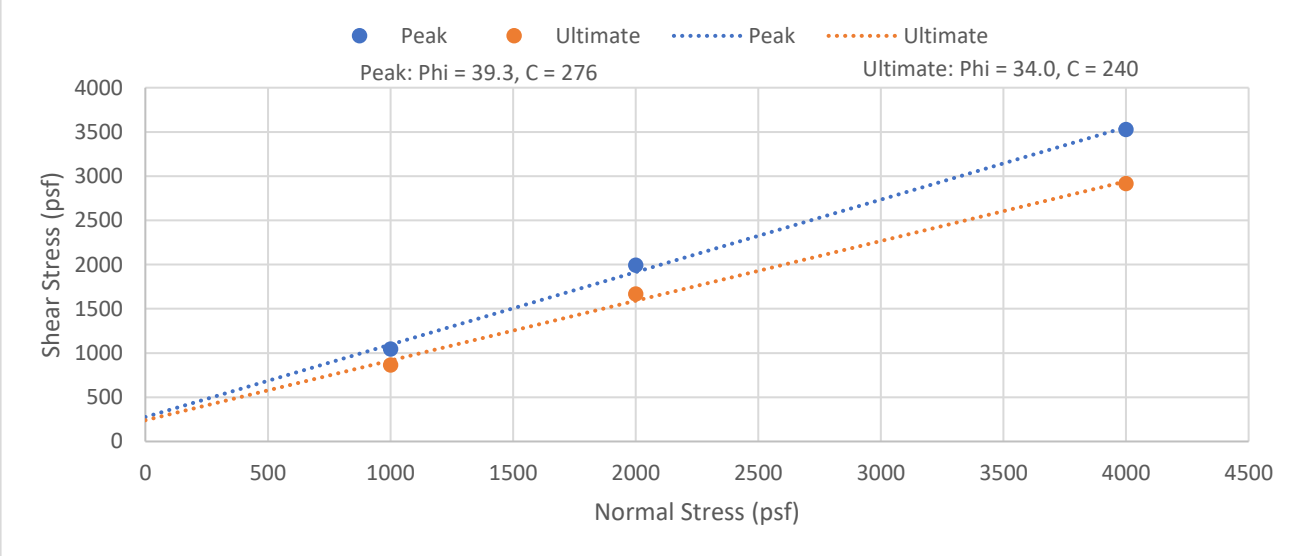
LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. TC_CONSOL_STRAIN-USCS CB205149 LOVE'S TRAVEL APP.GPJ TERRACON_DATATEMPLATE.GDT 2/4/21

Direct Shear Test Results
ASTM D3080

Client: Love's Travel Stops
Project Name: Love's Travel Stop Apple Valley
Project No.: CB205149
Boring No.: B-6
Sample No.: 4-Jun **Depth:** 10 ft
Soil Description: Silty Sand with Gravel (SM)
Test Date: 1/22/2021

Wet Unit Weight (pcf)	Dry Unit Weight (pcf)	Moisture (%)	Normal Stress (psf)	Peak Shear Stress (psf)	Ultimate Shear Stress (psf)
			1000	1044	864
			2000	1992	1668
			4000	3528	2916

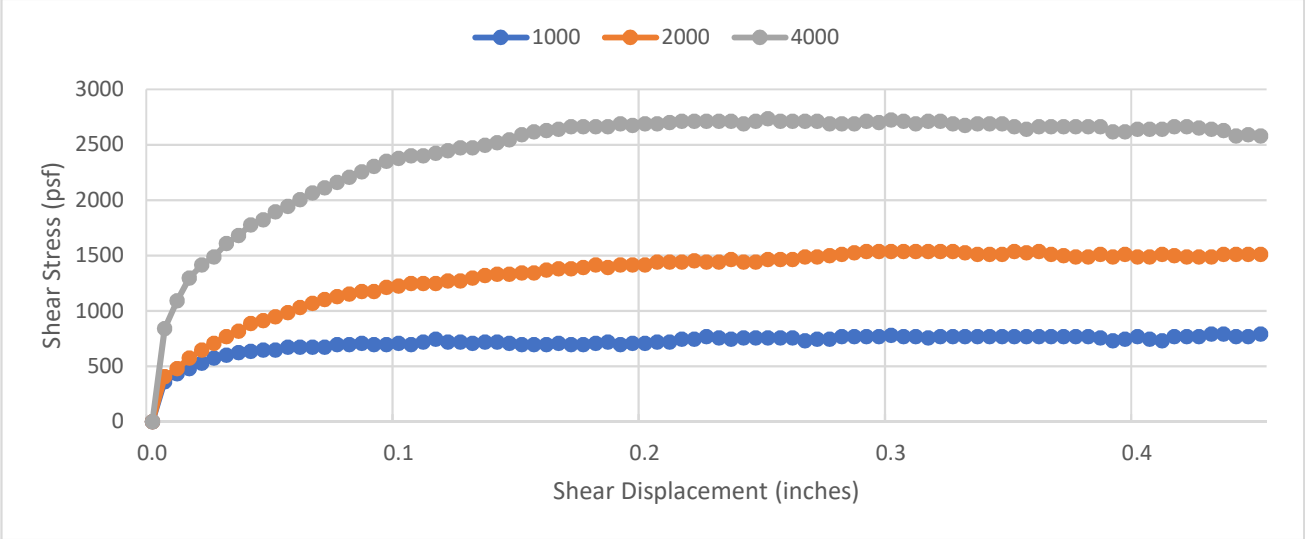


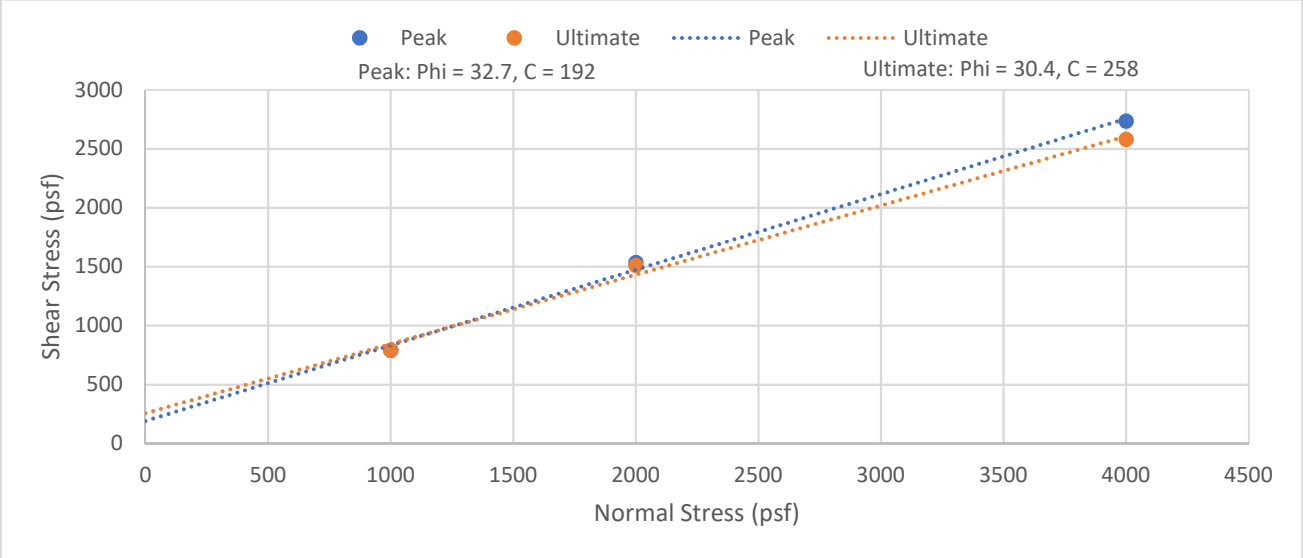


Direct Shear Test Results
ASTM D3080

Client: Love's Travel Stops
Project Name: Love's Travel Stop Apple Valley
Project No.: CB205149
Boring No.: B-15
Sample No.: 15-A **Depth:** 5 ft
Soil Description: Silty Sand with Gravel (SM) **Test Date:** 1/22/2021

Wet Unit Weight (pcf)	Dry Unit Weight (pcf)	Moisture (%)	Normal Stress (psf)	Peak Shear Stress (psf)	Ultimate Shear Stress (psf)
155.7	121.5	6.5	1000	792	792
			2000	1536	1512
			4000	2736	2580





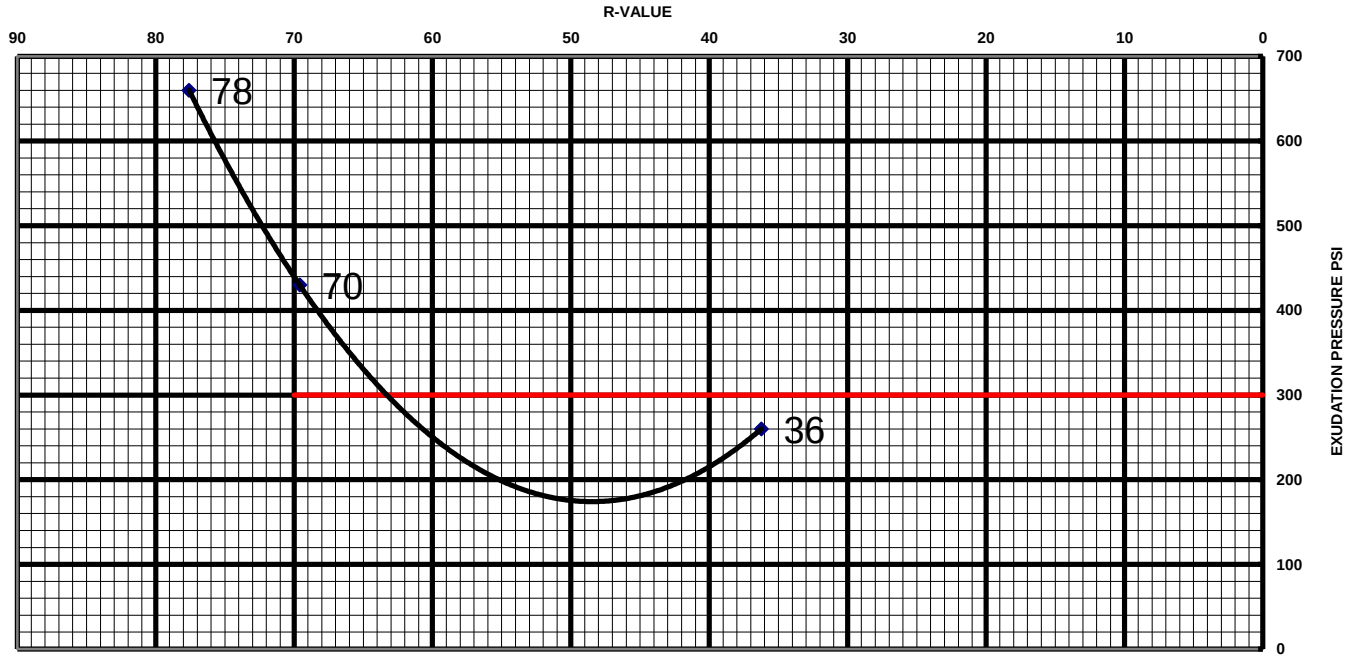
Job No. CB205149
Date. 1/26/2021

LABORATORY RECORD OF TESTS MADE ON BASE, SUBBASE, AND BASEMENT SOILS

CLIENT: **Love's Travel Stop and Country Store**
PROJECT **Love's Travel Apple Valley**
LOCATION: **Apple Valley, CA**
R-VALUE # : **B-12 (5' to 10')**
T.I. :

	A	B	C	D
COMPACTOR AIR PRESSURE P.S.I.	150	225	350	
INITIAL MOISTURE %	4.9	4.9	4.9	
WATER ADDED, ML	45	35	25	
WATER ADDED %	4.0	3.1	2.2	
MOISTURE AT COMPACTION %	8.9	8.0	7.1	
HEIGHT OF BRIQUETTE	2.47	2.45	2.47	
WET WEIGHT OF BRIQUETTE	1184	1178	1183	
DENSITY LB. PER CU.FT.	133.4	134.9	135.5	
STABILOMETER PH AT 1000 LBS.	35	20	16	
2000 LBS.	80	35	25	
DISPLACEMENT	4.40	3.90	3.90	
R-VALUE	36	70	78	
EXUDATION PRESSURE	260	430	660	
THICK. INDICATED BY STAB.	0.00	0.00	0.00	
EXPANSION PRESSURE	0	18	25	
THICK. INDICATED BY E.P.	0.00	0.60	0.83	

EXUDATION CHART



R-Value: **63**

Table 1 - Laboratory Tests on Soil Samples

Terracon
Love's Travel Stop
Your #CB205149, HDR Lab #21-0041LAB
20-Jan-21

Sample ID			B-1 1-4 @ 10-11.5'	B-4 4-1 @ 2.5-4'
Resistivity		**Units**		
as-received		ohm-cm	24,400	10,800
saturated		ohm-cm	1,800	880
pH			8.0	8.0
Electrical Conductivity		mS/cm	0.17	0.32
Chemical Analyses				
Cations				
calcium	Ca^{2+}	mg/kg	80	64
magnesium	Mg^{2+}	mg/kg	9.9	16
sodium	Na^{1+}	mg/kg	24	224
potassium	K^{1+}	mg/kg	40	6.5
ammonium	NH_4^{1+}	mg/kg	ND	ND
Anions				
carbonate	CO_3^{2-}	mg/kg	38	74
bicarbonate	HCO_3^{1-}	mg/kg	168	70
fluoride	F^{1-}	mg/kg	4.1	6.2
chloride	Cl^{1-}	mg/kg	30	168
sulfate	SO_4^{2-}	mg/kg	58	131
nitrate	NO_3^{1-}	mg/kg	175	231
phosphate	PO_4^{3-}	mg/kg	ND	ND
Other Tests				
sulfide	S^{2-}	qual	na	na
Redox		mV	na	na

Resistivity per ASTM G187, pH per ASTM G51, Cations per ASTM D6919, Anions per ASTM D4327, and Alkalinity per APHA 2320-B.

Electrical conductivity in millisiemens/cm and chemical analyses were made on a 1:5 soil-to-water extract.

mg/kg = milligrams per kilogram (parts per million) of dry soil.

Redox = oxidation-reduction potential in millivolts

ND = not detected

na = not analyzed

SUPPORTING INFORMATION

Contents:

General Notes
Unified Soil Classification System

UNIFIED SOIL CLASSIFICATION SYSTEM

Terracon GeoReport

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests [A]					Soil Classification	
					Group Symbol	Group Name [B]
Coarse-Grained Soils: More than 50% retained on No. 200 sieve	**Gravels:** More than 50% of coarse fraction retained on No. 4 sieve	**Clean Gravels:** Less than 5% fines [C]	Cu ≥ 4 and 1 ≤ Cc ≤ 3 [E]		GW	Well-graded gravel [F]
			Cu < 4 and/or [Cc<1 or Cc>3.0] [E]		GP	Poorly graded gravel [F]
		Gravels with Fines: More than 12% fines [C]	Fines classify as ML or MH		GM	Silty gravel [F, G, H]
			Fines classify as CL or CH		GC	Clayey gravel [F, G, H]
	Sands: 50% or more of coarse fraction passes No. 4 sieve	**Clean Sands:** Less than 5% fines [D]	Cu ≥ 6 and 1 ≤ Cc ≤ 3 [E]		SW	Well-graded sand [I]
			Cu < 6 and/or [Cc<1 or Cc>3.0] [E]		SP	Poorly graded sand [I]
		Sands with Fines: More than 12% fines [D]	Fines classify as ML or MH		SM	Silty sand [G, H, I]
			Fines classify as CL or CH		SC	Clayey sand [G, H, I]
Fine-Grained Soils: 50% or more passes the No. 200 sieve	**Silts and Clays:** Liquid limit less than 50	**Inorganic:**	PI > 7 and plots on or above "A"		CL	Lean clay [K, L, M]
			PI < 4 or plots below "A" line [J]		ML	Silt [K, L, M]
		Organic:	Liquid limit - oven dried	< 0.75	OL	Organic clay [K, L, M, N]
			Liquid limit - not dried			Organic silt [K, L, M, O]
	Silts and Clays: Liquid limit 50 or more	**Inorganic:**	PI plots on or above "A" line		CH	Fat clay [K, L, M]
			PI plots below "A" line		MH	Elastic Silt [K, L, M]
		Organic:	Liquid limit - oven dried	< 0.75	OH	Organic clay [K, L, M, P]
			Liquid limit - not dried			Organic silt [K, L, M, Q]
Highly organic soils:	Primarily organic matter, dark in color, and organic odor				PT	Peat

[A] Based on the material passing the 3-inch (75-mm) sieve.

[B] If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.

[C] Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.

[D] Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay.

[E] $Cu = D_{60}/D_{10}$ $\quad Cc = \dfrac{(D_{30})^2}{D_{10} \times D_{60}}$

[F] If soil contains ≥ 15% sand, add "with sand" to group name.

[G] If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

[H] If fines are organic, add "with organic fines" to group name.

[I] If soil contains ≥ 15% gravel, add "with gravel" to group name.

[J] If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.

[K] If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.

[L] If soil contains ≥ 30% plus No. 200 predominantly sand, add "sandy" to group name.

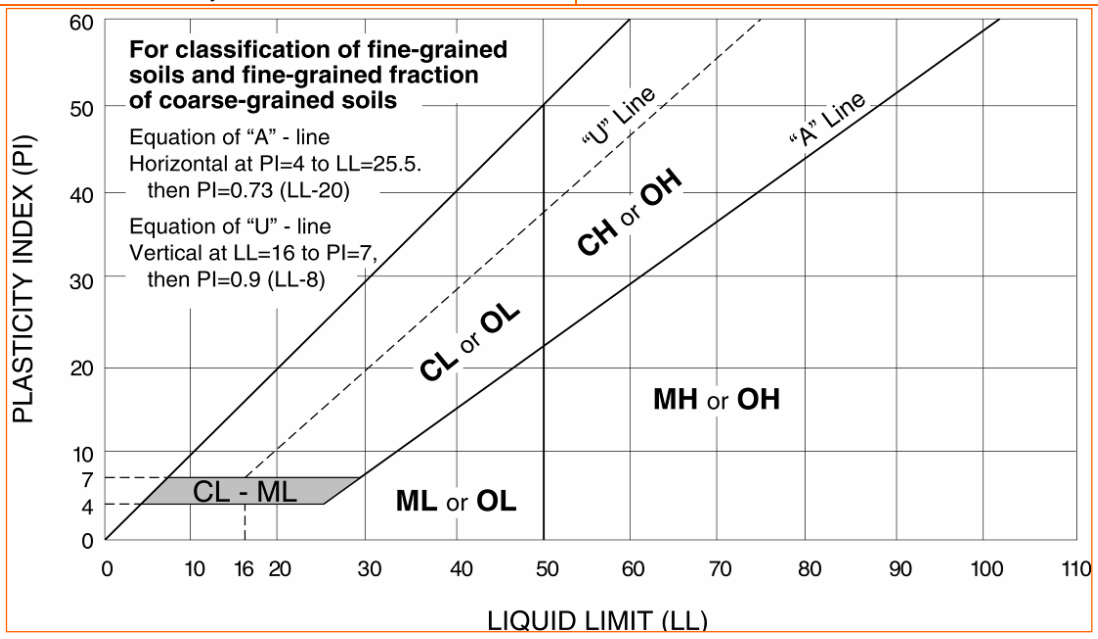
[M] If soil contains ≥ 30% plus No. 200, predominantly gravel, add "gravelly" to group name.

[N] PI ≥ 4 and plots on or above "A" line.

[O] PI < 4 or plots below "A" line.

[P] PI plots on or above "A" line.

[Q] PI plots below "A" line.



Appendix G

Noise Measurement Data and
Noise Modeling Calculations

Traffic Noise Spreadsheet Calculator

Project:

Noise Level Descriptor: Leq
Site Conditions: Soft
Traffic Input: ADT
Traffic K-Factor: 10

Number	Name	Segment Description and Location From	To	ADT	Speed (mph)	Distance to Directional Centerline, (feet)$_4$ Near	Far	% Auto	% Medium	% Heavy	% Day	% Eve	% Night	Leq, (dBA)$_{5,6,7}$	Distance to Contour, (feet)$_3$ 75 dBA	70 dBA	65 dBA	60 dBA
						Input				Traffic Distribution Characteristics					Output			
Existing Conditions																		
1	I-15	North junction Stoddard Wells Rd (Bell Mountain)		64,000	70	100	100	74.1%	5.9%	20.0%	30.0%	25.0%	45.0%	80.8	245	528	1138	2452
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Traffic Noise Spreadsheet Calculator

Project:

Noise Level Descriptor: Leq
Site Conditions: Soft
Traffic Input: ADT
Traffic K-Factor: 6

Segment Description and Location				Input										Output				
Number	Name	From	To	ADT	Speed (mph)	Distance to Directional Centerline, (feet)$_4$ Near	Far	Traffic Distribution Characteristics % Auto	% Medium	% Heavy	% Day	% Eve	% Night	Leq, (dBA)$_{5,6,7}$	Distance to Contour, (feet)$_3$ 75 dBA	70 dBA	65 dBA	60 dBA
Existing Conditions																		
1	Quarry Road	I-15 SB Ramps to Stoddard Wells Road		2,322	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	51.7	3	6	13	28
2	Stoddard Wells Road	Quarry Road to I-15 NB Ramps		2,941	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	52.8	3	7	15	33
3	Stoddard Wells Road	East of I-15 NB Ramps		4,419	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	54.5	4	9	20	43
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Citation #	Citations	
1	Caltrans Technical Noise Supplement. 2009 (November). Table (5-11), Pg 5-60.	Caltrans Technical Noise Supplement. 2013 (September). Table (4-2), Pg 4-17.
2	Caltrans Technical Noise Supplement. 2009 (November). Equation (5-26), Pg 5-60.	Caltrans Technical Noise Supplement. 2013 (September). Equation (4-5), Pg 4-17
3	Caltrans Technical Noise Supplement. 2009 (November). Equation (2-16), Pg 2-32.	FHWA 2004 TNM Version 2.5
4	Caltrans Technical Noise Supplement. 2009 (November). Equation (5-11), Pg 5-47, 48.	FHWA 2004 TNM Version 2.5
5	Caltrans Technical Noise Supplement. 2009 (November). Equation (2-26), Pg 2-55, 56.	Caltrans Technical Noise Supplement. 2013 (September). Equation (2-23), Pg 2-5
6	Caltrans Technical Noise Supplement. 2009 (November). Equation (2-27), Pg 2-57.	Caltrans Technical Noise Supplement. 2013 (September). Equation (2-24), Pg 2-5
7	Caltrans Technical Noise Supplement. 2009 (November). Pg 2-53.	Caltrans Technical Noise Supplement. 2013 (September). Pg 2-57.
8	Caltrans Technical Noise Supplement. 2009 (November). Equation (5-7), Pg 5-45.	FHWA 2004 TNM Version 2.5
9	Caltrans Technical Noise Supplement. 2009 (November). Equation (5-8), Pg 5-45.	FHWA 2004 TNM Version 2.5
10	Caltrans Technical Noise Supplement. 2009 (November). Equation (5-9), Pg 5-45.	FHWA 2004 TNM Version 2.5
11	Caltrans Technical Noise Supplement. 2009 (November). Equation (5-13), Pg 5-49.	FHWA 2004 TNM Version 2.5
12	Caltrans Technical Noise Supplement. 2009 (November). Equation (5-14), Pg 5-49.	FHWA 2004 TNM Version 2.5
13	Federal Highway Administration Traffic Noise Model Technical Manual. Report No. FHWA-PD-96-010. 1998 (January). Equation (16), Pg 67	
14	Federal Highway Administration Traffic Noise Model Technical Manual. Report No. FHWA-PD-96-010. 1998 (January). Equation (20), Pg 69	
15	Federal Highway Administration Traffic Noise Model Technical Manual. Report No. FHWA-PD-96-010. 1998 (January). Equation (18), Pg 69	

References

California Department of Transportation (Caltrans). 2009 (November). Technical Noise Supplement. Available: http://www.dot.ca.gov/hq/env/noise/pub/tens_complete.pdf. Accessed A
2017.

Addition of Noise Levels from Multiple Sources at a Discrete Receptor

OBJECTIVE: This work sheet is designed to estiamte the combined level of noise exposure at a single discrete receptor from multiple point sources.

KEY: Orange cells are for input.
Grey cells are intermediate calculations performed by the model.
Green cells are data to present in a written analysis (output).

Receptor Name: **Single-family residence south of Stoddard Wells Road**

STEP 1: Identify the noise sources and enter the reference noise levels (dBA and distance).
STEP 2: Select the ground type (hard or soft), and enter the source and receiver heights.
STEP 3: Select the distance to the receptor and the reduction provided by any intervening barrier.

Step 1.				Step 2.				Step 3.				
Noise Source	**Reference Noise Level**			**Attenuation Characteristics**				**Attenuated Noise Level at Receptor**				
	Reference Noise Level (dBA)	@	Reference Distance (ft)	Ground Type (soft/hard)	Source Height (ft)	Receiver Height (ft)	Ground Factor	Noise Level (dBA)	@	Distance to Receptor (ft)	Reduction Provided by Barrier, if any (dBA)
Traffic along I-15	80.8	@	100	soft	8	5	0.63	37.3	@	4500	0
Traffic along Stoddard Wells Road (east of I-15 ramps)	54.5	@	100	soft	8	5	0.63	46.3	@	205	0
							0.66				0
							0.66				
							0.66				
							0.66				

Combined level of noise exposure at receptor from all noise sources (dBA): **46.8**

Notes:

1 - Computation of the attenuated noise level is based on the equation presented on pg. 176 and 177 of FTA 2018.

2 - Computation of the ground factor is based on the equation presentd in Table 4-26 on pg. 86 of FTA 2018, where the distance of the reference noise leve can be adjusted and the usage factor is not applied (i.e., the usage factor is equal to 1).

3 - Summation of noise levels from different stationary noise sources at the same receptor is based on the equation presented on page 201 of FTA 2018.

Sources:

Federal Transit Association (FTA). 2018 (September). Transit Noise and Vibration Impact Assessment. Washington, D.C. Available: <http://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf>Accessed: March 5,

Sources:

Federal Transit Association (FTA). 2006 (May). Transit Noise and Vibration Impact Assessment. FTA-VA-90-1003-06. Washington, D.C. Available: <http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf>. Accessed: March 5, 2020.

PREFACE

Traffic Profile

This lists the 2019 traffic volumes for count locations on the California state highway system. Peak hours, peak month ADTs and annual ADTs are shown at count locations.
Significant volume changes (breakpoints) in the traffic profile along each route are counted and identified by name and post mile value. In addition to the profile breakpoints, there are county lines and landmarks to aid in orientation. The numbers shown apply to the highway immediately back and ahead of the locations. Therefore, between any two successive breakpoints along the route it may be assumed that traffic volumes will vary from one breakpoint to the next at a reasonably uniform rate of increase or decrease. Where only a single set of figures appears between two breakpoints, a constant volume of traffic may be assumed for the intervening section of highway.
All traffic volume figures listed include traffic in both directions unless otherwise indicated.

Route Number

All California state highways are listed in order of Legislative Route number.

Post Mile

Each profile breakpoint is identified by the post mile value corresponding to that point on the highway. The post mile values increase from the beginning of a route within a county to the next county line. The post mile values start over again at each county line. Post mile values usually increase from South to North or West to East depending upon the general direction the route follows within the State. The post mile at a given location will remain the same year after year. When a section of road is relocated, new post miles (usually noted by an alphabetical prefix such as “R” or “M”) are established for it.

Annual Average Daily Traffic (Annual ADT)

Annual average daily traffic is the total traffic volumes for the year divided by 365 days. The traffic count year is from October 1st through September 30th. Few locations in California are counted continuously. Traffic counting is generally performed by electronic counting instruments moved from location to location throughout the State in a program of continuous traffic count sampling. The resulting counts are adjusted to an estimate of annual average daily traffic by compensating for seasonal influence, weekly variation and other variables which may be present. Annual ADT is necessary for presenting a statewide picture of traffic flow, evaluating traffic trends, computing collision rates, planning and designing highways and other purposes.

Peak Month ADT

The peak month ADT is the average daily traffic for the month of heaviest traffic flow. This data is obtained because on many routes, high traffic volumes which occur during a certain season of the year are more representative of traffic conditions than the annual ADT.

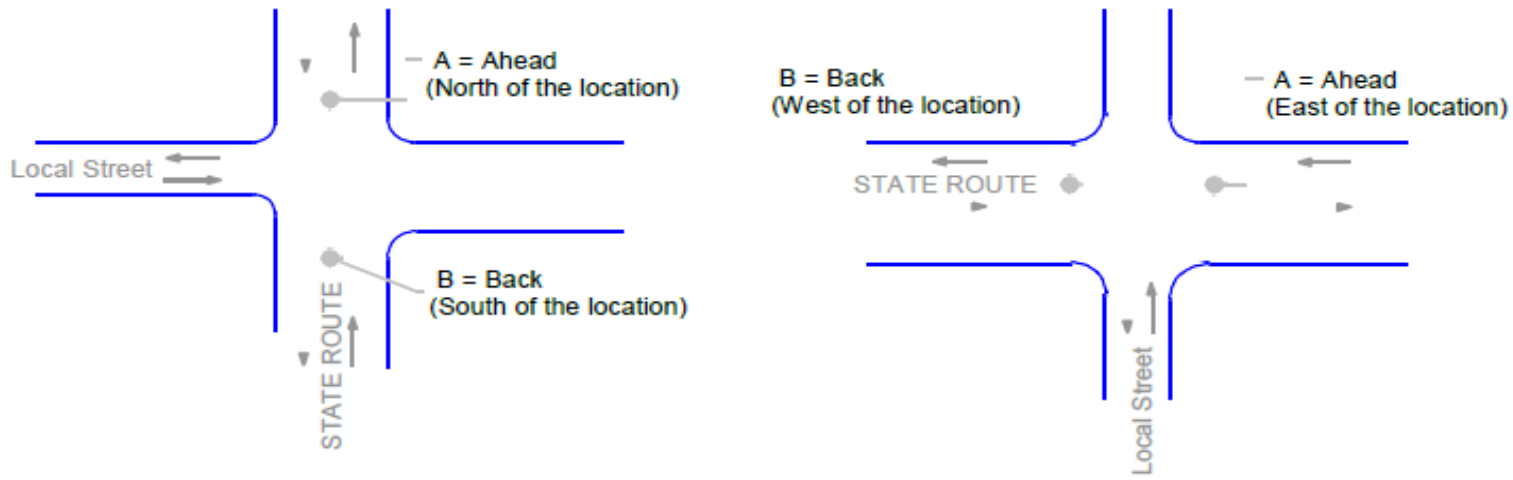
Peak Hour

This list includes an estimate of the “peak hour” traffic at points on the state highway system. This value is useful to traffic engineers in estimating the amount of congestion experienced and shows how near to capacity the highway is operating. Unless otherwise indicated, peak hour values indicate the volume in both directions.

A few hours each year are higher than the “peak hour,” but not many. In urban and suburban areas, the peak hour normally occurs every weekday, during what is considered “rush hour” traffic. On roads with large seasonal fluctuations in traffic, the peak hour is the hour near the maximum for the year but excluding a few (30 to 50 hours) that are exceedingly high and are not typical of the frequency of the high hours occurring during the season.

Explanation of Traffic Counts

Explanatory Diagram of Traffic Counts



Generally, in California West to East routes are even numbered, while South to North routes are odd numbered. In addition, the postmile values increase from South to North or West to East depending upon the general direction the highway follows within the state, except the following 5 backward routes, Route 71 (North to South), Route 224 (East to West), Route 282 (East to West), Route 580 (East to West), and Route 780 (East to West).

Highway Closures List

Regular Winter Closure
https://dot.ca.gov/travel/winter-driving-tips

DISTRICT	RTE	RTE_SFX	CNTY	PM_PFX	PM	PM_SFX	DESCRIPTION	BACK_PEAK_HOUR	BACK_PEAK_MADT	BACK_AADT	AHEAD_PEAK_HOUR	AHEAD_PEAK_MADT	AHEAD_AADT
12	001		ORA	R	0.129		DANA POINT, JCT. RTE. 5				4250	42000	38250
12	001		ORA	R	0.780		DANA POINT, DOHENY PARK ROAD	4250	42000	38900	4350	43500	38900
12	001		ORA	R	1.077		BREAK IN ROUTE						
12	001		ORA		8.430		LAGUNA BEACH, MOUNTAIN ROAD	3200	40500	37900	3200	40500	37900
12	001		ORA		9.418		LAGUNA BEACH, JCT. RTE. 133 NORTH	3400	43000	38800	3850	43000	38800
12	001		ORA		9.600		LAGUNA BEACH, CLIFF DRIVE/ ASTER STREET	3750	41000	38500	3750	41000	38500
12	001		ORA		11.500		LAGUNA BEACH, NORTH CITY LIMITS	3550	39500	36800	3600	40500	36800
12	001		ORA		14.057		BREAK IN ROUTE						
12	001		ORA	R	18.073		NEWPORT BEACH, BAYSIDE DRIVE	4550	52000	47200	5500	62000	56500
12	001		ORA	R	18.446		NEWPORT BEACH, DOVER DRIVE	4850	55000	50200	4850	55000	50200
12	001		ORA		19.797		NEWPORT BEACH, JCT. RTE. 55	4950	56000	49600	5900	54000	49600
12	001		ORA		20.370		NEWPORT BEACH, BALBOA BLVD	6000	54000	50600	6000	54000	50600
12	001		ORA		21.549		SANTA ANA RIVER BRIDGE	4650	42500	38800	4650	42500	39800
12	001		ORA		22.090		HUNTINGTON BEACH, BROOKHURST STREET	4750	43000	40300	4800	43000	40300
12	001		ORA		23.739		HUNTINGTON BEACH, JCT. RTE. 39 NORTH	4400	40000	38300	4400	40000	37200
12	001		ORA		25.890		HUNTINGTON BEACH, GOLDENWEST STREET	4500	41000	38200	4500	41000	38200
12	001		ORA		29.890		SUNSET BEACH, WARNER AVENUE	5500	49000	45700	4850	44000	41200
12	001		ORA		32.714		SEAL BEACH BOULEVARD	4600	41500	39200	4850	44000	41200
12	001		ORA		32.721		SEAL BEACH, SEAL BEACH BOULVARD	4850	50000	47300	4900	51000	47300
12	001		ORA		33.719		LOS ANGELES/ORANGE COUNTY LINE	4550	47500	43800			
07	001		LA		0.000		LOS ANGELES/ORANGE COUNTY LINE				4600	47500	43800
07	001		LA		1.860		LONG BEACH, BELLFLOWER BOULEVARD	3350	37000	34500	2550	28000	26000
07	001		LA		1.973		LONG BEACH, JCT. RTE. 22	2550	28000	26000	3400	36500	34000
07	001		LA		2.751		LONG BEACH, ANAHEIM STREET	3400	36500	34000	2800	30000	28000
07	001		LA		5.011		LONG BEACH, CHERRY AVENUE	3600	38000	36500	3650	38500	37000
07	001		LA		6.260		LONG BEACH, LONG BEACH BOULEVARD	3200	34000	32500	3350	36000	34500
07	001		LA		7.288		LONG BEACH, JCT. RTE. 710	4550	49500	40500	4350	47500	39000
07	001		LA		8.266		LONG BEACH, JCT. RTE. 103	3800	41500	34000	3550	39000	32000
07	001		LA		9.253		LOS ANGELES, ALAMEDA STREET	3550	39000	32000	3550	40000	32500
07	001		LA		10.532		LOS ANGELES, AVALON BOULEVARD	3550	40000	33000	4350	50000	41000
07	001		LA		11.610		LOS ANGELES, JCT. RTE. 110	4400	51000	41500	4400	59000	56000
07	001		LA		12.171		LOS ANGELES, VERMONT AVENUE	4400	59000	56000	4200	56000	53000
07	001		LA		12.523		LOS ANGELES, NORMANDIE AVENUE	4200	56000	53000	3950	51000	48500
07	001		LA		13.100		LOS ANGELES, JCT. RTE. 213	4000	51000	49000	5100	64000	61000
07	001		LA		14.634		TORRANCE, CRENSHAW BOULEVARD	4900	61000	58000	3850	46000	43500
07	001		LA		16.005		TORRANCE, JCT. RTE. 107	3350	41000	39000	3800	43500	42500
07	001		LA		18.090		TORRANCE, PALOS VERDES BOULEVARD	2850	33000	32000	2550	30500	29500
07	001		LA		19.524		REDONDO BEACH, TORRANCE BOULEVARD	3350	40500	39000	3350	40500	39500
07	001		LA		21.181		HERMOSA BEACH, AVIATION BOULEVARD	5300	64000	62000	4150	54000	50000
07	001		LA		21.341		HERMOSA BEACH, PIER AVENUE/14TH STREET	4150	54000	50000	3700	48500	45500
07	001		LA		21.919		MANHATTAN BEACH, ARTESIA BOULEVARD	3850	50000	47000	3800	49500	46000
07	001		LA		22.900		MANHATTAN BEACH, MANHATTAN BEACH BLBD	4000	52000	48500	4800	61000	57000
07	001		LA		23.924		EL SEGUNDO, ROSECRANS AVENUE	5400	68000	64000	5500	69000	65000
07	001		LA		24.911		EL SEGUNDO, EL SEGUNDO BOULEVARD	4800	64000	61000	4400	58000	56000
07	001		LA		25.924		LOS ANGELES, JCT. RTE. 105	4950	65000	62000	8900	115000	110000
07	001		LA		26.904		LOS ANGELES, LOS ANGELES INT'L AIRPORT	8900	115000	110000	6700	86000	83000
07	001		LA		27.363		LOS ANGELES, LOS ANGELES INT'L AIRPORT	6700	86000	83000	3250	38500	37000
07	001		LA		29.084		LOS ANGELES, MANCHESTER AVENUE	3750	44000	42000	5200	59000	57000
07	001		LA		30.163		LOS ANGELES, JEFFERSON BOULEVARD	5200	59000	57000	5100	60000	58000
07	001		LA		30.474		LOS ANGELES, CULVER BOULEVARD	5100	60000	58000	5200	62000	60000
07	001		LA		31.290		LOS ANGELES, JCT. RTE. 90	4500	55000	52000	5400	68000	65000
07	001		LA		31.780		LOS ANGELES, WASHINGTON BLVD	5500	70000	68000	4100	52000	47500
07	001		LA		32.166		LOS ANGELES, JCT. RTE. 187	4100	52000	47500	3500	45000	41500
07	001		LA	R	34.576		SANTA MONICA, JCT. RTE. 10	3400	46500	43000	5700	65000	62000
07	001		LA		35.184		SANTA MONICA, OCEAN AVENUE	5700	65000	62000	6700	75000	73000
07	001		LA		36.110		SANTA MONICA, CALIFORNIA AVENUE INCLINE	6700	75000	73000	7500	84000	79000
07	001		LA		37.045		LOS ANGELES, CHAUTAUQUA BOULEVARD	7500	84000	79000	7600	85000	80000
07	001		LA		39.326		LOS ANGELES, SUNSET BOULEVARD	5900	68000	63000	5600	65000	60000
07	001		LA		40.769		JCT. RTE. 27	4900	57000	53000	4700	53000	49000
07	001		LA		44.121		MALIBU, LAS FLORES CANYON ROAD	3900	44500	40500	3950	45000	41000
07	001		LA		47.091		MALIBU, CROSS CREEK ROAD	4100	46000	41500	5400	47500	43000
07	001		LA		47.750		MALIBU, CIVIC CENTER WAY	5400	47500	43000	4600	40500	36500
07	001		LA		48.171		MALIBU, MALIBU CANYON ROAD	4600	40500	36500	3750	32500	29500
07	001		LA		54.020		MALIBU, KANAN DUME ROAD	3550	31000	28000	3750	32500	29500
07	001		LA		56.843		MALIBU, TRANCAS CANYON ROAD/BROAD BEACH ROAD	2450	24200	21300	1900	18900	16700
07	001		LA		57.391		MALIBU, LUNITA ROAD	1900	18900	16700	1900	18900	16700
07	001		LA		59.401		MALIBU, ENCINAL CANYON ROAD	1700	16700	14800	1400	13800	12300
07	001		LA		59.901		MALIBU, JCT. RTE. 23	1400	13800	12300	1350	13100	11700
07	001		LA		62.301		MULHOLLAND HIGHWAY	1300	12500	11200	1550	15000	13400

07	001	LA		62.867	LOS ANGELES/VENTURA COUNTY LINE	1550	15000	13400				
07	001	VEN		0.000	LOS ANGELES/VENTURA COUNTY LINE				1550	15000	13400	
07	001	VEN		9.866	CALLEGUAS CREEK	1100	10700	9900	1100	10700	9900	
07	001	VEN		10.229	LAS POSAS ROAD	1100	10700	9900	1000	10000	9300	
07	001	VEN		11.594	WOOD ROAD	1000	10000	9300	1300	12800	12000	
07	001	VEN		12.785	HUENEME ROAD	1300	12800	12000	1350	13400	12600	
07	001	VEN		13.590	NAUMAN ROAD	1350	13400	12600	1400	13500	12800	
07	001	VEN	R	15.053	OXNARD, PLEASANT VALLEY ROAD	1400	13500	12800	2050	20000	19000	
07	001	VEN		21.075	OXNARD, JCT. RTE. 101	3100	33000	30500	720	6500	4400	
07	001	VEN		27.675	SEACLIFF COLONY, JCT. RTE. 101	720	6500	4400	130	950	610	
07	001	VEN		28.480	LAS CRUCES, JCT. RTE. 101	130	950	610				
05	001	SB	R	0.000	LAS CRUCES, JCT. RTE. 101				750	7200	6800	
05	001	SB		15.010	JALAMA ROAD	950	7600	6200	1200	9300	7800	
05	001	SB		19.251	LOMPOC, SOUTH JCT. RTE. 246	1700	12100	8700	1500	13100	10800	
05	001	SB		20.565	LOMPOC, NORTH JCT. RTE. 246	2200	19100	15700	1000	12000	11600	
05	001	SB		22.519	LOMPOC, SANTA YNEZ RIVER BRIDGE	2300	28000	27700	2300	28000	27700	
05	001	SB	R	23.296	LOMPOC/CASMALIA ROAD	2900	30500	28100	1800	21800	20000	
05	001	SB	R	26.690	PINE CANYON ROAD	1800	16300	15800	1400	17100	16800	
05	001	SB	M	29.891	VANDENBERG AIR FORCE BASE	1500	17600	16200	1400	16900	16800	
05	001	SB	R	31.042	JCT. RTE. 135	2500	29500	19600	1700	20600	19400	
05	001	SB	R	34.777	ORCUTT, JCT. RTE. 135 NORTH	2200	20600	19500	450	4300	4100	
05	001	SB	R	35.530	CLARK AVENUE	350	3400	3200	420	4000	3800	
05	001	SB		41.810	CASMALIA ROAD	570	5400	5200	300	3600	3500	
05	001	SB		49.199	GUADALUPE, JCT. RTE. 166 EAST	400	3900	3600	670	7100	6900	
05	001	SB		50.408	GUADALUPE NORTH CITY LIMITS	800	7400	7200	800	7400	7200	
05	001	SB		50.606	SANTA BARBARA/SAN LUIS OBISPO COUNTY LINE	880	8300	8000				
05	001	SLO		0.000	SANTA BARBARA/SAN LUIS OBISPO COUNTY LINE				820	9600	8300	
05	001	SLO		1.291	OSO FLACO UNDERPASS	680	8000	6800	900	10600	9100	
05	001	SLO		6.350	ENTRANCE, UNION OIL COKING PLANT	740	8700	7500	780	9200	7900	
05	001	SLO		10.290	ARROYO GRANDE ROAD	390	4500	3900	530	6200	5300	
05	001	SLO		10.900	HALCYON ROAD	1500	18100	15600	1000	11800	10200	
05	001	SLO		13.000	ENTRANCE, PISMO BEACH STATE PARK	820	9600	8300	1100	12800	11000	
05	001	SLO		14.100	GROVER CITY, GRAND AVENUE	1200	13600	11700	1300	15600	13400	
05	001	SLO		15.268	PISMO BEACH, VILLA CREEK	1100	12900	11100	1100	12900	11100	
05	001	SLO	L	16.543	PISMO BEACH, SOUTH JCT. RTE. 101	700	8000	7100	900	10800	9700	
05	001	SLO	L	16.770	SAN LUIS OBISPO, NORTH JCT. RTE. 101	2400	27000	24100	2700	31000	27200	
05	001	SLO		17.341	SAN LUIS OBISPO, FOOTHILL BOULEVARD	3300	37000	33700	3400	38500	34800	
05	001	SLO		17.874	HIGHLAND DRIVE	3100	34000	30800	2700	30000	27200	
05	001	SLO		19.710	ENTRANCE, CALIFORNIA MEN'S COLONY	2600	28500	26100	2300	26000	23700	
05	001	SLO		20.890	ENTRANCE, CAMP SAN LUIS OBISPO	2200	24400	22200	2100	23200	21100	
05	001	SLO		22.653	ENTRANCE, CUESTA COLLEGE	1800	20400	18500	1800	20200	18300	
05	001	SLO		27.883	BAYWOOD PARK ROAD	1300	14500	13200	4600	32500	28200	
05	001	SLO		28.820	MORRO BAY, SOUTH MORRO BAY	4600	33000	28200	3800	27500	23500	
05	001	SLO		29.618	MORRO BAY, NORTH MORRO BAY	3800	27500	23500	4200	30000	25700	
05	001	SLO		30.135	JCT. RTE. 41 NORTHEAST	4200	30000	25700	3000	21100	19700	
05	001	SLO		31.130	MORRO BAY, SAN JACINTO STREET	3200	22500	19000	2600	18300	15500	
05	001	SLO		31.970	ATASCADERO BEACH, YERBA BUENA STREET	2500	17500	14800	2500	17300	14600	
05	001	SLO	R	34.905	OLD CREEK ROAD	1900	13200	11200	1200	8200	6900	
05	001	SLO	R	35.959	C STREET	970	6700	5700	1200	8200	6900	
05	001	SLO		45.990	JCT. RTE. 46	1200	8600	7100	1800	13000	9400	
05	001	SLO		46.850	CAMBRIA AIR FORCE BASE ROAD	1800	13000	9400	1600	11500	8300	
05	001	SLO		48.260	ARDATH DRIVE/MAIN STREET	1500	10700	7700	1200	8700	7500	
05	001	SLO		54.804	PICO CREEK	1400	9800	7100	1400	9800	7100	
05	001	SLO		56.390	HEARST CASTLE STATE PARK	1400	9700	7000	800	5700	4100	
05	001	SLO		58.900	SAN SIMEON, NORTH	800	5700	4100	780	5500	4000	
05	001	SLO		71.341	SAN CARPOJO CREEK	530	4400	2900	560	3700	2900	
05	001	SLO		74.324	SAN LUIS OBISPO/MONTEREY COUNTY LINE	230	1600	1200				
05	001	MON		0.000	SAN LUIS OBISPO/MONTEREY COUNTY LINE				160	990	875	
05	001	MON		35.346	ANDERSON CANYON BRIDGE	320	1900	1700	380	2300	2000	
05	001	MON		46.595	BIG SUR RIVER BRIDGE	760	4500	4000	760	4500	4000	
05	001	MON		62.972	BIG SUR, GARRAPATA CREEK BRIDGE	870	7400	6500	900	7400	6500	
05	001	MON		68.335	CARMEL HIGHLANDS, YANKEE POINT DRIVE NORTH	1000	7900	7200	1000	8600	7800	
05	001	MON		71.179	SAN JOSE CREEK BRIDGE	1500	13300	12100	1500	13300	12100	
05	001	MON		72.614	RIO ROAD	1500	12600	11500	1900	19100	17400	
05	001	MON		72.921	CARMEL VALLEY ROAD, CARMEL, SOUTH	1900	19100	17400	4300	43000	39200	
05	001	MON		73.800	CARMEL, OCEAN AVENUE	4900	48500	44300	3900	46000	42000	
05	001	MON		75.135	JCT. RTE. 68	4000	53000	50000	4400	51000	50400	
05	001	MON	R	75.733	MONTEREY SOUTH CITY LIMITS	5200	53000	50400	5600	58000	54900	
05	001	MON	R	75.754	MONTEREY, MUNRAS AVENUE	5600	58000	54900	4000	41500	39000	
05	001	MON	R	77.379	MONTEREY, AGUAJITO ROAD	5600	59000	55700	8300	93000	87600	
05	001	MON	R	78.119	MONTEREY, JCT. RTE. 68 EAST	5700	63000	59700	3800	37000	35100	
05	001	MON	R	78.883	MONTEREY, DEL MONTE AVENUE	3800	37000	35100	6500	60000	56500	
05	001	MON	R	79.357	SEASIDE, JCT. RTE. 218	5400	49500	46600	5100	50000	47700	
05	001	MON	R	80.679	ORD VILLAGE	6900	68000	64000	6300	57000	53600	
05	001	MON	R	82.890	FORT ORD, MAIN ENTRANCE	6300	57000	56300	7400	65000	61400	
05	001	MON	R	84.484	FORT ORD, NORTH ENTRANCE	9400	83000	78100	6800	58000	54200	
05	001	MON	R	85.135	SOUTH MARINA	6800	58000	54200	5300	42500	39900	
05	001	MON	R	86.481	RESERVATION ROAD	5300	42500	39900	5700	44000	41000	

05	001	MON	R	88.638	NEPONSET ROAD	5700	44000	41000	4900	48000	45200
05	001	MON	R	89.185	SALINAS RIVER BRIDGE, CASTROVILLE	5800	48000	45200	5800	48000	45200
05	001	MON	R	90.388	MOLERA/NASHUA ROADS	7000	58000	54800	5900	51000	48200
05	001	MON	R	90.979	CASTROVILLE, JCT. RTE. 156 WEST	5900	51000	48200	4200	21600	20400
05	001	MON	T	92.213	CASTROVILLE, JCT. RTE. 183	4200	21600	20400	3900	31000	29100
05	001	MON		94.400	MOLERA ROAD	4400	34500	32700	4000	31500	29700
05	001	MON		96.101	MOSS LANDING, DOLAN ROAD	4100	32500	30700	4100	33000	31100
05	001	MON		99.920	JENSEN ROAD	3900	32000	30000	3800	32000	30400
05	001	MON	T	101.040	SALINAS/PAJARO ROADS	4200	35500	33300	2600	24300	22900
05	001	MON	R	102.031	MONTEREY/SANTA CRUZ COUNTY LINE	3800	44000	38000			
05	001	SCR	R	0.000	MONTEREY/SANTA CRUZ COUNTY LINE				4100	49500	44000
05	001	SCR	R	0.716	JCT. RTE. 129	4000	44000	39200	3700	42500	40400
05	001	SCR	R	2.269	WATSONVILLE, HARKINS SLOUGH ROAD OC	3300	39500	35200	2800	34000	30000
05	001	SCR	R	2.683	JCT. RTE. 152	2800	34000	30000	4900	65000	51900
05	001	SCR	R	3.181	WATSONVILLE, AIRPORT BOULEVARD/ROACHE ROAD	4800	54000	51200	5500	66000	58000
05	001	SCR	R	4.073	BUENA VISTA DRIVE (SPRING VALLEY ROAD)	5500	66000	58000	5400	64000	56800
05	001	SCR	R	6.688	MAR MONTE AVENUE (LA SELVA BEACH ROAD)	5400	64000	56800	5400	64000	56900
05	001	SCR	R	7.663	LARKIN VALLEY ROAD	5400	64000	56900	5600	69000	62700
05	001	SCR		8.355	FREEDOM BOULEVARD	5600	71000	62700	5900	69000	66000
05	001	SCR		9.153	RIO DEL MAR N/O FREEDOM BOULEVARD	6600	84000	73000	6900	83000	78800
05	001	SCR		10.535	STATE PARK DRIVE	6900	83000	78800	6700	86000	80200
05	001	SCR		12.088	CAPITOLA, PARK AVENUE	6900	86000	83400	5900	91000	87600
05	001	SCR		13.192	CAPITOLA, BAY AVENUE	5900	91000	87600	6300	98000	95300
05	001	SCR		13.620	CAPITOLA, 41ST AVENUE	6300	98000	95300	4800	76000	72500
05	001	SCR		14.864	SOQUEL AVENUE	5500	84000	82200	6300	96000	93400
05	001	SCR		15.822	SANTA CRUZ, MORRISSEY BOULEVARD	6300	96000	93400	6200	92000	88800
05	001	SCR		16.628	SANTA CRUZ, EMELINE STREET CONNECTION	6200	92000	88800	6300	90000	85700
05	001	SCR		16.821	SANTA CRUZ, JCT. RTE. 17 NORTH	6400	91000	86800	4800	61000	59100
05	001	SCR		17.560	JCT. RTE. 9 NORTH	5000	60000	59100	4100	47000	45200
05	001	SCR		18.239	SANTA CRUZ, MISSION STREET	4100	47000	45200	4700	55000	52900
05	001	SCR		19.000	SANTA CRUZ, BAY STREET	3300	37500	35600	2400	37000	25500
05	001	SCR		19.690	SANTA CRUZ, SWIFT STREET	2200	24800	23100	2900	23000	18700
05	001	SCR		20.611	SANTA CRUZ, NORTH CITY LIMITS	2300	18500	14700	2300	18800	14600
05	001	SCR		27.620	BONNY DOON RD	2500	16000	12300	2800	15600	11700
05	001	SCR		30.120	DAVENPORT, NORTH (SWANTON ROAD)	2800	15600	11700	2600	14300	10900
05	001	SCR		30.440	LANDING/SWANTON ROADS	2400	12900	9500	2400	13400	9700
05	001	SCR		37.451	SANTA CRUZ/SAN MATEO COUNTY LINE	850	6300	5000			
04	001	SM		0.000	SANTA CRUZ/SAN MATEO COUNTY LINE				850	6300	5000
04	001	SM		13.579	PEBBLE BEACH ROAD (TO PESCADERO)	660	4700	3300	1300	8900	7000
04	001	SM		18.189	JCT. RTE. 84 EAST	1000	7900	6800	1100	9500	7600
04	001	SM		20.980	TUNITAS CREEK ROAD	1050	9300	7000	1250	9000	8200
04	001	SM		23.060	MEYN/VERDE ROADS	1200	8900	8000	1200	9200	8100
04	001	SM		26.432	MIRAMONTES POINT ROAD	1300	10400	9100	1900	16100	14800
04	001	SM		27.750	HALF MOON BAY, MAIN STREET	2300	19100	17600	2100	17700	16300
04	001	SM		29.036	HALF MOON BAY, JCT. RTE. 92 EAST	2700	31000	31000	2400	30500	28000
04	001	SM		29.120	HALF MOON BAY, MAIN STREET	2400	30000	28000	2800	35000	32500
04	001	SM		30.225	FRENCHMANS CREEK ROAD	3000	28000	26600	2700	28500	26600
04	001	SM		33.361	CAPISTRANO/OBISPO ROADS	2400	22300	22000	2200	20600	19700
04	001	SM		35.334	VALLEMAR/ETHELDORE STREETS	1900	18000	17000	2100	19000	18800
04	001	SM		40.752	PACIFICA, SAN PEDRO AVENUE	2000	17600	17000	2000	17600	17000
04	001	SM		40.959	PACIFICA, LINDA MAR BOULEVARD	2000	17300	17000	3200	37500	37100
04	001	SM		42.014	PACIFICA, ROCKAWAY BEACH AVENUE	3600	42500	41300	4700	55000	54100
04	001	SM	R	42.583	PACIFICA, REINA DEL MAR AVENUE (TO VALLEMAR)	4700	55000	54100	4800	56000	55200
04	001	SM	R	43.464	PACIFICA, SHARP PARK ROAD	4600	56000	53000	3400	41500	40000
04	001	SM	R	43.744	PACIFICA, CLAREDON ROAD/ OCEANA BOULEVARD	3400	41500	40000	3100	39500	38000
04	001	SM	R	44.880	PACIFICA, MILAGRA DRIVE	3700	48500	47000	3000	42000	40000
04	001	SM	R	45.390	PACIFICA, MONTEREY ROAD	3000	42000	40000	4200	56000	55000
04	001	SM	R	46.722	DALY CITY, JCT. RTE. 35	4200	56000	55000	6400	85000	78000
04	001	SM	R	47.272	DALY CITY, CLARINADA AVENUE	6400	85000	78000	7100	95000	83000
04	001	SM	R	47.802	SOUTH JCT. RTE. 280	7100	95000	83000	7100	95000	83000
04	001	SM	R	48.359	NORTH JCT. RTE. 280	7100	95000	83000	6700	106000	101000
04	001	SM	R	48.558	SAN MATEO/SAN FRANCISCO COUNTY LINE	6400	106000	101000			
04	001	SF	R	0.000	SAN MATEO/SAN FRANCISCO COUNTY LINE				6400	106000	101000
04	001	SF	R	0.105	SAN FRANCISCO, ALEMANY BOULEVARD	7700	106000	103000	7200	99000	96000
04	001	SF	R	0.312	BROTHERHOOD WAY/STANLEY DRIVE	7200	99000	96000	6700	95000	92000
04	001	SF	R	0.680	SAN FRANCISCO, 19TH AVENUE/ JUNIPERO SERRA BLVD	6700	93000	92000	5300	75000	74200
04	001	SF		1.350	SAN FRANCISCO, WINSTON DRIVE	5300	75000	74200	5300	75000	74200
04	001	SF		1.897	SAN FRANCISCO, JCT. RTE. 35	5300	75000	74200	5300	75000	74200
04	001	SF		2.870	SAN FRANCISCO, QUINTARA STREET	5300	75000	74200	5300	75000	74200
04	001	SF		4.050	SAN FRANCISCO, LINCOLN WAY	5300	75000	74200	5400	76000	75200
04	001	SF		5.000	SAN FRANCISCO, FULTON STREET	5400	76000	75200	5400	76000	75200
04	001	SF		5.880	SAN FRANCISCO, LAKE STREET	4700	67000	65800	5400	67000	65800
04	001	SF		7.077	JCT. RTE. 101	6300	67000	65800			
04	001	MRN		0.000	JCT. RTE. 101				3150	35500	34500
04	001	MRN		0.650	TAMALPAIS JUNCTION, ALMONTE BOULEVARD	3150	35500	34500	2000	20500	19300
04	001	MRN		1.310	PINE STREET	1950	20500	18900	1950	17600	15700
04	001	MRN		1.910	LORING AVENUE	1700	16200	14100	1500	11300	9600
04	001	MRN		3.350	SOUTH JCT	1200	9500	7900	800	5100	4100

04	001	MRN		5.920	MUIR WOODS ROAD	750	4700	3700	950	5900	4700
04	001	MRN		12.210	PANORAMIC HIGHWAY, NORTH	950	5900	4700	900	5800	4700
04	001	MRN		17.066	FAIRFAX/BOLINAS ROADS	650	4100	3300	550	3500	2900
04	001	MRN		17.200	BOLINAS ROAD	550	3500	2900	650	4000	3300
04	001	MRN		26.509	SIR FRANCIS DRAKE BOULEVARD, SOUTH	650	4000	3300	700	5000	4000
04	001	MRN		28.600	SIR FRANCIS DRAKE BOULEVARD, NORTH	700	4950	4000	950	6700	5700
04	001	MRN		29.330	POINT REYES/PETALUMA ROADS	950	6700	5700	450	2900	2600
04	001	MRN		38.409	MARSHALL/PETALUMA ROADS	450	2900	2600	250	1700	1600
04	001	MRN		45.360	TOMALES/PETALUMA ROADS	250	1700	1600	250	1650	1600
04	001	MRN		45.660	DILLON BEACH ROAD	250	1650	1600	250	1650	1600
04	001	MRN		47.860	TWO ROCK ROAD	200	1650	1600	200	1350	1300
04	001	MRN		50.509	SONOMA/MARIN COUNTY LINE	200	1350	1300			
04	001	SON		0.000	SONOMA/MARIN COUNTY LINE				200	1350	1300
04	001	SON		0.190	VALLEY FORD ROAD	200	1350	1300	1000	6500	6400
04	001	SON		2.420	VALLEY FORD/FREESTONE ROADS	1000	6500	6400	850	5600	5500
04	001	SON		5.380	BODEGA HIGHWAY	850	5600	5500	1350	8800	8700
04	001	SON		11.070	BODEGA EASTSHORE ROAD	900	6200	6100	800	5300	5200
04	001	SON		20.100	JCT. RTE. 116 EAST	350	2700	2600	450	3300	3200
04	001	SON		21.300	JENNER	450	3300	3200	450	3400	3200
04	001	SON	R	33.038	FORT ROSS, FORT ROSS ROAD	300	2300	2200	300	2250	2200
04	001	SON		48.112	STEWARTS POINT/SKAGGS SPRINGS ROAD	300	1950	1900	300	1950	1900
04	001	SON		58.583	SONOMA/MENDOCINO COUNTY LINE	700	4800	4700			
01	001	MEN		0.000	SONOMA/MENDOCINO COUNTY LINE				440	4650	4000
01	001	MEN		1.020	NORTH LIMITS GUALALA	440	4650	4000	370	3700	3100
01	001	MEN		5.090	FISH ROCK ROAD	320	3600	3100	210	2600	3100
01	001	MEN		14.692	POINT ARENA, SOUTH CITY LIMITS	240	2600	2200	240	2850	2400
01	001	MEN		15.180	POINT ARENA, RIVERSIDE DRIVE	250	2800	2400	250	2800	2600
01	001	MEN		15.740	POINT ARENA, LAKE STREET	250	2800	2600	240	2800	2200
01	001	MEN		16.166	POINT ARENA, NORTH CITY LIMITS	250	2800	2300	250	2800	2300
01	001	MEN		19.340	MOUNTAIN VIEW ROAD, MANCHESTER, SOUTH	190	2500	2100	230	2300	1900
01	001	MEN		34.900	NORTH LIMITS ELK	190	1700	1300	190	1800	1300
01	001	MEN		40.273	JCT. RTE. 128 EAST	270	1800	3000	450	4000	1450
01	001	MEN		47.500	LITTLE RIVER, AIRPORT ROAD	480	4200	3300	650	5200	4200
01	001	MEN		50.040	COMPTCHE/UKIAH ROADS	700	7200	6000	860	8500	7300
01	001	MEN	R	50.560	MENDOCINO, JACKSON STREET	700	7500	5500	730	8200	7600
01	001	MEN	R	51.490	MENDOCINO, LANSING STREET	1000	10200	8100	1000	10200	8900
01	001	MEN	R	55.780	NORTH LIMITS CASPAR	1100	11300	9300	1250	13000	11000
01	001	MEN		57.220	GIBNEY LANE	1350	14000	11000	1400	14200	11300
01	001	MEN		59.250	SIMPSON LANE	1700	16000	13300	1900	19000	16700
01	001	MEN		59.803	JCT. RTE. 20 EAST	1900	19000	11000	1900	22000	4850
01	001	MEN		60.680	FORT BRAGG, CYPRESS AVENUE	2000	24200	21300	1500	20300	17700
01	001	MEN		61.471	FORT BRAGG, REDWOOD AVENUE	1500	20300	17700	1800	20000	17700
01	001	MEN		62.360	FORT BRAGG, NORTH CITY LIMITS	1400	14000	12100	1200	10100	8100
01	001	MEN		62.800	AIRPORT ROAD, FORT BRAGG, NORTH	1200	10100	8100	1000	8200	6300
01	001	MEN	R	64.858	MAC KERRICHER STATE PARK	880	6100	4850	110	1800	1450
01	001	MEN		77.660	WESTPORT, NORTH	180	1300	900	140	1800	1300
01	001	MEN		90.874	JCT. RTE. 211 NORTH	120	900	600	100	1100	550
01	001	MEN		105.501	LEGGETT, JCT. RTE. 271	140	1200	800	120	1100	720
01	001	MEN		105.578	LEGGETT, JCT. RTE. 101	200	1800	800			
07	002	LA		2.321	LOS ANGELES, CENTINELA AVENUE				2550	30500	29500
07	002	LA		2.600	LOS ANGELES, BUNDY DRIVE	2550	30500	29500	2650	32000	30500
07	002	LA		3.645	LOS ANGELES, JCT. RTE. 405	4350	53000	51000	3900	52000	50000
07	002	LA		10.651	LOS ANGELES, SYCAMORE AVENUE	3900	52000	50000	2850	41500	40500
07	002	LA		10.896	LOS ANGELES, HIGHLAND AVENUE	2850	41500	40500	2750	40000	39000
07	002	LA		11.581	LOS ANGELES, VINE STREET	2750	40000	39000	2600	38500	37500
07	002	LA		12.320	LOS ANGELES, WILTON PLACE	2600	38500	37500	3000	44000	43500
07	002	LA		12.580	LOS ANGELES, WESTERN AVENUE	3000	44000	43500	3850	58000	56000
07	002	LA		12.750	LOS ANGELES, JCT. RTE. 101	3850	58000	56000	3200	42000	40500
07	002	LA		13.190	LOS ANGELES, SUNSET BOULEVARD	3200	42000	40500	3250	39500	38500
07	002	LA		13.592	LOS ANGELES, LEFT ONTO GLENDALE BOULEVARD	2900	34000	33500	5500	62000	61000
07	002	LA		14.213	LOS ANGELES, RIGHT VIA THE GLENDALE FREEWAY	5500	62000	61000	5400	60000	58000
07	002	LA		15.143	LOS ANGELES, JCT. RTE. 5	5400	60000	58000	14600	163000	161000
07	002	LA		16.008	LOS ANGELES, SAN FERNANDO ROAD	14600	163000	161000	14000	156000	154000
07	002	LA	R	17.002	LOS ANGELES, VERDUGO ROAD	14000	156000	154000	12800	143000	141000
07	002	LA	R	17.288	LOS ANGELES, YORK BOULEVARD	12800	143000	141000	14500	163000	160000
07	002	LA	R	18.814	LOS ANGELES, JCT. RTE. 134	14500	163000	160000	12400	134000	130000
07	002	LA	R	20.053	GLENDALE, MOUNTAIN STREET	12400	134000	130000	11800	123000	119000
07	002	LA	R	22.939	LA CANADA-FLINTRIDGE, JCT. RTE. 210	11800	123000	119000	1500	15900	14500
07	002	LA	R	23.438	LA CANADA-FLINTRIDGE, FOOTHILL BOULEVARD	1500	15900	14500	1600	17300	15400
07	002	LA		24.463	EAST JCT. RTE. 210	1600	17300	15400	1600	17300	15400
07	002	LA	R	25.350	VISTA DEL VALLE ROAD	860	9300	8200	790	7900	6900
07	002	LA		26.990	ANGELES FOREST BOUNDARY	460	4000	3500	460	4000	3500
07	002	LA		28.576	SLIDE CANYON BRIDGE	580	5100	4400	580	5100	4400
07	002	LA		33.800	ANGELES FOREST HIGHWAY	410	3600	3100	110	860	750
07	002	LA		38.370	MOUNT WILSON ROAD	110	860	750	60	430	370
07	002	LA		50.610	ENTRANCE, UPPER CHILAO RECREATION AREA	70	450	390	70	440	380
07	002	LA		58.090	BUCKHORN RANGER STATION	40	260	230	40	260	230
07	002	LA		64.085	ISLIP SADDLE, JCT. RTE. 39 SOUTH (CLOSED)	40	250	220	40	250	220

07	002	LA		77.390	BLUE RIDGE ROAD	40	250	220	70	440	390
07	002	LA		79.881	BIG PINES HIGHWAY	70	440	390	280	1850	1600
07	002	LA		82.265	LOS ANGELES/SAN BERNARDINO COUNTY LINE	350	1900	1800			
08	002	SBD		0.000	LOS ANGELES/SAN BERNARDINO COUNTY LINE				350	1850	1800
08	002	SBD		1.730	WRIGHTWOOD, LONE PINE ROAD	780	8000	7300	800	8200	7500
08	002	SBD		6.358	JCT. RTE. 138	800	8200	7500			
02	003	TRI	L	0.000	JCT. RTE. 36				70	590	530
02	003	TRI		6.220	MORGAN HILL ROAD	140	1850	1450	290	2600	2400
02	003	TRI		7.200	HAYFORK	290	2600	2400	290	2600	2400
02	003	TRI	L	30.890	WEAVERVILLE, NORTH JCT. RTE. 299	160	1900	1750	400	3600	3450
02	003	TRI		31.940	TOM BELL ROAD	290	2500	2350	240	2450	2350
02	003	TRI		37.900	RUSH CREEK ROAD	130	1650	1250	110	1050	790
02	003	TRI		59.640	TRINITY CENTER STATE HIGHWAY MAINTENANCE STATION	50	790	540	50	790	540
02	003	TRI		67.894	COFFEE CREEK RD	50	790	540	100	480	330
02	003	TRI	R	79.501	U. S. FOREST SERVICE ROAD	40	190	140	40	180	130
02	003	TRI	T	85.068	TRINITY/SISKIYOU COUNTY LINE	40	180	130			
02	003	SIS		0.408	TRINITY/SISKIYOU COUNTY LINE				40	180	130
02	003	SIS		6.955	GAZELLE ROAD	40	180	130	50	310	220
02	003	SIS		8.800	CALLAHAN	50	310	220	60	490	350
02	003	SIS	R	21.000	ETNA, MAIN STREET	140	1700	1200	200	2050	1450
02	003	SIS	R	21.472	COLLIER WAY	200	2050	1500	240	2400	2200
02	003	SIS		32.200	FORT JONES, SCOTT RIVER ROAD	300	3000	2800	420	4150	3850
02	003	SIS		38.258	MOFFETT CREEK ROAD	290	3100	2650	300	3300	2950
02	003	SIS		44.670	FOREST MOUNTAIN RANCH	300	3300	2950	300	3300	2950
02	003	SIS	L	47.264	YREKA, MOONLIT OAKS AVENUE	1600	15700	14700	1200	7100	6600
02	003	SIS	L	48.164	YREKA, OBERLIN ROAD	1100	10900	10200	940	8500	6500
02	003	SIS	L	49.207	YREKA, CENTER STREET	900	9000	8900	870	9000	8100
02	003	SIS	L	49.871	YREKA, JCT. RTE. 263 NORTH	480	4650	4500	520	5900	5600
02	003	SIS	L	50.159	YREKA, JCT. RTE. 5	520	5900	5700			
02	003	SIS	R	47.380	YREKA, JCT. RTE. 5				330	3350	3200
02	003	SIS	R	48.955	YREKA, AGER ROAD	330	3350	3250	260	2350	2200
02	003	SIS	R	49.454	YREKA, PHILIPE LANE	260	2350	2300	220	2200	2000
02	003	SIS		53.220	MONTAGUE, GRENADA ROAD	160	1550	1450	350	3300	3100
02	003	SIS		54.187	MONTAGUE, EAST CITY LIMITS	270	2800	2600			
04	004	CC	L	0.000	SAN PABLO AVE				2500	28500	27900
04	004	CC	L	0.178	HERCULES, JCT. RTE. 80	2500	28500	27900			
04	004	CC		0.000	HERCULES, JCT. RTE. 80				4300	47500	45800
04	004	CC	R	0.778	HERCULES, WILLOW AVENUE	4300	47500	45800	4400	49500	47800
04	004	CC	R	5.168	MC EWEN ROAD	5000	57000	53800	5000	57000	53800
04	004	CC	R	8.549	MARTINEZ, ALHAMBRA BOULEVARD	5000	57000	53800	6200	71000	66700
04	004	CC	R	9.185	MARTINEZ, PINE STREET	6200	71000	66700	6900	79000	74700
04	004	CC	R	10.330	MARTINEZ, MORELLO AVENUE	6900	79000	74700	6400	73000	69700
04	004	CC	R	11.126	MILANO WAY	6900	79000	74700	6400	73000	69700
04	004	CC	R	11.400	PACHECO BLVD	6400	73000	69700	5800	65000	62700
04	004	CC		12.667	JCT. RTE. 680	5800	65000	62700	7100	85000	82600
04	004	CC	R	13.650	SOLANO WAY	7100	85000	82600	7500	88000	85600
04	004	CC	R	14.668	CONCORD, JCT. RTE. 242	7500	88000	85600	12600	159000	155300
04	004	CC	R	15.424	CONCORD, PORT CHICAGO HIGHWAY WEST	12600	159000	155300	9300	126000	122400
04	004	CC	R	16.834	WILLOW PASS ROAD (WEST)	9300	126000	122400	11600	164000	159200
04	004	CC	R	18.830	WILLOW PASS RD (EAST)/SAN MARCO BLVD	11600	164000	159200	9500	139000	134400
04	004	CC	R	20.102	BAILEY ROAD	9500	139000	134400	10700	157000	150300
04	004	CC		23.049	PITTSBURG, RAILROAD AVENUE	10700	157000	150300	10500	154000	147300
04	004	CC		24.321	PITTSBURG, LOVERIDGE ROAD	10500	154000	147300	10200	151000	144300
04	004	CC		26.007	ANTIOCH, SOMERSVILLE ROAD	10200	151000	144300	11300	167000	159200
04	004	CC		26.939	ANTIOCH, CONTRA LOMA BOULEVARD	13000	167000	159200	10600	156000	149300
04	004	CC		27.294	ANTIOCH, G STREET	11300	167000	159200	10600	156000	149300
04	004	CC	R	27.790	ANTIOCH, A STREET/LONETREE	10600	156000	149300	8800	130000	124400
04	004	CC	R	28.940	ANTIOCH, HILLCREST AVENUE	8800	130000	124400	8200	116000	109500
04	004	CC	R	30.439	JCT. RTE. 160	8200	116000	109500	6800	96000	90600
04	004	CC	R	31.368	LAUREL ROAD	6800	96000	90600	5700	80000	75700
04	004	CC	R	32.937	LONE TREE WAY	5700	80000	75700	5300	70000	66700
04	004	CC	R	34.253	SAND CREEK RD	5300	70000	66700	4300	55000	52800
04	004	CC	R	35.598	BALFOUR ROAD	4300	55000	52800	2700	33000	31800
04	004	CC	R	38.049	MARSH CREEK/VASCO RD	2700	33000	31800	1700	18900	18200
04	004	CC	R	41.960	MARSH CREEK ROAD	1700	18900	18200	2700	31000	29700
04	004	CC	R	44.367	BYRON HIGHWAY	2700	31000	29700	2700	27000	25700
04	004	CC		46.460	DISCOVERY BAY BOULEVARD	2700	27000	25700	1300	11900	11300
04	004	CC		48.392	CONTRA COSTA/SAN JOAQUIN COUNTY LINE	2000	15400	14000			
10	004	SJ		0.000	CONTRA COSTA/SAN JOAQUIN COUNTY LINE				2000	15400	14000
10	004	SJ		10.490	INLAND DRIVE	1450	16800	14100	1550	18000	15200
10	004	SJ		11.672	MAYBECK ROAD	1600	18500	15700	1600	18500	15700
10	004	SJ	T	14.023	ROBERTS ISLAND ROAD	1750	17300	16400	1850	20400	17400
10	004	SJ		15.090	FRESNO AVENUE	2750	21000	18700	1900	20500	17400
10	004	SJ		15.800	NAVY DRIVE/STOCKTON STREET	2450	22600	20100	2600	23800	21200
10	004	SJ	R	16.059	STOCKTON, NORTH JCT RTE 5	1850	19400	17100	8200	102000	98000
10	004	SJ	R	17.052	STANISLAUS STREET	8300	104000	99000	10400	131000	125000
10	004	SJ	R	17.706	STOCKTON, WILSON WAY	10400	131000	125000	10300	107000	106000
10	004	SJ	R	18.773	STOCKTON, FILBERT STREET	10300	113000	112000	9700	105000	104900

10	004	SJ	S	19.986	SOUTH JCT. RTE. 99	9700	105000	104900	1050	11600	9380
10	004	SJ		20.690	WALKER LANE	1100	8100	6900	720	5200	4500
10	004	SJ		24.870	JACKTONE ROAD	750	7500	6100	780	7600	6200
10	004	SJ		33.100	FARMINGTON/ESCALON-BELLOTA RD	900	6800	5000	820	7600	6000
10	004	SJ		34.140	SONORA ROAD (TO VALLEY HOME)	1250	6100	4250	1050	12700	3850
10	004	SJ		38.059	SAN JOAQUIN COUNTY/STANISLAUS COUNTY	1050	12700	3950			
10	004	STA		0.000	SAN JOAQUIN COUNTY/STANISLAUS COUNTY				1050	12700	3950
10	004	STA		4.540	MILTON ROAD	1250	11000	4700	1000	8800	5300
10	004	STA	R	8.885	STANISLAUS/CALAVERAS COUNTY LINE	1000	8800	7600			
10	004	CAL	R	0.000	STANISLAUS/CALAVERAS COUNTY LINE				1100	9300	7600
10	004	CAL	R	7.323	HODSON ROAD/REEDS TURNPIKE	1050	9100	5400	790	7600	4350
10	004	CAL	R	8.143	O' BYRNES FERRY ROAD	810	7900	4450	680	4150	4000
10	004	CAL		26.220	VALLECITO	500	9500	7900	860	9700	7800
10	004	CAL		29.620	BIG TREES/TOMBELL ROADS	890	8200	7000	810	8300	6800
10	004	CAL		37.350	AVERY, MORAN ROAD WEST JUNCTION	850	9300	7500	820	8400	6700
10	004	CAL		41.520	WHITE PINES ROAD	900	9300	7400	930	8500	6800
10	004	CAL	R	42.620	MORAN ROAD EAST JUNCTION	900	7600	6000	690	4500	3250
10	004	CAL		44.497	BIG TREES STATE PARK	690	4500	2700	680	3900	2550
10	004	CAL	R	47.140	DORRINGTON	800	4450	2750	470	2500	1650
10	004	CAL		49.570	MEKO DRIVE	360	2500	1400	380	2600	1500
10	004	CAL	R	62.840	BIG MEADOWS	450	1950	1100	380	2100	1000
10	004	CAL	R	65.865	CALAVERAS/ALPINE COUNTY LINE	290	1650	1200			
10	004	ALP	R	0.000	CALAVERAS/ALPINE COUNTY LINE				290	1650	1200
10	004	ALP	R	2.896	MOUNT REBA ROAD	290	1900	1250	270	1600	1200
10	004	ALP		3.890	LAKE ALPINE	270	1600	1200	220	1250	950
10	004	ALP		18.556	EBBETTS PASS SUMMIT (ELEV. 8730 FEET)	120	710	490	120	710	490
10	004	ALP		31.677	BULLION;JCT 89	120	710	490			
11	005	SD	R	0.306	SAN DIEGO, CAMINO DE LA PLAZA, AT THE INT'L BDRY				7600	90000	89000
11	005	SD	R	0.878	SOUTH JCT. RTE. 805	7600	90000	89000	4000	48500	45000
11	005	SD	R	1.198	VIA SAN YSIDRO	3800	46500	45000	5400	65000	60000
11	005	SD		2.312	SAN DIEGO, DAIRY MART ROAD	5400	65000	60000	6600	81000	80000
11	005	SD		3.100	SAN DIEGO, JCT. RTE. 905	6600	81000	80000	9300	120000	119000
11	005	SD		4.042	SAN DIEGO, CORONADO AVENUE	9800	127000	126000	10800	143000	142000
11	005	SD		4.632	JCT. RTE. 75 WEST	10800	143000	142000	12600	172000	153000
11	005	SD		5.404	SAN DIEGO, MAIN STREET	12400	157000	153000	13200	157000	155000
11	005	SD		6.056	CHULA VISTA, PALOMAR STREET	13200	157000	155000	12900	153000	151000
11	005	SD		6.807	CHULA VISTA, L STREET	12900	153000	151000	14000	165000	164000
11	005	SD		7.300	CHULA VISTA, J STREET	14000	165000	164000	14000	168000	167000
11	005	SD		7.812	CHULA VISTA, H STREET	14000	168000	167000	14200	192000	188000
11	005	SD		8.562	E STREET	10100	194000	188000	12500	153000	146000
11	005	SD		9.396	JCT. RTE. 54	12500	153000	146000	17900	218000	211000
11	005	SD	R	10.042	NATIONAL CITY, 24TH STREET	17900	218000	211000	17800	216000	210000
11	005	SD	R	10.749	NATIONAL CITY, 9TH STREET	17800	216000	210000	16600	209000	198000
11	005	SD	R	11.129	8TH STREET	16600	209000	198000	16100	220000	208000
11	005	SD	R	11.660	SAN DIEGO, DIVISION/MAIN STREETS	16100	218000	208000	17600	216000	215000
11	005	SD	R	12.647	JCT. RTE. 15 NORTH	17600	216000	215000	12900	177000	166000
11	005	SD	R	13.386	SAN DIEGO, 28TH STREET	12900	179000	166000	13200	176000	170000
11	005	SD	R	14.077	SAN DIEGO, JCT. RTE. 75 SOUTH	13200	176000	170000	13400	179000	172000
11	005	SD	R	14.740	J STREET	13400	179000	172000	14500	189000	178000
11	005	SD	R	15.036	SAN DIEGO, JCT. RTE. 94	14500	189000	178000	17700	245000	229000
11	005	SD	R	15.405	SAN DIEGO, PERSHING DRIVE	17700	245000	229000	17700	245000	229000
11	005	SD	R	16.069	SAN DIEGO, JCT. RTE. 163	17700	245000	229000	17100	237000	219000
11	005	SD	R	16.311	SAN DIEGO, SIXTH AVENUE	17100	237000	219000	17100	237000	219000
11	005	SD	R	16.589	SAN DIEGO, FIRST AVENUE	17100	237000	219000	13200	186000	174000
11	005	SD	R	16.912	SAN DIEGO, HAWTHORN STREET	13200	186000	174000	16300	226000	207000
11	005	SD	R	17.210	SAN DIEGO, LAUREL STREET	16300	226000	207000	16300	226000	207000
11	005	SD	R	17.250	SAN DIEGO, INDIA/SASSAFRAS STREETS	16300	226000	207000	15800	218000	201000
11	005	SD	R	17.530	PACIFIC HIGHWAY VIADUCT	15800	218000	201000	11900	161000	152000
11	005	SD	R	17.770	SAN DIEGO, SASSAFRAS STREET	11900	161000	152000	12000	158000	148000
11	005	SD	R	18.283	SAN DIEGO, WASHINGTON STREET	12000	158000	148000	15700	210000	196000
11	005	SD	R	19.033	SAN DIEGO, OLD TOWN AVENUE	15700	210000	196000	14000	206000	193000
11	005	SD	R	20.056	JCT. RTE. 8	14900	207000	193000	14600	204000	191000
11	005	SD	R	20.818	SAN DIEGO, MISSION BAY DRIVE/SEA WORLD DRIVE	14700	204000	191000	17000	237000	223000
11	005	SD	R	22.262	CLAIREMONT DRIVE	16900	236000	223000	17100	211000	206000
11	005	SD	R	22.872	SAN DIEGO, DE ANZA ROAD	17100	211000	206000	13700	169000	163000
11	005	SD	R	23.476	SAN DIEGO, BALBOA AVENUE	13700	169000	163000	12600	153000	147000
11	005	SD	R	23.930	SAN DIEGO, MISSION BAY DRIVE	12600	153000	147000	17100	219000	208000
11	005	SD	R	25.947	JCT. RTE. 52 EAST	16900	218000	208000	14300	199000	193000
11	005	SD	R	26.790	SAN DIEGO, GILMAN DRIVE	14300	199000	193000	13000	183000	175000
11	005	SD	R	28.159	SAN DIEGO, NOBEL DRIVE	13000	183000	175000	11500	162000	153000
11	005	SD	R	28.428	SAN DIEGO, LA JOLLA DRIVE	11500	162000	153000	12100	169000	168000
11	005	SD	R	29.463	SAN DIEGO, GENESEE AVENUE	12100	169000	168000	12600	176000	175000
11	005	SD	R	30.426 R	SAN DIEGO, SORRENTO VALLEY ROAD, BEGIN RIGHT ALIGN	6300	76000	70000	6300	76000	70000
11	005	SD	R	30.682 R	SAN DIEGO, NORTH JCT. RTE. 805	6300	76000	70000	5500	74000	70000
11	005	SD	R	31.188 R	END RIGHT ALIGN	5900	72000	70000			
11	005	SD	R	30.345 L	BEG LEFT ALIGN				5600	74000	67000
11	005	SD	R	30.426 L	SAN DIEGO, SORRENTO VALLEY ROAD	5600	74000	67000	6300	69000	67000
11	005	SD	R	30.682 L	SAN DIEGO, NORTH JCT RTE 805	10500	134000	113000	10500	134000	113000

11	005	SD	R	31.155	L	END LEFT ALIGN	11300	146000	135000			
11	005	SD	R	31.805		SAN DIEGO, CARMEL MOUNTAIN ROAD	18800	279000	257000	20200	285000	257000
11	005	SD	R	32.841		JCT RTE 56	20200	285000	257000	18600	274000	257000
11	005	SD	R	32.901		SAN DIEGO, CARMEL VALLEY ROAD	18600	274000	257000	20600	315000	312000
11	005	SD	R	34.134		SAN DIEGO, DEL MAR HEIGHTS ROAD	20600	315000	312000	18200	267000	257000
11	005	SD	R	36.266		VIA DE LA VALLE	18200	267000	257000	7800	240000	230000
11	005	SD	R	37.384		SOLANA BEACH, LOMAS SANTA FE DRIVE	7800	240000	230000	16100	244000	231000
11	005	SD	R	38.624		MANCHESTER AVENUE	16100	244000	231000	14200	216000	204000
11	005	SD	R	39.830		BIRMINGHAM DRIVE	14200	216000	204000	14600	221000	213000
11	005	SD	R	40.597		ENCINITAS, SANTA FE DRIVE	14600	221000	213000	14800	224000	217000
11	005	SD	R	41.509		ENCINITAS BOULEVARD	14400	225000	218000	15900	229000	217000
11	005	SD	R	42.712		LEUCADIA BOULEVARD	15900	229000	217000	14500	222000	215000
11	005	SD	R	44.071		LEUCADIA, LA COSTA AVENUE	15900	231000	216000	14100	227000	215000
11	005	SD	R	45.571		CARLSBAD, POINSETTIA LANE	15600	226000	212000	15500	224000	209000
11	005	SD	R	47.032		CARLSBAD, PALOMAR AIRPORT ROAD	15500	224000	209000	15200	219000	215000
11	005	SD	R	47.975		CARLSBAD, CANNON ROAD	15200	219000	215000	14300	219000	204000
11	005	SD	R	49.278		TAMARACK AVENUE	13800	213000	204000	14900	205000	201000
11	005	SD	R	50.106		CARLSBAD, CARLSBAD VILLAGE DRIVE	14900	205000	201000	14900	203000	199000
11	005	SD	R	50.684		CARLSBAD, LAS FLORES DRIVE	14900	203000	199000	13900	211000	202000
11	005	SD	R	51.201		JCT. RTE. 78 EAST	13900	211000	202000	14400	219000	209000
11	005	SD	R	51.466		OCEANSIDE, CASSIDY STREET	14800	222000	209000	15500	218000	208000
11	005	SD	R	51.847		OCEANSIDE, CALIFORNIA STREET	15500	218000	208000	16000	229000	207000
11	005	SD	R	52.298		OCEANSIDE, OCEANSIDE BOULEVARD	16000	229000	207000	16000	220000	208000
11	005	SD	R	53.430		MISSION AVENUE	12600	181000	172000	13300	185000	172000
11	005	SD	R	53.932		JCT. RTE. 76	12600	188000	174000	11400	150000	145000
11	005	SD	R	54.390		HARBOR DRIVE/VANDERGRIFT	13100	183000	171000	11500	153000	142000
11	005	SD	R	62.078		LAS PULGAS ROAD	12000	157000	142000	11700	157000	141000
11	005	SD	R	71.377		BASILONE ROAD	11700	157000	141000	12100	153000	148000
11	005	SD	R	72.281		CHRISTIANITOS ROAD	12100	153000	148000	12100	153000	148000
11	005	SD	R	72.367		SAN DIEGO/ORANGE COUNTY LINE	12100	153000	148000			
12	005	ORA		0.000		SAN DIEGO/ORANGE COUNTY LINE				11700	147000	143000
12	005	ORA		1.000		SAN CLEMENTE, AVENIDA CALIFIA	11300	145700	142000	12100	152000	148000
12	005	ORA		1.627		SAN CLEMENTE, EL CAMINO REAL	12100	152000	148000	12200	165000	155700
12	005	ORA		2.306		SAN CLEMENTE, AVENIDA PRESIDIO	12200	165000	155700	12000	163000	154000
12	005	ORA		2.663		SAN CLEMENTE, AVENIDA PALIZADA	12000	163000	154000	14000	184000	173400
12	005	ORA		3.393		SAN CLEMENTE, AVENIDA PICO	14000	184000	173400	14100	190000	172200
12	005	ORA		5.801		SAN CLEMENTE, CAMINO ESTRELLA	15000	200000	181900	17000	227000	205600
12	005	ORA		6.780		JCT RTE 1	17000	227000	205600	16600	211000	191200
12	005	ORA		7.344		SAN JUAN CAPISTRANO, CAMINO CAPISTRANO ON RAMP	15400	204000	192000	19000	234000	212000
12	005	ORA		8.795		SAN JUAN CAPISTRANO, SAN JUAN CREEK ROAD	19000	234000	212000	19000	237000	215000
12	005	ORA		9.604		SAN JUAN CAPISTRANO, JCT. RTE. 74	19000	237000	215000	23000	280000	253000
12	005	ORA		10.910		SAN JUAN CAPISTRANO, JUNIPERO SERRA ROAD	23000	280000	253000	24000	294000	267000
12	005	ORA		12.490		JCT RTE 73	24000	294000	267000	21000	257000	234000
12	005	ORA		12.943		AVERY PARKWAY	21000	258000	234000	23000	280000	255000
12	005	ORA		13.776		CROWN VALLEY PARKWAY	23000	280000	255000	28000	332000	300000
12	005	ORA		15.217		OSO PARKWAY	28000	332000	300000	29000	348000	316000
12	005	ORA		16.528		LA PAZ ROAD	29000	348000	316000	30500	367000	333000
12	005	ORA		17.472		ALICIA PARKWAY	30500	367000	333000	25500	366000	341000
12	005	ORA		18.685		NIGUEL/EL TORO ROADS	29000	421000	400000	34000	454000	415000
12	005	ORA		19.890		LAKE FOREST DRIVE	34000	454000	415000	30000	394000	371000
12	005	ORA		21.304		JCT. RTE. 405	30000	394000	371000	23000	311000	283000
12	005	ORA		22.213		IRVINE, ALTON PARKWAY	25000	334000	305000	25000	336000	315000
12	005	ORA		23.120		IRVINE, JCT. RTE. 133	25000	336000	315000	25500	340000	309000
12	005	ORA	R	23.942		IRVINE, SAND CANYON AVENUE	25500	340000	309000	23100	312500	294000
12	005	ORA	R	24.991		IRVINE, JEFFREY ROAD	24300	329000	309000	24000	312000	290000
12	005	ORA	R	26.583		IRVINE, CULVER DRIVE	24000	312000	290000	28000	352000	330000
12	005	ORA		27.589		JAMBOREE ROAD	28000	352000	330000	29000	378000	354000
12	005	ORA		28.250		TUSTIN RANCH ROAD	29000	378000	354000	31000	403000	377000
12	005	ORA	R	29.091		RED HILL AVENUE	31000	403000	377000	24000	312000	292000
12	005	ORA		29.616		TUSTIN, NEWPORT AVENUE	31000	403000	377000	25000	310000	292000
12	005	ORA		30.263		TUSTIN, JCT. RTE. 55	23300	287000	270200	20800	296000	269200
12	005	ORA		30.903		SANTA ANA, FIRST/FOURTH STREETS	30000	430000	390000	41500	512000	465000
12	005	ORA		31.759		SANTA ANA, GRAND AVENUE	41500	512000	465000	44000	553000	504000
12	005	ORA		32.462		SANTA ANA, SEVENTEENTH STREET	44000	553000	504000	34000	419000	382000
12	005	ORA		33.088		SANTA ANA, MAIN STREET	34000	419000	382000	32000	379000	338000
12	005	ORA		34.000		SANTA ANA, JCT. RTES. 22 AND 57	36000	426000	380000	25000	368000	328300
12	005	ORA		34.942		ORANGE, CHAPMAN AVENUE	23000	337000	301000	21000	311000	279000
12	005	ORA		35.190		ANAHEIM, STATE COLLEGE BOULEVARD	22000	336000	301000	20000	309000	279000
12	005	ORA		36.258		KATELLA AVENUE	19000	288000	260000	20600	316000	285000
12	005	ORA		36.606		ANAHEIM-HASTER OC	19000	288000	260000	21000	316000	285000
12	005	ORA		37.400		ANAHEIM, HARBOR BOULEVARD	21000	316000	285000	21000	315000	284000
12	005	ORA		37.641		ANAHEIM, BALL ROAD	21000	315000	284000	23000	339000	307000
12	005	ORA		38.060		ANAHEIM, SOUTH STREET CONNECTIONS	23000	339000	307000	23000	339000	307000
12	005	ORA		38.915		LINCOLN AVENUE	23000	339000	307000	22000	322000	293000
12	005	ORA		39.511		ANAHEIM, EUCLID AVENUE	21000	322000	293000	22000	323000	296000
12	005	ORA		40.710		ANAHEIM, BROOKHURST STREET	22000	323000	296000	21000	315000	290000
12	005	ORA		41.840	R	BEGIN RIGHT ALIGN				10500	158000	145000
12	005	ORA		42.100	R	FULLERTON, JCT. RTE. 91	10500	158000	145000	10500	124000	111000

12	005		ORA		42.515	R	END RIGHT ALIGN	10500	122000	111000			
12	005		ORA		41.840	L	BEGIN LEFT ALIGN				10500	158000	145000
12	005		ORA		42.100	L	FULLERTON, JCT. RTE. 91	10500	158000	145000	7300	122000	111000
12	005		ORA		42.515	L	END LEFT ALIGN	7300	122000	111000			
12	005		ORA		43.133		BUENA PARK, STANTON AVENUE CONNECTIONS	16300	244000	222000	16300	244000	222000
12	005		ORA		43.430		JCT. RTE. 39	14400	213000	194000	14000	208000	190000
12	005		ORA		44.260		BUENA PARK, ARTESIA AVENUE	15500	229000	208300	13400	216000	208300
12	005		ORA		44.297		ARTESIA AVENUE UC (END)	13400	216000	208300	13400	216000	208300
12	005		ORA		44.382		ORANGE/LOS ANGELES COUNTY LINE	13000	215000	208300			
07	005		LA		0.000		ORANGE/LOS ANGELES COUNTY LINE				13000	215000	208300
07	005		LA		1.210		SANTA FE SPRINGS, VALLEY VIEW AVENUE	10200	176000	171000	10100	173000	168000
07	005		LA		1.684		SANTA FE SPRINGS, ALONDRA BOULEVARD	10100	173000	168000	10000	174000	169000
07	005		LA		2.408		NORWALK, CARMENITA ROAD	10000	174000	169000	9900	177000	171000
07	005		LA		3.637		NORWALK, FIRESTONE BOULEVARD	9900	177000	171000	10900	178000	175000
07	005		LA		4.220		NORWALK, NORWALK BOULEVARD/SAN ANTONIO AVE	10900	178000	175000	11100	179000	176000
07	005		LA		4.912		NORWALK, IMPERIAL HIGHWAY	11100	179000	176000	12200	195000	192000
07	005		LA		6.848		SANTA FE SPRINGS, JCT. RTE. 605	12200	195000	192000	14100	234000	228000
07	005		LA		8.307		DOWNEY, LAKEWOOD BOULEVARD	14100	234000	228000	14700	239000	234000
07	005		LA		8.947		DOWNEY, PARAMOUNT BOULEVARD	14700	239000	234000	14600	239000	233000
07	005		LA		9.698		COMMERCE, SLAUSON AVENUE	14600	239000	233000	13600	224000	220000
07	005		LA		10.876		COMMERCE, GARFIELD AVENUE	13600	224000	220000	13200	225000	219000
07	005		LA		11.554		COMMERCE, WASHINGTON BOULEVARD	13200	225000	219000	13600	234000	229000
07	005		LA		12.800		COMMERCE, ATLANTIC BOULEVARD	13600	234000	229000	13600	237000	232000
07	005		LA		13.784		COMMERCE, JCT. RTE. 710	13600	237000	232000	15300	253000	244000
07	005		LA		14.251		DOWNEY ROAD	15300	253000	244000	15600	259000	250000
07	005		LA		14.800		DITMAN AVENUE	15600	259000	250000	15300	255000	248000
07	005		LA		14.944		INDIANA STREET	15300	255000	248000	15300	256000	250000
07	005		LA		16.474		LOS ANGELES, JCT. RTE. 60	15300	256000	250000	14700	237000	234000
07	005		LA		17.562		LOS ANGELES, FOURTH STREET	14700	237000	234000	15400	245000	241000
07	005		LA		18.063		LOS ANGELES, CESAR CHAVEZ DRIVE	15400	245000	241000	15000	234000	228000
07	005		LA		18.452		LOS ANGELES, JCT. RTE. 10	15000	234000	228000	16500	241000	234000
07	005		LA		19.196		LOS ANGELES, MAIN STREET	16500	241000	234000	16700	238000	230000
07	005		LA		19.725		LOS ANGELES, NORTH BROADWAY	16700	238000	230000	15900	227000	220000
07	005		LA		20.444		LOS ANGELES, JCT. RTE. 110	15900	227000	220000	18500	299000	283000
07	005		LA		21.830		LOS ANGELES, STADIUM WAY	18500	299000	283000	18200	296000	278000
07	005		LA		22.548		LOS ANGELES, JCT. RTE. 2	18200	296000	278000	16000	239000	233000
07	005		LA		23.655		LOS ANGELES, GLENDALE BOULEVARD	16000	239000	233000	14900	230000	224000
07	005		LA		24.330		LOS ANGELES, LOS FELIZ BLVD/GRIFFITH PARK DRIVE	14900	230000	224000	16400	251000	247000
07	005		LA		25.781		LOS ANGELES, COLORADO BOULEVARD EXTENSION	16400	251000	247000	17700	262000	258000
07	005		LA		27.080		LOS ANGELES, JCT. RTE. 134	17700	262000	258000	16200	246000	237000
07	005		LA		27.837		GLENDALE, WESTERN AVENUE	16200	246000	237000	15300	244000	230000
07	005		LA		28.426		BURBANK, ALAMEDA AVENUE	15300	244000	230000	15000	239000	224000
07	005		LA		29.160		BURBANK, OLIVE AVENUE	15000	239000	224000	14500	231000	215000
07	005		LA		29.777		BURBANK, BURBANK BOULEVARD	14500	231000	215000	13800	220000	204000
07	005		LA		30.610		BURBANK, VICTORY BOULEVARD/LINCOLN STREET	13800	220000	204000	13100	209000	192000
07	005		LA		31.234		BURBANK, BUENA VISTA STREET	13100	209000	192000	13400	213000	194000
07	005		LA		32.350		LOS ANGELES, HOLLYWOOD WAY	13400	213000	194000	14200	226000	205000
07	005		LA		33.281		LOS ANGELES, ROSCOE BOULEVARD	14200	226000	205000	13500	201000	193000
07	005		LA		33.678		LOS ANGELES, SUNLAND BOULEVARD	13500	201000	193000	13800	205000	196000
07	005		LA		34.275		LOS ANGELES, PENROSE STREET	13800	205000	196000	13400	201000	193000
07	005		LA		34.989		LOS ANGELES, LANKERSHIM BOULEVARD	13400	201000	193000	13300	200000	193000
07	005		LA		35.942		LOS ANGELES, SHELDON STREET/LAUREL CANYON BLVD	13300	200000	193000	13200	200000	194000
07	005		LA		36.358		LOS ANGELES, JCT. RTE. 170	13200	200000	194000	21700	302000	292000
07	005		LA		37.409		LOS ANGELES, OSBORNE STREET	21700	302000	292000	23200	312000	307000
07	005		LA		37.957		LOS ANGELES, TERRA BELLA STREET	23200	312000	307000	23000	305000	299000
07	005		LA		38.502		LOS ANGELES, VAN NUYS BOULEVARD	23000	305000	299000	22600	294000	289000
07	005		LA		39.361		LOS ANGELES, JCT. RTE. 118	22600	294000	289000	13500	212000	196000
07	005		LA		39.980		LOS ANGELES, BRAND BOULEVARD	13500	212000	196000	13400	206000	190000
07	005		LA		40.241		LOS ANGELES, SAN FERNANDO MISSION BOULEVARD	13400	206000	190000	13300	204000	187000
07	005		LA		41.597		LOS ANGELES, JCT. RTE. 405	13300	204000	187000	21400	315000	304000
07	005		LA		42.645		LOS ANGELES, ROXFORD STREET	21400	315000	304000	19700	292000	282000
07	005		LA	R	44.014		LOS ANGELES, JCT. RTE. 210	19700	292000	282000	19600	299000	286000
07	005		LA	R	44.015		BREAK IN ROUTE						
07	005	S	LA	C	43.925	R	LOS ANGELES, BEGIN TRUCK FWY-RIGHT ALIGN				1550	21300	18500
07	005	S	LA	C	44.924	R	LOS ANGELES, END TRUCK FWY - RIGHT ALIGN	1550	21300	18500			
07	005	S	LA	C	43.899	L	LOS ANGELES, BEGIN TRUCK FWY, LEFT ALIGN				1550	21300	18500
07	005	S	LA	C	44.924	L	LOS ANGELES, END TRUCK FWY - LEFT ALIGN	1550	21300	18500			
07	005	S	LA	C	44.924		LOS ANGELES, END TRUCK FWY RIGHT AND LEFT ALIGN				4550	61000	53000
07	005	S	LA	C	45.734		RTE. 5/14 SEPARATION OVERHEAD	4550	61000	53000	2900	40000	34500
07	005	S	LA	C	46.351		END TRUCK FREEWAY	2900	40000	34500			
07	005	S	LA	C	46.352		BREAK IN ROUTE						
07	005		LA	R	45.584		JCT. RTE. 14	19600	299000	286000	17200	226000	206000
07	005		LA	R	49.030		SANTA CLARITA, CALGROVE BOULEVARD	17200	226000	206000	17300	223000	205000
07	005		LA	R	50.326		SANTA CLARITA, LYONS AVENUE	17300	223000	205000	16400	208000	192000
07	005		LA	R	51.442		SANTA CLARITA, MC BEAN PARKWAY	16400	208000	192000	15700	196000	181000
07	005		LA	R	52.465		SANTA CLARITA, VALENCIA BOULEVARD	15700	196000	181000	13900	174000	159000
07	005		LA	R	53.565		SANTA CLARITA, SOUTH JCT. RTE. 126	13900	174000	159000	12900	159000	144000
07	005		LA	R	54.161		SANTA CLARITA, RYE CANYON ROAD	12900	159000	144000	12100	150000	135000

07	005	LA	R	55.480		SANTA CLARITA, NORTH JCT. RTE. 126	12100	150000	135000	11300	129000	118000
07	005	LA	R	56.602		HASLEY CANYON ROAD	11300	129000	115000	9700	104000	95000
07	005	LA	R	59.007		PARKER ROAD	9700	104000	95000	8200	83000	76000
07	005	LA	R	59.492		LAKE HUGHES ROAD	8200	83000	76000	8300	80000	73000
07	005	LA	R	65.967		TEMPLIN HIGHWAY	8300	80000	73000	9200	80000	72000
07	005	LA	R	74.450		VISTA DEL LAGO ROAD	9200	80000	72000	9200	80000	72000
07	005	LA	R	77.958		SMOKEY BEAR ROAD	9200	80000	72000	9800	80000	70000
07	005	LA	R	81.487		SOUTH JCT. RTE. 138	9800	80000	70000	8900	77000	69000
07	005	LA	R	81.757		QUAIL LAKE ROAD	8900	77000	69000	9100	77000	69000
07	005	LA	R	82.103		NORTH JCT. RTE. 138	9100	77000	69000	9600	81000	73000
07	005	LA	R	85.801		GORMAN ROAD	9600	81000	73000	9900	83000	74000
07	005	LA	R	88.566		FRAZIER MOUNTAIN PARK ROAD	9900	83000	74000	9900	85000	76000
07	005	LA	R	88.605		LOS ANGELES/KERN COUNTY LINE	9900	85000	76000			
06	005	KER	R	0.000		LOS ANGELES/KERN COUNTY LINE				9000	93000	79000
06	005	KER		1.612		LEBEC ROAD	9400	97000	83000	9400	97000	83000
06	005	KER		5.020		FORT TEJON/DIGIER ROADS	9400	97000	83000	9400	97000	83000
06	005	KER		5.152	R	BEGIN RIGHT ALIGN				4750	49500	41500
06	005	KER		10.153	R	GRAPEVINE	4750	49500	41500	4750	49500	41500
06	005	KER		10.408	R	END RIGHT ALIGN	4750	49500	41500			
06	005	KER		5.152	L	BEGIN LEFT ALIGN				4750	49500	41500
06	005	KER		10.153	L	GRAPEVINE	4750	49500	41500	4750	49500	41500
06	005	KER		10.408	L	END LEFT ALIGN	4750	49500	41500			
06	005	KER		13.523		WHEELER RIDGE ROAD	9600	99000	85000	10000	99000	88000
06	005	KER	R	15.076	R	BEG RTE 5 CONN RT LNS				2100	22500	18700
06	005	KER	R	15.858	R	JCT. RTE. 99 NORTH	2100	22500	18700	2100	22600	18700
06	005	KER		16.317	R	END RIGHT ALIGN	2100	22600	18700			
06	005	KER	R	15.076	L	BEGIN LEFT ALIGN				2150	23300	19300
06	005	KER		16.245	L	END LEFT ALIGNMENT	2150	23300	19300			
06	005	KER		19.612		JCT. RTE. 166	5700	45000	38000	5100	43500	37500
06	005	KER		29.073		OLD RIVER ROAD	5100	43500	37000	5100	43500	37000
06	005	KER		33.489		JCT. RTE. 223	5100	43500	37000	5500	45000	38500
06	005	KER		38.793		JCT. RTE. 119	5500	45000	38500	5600	47000	39500
06	005	KER		41.193		JCT. RTE. 43	5600	47000	39500	5600	46500	39000
06	005	KER		47.546		STOCKDALE ROAD	5600	46500	39000	5400	49000	42000
06	005	KER		52.145		JCT. RTE. 58	5400	49000	42000	5600	47000	41000
06	005	KER		56.642		7TH STANDARD ROAD	5600	47000	41000	5500	45500	40000
06	005	KER		58.006		ROWLEE ROAD	5500	45500	40000	6200	49000	44000
06	005	KER		62.605		LERDO AVENUE	6200	49000	44000	5900	48500	42500
06	005	KER		73.017		JCT. RTE. 46	5900	48500	42500	5200	42000	38000
06	005	KER		82.347		TWISSELMAN ROAD	5200	42000	38000	5300	39500	38000
06	005	KER		87.025		KERN/KINGS COUNTY LINE	5300	39500	38000			
06	005	KIN		0.000		KERN/KINGS COUNTY LINE				5300	39500	38000
06	005	KIN		12.362		UTICA AVENUE	4550	39000	38000	5200	44000	38500
06	005	KIN		16.595		JCT. RTE. 41	5200	44000	38500	5500	44500	40000
06	005	KIN		26.724		KINGS/FRESNO COUNTY LINE	5300	45000	39000			
06	005	FRE		0.000		KINGS/FRESNO COUNTY LINE				5300	45000	39000
06	005	FRE		0.228		JCT. RTE. 269, LASSEN AVENUE	5300	45000	39000	5300	46000	39500
06	005	FRE		5.501		JAYNE AVENUE	5300	46000	39500	5300	46000	39500
06	005	FRE		14.873		JCT. RTE. 198	5300	46000	39500	5500	46500	41000
06	005	FRE		17.964		JCT. RTE. 33 SOUTH, JCT. RTE. 145 NORTH	5500	46500	41000	5300	45500	40000
06	005	FRE		29.955		JCT. RTE. 33 NORTH	5300	45500	40000	5300	45500	40000
06	005	FRE		38.359		KAMM AVENUE	5300	45500	40000	5600	44000	41000
06	005	FRE		45.798		MANNING AVENUE	5600	44000	41000	5500	46000	41500
06	005	FRE		48.990		PANOCHE ROAD	5500	46000	41500	5300	48500	40500
06	005	FRE		52.746		RUSSELL AVENUE	5300	48500	40500	5300	48500	40500
06	005	FRE		60.077		SHIELDS AVENUE	5300	48500	40500	5400	49000	41000
06	005	FRE		65.782		NEES AVENUE	5400	49000	41000	5700	52000	43500
06	005	FRE		66.159		FRESNO/MERCED COUNTY LINE	5700	52000	43500			
10	005	MER		0.000		FRESNO/MERCED COUNTY LINE				5600	45500	38000
10	005	MER		6.280		JCT. RTE. 165 NORTH	3900	35500	30000	5800	49500	41500
10	005	MER		17.578		JCT. RTE. 152	5800	49500	41500	4200	39000	34600
10	005	MER		21.839		JCT. RTE. 33	4200	39000	34600	3100	46000	43000
10	005	MER		23.600		NORTH OF ROUTE 33 @ SANTA NELLA TRUCK SCALES	4000	37000	32500	4600	46000	43000
10	005	MER		32.391		JCT. RTE. 140 EAST	4600	48000	43700	4150	43500	42300
10	005	MER		32.477		MERCED/STANISLAUS COUNTY LINE	4150	43500	42300			
10	005	STA		0.000		MERCED/STANISLAUS COUNTY LINE				3800	46500	45700
10	005	STA		5.505		STUHR ROAD	3800	45000	44100	3800	45000	44100
10	005	STA		10.719		FINK ROAD	3800	45000	44100	3800	45000	44100
10	005	STA		15.855		DEL PUERTO CANYON ROAD/SPERRY AVENUE	4150	46500	45200	4750	57000	51500
10	005	STA		22.992		INGRAM CREEK (HOWARD ROAD)	4750	57000	51500	4400	52000	45500
10	005	STA		28.055		STANISLAUS/SAN JOAQUIN COUNTY LINE	4400	52000	45500			
10	005	SJ		0.000		STANISLAUS/SAN JOAQUIN COUNTY LINE				4400	52000	45500
10	005	SJ		0.053		BEGIN RIGHT ALIGN	3500	50000	48000			
10	005	SJ		0.680	R	JCT. RTE. 580 WEST, RIGHT ALIGN				1800	27000	25000
10	005	SJ		1.035	R	END RIGHT ALIGN	1800	27000	25000			
10	005	SJ		0.053	L	BEGIN LEFT ALIGN, DUM SB ON FR RTE 580				1800	27000	25000
10	005	SJ		0.680	L	JCT. RTE. 580 WEST, LEFT ALIGN	1800	27000	25000	1800	27000	25000
10	005	SJ		1.100	L	END LEFT ALIGN, HOSPITAL CR BR	1800	27000	25000			

10	005	SJ		3.444	JCT. RTE. 132	4000	32000	30500	3050	35000	31400
10	005	SJ		6.467	JCT. RTE. 33 SOUTH	3050	35000	31400	2450	31500	27500
10	005	SJ		11.056	KASSON ROAD	2450	31500	27500	2200	25500	24900
10	005	SJ	R	11.801	OLD ROUTE 50; 11TH STREET	2200	25500	24900	3350	48500	47000
10	005	SJ	R	12.623	JCT. RTE. 205 WEST	3500	50000	49000	10100	157000	152000
10	005	SJ	R	14.834	JCT. RTE. 120 EAST	10100	157000	152000	9300	136000	129000
10	005	SJ	R	17.516	LATHROP ROAD	8500	119000	114500	13300	135000	133000
10	005	SJ	R	20.951	FRENCH CAMP OVERCROSSING	10300	104000	103000	10300	109000	107000
10	005	SJ	R	21.439	MATHEWS ROAD	10100	108000	105000	10100	108000	105000
10	005	SJ	R	22.508	FRENCH CAMP TURNPIKE	10100	108000	105000	11900	143000	140700
10	005	SJ		24.637	STOCKTON, EIGHTH STREET	10800	130000	128000	11600	141000	138000
10	005	SJ		25.365	STOCKTON, JCT. RTE. 4	13500	161000	152000	15400	149000	132000
10	005	SJ		26.185	STOCKTON, JCT. RTE. 4	14100	149000	132000	14100	149000	130000
10	005	SJ		26.991	PERSHING AVENUE	11600	136000	121000	11400	119000	116500
10	005	SJ		27.906	STOCKTON, MONTE DIABLO AVENUE	11500	134000	118000	12900	107000	94000
10	005	SJ		28.533	COUNTRY CLUB BOULEVARD	12900	107000	94000	13200	121000	106000
10	005	SJ		29.516	PLYMOUTH RD/RYDE AVE	13200	121000	106000	12900	125000	111000
10	005	SJ		29.990	STOCKTON, MARCH LANE	12900	125000	111000	11900	120000	106000
10	005	SJ		31.451	BENJAMIN HOLT DRIVE	11900	120000	106000	11500	112000	99000
10	005	SJ		32.664	STOCKTON, HAMMER LANE	13900	127000	119500	10300	78000	73000
10	005	SJ		35.302	ATHERTON/EIGHT MILE ROADS	10300	87000	74000	6700	80000	63000
10	005	SJ		39.573	JCT. RTE. 12	6500	83000	77300	4700	69000	66000
10	005	SJ		44.712	PELTIER ROAD	5200	67000	61000	5400	67000	61900
10	005	SJ		47.602	WALNUT GROVE ROAD	5100	60000	54300	5300	65000	57700
10	005	SJ		49.819	SAN JOAQUIN/SACRAMENTO COUNTY LINE	6400	60000	56600			
03	005	SAC		0.018	SAN JOAQUIN/SACRAMENTO COUNTY LINE				5000	63000	57400
03	005	SAC		2.130	TWIN CITIES ROAD	5000	63000	57400	5000	63000	57600
03	005	SAC		8.493	HOOD FRANKLIN ROAD	5000	63000	57600	6900	85000	77000
03	005	SAC		10.826	ELK GROVE BOULEVARD	6900	85000	77000	7800	98000	91000
03	005	SAC		12.037	LAGUNA BOULEVARD	7800	98000	91000	8800	104000	97800
03	005	SAC		16.147	SACRAMENTO, POCKET/MEADOWVIEW ROADS	8800	104000	97800	10000	124000	114800
03	005	SAC		17.185	SACRAMENTO, FLORIN ROAD	1000	124000	114800	11900	146000	141300
03	005	SAC		18.651	SACRAMENTO, 43RD AVENUE	11900	146000	141300	13300	172000	163500
03	005	SAC		19.304	SACRAMENTO, SEAMAS AVENUE	13300	172000	163500	13300	171000	161000
03	005	SAC		20.534	SACRAMENTO, SUTTERVILLE ROAD	13300	171000	161000	13600	170000	161500
03	005	SAC		22.565	SACRAMENTO, JCT. RTE. 50	13600	170000	161500	15200	203000	192700
03	005	SAC		23.177	SACRAMENTO, P/Q STREETS	15200	203000	192700	14800	202000	190200
03	005	SAC		23.799	SACRAMENTO, I STREET	14800	202000	190200	15300	206000	193600
03	005	SAC		24.645	SACRAMENTO, RICHARDS BOULEVARD	15300	206000	193600	16200	211000	202000
03	005	SAC		25.340	SACRAMENTO, GARDEN HIGHWAY	16200	211000	202000	15300	203000	193000
03	005	SAC		25.972	SACRAMENTO, WEST EL CAMINO AVENUE	15300	203000	193000	13500	181000	168400
03	005	SAC		26.722	SACRAMENTO, JCT. RTE. 80	13500	181000	169900	13000	169000	160700
03	005	SAC		29.022	SACRAMENTO, DEL PASO ROAD	10700	148000	136800	9900	141000	127200
03	005	SAC		29.907	SACRAMENTO, JCT. RTE. 99 NORTH	9900	141000	127200	6300	93000	85900
03	005	SAC		32.734	SACRAMENTO, AIRPORT BOULEVARD	6300	93000	85900	5100	62000	59900
03	005	SAC		34.652	SACRAMENTO/YOLO COUNTY LINE	5100	62000	59900			
03	005	YOL		0.000	SACRAMENTO/YOLO COUNTY LINE				5100	62000	59900
03	005	YOL		0.520	ELKHORN ROAD	5100	62000	59900	5300	67000	61000
03	005	YOL		5.530	COUNTY ROAD 102	5300	67000	61000	4400	55000	50000
03	005	YOL	R	6.510	WOODLAND, EAST MAIN STREET	4400	55000	50000	2600	32500	28600
03	005	YOL	R	7.086	WOODLAND, JCT. RTE. 113	2600	32500	28600	3400	45000	38200
03	005	YOL	R	8.262	WOODLAND, JCT. RTE. 113 NORTH	3400	45000	39400	3000	40000	33700
03	005	YOL	R	9.411	COUNTY ROAD 99, WEST STREET	3000	40000	33700	3000	34500	30400
03	005	YOL	R	10.807	JCT. RTE. 16	3000	34500	30400	2300	28000	25500
03	005	YOL	R	12.342	YOLO , COUNTY ROAD 17	2300	28000	25500	2100	26000	23200
03	005	YOL	R	17.616	ZAMORA , COUNTY ROAD 13	2100	26000	23200	2300	29500	25000
03	005	YOL	R	22.610	JCT. RTE. 505 SOUTH	2300	29500	25000	3800	44500	36300
03	005	YOL	R	23.787	COUNTY ROAD 8	3800	44500	36300	3700	42500	36000
03	005	YOL	R	25.572	COUNTY ROAD 6	3700	42500	36000	3600	41500	35500
03	005	YOL	R	28.920	YOLO/COLUSA COUNTY (COUNTY LINE ROAD)	3600	41500	35500			
03	005	COL	R	0.000	YOLO/COLUSA COUNTY (COUNTY LINE ROAD)				3500	40500	34800
03	005	COL	R	6.793	HILLGATE ROAD (MILEPOST EQUATION)	3500	40500	34800	3500	38500	33800
03	005	COL	R	7.700	NORTH ARBUCKLE	3500	38500	33800	3500	39500	35000
03	005	COL	R	10.305	HAHN ROAD	3500	39500	35000	3400	38500	32800
03	005	COL	R	15.911	HUSTED ROAD	3400	38500	32800	3450	37500	30500
03	005	COL	R	17.975	WILLIAMS, E STREET	3450	37500	29600	3400	38000	30800
03	005	COL	R	18.722	JCT. RTE. 20	3400	38000	30800	3050	34500	28700
03	005	COL	R	26.729	MAXWELL/COLUSA ROADS	3050	34500	28700	3000	35000	27900
03	005	COL	R	29.248	NORTH MAXWELL OVERHEAD	3000	35000	27900	3000	32500	27300
03	005	COL	R	31.839	DELEVAN ROAD	3000	32500	27300	3000	32500	27300
03	005	COL	R	34.365	COLUSA/GLENN COUNTY LINE	3000	32500	27300			
03	005	GLE	R	0.000	COLUSA/GLENN COUNTY LINE				3000	32500	27300
03	005	GLE	R	1.517	COUNTY ROAD 68	3000	32500	27300	2900	32000	27000
03	005	GLE	R	7.607	COUNTY ROAD 57	2900	32000	27000	2900	32500	26000
03	005	GLE	R	9.872	WILLOWS, JCT. RTE. 162	2900	32500	26000	3200	37500	29000
03	005	GLE	R	10.877	COUNTY ROAD 48;N/O JCT RTE 162	3200	37500	29000	3200	32500	29000
03	005	GLE	R	13.895	COUNTY ROAD 39	3200	32500	29000	3200	37500	29000
03	005	GLE	R	16.803	COUNTY ROAD 33	3200	37500	29000	3200	36500	29200

03	005	GLE	R	20.822	COUNTY ROAD 27	3200	36500	29200	2900	32500	28000
03	005	GLE	R	24.817	COUNTY ROAD 16	2900	32500	28000	3000	35500	29000
03	005	GLE	R	25.529	JCT. RTE. 32 EAST	3000	35500	29000	3050	34000	27400
03	005	GLE	R	27.812	COUNTY ROAD 7	3050	34000	27400	3050	34000	27400
03	005	GLE	R	28.821	GLENN/TEHAMA COUNTY LINE	3050	34000	27400			
02	005	TEH	R	0.000	GLENN/TEHAMA COUNTY LINE				3100	34000	29000
02	005	TEH	R	5.769	LIBERAL AVENUE	3100	34000	29000	3300	37000	31500
02	005	TEH	R	7.486	SOUTH AVENUE	3300	37000	31500	3350	38000	32500
02	005	TEH	R	8.975	CORNING ROAD	3350	38000	32500	3400	38500	33000
02	005	TEH	R	10.969	FINNELL AVENUE	3400	38500	33000	3400	38500	33000
02	005	TEH	R	13.965	GYLE ROAD	3400	38500	33000	3300	36500	31500
02	005	TEH	R	19.781	FLORES AVENUE	3300	36500	31500	3300	37000	32000
02	005	TEH	R	24.871	RED BLUFF, SOUTH MAIN STREET	3300	37000	32000	3600	41500	36000
02	005	TEH	R	24.942	RED BLUFF, DIAMOND AVENUE	3600	41500	36000	3850	45500	39500
02	005	TEH	R	26.525	RED BLUFF, JCT. RTE. 36	3850	45500	39500	4250	52000	45000
02	005	TEH	R	28.377	NORTH RED BLUFF	3800	44500	39000	4250	51000	45000
02	005	TEH		31.043	WILCOX ROAD	4250	51000	45000	4300	52000	45500
02	005	TEH		32.236	JELLYS FERRY ROAD	4300	52000	45500	4100	49000	43500
02	005	TEH		36.371	HOOKER CREEK ROAD	4100	49000	43500	4100	48500	42500
02	005	TEH		38.716	SUNSET HILLS DRIVE	4100	48500	42500	4100	48500	43000
02	005	TEH		41.525	BOWMAN ROAD	4100	48500	43000	4650	54000	48500
02	005	TEH		42.115	TEHAMA/SHASTA COUNTY LINE	4650	54000	48500			
02	005	SHA		0.000	TEHAMA/SHASTA COUNTY LINE				4650	54000	48500
02	005	SHA		0.909	FOURTH STREET	4650	54000	48500	4700	53000	48500
02	005	SHA		1.907	NORTH COTTONWOOD	4700	53000	48500	5200	58000	54000
02	005	SHA	R	3.830	JCT. RTE. 273 NORTH	5200	58000	54000	5300	48500	45500
02	005	SHA	R	4.289	ANDERSON, DESCHUTES ROAD	5300	48500	45500	5200	59000	55000
02	005	SHA	R	5.294	ANDERSON, BALLS FERRY ROAD	5200	59000	55000	5300	49500	46500
02	005	SHA	R	5.640	ANDERSON, NORTH STREET	5300	49500	46500	5200	59000	56000
02	005	SHA	R	6.743	RIVERSIDE AVENUE	5200	59000	56000	5200	60000	57000
02	005	SHA	R	9.772	KNIGHTON ROAD	5200	60000	57000	5300	63000	59000
02	005	SHA	R	12.152	CHURN CREEK ROAD	5300	63000	59000	5600	66000	63000
02	005	SHA	R	14.459	REDDING, CYPRESS STREET	5600	66000	63000	6200	74000	70000
02	005	SHA	R	15.448	REDDING, JCT. RTE. 44	6200	74000	70000	5400	65000	61000
02	005	SHA	R	17.322	REDDING, JCT. RTE. 299	5400	65000	61000	4500	53000	49000
02	005	SHA	R	18.068	REDDING, TWINVIEW BOULEVARD	4500	53000	49000	3900	45000	41000
02	005	SHA	R	18.481	REDDING, JCT. RTE. 273	3900	45000	41000	4350	53000	47500
02	005	SHA	R	19.402	REDDING, OASIS ROAD	4350	53000	47500	3850	46000	40000
02	005	SHA	R	20.995	PINE GROVE	3850	46000	40000	3450	41500	34500
02	005	SHA	R	22.144	JCT. RTE. 151 WEST	3450	41500	34500	2800	31000	24700
02	005	SHA	R	24.080	.8-MI. N/O MOUNTAIN GATE	2800	31000	24700	2650	29500	22600
02	005	SHA	R	26.035	FAWNDALE	2650	29500	22600	2600	28500	21700
02	005	SHA	R	27.632	BRIDGE BAY	2600	28500	21700	2550	27500	21200
02	005	SHA	R	29.315 R	TURNTABLE BAY ROAD, BEGIN RIGHT ALIGN	1300	13700	10600	1250	13600	21100
02	005	SHA	R	32.159 R	O' BRIEN, RIGHT ALIGN	1250	13600	10500	1250	13200	20700
02	005	SHA	R	34.498 R	END RIGHT ALIGN	1250	13200	10300			
02	005	SHA	R	29.285 L	TURNTABLE BAY UNDERCROSS, BEGIN LEFT ALIGN	1300	13800	10700	1300	13700	10600
02	005	SHA	R	32.040 L	O'BRIEN, LEFT ALIGN	1300	13700	10600	1300	13400	10400
02	005	SHA	R	34.355 L	END LEFT ALIGN	1300	13400	10400			
02	005	SHA	R	36.825	GILMAN ROAD	2500	27000	20600	2450	26000	20500
02	005	SHA	R	41.053	ANTLERS	2450	26000	20500	2400	24900	19500
02	005	SHA	R	42.316	LAKEHEAD	2400	24900	19500	2400	24700	19300
02	005	SHA	R	45.953	VOLLMERS ROAD	2400	24700	19300	2400	24500	19100
02	005	SHA	R	49.147	LA MOINE ROAD	2400	24500	19100	2400	24500	19100
02	005	SHA	R	50.813	POLLARD FLAT	2400	24500	19100	2400	24500	19000
02	005	SHA		52.900	GIBSON	2400	24500	19000	2400	24600	19100
02	005	SHA		57.410	SIMS ROAD	2400	24600	19100	2400	24700	19100
02	005	SHA		59.350	FLUME CREEK	2400	24700	19100	2400	24700	19100
02	005	SHA		60.508	CONANT ROAD	2400	24700	19100	2400	24700	19100
02	005	SHA		61.745	SWEETBRIER AVENUE	2400	24700	19100	2450	24800	19200
02	005	SHA		63.583	CASTELLA	2450	24800	19200	2500	25500	19400
02	005	SHA		65.413	SODA CREEK ROAD	2500	25500	19400	2500	25500	19600
02	005	SHA		66.842	CASTLE CRAGS DRIVE	2500	25500	19600	2600	26500	20100
02	005	SHA		67.019	SHASTA/SISKIYOU COUNTY LINE	2600	26500	20100			
02	005	SIS		0.000	SHASTA/SISKIYOU COUNTY LINE				2600	26500	20100
02	005	SIS		0.685	SOUTH DUNSMUIR	2600	26500	20100	2450	25500	19400
02	005	SIS		2.514	CENTRAL DUNSMUIR	2450	25500	19400	2850	28000	21300
02	005	SIS		3.841	DUNSMUIR, DUNSMUIR AVENUE	2850	28000	21300	2950	28500	21900
02	005	SIS		5.899	MOTT ROAD	2950	28500	21900	3050	29500	22400
02	005	SIS	R	8.475	JCT. RTE. 89	3050	29500	22400	2800	27500	21100
02	005	SIS	R	10.485	MOUNT SHASTA, LAKE STREET	2800	27500	21100	3050	29000	22300
02	005	SIS	R	12.062	NORTH MOUNT SHASTA	3050	29000	22300	3700	31000	25500
02	005	SIS	R	13.184 R	ABRAMS LAKE ROAD	1700	15500	12700	1700	15500	25300
02	005	SIS	R	13.189 L	ABRAMS LAKE ROAD	1700	15500	12600	1700	15500	12600
02	005	SIS	R	15.339	DEETZ ROAD	3650	31000	25500	3650	31000	25500
02	005	SIS	R	17.441	SOUTH WEED	3650	31000	25500	3300	29000	23300
02	005	SIS	R	19.070	JCT. RTE. 97 NORTH	3300	29000	23300	2000	20400	16500
02	005	SIS	R	19.856	JCT. RTE. 265	2000	20400	16500	2100	21400	17200

02	005	SIS	R	22.999		EDGEWOOD	2100	21400	17200	1950	20500	16500
02	005	SIS	R	31.178		LOUIE ROAD	1950	20600	16600	1950	20500	16600
02	005	SIS	R	38.207		GRENADA	1950	20500	16600	2100	22900	18600
02	005	SIS	R	42.508		KILLGORE HILLS ROAD	2100	22900	18600	2150	23300	18900
02	005	SIS	R	45.620		SOUTH YREKA	2150	23300	18900	2100	22500	18300
02	005	SIS	R	47.563		YREKA, MINER STREET	2100	22500	18300	2000	21000	17200
02	005	SIS	R	48.239		YREKA, JCT. RTE. 3	2000	21000	17200	1950	20100	15900
02	005	SIS	R	58.326	R	JCT. RTE. 96 WEST	950	9600	7600	950	9600	15100
02	005	SIS	R	58.326	L	JCT. RTE. 96 WEST	930	9400	7500	930	9400	7500
02	005	SIS	R	61.553		HENLEY WAY	2050	20600	16300	2050	20400	16300
02	005	SIS	R	62.921		DITCH CREEK ROAD	2050	20400	16300	2050	20400	16300
02	005	SIS	R	65.517	R	BAILEY HILL ROAD RT	1050	10300	8300	1050	10200	16400
02	005	SIS	R	65.524	L	BAILEY HILL ROAD LT	1050	10200	8100	1050	10000	8100
02	005	SIS	R	68.328		HILT ROAD	2050	20100	16300	2100	20600	16700
02	005	SIS	R	69.293		OREGON STATE LINE	2100	20600	16700			
09	006	INY		0.000		JCT. RTE. 395				380	4200	4000
09	006	INY	R	1.429		5 BRIDGES RD	240	2700	2600	240	2700	2600
09	006	INY	R	3.952		SILVER CANYON ROAD	230	2550	2400	220	2450	2300
09	006	INY		8.354		INYO/MONO COUNTY LINE	210	2400	2100			
09	006	MNO		0.000		INYO/MONO COUNTY LINE				210	2400	2100
09	006	MNO		25.715		BENTON STATION, JCT. RTE. 120 WEST	120	1300	1100	100	1100	900
09	006	MNO		32.290		NEVADA STATE LINE	130	1300	1150			
11	007	IMP	S	0.000		BEGIN SPUR RTE 7 AT U.S. CUSTOMS STATION				1500	18700	17600
11	007	IMP	S	0.239		MENVIELLE ROAD	1500	18700	17600	980	12400	11700
11	007	IMP	S	0.449		JCT RTE 7	730	9500	9000	730	9500	9000
11	007	IMP	S	0.536		END SPUR RTE 7; BEGIN RTE 7, U.S./MEXICO INT'L BNDRY	440	5500	5100			
11	007	IMP		0.000		END SPUR RTE 7; BEGIN RTE 7, U.S./MEXICO INT'L BNDRY				240	3050	2750
11	007	IMP		0.040		POE TRUCKS COMM VEHICLE INSPECTION	240	3050	2750	230	2900	2650
11	007	IMP		0.264		CALEXICO VEHICLE INSPECTION	230	2900	2650	570	7300	6900
11	007	IMP		0.672		MAGGIO ROAD	770	10300	9400	560	7700	7500
11	007	IMP		1.188		CALEXICO, JCT RTE 98	560	7700	9300	750	8000	7600
11	007	IMP		6.718		JCT. RTE. 8	700	7500	7200	270	3900	3850
11	007	IMP		6.823		END OF RTE 7	270	3900	3850			
11	008	SD	T	0.407		SAN DIEGO, SUNSET CLIFFS BOULEVARD				890	13100	12500
11	008	SD	T	0.466		EB RIGHT TURN FR NIMITZ BLVD	960	14100	13500	3900	51000	48000
11	008	SD	L	1.213		MIDWAY DRIVE	3900	51000	48000	8000	110000	99000
11	008	SD	L	2.379		JCT RTE 5 LT LANES	8000	110000	99000	10800	141000	130000
11	008	SD	R	0.364		SAN DIEGO, MORENA BOULEVARD	10800	141000	130000	14300	200000	182000
11	008	SD		0.946		HOTEL CIRCLE/TAYLOR STREET	14300	200000	182000	14900	214000	199000
11	008	SD		2.230		SAN DIEGO, HOTEL CIRCLE	14900	214000	199000	17500	232000	215000
11	008	SD		2.410		SAN DIEGO, JCT. RTE. 163	17500	232000	215000	17900	238000	221000
11	008	SD		3.040		SAN DIEGO, MISSION CENTER ROAD	17900	238000	221000	19300	254000	237000
11	008	SD		3.902		SAN DIEGO, TEXAS STREET	19300	254000	237000	17100	226000	210000
11	008	SD		4.378		SAN DIEGO, JCT. RTE. 805	17100	226000	210000	18200	246000	241000
11	008	SD		5.638		JCT. RTE. 15	18200	246000	241000	17000	223000	219000
11	008	SD		6.271		SAN DIEGO, FAIRMOUNT AVENUE	17000	223000	219000	19200	247000	242000
11	008	SD		7.060		SAN DIEGO, WARING ROAD	19200	247000	242000	17300	238000	228000
11	008	SD		8.336		COLLEGE AVENUE	17300	238000	228000	15700	206000	200000
11	008	SD		9.591		LA MESA, LAKE MURRAY BOULEVARD	15700	206000	200000	16100	209000	205000
11	008	SD		10.570		FLETCHER PARKWAY	15600	202000	198000	14700	189000	187000
11	008	SD		10.967		SPRING STREET	14200	182000	180000	16000	204000	200000
11	008	SD		11.101		LA MESA, EL CAJON BOULEVARD	16000	204000	200000	14000	191000	189000
11	008	SD		11.764		JACKSON DRIVE	14000	191000	189000	15200	190000	186000
11	008	SD		12.240		LA MESA, JCT. RTE. 125 SOUTH	15200	190000	186000	19100	239000	229000
11	008	SD		12.654		LA MESA, SEVERIN/ FUERTE DRIVES	19100	239000	229000	17900	255000	246000
11	008	SD		13.658		EL CAJON, EL CAJON BOULEVARD	17900	255000	246000	14300	180000	178000
11	008	SD		14.594		WEST MAIN STREET	14300	180000	178000	13600	174000	170000
11	008	SD		15.300		EL CAJON, JOHNSON AVENUE	13600	174000	170000	11900	155000	151000
11	008	SD		15.800		EL CAJON, JCT. RTE. 67 NORTH	11900	155000	151000	9500	121000	118000
11	008	SD		16.467		EL CAJON, MOLLISON AVENUE	9500	121000	118000	8000	109000	103000
11	008	SD		17.360		EL CAJON, JCT. RTE. 54 SOUTH	8000	109000	103000	5300	70000	67000
11	008	SD		17.829		EL CAJON, EAST MAIN STREET	5300	70000	67000	8000	103000	99000
11	008	SD	R	18.727		GREENFIELD DRIVE	8000	103000	99000	7400	90000	88000
11	008	SD	R	20.041		LOS COCHES UC	7400	90000	88000	6000	84000	80000
11	008	SD	R	21.508		LOS COCHES CRK BRIDGE	6000	84000	80000	6000	84000	80000
11	008	SD	R	21.815		HARRITT ROAD / LAKE JENNINGS PARK ROAD	6000	84000	80000	5300	65000	64000
11	008	SD	R	25.685		HARBISON CANYON	5300	65000	64000	5200	61000	60000
11	008	SD	R	28.464		TAVERN ROAD	5200	61000	60000	3600	42500	42000
11	008	SD	R	31.343		WEST WILLOWS ROAD	3600	42500	42000	2550	31500	31000
11	008	SD	R	34.326		EAST WILLOWS ROAD	2550	31500	31000	2500	30500	30000
11	008	SD	R	43.532		PINE VALLEY ROAD	3400	30500	27500	2700	26500	25000
11	008	SD	R	44.931		SUNRISE HIGHWAY (LUGUNA JUNCTION)	2700	26500	25000	2700	26000	23800
11	008	SD	R	48.842	R	BUCKMAN SPRINGS RD , BUCKMAN SPRINGS SRR AREA	1400	13100	11900	1400	13100	11900
11	008	SD	R	48.859	L	Buckman Springs Road	1400	13100	11900	1400	13100	11900
11	008	SD	R	51.980		CAMERON ROAD	2350	18400	16900	2450	20400	18000
11	008	SD	R	61.147	R	CRESTWOOD ROAD, RIGHT ALIGN	1200	10200	9000	1200	8500	7700
11	008	SD	R	61.183	L	CRESTWOOD ROAD UC- LEFT ALIGN	1200	10200	9000	1200	10200	9000
11	008	SD	R	65.904		JCT. RTE. 94 SOUTH	2300	19600	17100	2250	20600	17500

11	008		SD	R	73.951	CARRIZO GORGE	2250	20600	17600	2050	21800	19300
11	008		SD	R	77.576	IN KO PAH	2050	21800	19300	2050	21100	19600
11	008		SD	R	77.765 R	SAN DIEGO/IMPERIAL COUNTY LINE, RIGHT ALIGN	930	9400	8700			
11	008		SD	R	77.770 L	SAN DIEGO/IMPERIAL COUNTY LINE, LEFT ALIGN	930	9500	8700			
11	008		IMP	R	0.000 R	SAN DIEGO/IMPERIAL COUNTY LINE, RIGHT ALIGN				1700	8600	8000
11	008		IMP	R	0.000 L	SAN DIEGO/IMPERIAL COUNTY LINE, LEFT ALIGN				1700	8600	8000
11	008		IMP	R	3.091 R	MOUNTAIN SPRINGS ROAD, RIGHT ALIGN	840	8500	7900	840	8500	7900
11	008		IMP	R	3.048 L	MOUNTAIN SPRINGS ROAD, LEFT ALIGN	680	8600	8000	680	8600	8000
11	008		IMP	R	10.010	JCT. RTE. 98	2150	18700	15800	2000	16900	14200
11	008		IMP	R	11.918	OCOTILLO, IMPERIAL HIGHWAY	2000	16900	14200	2000	16900	14200
11	008		IMP	R	23.480	DUNAWAY ROAD	2100	17200	14600	2000	14400	14300
11	008		IMP	R	29.933	DREW ROAD	2000	14400	14300	2300	17400	15900
11	008		IMP	R	33.991	FORRESTER ROAD	2300	17400	15900	2200	20100	17600
11	008		IMP	R	36.973	IMPERIAL AVENUE	2200	20100	17600	4000	36000	33000
11	008		IMP	R	37.972	JCT. RTE. 86	4000	36000	33000	4250	36000	35000
11	008		IMP	R	38.964	DOGWOOD ROAD	4250	36000	35000	3100	35000	32500
11	008		IMP	R	40.944	JCT. RTE. 111	3100	35000	32500	1800	20900	19700
11	008		IMP	R	42.539	BOWKER ROAD	1800	20900	19700	1700	19000	17900
11	008		IMP	R	47.783	JCT RTE 7	1700	19000	17900	1250	13300	12800
11	008		IMP	R	50.492	BONDS CORNER ROAD	1250	13300	12800	1150	12900	12600
11	008		IMP	R	53.497	JCT. RTE. 115 NORTH	1150	12900	12600	1900	16600	10900
11	008		IMP	R	65.752	EAST JCT. RTE. 98 WEST	1900	16600	13800	2300	17900	15500
11	008		IMP	R	68.827	EXPERIMENTAL FARM , BROCK RESEARCH CENTER	2300	17900	15500	2350	18300	15600
11	008		IMP	R	73.477	GORDON WELL ROAD	2350	18300	15600	2400	18600	16100
11	008		IMP	R	83.821	OGILBY ROAD	2450	19700	16600	2550	19900	17300
11	008		IMP	R	88.701	SIDEWINDER ROAD	2550	19900	17300	2650	20200	17600
11	008		IMP	R	90.740	JCT. RTE. 186 SOUTH	2650	20200	17600	3400	28000	23400
11	008		IMP	R	94.979	WINTERHAVEN DRIVE	3400	28000	23400	2700	30500	24100
11	008		IMP	R	96.546	4TH AVENUE	2700	30500	24100	2350	26000	21400
11	008		IMP	R	96.986	ARIZONA STATE LINE	2350	26000	21400			
05	009		SCR		0.046	SANTA CRUZ, JCT. RTE. 1				2800	29500	24600
05	009		SCR		0.630	SANTA CRUZ, NORTH CITY LIMITS	540	5600	5100	540	5600	5100
05	009		SCR		5.640	FELTON, SAN LORENZO AVENUE	780	6600	5900	980	7900	7100
05	009		SCR		6.460	FELTON, GRAHAM HILL ROAD	1600	12600	11400	2000	19700	19500
05	009		SCR		8.110	BEN LOMOND, GLEN ARBOR ROAD	1900	18900	18300	1700	15100	13800
05	009		SCR		9.711	BEN LOMOND, SAN LORENZO RIVER BRIDGE	1800	15500	14300	1800	15300	14300
05	009		SCR		11.300	BROOKDALE, ALAMEDA AVENUE	1800	15300	14300	1300	11200	10700
05	009		SCR		13.037	BOULDER CREEK, SOUTH JCT. RTE. 236	1100	12600	11200	1900	16800	16500
05	009		SCR		13.240	BEAR CREEK ROAD	1900	16800	16500	1600	10100	10000
05	009		SCR		15.340	KINGS CREEK ROAD	1600	8100	7900	1400	6600	6400
05	009		SCR	R	20.858	WATERMAN GAP, NORTH JCT. RTE. 236	360	2700	2600	420	3300	3100
05	009		SCR		27.094	JCT. RTE. 35	420	4200	3400			
04	009		SCL		0.000	JCT. RTE. 35				510	4000	3700
04	009		SCL		4.890	SANBORN ROAD	600	4100	3500	800	5400	4700
04	009		SCL		5.710	SARATOGA, PIERCE ROAD	800	5300	4700	1100	7700	6800
04	009		SCL		7.090	SARATOGA, SIXTH STREET	1100	7600	6800	1200	8100	7200
04	009		SCL	R	7.400	SARATOGA, JCT. RTE. 85 NORTH	1500	15500	14100	1300	13800	12600
04	009		SCL		8.840	SARATOGA, FRUITVALE AVENUE	1100	11100	10100	1400	15100	13800
04	009		SCL		9.880	QUITO ROAD	1400	14600	13400	1800	20100	18400
04	009		SCL		11.060	LOS GATOS, SANTA CRUZ AVENUE	2600	29500	27300	3200	37500	34700
04	009		SCL		11.448	LOS GATOS, JCT. RTE. 17	3000	36500	33600			
07	010		LA	S	0.655	LOS ANGELES, JCT. RTE. 5	7500	94000	90000	13300	209000	198000
07	010		LA	R	2.155	SANTA MONICA, JCT. RTE. 1	13300	209000	198000	11500	154000	150000
07	010		LA	R	3.210	SANTA MONICA, CLOVERFIELD BOULEVARD	11500	154000	150000	14400	192000	188000
07	010		LA	R	4.242	SANTA MONICA, CENTINELA AVENUE/PICO BOULEVARD	14400	192000	188000	14400	199000	194000
07	010		LA	R	4.510	LOS ANGELES, BUNDY DRIVE	14400	199000	194000	17200	244000	238000
07	010		LA	R	5.454	LOS ANGELES, JCT. RTE. 405	17200	244000	238000	18300	255000	251000
07	010		LA	R	6.402	LOS ANGELES, OVERLAND AVENUE	18300	255000	251000	15900	249000	247000
07	010		LA	R	7.207	LOS ANGELES, NATIONAL BOULEVARD	15900	249000	247000	17400	265000	263000
07	010		LA	R	7.915	LOS ANGELES, ROBERTSON BOULEVARD	17400	265000	263000	17700	261000	260000
07	010		LA	R	8.965	LOS ANGELES, JCT. RTE. 187	17700	261000	260000	20000	284000	280000
07	010		LA	R	10.430	LOS ANGELES, LA BREA AVENUE	20000	284000	280000	22100	305000	294000
07	010		LA	R	11.391	LOS ANGELES, CRENSHAW BOULEVARD	22100	305000	294000	23200	327000	322000
07	010		LA	R	12.319	LOS ANGELES, ARLINGTON AVENUE	23200	327000	322000	23400	353000	336000
07	010		LA	R	12.820	LOS ANGELES, WESTERN AVENUE	23400	353000	336000	24000	365000	347000
07	010		LA	R	13.303	LOS ANGELES, NORMANDIE AVENUE	24000	365000	347000	24300	371000	354000
07	010		LA	R	13.803	LOS ANGELES, VERMONT AVENUE	24300	371000	354000	24600	375000	355000
07	010		LA		14.250	LOS ANGELES, HOOVER STREET	24600	375000	355000	24500	370000	350000
07	010		LA		14.836	LOS ANGELES, JCT. RTE. 110	24500	370000	350000	20300	265000	259000
07	010		LA		15.800	LOS ANGELES, LOS ANGELES STREET	20300	265000	259000	20600	267000	260000
07	010		LA		16.380	LOS ANGELES, SAN PEDRO STREET/CENTRAL AVE	20600	267000	260000	22600	295000	286000
07	010		LA		17.350	LOS ANGELES, ALAMEDA STREET	22900	295000	286000	23700	303000	294000
07	010		LA		17.710	LOS ANGELES, SANTA FE AVENUE	23700	303000	294000	25500	320000	311000
07	010		LA		18.394	LOS ANGELES, JCT. RTE. 101	25500	320000	311000	7500	94000	90000
07	010		LA		18.394	BREAK IN ROUTE						
07	010	S	LA		16.968	LOS ANGELES, BEGIN BUSWAY AT ALAMEDA STREET				830	9000	8600
07	010	S	LA		17.500	LOS ANGELES, JCT. RTE. 101	830	9000	8600	1400	13400	12400
07	010	S	LA		18.410	LOS ANGELES, JCT. RTE. 5	1400	13400	12400	1700	14900	13700

07	010	S	LA	21.415	ALHAMBRA, JCT. RTE. 710	1700	14900	13700	3350	35500	35000
07	010	S	LA	25.208	ALHAMBRA, DEL MAR AVENUE	3350	35500	35000	2650	33000	32000
07	010	S	LA	28.190	EL MONTE, CONNECTIONS TO SAN BERNARDINO FREEWAY	2650	33000	32000	60	690	680
07	010	S	LA	28.613	EL MONTE, EL MONTE BUS STA/SANTA ANITA, END BUS	60	690	680			
07	010	S	LA	19.071	BREAK IN ROUTE						
07	010		LA	19.072	LOS ANGELES, SOTO STREET	13300	209000	198000	14600	228000	218000
07	010		LA	20.222	CITY TERRACE DRIVE	14600	228000	218000	13900	218000	208000
07	010		LA	21.382	MONTEREY PARK, JCT. RTE. 710	13900	218000	208000	12800	206000	203000
07	010		LA	22.312	ALHAMBRA, FREMONT AVENUE	12800	206000	203000	13100	211000	209000
07	010		LA	23.326	ALHAMBRA, ATLANTIC BOULEVARD	13100	211000	209000	13200	214000	211000
07	010		LA	23.985	ALHAMBRA, GARFIELD AVENUE	13200	214000	211000	13800	224000	221000
07	010		LA	24.831	MONTEREY PARK, NEW AVENUE	13800	224000	221000	14000	230000	227000
07	010		LA	25.327	SOUTH SAN GABRIEL, DEL MAR AVENUE	14000	230000	227000	13800	228000	225000
07	010		LA	25.837	ROSEMEAD, SAN GABRIEL BOULEVARD	13800	228000	225000	13500	224000	220000
07	010		LA	26.340	ROSEMEAD, WALNUT GROVE AVENUE	13500	224000	220000	13400	222000	219000
07	010		LA	26.857	EL MONTE, JCT. RTE. 164	13400	222000	219000	14800	214000	205000
07	010		LA	27.963	EL MONTE, TEMPLE CITY BOULEVARD/BALDWIN AVENUE	14800	214000	205000	16900	246000	236000
07	010		LA	28.673	EL MONTE, SANTA ANITA AVENUE	16900	246000	236000	16700	243000	233000
07	010		LA	29.545	EL MONTE, VALLEY BOULEVARD/PECK ROAD	16700	243000	233000	15500	231000	222000
07	010		LA	30.581	EL MONTE, GARVEY AVENUE	15500	231000	222000	16500	246000	235000
07	010		LA	31.151	BALDWIN PARK, JCT. RTE. 605	16500	246000	235000	15200	243000	222000
07	010		LA	31.540	BALDWIN PARK, BESS AVENUE/ FRAZIER STREET	15200	243000	222000	13800	221000	202000
07	010		LA	32.218	BALDWIN PARK, BALDWIN PARK BOULEVARD	13800	221000	202000	13100	210000	191000
07	010		LA	32.657	BALDWIN PARK, FRANCISQUITO AVENUE	13100	210000	191000	11800	189000	172000
07	010		LA	33.351	BALDWIN PARK, PUENTE AVENUE	11800	189000	172000	12000	192000	174000
07	010		LA	34.457	WEST COVINA, ORANGE/ PACIFIC AVENUES	12000	192000	174000	12900	205000	187000
07	010		LA	35.402	WEST COVINA, CALIFORNIA/VINCENT AVENUES	12900	205000	187000	13900	219000	200000
07	010		LA	36.500	WEST COVINA, AZUSA AVENUE	13900	219000	200000	15300	240000	219000
07	010		LA	37.480	WEST COVINA, CITRUS STREET	15300	240000	219000	15600	241000	221000
07	010		LA	38.008	WEST COVINA, BARRANCA STREET	15600	241000	221000	15500	234000	224000
07	010		LA	38.509	WEST COVINA, GRAND AVENUE	15500	234000	224000	15000	224000	215000
07	010		LA	38.969	WEST COVINA, HOLT AVENUE	15000	224000	215000	15200	226000	217000
07	010		LA	40.457	VIA VERDE	15200	226000	217000	15200	224000	216000
07	010		LA	42.443	POMONA, JCT. RTES. 57/71	15200	224000	216000	19400	275000	266000
07	010		LA	43.658	POMONA, FAIRPLEX DRIVE	19400	275000	266000	19200	276000	267000
07	010		LA	44.185	POMONA, DUDLEY STREET	19200	276000	267000	19000	277000	268000
07	010		LA	45.277	POMONA, WHITE AVENUE	19000	277000	268000	18100	269000	259000
07	010		LA	45.726	POMONA, GAREY AVENUE	18100	269000	259000	18800	284000	273000
07	010		LA	46.405	POMONA, TOWNE AVENUE	18800	284000	273000	18300	290000	278000
07	010		LA	47.737	POMONA, INDIAN HILL BOULEVARD	18300	290000	278000	19300	289000	278000
07	010		LA	48.265	LOS ANGELES/SAN BERNARDINO COUNTY LINE	19300	289000	278000			
08	010		SBD	0.000	LOS ANGELES/SAN BERNARDINO COUNTY LINE				19300	289000	278000
08	010		SBD	0.681	MONTCLAIR, MONTE VISTA AVENUE	17700	259000	248000	17600	257000	246000
08	010		SBD	1.229	MONTCLAIR, CENTRAL AVENUE	17600	257000	246000	18100	264000	253000
08	010		SBD	2.370	UPLAND, MOUNTAIN AVENUE	18000	263000	252000	18100	264000	253000
08	010		SBD	3.468	UPLAND, JCT. RTE. 83	18100	264000	253000	17200	273000	256000
08	010		SBD	5.238	ONTARIO, FOURTH STREET	17200	273000	256000	17100	271000	254000
08	010		SBD	6.097	ONTARIO, VINEYARD AVENUE	17100	271000	254000	16900	269000	252000
08	010		SBD	7.158	ONTARIO, ARCHIBALD AVENUE	16900	269000	252000	17900	284000	266000
08	010		SBD	8.161	ONTARIO, HAVEN AVENUE	17900	284000	266000	17900	284000	266000
08	010		SBD	9.176	ONTARIO, MILLIKEN AVENUE	17300	268000	260000	17500	272000	264000
08	010		SBD	9.936	ONTARIO, JCT. RTE. 15	17500	272000	264000	16600	258000	250000
08	010		SBD	11.132	ETIWANDA AVENUE	16600	258000	250000	14100	219000	213000
08	010		SBD	13.169	FONTANA, CHERRY AVENUE	14200	220000	214000	13700	217000	210000
08	010		SBD	15.180	CITRUS AVENUE	13700	217000	210000	13500	214000	208000
08	010		SBD	16.220	FONTANA, SIERRA AVENUE	13600	214000	208000	13400	206000	200000
08	010		SBD	R 18.492	BLOOMINGTON, CEDAR AVENUE	13300	206000	200000	13000	202000	196000
08	010		SBD	19.972	RIALTO, RIVERSIDE AVENUE	13100	202000	196000	13300	202000	197000
08	010		SBD	20.965	PEPPER AVENUE	13300	202000	197000	13500	203000	198000
08	010		SBD	R 21.961	COLTON, RANCHO AVENUE	13500	203000	198000	13500	205000	200000
08	010		SBD	R 22.616	COLTON, LA CADENA DRIVE/ NINTH STREET	13500	204000	200000	13800	208000	204000
08	010		SBD	R 23.248	COLTON, MOUNT VERNON AVENUE	13800	208000	204000	13600	204000	200000
08	010		SBD	R 24.240	COLTON, JCT. RTE. 215	13600	204000	200000	15700	235000	230000
08	010		SBD	25.261	WATERMAN AVENUE	15700	235000	230000	13900	209000	205000
08	010		SBD	26.272	TIPPECANOE AVENUE	13900	209000	205000	13500	202000	198000
08	010		SBD	27.296	MOUNTAIN VIEW AVENUE	13500	202000	198000	13200	198000	194000
08	010		SBD	28.300	CALIFORNIA STREET	13200	198000	194000	13100	195000	191000
08	010		SBD	29.313	ALABAMA STREET OC	12900	193000	189000	12300	184000	180000
08	010		SBD	30.899	REDLANDS, JCT. RTE. 38 NORTH	12300	184000	180000	10400	155000	152000
08	010		SBD	31.012	REDLANDS, SIXTH STREET	10400	155000	152000	12700	184000	176000
08	010		SBD	31.874	REDLANDS, UNIVERSITY STREET	12700	184000	176000	10900	157000	150000
08	010		SBD	32.111	REDLANDS, CYPRESS AVENUE	10900	157000	150000	11200	162000	155000
08	010		SBD	33.128	REDLANDS, FORD STREET/ MORRISON AVENUE	11200	162000	155000	10200	147000	141000
08	010		SBD	33.291	REDLANDS, REDLANDS BOULEVARD	10200	147000	141000	11100	160000	153000
08	010		SBD	34.288	REDLANDS, WABASH AVENUE	11100	160000	153000	11200	162000	155000
08	010		SBD	35.500	YUCAIPA BOULEVARD	11200	162000	155000	9500	132000	126000
08	010		SBD	R 37.029	LIVE OAK CANYON ROAD	9500	132000	126000	9200	129000	124000
08	010		SBD	R 39.160	SAN BERNARDINO/RIVERSIDE COUNTY LINE	9200	129000	124000			

08	010	RIV	R	0.000	SAN BERNARDINO/RIVERSIDE COUNTY LINE				9200	129000	124000
08	010	RIV	R	0.020	COUNTY LINE ROAD	9200	129000	124000	8700	122000	117000
08	010	RIV	R	0.860	CALIMESA BOULEVARD	8700	122000	117000	8900	125000	120000
08	010	RIV	R	1.923	SINGLETON ROAD	8900	125000	120000	9000	126000	121000
08	010	RIV	R	3.048	CHERRY VALLEY BOULEVARD	9000	126000	121000	8300	116000	112000
08	010	RIV	R	5.534	SAN TIMOTEO CANYON ROAD	8300	116000	112000	8000	112000	108000
08	010	RIV		6.670	JCT. RTE. 60 WEST	8000	112000	108000	11000	143000	133000
08	010	RIV		7.574	BEAUMONT, JCT. RTE. 79 SOUTH	11000	143000	133000	11000	143000	133000
08	010	RIV		8.205	PENNSYLVANIA AVENUE	11000	143000	133000	11600	150000	140000
08	010	RIV		9.307	HIGHLAND SPRINGS AVENUE	11600	150000	140000	11200	145000	135000
08	010	RIV		11.333	BANNING, SUNSET AVENUE	11200	145000	135000	10900	142000	132000
08	010	RIV	R	11.962	22ND STREET	10900	142000	132000	10800	140000	130000
08	010	RIV		12.853	BANNING, JCT RTE 243	10800	140000	130000	12300	148000	136000
08	010	RIV		13.859	BANNING, HARGRAVE STREET	11900	142000	131000	11000	133000	122000
08	010	RIV	R	14.760	EAST RAMSEY STREET	11000	133000	122000	11300	136000	125000
08	010	RIV	R	16.544	RESERVATION ROAD/FIELDS ROAD	11300	136000	125000	10600	127000	117000
08	010	RIV	R	17.657	APACHE TRAIL ROAD	10600	127000	117000	9400	113000	104000
08	010	RIV	R	19.398	CABAZON, EAST CABAZON ; MAIN STREET	9400	113000	104000	9900	118000	109000
08	010	RIV	R	24.554	VERBENIA AVENUE	10300	124000	114000	10300	124000	114000
08	010	RIV	R	25.201	JCT. RTE. 111	10300	124000	114000	8700	104000	96000
08	010	RIV		27.229	WHITEWATER	8700	104000	96000	8700	104000	96000
08	010	RIV		29.691	JCT. RTE. 62 NORTH	8700	104000	96000	7700	95000	86000
08	010	RIV		33.129	INDIAN AVENUE	7700	95000	86000	7800	95000	86000
08	010	RIV		36.138	PALM DRIVE/GENE AUTRY TRAIL	8000	97000	88000	8500	103000	94000
08	010	RIV		39.493	DATE PALM DRIVE	8500	103000	94000	9000	111000	101000
08	010	RIV		43.358	RAMON ROAD	9000	111000	101000	9500	117000	106000
08	010	RIV		44.505	MONTEREY AVENUE	9600	118000	106000	9700	119000	107000
08	010	RIV		46.890	COOK STREET	9700	119000	107000	9400	117000	105000
08	010	RIV		50.447	WASHINGTON STREET	9400	117000	105000	8400	104000	93000
08	010	RIV	R	52.342	JEFFERSON STREE/INDIO BOULEVARD	8400	104000	93000	7100	81000	76000
08	010	RIV	R	54.738	INDIO, MONROE STREET	7100	81000	76000	6500	74000	69000
08	010	RIV	R	55.744	INDIO, JACKSON STREET	6500	74000	69000	5900	68000	64000
08	010	RIV	R	56.946	INDIO, NORTH JCT. RTE. 111	6000	68000	64000	5400	62000	58000
08	010	RIV	R	57.831	INDIO, JCT. RTE. 86 SOUTH	5400	62000	58000	4050	33500	29000
08	010	RIV	R	58.916	COACHELLA, DILLON ROAD	4050	33500	29000	3650	28500	27800
08	010	RIV	R	81.548	COTTONWOOD SPRINGS ROAD	3650	28500	27800	3600	28000	27300
08	010	RIV	R	86.073	CHIRIACO SUMMIT	3600	28000	27300	3600	28000	27300
08	010	RIV	R	90.119	HAYFIELD ROAD	3600	28000	27300	3600	28000	27300
08	010	RIV	R	95.049	EAGLE MOUNTAIN RAILROAD OVERHEAD/RED CLOUD RD	3600	28000	27300	3600	28000	27300
08	010	RIV	R	102.014	EAGLE MOUNTAIN ROAD	3600	28000	27300	3600	28000	27300
08	010	RIV	R	105.087	JCT. RTE. 177 NORTH	3600	28000	27300	3500	27000	26400
08	010	RIV	R	114.402	CORN SPRINGS ROAD	3500	27000	26400	3500	27500	26500
08	010	RIV	R	129.935	FORD DRY LAKE / CHUCKAWALLA ROAD	3500	27500	26500	3500	27500	26500
08	010	RIV	R	135.049	WILEY'S WELL SAFETY REST AREA, WILEY'S WELL RD	3500	27500	26500	3700	29000	28000
08	010	RIV	R	145.118	MESA DRIVE	3700	29000	28000	3700	29000	28000
08	010	RIV	R	149.150	JCT. RTE. 78 SOUTH	3700	29000	28000	3400	32000	29000
08	010	RIV	R	152.152	BLYTHE, LOVEKIN BOULEVARD	3300	31000	28000	3350	31000	28300
08	010	RIV	R	153.155	BLYTHE, SEVENTH AVENUE	3350	31000	28300	3400	32000	29000
08	010	RIV	R	154.167	JCT. RTE. 95 NORTH	3400	32000	29000	3650	33000	30500
08	010	RIV	R	156.100	RIVIERA DRIVE	3650	33000	30500	3650	33000	30500
08	010	RIV	R	156.492	ARIZONA STATE LINE	3650	33000	30500			
11	011	SD		0.137 L	BEG LEFT ALIGN				370	3700	3350
11	011	SD		0.481 L	END LEFT ALIGN	370	3700	3350			
11	011	SD		0.000 R	BEG RIGHT ALIGN				390	4050	3700
11	011	SD		0.481 R	END RIGHT ALIGN	390	4050	3700			
11	011	SD		0.745	SANYO AVE	760	7800	7100	850	8500	7700
11	011	SD		1.401	END ROUTE 11	850	8500	7700			
04	012	SON		9.230	SEBASTOPOL, JCT. RTE. 116				2400	23300	22500
04	012	SON		9.540	SEBASTOPOL EAST CITY LIMITS	2400	23300	22500	3400	33200	32200
04	012	SON	R	12.940	WRIGHT/FULTON ROADS	3400	33000	32200	4300	43000	41000
04	012	SON	R	14.450	SANTA ROSA, STONY POINT ROAD	4300	43000	41000	7200	72000	69300
04	012	SON	R	15.300	SANTA ROSA, DUTTON AVENUE	7200	72000	69300	8300	84000	81000
04	012	SON	R	16.039	SANTA ROSA, JCT. RTE. 101	8300	84000	81000	7800	79000	76100
04	012	SON	R	16.630	SANTA ROSA, BENNETT VALLEY ROAD	7800	79000	76100	5700	58000	55600
04	012	SON	R	17.081	SANTA ROSA, BROOKWOOD/ MAPLE AVENUES	5700	58000	55600	6600	66000	64400
04	012	SON	T	17.530	SANTA ROSA, FARMERS LANE	6600	66000	64400	3800	39000	38100
04	012	SON	T	18.544	SANTA ROSA, FARMERS LANE	3800	39000	38100	4300	39000	36100
04	012	SON		18.350	SANTA ROSA, BRUSH CREEK ROAD	4300	39000	36100	4100	37000	34200
04	012	SON		19.442	SANTA ROSA, MIDDLE RINCON ROAD	4100	37000	34200	3900	35000	32200
04	012	SON		20.100	SANTA ROSA, CALISTOGA ROAD	3900	35000	32200	4100	33000	29300
04	012	SON		21.230	SANTA ROSA, LOS ALAMOS ROAD	4100	33000	29300	3600	29500	26400
04	012	SON		26.110	ADOBE CANYON ROAD	3600	29500	26400	3200	26500	23400
04	012	SON		27.030	KENWOOD, WARM SPRINGS ROAD	3200	26500	23400	2900	23400	20500
04	012	SON		30.070	TRINITY ROAD	2900	23400	20500	2400	19500	17600
04	012	SON		30.650	ARNOLD DRIVE	2400	19500	17600	1800	15600	14700
04	012	SON		32.860	MADRONE ROAD	1800	15600	14700	1800	15600	13900
04	012	SON		33.400	CAVEDALE ROAD	1800	15600	13900	1700	14700	13100
04	012	SON		34.250	AGUA CALIENTE ROAD	1700	14700	13100	1600	13700	12300

04	012		SON		35.110	BOYES BOULEVARD	1600	13700	12300	1500	12700	11600
04	012		SON		35.950	VERANO AVENUE	1500	12700	11600	1400	11700	10800
04	012		SON		36.550	SONOMA, PETALUMA AVENUE (RIVERSIDE DRIVE)	1400	11700	10800	1300	10800	10000
04	012		SON		37.000	SONOMA, FIFTH STREET WEST	1300	10800	10000	1300	10800	9200
04	012		SON		37.505	SONOMA, FIRST STREET WEST	1300	10800	9200	1200	9800	8400
04	012		SON		37.690	SONOMA, PATTEN STREET	1200	9800	8400	1100	8800	7700
04	012		SON		38.060	SONOMA, MAC ARTHUR STREET	1100	8800	7700	900	7800	6900
04	012		SON		38.690	NAPA ROAD	900	7800	6900	800	6900	6100
04	012		SON		39.410	WATMAUGH ROAD	800	6900	6100	800	6900	5900
04	012		SON		41.360	JCT. RTE. 121	800	6900	5900	900	6000	5900
04	012		SON		41.361	JCT. RTE. 29	900	6000	5900			
04	012		NAP		0.000	JCT. RTE. 29				3600	36100	35100
04	012		NAP		0.240	KELLY ROAD	3600	36500	35700	4500	46500	41700
04	012		NAP		2.300	.2-MI N/O NAPA/SOLANO COUNTY LINE	4500	46500	41700	4500	46500	41700
04	012		NAP		3.314	SOLANO/NAPA COUNTY LINE	4500	46500	41700			
04	012		SOL		0.000	SOLANO/NAPA COUNTY LINE				3800	43700	41700
04	012		SOL	L	1.801	JCT. RTE. 80	3800	43700	41700	3900	44500	42500
04	012		SOL	L	3.206	FAIRFIELD, BECK AVENUE	3900	44500	42500	3500	40500	38600
04	012		SOL	R	4.072	PENNSYLVANIA AVENUE	3500	40500	38600	3200	36500	34600
04	012		SOL	R	5.150	MARINA BOULEVARD	3200	36500	34600	2900	32500	30700
04	012		SOL		5.760	GRIZZLY ISLAND ROAD/ SUNSET AVENUE	2900	32500	30700	2300	26500	25700
04	012		SOL		7.160	SCANDIA ROAD/LAWLER RANCH	2300	26500	25700	2000	21800	19800
04	012		SOL		8.890	SCALLY ROAD	2000	21800	19800	2000	20800	17800
04	012		SOL		19.169	JCT. RTE. 113 NORTH	1400	14900	13900	2000	20800	17800
04	012		SOL		25.579	RIO VISTA, DROUIN DRIVE	2300	19800	17800	3200	23800	21800
04	012		SOL		26.276	JCT. RTE. 84 NORTH	3200	23800	21800	3500	25500	22800
04	012		SOL		26.410	SOLANO/SACRAMENTO COUNTY LINE	3500	25500	22800			
03	012		SAC		0.000	SOLANO/SACRAMENTO COUNTY LINE				2300	24400	22800
03	012		SAC		0.571	JCT. RTE. 160	2300	21600	19200	1900	19000	17200
03	012		SAC		5.645	ISLETON/TERMINOUS ROADS	1900	19000	17200	1950	19400	17800
03	012		SAC		6.200	SACRAMENTO/SAN JOAQUIN COUNTY LINE	1950	19400	17800			
10	012		SJ		0.000	SACRAMENTO/SAN JOAQUIN COUNTY LINE				1850	18900	18200
10	012		SJ		5.390	GLASSCOCK ROAD/TOWER PARKWAY	1800	22300	20100	1850	23100	20600
10	012		SJ		8.830	GUARD RD	1850	23700	21200	1900	23500	22700
10	012		SJ		10.167	JCT. RTE. 5	1900	23500	22700	1950	24200	23000
10	012		SJ		10.300	THORNTON ROAD	1600	16700	15000	1300	14900	12200
10	012		SJ		15.155	LOWER SACRAMENTO ROAD	1300	19900	16300	2350	15700	11100
10	012		SJ		16.440	SOUTH HAM LANE	3450	25000	23600	2450	27000	23100
10	012		SJ		16.931	LODI, SOUTH HUTCHINS STREET	2700	32000	24000	2700	31000	23900
10	012		SJ		17.700	LODI, CENTRAL AVENUE	2250	25000	19900	1900	24200	18800
10	012		SJ		17.950	LODI, CHEROKEE LANE	2150	27000	21500	1900	23000	18700
10	012		SJ		18.080	LODI, JCT. RTE. 99	2450	26500	24000	1100	12500	10100
10	012		SJ		18.360	LODI, CLUFF AVENUE	1100	12500	10400	950	11500	10300
10	012		SJ		20.900	VICTOR BRUELLA ROAD	890	10700	9000	890	9600	8700
10	012		SJ	L	23.286	LOCKEFORD, JCT. RTE. 88	670	6300	5750	760	7300	6300
10	012		SJ		27.642	SAN JOAQUIN/CALAVERAS COUNTY LINE	760	7300	5400			
10	012		CAL		0.000	SAN JOAQUIN/CALAVERAS COUNTY LINE				730	7400	5400
10	012		CAL		0.630	WALLIS, COMANCHE PARKWAY	730	7400	5400	660	6800	5000
10	012		CAL		6.300	BURSON, BURSON ROAD	770	6400	6100	1250	7700	7400
10	012		CAL		9.780	VALLEY SPRINGS, PINE STREET	950	6700	6000	1000	6800	6200
10	012		CAL		9.927	VALLEY SPRINGS, JCT. RTE. 26 SOUTH	600	6700	5800	980	10500	9200
10	012		CAL		10.400	WEST JUNCTION LIME CREEK ROAD	770	9800	8000	870	10600	8000
10	012		CAL		13.872	TOYON, JCT. RTE. 26 NORTH	950	11000	8000	720	7100	6300
10	012		CAL		18.201	SAN ANDREAS, JCT. RTE. 49	1000	7400	7000			
04	013		ALA		4.262	OAKLAND, JCT. RTE. 580				5900	58000	56400
04	013		ALA		5.012	CARSON STREET , BEGIN FREEWAY	5900	58000	56400	4900	49000	47200
04	013		ALA		5.393	OAKLAND, REDWOOD ROAD	4900	49000	47200	6300	63000	60500
04	013		ALA		6.469	OAKLAND, LINCOLN AVENUE	6300	63000	60500	6700	67000	64600
04	013		ALA		7.397	OAKLAND, PARK BOULEVARD	6700	67000	64600	6900	70000	66600
04	013		ALA		8.300	OAKLAND, MORAGA AVENUE	6900	70000	66600	7900	80000	76900
04	013		ALA		9.066	OAKLAND, BROADWAY TERRACE	7900	80000	76900	8300	83000	80400
04	013		ALA	R	9.621	OAKLAND, JCT. RTE. 24	8300	83000	80400	2900	28500	27700
04	013		ALA		10.690	BERKELEY, DOMINGO AVENUE	2900	28500	27700	3500	35500	33600
04	013		ALA		10.790	BERKELEY, CLAREMONT AVENUE	3500	35500	33600	2700	25000	24200
04	013		ALA		11.610	BERKELEY, TELEGRAPH AVENUE	2700	25000	24200	3000	29500	28300
04	013		ALA		12.240	BERKELEY, ADELINE STREET	3000	29500	28300	3000	31000	29200
04	013		ALA		13.178	JCT. RTE. 123	3000	31000	29200	4700	47000	45000
04	013		ALA		13.738	R BEGIN RIGHT ALIGN				2500	23300	22300
04	013		ALA		13.906	R BERKELEY, JCT. RTE. 80, END RIGHT ALIGN	2500	23300	22300			
04	013		ALA		13.738	L BEGIN LEFT ALIGN				2700	26500	25800
04	013		ALA		13.931	L BERKELEY, JCT. RTE. 80, END LEFT ALIGN	2700	26500	25800			
07	014	U	LA		24.300	NORTH JUNCTION ROUTE 5				1600	7900	7700
07	014	U	LA	T	27.895	PLACERITA CYN RD	2200	16400	15800	2600	18600	18000
07	014	U	LA		29.847	FRIENDLY VALLEY PARKWAY	2800	20500	19800			
07	014		LA	R	24.788	SB OFF TO SB RTE 5 & JCT. RTE. 5				12800	187000	181000
07	014		LA	R	27.048	SANTA CLARITA, SAN FERNANDO ROAD	12800	187000	181000	11700	170000	165000
07	014		LA	R	28.080	SANTA CLARITA, PLACERITA CANYON ROAD	11700	170000	165000	11000	160000	155000
07	014		LA	R	29.675	SANTA CLARITA, GOLDEN VALLEY ROAD	11000	160000	155000	10900	158000	153000

07	014		LA	R	30.811		SIERRA HIGHWAY	10900	158000	153000	9000	120000	119000
07	014		LA		33.423		SANTA CLARITA, SAND CANYON ROAD	9000	120000	119000	8100	109000	108000
07	014		LA		35.712		SANTA CLARITA, SHADOW PINES BOULEVARD/SOLEDAD ROA	8100	109000	108000	7800	110000	105000
07	014		LA		39.854		AGUA DULCE CANYON ROAD	7800	110000	105000	7600	108000	103000
07	014		LA		43.288		ESCONDIDO CANYON ROAD	7600	108000	103000	7600	108000	102000
07	014		LA		46.759		WARD ROAD	7600	108000	102000	7700	109000	104000
07	014		LA	R	48.607		CROWN VALLEY ROAD	7700	109000	104000	7700	110000	104000
07	014		LA	R	50.746		SANTIAGO ROAD	7700	110000	104000	7800	111000	105000
07	014		LA	R	52.172		SOLEDAD CANYON ROAD/SIERRA HIGHWAY	7800	111000	105000	8000	112000	105000
07	014		LA	R	54.543		ANGELES FOREST HIGHWAY	8000	112000	105000	6000	85000	80000
07	014		LA	R	58.172		PALMDALE, AVENUE S	6000	85000	80000	6900	85000	84000
07	014		LA	R	59.803		PALMDALE, SOUTH JCT. RTE. 138	6900	85000	84000	7400	90000	89000
07	014		LA	R	61.766		PALMDALE, 10TH STREET WEST	7400	90000	89000	7500	91000	89000
07	014		LA	R	63.671		PALMDALE, AVENUE N	7500	91000	89000	8100	96000	94000
07	014		LA	R	64.678		LANCASTER, COLUMBIA WAY/AVENUE M	8100	96000	94000	7900	93000	91000
07	014		LA	R	65.683		LANCASTER, AVENUE L	7900	93000	91000	6700	78000	76000
07	014		LA	R	66.730		LANCASTER, AVENUE K	6700	78000	76000	5500	63000	62000
07	014		LA	R	67.390		LANCASTER, AVENUE J-8/20TH STREET WEST	5500	63000	62000	4000	46000	45000
07	014		LA	R	67.957		LANCASTER, AVENUE J	4000	46000	45000	4600	52000	51000
07	014		LA	R	68.965		LANCASTER, AVENUE I	4600	52000	51000	3950	44500	43500
07	014		LA	R	69.991		LANCASTER, AVENUE H	3950	44500	43500	3600	43000	42000
07	014		LA	R	70.992		AVENUE G	3600	43000	42000	3600	42500	41500
07	014		LA	R	71.995		AVENUE F	3600	42500	41500	3500	41500	40000
07	014		LA	R	74.003		NORTH JCT. RTE. 138	3500	41500	40000	3300	38500	37500
09	014		KER	R	0.000		AVENUE A, LOS ANGELES/KERN COUNTY LINE				3600	39500	37800
09	014		KER	R	3.018		ROSAMOND BOULEVARD	2850	36500	35600	1900	21600	20900
09	014		KER	R	12.147		SILVER QUEEN ROAD	2100	20200	19600	1900	21100	20200
09	014		KER		16.070		JCT. RTE. 58	1600	16800	15700	1100	11300	10700
09	014		KER		19.239		MOJAVE, NORTH JCT RTE 58	1700	17100	15900	850	10900	9600
09	014		KER		21.290		RANDSBURG CUT-OFF ROAD, CA CITY/BAKERSFIELD RD	850	10800	9600	910	6900	5900
09	014		KER		22.150		CALIFORNIA CITY	910	6900	5900	1100	8500	7700
09	014		KER		35.560		RANDSBURG ROAD	910	6800	5900	730	5500	4500
09	014		KER		57.767		FREEMAN JCT. JCT. RTE. 178 WEST	980	7600	6600	980	7100	6000
09	014		KER		60.571		HOMESTEAD SOUTH JUNCTION, JCT. RTE. 178 EAST	790	5900	5050	600	3700	2750
09	014		KER		64.559		HOMESTEAD NORTH JCT. RTE. 395	800	5300	4100			
11	015	S	SD		11.890		BEG RTE 15S HOV LNS				4100	81000	76000
11	015	S	SD		15.000		CARROLL CANYON ROAD	4450	48000	47000	4450	47500	46500
11	015	S	SD		20.577		CARMEL MOUNTAIN ROAD	4150	41000	36000	3950	45500	41000
11	015	S	SD		23.688		RANCHO BERNARDO ROAD	3950	45500	41000	4650	45000	40500
11	015	S	SD		30.856		END ROUTE 15S; JCT RTE 15	3600	36000	33000			
11	015		SD	R	0.000	R	JCT. RTE. 5, BEGIN RIGHT ALIGN				5100	57000	55000
11	015		SD	R	0.395	R	END RIGHT ALIGN	5100	57000	55000			
11	015		SD	R	0.000	L	JCT. RTE. 5, LEFT ALIGN				4650	60000	57000
11	015		SD	R	0.385	L	END LEFT ALIGN	4650	60000	57000			
11	015		SD	R	0.588		SAN DIEGO, OCEANVIEW BOULEVARD	9800	115000	111000	9500	126000	123000
11	015		SD		1.846		SAN DIEGO, MARKET STREET	9500	126000	123000	11800	138000	133000
11	015		SD		2.226		JCT. RTE. 94	11800	138000	133000	11800	130000	127000
11	015		SD	R	3.367		JCT. RTE. 805	11800	130000	127000	16600	208000	171000
11	015		SD	M	4.663		SAN DIEGO, UNIVERSITY AVENUE	14100	173000	171000	13600	170000	169000
11	015		SD	M	5.042		SAN DIEGO, EL CAJON BOULEVARD	13600	170000	169000	1350	168000	167000
11	015		SD	M	5.600		SAN DIEGO, ADAMS AVENUE	13500	168000	167000	14800	185000	183000
11	015		SD	R	6.132		JCT. RTE. 8	14800	185000	183000	24400	226000	225000
11	015		SD	R	6.817		SAN DIEGO, FRIARS ROAD	17300	226000	225000	18600	243000	232000
11	015		SD	R	8.366		SAN DIEGO, AERO DRIVE	18600	243000	232000	15800	207000	206000
11	015		SD	R	9.238		SAN DIEGO, BALBOA AVENUE	15800	207000	206000	14800	193000	191000
11	015		SD	R	9.995		CLAIREMONT MESA BOULEVARD	14800	193000	191000	13000	164000	159000
11	015		SD	R	10.580		JCT. RTE. 52	12800	162000	159000	14600	191000	189000
11	015		SD	M	12.002		ROUTE 15S HOV LANES	14600	191000	189000	14100	181000	180000
11	015		SD	M	12.124		JCT. RTE. 163	14100	181000	180000	24400	305000	298000
11	015		SD	M	13.334		SAN DIEGO, MIRAMAR WAY	24400	305000	298000	24300	303000	295000
11	015		SD	M	14.285		SAN DIEGO, MIRAMAR/ POMERADO ROADS	24300	303000	295000	22600	284000	278000
11	015		SD	M	15.000		CARROLL CANYON ROAD	22600	284000	278000	21600	283000	274000
11	015		SD	M	15.924		MIRA MESA BOULEVARD	22100	283000	274000	20800	274000	265000
11	015		SD	M	17.311		SAN DIEGO, MERCY ROAD	20800	274000	265000	20000	263000	251000
11	015		SD	M	18.176		SAN DIEGO, POWAY ROAD	20000	263000	251000	18100	235000	220000
11	015		SD	M	19.468		JCT. RTE. 56	18100	235000	220000	17700	261000	254000
11	015		SD	M	20.574		CARMEL MOUNTAIN ROAD	18900	262000	254000	17900	252000	242000
11	015		SD	M	21.915		SAN DIEGO, CAMINO DEL NORTE	17900	252000	242000	17800	252000	236000
11	015		SD	M	22.935		SAN DIEGO, BERNARDO CENTER DRIVE	17800	252000	236000	17300	243000	227000
11	015		SD	M	23.687		SAN DIEGO, RANCHO BERNARDO ROAD	17300	243000	227000	15900	225000	217000
11	015		SD	M	26.026		POMERADO ROAD	15900	227000	217000	17100	237000	230000
11	015		SD	M	26.970		ESCONDIDO, FELICITA ROAD , VIA RANCHO PARKWAY	17300	237000	230000	17700	231000	221000
11	015		SD	M	27.650		ESCONDIDO, SOUTH JUNCTION OF CENTRE CITY PARKWAY	17700	231000	221000	14400	199000	192000
11	015		SD	R	28.765		CITRACADO PARKWAY	14400	199000	192000	19300	255000	241000
11	015		SD	R	30.090		ESCONDIDO, 9TH AVENUE	19300	255000	241000	14600	206000	198000
11	015		SD	R	30.627		VALLEY PARKWAY	14500	207000	198000	21500	275000	273000
11	015		SD	R	31.517		JCT. RTE. 78	21500	275000	273000	16500	166000	157000
11	015		SD	R	32.861		ESCONDIDO, EL NORTE PARKWAY	12200	165000	157000	10700	144000	139000

11	015	SD	R	33.922	CENTRE CITY PARKWAY	10700	144000	139000	11300	151000	146000
11	015	SD	R	36.636	DEER SPRINGS ROAD	11300	151000	146000	16500	159000	149000
11	015	SD	R	40.842	GOPHER CANYON ROAD	11700	155000	149000	11000	151000	141000
11	015	SD	R	43.279	ESCONDIDO HIGHWAY	11000	151000	141000	9800	133000	131000
11	015	SD	R	46.491	JCT. RTE. 76	9600	135000	131000	16300	171000	150000
11	015	SD	R	50.585	MISSION ROAD	15300	166000	150000	11400	152000	147000
11	015	SD	R	54.070	RAINBOW VALLEY BOULEVARD	10600	153000	147000	10500	152000	146000
11	015	SD	R	54.258	SAN DIEGO/RIVERSIDE COUNTY LINE	11400	151000	146000			
08	015	RIV	R	0.000	SAN DIEGO/RIVERSIDE COUNTY LINE				10500	150000	145000
08	015	RIV	R	1.098	RAINBOW TRUCK FACILITY	10500	150000	145000	10500	150000	145000
08	015	RIV		3.436	SOUTH JCT. RTE. 79	10500	150000	145000	11500	169000	165000
08	015	RIV		4.980	RANCHO CALIFORNIA ROAD	11500	169000	165000	12200	179000	175000
08	015	RIV		6.623	NORTH JCT RTE. 79	12200	179000	175000	14100	207000	202000
08	015	RIV		8.737	JCT. RTE. 215 NORTH	14100	207000	202000	8200	117000	114000
08	015	RIV		9.468	MURRIETA HOT SPRINGS ROAD	8300	117000	114000	9900	138000	135000
08	015	RIV		10.592	CALIFORNIA OAKS ROAD	9900	138000	135000	9700	136000	133000
08	015	RIV		13.635	CLINTON KEITH ROAD	9700	136000	133000	9600	135000	132000
08	015	RIV		15.071	BAXTER ROAD	9600	135000	132000	9300	130000	127000
08	015	RIV		16.298	BUNDY CANYON ROAD	9300	130000	127000	8800	123000	120000
08	015	RIV		19.164	RAILROAD CANYON ROAD	8800	123000	120000	9400	132000	129000
08	015	RIV		20.948	MAIN STREET	9400	132000	129000	9100	128000	125000
08	015	RIV		20.962	NORTH OF MAIN STREET	9600	133000	129000	9300	129000	125000
08	015	RIV		22.277	JCT. RTE. 74	9300	129000	125000	8700	121000	117000
08	015	RIV		23.850	NICHOLS ROAD	8800	122000	118000	8800	123000	119000
08	015	RIV		26.688	LAKE STREET	8800	123000	119000	9300	130000	126000
08	015	RIV		30.401	INDIAN TRAIL ROAD	9300	130000	126000	9800	136000	132000
08	015	RIV		33.387	TEMESCAL CANYON ROAD	9800	136000	132000	10700	148000	144000
08	015	RIV		35.641	WEIRICK ROAD	10700	148000	144000	11800	164000	159000
08	015	RIV		36.813	CAJALCO ROAD	11800	164000	159000	12500	174000	169000
08	015	RIV		37.819	EL CERRITO ROAD	12500	174000	169000	12900	179000	174000
08	015	RIV		38.693	CORONA, ONTARIO AVENUE	12900	179000	174000	12200	172000	169000
08	015	RIV		40.352	CORONA, MAGNOLIA AVENUE	12200	172000	169000	13500	191000	187000
08	015	RIV		41.501	JCT. RTE. 91	13500	191000	187000	10900	162000	158000
08	015	RIV		42.877	NORCO, YUMA DRIVE(HIDDEN VALLEY)	10900	166000	158000	10800	165000	157000
08	015	RIV		43.637	NORCO, 2ND STREET	10800	165000	157000	10500	160000	152000
08	015	RIV		45.600	NORCO, 6TH STREET	10500	160000	152000	10500	160000	152000
08	015	RIV		48.261	LIMONITE AVENUE	10500	160000	152000	10300	156000	149000
08	015	RIV		51.474	JCT. RTE. 60	10300	156000	149000	14800	224000	219000
08	015	RIV		52.281	RIVERSIDE/SAN BERNARDINO COUNTY LINE	14800	224000	219000			
08	015	SBD		0.000	RIVERSIDE/SAN BERNARDINO COUNTY LINE				14800	224000	219000
08	015	SBD		1.015	ONTARIO, JURUPA AVENUE	14800	224000	219000	14800	224000	219000
08	015	SBD		2.389	JCT. RTE. 10	14800	224000	219000	14100	219000	210000
08	015	SBD		3.052	FOURTH STREET	14100	219000	210000	13600	212000	203000
08	015	SBD		5.306	JCT. RTE. 66	13600	212000	203000	11900	184000	177000
08	015	SBD		5.973	RANCHO CUCAMONGA, MILLER AVENUE	11900	184000	177000	12100	188000	180000
08	015	SBD		6.783	RANCHO CUCAMONGA, BASE LINE AVENUE	12000	185000	178000	10800	167000	160000
08	015	SBD		9.610	SUMMIT AVENUE	10500	155000	152000	9500	141000	138000
08	015	SBD		12.842	SIERRA AVENUE	9500	141000	138000	9500	141000	138000
08	015	SBD		15.650	GLEN HELEN PARKWAY	9500	141000	138000	9500	141000	138000
08	015	SBD	R	14.960	KENWOOD AVENUE	12600	181000	171000	12600	181000	171000
08	015	SBD	R	20.011	CLEGHORN ROAD	12000	189000	181000	12200	192000	184000
08	015	SBD	R	21.373	JCT. RTE. 138	12200	192000	184000	10500	165000	158000
08	015	SBD	R	28.622	OAK HILL ROAD	10500	165000	158000	10100	160000	153000
08	015	SBD		31.813	JCT. RTE. 395 NORTH	10100	160000	153000	8500	127000	120000
08	015	SBD		32.323	JOSHUA STREET/PALM AVENUE	8500	127000	120000	9000	133000	126000
08	015	SBD		34.000	HESPERIA, PHELAN ROAD/ MAIN STREET	9000	133000	126000	8200	121000	115000
08	015	SBD		37.591	BEAR VALLEY CUTOFF (TO LUCERNE VALLEY)	8200	121000	115000	7300	108000	102000
08	015	SBD		40.509	JCT. RTE. 18 SOUTH	7300	108000	102000	7300	108000	102000
08	015	SBD		41.430	ROY ROGERS DRIVE	7300	108000	102000	7300	108000	102000
08	015	SBD		42.025	VICTORVILLE, MOJAVE DRIVE	6800	101000	96000	8000	99000	91000
08	015	SBD		43.488	VICTORVILLE, JCT. RTE. 18 SOUTHEAST	8000	99000	91000	6900	79000	69000
08	015	SBD		43.620	VICTORVILLE, E STREET	6900	79000	69000	6900	79000	69000
08	015	SBD		44.402	STODDARD WELLS ROAD	6900	79000	69000	6400	73000	64000
08	015	SBD		47.390	NORTH JUNCTION STODDARD WELLS RD (BELL MOUNTAIN)	6400	73000	64000	6300	72000	63000
08	015	SBD		51.831	BOULDER ROAD	6300	72000	63000	6300	72000	63000
08	015	SBD		55.693	WILD WASH BRIDGE	6300	72000	63000	6300	72000	63000
08	015	SBD		60.159	HODGE ROAD	6300	72000	63000	6300	72000	63000
08	015	SBD		65.840	SIDEWINDER ROAD	6300	72000	63000	6300	72000	63000
08	015	SBD		68.770	BARSTOW, LENWOOD ROAD	6300	72000	63000	7000	80000	70000
08	015	SBD		70.104	BARSTOW, JCT RTE 58 EAST	7000	80000	70000	8600	99000	86000
08	015	SBD		71.618	BARSTOW, L STREET	8600	99000	86000	8500	98000	85000
08	015	SBD		73.543	JCT. RTE. 247 SOUTH	8500	98000	85000	8000	92000	80000
08	015	SBD		74.418	BARSTOW, JCT. RTE. 40 EAST	8000	92000	80000	5900	60000	51000
08	015	SBD		74.949	BARSTOW, EAST MAIN STREET	5900	60000	51000	5900	60000	51000
08	015	SBD		76.883	JCT. RTE. 58 WEST	5900	60000	51000	5900	60000	51000
08	015	SBD		79.593	FORT IRWIN/MERIDIAN ROADS	5900	60000	51000	5700	58000	49000
08	015	SBD	R	81.840	GHOST TOWN ROAD	5700	58000	49000	5300	54000	46000
08	015	SBD	R	84.641	YERMO/CALICO ROAD	5300	54000	46000	5200	53000	45000

08	015	SBD	R	86.380	EAST YERMO	5200	53000	45000	5200	53000	45000
08	015	SBD	R	88.489	MINNEOLA ROAD	5500	55000	45000	5500	55000	45000
08	015	SBD	R	96.410	HARVARD ROAD	5500	55000	45000	5300	53000	44000
08	015	SBD	R	103.633	FIELD ROAD	5300	53000	44000	5300	53000	44000
08	015	SBD	R	111.592	AFTON ROAD	5300	53000	44000	5300	53000	44000
08	015	SBD	R	120.425	BASIN ROAD	5300	53000	44000	5300	53000	44000
08	015	SBD	R	124.237	RASOR ROAD	5300	53000	44000	5300	53000	44000
08	015	SBD	R	130.181	ZZYZX ROAD	5300	53000	44000	5300	53000	44000
08	015	SBD	R	135.806	WEST BAKER	5300	53000	44000	4750	47500	39000
08	015	SBD	R	136.574	BAKER, JCT. RTE. 127	4750	47500	39000	4600	46000	38000
08	015	SBD	R	138.456	EAST BAKER	4600	46000	38000	5300	53000	44000
08	015	SBD		149.605	HALLORAN SPRINGS	5200	52000	44000	5200	52000	44000
08	015	SBD		155.571	HALLORAN SUMMIT	5200	52000	44000	5200	52000	44000
08	015	SBD		162.733	CIMA ROAD	5200	52000	44000	5200	52000	44000
08	015	SBD		171.471	BAILEY ROAD	5200	52000	44000	5200	52000	44000
08	015	SBD		176.459	NIPTON ROAD	5200	52000	44000	5300	54000	45000
08	015	SBD		181.396	YATES WELL ROAD	5300	54000	45000	5300	54000	45000
08	015	SBD		186.238	NEVADA STATE LINE	5300	54000	45000			
03	016	COL		0.000	JCT. RTE. 20				80	600	510
03	016	COL		7.256	COLUSA/YOLO COUNTY LINE	80	600	510			
03	016	YOL		0.000	COLUSA/YOLO COUNTY LINE				80	600	510
03	016	YOL		7.146	RUMSEY, MANZANITA AVENUE	90	700	600	140	1150	900
03	016	YOL		12.205	GUINDA, COUNTY ROAD 57	140	1350	1050	140	1350	1100
03	016	YOL		18.132	MOSSY CREEK BRIDGE	200	2200	1650	200	2200	1650
03	016	YOL		19.200	WINNER'S WAY	200	2200	1700	510	6800	6500
03	016	YOL		19.427	INDIAN BINGO ROAD	510	6800	6500	950	11000	10500
03	016	YOL		25.148	CAPAY CANAL BRIDGE	950	11000	10500	950	11000	10500
03	016	YOL		27.546	ESPARTO, ORLEANS STREET	950	10800	9500	950	10800	9500
03	016	YOL		27.960	GRAFTON STREET	1050	10300	9000	1050	10300	9200
03	016	YOL		28.266	COUNTY ROAD 21 A	1050	10300	9600	1350	12900	12500
03	016	YOL		31.032	MADISON, COUNTY ROAD 89	1350	12900	12500	1350	14000	13000
03	016	YOL		32.226	JCT. RTE. 505	1350	14000	13000	700	8700	8400
03	016	YOL		36.710	COUNTY ROAD 94 B	820	10000	9600	820	10000	9600
03	016	YOL		39.558	CO RD 97	910	11000	10400	1000	13100	11500
03	016	YOL	R	40.570	WEST MAIN STREET	1057	13100	11500	820	9200	8700
03	016	YOL	R	41.303	WEST WOODLAND AVENUE	820	9200	8700	700	8500	8200
03	016	YOL	R	41.567	KENTUCKY AVENUE/ COUNTY ROAD 20	700	8500	8200	500	6000	5600
03	016	YOL	R	43.420	JCT. RTES. 5/16	500	6000	5600			
03	016	SAC	T	1.753	INT EB OFF 50 TO 16				4800	55000	49500
03	016	SAC		4.166	SACRAMENTO, WATT AVENUE	750	8500	7700	1200	13800	12800
03	016	SAC		6.220	BRADSHAW ROAD	1200	13800	12800	1050	11700	11300
03	016	SAC		8.342	EXCELSIOR ROAD	1050	11700	11300	920	10600	10000
03	016	SAC	R	11.474	SACRAMENTO, SUNRISE BOULEVARD	920	10600	10000	1150	13800	13200
03	016	SAC		12.540	GRANT LINE ROAD	1150	13800	13200	1450	15900	14200
03	016	SAC	R	15.999	DILLIARD ROAD	1450	15900	14200	1450	16000	14700
03	016	SAC	R	16.805	LATROBE ROAD	1500	16500	14800	1500	17000	14800
03	016	SAC		19.473	MURIETTA PARKWAY	1200	13300	12900	850	10000	9600
03	016	SAC	R	22.848	IONE ROAD	690	7600	7000	600	6800	6100
03	016	SAC	R	23.955	SACRAMENTO/AMADOR COUNTY LINE	600	6800	6100			
10	016	AMA	R	0.000	SACRAMENTO/AMADOR COUNTY LINE				600	6800	6100
10	016	AMA		9.093	JCT. RTE. 124 SOUTH	740	9600	8800	860	11100	10800
10	016	AMA		9.373	CENTRAL HOUSE, JCT. RTE. 49	810	10500	10200			
05	017	SCR		0.000	SANTA CRUZ, JCT. RTE. 1				6100	81000	71400
05	017	SCR		0.737	PASATIEMPO	7300	88000	84700	6900	86000	80700
05	017	SCR		2.180	SIMS ROAD	6900	86000	80700	7400	85000	78800
05	017	SCR		3.442	SCOTT VALLEY ROAD	7400	85000	78800	5600	65000	58400
05	017	SCR		5.453	GRANITE CREEK ROAD	5700	66000	59000	4700	51000	49500
05	017	SCR		12.553	SANTA CRUZ/SANTA CLARA COUNTY LINE	5500	68000	58000			
04	017	SCL		0.000	SANTA CRUZ/SANTA CLARA COUNTY LINE				5500	68000	58000
04	017	SCL		0.108	JCT. RTE. 35 NORTHWEST	5500	68000	58000	5500	68000	61000
04	017	SCL		1.250	REDWOOD DRIVE	5500	68000	61000	5500	68000	61000
04	017	SCL		4.060	BEAR CREEK ROAD	5500	68000	61000	5800	80000	72000
04	017	SCL		6.160	LOS GATOS, SANTA CRUZ AVENUE	5800	80000	72000	5200	71000	66000
04	017	SCL		7.073	LOS GATOS, JCT. RTE. 9 WEST	5200	71000	66000	6800	96000	89000
04	017	SCL		8.885	LARK AVENUE	6800	96000	89000	7100	108000	103000
04	017	SCL		9.354	LOS GATOS, JCT RTE 85	7100	108000	103000	9700	147000	136000
04	017	SCL		10.498	CAMPBELL, CAMDEN AVENUE	9700	147000	136000	10500	159000	145000
04	017	SCL		12.336	CAMPBELL, HAMILTON AVENUE	10500	159000	145000	12800	182000	173000
04	017	SCL		13.949	SAN JOSE, JCT. RTE. 280	12800	182000	173000			
08	018	SBD	T	6.179	SAN BERNARDINO, JCT. RTE. 210				2250	29000	28000
08	018	SBD	T	7.117	SAN BERNARDINO, PARKDALE DRIVE	2150	28000	27000	1900	25000	24000
08	018	SBD	T	7.548	SAN BERNARDINO, 40TH STREET	1900	25000	24000	1400	18000	17300
08	018	SBD	T	8.264	SAN BERNARDINO, SIERRA WAY	1400	18000	17300	1450	17100	16000
08	018	SBD		9.150	WATERMAN CANYON ROAD	1450	17100	16000	1450	17100	16000
08	018	SBD	R	13.285	WATERMAN CANYON ROAD	1450	17100	16000	1450	17100	16000
08	018	SBD	R	17.732	JCT. RTE. 138 NORTH	1450	17100	16000	1150	9400	8600
08	018	SBD		20.612	JCT. RTE. 189 NORTH	1150	9400	8600	1050	10800	10000
08	018	SBD		23.382	DALEY CANYON ROAD	1000	10700	9900	1200	12500	11500

08	018	SBD		24.712	JCT. RTE. 173 NORTH	1200	12500	11500	600	6300	5800
08	018	SBD		25.810	KUFFEL CANYON ROAD	600	6300	5800	620	6500	6000
08	018	SBD		31.651	WEST JCT. RTE. 330	680	6200	5700	680	6200	5700
08	018	SBD		31.903	JCT. RTE. 330 SOUTH	680	6200	5700	2600	16100	10700
08	018	SBD		34.520	GREEN VALLEY LAKE ROAD	1950	12000	8000	1550	9500	6300
08	018	SBD		44.319	JCT. RTE. 38 NORTHEAST	1550	9500	6300	1200	7400	4900
08	018	SBD		46.550	BIG BEAR LAKE, BLUE JAY ROAD	1200	7500	5000	1650	10200	6800
08	018	SBD		48.070	BIG BEAR LAKE, MILL CREEK ROAD	2500	15300	10200	2300	14300	9500
08	018	SBD		48.362	LAKEVIEW DRIVE	2300	14300	9500	2600	16200	10800
08	018	SBD		49.117	BIG BEAR BL AT PINE KNOT	3300	20400	13600	3550	35000	31500
08	018	SBD		50.820	MOONRIDGE ROAD	3600	36000	32500	2650	26000	23500
08	018	SBD		51.610	STANFIELD CUTOFF	2650	26000	23500	2300	22800	20500
08	018	SBD		53.917	JCT. RTE. 38 EAST	1850	18200	16400	1250	12400	11200
08	018	SBD		54.537	JCT. RTE. 38 WEST	1250	12400	11200	560	5600	5000
08	018	SBD		58.160	HOLCOMB VALLEY ROAD	430	4200	3800	260	2550	2300
08	018	SBD		58.440	BALDWIN LAKE ROAD	260	2550	2300	620	3400	3000
08	018	SBD		65.756	MARBLE CANYON ROAD	620	3400	3000	900	5000	4400
08	018	SBD		73.783	LUCERNE VALLEY, JCT. RTE. 247	700	6500	6300	1000	9300	9000
08	018	SBD		84.325	BEAR VALLEY CUTOFF	1150	11800	11000	560	5800	5400
08	018	SBD		88.871	APPLE VALLEY, YUCCA LOMA-NAVAJO ROAD	1300	13700	12800	2100	21900	20500
08	018	SBD		90.936	APPLE VALLEY INN ROAD	2550	27000	25000	3300	34000	32000
08	018	SBD		94.390	APPLE VALLEY ROAD	3400	35500	33000	4750	49000	46000
08	018	SBD		95.220	VICTORVILLE, STODDARD WELLS ROAD	4550	47000	44000	4300	45000	42000
08	018	SBD		95.790	VICTORVILLE, SEVENTH STREET	3600	37500	35000	3250	33500	31500
08	018	SBD	R	96.577	VICTORVILLE, NORTH JCT RTE 15	2900	30000	28000	3700	41000	40000
08	018	SBD		97.001	VICTORVILLE, AMARGOSA ROAD	3700	41000	40000	2800	31000	30000
08	018	SBD		100.956	JCT. RTE. 395	1750	19500	19100	1100	9400	9000
08	018	SBD		115.910	SAN BERNARDINO/LOS ANGELES COUNTY LINE	810	6800	6500			
07	018	LA		0.000	SAN BERNARDINO/LOS ANGELES COUNTY LINE				800	6800	6500
07	018	LA		4.500	JCT. RTE. 138	600	7600	7000			
01	020	MEN	R	0.000	JCT. RTE. 1				900	11900	9500
01	020	MEN	R	0.274	SOUTH HARBOR DRIVE	900	11900	9500	1000	9500	8000
01	020	MEN		2.080	SUMMER LANE	750	7500	6000	470	4600	3600
01	020	MEN		17.285	CHAMBERLAIN CREEK	270	3800	2800	330	4500	3100
01	020	MEN		32.437	WILLITS, WEST CITY LIMITS	390	4600	3800	600	7500	6000
01	020	MEN	L	35.956	NORTH JCT. RTE. 101	700	7900	6400	1400	15400	13700
01	020	MEN		33.220	SOUTH JCT. RTE. 101	1400	15400	13700	1400	15900	14400
01	020	MEN		33.769	REDWOOD VALLEY ROAD	1400	15900	14400	1500	15400	14700
01	020	MEN		35.390	MARINA DRIVE	1500	15400	14700	1500	14400	13700
01	020	MEN	R	38.054	POTTER VALLEY ROAD	1250	13500	11800	1250	13200	11500
01	020	MEN		44.114	MENDOCINO/LAKE COUNTY LINE	1250	13200	11500			
01	020	LAK		0.000	MENDOCINO/LAKE COUNTY LINE				1100	11700	10100
01	020	LAK		3.630	SCOTT VALLEY ROAD	980	10900	9600	1000	11500	10500
01	020	LAK		8.319	JCT. RTE. 29 SOUTH	1100	12200	10600	850	9300	6800
01	020	LAK		12.199	LUCERNE CUTOFF	1000	11000	9800	1250	13000	12000
01	020	LAK		18.530	LUCERNE, EAST; BELL RAY AVENUE	910	9600	8700	780	8300	7500
01	020	LAK		25.970	CLEAR LAKE OAKS, EAST	610	6500	5800	700	7300	6500
01	020	LAK		31.525	JCT. RTE. 53 SOUTH	900	9300	8500	900	9300	8500
01	020	LAK		31.620	JCT. RTE. 53 SOUTH	900	9300	8500	940	8800	7300
01	020	LAK		46.475	LAKE/COLUSA COUNTY LINE	850	8500	7000			
03	020	COL		0.000	LAKE/COLUSA COUNTY LINE				730	7700	6100
03	020	COL		3.451	JCT. RTE. 16 SOUTH	730	7700	6100	680	7200	5600
03	020	COL	T	20.558	JUNCTION OLD ROUTE 20	730	7400	5900	750	7100	5600
03	020	COL	R	22.120	WILLIAMS, JCT. RTE. 5	980	9800	7300	560	6800	6200
03	020	COL	T	23.187	HUSTED ROAD	520	6800	6200	910	10100	9500
03	020	COL		28.690	COLUSA, HUNTER ROAD	910	10100	9500	910	10100	9500
03	020	COL		30.639	COLUSA, FREMONT STREET	680	6800	6700	680	7000	6900
03	020	COL		31.091	COLUSA, JCT. RTE. 45 NORTH	910	9700	9300	1500	13000	12400
03	020	COL		31.470	COLUSA, FIFTH STREET	1500	13000	12500	1500	13000	12500
03	020	COL		31.841	COLUSA, MARKET/BRIDGE STREETS	1750	16000	15400	1750	16000	15400
03	020	COL		32.290	COLUSA, FREMONT STREET	1500	14000	13300	1050	12300	11600
03	020	COL		33.120	MOON BEND ROAD	810	9000	8400	810	9000	8400
03	020	COL		36.785	JCT. RTE. 45 SOUTH	810	9000	8400	760	8300	7800
03	020	COL	R	39.340	COLUSA/SUTTER COUNTY LINE	820	9000	8400			
03	020	SUT	R	0.000	COLUSA/SUTTER COUNTY LINE				820	9000	8500
03	020	SUT		5.009	EAST END SUTTER BYPASS	820	9100	8500	820	9100	8500
03	020	SUT		9.176	ACACIA AVENUE	820	9100	8500	1000	11000	10500
03	020	SUT		12.670	TOWNSHIP ROAD	1000	11000	10100	1100	11800	11300
03	020	SUT		13.600	GEORGE WASHINGTON BOULEVARD	1100	11800	11300	1500	18100	17500
03	020	SUT	R	15.350	CIVIC CENTER BOULEVARD	2700	31000	30000	3150	36000	35000
03	020	SUT	R	15.598	JCT. RTE. 99	3150	36000	35000	3550	4200	38000
03	020	SUT		16.330	YUBA CITY, LIVE OAK BOULEVARD	5000	50000	47000	5100	54000	52000
03	020	SUT		16.520	YUBA CITY, PLUMAS STREET	5100	54000	52000	5100	50000	47500
03	020	SUT		16.838	YUBA CITY, SUTTER STREET	5100	50000	47500	4450	50000	48200
03	020	SUT		17.057	SUTTER/YUBA COUNTY LINE	4450	50000	48200			
03	020	YUB		0.000	SUTTER/YUBA COUNTY LINE				4450	50000	48200
03	020	YUB		0.675	MARYSVILLE, H STREET	4450	50000	45000	4400	44500	44000
03	020	YUB		0.840	MARYSVILLE, F STREET	4200	42500	42000	4000	39500	39000

03	020	YUB		0.989	MARYSVILLE, SOUTH JCT. RTE. 70	4000	39500	39000	3200	34000	31000
03	020	YUB		1.236	MARYSVILLE, 9TH/B STREETS	2500	25000	23500	2250	29000	27100
03	020	YUB		1.472	NORTH JCT. RTE. 70	2250	28500	27100	1500	18100	16200
03	020	YUB	R	1.980	MARYSVILLE, BUCHANAN STREET	1500	18000	15800	1400	16400	14100
03	020	YUB	R	2.940	MARYSVILLE, 22ND STREET	1550	16400	14100	1250	13800	11600
03	020	YUB	R	7.018	HALLWOOD BOULEVARD	1050	11900	10800	1050	11900	10500
03	020	YUB	R	7.890	LOMA RICA ROAD	1050	12100	10400	1000	9700	8500
03	020	YUB		13.269	MARYSVILLE ROAD	1000	9700	8500	850	8200	7100
03	020	YUB	R	21.475	YUBA/NEVADA COUNTY LINE	880	9000	8500			
03	020	NEV		0.000	YUBA/NEVADA COUNTY LINE				880	9000	8500
03	020	NEV	R	4.651	PLEASANT VALLEY ROAD	880	9000	8500	1400	15600	15000
03	020	NEV	R	6.600	PENN VALLEY DRIVE	1400	15600	15000	1700	18400	17500
03	020	NEV	R	12.162	GRASS VALLEY, MILL STREET	1700	18400	17500	2600	27500	26000
03	020	NEV	R	12.240	GRASS VALLEY, JCT. RTE. 49	2600	27500	26000	4300	50000	48500
03	020	NEV	R	12.302	GRASS VALLEY, JCT. RTE. 49	4300	50000	48500	4300	50000	49000
03	020	NEV	R	12.864	GRASS VALLEY, NORTH AUBURN STREET	4300	50000	49000	4000	43500	39500
03	020	NEV	R	13.112	GRASS VALLEY, BENNETT STREET	4000	43500	39500	5300	57000	49100
03	020	NEV	R	13.614	GRASS VALLEY, IDAHO/MARYLAND ROAD	5300	57000	49100	4300	44500	42000
03	020	NEV	R	14.266	DORSEY DRIVE OC	4300	44500	42000	3700	42500	40000
03	020	NEV	R	14.797	BRUNSWICK ROAD	3700	42500	40000	3150	39000	35700
03	020	NEV	R	15.410	BANNER RIDGE OVERCROSSING	3150	39000	36000	3000	35500	32300
03	020	NEV	R	15.916	GOLD FLAT ROAD	3000	35500	32300	2900	29500	28500
03	020	NEV	R	16.741	NEVADA CITY, SACRAMENTO STREET	2900	29500	28500	2900	27500	25000
03	020	NEV	R	16.988	NEVADA CITY, BROAD STREET	2900	27500	25000	2500	18900	17000
03	020	NEV	R	17.240	NEVADA CITY, COYOTE STREET	2500	18900	17000	2350	18300	16100
03	020	NEV	R	17.398	NEVADA CITY, EAST JCT. RTE. 49	2350	18300	16100	910	6400	5300
03	020	NEV		23.250	SCOTTS FLAT ROAD	850	6300	5100	720	5800	4200
03	020	NEV		29.600	WHITE CLOUD CAMPGROUND	560	4900	3400	560	4900	3400
03	020	NEV		31.834	WASHINGTON ROAD	560	4900	3400	520	4500	3050
03	020	NEV		41.287	NEVADA/PLACER COUNTY LINE	520	4500	3050	520	4500	3050
03	020	PLA		43.868	PLACER/NEVADA COUNTY LINE	520	4500	3050	520	4500	3100
03	020	NEV		45.661	JCT RTE 80	520	4500	3100			
07	022	LA		0.000	LONG BEACH, JCT. RTE. 1				5400	65000	62000
07	022	LA		0.084	LONG BEACH, BELLFLOWER BOULEVARD	5400	65000	62000	5500	67000	64000
07	022	LA		1.142	LONG BEACH, STUDEBAKER ROAD	6100	74000	70000	8700	105000	100000
07	022	LA		1.467	LOS ANGELES/ORANGE COUNTY LINE	8700	105000	100000			
12	022	ORA		0.000	LOS ANGELES/ORANGE COUNTY LINE				8700	105000	100000
12	022	ORA	R	0.660	JCT. RTE. 405	11200	148000	147000	15600	150000	147000
12	022	ORA	R	2.653	WESTMINSTER, KNOTT AVENUE/GOLDEN WEST ST	16600	159000	150500	11600	156000	150500
12	022	ORA	R	3.587	GARDEN GROVE, JCT. RTE. 39	12300	164000	163600	15900	190000	189100
12	022	ORA	R	4.812	GARDEN GROVE, MAGNOLIA STREET	15900	190000	183400	15200	203000	196400
12	022	ORA	R	5.817	GARDEN GROVE, BROOKHURST STREET	15200	203000	196400	15600	209000	202100
12	022	ORA	R	6.811	GARDEN GROVE, EUCLID STREET	15600	209000	202100	15900	226000	216500
12	022	ORA	R	7.829	GARDEN GROVE, HARBOR BOULEVARD	15900	226000	223300	15900	232000	230500
12	022	ORA	R	8.822	GARDEN GROVE, GARDEN GROVE BOULEVARD	15900	232000	223500	16200	238000	229600
12	022	ORA	R	9.729	ORANGE, MANCHESTER AVENUE/ CITY DRIVE	16300	239000	231000	17100	245000	235500
12	022	ORA	R	10.478	SANTA ANA, JCT. RTES. 5 AND 57	17100	245000	242900	10900	152000	151300
12	022	ORA	R	10.992	SANTA ANA, MAIN STREET	10900	152000	146700	10900	154000	146700
12	022	ORA	R	11.825	ORANGE, GLASSELL STREET	10800	153000	145200	10500	157000	141800
12	022	ORA	R	12.866	TUSTIN AVENUE	10500	157000	141800	8700	122000	118400
12	022	ORA	R	13.164	JCT. RTE. 55	8700	122000	122100			
07	023	LA		0.000	JCT. RTE. 1				70	540	510
07	023	LA		4.791	SOUTH JUNCTION MULHOLLAND HIGHWAY	120	930	880	140	1100	1050
07	023	LA		6.711	NORTH JUNCTION MULHOLLAND HIGHWAY	140	1100	1050	270	2200	2100
07	023	LA		8.900	LOS ANGELES/VENTURA COUNTY LINE	270	2200	2100			
07	023	VEN		0.000	LOS ANGELES/VENTURA COUNTY LINE				270	2200	2100
07	023	VEN	T	1.490	THOUSAND OAKS, PORTRERO ROAD	270	2200	2100	1000	12600	11500
07	023	VEN	R	2.258	THOUSAND OAKS, TRIUNFO CANYON ROAD	1300	15900	14700	2050	24800	23100
07	023	VEN	R	2.880	THOUSAND OAKS, AGOURA ROAD	2250	27000	25500	2150	24800	24100
07	023	VEN	R	3.339	THOUSAND OAKS, JCT. RTE. 101	3250	37500	37000	10000	119000	116000
07	023	VEN	R	5.064	THOUSAND OAKS, JANSS ROAD	10000	119000	116000	9900	114000	111000
07	023	VEN	R	6.028	THOUSAND OAKS, AVENIDA DE LOS ARBOLES	9900	114000	111000	9100	102000	100000
07	023	VEN	R	7.165	THOUSAND OAKS, SUNSET HILLS BOULEVARD	9100	102000	100000	8900	98000	96000
07	023	VEN	R	8.209	THOUSAND OAKS, OLSEN ROAD	8900	98000	96000	7200	77000	76000
07	023	VEN	R	10.164	MOORPARK, TIERRA REJADA ROAD	7200	77000	76000	7000	73000	72000
07	023	VEN	R	11.432	MOORPARK, JCT. RTE. 118	7000	73000	72000	2900	33000	30500
07	023	VEN	R	13.373	MOORPARK, HIGH STREET	1200	11700	11300	720	7500	7100
07	023	VEN		14.260	MERIDIAN HILLS DRIVE	720	7500	7100	410	4300	4000
07	023	VEN		14.607	SPRING ROAD	410	4300	4000	1050	11000	10300
07	023	VEN		15.540	HAPPY CAMP ROAD	1200	9200	7600	920	7500	6300
07	023	VEN		16.800	GRIMES CANYON ROAD	920	7500	6300	870	7500	6300
07	023	VEN		22.265	BARDSDALE AVENUE	870	7500	6300	940	8900	7600
07	023	VEN		24.165	FILLMORE, JCT. RTE. 126	1000	10600	9100			
04	024	ALA	R	1.847	OAKLAND, JCT. RTES. 580 AND 980				12200	167000	163100
04	024	ALA	R	3.063	OAKLAND, TELEGRAPH/CLAREMONT AVENUES	12200	167000	163100	11400	154000	151000
04	024	ALA	R	4.152	OAKLAND, BROADWAY/PATTON STREET	11400	154000	151000	12400	170000	166200
04	024	ALA	R	5.117	OAKLAND, JCT. RTE. 13	12400	170000	166200	13100	177000	171200
04	024	ALA	R	5.650	CALDECOTT LANE	13100	177000	171200	12900	174000	169200

04	024	ALA	R	5.887	OAKLAND, CALDECOTT TUNNEL	12900	174000	169200	12900	174000	169200
04	024	ALA	R	6.241	ALAMEDA/CONTRA COSTA COUNTY LINE	12900	174000	169200			
04	024	CC	R	0.000	ALAMEDA/CONTRA COSTA COUNTY LINE				12900	174000	165500
04	024	CC	R	0.400	FISH RANCH ROAD	12600	171000	165500	13000	176000	170500
04	024	CC		1.196	GATEWAY BOULEVARD	13000	176000	170500	13000	176000	170500
04	024	CC	R	2.319	CAMINO PABLO	13000	176000	170500	12200	165000	159600
04	024	CC	R	3.473	SAINT STEPHENS	12200	165000	159600	13100	175000	170500
04	024	CC	R	4.397	LAFAYETTE, ACALANES ROAD	13100	175000	170500	13100	178000	176000
04	024	CC	R	6.512	LAFAYETTE, OAK HILL ROAD/ FIRST STREET	13100	178000	176000	13800	189000	185400
04	024	CC	R	7.656	LAFAYETTE, PLEASANT HILL ROAD	13800	189000	185400	14700	201000	197300
04	024	CC		9.119	WALNUT CREEK, JCT RTE 680	14700	201000	197300			
05	025	MON		0.000	JCT. RTE. 198				50	160	135
05	025	MON		11.750	MONTEREY/SAN BENITO COUNTY LINE	40	130	105			
05	025	SBT		0.000	MONTEREY/SAN BENITO COUNTY LINE				80	390	320
05	025	SBT		7.300	BITTER WATER/KING CITY ROAD	80	390	320	80	560	530
05	025	SBT		21.470	JCT. RTE. 146 WEST	90	710	510	120	810	720
05	025	SBT		39.533	PAICINES, PANOCHE ROAD	170	1200	1000	260	2200	1900
05	025	SBT		49.014	VALLEY VIEW ROAD	260	2000	1900	1000	7400	6500
05	025	SBT		52.194	BRIGGS RD E	1600	18200	17900	2400	20200	19800
05	025	SBT		54.048	JCT. RTE. 156	2400	20200	19800	4500	37500	29300
05	025	SBT		55.134	HUDNER LANE	2500	28000	26400	2500	28000	26400
05	025	SBT		60.084	SAN BENITO/SANTA CLARA COUNTY LINE	5600	52000	51100			
04	025	SCL		0.000	SAN BENITO/SANTA CLARA COUNTY LINE				2300	29000	27300
04	025	SCL		2.528	GILROY, JCT RTE 101	2400	29500	27900	2400	29500	27900
04	025	SCL		2.560	JCT. RTE. 101	2400	29500	27900			
10	026	SJ		1.110	JCT. RTE. 99				2300	24700	23100
10	026	SJ		1.897	CARDINAL AVENUE	1300	16500	10200	1450	14000	12600
10	026	SJ	R	4.217	ALPINE RD	1050	10000	8100	970	9300	8100
10	026	SJ		6.850	JACKTONE ROAD	870	7700	6300	780	7700	6950
10	026	SJ		10.000	DUNCAN ROAD	970	7700	6800	1000	8900	7600
10	026	SJ		10.700	MILL STREET	1000	8900	7300	1000	8900	7400
10	026	SJ		11.080	LINDEN, FLOOD ROAD/FRONT STREET	590	6200	5500	670	6000	5400
10	026	SJ		15.060	ESCALON/BELLOTA ROAD	660	6600	5500	780	5900	5500
10	026	CAL	R	4.379	JENNY LIND ROAD	440	4450	2500	710	6600	6250
10	026	CAL		7.620	SILVER RAPIDS RD	760	10000	7400	760	9000	8500
10	026	CAL		8.530	LA CONTENTA COUNTRY CLUB ENTRANCE	850	12000	11800	1200	12100	11900
10	026	CAL		9.859	HOGAN DAM ROAD	1150	13000	11500	1100	12600	10800
10	026	CAL		10.435	VALLEY SPRINGS, JCT. RTE. 12	1650	12000	11400	200	2200	1700
10	026	CAL		14.280	PALOMA RD LT	200	2100	1700	210	2600	1900
10	026	CAL		18.069	MOKELUMNE HILL, JCT. RTE. 49	200	1850	1700	310	2550	2350
10	026	CAL		26.797	RIDGE ROAD	130	1400	1100	130	1000	740
10	026	CAL		32.650	GLENCO, ASSOCIATED OFFICE ROAD	160	1000	750	90	880	750
10	026	CAL	R	33.564	RAILROAD FLAT ROAD	90	820	780	200	1700	1550
10	026	CAL		34.770	WINTON ROAD	210	1600	1400	200	2150	1800
10	026	CAL		34.885	MAIN ST	200	1600	1350	230	1800	1650
10	026	CAL		38.325	CALAVERAS/AMADOR COUNTY LINE	180	1950	1550			
10	026	AMA		0.000	CALAVERAS/AMADOR COUNTY LINE				180	1950	1550
10	026	AMA		4.644	JCT. RTE. 88	310	2600	2300			
07	027	LA		0.000	JCT. RTE. 1				1900	16700	15200
07	027	LA		4.310	OLD TOPANGA CANYON ROAD	2000	18600	17100	1900	18300	16900
07	027	LA		11.060	LOS ANGELES, MULHOLLAND DRIVE	1550	15700	14700	2550	27000	26000
07	027	LA		12.276	LOS ANGELES, VENTURA BOULEVARD	2900	33000	32000	5300	62000	60000
07	027	LA		12.430	LOS ANGELES, JCT. RTE. 101	5300	62000	60000	4100	53000	52000
07	027	LA		14.050	LOS ANGELES, VANOWEN STREET	3000	37500	37000	3250	39500	39000
07	027	LA		14.550	LOS ANGELES, SHERMAN WAY	3400	40500	40000	3300	38000	37500
07	027	LA		15.830	LOS ANGELES, ROSCOE BOULEVARD	2900	33000	32000	4250	47000	46000
07	027	LA		18.629	LOS ANGELES, DEVONSHIRE STREET	3850	41500	40500	3900	41000	40000
07	027	LA		20.062	LOS ANGELES, JCT. RTE. 118	4500	46000	45000			
03	028	PLA		0.085	TAHOE CITY, JCT. RTE. 89				1650	17700	14600
03	028	PLA		0.512	GROVE STREET	1650	17700	14600	1450	17400	14200
03	028	PLA		0.830	TAHOE STATE PARK	1450	17600	14100	1250	16700	13800
03	028	PLA		1.845	LAKE FOREST DRIVE	1300	16300	13100	1300	14900	12400
03	028	PLA		4.250	LARDIN WAY	1150	12400	9800	1150	12600	9500
03	028	PLA		5.810	CARNELIAN BAY ROAD	1100	12500	8900	1200	12600	9100
03	028	PLA		7.190	GRANITE ROAD	1400	13500	10200	1400	13600	10600
03	028	PLA		8.320	NATIONAL AVENUE	1350	13100	10900	1400	15500	13200
03	028	PLA		9.340	KINGS BEACH, JCT. RTE. 267 NORTH	1400	15800	13600	1500	17200	14700
03	028	PLA		9.880	COON STREET	1500	17200	14700	1700	19400	15300
03	028	PLA		11.000	CAL-NEVA DRIVE	1650	17300	13000	1600	18900	13300
03	028	PLA		11.028	NEVADA STATE LINE	1600	18900	13300			
04	029	SOL		0.000	VALLEJO, JCT. RTE. 80				1600	11000	9700
04	029	SOL		1.010	VALLEJO, LEMON STREET	1600	11000	9700	2700	20400	18300
04	029	SOL		2.066	VALLEJO, MAINE STREET	2700	20400	18300	2100	19200	18300
04	029	SOL		2.820	VALLEJO, TENNESSEE STREET	2100	19200	18300	2000	23600	22600
04	029	SOL		4.732	LEWIS BROWN DR/JCT. RTE. 37	4000	34500	34300	4000	53000	51400
04	029	SOL		5.058	RTE 29/WB 37 ON/OFF RAMPS	4000	53000	51400	4000	53000	51400
04	029	SOL		5.850	VALLEJO, MINI DRIVE	4000	53000	51400	4000	53000	51400
04	029	SOL		5.955	SOLANO/NAPA COUNTY LINE	4000	53000	51400			

04	029	NAP		0.000	SOLANO/NAPA COUNTY LINE				4000	52500	45200
04	029	NAP		0.690	AMERICAN CANYON ROAD	3500	46000	45200	3100	37500	36800
04	029	NAP	R	2.767	GREEN ISLAND ROAD	3100	37500	36800	3100	37500	36800
04	029	NAP		3.610	KELLY ROAD SOUTH	3100	37500	36800	3700	43500	41500
04	029	NAP		4.706	JCT. RTE. 12 EAST	3700	43500	41500	6100	65000	61200
04	029	NAP	R	6.196	JCT. RTE. 221 NORTH	6100	65000	61200	4000	50000	45200
04	029	NAP	R	8.657	JCT. RTE. 121 SOUTH	4000	50000	45200	4500	52000	49000
04	029	NAP	R	9.100	IMOLA AVENUE	4500	52000	49000	4500	52000	49000
04	029	NAP	R	10.389	NAPA, JCT. RTE. 121 NORTH	4500	52000	49000	5400	60000	55500
04	029	NAP		11.548	FIRST STREET	5400	60000	55500	6100	67000	63100
04	029	NAP		12.039	NAPA, LINCOLN AVENUE	6100	67000	63100	5400	60000	55500
04	029	NAP		13.058	JCT. TRANCAS/REDWOOD ROADS	5400	60000	55500	4100	42500	40500
04	029	NAP		15.581	OAK KNOLL AVENUE	4100	42500	40500	4100	42500	40500
04	029	NAP		19.031	CALIFORNIA DRIVE	4100	42500	40500	3600	36500	34800
04	029	NAP		22.520	OAKVILLE GRADE ROAD	3600	36500	34800	2700	28500	26400
04	029	NAP		24.595	RUTHERFORD, JCT. RTE. 128 EAST	2700	28500	26400	2600	26500	24600
04	029	NAP		26.570	ZINFANDEL LANE	2600	26500	24600	2500	24600	22600
04	029	NAP		28.750	ST. HELENA, ADAMS STREET	2500	24600	22600	2300	22600	20800
04	029	NAP		29.250	ST. HELENA, PRATT AVENUE	2300	22600	20800	2000	19800	18900
04	029	NAP		30.660	LODI LANE	2000	19800	18900	1800	17900	17000
04	029	NAP		33.470	LARKMEAD LANE	1800	17900	17000	1600	16100	15100
04	029	NAP		36.893	CALISTOGA, JCT. RTE. 128 NORTHWEST	1600	16100	15100	1400	14200	13200
04	029	NAP		37.902	CALISTOGA, SILVERADO TRAIL	1400	14200	13200	1300	12400	11400
04	029	NAP		39.500	TUBBS LANE	1300	12400	11400	1000	9500	8500
04	029	NAP		48.582	NAPA/LAKE COUNTY LINE	1000	9500	8500			
01	029	LAK		0.000	NAPA/LAKE COUNTY LINE				970	8800	8500
01	029	LAK		4.150	RANCHERIA ROAD	870	9700	9100	870	10300	9900
01	029	LAK		4.540	DRY CREEK CUTOFF	870	10300	9900	820	12000	10800
01	029	LAK		5.811	MIDDLETOWN, JCT. RTE. 175	900	12500	11700	910	13100	12800
01	029	LAK		6.360	MIDDLETOWN, BUTTS CANYON ROAD	910	13100	12800	910	13100	12900
01	029	LAK		11.124	HIDDEN VALLEY/SPRUCE ROAD	900	12500	11100	900	12000	10900
01	029	LAK		11.930	SPRUCE GROVE ROAD	900	12000	10900	900	12000	10900
01	029	LAK		20.310	JCT. RTE. 53 NORTH	940	12500	11700	800	11500	9700
01	029	LAK		21.650	SEIGLER CANYON ROAD	1150	12600	11600	1050	11600	10600
01	029	LAK		22.190	POINT LAKEVIEW DRIVE	1050	11600	10600	860	10300	9100
01	029	LAK		27.890	JCT. RTE. 281	860	10300	9100	900	10300	9300
01	029	LAK		31.050	JCT. RTE. 175	900	10300	9300	1000	10300	9850
01	029	LAK		31.330	JCT. RTE. 175	1000	10300	9900	1000	10300	9900
01	029	LAK		32.350	BOTTLE ROCK ROAD	1000	10300	9800	1200	12000	10800
01	029	LAK	R	34.580	MAIN STREET	1200	12700	11700	1200	12100	11700
01	029	LAK	R	34.747	KELSEYVILLE, LIVE OAK DRIVE	1200	12100	11700	1200	12500	12000
01	029	LAK	R	35.320	KELSEYVILLE, BELL HILL ROAD	1200	12500	11800	1200	12000	11400
01	029	LAK	R	36.289	RENFRO DRIVE	1200	12000	11500	1300	14100	13500
01	029	LAK	R	37.669	ARGONAUT ROAD	1300	14400	13200	1300	14100	13100
01	029	LAK	R	38.592	HIGHLAND SPRINGS ROAD	1300	14100	13500	1400	15000	13900
01	029	LAK	R	40.140	JCT. RTE. 175	1500	15100	14500	1300	13700	13000
01	029	LAK	R	41.423	LAKEPORT, LAKEPORT BOULEVARD	1300	13700	13000	1350	15700	13500
01	029	LAK	R	42.677	11TH STREET	1350	15700	13500	1300	13300	12600
01	029	LAK	R	45.145	PARK WAY	1300	13300	12600	980	11000	10400
01	029	LAK	R	47.849	LUCERNE	980	11000	10400	700	7600	7000
01	029	LAK		52.539	JCT. RTE. 20	700	7600	7000			
03	032	GLE	L	0.000	JCT. RTE. 5				960	10200	9700
03	032	GLE	R	0.523	WALKER & 6TH	1000	11000	10300	1050	12800	11000
03	032	GLE		1.300	ORLAND, COUNTY ROAD M	980	11300	10150	920	10000	9250
03	032	GLE		3.000	COUNTY ROAD P	1000	10200	9750	1100	10800	10400
03	032	GLE		9.626	JCT. RTE. 45 SOUTH	1100	11100	10600	1400	14900	13800
03	032	GLE		10.910	GLENN/BUTTE COUNTY LINE	1500	16000	14600			
03	032	BUT		0.000	GLENN/BUTTE COUNTY LINE				1500	16000	14600
03	032	BUT		4.180	MERIDIAN ROAD	1500	16000	14600	1500	16000	14600
03	032	BUT		5.022	MUIR AVENUE	1500	16000	14600	1500	16000	14600
03	032	BUT		6.238	EAST/NORTH LINDO AVE	1550	16300	14900	1750	18900	18500
03	032	BUT		6.457	WEST LINDO AVENUE	1750	18900	18500	1950	19300	18400
03	032	BUT		7.110	WEST EIGHTH AVENUE	1900	20300	19100	2000	21400	20200
03	032	BUT		7.790	WEST SACRAMENTO AVENUE	2300	24600	23400	2000	23000	22400
03	032	BUT	R	8.367	CHICO, WEST FIRST STREET	2000	23000	22400	2400	27500	26500
03	032	BUT	R	8.655	CHICO, WEST FIFTH STREET	2400	27500	26500	2350	25000	23500
03	032	BUT	R	8.869 R	CHICO, ON NINTH ST AT WALNUT ST, BEGIN RIGHT ALIGN				1150	11800	10600
03	032	BUT	R	9.006 R	CHICO, ON NINTH STREET AT ORANGE STREET	1150	11800	10600	1200	12200	11000
03	032	BUT	R	9.133 R	CHICO, ON NINTH STREET AT IVY STREET	1200	12200	11000	1300	12400	12000
03	032	BUT	R	9.461 R	CHICO, ON NINTH STREET AT BROADWAY	1300	12400	12000	1450	13700	13600
03	032	BUT	R	9.571 R	CHICO, ON 9TH ST AT MAIN ST	1500	13700	13600	1750	18700	18100
03	032	BUT		9.410 R	CHICO, ON NINTH STREET AT PINE STREET	1750	18700	18100	2200	23200	23000
03	032	BUT		9.460 R	CHICO, ON NINTH STREET AT CYPRESS STREET	2200	23200	23000	1800	18500	18000
03	032	BUT		10.187 R	CHICO, JCT. RTE. 99	1800	18500	18000	1900	20800	20000
03	032	BUT		10.280 R	CHICO, ON NINTH STREET AT FIR STREET	1900	20800	20000	900	9500	9200
03	032	BUT		10.735 R	CHICO, 1/2 MILE E OF FIR ST, END RIGHT ALIGN	900	9500	9200			
03	032	BUT	R	8.905 L	CHICO, ON EIGHTH ST AT WALNUT ST, BEGIN LEFT ALIGN				1250	14200	14000
03	032	BUT	R	9.038 L	CHICO, ON EIGHTH STREET AT ORANGE STREET	1250	14200	14000	1450	15900	15500

03	032	BUT	R	9.171	L	CHICO, ON EIGHTH STREET AT IVY STREET	1450	15900	15500	1400	15400	15000
03	032	BUT	R	9.504	L	CHICO, ON EIGHTH STREET AT BROADWAY	1400	15400	15000	1500	17400	16000
03	032	BUT	R	9.571	L	CHICO, ON 8TH ST AT MAIN ST	1500	17400	16000	1500	19700	18000
03	032	BUT		9.400	L	CHICO, ON EIGHTH STREET AT PINE STREET	1500	19700	18000	1800	22000	19900
03	032	BUT		9.460	L	CHICO, ON EIGHTH STREET AT CYPRESS STREET	1800	22000	19900	1750	18200	17800
03	032	BUT		10.187	L	CHICO, ON EIGHTH STREET AT JCT RTE 99	1750	18200	17800	1250	12300	11000
03	032	BUT		10.280	L	CHICO, ON EIGHTH STREET AT FIR STREET	1250	12300	11000	700	5900	5800
03	032	BUT		10.735	L	CHICO, 1/2 MILE E OF FIR STREET, END LEFT ALIGN	700	5900	5800			
03	032	BUT		11.010		CHICO, FOREST AVENUE	2200	21500	20000	1450	15500	14000
03	032	BUT		11.270		CHICO, EL MONTE AVENUE	1450	15500	14000	1200	13600	12000
03	032	BUT		11.704		BRUCE ROAD	1200	13600	12000	1250	11900	9500
03	032	BUT		15.211		CHICO, HUMBOLT ROAD	720	7100	5700	430	4500	3800
03	032	BUT	R	23.866		FOREST RANCH, NOPEL AVENUE	380	3050	2750	340	2500	2050
03	032	BUT	R	36.926		LOMO, HUMBOLT ROAD	200	1500	1050	200	1500	1050
03	032	BUT		37.749		BUTTE/TEHAMA COUNTY LINE	150	1300	1000			
02	032	TEH		0.000		BUTTE/TEHAMA COUNTY LINE				180	2100	1450
02	032	TEH	R	24.876		JCT. RTE. 36	210	2650	1550			
07	033	VEN		0.000		VENTURA, JCT. RTE. 101				3750	44500	42500
07	033	VEN		1.565		VENTURA, STANLEY AVENUE	3750	44500	42500	2800	33000	31500
07	033	VEN		2.648		SHELL ROAD	2800	33000	31500	2600	30500	29000
07	033	VEN	R	4.487		CANADA LARGA ROAD	2600	30500	29000	2450	29000	27500
07	033	VEN	R	5.635		CASITAS VISTA ROAD	2450	29000	27500	2300	26500	25500
07	033	VEN		8.001		CREEK ROAD	2100	24200	23400	2050	24500	23200
07	033	VEN		9.040		SANTA ANA BOULEVARD	2050	24500	23200	1900	24700	23400
07	033	VEN		10.650		WOODLAND ROAD	1900	24700	23400	1950	24700	23400
07	033	VEN		11.200		WEST JCT. RTE. 150	1900	22700	21500	1200	14000	11200
07	033	VEN		11.961		EL ROBLAR DRIVE	1300	11600	7000	550	4550	2550
07	033	VEN		12.800		FAIRVIEW ROAD/LA LUNA AVENUE	400	3400	2200	270	2000	1650
07	033	VEN		13.350		LOS PADRES NATIONAL FOREST BOUNDARY	250	1700	1350	250	1700	1350
07	033	VEN		15.441		MATILIJA HOT SPRINGS ROAD	250	1500	1100	150	840	660
07	033	VEN		17.631		WHEELER HOT SPRINGS	150	840	660	140	810	640
07	033	VEN		25.791		ROSE VALLEY ROAD	120	680	540	100	540	430
07	033	VEN		30.219		SESPE GORGE MAINTENANCE STATION	90	490	390	90	490	390
07	033	VEN		48.500		LOCKWOOD VALLEY ROAD	70	400	310	70	390	310
07	033	VEN		57.508		VENTURA/SANTA BARBARA COUNTY LINE	90	430	400			
05	033	SB		0.000		VENTURA/SANTA BARBARA COUNTY LINE				90	430	400
05	033	SB		8.184		SANTA BARBARA/SAN LUIS OBISPO COUNTY LINE	350	1600	1500			
05	033	SLO		0.000		SANTA BARBARA/SAN LUIS OBISPO COUNTY LINE				170	1500	1400
05	033	SLO		2.802		JCT. RTE. 166 WEST	130	1200	1100	640	5900	5400
05	033	SLO		4.951		SAN LUIS OBISPO/KERN COUNTY LINE	570	5300	4800			
06	033	KER		0.000		SAN LUIS OBISPO/KERN COUNTY LINE				500	4350	3700
06	033	KER	R	11.555		MARICOPA, JCT. RTE. 166 EAST	510	5000	4200	430	4400	4200
06	033	KER		12.910		COUNTY ROAD P263	430	4300	4200	540	6200	5300
06	033	KER		17.889		TAFT, JCT. RTE. 119 EAST	610	6200	5900	250	2350	2250
06	033	KER		18.330		TAFT, FIRST STREET	530	5900	5300	870	9300	8700
06	033	KER		18.790		TAFT, SIXTH STREET	780	8600	8300	1150	12000	11400
06	033	KER		19.129		LINCOLN/10TH STREETS	1150	13000	11300	610	6800	6100
06	033	KER		23.410		MIDWAY ROAD	260	3300	2600	410	3150	3050
06	033	KER		33.454		JCT. RTE. 58 WEST	400	3550	2900	390	3250	2950
06	033	KER		34.285		JCT. RTE. 58 EAST	390	3250	2950	190	1750	1450
06	033	KER		41.080		LOKERN ROAD (COUNTY ROAD P208)	320	2600	2400	490	4100	3650
06	033	KER		44.085		LOST HILLS ROAD (COUNTY ROAD P213)	490	4100	3650	600	4850	4250
06	033	KER	R	60.168		JCT. RTE. 46	300	2350	2100	420	2600	2300
06	033	KER		72.720		DEVILS DEN ROAD (BARKER ROAD)	220	1800	1600	230	1800	1600
06	033	KER		73.743		KERN/KINGS COUNTY LINE	210	1700	1500			
06	033	KIN		0.000		KERN/KINGS COUNTY LINE				240	1950	1700
06	033	KIN		7.800		REEF CITY, JCT. RTE. 41	350	2350	1700	510	3450	2900
06	033	KIN		16.400		SOUTH END, AVENAL	670	7100	4750	670	7100	4750
06	033	KIN		16.440		AVENAL, 7TH AVENUE	670	7100	4750	450	4850	3200
06	033	KIN		17.140		JCT. RTE. 269	360	3750	2550	450	4750	3200
06	033	KIN		18.994		KINGS/FRESNO COUNTY LINE	290	3100	2000			
06	033	FRE		0.000		KINGS/FRESNO COUNTY LINE				290	3100	2000
06	033	FRE		8.020		ALPINE/LOST HILLS ROADS	290	3100	2000	250	2700	1750
06	033	FRE		14.750		MERCED AVENUE	840	8800	8300	1000	11600	10200
06	033	FRE		15.370		COALINGA, FIFTH STREET	1150	12800	11300	350	3750	3600
06	033	FRE		15.707		COALINGA, JCT. RTE. 198 WEST	410	6200	4100	860	13200	9100
06	033	FRE		16.780		COALINGA, PHELPS AVENUE	890	9600	9400	520	7900	5400
06	033	FRE	R	18.588		GALE AVENUE	480	5500	5100	420	5100	4400
06	033	FRE		24.316		JCT. RTE. 198 EAST	380	4550	4300	230	2650	2450
06	033	FRE	R	27.019		DERRICK AVENUE	260	3100	2650	240	2750	2400
06	033	FRE	R	29.000		JCT. RTE. 145 NORTHEAST, SOUTH JCT. RTE. 5	240	2750	2400	240	2750	2400
06	033	FRE	R	39.853		NORTH JCT. RTE. 5	240	2750	2400	250	2400	1850
06	033	FRE		53.400		ADAMS AVENUE	330	2200	1750	260	2400	1750
06	033	FRE		59.430		CALIFORNIA AVENUE	270	2450	1900	320	2850	1900
06	033	FRE		61.450		MENDOTA, BELMONT AVENUE	320	2850	1900	750	5700	4750
06	033	FRE		62.247		MENDOTA, JCT. RTE. 180 EAST	530	6400	5400	1350	15100	13000
06	033	FRE	R	62.506		BASS AVENUE	1350	15100	13000	770	8200	7300
06	033	FRE		69.920		FIREBAUGH, 15TH STREET	1350	14600	12800	1250	13200	12000

06	033	FRE		70.193	FIREBAUGH, 12TH STREET	1500	13600	12300	1450	12600	11800
06	033	FRE		70.557	FIREBAUGH, 8TH STREET	1200	11000	9600	1100	10300	9100
06	033	FRE		72.837	DOUGLAS AVENUE	340	3750	3150	330	3700	3100
06	033	FRE	R	79.905	BRANNON AVENUE	280	3400	2650	780	2700	2350
10	033	MER	L	1.232	FRESNO/MERCED COUNTY LINE	310	4150	3400			
10	033	MER	R	0.000	FRESNO/MERCED COUNTY LINE				310	4150	3400
10	033	MER	R	1.170	DOS PALOS, BLOSSOM STREET	730	9450	7600	810	7600	6100
10	033	MER		1.888	CARMELLIA AVENUE	620	6600	6000	520	6600	5850
10	033	MER	R	5.635	EAST JCT. RTE. 152	680	8200	6500	680	7800	6800
10	033	MER	R	13.238	WEST JCT. RTE 152	680	7800	6800	1100	13300	11300
10	033	MER	R	15.600	VERA CRUZ DRIVE	1200	12400	11800	910	12700	10400
10	033	MER	R	16.258	CENTINELLA, HENRY MILLER ROAD	1050	13300	10400	1200	12700	10100
10	033	MER	R	16.643	JCT. RTE. 5	1200	14200	12900	1350	15300	14200
10	033	MER		17.270	MC CABE ROAD	470	5800	5700	450	5600	5500
10	033	MER		27.111	NORTH JCT. RTE. 140 EAST	710	9400	7600	800	9900	8850
10	033	MER		30.302	MERCED/STANISLAUS COUNTY LINE	590	6400	6350			
10	033	STA		0.000	MERCED/STANISLAUS COUNTY LINE				590	6400	6350
10	033	STA		0.680	NEWMAN, MERCED STREET	780	9600	9000	720	9200	8400
10	033	STA		0.950	NEWMAN, DRISKELL ROAD/KERN STREET	710	9200	9100	750	7300	7250
10	033	STA		2.060	STUHR ROAD	780	8900	8400	430	4500	4400
10	033	STA		4.820	J.T. CROW RD RT	470	5800	5500	510	5800	5500
10	033	STA		6.838	CROWS LANDING, CROWS LANDING/FINK ROADS	560	6200	6000	330	4900	4600
10	033	STA		7.040	CROWS LANDING, 4TH STREET	390	4250	3750	430	4550	3950
10	033	STA		12.571	PATTERSON, SPERRY ROAD	610	6700	4900	570	6600	5500
10	033	STA		13.100	SALADO AVENUE/EL CIRCULO	810	8800	6900	850	9600	6700
10	033	STA		13.180	LAS PALMAS AVENUE	90	6200	6100	510	6500	6400
10	033	STA		13.260	DEL PUERTO AVENUE/EL CIRCULO	540	6000	4500	650	7200	5400
10	033	STA		14.520	WARD AVENUE	600	6400	5800	560	5600	5500
10	033	STA		16.430	BALDWIN RD-LT	450	4850	4800	420	4500	3900
10	033	STA		19.550	WESTLEY, GRAYSON/HOWARD ROADS	400	4200	3800	310	3200	3100
10	033	STA		19.920	WESTLEY, E STREET	270	3200	3000	220	2750	2500
10	033	STA		27.086	STANISLAUS/SAN JOAQUIN COUNTY LINE	610	6400	6350			
10	033	SJ		0.000	STANISLAUS/SAN JOAQUIN COUNTY LINE				610	6400	6350
10	033	SJ		0.818	VERNALIS, JCT. RTE. 132	240	3600	2900	290	3650	3600
10	033	SJ		3.510	NEW JERUSALEM, DURHAM FERRY ROAD	270	3450	3400	980	5400	4800
10	033	SJ		4.826	JCT. RTE. 5	980	5400	4800			
07	034	VEN		6.270	OXNARD, RICE AVENUE	1250	10700	10200	1500	12200	11700
07	034	VEN		8.430	PLEASANT VALLEY ROAD, WEST JUNCTION	1500	12200	11700	1450	11300	9600
07	034	VEN		8.911	WOOD ROAD	1450	11300	9600	1450	10900	9300
07	034	VEN		10.433	LAS POSAS ROAD, WEST JUNCTION	1450	10900	9300	1150	8200	7000
07	034	VEN		12.463	RIGHT ONTO PLEASANT VALLEY ROAD	1150	8200	7000	2400	18000	15100
07	034	VEN		12.780	CAMARILLO, PLEASANT VALLEY ROAD, LEFT ONTO LEWIS RO/	2400	18000	15100	1600	12400	10400
07	034	VEN	R	13.541	CAMARILLO, VENTURA BOULEVARD	1600	12400	10400	2700	21600	18200
07	034	VEN	R	13.603	CAMARILLO, JCT. RTE. 101	2700	21600	18200	2600	21900	18200
07	034	VEN		13.657	CAMARILLO, DAILY DRIVE	2600	21900	18200	2500	22100	18900
07	034	VEN		15.870	CAMARILLO, LAS POSAS ROAD, EAST JUNCTION	1400	13100	11200	880	9300	8900
07	034	VEN		17.663	SOMIS, JCT. RTE. 118	1350	15100	14500			
04	035	SCL	R	0.053	JCT. RTE. 17				200	900	800
04	035	SCL		0.230	SANTA CLARA/ SANTA CRUZ COUNTY LINE	210	1000	950			
05	035	SCR		0.230	SANTA CLARA/ SANTA CRUZ COUNTY LINE				380	1300	1200
05	035	SCR		2.870	BEAR CREEK ROAD	280	1100	980	100	520	400
05	035	SCR		7.680	SANTA CRUZ/ SANTA CLARA COUNTY LINE	80	480	400			
04	035	SCL		7.680	SANTA CRUZ/ SANTA CLARA COUNTY LINE				100	460	400
04	035	SCL		7.700	BLACK ROAD	100	400	300	200	1000	800
04	035	SCL		14.100	JCT. RTE. 9	300	1500	1200	300	1500	1200
04	035	SCL		17.121	SAN MATEO/SANTA CLARA COUNTY LINE	300	1500	1200			
04	035	SM		0.000	SAN MATEO/SANTA CLARA COUNTY LINE				300	1500	1200
04	035	SM		3.213	ALPINE ROAD	300	1500	1200	300	1500	1200
04	035	SM		10.518	WOODSIDE, JCT. RTE. 84	700	2600	2300	200	1500	1400
04	035	SM		16.220	KINGS MOUNTAIN ROAD	200	1600	1500	200	1500	1400
04	035	SM	L	21.720	JCT. RTE. 92	400	2700	2500	500	3600	3400
04	035	SM	R	23.037	JCT. RTE. 280	500	3600	3400	2100	18000	17000
04	035	SM		24.349	SAN BRUNO, SAN BRUNO AVENUE	2100	18000	17000	2200	19000	18000
04	035	SM		24.852	SAN BRUNO, SNEATH AVENUE	2600	20800	19900	2500	21000	20000
04	035	SM		26.234	PACIFICA, SHARP PARK ROAD	3000	24000	23000	2700	23000	22000
04	035	SM		26.860	PACIFICA, MANOR DRIVE	2500	20200	19300	3000	26000	24000
04	035	SM	R	28.687	DALY CITY, JCT. RTE. 1	4400	35000	33600	3300	28000	26000
04	035	SM		29.700	DALY CITY, WESTMOOR AVENUE	4300	41000	38000	3500	30000	28000
04	035	SM		30.270	DALY CITY, WESTRIDGE AVENUE	3200	33000	30000	3700	32000	30000
04	035	SM		30.834	JOHN DALY BOULEVARD	3300	34000	31000	3700	33000	32000
04	035	SM		31.537	SAN MATEO/SAN FRANCISCO COUNTY LINE	3700	33000	32000			
04	035	SF		0.000	SAN MATEO/SAN FRANCISCO COUNTY LINE				3300	31000	27900
04	035	SF		0.800	SAN FRANCISCO, JOHN MUIR DRIVE	3300	31000	27900	3500	33000	30000
04	035	SF		1.830	SAN FRANCISCO, SLOAT BOULEVARD	3100	28500	25800	3100	28500	25800
04	035	SF		2.122	SAN FRANCISCO, SUNSET BOULEVARD	3000	28500	25600	3200	30000	26800
04	035	SF		3.164	SAN FRANCISCO, JCT. RTE. 1	3100	29000	26000			
01	036	HUM		0.000	ALTON, JCT. RTE. 101				510	5300	4700
01	036	HUM		0.298	EAST LIMITS ALTON	510	5300	4700	510	5600	4900

01	036	HUM		2.811		HYDESVILLE, ROHNERVILLE ROAD	720	5800	4600	530	5800	5300
01	036	HUM		3.270		EAST LIMITS HYDESVILLE	700	5700	5200	700	5500	5200
01	036	HUM		7.540		CARLOTTA, EAST	320	3300	2600	320	3300	2600
01	036	HUM	R	23.709		WEST LIMITS BRIDGEVILLE	190	2700	2300	180	2500	2000
01	036	HUM	R	23.916		BRIDGEVILLE, ALDERPOINT ROAD	180	2500	2000	100	2200	1900
01	036	HUM		43.955		EAST LIMITS COBB	140	2000	1700	150	2000	1700
01	036	HUM		45.681		HUMBOLDT/TRINITY COUNTY LINE	140	1900	1600			
02	036	TRI		0.000		HUMBOLDT/TRINITY COUNTY LINE				250	2550	1400
02	036	TRI	R	3.324		LOWER MAD RIV RD 501 RT	210	2250	1200	120	1150	610
02	036	TRI		18.090		FOREST GLEN MAINTENANCE STATION	110	1050	550	110	1050	550
02	036	TRI		27.230		JCT. RTE. 3 NORTH	140	1750	920	90	890	480
02	036	TRI	R	41.139		TRINITY/SHASTA COUNTY LINE	80	890	480			
02	036	SHA		0.000		TRINITY/SHASTA COUNTY LINE				80	890	480
02	036	SHA		8.870		PLATINA ROAD	160	1400	760	80	780	530
02	036	SHA		11.928		SHASTA/TEHAMA COUNTY LINE	80	780	530			
02	036	TEH	L	0.000		SHASTA/TEHAMA COUNTY LINE				90	780	530
02	036	TEH		23.200		BOWMAN ROAD	90	910	610	100	820	560
02	036	TEH		28.216		CANNON ROAD	100	820	560	100	840	570
02	036	TEH	R	33.739		OAK KNOLL DRIVE	220	2300	1550	220	2300	1550
02	036	TEH	R	39.300		MC COY ROAD	350	4850	3300	460	5400	3900
02	036	TEH		39.720		BAKER ROAD	460	5400	3900	460	6000	4100
02	036	TEH	L	39.734		NORTH MAIN STREET	510	6000	4100	550	8700	8000
02	036	TEH	L	40.315		RED BLUFF, ADOBE ROAD	540	14000	12800	360	10500	9700
02	036	TEH	L	40.870		RED BLUFF, CRITTENDEN STREET	360	10400	9500	670	8800	8200
02	036	TEH	L	41.150		RED BLUFF, WALNUT STREET	670	8900	8200	890	12200	11500
02	036	TEH	L	41.290		RED BLUFF, OAK STREET	890	11800	11000	1400	20300	18800
02	036	TEH		41.400		RED BLUFF, SACRAMENTO RIVER BRIDGE	1400	20300	18800	1400	20300	18800
02	036	TEH		41.670		RED BLUFF, GILMORE ROAD	1400	20300	18800	1700	23800	19100
02	036	TEH		41.847		RED BLUFF, JCT. RTE. 5	1700	23800	19100	1400	22900	19600
02	036	TEH		42.790		RED BLUFF, CHESTNUT AVENUE	1400	22900	19600	1250	20000	17800
02	036	TEH		43.280		HOY ROAD	1250	20000	17800	820	14200	12400
02	036	TEH		44.004		JCT. RTE. 99 SOUTH	820	14200	12400	130	2600	1900
02	036	TEH		55.260		MANTON ROAD	260	2800	1850	200	2350	1600
02	036	TEH		58.180		PAYNES CREEK	200	2350	1600	220	1850	1400
02	036	TEH		83.142		MINERAL, JCT. RTE. 172 SOUTHEAST	210	1550	1150	190	1350	1050
02	036	TEH		87.681		JCT. RTE. 89 NORTH	190	1500	1050	180	1450	1050
02	036	TEH		91.253		MORGAN SPRINGS, JCT. RTE. 172 SOUTHWEST	180	1450	1050	160	1500	1100
02	036	TEH		99.935		JCT. RTE. 32 SOUTHWEST	160	1500	1100	380	2900	2150
02	036	TEH		104.002		TEHAMA/PLUMAS COUNTY LINE	380	2900	2150			
02	036	PLU		0.000		TEHAMA/PLUMAS COUNTY LINE				380	2900	2150
02	036	PLU		6.287		JCT. RTE. 89	380	2900	2150	680	5600	3200
02	036	PLU		8.080		FARRAR DRIVE	770	5900	3800	770	5900	3800
02	036	PLU		8.840		FEATHER RIVER BRIDGE	900	6300	5200	900	6300	5200
02	036	PLU		9.180		CHESTER, MELISSA AVENUE	570	5300	3900	570	5300	3900
02	036	PLU	R	13.930		BIG SPRINGS ROAD	570	5300	3900	250	2450	2050
02	036	PLU		18.421		PLUMAS/LASSEN COUNTY LINE	250	2450	2050			
02	036	LAS		0.000		PLUMAS/LASSEN COUNTY LINE				250	2450	2050
02	036	LAS		0.760		JCT. RTE. 147 SOUTH	250	2450	2050	230	2350	2050
02	036	LAS		3.100		WESTWOOD, DELLWOOD ST	230	2350	2050	310	3150	2550
02	036	LAS		3.706		WESTWOOD, COUNTY ROAD A 21	310	3150	2550	310	3350	2600
02	036	LAS	R	19.196		JCT. RTE. 44 NORTHWEST	290	3100	2450	490	5300	4200
02	036	LAS		22.060		EAGLE LAKE ROAD	490	5300	4200	500	5800	4500
02	036	LAS		24.460		SUSANVILLE, COTTAGE STREET	620	7000	5500	620	7000	5500
02	036	LAS		25.050		SUSANVILLE, PACIFIC STREET	1100	11900	10900	1100	11900	10900
02	036	LAS		25.356		SUSANVILLE, JCT. RTE. 139 NORTH	1100	11900	10900	1500	16000	15000
02	036	LAS		25.940		RIVERSIDE DRIVE	1500	16000	15000	1600	16200	15600
02	036	LAS	R	26.220		SUSANVILLE, JOHNSTONVILLE ROAD	1600	16200	15600	1050	10200	9000
02	036	LAS	R	29.394		SOUTH JCT. RTE. 395	1050	10200	9000	1050	10200	9000
02	036	LAS		46.481	X	JOHNSTONVILLE, JCT. RTE. 395	1050	10200	9000			
04	037	MRN		0.000	X	JCT RTE 251				4300	51000	42500
04	037	MRN	R	11.200		NOVATO, JCT. RTE. 101	4300	5100	42500	3200	38500	31900
04	037	MRN		13.773		ATHERTON AVENUE	3200	38500	31900	3400	40500	33800
04	037	MRN		14.473		PETALUMA CREEK	3400	40500	33800	3400	40500	33800
04	037	MRN		14.617		MARIN/SONOMA COUNTY LINE	3400	40500	33800			
04	037	SON		0.000		MARIN/SONOMA COUNTY LINE				3400	40500	33800
04	037	SON		2.060		LAKEVILLE ROAD	3400	40500	33800	3400	40500	33800
04	037	SON		3.900		JCT. RTE. 121 NORTH	3400	40500	33800	3400	40500	33800
04	037	SON	R	6.245		SONOMA/SOLANO COUNTY LINE	3400	40500	33800			
04	037	SOL	R	0.000		SONOMA/SOLANO COUNTY LINE				3400	40500	33800
04	037	SOL	R	7.213		WALNUT AVENUE	3500	42500	35800	3300	40500	36700
04	037	SOL	R	8.010		WILSON AVENUE	3300	40500	36700	3100	39500	38700
04	037	SOL	R	9.665		JCT. RTE. 29	3100	39500	38700	5500	73000	69600
04	037	SOL		10.940		VALLEJO, FAIRGROUNDS DRIVE	5500	73000	69600	7700	101000	96600
04	037	SOL	R	11.730	R	JCT. RTE. 80, RIGHT ALIGN	3900	51000	48300			
04	037	SOL	R	11.410	L	CT. RTE. 80, LEFT ALIGN	3900	50000	48300			
08	038	SBD	S	0.372		ORANGE AVE				2100	22600	21500
08	038	SBD		0.000		REDLANDS, JCT. RTE. 10	2100	22600	21500	2100	22600	21500
08	038	SBD		0.071		REDLANDS, COLTON AVENUE	2100	22600	21500	3650	22600	16000

08	038	SBD		0.571	ORANGE STREET/LUGONIA AVENUE	3650	22600	16000	3900	24000	17000
08	038	SBD		3.071	REDLANDS, WABASH AVENUE	4550	28000	20000	3900	24000	17000
08	038	SBD		4.070	MENTONE, CRAFTON AVENUE	3200	19700	14000	3150	19300	13700
08	038	SBD		8.530	BRYANT STREET	3150	19300	13700	1500	9300	6600
08	038	SBD	R	9.720	SAN BERNARDINO NATIONAL FOREST BOUNDARY	1350	8500	6000	2100	7600	5500
08	038	SBD		14.990	VALLEY OF THE FALLS DRIVE	2100	7600	5500	1450	5300	3800
08	038	SBD		25.380	TWO LAKES ROAD	1200	4300	3100	1050	3750	2700
08	038	SBD		30.861	SOUTH FORK SANTA ANA RIVER BRIDGE	1050	3750	2700	1050	3750	2700
08	038	SBD		48.160	BIG BEAR CITY, BIG BEAR BOULEVARD	3200	11700	8400	5400	19500	14000
08	038	SBD		49.530	JCT. RTE. 18	6400	23400	16800	680	4300	4000
08	038	SBD		51.900	STANFIELD CUTOFF	920	5800	5400	460	2900	2700
08	038	SBD	R	54.047	HOLCOMB VALLEY ROAD	460	2900	2700	470	2650	1900
08	038	SBD		59.438	BIG BEAR DAM, JCT. RTE. 18	470	2650	1900			
12	039	ORA		0.000	HUNTINGTON BEACH, JCT. RTE. 1				3500	35500	30300
12	039	ORA		1.630	HUNTINGTON BEACH, ADAMS AVENUE	3850	38500	32800	4700	49500	42600
12	039	ORA		3.120	HUNTINGTON BEACH, MAIN STREET/ELLIS AVENUE	6800	72000	61700	6500	75000	67100
12	039	ORA		3.611	HUNTINGTON BEACH, TALBERT AVENUE	6500	75000	65100	6400	74000	66500
12	039	ORA		4.131	HUNTINGTON BEACH, SLATER AVENUE	6400	74000	66500	6700	78000	69600
12	039	ORA		4.631	HUNTINGTON BEACH, WARNER AVENUE	5600	78000	69400	5800	76000	71900
12	039	ORA		5.800	HUNTINGTON BEACH, JCT. RTE. 405	6400	84000	82000	6700	89000	86200
12	039	ORA		6.630	WESTMINSTER, BOLSA AVENUE	6700	89000	83600	6200	84000	77500
12	039	ORA		7.634	WESTMINSTER, WESTMINSTER AVENUE	6200	84000	77500	5900	81000	74500
12	039	ORA		8.478	WESTMINSTER, JCT. RTE. 22	6000	82000	77000	5900	83000	76900
12	039	ORA		9.171	STANTON, LAMPSON AVENUE	6100	87000	77600	6200	85000	77600
12	039	ORA		9.671	STANTON, CHAPMAN AVENUE	5700	79000	71500	5700	79000	71500
12	039	ORA		10.660	STANTON, KATELLA AVENUE	5100	71000	64600	5100	71000	64600
12	039	ORA		11.181	STANTON, CERRITOS AVENUE	5200	71000	65200	5200	71000	65200
12	039	ORA		11.681	BALL ROAD	5000	68000	62500	5000	68000	62500
12	039	ORA		12.685	ANAHEIM, LINCOLN AVENUE	5300	72000	68800	5800	72000	68800
12	039	ORA		14.378	BUENA PARK, JCT. RTE. 91	5900	71000	68500	5200	62000	57800
12	039	ORA		15.150	BUENA PARK, MANCHESTER AVENUE	5100	62000	57600	5200	61000	57600
12	039	ORA		15.573	BUENA PARK, ARTESIA BOULEVARD	5100	61000	57600	5400	64000	60700
12	039	ORA		16.130	STAGE ROAD/CASCADE WAY	6000	71000	66400	5900	73000	66400
12	039	ORA		16.380	BUENA PARK, LA MIRADA BOULEVARD	5800	72000	65600	4400	54000	48600
12	039	LA	D	17.340	ROSECRANS AVE	4050	50000	45000	3900	49000	44000
12	039	ORA		19.168	LA HABRA, JCT. RTE. 90 EAST	4300	54000	50300	4150	54000	50300
12	039	ORA		19.671	LA HABRA, LAMBERT ROAD	3550	46000	41700	3000	36000	34700
12	039	ORA		20.719	LA HABRA, JCT. RTE. 72	2650	33000	32700	3350	40500	39700
12	039	ORA		20.880	LA HABRA, HACIENDA BOULEVARD	3350	40500	39700	3100	38500	37200
12	039	ORA		22.600	HARBOR BOULEVARD, ORANGE COUNTY	2850	33000	32800			
07	039	LA		17.813	SAN GABRIEL RIVER BRIDGE, LOS ANGELES COUNTY				490	2900	2350
07	039	LA		19.730	MORRIS DAM ROAD, NAVAL ORDNANCE TEST STATION	490	2900	2350	430	2550	2100
07	039	LA		25.710	EAST FORK ROAD	330	1950	1600	390	2300	1850
07	039	LA		32.490	COLD BROOK RANGER STATION	50	270	220	50	270	220
07	039	LA		38.150	CRYSTAL LAKE ROAD	30	180	150	20	140	110
07	039	LA		44.400	ISLIP SADDLE, JCT. RTE. 2	20	140	110			
08	040	SBD		0.000	BARSTOW, JCT. RTE. 15				2950	25500	21800
08	040	SBD		0.794	MONTARA AVENUE EAST BARSTOW , BEGIN FREEWAY	2950	25500	21800	2950	25500	22000
08	040	SBD	R	2.348	MAIN STREET	2950	25500	22000	2950	25500	22000
08	040	SBD	R	4.708	NEBO STREET	2700	23300	20000	2650	22900	19700
08	040	SBD	R	7.181	A STREET	2650	22900	19700	2300	19800	17000
08	040	SBD	R	12.191	AIRPORT ROAD	2300	19800	17000	2150	18600	16000
08	040	SBD	R	18.446	WEST NEWBERRY ROAD	2150	18600	16000	1950	16900	14500
08	040	SBD	R	23.334	FORT CADY ROAD	1950	16900	14500	1900	16300	14000
08	040	SBD	R	28.481	E/O DESERT OASIS ROADSIDE REST	1900	16300	14000	1900	16600	14300
08	040	SBD	R	32.496	HECTOR ROAD	1900	16600	14300	1900	16300	14000
08	040	SBD	R	49.984	CRUCERO ROAD	1900	16300	14000	1700	14800	12700
08	040	SBD	R	78.172	KELBAKER ROAD	1700	14800	12700	1750	15100	13000
08	040	SBD	R	99.728	ESSEX ROAD	1750	15100	13000	1750	15100	13000
08	040	SBD	R	107.170	GOFFS ROAD	1750	15100	13000	1750	15100	13000
08	040	SBD	R	115.199	MOUNTAIN SPRINGS ROAD	1750	15100	13000	1700	14900	12800
08	040	SBD	R	119.975	WATER ROAD	1700	14900	12800	1700	14900	12800
08	040	SBD	R	132.739	JCT. RTE. 95 NORTH	1700	14900	12800	1800	20300	17500
08	040	SBD	R	139.117	PARK ROAD	1800	20300	17500	1500	16700	14400
08	040	SBD	R	141.017	RIVER ROAD	1500	16700	14400	1550	17100	14700
08	040	SBD	R	142.370	NEEDLES, J STREET	1550	17100	14700	1850	20900	18000
08	040	SBD	R	143.764	JCT. RTE. 95 SOUTH	1850	20900	18000	1500	16700	14400
08	040	SBD		148.198	FIVE MILE ROAD	1500	16700	14400	1550	17300	14900
08	040	SBD	R	153.315	PARK MOABI ROAD	1550	17300	14900	1550	17300	14900
08	040	SBD	R	154.643	ARIZONA STATE LINE	1550	17300	14900			
05	041	SLO		0.000	MORRO BAY, JCT. RTE. 1				1900	14500	7600
05	041	SLO		7.234	CERRO ALTO ROAD	1000	7900	7000	1600	11100	8800
05	041	SLO		14.520	ATASCADERO, SANTA ROSA ROAD	1600	19700	10200	1600	10200	9200
05	041	SLO		15.894	ATASCADERO, JCT. RTE. 101	1600	19700	12100	2100	19300	17000
05	041	SLO		15.960	EL CAMINO REAL	1900	19700	17000	970	14200	11700
05	041	SLO		27.975	JCT. RTE. 229 SOUTH	160	2700	2200	210	3500	2500
05	041	SLO		41.159	MC MILLAN CANYON ROAD	150	1500	960	60	710	530
05	041	SLO	R	42.172	JCT. RTE. 46	140	1400	940	680	7300	5500

05	041	SLO		50.434	SAN LUIS OBISPO/ KERN COUNTY LINE	600	6000	4500				
06	041	KER		0.000	SAN LUIS OBISPO/ KERN COUNTY LINE				1150	10400	8300	
06	041	KER		4.978	KERN COUNTY/KINGS COUNTY LINE	1150	10400	8300				
06	041	KIN		0.000	KERN COUNTY/KINGS COUNTY LINE				1150	10400	8300	
06	041	KIN		8.098	REEF CITY, JCT. RTE. 33	1200	10700	8400	1100	10700	7900	
06	041	KIN		16.275	JCT. RTE. 5	110	10700	7900	2250	26000	21000	
06	041	KIN		16.720	BERNARD DRIVE	2250	26000	21000	830	8500	7700	
06	041	KIN		20.080	QUAIL AVENUE	840	8700	7800	840	8700	7800	
06	041	KIN		28.429	NEVADA AVENUE/COALINGA ROAD	840	8700	7800	840	9100	8000	
06	041	KIN	R	37.792	JACKSON AVENUE	1200	13800	12400	1200	13900	12500	
06	041	KIN	R	39.962	JCT RTE 198	1200	14000	12600	1750	21300	19600	
06	041	KIN	R	40.950	BUSH STREET	1750	21300	19600	1500	18200	16800	
06	041	KIN	R	42.148	HANFORD-ARMONA ROAD	1500	18200	16800	1700	20400	19100	
06	041	KIN	R	44.153	GRANGEVILLE BOULEVARD	1700	20400	19100	1600	18800	17700	
06	041	KIN	R	48.283	EXCELSIOR AVE; KINGS/FRESNO COUNTY LINE	1600	18800	17700				
06	041	FRE	R	0.000	EXCELSIOR AVE; KINGS/FRESNO COUNTY LINE				1500	17200	16200	
06	041	FRE	R	2.030	MOUNT WHITNEY AVENUE	1500	18200	16500	1550	18400	16800	
06	041	FRE	M	6.069	ELKHORN AVENUE	1550	18400	16800	1600	18900	17300	
06	041	FRE	R	8.107	CONEJO AVENUE	1600	18900	17300	1600	18900	17300	
06	041	FRE	R	10.108	MOUNTAIN VIEW AVENUE	1600	18900	17300	1950	23300	21300	
06	041	FRE	R	14.101	MANNING AVENUE	2000	23800	21800	2150	24800	23200	
06	041	FRE	R	16.100	ADAMS AVENUE	2150	24800	23200	2700	31000	29000	
06	041	FRE	R	19.113	CENTRAL AVENUE	2700	31000	29000	2950	34000	32000	
06	041	FRE	R	20.084	NORTH AVENUE	2950	34000	32000	3700	41500	39500	
06	041	FRE	R	21.113	FRESNO, EAST JENSEN AVENUE	3700	41500	39500	4650	52000	50000	
06	041	FRE	R	21.859	JCT RTE 99	4650	52000	50000	9300	106000	100000	
06	041	FRE	R	22.798	FRESNO, M STREET	9300	106000	100000	10800	121000	115000	
06	041	FRE	R	23.736	FRESNO, DIVISADERO STREET	10800	121000	115000	12800	146000	138000	
06	041	FRE	R	24.527	FRESNO, JCT. RTE. 180S	12800	146000	138000	15700	168000	157000	
06	041	FRE	R	25.266	FRESNO, MC KINLEY AVENUE	15700	168000	157000	15400	162000	157000	
06	041	FRE	R	26.461	FRESNO, SHIELDS AVENUE	15300	162000	156000	14700	156000	151000	
06	041	FRE	R	27.471	FRESNO, ASHLAN AVENUE	14700	156000	151000	13600	151000	146000	
06	041	FRE	R	28.469	FRESNO, SHAW AVENUE	13600	151000	146000	12300	136000	132000	
06	041	FRE	R	29.463	FRESNO, BULLARD AVENUE	12300	136000	132000	10700	119000	114000	
06	041	FRE	R	30.447	FRESNO, HERNDON AVENUE	10700	119000	114000	7300	87000	83000	
06	041	FRE	R	31.683	FRESNO, FRIANT ROAD	7300	87000	83000	5100	55000	53000	
06	041	MAD		3.230	AVENUE 12	2950	36000	32500	1850	22600	20400	
06	041	MAD		9.250	JCT. RTE. 145 WEST	1400	16900	15300	1600	20200	17600	
06	041	MAD		17.910	COUNTY ROAD 200	1500	19300	16600	1350	17100	14000	
06	041	MAD		25.000	ROAD 417 (RIGHT)	1100	13900	11800	1100	13500	11600	
06	041	MAD		35.480	JCT. RTE. 49 NORTH	1450	18300	15700	2100	23900	20400	
06	041	MAD		35.770	OAKHURST, ROAD 426	2100	28000	20400	1400	14100	10500	
06	041	MAD		38.889	YOSEMITE FORKS, BASS LAKE ROAD	1400	14900	10500	820	9400	6200	
06	041	MAD		45.739	MADERA/MARIPOSA COUNTY LINE	810	9400	6100				
06	041	MPA		0.000	MADERA/MARIPOSA COUNTY LINE				440	4250	3000	
06	041	MAD	D	0.639	MARIPOSA/MADERA COUNTY LINE	440	4250	3000	440	4250	3000	
06	041	MPA		4.918	FISH CAMP, ENTRANCE TO YOSEMITE NATIONAL PARK	480	5500	3050				
06	043	KER		0.111	JCT. RTE. 119				780	7400	6900	
06	043	KER		1.900	JCT. RTE. 5	780	7400	6900	1050	9700	9600	
06	043	KER		8.112	JCT. RTE. 58 EAST	600	5600	5500	950	9200	8700	
06	043	KER		9.162	JCT. RTE. 58 WEST	950	9200	8700	680	5800	5500	
06	043	KER		12.190	SEVENTH STANDARD ROAD	780	6800	6400	420	4250	3900	
06	043	KER		15.890	CENTRAL VALLEY HIGHWAY	420	4250	3900	1100	10700	10000	
06	043	KER		16.550	SHAFTER, EAST LERDO HIGHWAY	1100	10700	10000	1300	13100	12300	
06	043	KER		16.860	SHAFTER, CENTRAL AVENUE	1300	13100	12300	1300	13200	12300	
06	043	KER		17.170	SHAFTER, SHAFTER AVENUE	1200	12000	11100	1550	15400	14600	
06	043	KER		17.950	FRESNO AVENUE	1550	15400	14600	1250	12300	12200	
06	043	KER	R	21.289	WASCO AVENUE	1200	12100	11900	1150	11700	11500	
06	043	KER	R	24.124	WASCO, POSO AVENUE	1050	10600	10400	740	7500	7200	
06	043	KER	R	25.125	JCT. RTE. 46	660	6900	6700	540	4550	4350	
06	043	KER		33.470	POND ROAD	460	3850	3700	420	3600	3350	
06	043	KER		36.670	KERNELL, GARCES HIGHWAY	330	3050	3000	290	2800	2750	
06	043	KER		38.807	KERN/TULARE COUNTY LINE	290	2800	2750				
06	043	TUL		0.000	KERN/TULARE COUNTY LINE				290	2800	2750	
06	043	TUL		7.760	AVENUE 56	290	2800	2750	280	2900	2850	
06	043	TUL		22.133	CORCORAN, RAILROAD DRIVE	380	4000	3950	480	4750	4500	
06	043	TUL		22.674	TULARE/KINGS COUNTY LINE	480	4750	4500				
06	043	KIN		0.000	TULARE/KINGS COUNTY LINE				490	4950	4600	
06	043	KIN		1.456	JCT. RTE. 137	490	4950	4600	320	3250	3000	
06	043	KIN		3.180	NORTH END CORCORAN BYPASS	320	3250	3000	740	7300	7000	
06	043	KIN		10.359	KANSAS AVENUE	710	7000	6700	590	6200	5900	
06	043	KIN		16.391	HOUSTON AVENUE	690	7500	7100	730	8100	7500	
06	043	KIN		18.238	JCT. RTE. 198	750	8400	7700	1150	12900	11800	
06	043	KIN		18.429	LACEY BOULEVARD	1150	12900	11800	1100	12200	11300	
06	043	KIN		19.431	GRANGEVILLE BOULEVARD	1100	12200	11300	780	8900	8200	
06	043	KIN		22.272	10TH AVENUE	520	6000	5500	1050	11800	11000	
06	043	KIN		24.470	EXCELSIOR AVENUE	1150	13000	12000	1150	13300	12200	
06	043	KIN		27.286	KINGS/FRESNO COUNTY	1150	13300	12200				

06	043	FRE		0.000		KINGS/FRESNO COUNTY				1150	13000	12200
06	043	FRE		8.340		NEBRASKA AVENUE	1150	13400	12800	1450	15700	15000
06	043	FRE		9.308		JCT. RTE. 99	1750	18800	17900			
02	044	SHA	L	0.000	R	REDDING, JCT RTE 273 AND 299, BEGIN RIGHT ALIGN				1300	14100	13500
02	044	SHA	L	0.168	R	REDDING, MARKET/TEHAMA STREETS, JCT RTE 273 SOUTH	1650	17700	16900	1350	14600	13800
02	044	SHA	L	0.313	R	REDDING, ON SHASTA STREET AT LIBERTY STREET	2350	22600	21500	2350	22600	21500
02	044	SHA	L	0.384	R	REDDING, ON TEHAMA STREET AT LIBERTY STREET	2350	22600	21500	2350	22600	21500
02	044	SHA	L	0.540	R	END RIGHT ALIGN	2350	22600	21500			
02	044	SHA	L	0.000	L	BEGIN LEFT ALIGN VIA EUREKA WAY				1300	13000	12700
02	044	SHA	L	0.072	L	REDDING, EUREKA WAY/ PINE STREET	1300	13000	12700	1550	13700	13000
02	044	SHA	L	0.169	L	REDDING, PINE/SHASTA STREETS, JCT. RTE. 273 SOUTH	1550	13700	13000	2150	19300	18300
02	044	SHA	L	0.498	L	END LEFT ALIGN	2500	22700	21500			
02	044	SHA	L	0.852		REDDING, BUTTE STREET	4200	44000	43000	5800	62000	58000
02	044	SHA	R	0.000		REDDING, JCT. RTE. 5	5800	62000	58000	5400	57000	53000
02	044	SHA	R	0.134		HILLTOP DRIVE	5400	57000	53000	4350	40000	38000
02	044	SHA	R	1.239		REDDING, VICTOR AVENUE	4350	40000	38000	4200	37500	35500
02	044	SHA	R	2.131		SHASTA VIEW DRIVE	4200	37500	35500	2700	24800	23500
02	044	SHA	R	3.627		AIRPORT ROAD	2700	24800	23500	1850	17600	16600
02	044	SHA	R	7.000		DESCHUTES ROAD	1750	16400	15600	870	9400	8700
02	044	SHA	R	10.770		MILLVILLE PLAINS	760	8400	8000	520	3650	3450
02	044	SHA	R	19.010		DERSCH ROAD	390	4500	4000	490	5500	4850
02	044	SHA	R	27.830		SHINGLETOWN	640	6200	4800	530	5100	3950
02	044	SHA		42.818		VIOLA	250	2450	1900	320	1950	1450
02	044	SHA	R	49.353		LASSEN VOLCANIC NATIONAL PARK	320	1950	1450	270	2100	1450
02	044	SHA		62.685		JCT. RTE. 89 NORTHWEST	360	2000	1400	270	2200	1550
02	044	SHA		71.389		SHASTA/LASSEN COUNTY LINE	270	2200	1550			
02	044	LAS		0.000		SHASTA/LASSEN COUNTY LINE				320	2750	2000
02	044	LAS		19.290		COUNTY ROAD A 21	320	2750	2000	260	2350	1700
02	044	LAS		37.247		JCT. RTE. 36	260	2350	1700			
03	045	YOL		0.000		KNIGHTS LANDING, JCT. RTE. 113				160	1500	1100
03	045	YOL		0.270		COUNTY ROAD 108	160	1500	1100	160	1280	820
03	045	YOL		5.800		COUNTY ROAD P98 A	160	1300	820	150	1050	900
03	045	YOL		12.920		YOLO/COLUSA COUNTY	150	1050	900			
03	045	COL		0.000		YOLO/COLUSA COUNTY				150	1050	900
03	045	COL		7.365		TULE ROAD	150	1050	900	150	1100	950
03	045	COL		12.867		GRIMES-ARBUCKLE ROAD	150	1150	1000	180	1350	1200
03	045	COL		18.469		SYCAMORE CUTOFF ROAD	180	1350	1200	130	950	840
03	045	COL		19.850		JCT. RTE. 20	130	950	840	640	7400	7000
03	045	COL		20.080		COLUSA, LURLINE AVENUE	640	7400	7000	650	7400	7300
03	045	COL		24.530		MAXWELL COLUSA ROAD	370	3700	3500	220	2300	2100
03	045	COL		32.060		COUNTY ROAD P29	220	2300	2100	220	2300	2150
03	045	COL		34.176		COLUSA/GLENN COUNTY LINE	220	2300	2150			
03	045	GLE		0.000		COLUSA/GLENN COUNTY LINE				220	2300	2150
03	045	GLE		3.059		JCT. RTE. 162 EAST	240	2450	2300	200	1700	1600
03	045	GLE		7.527		JCT. RTE. 162 WEST	200	1900	1650	290	2900	2650
03	045	GLE		11.866		COUNTY ROAD P39	280	2700	2500	220	2250	2100
03	045	GLE		17.191		COUNTY ROAD 29	220	2250	2100	260	2550	2350
03	045	GLE	R	20.591		COUNTY ROAD 24	260	2550	2350	290	2550	2400
03	045	GLE		22.680		HAMILTON CITY, WEST FIRST STREET	290	2550	2450	300	2900	2550
03	045	GLE		23.230		HAMILTON CITY, JCT. RTE. 32	300	2900	2550			
05	046	SLO	R	0.146		JCT. RTE. 1				610	5700	4000
05	046	SLO	R	2.372		GREEN VALLEY ROAD	470	4800	3900	460	4700	3800
05	046	SLO	R	11.471		CYPRESS MOUNTAIN DRIVE	580	5900	4800	620	6400	5200
05	046	SLO	R	12.664		DOVER CYN RD	640	6600	5300	640	6600	5300
05	046	SLO	R	15.529		YORK MOUNTAIN ROAD	720	7400	6000	730	7600	6100
05	046	SLO	R	17.398		VINEYARD DRIVE	760	7800	6300	760	7800	6300
05	046	SLO	R	21.969		SOUTH JCT. RTE. 101	960	9900	8000	3100	32000	26000
05	046	SLO		32.145		PASO ROBLES AIRPORT ROAD	4600	46500	38000	3000	30500	28000
05	046	SLO		45.480		MC MILLAN CANYON ROAD	2300	23100	18400	2400	22200	18900
05	046	SLO		54.038		CHOLAME	2300	21700	18500	2300	21200	18100
05	046	SLO		55.106		JCT. RTE. 41 NORTHEAST	1700	17400	16700	970	9700	9000
05	046	SLO		60.849		SAN LUIS OBISPO/KERN COUNTY LINE	980	9600	8100			
06	046	KER		0.000		SAN LUIS OBISPO/KERN COUNTY LINE				980	9800	8200
06	046	KER		7.330		KECKS CORNER, COALINGA ROAD	980	9800	8200	700	8900	7200
06	046	KER		20.543		BLACKWELLS CORNER, JCT. RTE. 33	700	8900	7200	800	9100	8200
06	046	KER		27.480		BROWN MATERIAL ROAD	720	9100	8200	990	12800	11300
06	046	KER		32.180		WARREN DRIVE	1050	12200	11700	1050	12800	11900
06	046	KER		32.533		JCT. RTE. 5	1000	12700	11600	530	6600	5900
06	046	KER		32.722		BUFORD STREET	530	6300	5900	530	6300	5900
06	046	KER		36.840		CORCORAN ROAD	530	6300	5900	520	6400	5700
06	046	KER		43.020		ROWLEE ROAD	620	7900	6800	800	9800	8700
06	046	KER		50.020		WASCO, PALM AVENUE	1500	18000	16700	1600	19000	17700
06	046	KER		50.904		WASCO, JCT. RTE. 43 SOUTH	840	10900	9700	800	10800	9400
06	046	KER		51.215		WASCO, JCT. RTE. 43 NORTH	800	10800	9400	860	11400	10100
06	046	KER		54.090		SMITH AVENUE	850	11300	10000	730	9600	8600
06	046	KER	R	57.787		JCT. RTE. 99	750	7600	7000			
07	047	LA	R	0.000		LOS ANGELES, JCT. RTE. 110				5400	56000	53000
07	047	LA	R	0.430		LOS ANGELES, HARBOR BOULEVARD	5400	56000	53000	5300	55000	53000

07	047	LA		2.302	LOS ANGELES, VINCENT THOMAS BRIDGE	5300	55000	53000	1650	14900	13800
07	047	LA		3.497	LONG BEACH, OCEAN BOULEVARD	1650	14900	13800	1650	14900	13800
07	047	LA		3.576	LONG BEACH, NEW DOCK STREET	1650	14900	13800	2100	18200	16900
07	047	LA		3.880	LONG BEACH, HEIM LIFT BRIDGE	2100	18200	16900	2100	18200	16900
07	047	LA		4.565	LOS ANGELES, JCT. RTE. 103	2100	18200	16900			
06	049	MAD		0.000	OAKHURST, JCT. RTE. 41				1400	14700	13700
06	049	MAD		4.494	COUNTY ROAD 600	710	8300	7400	630	7700	6800
06	049	MAD		5.530	COUNTY ROAD 628	630	7700	6800	540	6600	5800
06	049	MAD		8.235	COUNTY ROAD 601	440	5300	4700	470	5100	4350
06	049	MAD		9.275	MADERA/MARIPOSA COUNTY LINE	380	3850	3550			
10	049	MPA		0.332	MADERA/MARIPOSA COUNTY LINE				380	3850	3550
10	049	MPA		6.099	TRIANGLE RD RT	430	4200	3800	430	3800	3500
10	049	MPA		9.737	WOODLAND/HIRSCH ROADS	480	4700	4250	510	4950	4500
10	049	MPA		12.549	BOOTJACK ROAD	870	6400	5700	700	5100	4500
10	049	MPA		16.700	MORMON BAR, BEN HUR ROAD	880	6500	5800	1150	9000	8250
10	049	MPA		18.510	MARIPOSA, JCT. RTE. 140	1200	10000	8500	780	6900	6300
10	049	MPA		18.610	JOE HOWARD ROAD	780	7600	5100	660	8700	4650
10	049	MPA		20.510	WHITLOCK RD RT	330	3200	2700	340	3350	2300
10	049	MPA		22.990	MOUNT BULLION, CATHAY WAY	240	1900	1500	190	1150	1100
10	049	MPA		29.450	BEAR VALLEY, BEAR VALLEY ROAD	120	870	860	130	770	510
10	049	MPA		44.670	COULTERVILLE, JCT. RTE. 132 WEST	170	1200	690	90	840	670
10	049	MPA		48.835	MARIPOSA/TUOLUMNE COUNTY LINE	110	1050	830			
10	049	TUO		0.000	MARIPOSA/TUOLUMNE COUNTY LINE				110	1050	830
10	049	TUO	R	8.779	JCT. RTE. 120	130	1050	850	160	1900	1100
10	049	TUO	R	10.124	SIMMS RD	160	1900	1100	260	2500	1400
10	049	TUO	R	11.587	SOUTH JCT. RTE. 108	240	2650	2500	1500	18500	16900
10	049	TUO		14.340	JAMESTOWN, SOUTH JUNCTION MAIN STREET	1550	19200	15600	2150	18500	15600
10	049	TUO		14.742	RAWHIDE ROAD/HUMBUG STREET	2150	18500	16900	2300	18700	18500
10	049	TUO		16.480	SONORA, EAST JCT. RTE. 108	2700	23000	22000	1200	12600	11900
10	049	TUO		17.350	SONORA, FAIRVIEW LANE	1850	20600	17600	1000	11500	10700
10	049	TUO		17.481	SONORA, SOUTHGATE DRIVE	1000	11500	10700	1000	11500	10900
10	049	TUO		17.965	SONORA, JCT. RTE. 108U	1250	12600	11500	1700	19300	18300
10	049	TUO		18.220	SONORA, DODGE STREET	1700	19600	18500	1950	19800	19400
10	049	TUO		18.490	SONORA, WASHINGTON STREET/ SHAWS FLAT ROAD	1600	16500	16100	1650	17700	15400
10	049	TUO		20.400	COLUMBIA WYE	1350	15200	13300	570	5100	4800
10	049	TUO		23.709	RAWHIDE ROAD	510	5000	3600	460	6000	5400
10	049	TUO		24.810	TUTTLETOWN	460	4800	4700	590	4400	4050
10	049	TUO	R	27.521	TUOLUMNE/CALAVERAS COUNTY LINE	570	4950	4500			
10	049	CAL	R	0.000	TUOLUMNE/CALAVERAS COUNTY LINE				570	4950	4500
10	049	CAL		6.520	ANGELS CAMP, SOUTH CITY LIMITS	830	6900	6500	830	6900	6500
10	049	CAL		6.660	ANGELS CAMP, CENTENNIAL RD	830	6900	6500	660	8900	7000
10	049	CAL		7.210	ANGELS CAMP, SOUTH JCT. RTE. 4	840	10900	9300	1300	7100	6000
10	049	CAL		8.330	MURPHYS GRADE ROAD	1350	6800	5800	1650	6700	5650
10	049	CAL		8.667	NORTH JCT. RTE. 4	1200	10900	9600	990	9200	8200
10	049	CAL		9.420	NORTH ANGELS CAMP, COPELLO DRIVE	810	8100	7700	720	7500	7100
10	049	CAL		14.200	FRICOT ROAD	780	7500	6800	700	6900	6600
10	049	CAL		18.794	MOUNTAIN RANCH ROAD	770	10900	6700	1100	11600	9100
10	049	CAL		19.412	SAN ANDREAS, MAIN STREET	1100	11700	11100	1050	11500	10900
10	049	CAL	R	20.496	JCT. RTE. 12 WEST	1050	10800	9300	680	7000	5900
10	049	CAL	R	22.210	GOLD STRIKE ROAD	650	7100	6100	600	5900	5500
10	049	CAL		27.614	MOKELUMNE HILL, JCT. RTE. 26	580	5700	5250	680	7100	6600
10	049	CAL		28.060	CAMPO SECO RD/STOCKTON HILL RD	560	6500	6300	560	6500	6300
10	049	CAL		30.865	CALAVERAS/AMADOR COUNTY LINE	570	7300	7100			
10	049	AMA		0.000	CALAVERAS/AMADOR COUNTY LINE				580	7300	7100
10	049	AMA		2.801	JACKSON, SCOTTSVILLE BOULEVARD	760	7800	7500	800	8900	8700
10	049	AMA		3.120	JACKSON, BROADWAY AND FULLER LANE	810	8800	8600	810	7000	6400
10	049	AMA		3.620	JACKSON, FRENCH BAR RD	1350	14300	8300	1400	14800	7300
10	049	AMA		4.029	JACKSON, SOUTH JCT. RTE. 88	2050	8300	7800	2150	7600	7400
10	049	AMA		4.320	JACKSON, MAIN/MATTLEY STREETS	1850	20900	18700	1700	19300	17200
10	049	AMA		5.934	MARTELL, NORTH JCT. RTE. 88 WEST	1800	19200	19000	1250	11700	11600
10	049	AMA		6.099	JACKSON GATE ROAD	1700	20000	19400	1800	20900	17900
10	049	AMA		6.980	SUTER CREEK, JCT. RTE. 104 WEST	1800	20000	17800	1600	15000	14800
10	049	AMA		14.723	CENTRAL HOUSE, JCT. RTE. 16 WEST	1050	11600	11150	740	7500	6900
10	049	AMA		16.530	PLYMOUTH, BUSH ST	1100	8200	7700	900	8200	7700
10	049	AMA		17.220	PLYMOUTH, MAIN STREET/ FIDDLETOWN ROAD	700	8200	7700	250	7300	5200
10	049	AMA		17.400	HALKS VIEW RD	250	2650	2500	220	2200	2100
10	049	AMA		22.116	AMADOR/EL DORADO COUNTY LINE	180	2100	2050			
03	049	ED		0.000	AMADOR/EL DORADO COUNTY LINE				180	2100	2050
03	049	ED		1.650	NASHVILLE, SOUTH	260	2400	2350	270	2450	2350
03	049	ED		8.352	CHINA HILL ROAD	460	4200	4100	710	6600	6400
03	049	ED		9.494	EL DORADO, UNION MINE ROAD	710	6600	6400	790	7700	7500
03	049	ED		9.641	EL DORADO, PLEASANT VALLEY ROAD	790	7700	7500	1100	10500	10300
03	049	ED		11.239	MISSOURI FLAT ROAD	1600	14700	14500	1500	16300	16100
03	049	ED		11.859	DIAMOND SPRINGS, PLEASANT VALLEY ROAD	1500	16300	16100	580	6700	6600
03	049	ED		14.463	PLACERVILLE, FISKE ROAD	820	9200	9100	820	9200	9100
03	049	ED	R	14.597	PLACERVILLE, PACIFIC ST/RTE 49 LEFT TURN	930	9400	9300	1250	12600	11800
03	049	ED	R	14.708	PLACERVILLE, PACIFIC ST AT MAIN ST	1250	12600	11800	1250	13700	12800
03	049	ED		14.891	PLACERVILLE, JCT. RTE. 50	960	12100	11500	870	8500	8200

03	049	ED		15.685	JCT. RTE. 193 NORTH	720	6800	6200	600	6200	5700
03	049	ED		16.440	DIANA STREET	460	4800	4450	410	4550	4200
03	049	ED		19.420	GOLD HILL ROAD	270	3150	2900	270	3050	2750
03	049	ED		22.865	COLOMA, JCT. RTE. 153 WEST	270	3050	2750	520	5800	5100
03	049	ED		24.480	MARSHALL GRADE ROAD	670	7400	6600	460	4600	4000
03	049	ED		28.190	HASTINGS CREEK BRIDGE	380	3700	3400	380	3700	3400
03	049	ED		34.466	COOL, JCT. RTE. 193 EAST	420	3900	3600	860	9400	8900
03	049	ED		38.233	EL DORADO/PLACER COUNTY LINE	860	9400	8900			
03	049	PLA		0.000	EL DORADO/PLACER COUNTY LINE				860	9400	8900
03	049	PLA		2.360	AUBURN, BORLAND AVENUE	920	10200	9400	1300	15000	13900
03	049	PLA		3.208	AUBURN, JCT. RTE. 80	1100	10900	8900	2700	31500	30500
03	049	PLA		3.780	AUBURN, PALM AVENUE	2900	36000	35000	3000	37000	36100
03	049	PLA		5.210	LUTHER ROAD	3100	38500	38000	3450	43500	42500
03	049	PLA		5.860	ATWOOD ROAD	3400	41500	40500	3500	42000	41000
03	049	PLA		5.990	COTTAGE DRIVE	3500	42000	41000	3500	42000	41000
03	049	PLA		6.380	AUBURN, BELL ROAD	3200	40500	39200	2900	38000	35500
03	049	PLA		7.427	DRY CREEK ROAD	2900	36000	34000	2900	35000	33000
03	049	PLA	R	8.973	LORENSEN RD	2900	33500	32000	2900	33500	32000
03	049	PLA		11.373	PLACER/NEVADA COUNTY LINE	2900	31500	30500			
03	049	NEV		0.000	PLACER/NEVADA COUNTY LINE				2900	31500	30500
03	049	NEV		2.194	WOLF/COMBIE ROADS	2200	26500	25300	2150	24400	23300
03	049	NEV		3.614	SOUTH WOLF CREEK BRIDGE	2150	24400	23300	2150	24400	23300
03	049	NEV		9.220	ALTA SIERRA DRIVE	2150	27000	25600	2250	26000	24800
03	049	NEV	R	10.553	LA BARR MEADOWS RD	2300	26000	24800	2400	26500	25400
03	049	NEV	R	13.663	SOUTH GRASS VALLEY	2650	29000	27500	3250	35500	33000
03	049	NEV	R	14.475	NEVADA CITY, JCT. RTE. 20	3250	35500	33000	1200	13100	12100
03	049	NEV		15.810	WEST BROAD STREET	820	9100	8100	680	7400	7000
03	049	NEV		17.540	NEWTOWN/INDIAN FLAT ROADS	620	6900	6400	560	5900	5600
03	049	NEV	R	25.690	TYLER FOOTE CROSSING ROAD	490	4750	4450	420	3350	3100
03	049	NEV		27.520	PLEASANT VALLEY ROAD	410	3250	2900	320	2800	2450
03	049	NEV	R	32.637	NEVADA/YUBA COUNTY LINE	230	2300	1800			
03	049	YUB	R	0.000	NEVADA/YUBA COUNTY LINE				230	2300	1800
03	049	YUB		1.685	RIDGE ROAD	230	2300	1800	190	1800	1450
03	049	YUB		3.590	MARYSVILLE ROAD	190	1800	1450	120	1250	1000
03	049	YUB		5.380	CAMPTONVILLE ROAD	120	1250	1000	110	1150	900
03	049	YUB		9.372	YUBA/SIERRA COUNTY LINE	120	1000	830			
03	049	SIE		0.000	YUBA/SIERRA COUNTY LINE				120	1000	850
03	049	SIE	R	12.230	GOODYEAR CREEK ROAD	130	950	590	140	970	680
03	049	SIE	R	12.385	GOODYEAR-LT/MTN HOUSE-RT	140	970	740	150	970	900
03	049	SIE		16.291	SADDLE BACK ROAD	150	970	680	160	1000	740
03	049	SIE		16.787	DOWNIEVILLE, MAIN STREET	160	1000	740	150	950	680
03	049	SIE		29.190	SIERRA CITY, WEST CITY LIMITS	150	900	630	100	850	520
03	049	SIE	R	34.307	GOLD LAKE ROAD	100	750	470	90	650	390
03	049	SIE		47.450	SATTLEY, JCT. RTE. 89	90	630	330	130	1250	940
03	049	SIE		47.860	SIERRAVILLE, LEMON CANYON ROAD	130	1250	940	140	1200	910
03	049	SIE		56.540	ANTELOPE VALLEY ROAD	140	1200	910	140	1200	910
03	049	SIE		60.545	LOYALTON, SMITHNECK CREEK	190	1450	1250	190	1450	1250
03	049	SIE		61.320	SMITHNECK ROAD	230	1700	1450	180	1400	1000
03	049	SIE		64.047	SIERRA/PLUMAS COUNTY LINE	170	1200	900			
02	049	PLU		0.000	SIERRA/PLUMAS COUNTY LINE				100	860	700
02	049	PLU		3.920	DYSON LANE	100	830	700	130	1350	1100
02	049	PLU		7.500	JCT. RTE. 70	130	1250	1150			
03	050	YOL		0.000	JCT. RTE. 80 EAST				6800	94000	90100
03	050	YOL		0.350	WEST SACRAMENTO JCT. RTE. 80	6800	94000	90100	6800	94000	90100
03	050	YOL		1.202	HARBOR BOULEVARD	6800	94000	90100	11200	128000	121000
03	050	YOL		2.498	JCT. RTE. 84	11200	128000	121000	10100	132000	123700
03	050	YOL		2.918	OFF CONNECTION TO SOUTH RIVER ROAD	10100	132000	123700	10300	133000	126000
03	050	YOL		3.156	YOLO/SACRAMENTO COUNTY LINE	10300	133000	126000			
03	050	SAC	L	0.000	YOLO/SACRAMENTO COUNTY LINE				10300	133000	126000
03	050	SAC	L	0.350	SACRAMENTO, JCT. RTE. 5	10300	133000	126000	21100	252000	234600
03	050	SAC	L	1.060	SACRAMENTO, 9TH/10TH STREETS	21100	252000	234600	18600	264000	245000
03	050	SAC	L	1.370	SACRAMENTO, JCT. RTE. 160	18600	264000	245000	19600	292000	277000
03	050	SAC	R	0.000	JCT. RTES. 51/99	19600	292000	277000	20200	259000	231500
03	050	SAC	R	0.600	SACRAMENTO, STOCKTON BOULEVARD	20200	259000	231500	18200	243000	233000
03	050	SAC	R	2.131	SACRAMENTO, 59TH STREET	18200	243000	233000	21800	248000	217300
03	050	SAC	R	2.628	SACRAMENTO, 65TH STREET	21800	248000	217300	22300	242000	217300
03	050	SAC	R	3.473	SACRAMENTO, STATE COLLEGE	22300	242000	217300	19600	208000	195100
03	050	SAC	R	3.674	JCT. RTE. 16	19000	208000	195000	16000	205000	196000
03	050	SAC	R	5.336	SACRAMENTO, WATT AVENUE	16000	205000	196000	16000	191000	184000
03	050	SAC	R	7.746	BRADSHAW ROAD	16000	191000	184000	16500	195000	188000
03	050	SAC	R	9.505	MATHER FIELD ROAD	16500	195000	188000	16300	192000	180500
03	050	SAC	R	10.919	ZINFANDEL DRIVE	16300	192000	180500	12300	150000	144000
03	050	SAC		12.496	SUNRISE BOULEVARD	12300	150000	144000	12300	139000	130600
03	050	SAC		15.759	NIMBUS ROAD	12300	139000	130600	11800	137000	127600
03	050	SAC		16.100	AEROJET ROAD	11800	137000	127600	10300	134000	125400
03	050	SAC		17.008	FOLSOM BOULEVARD/NATOMA	10300	134000	125400	8800	100000	95000
03	050	SAC		19.233	PRAIRIE CITY ROAD	8800	100000	95000	8800	100000	94000
03	050	SAC		21.502	SCOTT ROAD	8800	100000	94000	9500	108000	100000

03	050	SAC		23.136	SACRAMENTO/EL DORADO COUNTY LINE	9500	108000	100000					
03	050	ED		0.000	SACRAMENTO/EL DORADO COUNTY LINE				9500	108000	100000		
03	050	ED		0.857	LATROBE ROAD	9500	108000	100000	7400	83000	75000		
03	050	ED	R	3.232	BASS LAKE ROAD	7400	83000	74900	6300	78000	68400		
03	050	ED		4.962	CAMBRIDGE ROAD	6300	78000	68400	6200	76000	67400		
03	050	ED		6.570	CAMERON PARK	6200	76000	67400	6100	74000	71000		
03	050	ED	R	8.564	SHINGLE SPRINGS	6100	74000	71000	5400	64000	57500		
03	050	ED	R	10.295	EAST SHINGLE SPRINGS	5400	64000	57500	4350	60000	54000		
03	050	ED	R	12.190	GREENSTONE ROAD	4150	56000	50500	4050	56000	50000		
03	050	ED	R	14.011	EL DORADO ROAD	4050	56000	50000	4050	54000	49000		
03	050	ED	R	15.055	MISSOURI FLAT ROAD	4050	54000	49000	4300	58000	53000		
03	050	ED		15.829	PLACERVILLE, FAIRGROUNDS	4300	58000	53000	3750	45000	40800		
03	050	ED		16.990	WEST PLACERVILLE	3750	45000	40800	4750	55000	50500		
03	050	ED		17.520	PLACERVILLE, CANAL STREET	4700	55000	50500	4100	49500	46000		
03	050	ED		17.667	PLACERVILLE, JCT. RTE. 49	4100	49500	46000	4150	49000	42300		
03	050	ED		17.788	PLACERVILLE, COLOMA STREET	4150	49000	42300	4400	49000	43000		
03	050	ED		18.032	PLACERVILLE, BEDFORD AVENUE	4400	49000	43000	4100	46000	43100		
03	050	ED		18.517	PLACERVILLE, MOSQUITO ROAD OVERHEAD	4100	46000	43100	3500	36000	32100		
03	050	ED		18.990	PLACERVILLE, SCHNELL SCHOOL ROAD	3500	36000	32100	3900	39500	32800		
03	050	ED		20.296	PLACERVILLE, POINT VIEW DRIVE	3900	39500	32800	3600	36000	28800		
03	050	ED		20.741	NEW TOWN ROAD	3600	36000	28800	3300	31500	27000		
03	050	ED		23.957	JUNCTION OLD HIGHWAY, CAMINO, WEST	3300	31500	27000	3500	31000	24800		
03	050	ED	R	25.949	EAST CAMINO ROAD	3500	31000	24800	3500	30000	22600		
03	050	ED	R	28.842	SAWMILL	3500	30000	22600	3000	25000	18700		
03	050	ED	R	31.299	SLY PARK ROAD	3000	25000	18700	2200	17200	11800		
03	050	ED		39.772	ICEHOUSE ROAD	2200	17200	11800	2100	17400	11900		
03	050	ED		65.619	ECHO LAKE ROAD	1900	15800	11100	1900	15800	11100		
03	050	ED		70.245	UPPER TRUCKEE RIVER ROAD	1900	15800	11100	1900	17200	11900		
03	050	ED		70.621	JCT. RTE. 89 SOUTH	1900	17200	11900	2350	22500	14700		
03	050	ED		71.480	MEYERS, PIONEER TRAIL ROAD	2350	22500	14700	2800	22000	15800		
03	050	ED		72.710	SAWMILL ROAD	2800	22000	15800	1400	15600	12400		
03	050	ED		74.330	SOUTH LAKE TAHOE, H STREET	1400	15600	12400	2700	21400	15200		
03	050	ED		75.448	SOUTH LAKE TAHOE, JCT. RTE. 89 NORTH	3450	29000	20600	4150	43000	35000		
03	050	ED		76.407	UPPER TRUCKEE RIVER BRIDGE	4150	43000	35000	4150	43000	35000		
03	050	ED		78.420	SOUTH LAKE TAHOE, RUFUS ALLEN BOULEVARD	2800	36500	28500	2800	37000	29000		
03	050	ED		79.290	SOUTH LAKE TAHOE, SKI RUN BOULEVARD	3150	40000	30300	3600	43000	34000		
03	050	ED		80.020	SOUTH LAKE TAHOE, PIONEER TRAIL ROAD	3600	43000	34000	3100	34000	28900		
03	050	ED		80.140	SOUTH LAKE TAHOE, PARK AVENUE	3100	34000	28900	2550	39500	28500		
03	050	ED		80.440	NEVADA STATE LINE	2550	39500	28500					
03	051	SAC		0.000	SACRAMENTO, JCT. RTES. 50/99				8900	128000	124500		
03	051	SAC		0.241	SACRAMENTO,VIADUCT (P/N STREET RAMPS)	8900	128000	124500	11000	158000	151000		
03	051	SAC		1.204	SACRAMENTO, H STREET	11000	158000	151000	10500	155000	148000		
03	051	SAC		1.444	SACRAMENTO, E STREET	10500	155000	148000	12100	181000	174000		
03	051	SAC		3.357	SACRAMENTO, EXPOSITION BOULEVARD	12100	181000	174000	12100	163000	160000		
03	051	SAC		3.688	SACRAMENTO, JCT. RTE. 160 WEST	12100	163000	160000					
03	051	SAC		3.688	R SACRAMENTO, JCT. RTE. 160 WEST, BEGIN RIGHT ALIGN				4900	82000	79000		
03	051	SAC		4.061	R SACRAMENTO, ARDEN WAY, RIGHT ALIGN	4900	82000	79000	6000	89000	86500		
03	051	SAC		4.353	R END RIGHT ALIGN	6000	89000	86500					
03	051	SAC		3.688	L SACRAMENTO, JCT. RTE. 160 WEST, BEGIN LEFT ALIGN				5500	92000	87500		
03	051	SAC		4.024	L SACRAMENTO, ARDEN WAY, LEFT ALIGN	5500	92000	87500	5500	92000	87500		
03	051	SAC		4.335	L END LEFT ALIGN	5500	92000	87500					
03	051	SAC		4.743	SACRAMENTO, EL CAMINO AVENUE	14000	176000	169000	12000	165000	159000		
03	051	SAC		5.498	SACRAMENTO, MARCONI AVENUE	12000	165000	159000	10000	142000	135000		
03	051	SAC		5.963	SACRAMENTO, HOWE AVENUE CONNECTION	10000	142000	135000	10000	142000	137000		
03	051	SAC		6.213	SACRAMENTO, BELL STREET CONNECTION	10000	142000	137000	10000	139000	135000		
03	051	SAC		6.788	SACRAMENTO, FULTON AVENUE	10000	139000	135000	11000	154000	149000		
03	051	SAC		7.701	SACRAMENTO, AUBURN BOULEVARD	11000	154000	149000	10200	143000	139000		
03	051	SAC		7.969	SACRAMENTO, WATT AVENUE	10200	143000	139000	10000	141000	137000		
03	051	SAC		8.860	JCT. RTE. 80 WEST	10000	132000	130000					
11	052	SD		0.324	JCT. RTE. 5				11700	126000	99000		
11	052	SD		1.346	REGENTS ROAD	11700	126000	99000	8100	99000	97000		
11	052	SD		2.292	SAN DIEGO, GENESEE AVENUE	8100	99000	97000	7500	92000	88000		
11	052	SD		3.761	JCT. RTE. 805	7500	92000	88000	9400	108000	101000		
11	052	SD		5.494	CONVOY STREET	9400	108000	101000	15500	174000	123000		
11	052	SD		6.602	JCT. RTE. 163	15500	174000	123000	10000	109000	108000		
11	052	SD		6.926	KEARNEY VILLA OVERCROSSING	10000	109000	108000	10000	109000	108000		
11	052	SD		7.314	JCT. RTE. 15	10000	109000	108000	8600	104000	102000		
11	052	SD		8.713	SANTO ROAD	8600	104000	102000	8200	99000	98000		
11	052	SD		13.273	MAST BOULEVARD	8000	98000	96000	7100	87000	84000		
11	052	SD		13.972	MISSION GORGE	7000	86000	84000	7700	84000	81000		
11	052	SD		14.962	JCT RTE 125	7100	87000	84000	7800	85000	82000		
11	052	SD		16.144	CUYAMACA STREET	7400	86000	82000	6900	83000	79000		
11	052	SD		16.735	COTTONWOOD AVE	6800	83000	78000	6600	81000	78000		
11	052	SD		17.220	JCT. RTE. 67	6600	81000	78000					
01	053	LAK		0.000	LOWER LAKE, JCT. RTE. 29				2100	19400	17700		
01	053	LAK		1.470	LAKESHORE DRIVE, OLD STATE HIGHWAY	2100	19400	17700	2200	19400	18300		
01	053	LAK		2.960	CLEARLAKE HIGHLANDS, 40TH AVENUE	2200	19400	18300	880	9400	8700		

01	053	LAK		7.445		JCT. RTE. 20	560	6300	5700				
11	054	SD		0.000	R	JCT. RTE. 5, BEGIN RIGHT ALIGN				5100	58000	56000	
11	054	SD		0.401	R	NATIONAL CITY BOULEVARD, RIGHT ALIGN	5100	58000	56000	4800	62000	61000	
11	054	SD		0.899	R	NATIONAL CITY, HIGHLAND AVENUE OC, RIGHT ALIGN	4800	62000	61000	5200	67000	64000	
11	054	SD		1.753	R	END RIGHT ALIGN	5200	67000	64000				
11	054	SD		0.000	L	WB OFF TO SB 5, BEGIN LEFT ALIGN				4200	54000	51000	
11	054	SD		0.406	L	NATIONAL CITY, NATIONAL CITY BLVD, LEFT ALIGN	4200	54000	51000	4600	60000	58000	
11	054	SD		0.904	L	NATIONAL CITY, HIGHLAND AVENUE OC, LEFT ALIGN	4600	60000	58000	5000	65000	62000	
11	054	SD		1.797	L	END LEFT ALIGN	5000	65000	62000				
11	054	SD		1.880		JCT. RTE. 805	11000	144000	140000	11200	152000	148000	
11	054	SD		2.968		REO DRIVE	11200	151000	148000	10900	144000	139000	
11	054	SD		4.207		WOODMAN STREET	10700	142000	139000	9900	130000	126000	
11	054	SD		4.994		BRIARWOOD ROAD	10100	131000	126000	9700	121000	118000	
11	054	SD	T	10.993		JCT. RTE. 94	9700	121000	118000	3800	44000	43500	
11	054	SD	T	11.261		WEST CUYAMACA COLLEGE DRIVE	3800	44000	43500	3250	37500	37000	
11	054	SD	T	11.846		WILLOW GLEN DRIVE	3250	37500	37000	2200	23900	21800	
11	054	SD	T	13.710		CHASE AVENUE	2100	22500	21800	1950	22600	22300	
11	054	SD	T	14.179		GROVE RD. LT. T	1950	22600	22300	1950	22600	22300	
11	054	SD	T	14.212		END ROUTE 54	1950	22600	22300				
12	055	ORA		0.267		JCT. RTE. 1				8500	107000	93000	
12	055	ORA		1.513		COSTA MESA, EAST 17TH STREET	8500	107000	93000	8500	107000	93000	
12	055	ORA		1.820		COSTA MESA, HARBOR BOULEVARD	8600	108000	94000	7300	92000	80000	
12	055	ORA		2.021		COSTA MESA, 19TH STREET	7300	92000	80000	6100	90000	85000	
12	055	ORA	R	2.772		COSTA MESA, VICTORIA/22ND STREETS	7100	107000	95000	11400	152000	140000	
12	055	ORA	R	4.022		COSTA MESA, MESA DRIVE	11000	147000	140000	10900	142000	138000	
12	055	ORA	R	4.233		COSTA MESA, BEGIN COSTA MESA FREEWAY	9200	120000	116800	9200	120000	116800	
12	055	ORA	R	5.990		JCT. RTE. 405	9100	120000	159800	9400	123000	167400	
12	055	ORA	R	6.990		SANTA ANA, MAC ARTHUR BOULEVARD	17300	226000	219700	17000	223000	290800	
12	055	ORA	R	7.850		SANTA ANA, DYER ROAD	18700	245000	236000	19500	257000	242400	
12	055	ORA	R	9.437		SANTA ANA, EDINGER AVENUE	19500	257000	242400	21200	287000	272300	
12	055	ORA	R	9.960		TUSTIN, MC FADDEN STREET	21200	287000	272300	21800	295000	280000	
12	055	ORA		10.450		TUSTIN, JCT. RTE. 5	217000	295000	269700	14000	178000	246100	
12	055	ORA		10.979		SANTA ANA, FOURTH STREET	14000	178000	167000	19100	242000	226600	
12	055	ORA		11.785		TUSTIN, SEVENTEENTH STREET	19100	242000	226600	19300	244000	227500	
12	055	ORA		12.967		JCT. RTE. 22 WEST	19300	244000	259600	21100	266000	271900	
12	055	ORA		13.700		CHAPMAN AVENUE	21100	266000	248500	19400	246000	238300	
12	055	ORA		15.242		ORANGE, KATELLA AVENUE	19300	246000	229700	18100	227000	212900	
12	055	ORA		16.981		ORANGE, LINCOLN AVENUE	18100	227000	212900	18100	226000	211600	
12	055	ORA	R	17.876		JCT RTE 91	18100	226000	222800				
11	056	SD		0.000		JCT 5				4450	59000	57000	
11	056	SD		0.309		EL CAMINO RL	4450	59000	57000	6200	76000	73000	
11	056	SD		0.820		CARMEL CREEK RD	6200	76000	73000	7500	84000	81000	
11	056	SD		1.808		CARMEL COUNTRY RD	7400	83000	81000	6800	75000	73000	
11	056	SD		3.103		CARMEL VALLEY RD	7600	76000	73000	6200	67000	64000	
11	056	SD		6.338		CAMINO DEL SUR	5900	66000	64000	6500	77000	73000	
11	056	SD		7.202		BLACK MOUNTAIN RD	6500	77000	73000	6700	77000	74000	
11	056	SD		8.540		RANCHO PENASQUITOS BLVD	6600	76000	74000	6000	68000	67000	
11	056	SD		9.712		JCT RTE 15	5900	69000	67000	2850	32000	31500	
11	056	SD		9.837		END ROUTE	2850	32000	31500				
12	057	ORA		10.830	R	ORANGE, JCT. RTES. 5 AND 22, BEGIN RIGHT ALIGN				8600	100000	98000	
12	057	ORA		11.022	R	END RIGHT ALIGN	8600	100000	98000				
12	057	ORA		10.649	L	BEGIN LEFT ALIGN				8600	100000	98000	
12	057	ORA		11.022	L	END LEFT ALIGN	8600	100000	98000				
12	057	ORA		11.238		ORANGE, CHAPMAN AVENUE UC	15900	184000	181000	16700	206000	202600	
12	057	ORA		11.798		ORANGEWOOD AVENUE	16900	207000	202600	19000	235000	228700	
12	057	ORA		12.540		ANAHEIM, KATELLA AVENUE	19000	235000	228700	21000	267000	259600	
12	057	ORA		13.416		ANAHEIM, BALL ROAD	21000	267000	259600	22000	279000	270700	
12	057	ORA		14.777		ANAHEIM, LINCOLN AVENUE	22000	279000	270700	22400	289000	278800	
12	057	ORA		15.600		ANAHEIM, JCT. RTE. 91	22400	289000	278800	16200	210000	196000	
12	057	ORA		16.393		PLACENTIA, ORANGETHORPE AVENUE	26000	335000	313200	24300	332000	309800	
12	057	ORA		17.303		FULLERTON, CHAPMAN AVENUE	24000	330000	307800	21700	300000	280300	
12	057	ORA		17.574		FULLERTON, NUTWOOD AVENUE	21700	300000	280300	21000	289000	270200	
12	057	ORA		18.341		FULLERTON, YORBA LINDA BOULEVARD	21000	289000	270200	20500	258000	244000	
12	057	ORA		19.858		BREA, JCT. RTE. 90	20500	258000	244000	19200	235000	229000	
12	057	ORA		20.884		BREA, LAMBERT ROAD	19200	235000	229000	21000	249000	242300	
12	057	ORA		21.776		TONNER CANYON ROAD	21000	249000	242000	19200	248000	239000	
12	057	ORA	R	22.551		ORANGE/LOS ANGELES COUNTY LINE	17200	248000	239000				
07	057	LA	R	0.000		ORANGE/LOS ANGELES COUNTY LINE				17400	242000	239000	
07	057	LA	R	0.912		DIAMOND BAR, BREA CANYON ROAD	15200	215000	212000	14500	222000	219000	
07	057	LA	R	1.937		DIAMOND BAR, DIAMOND BAR BOULEVARD	14500	222000	219000	13400	207000	205000	
07	057	LA	R	3.167		DIAMOND BAR, PATHFINDER ROAD	13400	207000	205000	13800	210000	208000	
07	057	LA	R	4.296	R	DIAMOND BAR, BEGIN RIGHT ALIGNMENT				6900	105000	104000	
07	057	LA	R	4.518	R	DIAMOND BAR, NORTH JCT. RTE. 60, END RIGHT ALIGN	6900	105000	104000				
07	057	LA	R	4.296	L	DIAMOND BAR, BEGIN LEFT ALIGN				6900	105000	104000	
07	057	LA	R	4.518	L	DIAMOND BAR, SOUTH JCT. RTE. 60, END LEFT ALIGN	6900	105000	104000				
07	057	LA		4.977		DIAMOND BAR, SUNSET CROSSING ROAD	9600	135000	130000	10700	151000	145000	
07	057	LA		6.168		POMONA, TEMPLE AVENUE	10700	151000	145000	12100	163000	157000	
07	057	LA	R	7.719		POMONA, JCT. RTES. 10/71	12100	163000	157000	13800	180000	171000	

07	057	LA	R	8.711		POMONA, VIA VERDE/RAGING WATERS DRIVE	13800	180000	171000	13900	177000	171000
07	057	LA	R	10.272		SAN DIMAS, COVINA AVENUE	13900	177000	171000	12900	166000	161000
07	057	LA	R	10.794		SAN DIMAS, ARROW HIGHWAY	12900	166000	161000	12000	157000	151000
07	057	LA	R	11.284	R	GLENDORA, BEGIN RIGHT ALIGN				6000	79000	76000
07	057	LA	R	11.791	R	GLENDORA, JCT. RTE. 210, RIGHT ALIGN	6000	79000	76000			
07	057	LA	R	12.303	R	GLENDORA, END RIGHT ALIGN	6000	79000	76000			
07	057	LA	R	11.284	L	GLENDORA, BEGIN LEFT ALIGN				6000	79000	76000
07	057	LA	R	12.212	L	GLENDORA, END LEFT ALIGN	6000	79000	76000			
05	058	SLO		0.000		JCT. RTE. 101				950	6600	5800
05	058	SLO		1.540		SANTA MARGARITA, PINAL AVENUE	750	5200	4600	840	5800	5100
05	058	SLO		1.870		SANTA MARGARITA, J STREET	570	4000	3500	490	3400	3000
05	058	SLO		3.139		POZO ROAD	460	3200	2800	560	3900	3400
05	058	SLO		5.440		PARK HILL ROAD	300	2100	1800	250	1700	1500
05	058	SLO		6.889		JCT. RTE. 229 NORTHEAST	250	1700	1500	260	1800	1600
05	058	SLO		24.544		CAMMATTI CREEK	100	680	600	100	680	600
05	058	SLO		45.200		SODA LAKE ROAD	80	570	500	30	170	150
05	058	SLO		57.150		SAN LUIS OBISPO/KERN COUNTY LINE	30	230	200			
06	058	KER		0.000		SAN LUIS OBISPO/KERN COUNTY LINE				40	200	180
06	058	KER		1.350		KERN/SAN LUIS OBISPO COUNTY LINE	40	200	180			
06	058	KER		2.700		SAN LUIS OBISPO/KERN COUNTY LINE				40	200	180
06	058	KER		9.440		REWARD ROAD (ROAD 230)	40	200	180	40	200	180
06	058	KER		15.420		JCT. RTE. 33	40	200	170	260	1500	1400
06	058	KER		23.748		LOKERN ROAD	260	1500	1400	620	4200	3900
06	058	KER		24.760		CORN CAMP ROAD	620	4200	3900	600	4100	3800
06	058	KER		27.279		BUTTONWILLOW AVENUE	670	4500	4200	780	5200	5000
06	058	KER		28.750		WASCO WAY (ROAD 267)	810	5700	5300	690	4900	4600
06	058	KER		31.455		SOUTHBOUND I 5 RAMPS	690	5100	4600	790	5700	5300
06	058	KER		31.752		TRACY AVENUE	590	6300	5900	590	6300	5900
06	058	KER		39.970		JCT. RTE. 43	680	6200	5800	620	6500	6000
06	058	KER		51.807		BAKERSFIELD, REAL ROAD	4700	58000	54000	4700	58000	54000
06	058	KER	R	52.360		BAKERSFIELD, SOUTH JCT. RTE. 99	4750	59000	55000	7700	93000	87000
06	058	KER	R	53.387		H STREET	7700	93000	87000	6800	82000	77000
06	058	KER	R	53.519		SOUTH CHESTER AVENUE	6800	82000	77000	7700	93000	87000
06	058	KER	R	54.419		SOUTH UNION AVENUE	7700	93000	87000	7400	89000	84000
06	058	KER	R	55.404		COTTONWOOD ROAD	7400	89000	84000	7400	89000	84000
06	058	KER	R	56.410		MT. VERNON AVENUE	7400	89000	84000	6300	75000	71000
06	058	KER	R	57.412		OSWELL STREET	6300	75000	71000	5000	63000	58000
06	058	KER	R	58.436		FAIRFAX ROAD	5000	63000	58000	4000	48500	45000
06	058	KER	R	59.440		JCT. RTE. 184	4000	48500	45000	2700	34500	32500
06	058	KER	R	61.512		EDISON ROAD	2700	34500	32500	2600	33000	31000
06	058	KER	R	63.581		COMANCHE DRIVE	2600	33000	31000	2550	28500	26000
06	058	KER	R	65.680		TOWER LINE ROAD	2550	28000	26000	2250	28500	26000
06	058	KER		69.747		GENERAL BEALE ROAD	2200	28000	25500	2250	26500	24200
06	058	KER		75.630		JCT RTE 223	2250	26500	24200	2300	27000	24800
06	058	KER		77.252		BEAR MOUNTAIN RANCH	2300	27000	24800	2250	23200	22200
09	058	KER	R	90.717		JCT. RTE. 202 SOUTHWEST	2200	22900	19700	2800	25500	24000
09	058	KER	R	91.670		TEHACHAPI, MILL STREET	2800	22000	20700	1950	22600	21400
09	058	KER	R	94.164		SUMMIT	2000	24500	23200	2050	23300	23200
09	058	KER	R	99.254		SAND CANYON OH	1950	20900	20100	2250	24200	22600
09	058	KER	R	101.562		CAMERON ROAD	2000	21400	20000	2250	24100	23700
09	058	KER	R	107.465		RANDSBURG CUT-OFF ROAD	2400	25500	24700	1900	20700	19600
09	058	KER	M	108.906		BUSINESS 58	1800	21000	19900	1650	15600	15100
09	058	KER	M	111.130		JCT. RTE. 14	1800	16900	16400	1250	15900	14000
09	058	KER	M	116.229		BUSINESS 58 OC	1500	15100	14000	1800	17500	16500
09	058	KER	R	127.636		CALIFORNIA CITY BOULEVARD	1800	20400	18600	1800	18100	17000
09	058	KER	R	129.674		EDWARDS	1800	18100	17300	1700	17200	15500
09	058	KER	R	132.042		CLAY MINE ROAD	1700	16500	14500	1600	18700	16300
09	058	KER	R	142.878		BORON AVENUE	1650	16100	15350	1450	15700	14700
09	058	KER	R	143.860		KERN/SAN BERNARDINO COUNTY LINE	1750	17300	15400			
08	058	SBD	R	0.000		KERN/SAN BERNARDINO COUNTY LINE				1800	18000	16000
08	058	SBD		5.400		JCT. RTE. 395	1700	16900	15000	1400	14100	12500
08	058	SBD	R	18.303		HARPER LAKE ROAD	1400	14100	12500	1300	15000	12500
08	058	SBD	R	20.635		IRON WASH BRIDGE	1250	14400	12000	1250	14400	12000
08	058	SBD	M	30.387		LENWOOD ROAD	1300	15000	12500	1400	16200	13500
08	058	SBD	R	33.652		WEST MAIN STREET	1450	16800	14000	1450	16800	14000
08	058	SBD	R	34.812		JCT. RTE. 15	1450	16800	14000			
06	059	MAD		0.000		JCT. RTE. 152				390	6600	5900
06	059	MAD		0.057		JCT RTE 152	390	6600	5800			
10	059	MER	R	0.000		JCT RTE 152				450	6300	5700
10	059	MER		3.530		EL NIDO RD	490	6500	6400	530	6800	6750
10	059	MER		7.070		SANDY MUSH RD	690	7200	7100	700	6900	6850
10	059	MER		13.130		DICKENSON AND MISSION ROADS	940	9600	9000	900	9900	9200
10	059	MER		14.126		MERCED, CHILDS AVENUE	1100	13000	10800	1200	13200	11500
10	059	MER		14.780		MERCED, JCT. RTE. 99; JCT. RTE. 140	730	9800	9200	1550	26500	23000
10	059	MER		14.980		MERCED, 16TH & V ST	1550	26500	23000	2200	31500	27400
10	059	MER		15.350		MERCED, 16TH STREET	2200	31500	27400	1500	18300	18200
10	059	MER		16.100		MERCED, WEST OLIVE AVENUE/SANTA FE DRIVE	1650	18600	14000	650	12400	12000
10	059	MER		19.000		BELLEVUE RD	480	5500	3800	420	3750	3700

10	059	MER		22.990	OAKDALE ROAD	340	3150	3100	260	2000	1950
10	059	MER		26.550	YOUD RD	290	1900	1850	270	2150	2100
10	059	MER	R	28.808	TURLOCK ROAD	270	2450	1500	270	2450	1500
10	059	MER		32.250	SNELLING ROAD	270	2100	2000	430	3950	3900
10	059	MER		33.000	MONTGOMERY ST-LT	430	4300	2700	370	3400	2600
10	059	MER		33.709	LA GRANGE ROAD	300	2500	2100			
07	060	LA		0.000	LOS ANGELES, JCT. RTE. 10				11700	183000	180000
07	060	LA	R	0.545	LOS ANGELES, JCT. RTE. 5	11700	183000	180000	14500	226000	217000
07	060	LA	R	1.475	LOS ANGELES, LORENA STREET	14500	226000	217000	14900	232000	223000
07	060	LA	R	1.936	LOS ANGELES, INDIANA STREET	14900	232000	223000	16400	249000	239000
07	060	LA	R	2.592	THIRD STREET/DOWNEY ROAD	16400	249000	239000	16000	251000	241000
07	060	LA	R	3.270	JCT. RTE. 710	16000	251000	241000	16900	264000	261000
07	060	LA	R	4.426	MONTEREY PARK, ATLANTIC BOULEVARD	16900	264000	261000	16200	253000	250000
07	060	LA	R	5.893	MONTEBELLO, FINDLAY/ GARFIELD/WILCOX AVENUES	16200	253000	250000	15400	235000	232000
07	060	LA	R	7.774	MONTEBELLO, PARAMOUNT BOULEVARD	15400	235000	232000	14600	227000	222000
07	060	LA	R	8.548	ROSEMEAD, SAN GABRIEL BOULEVARD	14600	227000	222000	15300	237000	232000
07	060	LA		9.509	SOUTH EL MONTE, JCT. RTE. 164	15300	237000	232000	16900	247000	241000
07	060	LA		10.230	SOUTH EL MONTE, SANTA ANITA AVENUE	16900	247000	241000	16600	247000	242000
07	060	LA		11.007	SOUTH EL MONTE, PECK ROAD/DURFEE AVENUE	16600	247000	242000	16400	243000	238000
07	060	LA		11.711	INDUSTRY, JCT. RTE. 605	16400	243000	238000	17900	263000	257000
07	060	LA		12.627	INDUSTRY, CROSSROADS PARKWAY	17900	263000	257000	17800	267000	261000
07	060	LA		14.262	HACIENDA HEIGHTS, SEVENTH AVENUE	17800	267000	261000	16400	251000	245000
07	060	LA		15.932	HACIENDA HEIGHTS, HACIENDA BOULEVARD	16400	251000	245000	15300	245000	240000
07	060	LA		17.972	INDUSTRY, AZUSA AVENUE	15300	245000	240000	14600	248000	228000
07	060	LA		19.464	INDUSTRY, FULLERTON ROAD	14600	248000	228000	15100	257000	236000
07	060	LA		20.428	ROWLAND HEIGHTS, NOGALES STREET	15100	257000	236000	16500	281000	258000
07	060	LA	R	21.478	INDUSTRY, FAIRWAY DRIVE	16500	281000	258000	18500	302000	285000
07	060	LA	R	22.970	DIAMOND BAR, BREA CANYON ROAD	18500	302000	285000	20900	341000	322000
07	060	LA	R	23.560	DIAMOND BAR, JCT. RTE. 57 SOUTH	20900	341000	322000	22600	350000	348000
07	060	LA	R	24.451	DIAMOND BAR, GRAND AVENUE	22600	350000	348000	22700	352000	350000
07	060	LA	R	25.464	DIAMOND BAR, JCT. RTE. 57 NORTH	22700	352000	350000	17300	250000	247000
07	060	LA	R	28.043	POMONA, PHILLIPS RANCH ROAD	17300	250000	247000	16400	237000	235000
07	060	LA	R	29.392	POMONA, JCT. RTE. 71	16400	237000	235000	16100	239000	235000
07	060	LA	R	30.328	POMONA, RESERVOIR STREET	16100	239000	235000	15700	231000	224000
07	060	LA	R	30.456	LOS ANGELES/SAN BERNARDINO COUNTY LINE	15700	244000	236000			
08	060	SBD	R	0.000	LOS ANGELES/SAN BERNARDINO COUNTY LINE				15700	244000	236000
08	060	SBD	R	1.367	CHINO, RAMONA AVENUE	15800	245000	237000	15800	245000	237000
08	060	SBD	R	2.366	CENTRAL AVENUE	15800	245000	237000	15900	246000	238000
08	060	SBD	R	3.602	MOUNTAIN AVENUE	15900	246000	238000	15700	243000	235000
08	060	SBD	R	4.580	ONTARIO, JCT. RTE. 83	15700	243000	235000	15600	242000	234000
08	060	SBD	R	5.855	GROVE AVENUE	15600	242000	234000	15200	236000	228000
08	060	SBD	R	6.856	VINEYARD AVENUE	15200	236000	228000	15300	237000	229000
08	060	SBD	R	7.873	ARCHIBALD AVENUE	15300	237000	229000	14700	228000	221000
08	060	SBD	R	8.906	HAVEN AVENUE	14700	228000	221000	14300	222000	216000
08	060	SBD	R	9.958	SAN BERNARDINO/RIVERSIDE CO LINE, MILLIKEN AVE	14100	218000	212000			
08	060	RIV	R	0.000	SAN BERNARDINO/RIVERSIDE CO LINE, MILLIKEN AVE				13100	204000	198000
08	060	RIV	R	0.491	JCT. RTE. 15	11900	175000	170000	12500	168000	165000
08	060	RIV	R	1.560	VAN BUREN BOULEVARD	15000	207000	200000	12200	168000	162000
08	060	RIV	R	1.993	ETIWANDA AVENUE	12200	168000	162000	13100	193000	181000
08	060	RIV	R	3.030	MISSION BOULEVARD	13100	193000	181000	12000	176000	165000
08	060	RIV	R	4.548	PEDLEY ROAD	12000	176000	165000	11900	175000	164000
08	060	RIV	R	5.575	PYRITE STREET	11900	175000	164000	12000	176000	165000
08	060	RIV		7.533	VALLEY WAY	12000	176000	165000	12300	181000	170000
08	060	RIV		9.555	RUBIDOUX, RUBIDOUX BOULEVARD	12300	181000	170000	12500	184000	173000
08	060	RIV		11.068	RIVERSIDE, CRESTMORE AVENUE	12500	184000	173000	12800	189000	177000
08	060	RIV		11.732	RIVERSIDE, MAIN STREET	12800	189000	177000	12000	177000	166000
08	060	RIV		11.818	RIVERSIDE, ORANGE STREET OVERCROSSING	12000	177000	166000	12400	171000	165000
08	060	RIV	R	12.064	RIVERSIDE, JCT. RTES. 215/91	11800	162000	157000	10000	140000	130000
08	060	RIV	R	12.212	EAST JCT. RTE. 215	10000	140000	130000	10900	151000	140000
08	060	RIV		13.307	DAY STREET	11400	159000	147000	13600	162000	150000
08	060	RIV		14.324	MORENO VALLEY, PIGEON PASS ROAD	13500	162000	150000	11900	144000	133000
08	060	RIV		15.338	MORENO VALLEY, HEACOCK STREET	11900	144000	133000	10400	125000	116000
08	060	RIV		16.350	MORENO VALLEY, PERRIS BOULEVARD	10400	125000	116000	11600	108000	100800
08	060	RIV		18.370	NASON STREET	11600	108000	100800	10100	95000	88000
08	060	RIV		19.200	MORENO BEACH DRIVE	10100	95000	88000	8300	77000	72000
08	060	RIV		20.370	REDLANDS BOULEVARD	8300	77000	72000	7700	72000	67000
08	060	RIV		21.369	EB ON FRM THEODORE STREET	7700	72000	67000	7700	72000	67000
08	060	RIV		22.101	GILMAN SPRINGS ROAD	7700	72000	67000	6700	62000	58000
08	060	RIV		27.979	JACKRABBIT TRAIL-END FREEWAY	6700	62000	58000	6700	62000	58000
08	060	RIV		30.495	JCT. RTE. 10	6700	62000	58000			
04	061	ALA		14.800	SAN LEANDRO, JCT. RTE. 112 EAST				2500	23800	23300
04	061	ALA		15.936	OAKLAND, HEGENBERGER ROAD/98TH AVENUE	2500	23800	23300	2400	23000	22500
04	061	ALA		16.070	OAKLAND, AIRPORT/HEGENBERGER ROADS	2400	23000	22500	2500	23300	22800
04	061	ALA		18.520	ALAMEDA, ISLAND DRIVE	2500	23300	22800	4500	44500	43600
04	061	ALA		18.552	ALAMEDA, SAN LEANDRO BRIDGE	4500	44500	43600	4500	44500	43600
04	061	ALA		19.440	ALAMEDA, BROADWAY	4500	44500	43600	1000	10500	10200
04	061	ALA		19.840	ALAMEDA, BROADWAY/ ENCINAL AVENUE	1000	10500	10200	900	8800	8500
04	061	ALA		21.270	ALAMEDA, CENTRAL AVENUE/ SHERMAN STREET	900	8800	8500	900	9600	9300

04	061	ALA		21.967	JCT. RTE. 260 NORTH	1600	16500	16100				
08	062	RIV		0.000	JCT. RTE. 10				2100	25500	23000	
08	062	RIV	R	3.344	PIERSON BOULEVARD	2100	25500	23000	1900	23300	21000	
08	062	RIV	R	6.451	INDIAN AVENUE	1900	23300	21000	2350	29000	26000	
08	062	RIV		9.237	RIVERSIDE/SAN BERNARDINO COUNTY LINE	2350	29000	26000				
08	062	SBD		0.000	RIVERSIDE/SAN BERNARDINO COUNTY LINE				2350	29000	26000	
08	062	SBD		0.845	HESS BOULEVARD	2350	29000	26000	2150	26500	24000	
08	062	SBD		1.884	MORONGO VALLEY, PIONEER/ EAST DRIVES	2250	27500	25000	2150	26500	24000	
08	062	SBD		9.293	YUCCA VALLEY, CAMINO DEL CIELO	2100	25500	23000	2100	25500	23000	
08	062	SBD		10.531	YUCCA VALLEY, PIONEER TOWN ROAD	2450	30000	27000	2700	33500	30000	
08	062	SBD		12.404	YUCCA VALLEY, JCT. RTE. 247 NORTH	2750	34000	30500	2900	30000	28500	
08	062	SBD		15.145	YUCCA MESA ROAD	2900	30000	28500	2150	22300	21200	
08	062	SBD		18.267	JOSHUA TREE, PARK BOULEVARD	1800	18900	18000	1800	18900	18000	
08	062	SBD		22.165	SUNFAIR ROAD	1800	18900	18000	1550	15800	15000	
08	062	SBD		31.196	TWENTYNINE PALMS, NATIONAL PARK DRIVE/HATCH RD	1550	15800	15000	1600	16400	15600	
08	062	SBD		33.208	TWENTYNINE PALMS, ADOBE ROAD	1150	12000	11400	990	10300	9800	
08	062	SBD		34.223	29 PALMS/UTAH TRAIL	850	5800	5300	490	3350	3060	
08	062	SBD		79.476	SAN BERNARDINO/RIVERSIDE COUNTY LINE	140	940	860				
08	062	RIV		79.476	SAN BERNARDINO/RIVERSIDE COUNTY LINE				140	1200	860	
08	062	RIV		84.965	JCT. RTE. 177 SOUTH	240	1200	860	420	2200	1530	
08	062	RIV		90.203	RIVERSIDE/SAN BERNARDINO COUNTY LINE	420	2200	1530				
08	062	SBD		90.203	RIVERSIDE/SAN BERNARDINO COUNTY LINE				420	2200	1530	
08	062	SBD		102.254	CADIZ ROAD	420	2200	1530	420	2200	1530	
08	062	SBD		107.237	BLYTHE RICE ROAD	420	2200	1530	420	2200	1530	
08	062	SBD		125.761	JCT. RTE. 95	420	2100	1530	490	3000	2550	
08	062	SBD		142.660	ARIZONA STATE LINE	1200	7300	6200				
06	063	TUL		0.000	TULARE, JCT. RTE. 137				2050	22000	21500	
06	063	TUL		4.010	LIBERTY AVENUE; AVENUE 264	2100	22500	21500	2050	23000	21800	
06	063	TUL		5.011	PARK AVENUE (AVENUE 272)	2200	24100	22900	2150	23800	22600	
06	063	TUL		6.010	CALDWELL AVENUE (AVENUE 280)	2150	23800	22600	3000	33000	31500	
06	063	TUL		6.990	VISALIA, WALNUT AVENUE (AVENUE 288)	2750	30500	29000	2450	27500	26000	
06	063	TUL		7.490	VISALIA, TULARE AVENUE (AVENUE 292)	2450	27500	26000	2950	34000	33000	
06	063	TUL	L	8.881	R VISALIA, NOBLE/MINERAL KING. W JCT. RTE. 198, RIGHT ALIGN				1150	14200	12800	
06	063	TUL		7.948	R COURT ST AT NOBLE	1150	14200	12800	1200	13500	12800	
06	063	TUL		7.980	R VISALIA, EAST JCT. RTE. 198	1200	13500	12800	1200	13500	12800	
06	063	TUL		8.200	R VISALIA, ON COURT ST AT MAIN ST	1200	13500	12800	1300	14600	13800	
06	063	TUL		8.392	R VISALIA, ON COURT ST AT SCHOOL ST	920	10400	9900	930	10600	10000	
06	063	TUL	R	8.775	R VISALIA, ON COURT ST/W THIRD AVE NEAR LINCOLN OVAL	840	9500	9000	710	8000	7600	
06	063	TUL	R	9.095	R VISALIA, ON NW 3RD AVE/HOUSTON AVE, END RIGHT ALIGN	660	7500	7100				
06	063	TUL		7.980	L VISALIA, EAST JCT 198, BEGIN LEFT ALIGN				1300	14600	13800	
06	063	TUL		8.200	L VISALIA, ON LOCUST STREET AT MAIN STREET	1000	11400	10800	1050	12000	11400	
06	063	TUL		8.392	L VISALIA, ON LOCUST STREET AT SCHOOL STREET	960	10900	10300	950	10800	10200	
06	063	TUL		8.681	L VISALIA, LOCUST/PINE STREETS	820	9300	8800	750	8500	8100	
06	063	TUL	L	8.916	L MINERAL KING @ WILLIS	1200	13200	12500	1200	13500	12800	
06	063	TUL	L	9.226	L MINERAL KING @ COURT	1200	13500	12800	750	8500	8100	
06	063	TUL	R	9.095	L VISALIA, ON NW 3RD AVE/HOUSTON AVE, END LEFT ALIGN	750	8500	8100				
06	063	TUL	R	9.100	VISALIA, HOUSTON AVE (AVENUE 304)				1900	21600	20500	
06	063	TUL		12.130	AVENUE 328	920	10400	9900	690	7800	7400	
06	063	TUL		15.110	AVENUE 352; OIL WELL ROAD	690	7800	7400	670	7400	7300	
06	063	TUL	R	19.187	JCT. RTE. 201 EAST	510	5500	5400	690	7400	7300	
06	063	TUL		21.568	JCT. RTE. 201 WEST, CONEJO AVENUE	690	7400	7300	810	8700	8600	
06	063	TUL		22.370	EMERALD DRIVE	810	8700	8600	1050	11200	11000	
06	063	TUL	R	23.572	AVENUE 416; EL MONTE WAY	1250	12300	12100	760	7200	7100	
06	063	TUL	R	24.322	AVENUE 422	410	3950	3850	330	3100	3000	
06	063	TUL	R	25.550	AVENUE 432	220	2050	2000	230	2300	2000	
06	063	TUL	R	29.090	AVENUE 460	160	1600	1400	170	1700	1500	
06	063	TUL	R	30.084	TULARE/FRESNO COUNTY LINE	190	1950	1700				
06	063	FRE		0.000	TULARE/FRESNO COUNTY LINE				260	3250	2500	
06	063	FRE		2.500	AMERICAN AVENUE	260	2250	1950	130	1200	910	
06	063	FRE		8.362	JCT. RTE. 180	120	1000	770				
06	065	KER	R	0.000	JCT. RTE. 99				1750	19400	17700	
06	065	KER		2.900	JAMES ROAD	1000	11200	10300	880	10000	9000	
06	065	KER		4.670	LERDO HIGHWAY	880	10000	9000	760	8600	7800	
06	065	KER		11.860	WOODY/FAMOSO ROAD	790	8900	8200	680	8700	7100	
06	065	KER		23.186	JCT. RTE. 155	740	8400	7800	700	7800	7300	
06	065	KER		25.169	KERN/TULARE COUNTY LINE	700	7800	7300				
06	065	TUL		0.000	KERN/TULARE COUNTY LINE				700	7800	7300	
06	065	TUL	R	6.983	AVENUE 56	700	7800	7300	800	9700	8400	
06	065	TUL	R	11.860	AVENUE 95	960	11400	10000	1200	14500	12400	
06	065	TUL	R	14.073	AVENUE 112	1200	14500	12400	1150	12900	12200	
06	065	TUL		18.163	JCT. RTE. 190	1550	16700	16000	2850	32000	29500	
06	065	TUL		19.142	OLIVE STREET	2800	31000	29000	2550	28500	26500	
06	065	TUL	R	20.140	HENDERSON AVE	2550	28500	26500	2300	26000	23500	
06	065	TUL		21.830	LINDA VISTA AVENUE	2300	26000	23500	2250	25500	23200	
06	065	TUL		23.333	AVENUE 184	2300	26000	23900	2250	24300	22900	
06	065	TUL		29.489	LINDSAY, HERMOSA STREET (AVENUE 228)	2250	24300	22900	2050	23100	21300	
06	065	TUL		30.090	OAK AVENUE(ROAD 207)	2050	22400	21200	2250	24900	23300	
06	065	TUL		30.540	RD 204, SPRUCE AVE	2200	24100	22700	1400	15400	14400	

06	065	TUL		31.546	JCT. RTE. 137 WEST	1300	14600	13600	750	7200	6400
06	065	TUL		37.100	EXETER, D STREET	870	10400	8800	750	8600	7600
06	065	TUL		37.650	EXETER, PINE STREET	920	10200	9300	1000	11300	10300
06	065	TUL		39.577	JCT. RTE. 198	1000	9900	9600			
03	065	PLA	R	4.863	ROSEVILLE, JCT. RTE. 80				8700	122000	117800
03	065	PLA	R	5.926	ROSEVILLE, HARDING BOULEVARD	8700	122000	117800	8600	122000	106000
03	065	PLA	R	7.100	PLEASANT GROVE	8600	122000	106000	8000	110000	102400
03	065	PLA	M	8.258	WASHINGTON BOULEVARD	8000	110000	102400	6400	87000	80300
03	065	PLA	R	9.569	PLACER/SUNSET BOULEVARDS	6400	87000	80300	7800	74000	68200
03	065	PLA	R	11.921	TWELVE BRIDGES OVERCROSSING	7800	74000	68200	5300	65000	57000
03	065	PLA	R	13.359	FERRARI RANCH RD	5300	65000	57000	2100	25000	23600
03	065	PLA	R	15.546	NELSON LANE	2100	25000	23600	2100	25000	23600
03	065	PLA	R	17.446	NICOLAUS ROAD	2100	25000	23600	2100	25000	23600
03	065	PLA	R	19.461	WEST WISE RD SB 65	2100	25000	23600	2100	25000	23600
03	065	PLA	L	23.193	RIOSA RD	2100	25000	23600	2200	25500	24700
03	065	PLA	R	24.259	PLACER/YUBA COUNTY LINE	2200	25500	24700			
03	065	YUB	R	0.000	PLACER/YUBA COUNTY LINE				2200	25500	24700
03	065	YUB		1.503	WHEATLAND, EVERGREEN DRIVE	1900	21000	19200	2100	22800	21000
03	065	YUB		2.207	DRY CREEK BRIDGE	2100	22800	21000	2100	22800	21000
03	065	YUB		2.600	DAIRY ROAD	2100	22800	21000	2100	22800	21000
03	065	YUB		4.099	SOUTH BEALE RD - RT	2100	22800	21000	1900	22300	21400
03	065	YUB	R	6.884	FORTY MILE ROAD	1900	22300	21400	1850	20000	18900
03	065	YUB	R	8.028	MC GOWAN ROAD	1850	20000	18900	2050	23200	21600
03	065	YUB	R	9.177	JCT. RTE. 70	2050	23200	21600			
07	066	LA		0.000	LA VERNE, BASELINE ROAD				1850	19600	19300
07	066	LA	R	0.189	LA VERNE, JCT. RTE. 210	1850	19600	19300	2200	26500	25000
07	066	LA		1.731	LA VERNE, FRUIT STREET/WHITE AVENUE	2100	25500	24000	1900	23100	22000
07	066	LA		2.540	POMONA, GAREY AVENUE	2000	24100	22800	2050	23100	21800
07	066	LA		3.219	CLAREMONT, TOWNE AVENUE	2050	23100	21800	2250	25000	23700
07	066	LA		3.220	RIALTO/SAN BERNARDINO CITY LIMITS (PEPPER AVENUE)	2100	22400	21300			
08	066	SBD		20.140	RIALTO/SAN BERNARDINO CITY LIMITS (PEPPER AVENUE)				1850	20800	19700
08	066	SBD		21.370	FOURTH STREET	1850	22500	21500	1700	20700	19800
08	066	SBD		22.415	SAN BERNARDINO, MOUNT VERNON AVENUE	1500	18600	17800	1350	16500	15800
08	066	SBD		23.054	SAN BERNARDINO, JCT. RTE. 215	1500	18600	17800			
11	067	SD	R	0.000	EL CAJON, JCT. RTE. 8				4250	51000	50000
11	067	SD	R	0.306	EL CAJON, BROADWAY	4250	51000	50000	8700	109000	107000
11	067	SD	R	1.118	BRADLEY AVENUE	8600	109000	107000	8400	103000	98000
11	067	SD	R	1.943	PROSPECT AVENUE	7900	104000	102000	5400	64000	61000
11	067	SD	R	2.672	WOODSIDE AVENUE	6100	72000	71000	7200	80000	78000
11	067	SD	R	3.914	RIVERFORD ROAD	7200	80000	78000	5200	64000	62000
11	067	SD	R	4.832	WINTER GARDEN BOULEVARD	5200	64000	62000	3350	38000	36500
11	067	SD	R	5.479	MAPLEVIEW STREET	3350	38000	36500	2350	26000	25500
11	067	SD		9.117	VIGILANTE ROAD	2100	22900	22400	1950	21500	21000
11	067	SD		9.320	SLAUGHTER HOUSE CANYON ROAD	1950	21500	21000	1850	20000	19800
11	067	SD		13.560	RIO MARIA RD RT T	1850	20000	19800	1850	20800	18400
11	067	SD		15.200	POWAY ROAD	1850	20800	18400	2700	33000	29000
11	067	SD	R	20.873	SAN VICENTE LAKE ROAD	2500	29500	29000	2450	26500	25500
11	067	SD		21.348	HIGHLAND VALLEY ROAD	2450	26500	25500	2200	23400	23100
11	067	SD		23.276	LETTON STREET	2200	23400	23100	2200	24200	23800
11	067	SD		23.840	MONTECITO ROAD/15TH STREET	2200	24200	23800	3350	38500	38000
11	067	SD		24.170	TWELFTH STREET	3350	38500	38000	3450	40500	39500
11	067	SD		24.270	ELEVENTH STREET	3450	40500	39500	2250	26500	26000
11	067	SD		24.377	RAMONA, JCT. RTE. 78	2450	27000	26000			
05	068	MON		0.000	PACIFIC GROVE, ASILOMAR BEACH STATE PARK				800	3600	3400
05	068	MON		0.224	SUNSET DRIVE EAST OF ASILOMAR	770	4200	4000	410	5000	4400
05	068	MON		1.120	PACIFIC GROVE, FOREST AVENUE	1300	10000	9600	2600	21600	20700
05	068	MON		1.500	PRESCOTT LANE	2300	18600	17800	2500	20100	19200
05	068	MON		1.990	PRESIDIO BOULEVARD	2600	21000	20100	3200	26000	24700
05	068	MON	R	3.948	JCT. RTE. 1	3200	26000	24700	2000	24300	16200
05	068	MON		6.812	JCT. RTE. 218 NORTHWEST	3100	25000	24100	2900	21600	20800
05	068	MON		11.221	LAURELES GRADE ROAD	5000	37000	35800	3400	23600	22800
05	068	MON		13.330	SAN BENANCIO ROAD	3900	27500	26300	3400	25500	24400
05	068	MON	R	17.190	RESERVATION ROAD	3100	23100	22300	2900	35000	34100
05	068	MON	R	18.076	SPRECKLES BOULEVARD	4400	32000	31500	5100	35000	34000
05	068	MON		19.971	SALINAS, BLANCO ROAD	5100	35000	34000	4300	28500	27800
05	068	MON		20.910	SALINAS, AVENUE A/MAPLE STREET	5300	35000	34000	4000	32000	31100
05	068	MON		21.074	SALINAS, JOHN/MAIN STREETS	1900	23300	22500	860	10500	10200
05	068	MON		21.565	SALINAS, ABBOTT STREET	1400	16500	11200	1700	16800	11400
05	068	MON		22.023	SALINAS, JCT. RTE. 101	1900	17900	12100			
03	070	SUT	R	0.051	JCT. RTE. 99				1900	22100	20400
03	070	SUT	R	4.049	NICOLAUS AVENUE OC	1900	22100	20400	2000	23400	21400
03	070	SUT		8.298	SUTTER/YUBA COUNTY LINE	2000	23400	21400			
03	070	YUB		0.000	SUTTER/YUBA COUNTY LINE				2000	23400	21400
03	070	YUB	R	0.354	FEATHER RIVER BOULEVARD	2000	23400	21400	1750	19900	18200
03	070	YUB	R	3.474	PLUMAS LAKE BLVD	1750	19900	18200	1850	22700	21300
03	070	YUB	R	7.345	MC GOWAN ROAD	1850	22700	21300	2150	23500	22000
03	070	YUB	R	8.293	JCT. RTE. 65 SOUTH	1450	23500	22000	3900	46500	42500
03	070	YUB	R	9.282	OLIVEHURST AVENUE	3900	47000	44392	3700	42500	40300

03	070	YUB	R	10.160		ERLE ROAD	3700	42500	40300	4250	49000	46700
03	070	YUB	R	11.386		FEATHER RIVER BOULEVARD	4250	49000	46700	4800	54000	52000
03	070	YUB		13.500		NORTH BEALE ROAD	4800	54000	52000	5300	66000	63800
03	070	YUB		14.083		MARYSVILLE, 1ST STREET	5300	66000	63800	8400	63000	60500
03	070	YUB		14.250		MARYSVILLE, 3RD STREET	8400	63000	60500	7200	54000	50900
03	070	YUB		14.400		MARYSVILLE, 5TH STREET	7200	54000	50900	6200	48500	45900
03	070	YUB		14.710		MARYSVILLE, JCT. RTE. 20	4550	43500	40800	1700	17200	15600
03	070	YUB		14.870		MARYSVILLE, 14TH STREET	1700	17200	15600	2300	21500	19900
03	070	YUB		15.160		MARYSVILLE, 18TH STREET	2400	22800	20400	2150	20900	19400
03	070	YUB		15.350		MARYSVILLE, 24TH STREET	2100	20400	18900	1500	16200	15800
03	070	YUB		16.220		LAURELLEN ROAD	1500	16200	15800	1450	15800	15700
03	070	YUB		19.743		WOODRUFF LANE	1450	15800	15700	1400	15000	14600
03	070	YUB		25.822		YUBA/BUTTE COUNTY LINE	1400	16500	15200			
03	070	BUT		0.000		YUBA/BUTTE COUNTY LINE				1400	16500	15200
03	070	BUT		1.010		LOWER HONCUT ROAD	1400	16500	15200	1500	16500	14800
03	070	BUT		4.060		EAST GRIDLEY ROAD/STIMPSON LANE	1400	16300	15000	1600	18400	17000
03	070	BUT		9.060		WELSH/PALERMO ROADS	1750	17500	16700	1800	17900	16900
03	070	BUT		11.531		MARYSVILLE BAGGETT ROAD	1800	17900	16900	1700	19800	18200
03	070	BUT		13.901		OROVILLE, JCT. RTE. 162	1700	19800	18200	1950	24000	22700
03	070	BUT		14.610		OROVILLE, MONTGOMERY STREET	1950	24000	22700	2600	30500	28900
03	070	BUT		15.425		OROVILLE, GRAND AVENUE	2600	30500	28900	1800	21200	20100
03	070	BUT		15.720		OROVILLE, NELSON ROAD	1800	21200	20100	2150	26000	24600
03	070	BUT		16.627		GARDEN DRIVE	2150	26000	24600	2750	28000	26100
03	070	BUT		20.096		JCT. ROUTE 149	2750	28000	26200	860	9100	8200
03	070	BUT	R	21.870		JCT. ROUTE 191	840	8700	8050	350	3900	3400
03	070	BUT		23.950		COAL CANYON ROAD	350	3900	3400	350	3900	3400
03	070	BUT		26.470		PENTZ ROAD	350	3900	3400	350	3300	2750
03	070	BUT		34.010		PINKSTON/BIG BEND ROADS	250	2550	2100	200	2100	1700
03	070	BUT		48.076		BUTTE/PLUMAS COUNTY LINE	180	1800	1450			
02	070	PLU		0.000		BUTTE/PLUMAS COUNTY LINE				180	1450	1150
02	070	PLU		33.026		JCT. RTE. 89 NORTH	160	1350	1250	260	2750	2550
02	070	PLU		41.970		COUNTY HOSPITAL ROAD	380	3850	3650	590	5700	5400
02	070	PLU		43.086		LAWRENCE STREET	740	6900	6600			
02	070	PLU	R	43.086	R	LAWRENCE STREET, BEGIN RIGHT ALIGN				390	3500	3300
02	070	PLU	R	43.179	R	QUINCY, MAIN ST AT COURT ST/BUCKS LAKE ROAD	390	3500	3300	450	4200	3950
02	070	PLU	R	43.303	R	QUINCY, ON MAIN STREET AT RAILWAY AVENUE	450	4200	3950	520	4900	4650
02	070	PLU	R	43.700	R	QUINCY, END RIGHT ALIGN ON MAIN ST AT LAWRENCE ST	580	5600	5400			
02	070	PLU	R	43.086	L	BEGIN LEFT ALIGN VIA LAWRENCE				390	3500	3300
02	070	PLU	R	43.268	L	QUINCY, ON LAWRENCE STREET AT RAILWAY AVENUE	440	4200	3900	500	4900	4550
02	070	PLU		43.785		QUINCY JUNCTION ROAD	1100	11200	10500	1200	11800	10700
02	070	PLU		45.245		QUINCY STATE HIGHWAY MAINTENANCE STATION	860	8800	8000	860	8800	8000
02	070	PLU		46.770		LA PORTE ROAD	350	3700	3350	520	3300	3000
02	070	PLU	R	66.628		JCT. RTE. 89 SOUTH	280	4050	2900	390	4100	3300
02	070	PLU		75.332		PORTOLA, WEST CITY LIMITS	550	6500	5400	550	6500	5400
02	070	PLU		75.960		GULLING STREET	760	8200	6700	790	8100	7000
02	070	PLU	R	76.600		PORTOLA, MEADOW WAY	480	5300	4350	450	5100	3850
02	070	PLU	R	80.315		BECKWOURTH, CALPINE ROAD	450	5100	3850	480	4650	3500
02	070	PLU		92.065		JCT. RTE. 49 SOUTH	480	4650	3500	530	5100	4150
02	070	PLU		94.280		JCT. RTE. 284 NORTH	530	5100	4150	470	5100	4450
02	070	PLU		95.964		PLUMAS/LASSEN COUNTY LINE	470	5100	4450			
02	070	LAS		0.000		PLUMAS/LASSEN COUNTY LINE				470	5100	4450
02	070	LAS		3.889		JCT. RTE. 395	470	5100	4450			
07	071	LA	R	0.335	R	POMONA, JCT. RTES. 10/57, BEGIN RIGHT ALIGN				3200	48000	45500
07	071	LA	R	0.490	R	POMONA, END RIGHT ALIGN	3200	48000	45500			
07	071	LA	R	0.335	L	POMONA, JCT. RTES. 10/57, BEGIN LEFT ALIGN				3200	48000	45500
07	071	LA	R	0.490	L	POMONA, END LEFT ALIGN	3200	48000	45500			
07	071	LA	R	1.479		POMONA, VALLEY BOULEVARD	6400	96000	91000	6300	101000	96000
07	071	LA		1.239		POMONA, POMONA BOULEVARD	6000	97000	92000	5800	99000	93000
07	071	LA		1.622		POMONA, MISSION BOULEVARD	5700	102000	96000	7100	102000	97000
07	071	LA		1.912		POMONA, NINTH STREET	7100	102000	97000	5900	84000	80000
07	071	LA	R	3.614		POMONA, RIO RANCHO ROAD	6100	86000	78000	6500	92000	83000
07	071	LA	R	4.310		POMONA, JCT. RTE. 60	6500	92000	83000	8900	104000	101000
07	071	LA	R	4.697		LOS ANGELES/SAN BERNARDINO COUNTY LINE	8900	104000	101000			
08	071	SBD	R	0.000		LOS ANGELES/SAN BERNARDINO COUNTY LINE				10000	124000	120000
08	071	SBD	R	0.908		CHINO, CHINO AVENUE	10000	124000	120000	9700	119000	116000
08	071	SBD	R	1.823		CHINO, GRAND AVENUE	9700	119000	116000	8300	103000	100000
08	071	SBD	R	3.349		CHINO HILLS PARKWAY, JCT RTE 142	8300	103000	100000	7300	95000	90000
08	071	SBD	R	4.886		SOQUEL CANYON	7300	95000	90000	6700	92000	87500
08	071	SBD	R	6.520		PINE AVE OC	6700	92000	87500	6500	89000	85000
08	071	SBD	R	7.983		JCT. RTE. 83 NORTH	6500	89000	85000	6900	95000	90000
08	071	SBD	R	8.478		SAN BERNARDINO/RIVERSIDE COUNTY LINE	6900	95000	90000			
08	071	RIV	R	0.000		SAN BERNARDINO/RIVERSIDE COUNTY LINE				6900	95000	90000
08	071	RIV	R	3.032		JCT. RTE. 91	6900	95000	90000			
12	072	ORA		11.421		LA HABRA, JCT. RTE. 39				3000	35500	35200
12	072	ORA		11.918		ORANGE/LOS ANGELES COUNTY LINE	2350	28500	26500			
07	072	LA		0.000		ORANGE/LOS ANGELES COUNTY LINE				2350	28500	26500
07	072	LA		0.960		WHITTIER, SANTA GERTRUDES AVENUE	3350	40500	38000	3250	39000	36500
07	072	LA		1.850		WHITTIER, COLIMA ROAD	3250	39000	36500	3800	46000	42500

07	072	LA		3.650		WHITTIER, PAINTER AVENUE	4000	48500	45000	3500	42500	39500
07	072	LA		4.252		WHITTIER, SANTA FE SPRINGS ROAD/WASHINGTON BLVD	3500	42500	39500	2300	28000	26500
07	072	LA		6.278		WHITTIER, NORWALK BOULEVARD	2300	28000	26500	3600	44000	41000
07	072	LA		6.662		WHITTIER, JCT. RTE. 605	3600	44000	41000	2850	35500	33000
07	072	LA		6.707		WHITTIER, PIONEER BOULEVARD	2850	35500	33000	2850	35500	33000
07	072	LA		6.766		ESPERANZA AVE RT	2850	35500	33000			
12	073	ORA		10.000		JCT RTE 5				4300	35000	32150
12	073	ORA		11.760		GREENFIELD DR	3850	33000	32150	4350	35000	31600
12	073	ORA		13.404		LA PAZ ROAD	4400	35000	31600	5900	49500	45200
12	073	ORA		14.393		ALISO CREEK ROAD	5800	49500	45200	6700	56000	50000
12	073	ORA		16.250		EL TORO ROAD	6700	56000	50000	7800	63000	57500
12	073	ORA		18.696		TOLL PLAZA	7800	63000	57500	7800	63000	57500
12	073	ORA		21.428		NEWPORT COAST DRIVE	8000	64000	57500	8600	69000	62400
12	073	ORA		22.448		BONITA CANYON DRIVE/FORD ROAD	8600	69000	62400	8600	65000	60600
12	073	ORA		24.778		JAMBOREE ROAD	15900	121000	112500	10400	130000	119200
12	073	ORA	R	26.581		COSTA MESA, JCT RTE 55	10400	130000	119200	7500	100000	95700
12	073	ORA	R	27.282		COSTA MESA, BEAR STREET	8100	106000	95700	10600	148000	135500
12	073	ORA	R	27.742	R	BEGIN RIGHT ALIGN				9600	133000	121000
12	073	ORA	R	27.811	R	JCT RTE 405, RIGHT ALIGN	8600	133000	110900	8600	133000	110900
12	073	ORA	R	28.045	R	END RIGHT ALIGN	8100	113000	102500			
12	073	ORA	R	27.742	L	BEGIN LEFT ALIGN				8100	113000	102500
12	073	ORA	R	27.777	L	JCT RTE 405, LEFT ALIGN	8100	113000	102500	8100	113000	102500
12	073	ORA	R	28.016	L	END LEFT ALIGN	8100	113000	102500			
12	074	ORA		0.000		SAN JUAN CAPISTRANO, JCT. RTE. 5				4000	46500	46600
12	074	ORA		1.060		CALLE ENTRADERO DRIVE	4000	46500	45200	4150	44000	41800
12	074	ORA	R	2.151		RANCHO VIEJO WAY/SANTA MARGARITA	4150	44000	41800	4200	38500	37400
12	074	ORA		5.242		CONROCK ENTRANCE	3550	32500	32600	3550	32500	32600
12	074	ORA		8.130		TROUGH CREEK BRIDGE	1300	11800	11500	1300	12200	11900
12	074	ORA		9.250		LUCAS CANYON ROAD	1300	12200	11900	1200	11200	10300
12	074	ORA		16.599		ORANGE/RIVERSIDE COUNTY LINE	1050	11700	10700			
08	074	RIV		0.000		ORANGE/RIVERSIDE COUNTY LINE				1050	11700	10700
08	074	RIV		11.825		ELSINORE, GRAND AVENUE	1050	11700	10700	1650	21100	19300
08	074	RIV	R	14.190		ELSINORE, LAKE SHORE DRIVE	2300	29500	26900	2200	27500	25400
08	074	RIV	R	14.997		GUNNERSON STREET/ STICKLAND AVENUE	2300	29500	26900	2300	29500	26900
08	074	RIV	R	16.335		ELSINORE, JCT. RTE. 15	2750	35000	32000	2750	33500	32000
08	074	RIV		27.540		JCT. RTE. 215	1700	22000	21300	2150	26000	25400
08	074	RIV		28.914		ETHANAC ROAD	2050	25000	24400	2000	26500	25400
08	074	RIV		29.800		MENIFEE ROAD	2000	26000	25000	2600	32500	30500
08	074	RIV		34.332		JCT. RTE. 79 SOUTH	2550	31000	29500	3000	34500	33500
08	074	RIV		36.928		WARREN ROAD	3350	35000	33500	2700	30000	28500
08	074	RIV		39.588		LYON AVENUE	2700	30000	28500	2500	32000	30500
08	074	RIV		40.588		HEMET, STATE STREET	2900	32000	30500	2250	31000	29500
08	074	RIV		41.338		JCT. RTE. 79 NORTH	2350	31000	29500	2400	29000	27500
08	074	RIV		41.840		HEMET, YALE STREET	2300	30000	28500	2000	26500	25400
08	074	RIV		42.340		CORNELL STREET	1950	26500	25400	1950	26500	25400
08	074	RIV		43.338		HEMET STREET	2000	26500	25400	1500	20300	19300
08	074	RIV		44.740		MOUNTAIN STREET	1200	16000	15200	1300	16200	15700
08	074	RIV		48.288		SAN BERNARDINO NATIONAL FOREST BOUNDARY	540	5100	4900	400	3800	3600
08	074	RIV		59.250		JCT. RTE. 243 NORTH	390	3600	3250	340	3550	3350
08	074	RIV		71.745		JCT. RTE. 371 WEST	320	2800	2650	450	3850	3450
08	074	RIV	R	92.340		PALM DESERT, JCT. RTE. 111	2500	21400	19300			
11	075	SD		8.930		BEGIN ROUTE 75 EAST OF ROUTE 5				2750	34000	33500
11	075	SD		9.000		SAN DIEGO, JCT. RTE. 5	2750	3400	33500	4700	72000	70000
11	075	SD		9.310		SAN DIEGO, SATURN/19TH STREET	5400	72000	70000	4350	54000	53000
11	075	SD		13.973		CORONADO, SILVER STRAND STATE PARK	2850	21900	19900	2850	24800	23100
11	075	SD		17.610		CORONADO, GATE 3, ENTRANCE TO NAVAL AMPHIBIOUS BASI	2900	24700	23400	2750	27000	24500
11	075	SD		18.470		CORONADO, POMONA AVENUE	2750	27000	24500	2700	26000	24300
11	075	SD		18.930		CORONADO, 10TH STREET/ PARK PLACE	2700	26000	24300	3000	28500	27500
11	075	SD		19.050		CORONADO, 9TH STREET	3000	28500	27500	3000	28500	27500
11	075	SD		19.160		CORONADO, 8TH STREET	3000	28500	27500	3000	28500	27500
11	075	SD		19.380		CORONADO, 6TH STREET	3000	28500	27500	2200	29000	27000
11	075	SD		19.586		JCT. RTE. 282	2100	28500	27000	1900	25000	22300
11	075	SD	R	19.696	R	CORONADO, JCT. RTE. 282, BEGIN RIGHT ALIGN				2400	27500	26000
11	075	SD	R	19.790	R	CORONADO, ON 4TH STREET AT C AVENUE	2400	27500	26000	2500	30500	26500
11	075	SD	R	19.849	R	CORONADO, ON 4TH STREET AT B AVENUE	2500	30500	26500	2850	34500	32500
11	075	SD	R	19.990	R	CORONADO, END OF RIGHT ALIGN	4900	42000	37500			
11	075	SD	R	19.696	L	CORONADO, JCT. RTE. 282, BEGIN LEFT ALIGN				3750	43000	40000
11	075	SD	R	19.789	L	CORONADO, ON 3RD STREET AT C AVENUE	3100	35000	33000	3250	36000	34500
11	075	SD	R	19.850	L	CORONADO, ON 3RD STREET AT B AVENUE	3250	36000	34500	3400	38000	36000
11	075	SD	R	20.035	L	CORONADO, END LEFT ALIGN ON POMONA AVE/4TH ST	4350	43500	39000			
11	075	SD	R	20.136		GLORIETTA BLVD. F				7200	88000	78000
11	075	SD	R	20.284		CORONADO, TOLL GATES	7300	84000	78000	7200	88000	78000
11	075	SD	R	22.261		JCT. RTE. 5	7200	88000	78000			
11	076	SD	R	0.000		JCT. RTE. 5				3650	53000	50000
11	076	SD	R	0.486		OCEANSIDE, LORETTA STREET	3650	54000	50000	3950	53000	45000
11	076	SD	R	1.156		OCEANSIDE, CANYON DRIVE	3650	48500	41000	4050	51000	46500
11	076	SD	R	1.767		OCEANSIDE, BENET ROAD	3700	46500	42000	3750	47500	42000
11	076	SD	R	2.145		OCEANSIDE, AIRPORT ROAD	3750	47500	42000	3950	51000	46500

11	076	SD	R	3.389	OCEANSIDE, EL CAMINO REAL	3950	51000	46500	3600	43000	40500
11	076	SD	R	3.745	OCEANSIDE, DOUGLAS STREET	3600	43000	40500	3850	47500	46500
11	076	SD	R	4.211	OCEANSIDE, RANCHO DEL ORO	3200	39500	36000	3100	38500	36000
11	076	SD	R	5.597	OCEANSIDE, FRAZEE ROAD	3100	38500	36000	3800	47000	43500
11	076	SD	R	6.207	COLLEGE BOULEVARD	3600	44500	41000	4800	47500	46000
11	076	SD	R	6.721	OCEANSIDE, NORTH SANTA FE ROAD	4900	56000	54000	4750	53000	51000
11	076	SD	R	14.492	GIRD RD - LT	1600	18700	17600	2100	24400	23500
11	076	SD	R	17.012	OLD HIGHWAY 15	2100	24400	23500	2650	34000	31000
11	076	SD	R	17.303	JCT. RTE. 15	3350	45000	41500	2150	16000	15100
11	076	SD		23.010	PALA MISSION ROAD	1400	13500	12600	610	7200	6900
11	076	SD		24.130	COUNTY ROAD S 16	700	8300	7900	960	11600	11000
11	076	SD		29.866	COLE GRADE ROAD	1000	12100	11500	1100	12100	10500
11	076	SD		38.250	PALOMAR MOUNTAIN ROAD	420	3650	3000	330	2850	2250
11	076	SD		47.790	EAST PALOMAR ROAD	470	4100	3200	390	2550	2150
11	076	SD		52.319	JCT. RTE. 79	300	2400	2000			
04	077	ALA		0.098	OAKLAND, JCT. RTE. 880				1300	17400	17000
04	077	ALA		0.365	OAKLAND, EAST 12TH STREET	1300	17400	17000	900	12500	12200
04	077	ALA		0.452	OAKLAND, EAST 14TH STREET	900	12500	12200			
11	078	SD		0.004	OCEANSIDE, JCT. RTE. 5				8200	81000	78000
11	078	SD		0.741	OCEANSIDE, JEFFERSON STREET	9100	122000	1180000	9300	128000	125000
11	078	SD		1.498	OCEANSIDE, EL CAMINO REAL	9300	128000	124000	10800	148000	138000
11	078	SD		3.315	OCEANSIDE, COLLEGE BOULEVARD	10500	144000	138000	10200	131000	128000
11	078	SD		4.384	VISTA, EMERALD DRIVE	10200	131000	128000	10000	137000	128000
11	078	SD		5.944	VISTA, MELROSE DRIVE	10000	137000	128000	10900	141000	123000
11	078	SD		6.940	VISTA, SUNSET DRIVE	10900	141000	123000	11200	146000	128000
11	078	SD		7.710	VISTA, MAR VISTA DRIVE	11200	146000	128000	11100	145000	126000
11	078	SD		9.083	SYCAMORE AVENUE	11100	145000	126000	11000	147000	142000
11	078	SD		10.606	SAN MARCOS,RANCHO SANTA FE	11000	146000	142000	10600	146000	142000
11	078	SD		11.183	SAN MARCOS, LAS POSAS ROAD	10600	145000	142000	10000	142000	141000
11	078	SD		12.134	SAN MARCOS, SAN MARCOS BOULEVARD	10000	142000	141000	11100	169000	167000
11	078	SD		12.911	SAN MARCOS, TWIN OAKS VALLEY ROAD	11100	169000	167000	12800	169000	168000
11	078	SD		14.241	SAN MARCOS, WOODLAND PARKWAY	12800	169000	168000	11200	168000	167000
11	078	SD		15.486	NORDAHL ROAD	11200	168000	167000	11900	172000	168000
11	078	SD	R	16.539	ESCONDIDO, JCT. RTE. 15	11800	171000	168000	6900	92000	86000
11	078	SD	R	17.268	ESCONDIDO, CENTRE CITY PARKWAY	6900	92000	86000	4400	59000	58000
11	078	SD	N	17.680	ESCONDIDO, BROADWAY/LINCOLN PARKWAY	4400	59000	58000	4400	59000	58000
11	078	SD	T	17.678	BROADWAY AND RTE 78	4400	59000	58000	2750	33500	33000
11	078	SD	T	17.822	ESCONDIDO, MISSION AVENUE	2750	33500	33000	2850	34500	34000
11	078	SD	T	18.072	ESCONDIDO, WASHINGTON AVENUE	2850	34500	34000	2650	32000	31500
11	078	SD	T	18.408	ESCONDIDO, HICKORY STREET	2650	32000	31500	1350	15600	15400
11	078	SD	T	19.094	ESCONDIDO ASH STREET	1400	15700	15400	1650	19300	19300
11	078	SD	T	19.271	ESCONDIDO, VALLEY PARKWAY BOULEVARD	1650	19300	19300	1550	17300	17000
11	078	SD	T	19.525	ESCONDIDO, GRAND AVENUE	1550	17300	17000	1400	17000	16800
11	078	SD		19.221	ESCONDIDO, OAK HILL DRIVE/5TH AVENUE	1400	17000	16800	1400	15700	15500
11	078	SD		20.190	17TH AVENUE	1400	15700	15500	1350	15600	15400
11	078	SD		20.640	BEAR VALLEY PARKWAY	1350	15600	15400	1350	16400	16300
11	078	SD		20.950	SUMMIT DRIVE	1350	16400	16300	1000	13400	13300
11	078	SD	R	22.560	CLOVERDALE/SAN PASQUAL ROAD	1000	13400	13300	1300	11900	10200
11	078	SD		23.000	SAN PASQUAL VALLEY ROAD	1200	10700	10200	1200	10700	10200
11	078	SD		24.023	WILD ANIMAL PARK ROAD	1200	10700	10200	840	8400	7300
11	078	SD	R	27.315	BANDY CANYON ROAD	840	8400	7300	1000	10500	9300
11	078	SD		33.050	WEEKEND VILLA ROAD	1000	10500	9300	1000	10800	9700
11	078	SD		34.352	ASH ST	1000	10800	9700	1150	11900	11000
11	078	SD		35.120	OLIVE STREET	1150	11900	11000	850	10700	10400
11	078	SD		35.519	JCT. RTE. 67 SOUTHWEST	850	10700	10400	2000	22000	21100
11	078	SD		35.741	RAMONA, EIGHTH STREET	1950	22000	21100	1650	21000	20700
11	078	SD		35.850	RAMONA, SEVENTH STREET	1650	21000	20700	1400	17000	16800
11	078	SD		35.960	RAMONA, SIXTH STREET	1400	17000	16800	1250	15200	14900
11	078	SD		36.290	RAMONA, THIRD STREET	1250	15200	14900	690	17500	8700
11	078	SD		37.110	MAGNOLIA AVENUE	690	17500	8700	690	7200	7000
11	078	SD		41.960	SUTHERLAND DAM ROAD	690	7200	7000	580	5300	5000
11	078	SD		51.108	WEST JCT. RTE. 79	1100	7200	6000	770	5200	4650
11	078	SD		56.910	PINE HILLS ROAD	780	5300	4650	920	6000	5100
11	078	SD		57.880	JULIAN, MAIN/ WASHINGTON STREETS	920	6000	5100	660	5100	5000
11	078	SD		58.133	EAST JCT. RTE. 79	740	5500	5000	520	4700	4200
11	078	SD		58.640	MANZANITA ROAD	490	4600	4200	280	2700	2450
11	078	SD		59.240	CANYON DRIVE	280	2700	2450	210	1900	1750
11	078	SD		60.273	WYNOLA ROAD	210	1900	1750	150	1450	1350
11	078	SD		69.693	VALLECITOS ROAD	150	1450	1350	140	1300	1250
11	078	SD		70.010	SAN FELIPE ROAD	140	1300	1250	240	2250	1350
11	078	SD		76.840	YAQUI PASS ROAD	250	2350	1350	250	1600	1150
11	078	SD		85.610	BORREGO SPRINGS ROAD	250	1600	1150	340	2250	1600
11	078	SD		95.313	SAN DIEGO/IMPERIAL COUNTY LINE	340	2250	1600			
11	078	IMP		0.000	SAN DIEGO/IMPERIAL COUNTY LINE				300	1500	1200
11	078	IMP		13.169	NORTH JCT. RTE 86	260	1350	1200	260	1300	1200
11	078	IMP	R	9.203	SOUTH JCT RTE 86	300	1950	1200	800	10200	9000
11	078	IMP	R	10.809	BRANDT RD	780	10400	9000	1100	14000	12200
11	078	IMP	R	12.891	JCT 78/111 - WEST	2850	14700	12200	2900	16300	13600

11	078	IMP	R	13.897	BEST ROAD	1150	15200	13600	1200	13200	11800
11	078	IMP		15.499	E JCT RTE 78/111	970	13200	11800	510	5200	4550
11	078	IMP		18.651	WEST JCT. RTE. 115	500	4850	4550	450	4500	3700
11	078	IMP		21.023	EAST JCT. RTE. 115	490	4350	3700	360	2500	2100
11	078	IMP		25.927	GREEN ROAD	480	2500	2100	410	2050	1800
11	078	IMP		41.004	GLAMIS	410	2050	1800	440	2100	1900
11	078	IMP		52.348	OGILBY ROAD	440	2100	1900	520	2400	2050
11	078	IMP		80.442	PALO VERDE, FOURTH/MAIN STREETS	550	2600	2150	360	2250	1950
11	078	IMP		80.743	PALO VERDE, IMPERIAL/RIVERSIDE COUNTY LINE	330	2250	1950			
08	078	RIV		0.000	PALO VERDE, IMPERIAL/RIVERSIDE COUNTY LINE				220	1600	1500
08	078	RIV		3.060	32ND AVENUE/PALO VERDE BOULEVARD	220	1600	1500	260	1900	1800
08	078	RIV		6.350	CRANNELLS BOULEVARD/28TH AVENUE	260	1900	1800	240	1950	1700
08	078	RIV		9.352	28TH AVENUE/NEIGHBORS BOULEVARD	240	1950	1700	270	2150	1900
08	078	RIV		10.620	RIPLEY, BROADWAY STREET	270	2150	1900	270	3100	2800
08	078	RIV		16.169	JCT. RTE. 10	270	3100	2800	390	3350	2800
08	078	RIV		16.411	HOBSON WAY F-OLD RTE 10	390	3350	2800			
11	079	SD	L	0.044	JCT. RTE. 8				650	6200	5800
11	079	SD	L	1.297	DESCANSO, RIVERSIDE DRIVE	640	6000	5800	360	3400	3200
11	079	SD		0.000	GUTAY AND PINE VALLEY HIGHWAY	360	3400	3200	440	3400	2900
11	079	SD		9.270	PASO PICACHO CAMP GROUND	220	1750	1650	220	1750	1650
11	079	SD		14.440	SUNRISE HIGHWAY	210	1750	1650	260	2000	1900
11	079	SD		20.230	JCT. RTE. 78	320	3150	3050	620	4400	3200
11	079	SD		27.370	JCT. RTE. 76 WEST	430	2950	2650	420	3150	2850
11	079	SD		31.700	SAN FELIPE ROAD	390	3150	2850	210	1850	1550
11	079	SD		35.070	WARNER SPRINGS, LOS TULES ROAD	190	1700	1400	190	1700	1400
11	079	SD		44.090	SUNSHINE SUMMIT	170	1500	1250	220	1800	1700
11	079	SD		49.298	OAK GROVE	200	1600	1500	260	2050	1900
11	079	SD		53.035	SAN DIEGO/RIVERSIDE COUNTY LINE	350	3200	2100			
08	079	RIV		0.000	SAN DIEGO/RIVERSIDE COUNTY LINE				300	2400	2000
08	079	RIV		2.270	JCT. RTE. 371 EAST	480	3650	3200	1300	10000	8700
08	079	RIV		5.802	SAGE ROAD	1300	10000	8700	1350	10400	9100
08	079	RIV	R	4.777	MURRIETA HOT SPRINGS RD	3050	36000	34000	2500	29500	28000
08	079	RIV	M	7.630	BENTON RD	2800	30500	28000	2500	27500	25000
08	079	RIV	R	16.670	SIMPSON AVENUE	1600	17400	16000	1100	12000	11000
08	079	RIV	R	19.160	JCT. RTE. 74	1000	10900	10000	1650	17500	16500
08	079	RIV		26.400	MENLO AVENUE MAIN STREET	1500	15900	15000	1200	13200	12500
08	079	RIV	M	33.780	GILMAN SPRINGS ROAD, SANDRSON AVENUE	1350	13500	13000	3150	31000	30000
08	079	RIV		39.190	CALIFORNIA AVENUE	3350	33500	32000	2950	29000	28000
08	079	RIV		40.449	BEAUMONT, JCT. RTE. 10	3150	30500	30000			
04	080	SF		3.951	SAN FRANCISCO, JCT. RTE. 101				12200	187500	182000
04	080	SF		4.400	SAN FRANCISCO, 7th/8th STREETS	12200	188000	182000	13100	198000	192500
04	080	SF		5.588	R FIRST/HARRISON STREETS, BAY BRIDGE RIGHT ALIGN	6200	97000	93000	9100	139000	134000
04	080	SF		7.719	R TREASURE ISLAND; YERBA BUENA ISLAND,END RT ALIGN	9100	139000	134000	8900	136000	132000
04	080	SF		5.454	L SAN FRANCISCO, FOURTH/FIFTH ST,BAY BRIDGE LEFT ALIGN	6500	99000	96000	9000	137000	132000
04	080	SF		5.588	L FIRST/HARRISON STREETS, BAY BRIDGE CONNECT	6500	99000	96000	9000	137000	132000
04	080	SF		7.719	L TREASURE ISLAND; YERBA BUENA ISLAND	9000	137000	132000	9000	137000	133000
04	080	SF		7.889	L END LEFT ALIGN	900	137000	133000			
04	080	SF	R	8.866	SAN FRANCISCO/ALAMEDA COUNTY LINE	17800	274000	265000			
04	080	ALA	R	0.000	SAN FRANCISCO/ALAMEDA COUNTY LINE				17800	274000	265000
04	080	ALA		1.989	SAN FRANCISCO-OAKLAND BAY BRIDGE TOLL PLAZA	17800	274000	265000	14400	224000	214500
04	080	ALA		2.413	OAKLAND, WEST GRAND AVENUE , ARMY TERMINAL CONNEC	14400	224000	214500	14400	224000	214500
04	080	ALA		2.509	OAKLAND, JCT RTE 880	14400	224000	214500	14400	224000	214500
04	080	ALA		2.802	OAKLAND, JCT. RTE. 580 EAST	14400	224000	214500	18300	284000	276000
04	080	ALA		3.786	EMERYVILLE, POWELL STREET	18300	284000	276000	15500	240000	233000
04	080	ALA		4.582	BERKELEY, JCT. RTE. 13 EAST	15500	240000	233000	15500	241000	234000
04	080	ALA		5.823	BERKELEY, UNIVERSITY AVENUE	15500	241000	234000	15500	240000	233000
04	080	ALA		6.620	BERKELEY, GILMAN STREET	15500	240000	233000	15800	247000	240000
04	080	ALA	R	7.300	ALBANY, JCT RTE 580	15800	247000	240000	11900	184000	179000
04	080	ALA		8.036	ALAMEDA/CONTRA COSTA COUNTY LINE	11900	184000	179000			
04	080	CC		0.000	ALAMEDA/CONTRA COSTA COUNTY LINE				11900	184000	179000
04	080	CC		0.216	RICHMOND, CENTRAL AVENUE	11900	184000	179000	10400	160000	155000
04	080	CC		1.000	RICHMOND, CARLSON BOULEVARD	10400	160000	155000	10400	161000	156000
04	080	CC		1.671	EL CERRITO, POTRERO AVENUE	10400	161000	156000	9400	146000	142000
04	080	CC		2.040	RICHMOND, JCT. RTE. 123 SOUTH	9400	146000	142000	11600	178000	172000
04	080	CC		2.619	RICHMOND, MAC DONALD AVENUE CONNECTION	11600	178000	172000	11400	175000	169000
04	080	CC		2.961	RICHMOND, SAN PABLO AVENUE	11400	175000	169000	11100	168000	163000
04	080	CC		3.411	RICHMOND, SOLANO AVENUE CONNECTION	11100	168000	163000	10500	161000	156000
04	080	CC		3.795	RICHMOND, MC BRYDE AVENUE CONNECTION	10500	161000	156000	13600	209000	202000
04	080	CC		4.341	SAN PABLO, SAN PABLO DAM ROAD	13600	209000	202000	11000	169000	163000
04	080	CC		5.246	EL PORTAL DRIVE	11000	169000	163000	10900	168000	162000
04	080	CC		5.983	RICHMOND, HILLTOP DRIVE	10900	168000	162000	12400	188000	180000
04	080	CC		6.600	RICHMOND PARKWAY	12400	188000	180000	11500	173000	167000
04	080	CC		7.597	PINOLE, APPIAN WAY	11500	173000	167000	11600	176000	169000
04	080	CC		8.508	PINOLE, PINOLE VALLEY ROAD	11600	176000	169000	12100	178000	171000
04	080	CC		10.059	HERCULES, JCT. RTE. 4 EAST	12100	178000	171000	8500	125000	118000
04	080	CC		10.685	HERCULES, WILLOW AVENUE	8500	125000	118000	7800	114000	107500
04	080	CC		12.753	CUMMINGS SKYWAY	7800	114000	107500	8400	121000	115000
04	080	CC		13.489	CROCKETT	8400	121000	115000	9100	132000	125000

04	080	CC		14.139	CARQUINEZ BRIDGE, CC/SOL COUNTY LINE	9100	132000	125000				
04	080	SOL		0.000	CARQUINEZ BRIDGE, CC/SOL COUNTY LINE				9100	132000	125000	
04	080	SOL		1.144	VALLEJO, JCT. RTE. 29 NORTHWEST	9100	132000	125000	9100	134000	125000	
04	080	SOL		1.776	VALLEJO, MAGAZINE STREET	9100	134000	125000	9100	134000	125000	
04	080	SOL		2.220	VALLEJO, JCT. RTE. 780 SOUTHEAST	9100	134000	125000	10500	160000	148000	
04	080	SOL		2.881	VALLEJO, GEORGIA STREET	10500	160000	148000	10700	164000	152000	
04	080	SOL		3.233	VALLEJO, SPRINGS ROAD	10700	164000	152000	11100	170000	158000	
04	080	SOL		3.494	VALLEJO, TENNESSEE STREET	11100	170000	158000	11100	171000	158000	
04	080	SOL		4.432	VALLEJO, REDWOOD STREET	11100	171000	158000	9500	146000	135000	
04	080	SOL		5.634	VALLEJO, JCT. RTE. 37 WEST	9500	146000	135000	10100	146000	134000	
04	080	SOL		6.814	SOLANO/NAPA COUNTY LINE	10100	146000	134000				
04	080	NAP		6.814	SOLANO/NAPA COUNTY LINE				10100	146000	134000	
04	080	NAP		8.004	NAPA/SOLANO COUNTY LINE	10100	146000	134000				
04	080	SOL		8.004	NAPA/SOLANO COUNTY LINE				10100	146000	134000	
04	080	SOL		8.103	AMERICAN CANYON ROAD	10100	146000	134000	10500	152000	139000	
04	080	SOL	R	11.394	RED TOP ROAD	10500	152000	139000	10200	149000	136000	
04	080	SOL	R	11.976	JCT. RTE. 12 WEST	10200	149000	136000	12500	181000	164000	
04	080	SOL		12.839	JCT. RTE. 680 SOUTH	12500	181000	164000	17100	250000	227000	
04	080	SOL		13.486	SUISUN VALLEY ROAD	17100	250000	227000	17500	256000	232000	
04	080	SOL		15.815	FAIRFIELD, EAST JCT. RTE. 12	17500	256000	232000	15200	211000	189500	
04	080	SOL		16.152	FAIRFIELD, CHADBOURNE RD	15200	211000	190000	15900	220000	198000	
04	080	SOL		17.197	FAIRFIELD, WEST TEXAS STREET	15900	220000	198000	15400	212900	191500	
04	080	SOL		17.522	FAIRFIELD, OLIVER RD	15400	213000	192000	16900	234000	210000	
04	080	SOL		17.917	TRAVIS BOULEVARD	16900	234000	210000	17000	235000	212000	
04	080	SOL		19.176	AIRBASE PARKWAY	17000	235000	212000	15400	212000	191000	
04	080	SOL		20.925	FAIRFIELD, NORTH TEXAS STREET	15400	212000	191000	15200	216000	194000	
04	080	SOL	R	23.134	CHERRY GLEN RD	15200	216000	194000	14500	208000	186000	
04	080	SOL		23.958	PLEASANT VALLEY	14500	208000	186000	14600	208000	187000	
04	080	SOL	R	25.306	ALAMO AVENUE	14600	208000	187000	14700	205000	186000	
04	080	SOL	R	26.010	DAVIS STREET	14700	205000	186000	14500	205000	186000	
04	080	SOL	R	26.228	DEPOT/CLIFFSIDE	14500	205000	186000	14300	202000	183000	
04	080	SOL	R	27.238	VACAVILLE, MONTE VISTA/ALISON DR	14300	202000	183000	13200	185000	169000	
04	080	SOL	R	27.554	VACAVILLE, MONTE VISTA AVE	13200	185000	169000	13400	187000	171000	
04	080	SOL	R	28.360	JCT. RTE. 505 NORTH	13400	187000	171000	10600	144000	134000	
04	080	SOL		29.859	VACAVILLE, LEISURE TOWN	10600	144000	134000	11000	149000	139000	
04	080	SOL		31.364	MERIDIAN RD/WEBER RD	11000	149000	139000	10800	146000	136000	
04	080	SOL		32.622	MIDWAY RD	10800	146000	136000	10800	146000	136000	
04	080	SOL		35.547	DIXON/GRANT ROAD	10800	146000	136000	10400	142000	132000	
04	080	SOL		36.901	PITT SCHOOL RD	10400	142000	132000	10400	141000	131000	
04	080	SOL		38.210	JCT. RTE. 113 SOUTH	10400	141000	131000	10600	146000	135000	
04	080	SOL		39.742	PEDRICK ROAD	10600	146000	135000	10600	146000	135000	
04	080	SOL		41.256	KIDWELL RD	10600	146000	135000	10600	146000	135000	
04	080	SOL		42.670	JCT. RTE. 113 NORTH	10600	146000	135000	11000	152000	140000	
04	080	SOL	R	44.720	SOLANO/YOLO COUNTY LINE	11000	152000	140000				
03	080	YOL		0.000	SOLANO/YOLO COUNTY LINE				12600	146000	139400	
03	080	YOL		0.237	RICHARDS BOULEVARD	12600	146000	139400	12300	142000	133900	
03	080	YOL		0.840	DAVIS, OLIVE AVENUE	12300	142000	133900	12600	143000	136300	
03	080	YOL		2.680	DAVIS, MACE BOULEVARD (COUNTY ROAD 104)	12600	143000	136300	13300	152000	144300	
03	080	YOL		5.781	WEBSTER (ROAD 32/CHILES ROAD)	13300	152000	141300	13300	158000	149500	
03	080	YOL		9.179	YOLO CAUSEWAY , WEST CAPITOL AVENUE	13300	158000	149500	11500	166000	160800	
03	080	YOL	R	9.905	WEST SACRAMENTO, JCT. RTE. 50	11500	166000	160800	8700	106000	100800	
03	080	YOL	R	11.228	JCT. RTE. 84 EAST	8700	106000	100800	8800	102000	98000	
03	080	YOL	R	11.718	YOLO/SACRAMENTO COUNTY LINE	8800	102000	98000				
03	080	SAC	M	0.000	YOLO/SACRAMENTO COUNTY LINE				8800	102000	98000	
03	080	SAC	M	1.355	WEST EL CAMINO AVENUE	8800	102000	98000	7500	97000	91400	
03	080	SAC	M	2.554	SACRAMENTO, JCT. RTE. 5	12100	107000	84500	13700	184000	166200	
03	080	SAC	M	3.643	TRUXEL ROAD	13700	184000	166200	12400	150000	143500	
03	080	SAC	M	4.983	NORTHGATE BOULEVARD	12400	150000	143500	15700	151000	145700	
03	080	SAC	M	6.116	SACRAMENTO, NORWOOD AVENUE	15700	151000	145700	11900	153000	143500	
03	080	SAC	M	7.634	SACRAMENTO, RALEY BOULEVARD	11900	153000	143500	13800	171000	162000	
03	080	SAC	M	8.669	SACRAMENTO, WINTERS STREET	13800	171000	162000	12900	146000	139200	
03	080	SAC	M	9.401	SACRAMENTO, LONGVIEW DRIVE	12900	146000	139200	11800	148000	142000	
03	080	SAC	M	10.361	WATT AVENUE	11100	145000	137000	13600	158000	148500	
03	080	SAC	R	10.989	JCT. RTE. 51	13800	160000	152000	17600	238000	224900	
03	080	SAC		12.476	MADISON AVENUE	18200	251000	244600	20100	234000	220200	
03	080	SAC		14.454	GREENBACK LANE	20100	234000	220200	16100	224000	210000	
03	080	SAC		16.685	ANTELOPE ROAD	16100	224000	210000	18000	208000	195900	
03	080	SAC		18.000	SACRAMENTO/PLACER COUNTY LINE	18000	208000	195900				
03	080	PLA		0.000	SACRAMENTO/PLACER COUNTY LINE				18000	208000	195900	
03	080	PLA		0.268	ROSEVILLE, RIVERSIDE DRIVE	18000	208000	195900	15500	204000	194000	
03	080	PLA		1.975	ROSEVILLE, DOUGLAS BOULEVARD	15500	204000	194000	14800	186000	177300	
03	080	PLA		3.070	ROSEVILLE, ATLANTIC STREET	14800	186000	177300	14600	177000	169600	
03	080	PLA		3.661	ROSEVILLE, TAYLOR ROAD	14600	177000	169600	14100	174000	167300	
03	080	PLA		4.160	JCT. RTE. 65	14100	174000	167300	10700	134000	127800	
03	080	PLA		6.055	ROCKLIN, ROCKLIN ROAD	10700	134000	127800	8700	105000	100600	
03	080	PLA		7.421	ROCKLIN, SIERRA COLLEGE BOULEVARD	8700	105000	100600	8700	110000	89430	
03	080	PLA		8.724	NIXON LOOMIS ROAD	8700	110000	103000	8000	102000	94900	
03	080	PLA		10.350	PENRYN ROAD	8000	102000	94900	8200	97000	89500	

03	080	PLA		13.808		NEWCASTLE ROAD	8200	97000	89500	8000	95000	87200
03	080	PLA		15.620		HALLBOM ROAD UC	8000	95000	87200	8200	101000	90300
03	080	PLA		16.846		AUBURN, AUBURN RAVINE/ OPHIR ROADS	8200	101000	90300	8300	98000	90000
03	080	PLA		17.289		AUBURN, NEVADA STREET	8300	98000	90000	8000	92000	84200
03	080	PLA		17.541		AUBURN, JCT. RTE. 49	8000	92000	84200	6800	78000	69500
03	080	PLA		17.830		AUBURN, ELM AVENUE	6800	78000	69500	6600	71000	64800
03	080	PLA	R	18.906		LINCOLN WAY	6600	71000	64800	6600	71000	63700
03	080	PLA	R	19.465		AUBURN RAVINE ROAD	6600	71000	63700	6000	65000	58500
03	080	PLA	R	20.127		BOWMAN	6000	65000	58500	6800	70000	62400
03	080	PLA	R	21.128		HAINES ROAD	6800	70000	62400	6100	68000	56500
03	080	PLA	R	22.212		DRY CREEK ROAD	6100	68000	56500	5700	58000	50000
03	080	PLA	R	23.429		CLIPPER GAP	5700	58000	50000	5200	51000	45000
03	080	PLA	R	26.209		APPLEGATE ROAD	5200	51000	45000	5200	53000	42100
03	080	PLA		27.392		HEATHER GLEN	5200	53000	42100	5300	52000	43300
03	080	PLA		28.587		WEIMAR	5300	52000	43300	5200	51000	42100
03	080	PLA		29.323		WEIMAR CROSSROAD	5200	51000	42100	5000	46500	38400
03	080	PLA		31.794		ILLINOIS TOWN	5000	46500	38400	4700	49000	38500
03	080	PLA		33.131		COLFAX, JCT. RTE. 174 NORTH	4700	49000	38500	4500	43000	33100
03	080	PLA		37.782		MAGRA ROAD	4500	43000	33100	4500	43000	40400
03	080	PLA		38.347		ALPINE	4500	38000	30200	4550	38000	29900
03	080	PLA		41.372		GOLD RUN	4550	38000	29900	4600	36500	28800
03	080	PLA		42.191		SAWMILL	4600	36500	28800	4600	36500	28900
03	080	PLA		43.167		MONTE VISTA	4600	36500	28900	4500	38500	30400
03	080	PLA		44.752		ALTA ROAD	4500	38500	30400	4500	38500	29600
03	080	PLA		46.310		CRYSTAL SPRINGS ROAD	4500	38500	29600	4500	38500	29500
03	080	PLA		46.935		BAXTER	4500	38500	29500	4500	38500	29500
03	080	PLA		49.000		DRUM FOREBAY ROAD	4500	38500	29500	4500	38500	29300
03	080	PLA		53.356		BLUE CANYON ROAD	4500	38500	29300	4500	38500	29300
03	080	PLA		54.812		PUTTS LAKE	4500	38500	29300	4500	38500	29300
03	080	PLA	R	56.057		CARPENTER FLAT	4500	38500	29300	4500	38500	29300
03	080	NEV	R	58.835		YUBA GAP OC	4500	38500	29300	4500	38500	29300
03	080	NEV	R	59.540		JCT. RTE. 20 WEST	4500	38500	29300	4950	42000	32400
03	080	NEV	R	62.027	R	CARYLE ROAD, INDIAN SPRINGS	2400	21100	16400	2400	21100	16400
03	080	NEV	R	62.027	L	CARYLE ROAD, INDIAN SPRINGS	2350	20700	16000	2350	20700	16000
03	080	PLA	R	63.517		CISCO GROVE	4750	41500	32400	4750	41500	32000
03	080	PLA	R	66.201		HAMPSHIRE ROCKS	4550	41500	32000	4550	38500	31400
03	080	PLA		69.229		KINGVALE	4550	33500	31400	4250	38000	31000
03	080	PLA		69.769		PLACER/NEVADA COUNTY LINE	4250	38000	31000			
03	080	NEV		0.000		PLACER/NEVADA COUNTY LINE				4250	38000	31000
03	080	NEV	R	2.476	R	SODA SPRINGS	2500	19800	15500	2400	20500	16000
03	080	NEV	R	5.066	R	CASTLE PEAK	2400	20500	16000	2500	20600	16100
03	080	NEV	R	9.007	R	DONNER LAKE	2500	20000	15500	2400	19000	15400
03	080	NEV	R	2.237	L	SODA SPRINGS, BEGIN LEFT ALIGN			14500	3100	20800	15400
03	080	NEV	R	2.545	L	SODA SPRING OC	3100	20800	15400	3100	20900	16200
03	080	NEV	R	5.166	L	CASTLE PEAK UC	3100	20900	16200	3100	21500	16200
03	080	NEV	R	9.071	L	DONNOR LAKE	3100	21500	16300	3150	20100	16400
03	080	NEV		13.210		TRUCKEE, DONNER PARK	4950	41000	31800	5400	46000	35300
03	080	NEV		14.164		TRUCKEE, JCT. RTE. 89 SOUTH	5400	46000	35300	6000	52000	39500
03	080	NEV		14.970		WEST TRUCKEE	6000	52000	39500	5600	49000	38000
03	080	NEV		16.285		JCT. RTE. 89 NORTH, JCT. RTE. 267 SOUTH	5600	49000	38000	3450	39500	33600
03	080	NEV		18.276		POLARIS ROAD	3450	39500	33600	3600	40500	32600
03	080	NEV		22.412		HIRSCHDALE ROAD OVERHEAD	3600	40500	32600	3350	39500	32500
03	080	NEV		27.292		TRUCKEE RIVER	3350	39500	32500	3350	39500	32400
03	080	NEV		29.489		FARAD	3350	39500	32400	3350	39500	32400
03	080	NEV		31.783		NEVADA/SIERRA COUNTY LINE	3350	39500	32400			
03	080	SIE		0.000		NEVADA/SIERRA COUNTY LINE				3350	39500	32400
03	080	SIE		1.593		NEVADA STATE LINE	3350	39500	32400			
04	082	SCL		9.904		SAN JOSE, JCT. RTE. 880				2600	24300	23800
04	082	SCL		10.343		SAN JOSE/SANTA CLARA CITY LIMITS	2400	21500	20800	1900	16500	16000
04	082	SCL	R	11.141		SANTA CLARA, BENTON ROAD	1900	16500	16000	1900	16500	16000
04	082	SCL		11.540		SANTA CLARA, SANTA CLARA/ ALVISO ROADS	2000	22100	21500	2000	22100	21500
04	082	SCL		12.310		SANTA CLARA, SCOTT LANE	2300	25300	24900	2400	26000	25700
04	082	SCL		14.300		SANTA CLARA, LAWRENCE EXPRESSWAY	3400	38000	37100	3800	42500	37600
04	082	SCL		15.320		SUNNYVALE, WOLFE ROAD	4000	44500	43200	3800	42500	41200
04	082	SCL		16.762		SUNNYVALE, SARATOGA/SUNNYVALE ROADS	3600	40000	39300	3100	34000	33600
04	082	SCL		17.035		MATHILDA AVENUE	3100	34000	33600	3400	38500	37400
04	082	SCL		18.841		MOUNTAIN VIEW, JCT. RTE. 85	5500	62000	60900	4800	54000	52500
04	082	SCL		19.134		MOUNTAIN VIEW, JCT. RTE. 237 EAST	4800	54000	52500	4400	49500	48300
04	082	SCL		19.870		MOUNTAIN VIEW, CASTRO STREET	4000	44500	43600	3800	42500	41500
04	082	SCL		20.670		MOUNTAIN VIEW, EL MONTE AVENUE	4100	46500	45200	4100	46500	45200
04	082	SCL		21.840		LOS ALTOS, SAN ANTONIO AVENUE	4000	44500	43600	4100	46500	45200
04	082	SCL		22.670		PALO ALTO, CHARLESTON ROAD	4100	46000	44700	3900	44000	43100
04	082	SCL		24.040		PALO ALTO, PAGE MILL ROAD	3900	44000	43100	3500	38500	37800
04	082	SCL		25.450		PALO ALTO, EMBARCADERO ROAD	3500	38500	37800	3400	37500	36800
04	082	SCL		25.877		PALO ALTO, UNIVERSITY AVENUE	3300	36000	35300	3300	36500	35800
04	082	SCL		26.370		SANTA CLARA/SAN MATEO COUNTY LINE	2900	31500	31300			
04	082	SM		0.000		SANTA CLARA/SAN MATEO COUNTY LINE				2900	31500	31300
04	082	SM		0.771		MENLO PARK, SANTA CRUZ AVENUE	2900	31500	31300	2700	30000	29800

04	082	SM		1.890	ATHERTON, ATHERTON AVENUE	3000	32000	31800	3000	32000	31800
04	082	SM		3.435	JCT. RTE. 84	4700	53000	51500	3300	37000	36100
04	082	SM		4.430	REDWOOD CITY, BROADWAY	2900	32500	31600	2600	27000	26400
04	082	SM		5.150	REDWOOD CITY/SAN CARLOS CITY LIMITS	2500	24300	23700	2500	24300	23700
04	082	SM		6.440	SAN CARLOS, SAN CARLOS AVENUE	2400	22300	21800	2600	29000	28300
04	082	SM		6.570	SAN CARLOS, HOLLY STREET	2900	28000	27700	2600	24700	24000
04	082	SM		7.690	BELMONT, RALSTON AVENUE	2800	26500	25800	2500	24100	23500
04	082	SM		9.330	SAN MATEO, HILLSDALE BOULEVARD	3600	35000	34700	3400	34000	33300
04	082	SM		10.554	SAN MATEO, JCT. RTE. 92	4000	39000	38400	4300	43000	42200
04	082	SM		11.715	SAN MATEO, THIRD AVENUE	2700	27000	26200	2700	27000	26200
04	082	SM		11.840	SAN MATEO, CRYSTAL SPRINGS ROAD	2500	24100	23500	2500	24100	23500
04	082	SM		12.963	BURLINGAME, PENINSULA AVENUE	2500	24400	23700	2200	21900	21400
04	082	SM		14.420	BURLINGAME, BROADWAY	2600	26000	25300	2600	25500	24900
04	082	SM		15.946	MILLBRAE, MILLBRAE AVENUE	2800	27000	26600	2600	26000	25300
04	082	SM		16.844	MILLBRAE, CENTER STREET	2800	27000	26600	2800	26500	26000
04	082	SM		17.990	SAN BRUNO, TAYLOR/SAN MATEO AVENUE	3700	36000	35500	3700	36000	35500
04	082	SM		18.600	SAN BRUNO, SAN BRUNO AVENUE	5100	51000	49700	5200	52000	50900
04	082	SM		18.963	SAN BRUNO, JCT. RTE. 380	5200	52000	50900	4900	49000	48000
04	082	SM		20.662	S SAN FRANCISCO, CHESTNUT AVE/WESTBOROUGH BLVD	5000	49500	48500	4100	38500	37900
04	082	SM		21.910	SOUTH SAN FRANCISCO, HICKEY BOULEVARD	4000	36000	34900	2700	23000	22400
04	082	SM		22.434	COLMA, MISSION ROAD	2100	17400	17000	3400	32000	31600
04	082	SM		23.780	DALY CITY, SAN PEDRO AVENUE	3000	28000	27400	3200	29500	29000
04	082	SM		24.846	DALY CITY, HILLSIDE BOULEVARD	2000	19300	18800	2000	19300	18800
04	082	SM		24.929	DALY CITY, MISSION STREET	2000	19300	18800	1200	10900	10600
04	082	SM		25.150	SAN MATEO/SAN FRANCISCO COUNTY LINE	1200	10900	10600			
04	082	SF		0.000	SAN MATEO/SAN FRANCISCO COUNTY LINE				1800	16500	16200
04	082	SF	R	0.208	SAN FRANCISCO, JCT. RTE. 280	1800	16500	16200			
08	083	SBD	R	0.000	JCT. RTE. 71				2800	36500	35500
08	083	SBD		1.888	PINE AVENUE	2800	36500	35500	2150	28000	27000
08	083	SBD		3.920	MERRILL AVENUE	2050	27000	26000	2150	28000	27000
08	083	SBD		5.420	SCHAEFER AVE	2150	28000	27000	2150	28000	27000
08	083	SBD		6.413	RIVERSIDE DRIVE	2150	28000	27000	2600	33500	32600
08	083	SBD		7.179	ONTARIO, JCT. RTE. 60	3450	45500	43800	2650	35000	33700
08	083	SBD		7.413	ONTARIO, PHILADELPHIA AVENUE	2500	32500	31500	2500	32500	31500
08	083	SBD		8.879	ONTARIO, MISSION BOULEVARD	2150	28000	27500	2400	29000	27500
08	083	SBD		9.458	ONTARIO, HOLT BOULEVARD	2500	30000	28500	2600	31000	29500
08	083	SBD		9.960	ONTARIO, G STREET	2700	32000	30600	2850	34000	32600
08	083	SBD		10.470	ONTARIO, 4TH STREET	2850	34000	32600	2850	34000	32600
08	083	SBD		11.113	UPLAND, JCT. RTE. 10	3200	38500	36700			
04	084	SM		0.000	SAN GREGORIO, JCT. RTE. 1				700	2200	1800
04	084	SM		0.788	SAN GREGORIO HIGHWAY (STAGE ROAD)	700	2200	1800	700	2200	1800
04	084	SM		8.328	PESCADERO ROAD	700	2800	2300	700	2800	2300
04	084	SM		8.849	LA HONDA	700	2900	2400	700	2900	2400
04	084	SM		14.950	WOODSIDE, JCT. RTE. 35	900	4300	3600	900	6000	5400
04	084	SM		18.340	WOODSIDE, PORTOLA ROAD	1000	6200	5600	1000	6100	5500
04	084	SM		20.000	WOODSIDE, KINGS MOUNTAIN ROAD	900	5400	4900	1100	7300	6800
04	084	SM		20.660	WOODSIDE, CANADA ROAD	1100	9000	8400	2000	16400	15600
04	084	SM		20.920	WOODSIDE, WHISKEY HILL ROAD	1900	15700	14900	2200	18100	17500
04	084	SM		21.537	WOODSIDE, JCT. RTE. 280	2200	18100	17500	2900	36500	36000
04	084	SM		22.682	REDWOOD CITY, ALAMEDA DE LAS PULGAS	2900	36500	36000	3700	33500	33000
04	084	SM		23.497	REDWOOD CITY, VALOTA ROAD	3700	33500	33000	3900	36000	35000
04	084	SM		24.704	REDWOOD CITY, JCT. RTE. 82	3900	36000	35000	5300	48000	47000
04	084	SM		25.058	REDWOOD CITY, MIDDLEFIELD ROAD	5300	48000	47000	5200	47000	46000
04	084	SM	R	25.810	MENLO PARK, JCT. RTE. 101	7300	67000	66000	4700	47500	46000
04	084	SM	R	27.659	JCT. RTE. 114	4700	47500	46000	7300	74000	72000
04	084	SM	R	28.194	JCT. RTE. 109	7300	74000	72000	7500	75000	74000
04	084	SM	R	29.250	DUMBARTON BRIDGE	7500	7500	74000	7500	7500	7400
04	084	SM	R	30.149	SAN MATEO/ALAMEDA COUNTY LINE	7500	75000	74000			
04	084	ALA	R	0.000	SAN MATEO/ALAMEDA COUNTY LINE				7500	75000	74000
04	084	ALA	R	3.180	DUMBARTON BRIDGE TOLL PLAZA	7500	75000	74000	7500	75000	74000
04	084	ALA	R	3.747	THORNTON AVENUE/ PASEO PADRE PARKWAY	7500	75000	74000	5500	61000	60000
04	084	ALA	R	4.884	NEWARK BOULEVARD	5500	61000	60000	6600	83000	81000
04	084	ALA	R	6.010	SOUTH JCT. RTE. 880	6600	83000	81000	5200	66000	64000
04	084	ALA		6.923	NORTH JCT. RTE. 880	4500	57000	81600	3700	33500	32800
04	084	ALA		10.830	FREMONT, JCT. RTE. 238	2800	25000	24400	1900	17300	16800
04	084	ALA		13.000	PALOMARES ROAD	1900	17300	15500	1700	15500	14800
04	084	ALA		17.287	SUNOL, PLEASANTON/ SUNOL ROADS	1700	15500	14800	1100	8700	8200
04	084	ALA	R	17.987	JCT. RTE. 680	1100	8700	8200	4400	41500	39200
04	084	ALA	R	25.314	CONCANNON BLVD	3700	34500	32800	3600	33500	31700
04	084	ALA	R	26.215	STANLEY BLVD	3600	33500	31700	4800	46000	43500
04	084	ALA	R	27.254	JACK LONDON BLVD	4800	46000	43500	4900	47000	44500
04	084	ALA	M	27.747	AIRWAY BLVD - L	4900	47000	44500			
04	084	SOL		0.134	WEST JCT. RTE. 12				500	3300	3000
04	084	SOL		0.910	AIRPORT ROAD	500	3300	3000	300	1400	1200
04	084	SOL		2.485	CACHE SLOUGH FERRY	110	720	620	110	310	210
04	084	SOL		7.246	JCT. RTE. 220 EAST	110	310	210	110	410	310
04	084	SOL		12.080	MINER SLOUGH BRIDGE/ RYER ROAD	110	410	310	110	310	210
04	084	SOL		13.672	SOLANO/YOLO COUNTY LINE	40	380	290			

03	084	YOL		0.000	SOLANO/YOLO COUNTY LINE				90	480	330
03	084	YOL		4.570	COURTLAND ROAD	60	590	430	140	1400	1150
03	084	YOL		9.530	CLARKSBURG ROAD	150	1450	1400	180	1450	1300
03	084	YOL		11.770	BABEL SLOUGH ROAD	180	1600	1200	140	1500	1350
03	084	YOL		15.687	END OF ROUTE	140	1500	1350			
04	085	SCL		0.000	SAN JOSE, JCT. RTE. 101				4750	54000	53000
04	085	SCL		0.181	SAN JOSE, BERNAL ROAD	4750	54000	53000	6700	85000	83000
04	085	SCL		0.790	SAN JOSE, GREAT OAKS BOULEVARD	6700	85000	83000	7700	107000	105000
04	085	SCL		1.973	SAN JOSE, COTTLE ROAD	7700	107000	105000	10100	126000	124000
04	085	SCL		3.930	SAN JOSE, BLOSSOM HILL ROAD	10100	126000	124000	12600	163000	158000
04	085	SCL		5.220	JCT. RTE. 87	12600	163000	158000	11700	151000	143000
04	085	SCL		6.136	ALMADEN EXPRESSWAY	11700	151000	143000	10500	134000	129000
04	085	SCL		8.109	SAN JOSE, CAMDEN AVENUE	10500	134000	129000	11300	145000	142000
04	085	SCL		9.277	SAN JOSE, UNION AVENUE	11300	145000	142000	11600	149000	146000
04	085	SCL	R	10.231	SAN JOSE, BASCOM AVENUE	11600	149000	146000	6200	79000	77200
04	085	SCL	R	10.498	JCT. RTE. 17	10600	135000	131500	9100	131000	110000
04	085	SCL	R	10.997	LOS GATOS, WINCHESTER BLVD.	9100	131000	110000	10200	144000	127000
04	085	SCL	R	13.684	SARATOGA, SARATOGA AVENUE	10200	144000	127000	8900	119000	114000
04	085	SCL	R	15.867	CUPERTINO, SARATOGA-SUNNYVALE ROAD	8900	119000	114000	9200	123000	118000
04	085	SCL	R	17.699	CUPERTINO, STEVENS CREEK BOULEVARD	9200	123000	118000	9300	120000	110000
04	085	SCL	R	18.448	SUNNYVALE, JCT. RTE. 280	9300	120000	110000	9400	123000	119000
04	085	SCL	R	18.861	CUPERTINO, HOMESTEAD ROAD	9400	123000	119000	9900	129000	125000
04	085	SCL	R	19.856	SUNNYVALE, FREMONT AVENUE	9900	129000	125000	9600	125000	121000
04	085	SCL	R	21.749	MOUNTAIN VIEW, JCT. RTE. 82	9600	125000	121000	9000	125000	121000
04	085	SCL	R	22.163	JCT. RTE. 237	9000	125000	121000	7100	100000	97000
04	085	SCL	R	22.629	MOUNTAIN VIEW, EVELYN AVENUE	7100	100000	97000	6900	90000	87000
04	085	SCL	R	23.435	MOUNTAIN VIEW, MOFFETT BOULEVARD	6900	90000	87000	6300	82000	82000
04	085	SCL	R	23.867	MOUNTAIN VIEW, JCT. RTE. 101	6300	82000	82000	6300	82000	82000
04	085	SCL	R	24.059	END ROUTE 85	6300	82000	82000			
11	086	IMP	R	0.000	JCT. RTE. 111				620	5800	4850
11	086	IMP		2.077	DOGWOOD ROAD	540	5600	5100	460	4550	4200
11	086	IMP		3.050	WEST HEBER TURN	460	4550	4200	350	3500	3300
11	086	IMP		4.530	MC CABE ROAD	350	3500	3300	630	8200	8100
11	086	IMP		6.006	JCT. RTE. 8	2100	24600	22400	3000	33500	32000
11	086	IMP	L	6.534	EL CENTRO, ROSS AVENUE	3000	33500	32000	2900	31000	30000
11	086	IMP		7.240	EL CENTRO, STATE STREET	2900	31000	30000	2650	30000	29000
11	086	IMP	L	7.308	MAIN STREET	2650	30000	29000	1700	20600	19000
11	086	IMP	L	8.028	EL CENTRO, EIGHTH STREET	1700	20600	19000	1550	18000	17000
11	086	IMP	L	8.525	ADAMS/IMPERIAL AVENUES	1600	18400	17000	2600	31500	28500
11	086	IMP		7.430	EL CENTRO, EUCLID/HOGAR AVENUES	2600	31500	28500	2350	28000	26000
11	086	IMP		7.490	EL CENTRO, WOODWARD AVENUE	2350	28000	26000	2450	29000	26500
11	086	IMP		7.643	SCOTT AVENUE	2450	29000	26500	2450	30500	27500
11	086	IMP		7.930	PICO AVENUE	2450	30500	27500	2450	29000	26500
11	086	IMP		8.180	EL DORADO AVENUE	2450	29000	26500	2000	23700	22100
11	086	IMP		15.320	KEYSTONE ROAD	1300	14500	13800	1300	15800	14000
11	086	IMP		19.190	LEGION ROAD	1350	16100	14300	1950	21700	19600
11	086	IMP		20.080	BRAWLEY, WESTERN AVENUE	1950	21700	19600	1700	19100	16900
11	086	IMP		20.250	BRAWLEY, K STREET	1700	19100	16900	1100	12900	12200
11	086	IMP		20.627	SOUTH JCT. RTE. 78	1100	12900	12300	1550	17900	17200
11	086	IMP		20.990	BRAWLEY, RIO VISTA AVENUE	1550	17900	17200	1800	20900	20000
11	086	IMP		21.250	LAS FLORES DRIVE	1800	20900	20000	1700	20700	19600
11	086	IMP	R	22.882	KALIN ROAD	1700	20700	19600	770	9500	8800
11	086	IMP	R	24.057	JCT RTE 78	760	9400	8700	1450	17200	16400
11	086	IMP	R	27.211	WESTMORLAND, B STREET	1450	17200	16400	1450	16400	15300
11	086	IMP		27.510	WESTMORLAND, CENTER STREET	1450	16400	15300	1900	24600	23400
11	086	IMP		27.760	WESTMORLAND, WEST CITY LIMITS/ H STREET	1900	24600	23400	1150	13400	12700
11	086	IMP		28.006	MARTIN ROAD	1150	13400	12700	1150	14600	12800
11	086	IMP	R	29.005	LACK ROAD	1150	14600	12800	1250	19000	17300
11	086	IMP	R	33.757	BANNISTER ROAD	1250	19000	17300	1150	14900	13200
11	086	IMP		43.559	NORTH JCT. RTE. 78	1100	14600	12400	1100	13300	11900
11	086	IMP		53.900	AIR PARK DRIVE	1100	13600	12100	2250	20000	18400
11	086	IMP		56.120	SALTON CITY, SOUTH MARINA DRIVE	2250	20000	18400	2250	20600	18900
11	086	IMP		63.630	SALTON SEA BEACH ROAD	2250	20600	18900	1500	19900	16900
11	086	IMP		66.143	DESERT SHORES DRIVE	1700	19400	16800	1500	19900	16800
11	086	IMP		67.824	IMPERIAL/RIVERSIDE COUNTY LINE	1500	19900	16800			
08	086	RIV		0.000	IMPERIAL/RIVERSIDE COUNTY LINE				1500	19900	16800
08	086	RIV		1.710	LINCOLN ST - RT	1500	19900	16800	1500	19900	16800
08	086	RIV	R	3.484	81ST AVE	1500	19900	16800	1400	19600	16800
08	086	RIV	R	11.031	JCT RTE 195	1550	19000	16500	1400	18600	16500
08	086	RIV	R	12.477	JCT RTE 111	1400	18600	16500	1650	22600	19400
08	086	RIV	R	16.744	AIRPORT BLVD	1950	27500	23500	2450	34500	29500
08	086	RIV	R	22.157	DILLON RD	2450	34500	29500	2800	39000	33500
08	086	RIV	R	23.000	JCT RTE 10	2800	39000	33500			
04	087	SCL		0.000	SAN JOSE, JCT. RTE 85				9400	123000	116000
04	087	SCL		1.340	CAPITOL EXPRESSWAY	9400	123000	116000	10300	137000	129000
04	087	SCL		2.826	CURTNER AVENUE	10300	137000	129000	10000	132000	127000
04	087	SCL		3.563	ALMADEN EXPRESSWAY	10000	132000	127000	11300	156000	151000
04	087	SCL		4.350	SAN JOSE, LELONG STREET	11300	156000	151000	12800	177000	170000

04	087	SCL		5.156	SAN JOSE, JCT. RTE. 280	12800	177000	170000	7700	105000	101000
04	087	SCL		5.555	SAN JOSE, PARK AVENUE	7700	105000	101000	8800	120000	116000
04	087	SCL		6.100	SAN JOSE, JULIAN STREET	8800	120000	116000	9400	129000	124000
04	087	SCL		6.690	W. TAYLOR	9400	129000	124000	7000	96000	90000
04	087	SCL	T	8.755	AIRPORT PARKWAY	700	9600	9000	6600	91000	90000
04	087	SCL		9.220	JCT. RTE. 101	6600	91000	90000			
10	088	SJ		0.000	JCT RTE 99				2800	26500	24100
10	088	SJ		0.400	WILCOX ROAD	1650	19900	18300	1950	20800	19800
10	088	SJ		1.770	WHITE LANE	1400	17500	15600	1300	16600	14800
10	088	SJ		2.220	FAIRCHILD LANE	1300	16600	14800	1150	14300	12800
10	088	SJ		4.940	WATERLOO, FERGUSON/ COMSTOCK ROADS	890	11200	10000	680	8700	7700
10	088	SJ		6.518	EIGHT MILE ROAD	700	8800	7900	1150	10400	9600
10	088	SJ		9.610	HARNEY LANE	1100	10400	10000	1200	11300	10900
10	088	SJ	L	12.240	LOCKEFORD, JCT RTE 12 WEST	980	11600	10800	1600	15500	15300
10	088	SJ		13.600	JACKTONE ROAD	1500	18000	14600	1850	20400	15600
10	088	SJ		14.080	ELLIOTT/TULLY ROADS	1850	20100	15600	1700	17400	13500
10	088	SJ		16.270	DISCH ROAD	1550	15600	12100	1050	13600	10900
10	088	SJ		18.080	MACKVILLE ROAD	1100	15100	12600	1050	16000	11700
10	088	SJ		19.174	CLEMENTS, JCT. RTE. 12 EAST	1600	16900	15600	1600	15000	13600
10	088	SJ		22.093	LIBERTY ROAD	1000	10700	9750	1000	9400	8700
10	088	SJ		25.365	SAN JOAQUIN/AMADOR COUNTY	1000	8700	8100			
10	088	AMA		0.000	SAN JOAQUIN/AMADOR COUNTY				950	8700	8100
10	088	AMA		5.527	JCT. RTE. 124 NORTH	990	9700	8800	910	8100	7300
10	088	AMA		7.389	WEST JCT. RTE. 104	1000	9300	8800	1450	13200	12500
10	088	AMA		12.680	EAST JCT. RTE. 104	1400	15400	14600	1150	9000	8300
10	088	AMA		14.250	JCT. RTE. 49	1200	9300	8800	920	8900	8400
10	088	AMA		14.561	MIDDLE FORK JACKSON CREEK BRIDGE	1600	9100	9000	1600	9100	9000
10	088	AMA		14.900	JACKSON, COURT STREET	950	8700	8500	950	10000	8900
10	088	AMA		22.690	PINE GROVE, RIDGE ROAD	1450	14300	12000	1900	21700	12000
10	088	AMA		23.360	VOLCANO ROAD	1900	21700	12000	1400	14500	12000
10	088	AMA	R	26.791	JCT RTE 26, RED CORRAL RD	1050	11200	10000	950	9300	8500
10	088	AMA	R	32.053	TIGER CREEK ROAD	940	7500	6300	700	6700	5500
10	088	AMA		32.980	MEADOW DR	750	6900	4800	690	5800	4350
10	088	AMA		34.540	INSPIRATION DR	470	4350	2100	440	4650	3500
10	088	AMA	R	38.305	DEW DROP ROAD	850	3650	2600	450	3700	2800
10	088	AMA	R	58.670	MORMAN EMIGRANT TRAIL	340	2550	1850	370	3000	1700
10	088	AMA		71.360	KIRKWOOD MEADOWS DRIVE	360	3250	1550	370	3600	1450
10	088	AMA		71.649	AMADOR/ALPINE COUNTY LINE	370	3600	2500			
10	088	ALP		0.000	AMADOR/ALPINE COUNTY LINE				370	3600	2500
10	088	ALP		1.250	CAPLES LAKE	390	3750	1950	380	3700	2450
10	088	ALP	R	5.230	CARSON PASS SUMMIT (ELEV. 8573 FEET)	390	3750	2500	380	3700	2450
10	088	ALP		13.400	PICKETTS, WEST JCT. RTE. 89	340	3000	2200	390	3800	2950
10	088	ALP		19.223	WOODFORDS, EAST JCT. RTE. 89	450	3800	3450	430	4000	3550
10	088	ALP		25.283	NEVADA STATE LINE	690	5800	4700			
09	089	MNO		0.000	SLINKARD JUNCTION, JCT. RTE. 395				90	570	260
09	089	MNO		7.596	MONO/ALPINE COUNTY LINE	100	620	390			
10	089	ALP		0.000	MONO/ALPINE COUNTY LINE				100	620	430
10	089	ALP		9.957	BULLION, JCT. RTE. 4 WEST	150	820	590	120	1000	890
10	089	ALP		14.670	LARAMIE ST	110	1000	950	150	1450	910
10	089	ALP		14.900	MARKLEEVILLE, WEBSTER STREET	160	1300	720	320	2700	1700
10	089	ALP		21.376	PICKETTS, JCT. RTE. 88	380	3200	3050	390	3600	3200
10	089	ALP		23.972	ALPINE/EL DORADO CTY LINE; LUTHER PASS (ELEV. 7740)	1000	4750	3200			
03	089	ED		0.000	ALPINE/EL DORADO CTY LINE; LUTHER PASS (ELEV. 7740)				770	5800	3950
03	089	ED		4.580	BRIDGE ROAD (ROUND LAKE)	770	5800	3950	770	5800	3950
03	089	ED		8.560	JCT. RTE. 50	500	6000	4900	2200	23700	16700
03	089	ED		9.100	SOUTH LAKE TAHOE, 10TH STREET	2150	23700	16300	1800	19000	12300
03	089	ED		9.710	SOUTH LAKE TAHOE, WEST WAY	1100	13400	7400	890	11000	5800
03	089	ED		11.686	FALLEN LEAF LAKE ROAD	770	9900	5000	790	9800	4900
03	089	ED		13.240	SPRING TRACT ROAD	790	9800	4900	790	9800	4900
03	089	ED		19.540	BLISS MEMORIAL STATE PARK ROAD	570	5200	3000	530	6000	3650
03	089	ED		22.770	RUBICON GLEN DRIVE	530	6000	3650	490	5900	3400
03	089	ED		27.406	EL DORADO/PLACER COUNTY LINE	740	7300	4000			
03	089	PLA		0.000	EL DORADO/PLACER COUNTY LINE				740	7300	4000
03	089	PLA		0.850	MC KINNEY CREEK ROAD	910	9000	5200	460	9200	5500
03	089	PLA		5.812	WARD CREEK BRIDGE	700	6900	5700	700	6900	5700
03	089	PLA		6.460	FIR AVENUE	700	6900	5700	700	6900	5800
03	089	PLA	T	8.569	TAHOE CITY, JCT. RTE. 28 EAST	1300	18600	11800	1200	17400	11700
03	089	PLA		8.900	TAHOE CITY STATE HIGHWAY MAINTENANCE STATION	1350	16500	11200	1350	16500	11200
03	089	PLA		13.058	TRUCKEE RIVER BRIDGE	1450	15400	11100	1450	13700	10100
03	089	PLA		13.720	SQUAW VALLEY ROAD	1450	13700	10100	1500	15400	11645
03	089	PLA		21.520	WEST RIVER STREET	1500	15400	11600	1250	12800	10700
03	089	PLA		21.677	PLACER/NEVADA COUNTY LINE	1250	12800	10700			
03	089	NEV		0.000	PLACER/NEVADA COUNTY LINE				2400	12800	10700
03	089	NEV	R	0.621	JCT RTE 80 WEST ON/OFF RAMPS TO WB 80	1850	20100	14500	460	6900	5000
03	089	NEV		1.150	PROSSER DAM ROAD	460	6900	5000	660	6200	4100
03	089	NEV		5.040	HOBART MILLS ROAD	380	2900	2000	380	2900	2000
03	089	NEV		8.702	NEVADA/SIERRA COUNTY LINE	280	3450	2150			
03	089	SIE		0.000	NEVADA/SIERRA COUNTY LINE				280	3450	2150

03	089	SIE		15.055	SIERRAVILLE, JCT. RTE. 49 NORTH	280	3450	2150	220	2100	1400
03	089	SIE		19.958	JCT. RTE. 49 WEST	240	1800	1000	180	1400	790
03	089	SIE		23.080	CALPINE ROAD	180	1400	790	70	940	580
03	089	SIE		29.584	SIERRA/PLUMAS COUNTY LINE	80	1100	670			
02	089	PLU		0.000	SIERRA/PLUMAS COUNTY LINE				170	1350	810
02	089	PLU		7.080	GOLD LAKE ROAD	380	3300	2350	450	5700	4050
02	089	PLU		8.720	BLAIRSDEN, JCT. RTE. 70	310	2950	2200	330	2450	2000
02	089	PLU		14.840	ARLINGTON ROAD	330	2450	2000	210	2400	2000
02	089	PLU		16.560	STAMPFI LN	210	2400	2000	240	2650	2200
02	089	PLU		20.220	GREENVILLE, GRAND STREET	330	3000	2750	320	3100	2850
02	089	PLU		20.470	GREENVILLE, BECKWOURTH ROAD	320	3100	2850	240	2600	2000
02	089	PLU		29.589	JCT. RTE. 147 NORTH	190	1800	1650	110	1050	960
02	089	PLU		36.655	ALMANOR	110	1050	960	340	2650	1750
02	089	PLU	R	42.185	JCT. RTE. 36	340	2650	1750			
02	089	TEH	R	0.010	JCT. RTE. 36				140	740	430
02	089	TEH		4.403	JCT. RTE. 44	140	740	430			
02	089	SHA		0.000	JCT. RTE. 44				370	2300	1650
02	089	SHA		21.719	FOUR CORNERS, JCT. RTE. 299	320	3000	1900	360	2900	2000
02	089	SHA		30.000	LAKE BRITTON ROAD	270	2100	1450	270	2100	1450
02	089	SHA		38.777	COUNTY ROAD A 19/McARTHUR ROAD	270	2100	1450	180	1700	1300
02	089	SHA		43.345	SHASTA/SISKIYOU COUNTY LINE	180	1700	1300			
02	089	SIS		0.000	SHASTA/SISKIYOU COUNTY LINE				180	1700	1300
02	089	SIS		14.340	MILITARY PASS ROAD	180	1700	1300	170	1650	1250
02	089	SIS		24.750	BROADWAY/SOUTHERN AVENUE	250	2750	2100	310	3500	2650
02	089	SIS	R	34.622	JCT. RTE. 5	460	4500	3350			
07	090	LA		0.921	LOS ANGELES, JCT. RTE. 1				2900	36000	34500
07	090	LA		1.201	LOS ANGELES, MINDANAO WAY	2900	36000	34500	4950	61000	59000
07	090	LA		1.746	LOS ANGELES, CULVER BOULEVARD	4950	61000	59000	6500	80000	77000
07	090	LA	R	1.722	LOS ANGELES, CENTINELA AVENUE	6500	80000	77000	7700	96000	93000
07	090	LA		2.650	CULVER CITY, JCT. RTE. 405	7700	96000	93000	3150	39000	37500
07	090	LA	T	3.278	CULVER CITY, SLAUSON AVENUE	3150	39000	37500			
12	090	ORA		0.500	LA HABRA, JCT. RTE. 39				3400	46500	46500
12	090	ORA		1.760	LA HABRA, EUCLID STREET	3400	46500	45100	3550	48000	46700
12	090	ORA		2.497	LA HABRA, HARBOR BOULEVARD	3550	48000	48200	3500	47000	47100
12	090	ORA		4.391	BREA, BREA BOULEVARD	3500	47000	47100	4900	66000	65800
12	090	ORA		5.191	BREA, STATE COLLEGE BOULEVARD	4900	66000	63800	6000	71000	67700
12	090	ORA	R	5.453	BREA, JCT. RTE. 57	6000	71000	69800	4300	51000	48300
12	090	ORA		6.576	WEST OF JCT. RTE. 142	3850	45000	42700	3850	45000	42700
12	090	ORA		7.271	BREA, JCT. RTE. 142 NORTHEAST	5400	62000	61000	4300	51000	50000
12	090	ORA		11.147	YORBA LINDA, ORCHARD/ KELLOGG DRIVES	4400	52000	49700	3050	45500	44800
12	090	ORA		12.030	ROUTE BREAK						
12	090	ORA		12.275	ANAHEIM, ORANGETHORPE AVENUE	2650	39000	38700	4050	58000	57700
12	090	ORA		12.462	ANAHEIM, LA PALMA AVENUE	4050	58000	57700	4450	64000	62900
12	090	ORA		12.828	ANAHEIM, JCT. RTE. 91	4450	64000	64900			
07	091	LA		6.012	LOS ANGELES, VERMONT AVENUE				4500	67000	64000
07	091	LA	R	6.344	LOS ANGELES, JCT. RTE. 110	4500	67000	64000	14700	204000	197000
07	091	LA	R	7.426	CARSON, AVALON BOULEVARD	14700	204000	197000	15000	209000	201000
07	091	LA	R	8.435	COMPTON, CENTRAL AVENUE	15000	209000	201000	15100	212000	205000
07	091	LA	R	9.162	COMPTON, WILMINGTON AVENUE	15100	212000	205000	15600	220000	212000
07	091	LA	R	10.271	COMPTON, ALAMEDA STREET	15600	220000	212000	15600	220000	212000
07	091	LA	R	10.410	COMPTON, ALAMEDA STREET/SANTA FE AVENUE	15600	220000	212000	16100	229000	220000
07	091	LA	R	11.096	LONG BEACH, LONG BEACH BOULEVARD	16100	229000	220000	16000	229000	221000
07	091	LA	R	11.681	LONG BEACH, JCT. RTE. 710	16000	229000	221000	21200	293000	273000
07	091	LA	R	13.094	LONG BEACH, CHERRY AVENUE	21200	293000	273000	20000	298000	277000
07	091	LA	R	13.594	LONG BEACH, PARAMOUNT BOULEVARD	20000	298000	277000	19600	294000	273000
07	091	LA	R	14.103	LONG BEACH, DOWNEY AVENUE	19600	294000	273000	19400	293000	271000
07	091	LA	R	14.618	BELLFLOWER, JCT. RTE. 19	19400	293000	271000	19000	271000	259000
07	091	LA	R	15.105	BELLFLOWER, CLARK AVENUE	19000	271000	259000	20000	286000	273000
07	091	LA	R	15.614	BELLFLOWER, BELLFLOWER BOULEVARD	20000	286000	273000	19700	283000	270000
07	091	LA	R	16.941	CERRITOS, JCT. RTE. 605	19700	283000	270000	24400	314000	288000
07	091	LA	R	18.087	ARTESIA, PIONEER BOULEVARD	24400	314000	288000	23600	304000	279000
07	091	LA	R	18.645	CERRITOS, NORWALK BOULEVARD	23600	304000	279000	23300	302000	277000
07	091	LA	R	19.172	CERRITOS, BLOOMFIELD AVENUE	23300	302000	277000	21400	277000	255000
07	091	LA	R	19.434	CERRITOS, ARTESIA AVENUE	21400	277000	255000	21200	275000	253000
07	091	LA	R	20.454	CERRITOS, CARMENITA AVENUE	21200	275000	253000	20700	270000	248000
07	091	LA	R	20.741	LOS ANGELES/ORANGE COUNTY LINE	25000	300000	275400			
12	091	ORA	R	0.000	LOS ANGELES/ORANGE COUNTY LINE				25000	300000	275400
12	091	ORA	R	0.489	LA PALMA, ORANGETHORPE AVENUE	18500	283600	275400	22300	322000	300400
12	091	ORA	R	0.848	BUENA PARK, VALLEY VIEW STREET	20400	295000	275400	22200	319000	300400
12	091	ORA	R	1.842	BUENA PARK, KNOTT AVENUE	22300	321000	300400	24200	333000	312700
12	091	ORA	R	2.615	BUENA PARK, JCT. RTE. 39	24200	333000	312700	24400	338000	319000
12	091	ORA	R	3.638	R FULLERTON, JCT. RTE. 5, BEGIN RIGHT ALIGN	12200	169000	159500	9000	126000	120200
12	091	ORA	R	3.851	R FULLERTON, MAGNOLIA BOULEVARD, END RIGHT ALIGN	9000	126000	120200	10800	154000	146600
12	091	ORA	R	3.221	L BEGIN LEFT ALIGN	12200	169000	159500	12200	169000	159500
12	091	ORA	R	3.879	L FULLERTON, MAGNOLIA BOULEVARD, END LEFT ALIGN	9000	126000	120200	10800	154000	146600
12	091	ORA		1.232	ANAHEIM, BROOKHURST AVENUE	21500	307000	293200	22500	325000	312400
12	091	ORA		2.234	EUCLID AVENUE	22400	325000	312400	22900	330000	317000
12	091	ORA		3.258	FULLERTON, HARBOR BOULEVARD	22900	330000	317000	22100	319000	306600

12	091	ORA		3.512	ANAHEIM, LEMON STREET/ HARVARD AVENUE	22900	330000	317000	22200	319000	306600
12	091	ORA		4.256	ANAHEIM, EAST STREET	22200	319000	306600	20900	300000	287000
12	091	ORA		5.258	ANAHEIM, STATE COLLEGE BOULEVARD	20900	300000	287000	20000	291000	279300
12	091	ORA		6.119	ANAHEIM, JCT. RTE. 57	20000	291000	279300	17000	240000	228700
12	091	ORA		7.353	KRAEMER BOULEVARD/ GLASSELL STREET	18000	256000	244000	17400	250000	239000
12	091	ORA		8.399	TUSTIN AVENUE	17400	250000	239000	17000	240000	228500
12	091	ORA	R	9.187	JCT. RTE. 55 SOUTH	14000	200000	190000	19200	302000	287400
12	091	ORA	R	10.091	LAKEVIEW AVENUE	19200	302000	287400	19200	305000	290000
12	091	ORA	R	11.540	PERALTA, JCT. RTE. 90 WEST	17300	274000	260000	18400	292000	279000
12	091	ORA	R	12.080	E/O IMPERIAL HIGHWAY; RTE 90	17100	272000	260000	18400	292000	279000
12	091	ORA	R	14.431 R	WEIR CANYON ROAD	9600	152000	145100	9400	150000	144500
12	091	ORA	R	14.431 L	WEIR CANYON ROAD	9400	152000	136000	9300	148000	141700
12	091	ORA	R	15.925	JCT RTE 241	18700	297000	284000	19300	283000	272000
12	091	ORA	R	16.404	GYPSUM CANYON ROAD	19300	283000	272000	19800	290000	280000
12	091	ORA	R	17.950 R	COAL CANYON ROAD RIGHT	9100	145000	139500	9100	145000	139500
12	091	ORA	R	17.973 L	COAL CANYON ROAD LEFT	9100	145000	139500	9100	145000	139500
12	091	ORA	R	18.905	ORANGE/RIVERSIDE COUNTY LINE	19500	290000	279000			
08	091	RIV	R	0.000	ORANGE/RIVERSIDE COUNTY LINE				18200	269000	264000
08	091	RIV	R	1.031	GREEN RIVER DRIVE	18300	272000	267000	16700	258000	253000
08	091	RIV	R	2.087	JCT. RTE. 71 NORTH	16700	258000	253000	16500	269000	256000
08	091	RIV	R	3.705	SERFAS CLUB DRIVE	16500	269000	256000	16700	270000	257000
08	091	RIV		4.157	MAPLE STREET	16700	270000	257000	16000	260000	248000
08	091	RIV		5.383	CORONA, LINCOLN AVENUE	16000	260000	248000	16400	268000	255000
08	091	RIV		6.024	CORONA, WEST GRAND BOULEVARD	16400	268000	255000	16000	259000	247000
08	091	RIV		6.343	CORONA, MAIN STREET	16000	259000	247000	15000	245000	233000
08	091	RIV		7.451	CORONA, JCT RTE 15	15000	245000	233000	15200	230000	219000
08	091	RIV		9.180	MC KINLEY STREET	15200	230000	219000	14700	219000	209000
08	091	RIV		10.806	RIVERSIDE, PIERCE STREET	14700	219000	209000	12600	191000	182000
08	091	RIV		11.097	RIVERSIDE, MAGNOLIA AVENUE	12600	191000	182000	13500	203000	193000
08	091	RIV		11.991	RIVERSIDE, LA SIERRA AVENUE	13800	207000	197000	14900	226000	215000
08	091	RIV		13.040	RIVERSIDE, TYLER STREET	14900	226000	215000	14900	220000	212000
08	091	RIV		14.079	RIVERSIDE, VAN BUREN STREET	14900	220000	212000	13600	203000	195000
08	091	RIV		15.627	RIVERSIDE, ADAMS STREET	13600	203000	195000	13500	199000	192000
08	091	RIV		16.651	RIVERSIDE, MADISON STREET	13500	199000	192000	13000	192000	185000
08	091	RIV		17.819	RIVERSIDE, ARLINGTON AVENUE	13000	192000	185000	13000	192000	185000
08	091	RIV		18.412	RIVERSIDE, CENTRAL AVENUE	13000	192000	185000	13100	192000	185000
08	091	RIV		19.999	RIVERSIDE, 14TH STREET	13400	191000	186000	13300	190000	185000
08	091	RIV		20.450	RIVERSIDE, MISSION INN AVENUE	13300	190000	185000	13000	191000	184000
08	091	RIV		21.471	RIVERSIDE, SPRUCE STREET	13000	191000	184000	13000	192000	185000
08	091	RIV		22.068	RIVERSIDE, JCT. RTE. 60, JCT. RTE. 215 NORTH	13000	192000	185000			
04	092	SM		0.000	HALF MOON BAY, JCT. RTE. 1				1700	18900	17900
04	092	SM		0.200	HALF MOON BAY, MAIN STREET	1700	18900	17900	2700	29500	27900
04	092	SM		5.191	JCT. RTE. 35 SOUTH	2700	29500	27900	2800	31000	29500
04	092	SM		7.190	RALSTON AVE/SKYLINE BLVD; JCT. RTE. 35 NORTH	2800	31000	29500	2500	27500	26000
04	092	SM	R	7.310	ON RALSTON AVE, JCT. RTE. 280	2100	23400	22000	8800	81000	79000
04	092	SM	R	7.929	RALSTON AVENUE/POLHEMUS ROAD	8800	81000	79000	7600	71000	69000
04	092	SM	R	8.674	MONTEREY STREET	7600	71000	69000	6800	73000	72000
04	092	SM	R	9.378	SAN MATEO, WEST HILLSDALE BOULEVARD	6800	73000	72000	6500	70000	69000
04	092	SM	R	10.564	SAN MATEO, ALAMEDA DE LAS PULGAS	6500	70000	69000	7500	82000	80000
04	092	SM	R	11.208	JCT. RTE. 82	7500	82000	80000	8700	95000	93000
04	092	SM	R	11.606	SAN MATEO, SOUTH DELAWARE STREET CONNECTIONS	8700	95000	93000	9600	105000	103000
04	092	SM	R	12.143	SAN MATEO, JCT. RTE. 101	9600	105000	103000	13700	162000	152000
04	092	SM	R	12.777	MARINERS ISLAND BOULEVARD/ WEST CAPE DRIVE	13700	162000	152000	10100	141000	132000
04	092	SM	R	13.831	FOSTER CITY BOULEVARD	10100	141000	132000	8900	124000	117000
04	092	SM	R	14.443	SAN MATEO/HAYWARD BRIDGE	8900	124000	117000	9100	127000	120000
04	092	SM	R	18.801	SAN MATEO/ALAMEDA COUNTY LINE	8900	124000	117000			
04	092	ALA	R	0.000	SAN MATEO/ALAMEDA COUNTY LINE				9100	127000	120000
04	092	ALA	R	2.594	SAN MATEO-HAYWARD BRIDGE TOLL PLAZA	8900	124000	117000	9100	127000	120000
04	092	ALA	R	4.477	HAYWARD, CLAWITER ROAD	8900	124000	117000	9100	127000	120000
04	092	ALA	R	5.121	INDUSTRIAL BOULEVARD	9100	127000	120000	8700	116000	108000
04	092	ALA	R	5.757	HAYWARD, HESPERIAN BOULEVARD	8700	116000	108000	9300	124000	115000
04	092	ALA		6.392	HAYWARD, JCT. RTE. 880	9300	124000	115000	4200	49500	46000
04	092	ALA		6.780	HAYWARD, SANTA CLARA STREET, END FREEWAY	4200	49500	46000	3900	45500	42000
04	092	ALA		6.798	HAYWARD, JCT. RTES. 185/238	3900	45500	42000			
11	094	SD		1.416	BEGIN RTE AT JCT RTE 5 and EB ON FRM "G" ST / 17TH				11300	145000	136000
11	094	SD		1.848	25TH STREET , BEGIN FREEWAY	11300	145000	136000	14400	161000	157000
11	094	SD		2.214	28TH STREET	14400	161000	157000	23900	168000	163000
11	094	SD		2.675	SAN DIEGO, 32ND STREET	23900	168000	163000	18000	197000	193000
11	094	SD		3.172	SAN DIEGO, JCT. RTE. 15	18000	197000	193000	17900	193000	187000
11	094	SD		3.630	SAN DIEGO, HOME AVENUE	17900	193000	187000	16500	178000	173000
11	094	SD		4.086	SAN DIEGO, JCT. RTE. 805	16500	178000	173000	22100	248000	231000
11	094	SD		4.632	SAN DIEGO, 47TH STREET	22100	248000	231000	22000	248000	229000
11	094	SD		5.140	SAN DIEGO, EUCLID AVENUE	22000	248000	229000	14200	179000	175000
11	094	SD		5.789	56TH STREET/ KELTON ROAD	14200	179000	175000	15700	188000	182000
11	094	SD		6.161	SAN DIEGO, FEDERAL BOULEVARD	15700	188000	182000	14300	168000	166000
11	094	SD		7.292	COLLEGE GROVE WAY	14300	168000	166000	14200	167000	166000
11	094	SD		7.758	COLLEGE AVENUE	14200	167000	166000	12000	147000	144000
11	094	SD		8.274	MASSACHUSETTS AVENUE	12000	147000	144000	13500	157000	154000

11	094	SD		8.765	WAITE DRIVE	13500	157000	154000	11600	156000	147000
11	094	SD		8.983	LEMON GROVE AVENUE	11600	156000	147000	11500	147000	144000
11	094	SD		9.255	GROVE STREET	11500	147000	144000	11800	146000	144000
11	094	SD	R	10.461 R	JCT. RTE. 125, BEGIN RIGHT ALIGN				5900	73000	72000
11	094	SD	R	10.829 R	SPRING STREET, END RIGHT ALIGN	4000	46500	46000			
11	094	SD	R	11.081	SPRING VALLEY, BANCROFT DRIVE	8800	103000	102000	8000	95000	91000
11	094	SD	R	11.800	CASA DE ORO, KENWOOD DRIVE	8000	95000	91000	6500	79000	78000
11	094	SD	R	12.750	SWEETWATER SPRINGS BOULEVARD	6500	79000	78000	5400	64000	63000
11	094	SD	R	13.333	AVOCADO BOULEVARD	5400	64000	63000	4350	52000	51000
11	094	SD		14.330	JAMACHA BLVD	4350	52000	51000	6300	74000	72000
11	094	SD		14.860	JCT. RTE. 54 NORTH	6300	74000	72000	1750	20100	19800
11	094	SD		17.352	STEEL CANYON ROAD	1500	18700	18600	1600	19700	19100
11	094	SD		19.400	LYONS VALLEY ROAD	1600	19700	19100	1100	12900	12800
11	094	SD		24.554	HONEY SPRINGS ROAD	780	9200	9100	690	7700	7600
11	094	SD		24.731	OTAY LAKES	690	7700	7600	690	8000	7800
11	094	SD		28.300	DULZURA POST OFFICE	690	8000	7800	780	7900	7800
11	094	SD		29.792	MARRON VALLEY	780	7900	7800	770	8000	7700
11	094	SD		38.970	JCT. RTE. 188 SOUTH	710	7400	6900	240	2200	2100
11	094	SD		41.393	POTRERO VALLEY RD	240	2200	2100	150	1600	1500
11	094	SD		52.150	BUCKMAN SPRINGS ROAD	200	2200	2150	240	2200	2150
11	094	SD		61.701	LIVE OAKS SPRS RD	90	570	530	90	570	530
11	094	SD		64.229	WEST JUNCTION OLD HWY 80	90	750	690	210	1800	1750
11	094	SD		64.817	JEWEL VALLEY/ RIBBONWOOD ROADS	210	1800	1750	170	1650	1450
11	094	SD		65.375	JCT. RTE. 8	170	1650	1450			
08	095	RIV	L	0.157	JCT. RTE. 10				430	5000	4600
08	095	RIV		0.000	HOBSON WAY	430	5000	4600	280	3250	3000
08	095	RIV		3.520	SIXTH AVENUE	240	2850	2600	300	2150	2000
08	095	RIV		10.540	PALO VERDE DAM ROAD	190	1400	1300	190	1400	1300
08	095	RIV		36.197	RIVERSIDE/SAN BERNARDINO COUNTY LINE	110	1000	900			
08	095	SBD		0.000	RIVERSIDE/SAN BERNARDINO COUNTY LINE				110	1000	900
08	095	SBD		9.684	JCT. RTE. 62	110	1000	900	320	3400	2900
08	095	SBD		37.300	HAVASU LAKE ROAD	320	3400	2900	450	4700	4000
08	095	SBD	R	57.207	EAST JCT. RTE. 40	440	4600	4200	440	4600	4200
08	095	SBD	R	57.244	WEST JCT. RTE. 40	440	4600	4200	370	3500	2700
08	095	SBD		63.944	ARROWHEAD JUNCTION, GOFFS ROAD	370	3500	2700	400	3700	2900
08	095	SBD		80.453	NEVADA STATE LINE	400	3700	2900			
01	096	HUM		0.000	WILLOW CREEK, JCT. RTE. 299				320	3500	3100
01	096	HUM		0.100	STANDARD OIL LANE	320	3500	3100	300	4300	3800
01	096	HUM		3.590	WILLOW CREEK, NORTH	220	2100	1900	220	2100	1900
01	096	HUM		10.950	SOUTH LIMITS HOOPA	340	4300	3900	300	3600	3200
01	096	HUM		12.830	NORTH LIMITS HOOPA	270	2500	2200	270	2500	2200
01	096	HUM		23.086	WEITCHPEC, JCT. RTE. 169	90	1250	1100	60	720	500
01	096	HUM		37.870	EYESEE ROAD	110	1200	1000	120	1400	1200
01	096	HUM		38.500	ORLEANS, NORTH	110	1200	1000	110	1200	1000
01	096	HUM	R	38.773	KLAMATH RIVER, NORTH	90	820	700	100	1100	900
01	096	HUM	R	44.979	HUMBOLDT/SISKIYOU COUNTY LINE	90	700	630			
02	096	SIS	R	0.000	HUMBOLDT/SISKIYOU COUNTY LINE				20	140	95
02	096	SIS	R	0.550	ISHI PISHI ROAD	20	140	95	30	150	100
02	096	SIS	R	0.720	ETNA, SOMES BAR ROAD	30	150	100	30	150	100
02	096	SIS		23.268	SWILLUP CREEK BRIDGE	70	410	310	30	200	150
02	096	SIS		38.758	BENJAMIN CREEK ROAD	90	540	410	40	410	320
02	096	SIS		41.021	INDIAN CREEK BRIDGE	130	710	600	140	900	880
02	096	SIS		41.101	HAPPY CAMP, MAIN STREET	140	900	880	230	1850	1550
02	096	SIS		41.250	HAPPY CAMP, SECOND STREET	210	1850	1550	190	1650	1400
02	096	SIS		41.670	DAVIS ROAD	170	1600	1350	140	920	770
02	096	SIS	R	52.509	THOMPSON CREEK BRIDGE	60	560	550	80	740	620
02	096	SIS		60.757	SEIAD MAINTENANCE STATION	70	740	600	70	740	600
02	096	SIS		71.330	SCOTT BAR ROAD	90	620	510	80	610	490
02	096	SIS		103.418	JCT. RTE. 263 SOUTH	110	1250	810	140	1100	850
02	096	SIS		105.823	JCT. RTE. 5	80	540	470			
02	097	SIS	L	0.000	WEED, JCT. RTE. 5				830	11000	10700
02	097	SIS	L	0.430	JCT. RTE. 265	830	11000	10700	590	7900	7400
02	097	SIS		1.047	WEED, WEST LINCOLN STREET	590	7900	7400	490	7300	6900
02	097	SIS		4.430	WEED, BIG SPRINGS ROAD	490	6900	6300	460	6400	5900
02	097	SIS		20.190	GRASS LAKE STATE HIGHWAY MAINTENANCE STATION	510	5200	3550	510	5200	3550
02	097	SIS		36.150	1.7-MI. S/O BALL MOUNTAIN RD	490	4750	3450	490	4750	3450
02	097	SIS		45.248	SAMS NECK ROAD	490	4750	3450	310	7100	4050
02	097	SIS		49.827	DORRIS QUARANTINE STATION	310	7100	4050	310	7100	4050
02	097	SIS		50.890	DORRIS, FIRST/MAIN STREETS	350	6400	4700	350	6400	4700
02	097	SIS		53.809	JCT. RTE. 161 EAST	460	6800	4600	320	4800	3250
02	097	SIS		54.089	OREGON STATE LINE	320	4800	3250			
11	098	IMP	R	0.000	BEGIN ROUTE 98				210	2000	1800
11	098	IMP	R	0.304	WEST JCT. RTE. 8	210	2000	1800	200	2000	1800
11	098	IMP		1.518	IMPERIAL HIGHWAY	210	2000	1800	210	2200	2050
11	098	IMP		22.197	DREW ROAD	280	2450	2350	240	2450	2350
11	098	IMP		27.210	FERRELL ROAD	240	2450	2350	330	3200	2950
11	098	IMP		28.740	CLARK ROAD	330	3200	2950	490	5100	4850
11	098	IMP		30.270	DOGWOOD ROAD	530	5500	4850	900	11800	10700

11	098	IMP		31.310	KLOKE ROAD	900	11800	10700	2000	27000	24900
11	098	IMP		31.920	CALEXICO, CESAR CHAVEZ BOULEVARD	2000	27000	24900	1850	25500	23400
11	098	IMP		32.314	JCT. RTE. 111	1850	25500	23400	2300	26500	24600
11	098	IMP		32.460	CALEXICO, ROCKWOOD AVENUE	2300	25500	24600	2450	28000	26500
11	098	IMP		32.614	HEBER AVENUE	2450	28000	26500	2450	27500	25500
11	098	IMP		32.780	CALEXICO, BLAIR AVENUE	2450	27500	25500	2200	25500	23400
11	098	IMP		32.920	ENCINAS AVENUE	2200	25500	23400	1800	20500	18700
11	098	IMP		33.253	ANDRADE AVENUE	1800	20500	18700	950	11100	9800
11	098	IMP		34.460	BOWKER ROAD	950	11100	9800	760	7500	7100
11	098	IMP		35.197	CALEXICO, COLE ROAD	800	8000	7100	1300	14400	12800
11	098	IMP		36.630	BARBARA WORTH ROAD	1300	13700	12800	1300	14200	13000
11	098	IMP		37.628	ANDERHOLT RD. F	1250	14500	13000	1200	13600	13300
11	098	IMP		39.654	JCT. RTE. 7	1250	14100	13300	290	4450	3250
11	098	IMP		41.095	VENCILL ROAD	300	3500	3250	270	3350	2900
11	098	IMP		42.101	BONDS CORNER/HAWK ROADS	280	3350	2900	370	5900	2650
11	098	IMP		43.680	BONESTEELE RD - LT	370	5900	2650	310	4750	2250
11	098	IMP		45.288	EAST HIGHLINE CANAL	310	4750	2250	310	4750	2250
11	098	IMP	R	56.884	EAST JCT. RTE. 8	240	2650	2550	240	2950	2550
11	098	IMP	R	57.017	END OF ROUTE	240	2950	2550			
06	099	KER	L	0.000	BEGIN ROUTE				4850	55000	49000
06	099	KER	L	0.748	JCT. RTE. 5	4850	55000	49000	4850	55000	49000
06	099	KER		2.732	METTLER, JCT. RTE. 166 WEST	4850	55000	49000	5000	55000	51000
06	099	KER		5.343	DAVID ROAD	5000	55000	51000	5300	59000	53000
06	099	KER		7.295	SANDRINI ROAD OC	5100	59000	53000	5200	59000	54000
06	099	KER		9.299	HERRING ROAD OC	5200	59000	54000	5300	59000	55000
06	099	KER		10.930	OLD U. S. 99	5500	59000	55000	5300	58000	53000
06	099	KER		13.411	JCT. RTE. 223 EAST	5300	58000	53000	5400	64000	59000
06	099	KER		15.432	HOUGHTON ROAD	5400	64000	59000	5600	66000	61000
06	099	KER		17.500	JCT. RTE. 119 WEST	5600	66000	61000	5900	75000	69000
06	099	KER		18.526	HOSKING AVE OC	6600	75000	69000	7700	90000	83000
06	099	KER		19.541	PANAMA LANE	7700	90000	83000	8300	111000	105000
06	099	KER		21.082	BAKERSFIELD, WHITE LANE	8400	111000	105000	10500	139000	131000
06	099	KER		22.604	BAKERSFIELD, MING AVENUE	10500	139000	131000	12000	163000	153000
06	099	KER		23.514	JCT. RTE. 58 EAST	12000	163000	153000	12200	170000	159000
06	099	KER		24.599	BAKERSFIELD, CALIFORNIA AVENUE	12200	170000	159000	12600	170000	158000
06	099	KER		25.654	JCT. RTE. 58 WEST, JCT. RTE. 178 EAST	12600	165000	158000	10100	134000	125000
06	099	KER		26.776	BUCK OWENS BOULEVARD	10100	134000	125000	10100	134000	125000
06	099	KER		27.046	JCT RTE 204	10100	134000	125000	10400	131000	123000
06	099	KER		27.866	OLIVE DRIVE	10400	131000	123000	8400	103000	98000
06	099	KER	R	28.556	OIL JUNCTION	8400	103000	98000	8700	104000	101000
06	099	KER	R	29.878	JCT. RTE. 65	8700	104000	101000	7200	86000	84000
06	099	KER	R	30.532	SEVENTH STANDARD ROAD	7000	86000	82000	6700	82000	79000
06	099	KER		36.523	CAWELO, LERDO HIGHWAY	6700	82000	79000	6100	74000	71000
06	099	KER	R	39.119	MERCED AVENUE	6100	74000	71000	6200	74000	71000
06	099	KER	R	41.161	KIMBERLINA ROAD	6200	74000	71000	6000	73000	69000
06	099	KER		44.307	JCT. RTE. 46	6000	72000	69000	5800	69000	66000
06	099	KER	R	47.370	WHISLER ROAD	5800	69000	66000	5700	68000	66000
06	099	KER		49.295	MC FARLAND, SHERWOOD AVENUE	5700	68000	66000	5500	66000	64000
06	099	KER		49.954	MC FARLAND, PERKINS AVENUE	5500	66000	64000	5500	65000	63000
06	099	KER		50.410	MC FARLAND, ELMO HIGHWAY	5800	69000	67000	6000	73000	69000
06	099	KER		52.450	POND ROAD	6000	73000	69000	6400	75000	69000
06	099	KER		54.475	WOOLOMES AVENUE	6500	75000	70000	6400	74000	69000
06	099	KER		55.521	DELANO, JCT. RTE. 155	6400	74000	69000	6000	70000	60000
06	099	KER		56.279	DELANO, 13TH AVENUE	5900	68000	63000	5100	59000	57000
06	099	KER		56.540	DELANO, CECIL AVENUE	5100	59000	57000	5600	64000	62000
06	099	KER		57.581	KERN/TULARE COUNTY LINE	5600	64000	62000			
06	099	TUL		0.000	KERN/TULARE COUNTY LINE				5400	62000	60000
06	099	TUL		3.055	RADNOR, AVENUE 24	5100	60000	58000	5000	62000	58000
06	099	TUL		6.148	AVENUE 48	5000	62000	58000	4600	56000	53000
06	099	TUL		9.712	AVENUE 76	4200	51000	48500	4250	51000	49000
06	099	TUL		12.297	AVENUE 96/PARK DRIVE	4300	51000	49500	4000	49000	46000
06	099	TUL		12.804	PIXLEY, AVENUE 100	4000	49500	46000	4100	50000	47000
06	099	TUL		13.330	AVENUE 104	4100	50000	47000	4200	52000	48500
06	099	TUL		15.367	AVENUE 120	4200	52000	48500	4350	53000	50000
06	099	TUL		18.429	TIPTON, JCT. RTE. 190 EAST	4350	53000	50000	4550	55000	52000
06	099	TUL		19.463	TIPTON, AVENUE 152	4550	55000	52000	4750	58000	54000
06	099	TUL		23.489	AVENUE 184	4750	58000	54000	4750	59000	56000
06	099	TUL		25.433	AVENUE 200	4750	59000	56000	4850	61000	58000
06	099	TUL		27.600	PAIGE ROAD (AVENUE 216)	4850	62000	58000	4950	62000	59000
06	099	TUL		28.605	TULARE, BARDSLEY AVENUE	4950	62000	59000	5300	67000	63000
06	099	TUL		29.568	TULARE, JCT. RTE. 137	5300	67000	63000	5500	69000	65000
06	099	TUL		30.578	PROSPERITY AVENUE	5500	69000	65000	5200	65000	61000
06	099	TUL		31.849	CARTMILL RD OC	5200	65000	61000	5200	65000	61000
06	099	TUL		33.222	SOUTH TAGUS	5200	65000	61000	5500	69000	65000
06	099	TUL		33.942	TAGUS (AVENUE 264)	5500	69000	65000	5700	71000	67000
06	099	TUL		36.411	CALDWELL AVENUE (AVENUE 280)	5700	71000	67000	6100	76000	72000
06	099	TUL	R	38.714	VISALIA, JCT RTE 198	6100	76000	72000	5900	72000	68000
06	099	TUL	R	38.750	JCT. RTE. 198 EAST	5900	72000	68000	5300	65000	68000

06	099	TUL	R	38.980	JCT. RTE. 198 WEST	5300	65000	61000	4950	61000	57000
06	099	TUL		40.790	GOSHEN	5900	72000	68000	5900	72000	68000
06	099	TUL		48.710	TRAVER	5700	70000	66000	5800	70000	66000
06	099	TUL		51.806	DODGE AVENUE	5800	71000	66000	6100	74000	69000
06	099	TUL	R	53.822	MENDOCINO AVENUE	6100	74000	69000	5800	71000	67000
06	099	TUL	R	53.939	TULARE/FRESNO COUNTY LINE	5800	71000	67000			
06	099	FRE	R	0.000	TULARE/FRESNO COUNTY LINE				5800	71000	67000
06	099	FRE	R	0.951	KINGSBURG, JCT. RTE. 201 EAST	5800	71000	67000	5900	74000	69000
06	099	FRE	R	2.058	BETHEL AVENUE	5900	74000	69000	6100	77000	72000
06	099	FRE	R	3.742	MOUNTAIN VIEW AVENUE	6100	77000	72000	6800	85000	79000
06	099	FRE	R	5.321	SELMA, SECOND STREET	6800	85000	79000	7100	88000	81000
06	099	FRE		6.431	JCT. RTE. 43 SOUTH	7100	88000	81000	8200	100000	95000
06	099	FRE		9.164	MANNING AVENUE	8200	100000	95000	9100	111000	105000
06	099	FRE		11.098	FOWLER, MERCED STREET	9100	111000	105000	9500	113000	108000
06	099	FRE		11.836	ADAMS AVENUE	9500	113000	108000	9400	111000	107000
06	099	FRE		12.404	CLOVIS AVENUE	9400	111000	107000	8600	101000	98000
06	099	FRE		14.512	AMERICAN AVENUE	8600	101000	98000	8900	105000	101000
06	099	FRE		15.491	CHESTNUT AVENUE	8900	105000	101000	8200	96000	93000
06	099	FRE		15.864	CENTRAL AVENUE	8200	96000	93000	9300	110000	106000
06	099	FRE		16.925	CEDAR AVENUE	9300	110000	106000	8700	104000	100000
06	099	FRE		17.255	FRESNO, NORTH AVENUE	8700	104000	100000	9800	115000	111000
06	099	FRE		18.544	FRESNO, JENSEN AVENUE	9800	115000	111000	10700	128000	122000
06	099	FRE		19.290	FRESNO, NORTH JCT. RTE. 41	10700	128000	122000	6800	82000	79000
06	099	FRE		20.190	FRESNO, VENTURA STREET	6800	82000	79000	8000	99000	94000
06	099	FRE		20.737	FRESNO, FRESNO STREET	8000	99000	94000	8400	102000	98000
06	099	FRE		21.012	FRESNO, STANISLAUS STREET	8400	102000	98000	9800	116000	111000
06	099	FRE		22.160	JCT RTE 180S	9800	116000	111000	13500	158000	150000
06	099	FRE		22.735	FRESNO, BELMONT AVENUE	13500	158000	150000	13000	152000	143000
06	099	FRE		23.304	FRESNO, OLIVE AVENUE	13000	152000	143000	12300	146000	139000
06	099	FRE		23.852	MC KINLEY AVENUE	12300	146000	139000	11800	139000	132000
06	099	FRE		24.416	FRESNO, CLINTON AVENUE	11800	139000	132000	9700	119000	114000
06	099	FRE		25.000	FRESNO, SHIELDS AVENUE	9700	119000	114000	9200	119000	114000
06	099	FRE		26.224	DAKOTA AVENUE	9200	119000	114000	9200	119000	114000
06	099	FRE		26.554	ASHLAN AVENUE	7500	98000	94000	6700	90000	85000
06	099	FRE		28.102	SHAW AVENUE	6700	90000	85000	6500	84000	81000
06	099	FRE		30.988	HERNDON AVENUE	6500	84000	81000	6700	89000	84000
06	099	FRE		31.609	FRESNO/MADERA COUNTY LINE	6800	89000	84000			
06	099	MAD		0.000	FRESNO/MADERA COUNTY LINE				6800	89000	84000
06	099	MAD	R	0.989	AVENUE 7 (RIPPERDAN AVENUE)	6800	89000	84000	6000	80000	76000
06	099	MAD	R	3.564	AVENUE 9	6000	80000	76000	6400	85000	81000
06	099	MAD	R	7.463	AVENUE 12	6400	85000	81000	6300	85000	81000
06	099	MAD		9.490	GATEWAY DRIVE	6300	85000	81000	5900	82000	77000
06	099	MAD		10.268	MADERA, JCT. RTE. 145	5900	82000	77000	6600	88000	84000
06	099	MAD		11.009	MADERA, WEST FOURTH STREET	6600	88000	84000	6000	81000	77000
06	099	MAD		11.180	MADERA, SECOND STREET	6000	81000	77000	6600	88000	85000
06	099	MAD		12.125	MADERA, CLEVELAND AVENUE	6600	88000	85000	6000	80000	77000
06	099	MAD		12.752	MADERA, AVENUE 16	6000	80000	77000	6600	86000	83000
06	099	MAD	R	14.222	AVENUE 17	6600	86000	83000	6400	83000	80000
06	099	MAD	R	16.331	AVENUE 18 1/2	6300	82000	79000	6300	82000	79000
06	099	MAD	R	18.680	AVENUE 20	6300	82000	79000	6100	81000	76000
06	099	MAD		20.874	AVENUE 21 1/2	6200	81000	76000	6200	81000	76000
06	099	MAD		22.727	CALIFA, JCT. RTE. 152 WEST	6200	80000	76000	3900	53000	49500
06	099	MAD		23.770	AVENUE 24	3900	53000	49500	3950	53000	50000
06	099	MAD		24.430	AVENUE 24 1/2	3950	53000	50000	3950	52000	50000
06	099	MAD		26.576	JCT. RTE. 233 WEST	3950	52000	50000	3650	49000	47000
06	099	MAD		28.167	MINTURN ROAD	3650	49000	47000	3650	49000	47000
06	099	MAD		29.359	MADERA/MERCED COUNTY LINE	3650	49000	47000			
10	099	MER		0.000	MADERA/MERCED COUNTY LINE				4500	58000	52800
10	099	MER	R	6.852	LE GRAND ROAD	4750	54000	52500	4600	53000	51300
10	099	MER		13.094	MERCED, CHILDS AVENUE	4100	44000	40000	4200	48500	42500
10	099	MER		13.861	MERCED, JCT. RTE. 140 EAST	4350	50000	44000	3750	44000	42500
10	099	MER		14.411	MERCED, G STREET	4500	53000	51000	4600	54000	52000
10	099	MER		14.686	MERCED, JCT. RTE. 59 SOUTH	4200	49500	47500	4050	47500	46000
10	099	MER		15.416	MERCED, R STREET	3900	45500	44000	4800	54000	51000
10	099	MER		15.799	MERCED, JCT. RTE. 140 WEST; JCT. RTE. 59 NORTH	4450	54000	51000	4950	64300	57700
10	099	MER		16.538	MERCED, WEST MERCED OVERHEAD, ATWATER BLVD	4600	57000	54000	5400	66000	56000
10	099	MER		16.980	16TH STREET	5400	66000	56000	5800	64000	59000
10	099	MER		21.612	EAST ATWATER BOULEVARD	5000	58000	49000	4900	55000	52000
10	099	MER		22.755	ATWATER, APPLEGATE ROAD	4900	55000	52000	4950	57000	53000
10	099	MER		23.462	ATWATER, WEST ATWATER BOULEVARD	4950	57000	53000	4950	58000	54000
10	099	MER	R	29.001	LIVINGSTON,HAMMATT AVENUE	5800	65000	60000	5600	63000	61000
10	099	MER	R	30.379	WINTON PARKWAY	5700	64000	62000	5500	62000	60000
10	099	MER	R	31.926	COLLIER ROAD	6300	71000	68000	5700	76000	73000
10	099	MER	R	32.310	HIGHLINE CANAL	6400	84000	82100	6400	84000	82100
10	099	MER	R	34.429	SHANKS ROAD	5300	77000	72400	5500	77000	74500
10	099	MER	R	36.343	GOLDEN STATE BOULEVARD	5100	64000	61000	5300	64000	62000
10	099	MER	R	37.302	MERCED/STANISLAUS COUNTY LINE	7900	100000	96900			
10	099	STA	R	0.000	MERCED/STANISLAUS COUNTY LINE				7900	95400	92400

10	099	STA	R	1.626	JCT. RTE. 165 SOUTH	7900	95000	89400	10900	109000	107300
10	099	STA	R	3.450	TURLOCK, WEST MAIN STREET	10900	109000	107300	12200	123000	123700
10	099	STA	R	4.540	TURLOCK, FULKERTH ROAD	12200	123000	123700	11500	115000	112000
10	099	STA	R	5.637	MONTE VISTA AVENUE	11500	115000	112000	11000	104000	103000
10	099	STA	R	6.750	TAYLOR ROAD	11000	104000	103000	8800	123000	122000
10	099	STA	R	7.811	KEYES ROAD	8800	123000	122000	10300	129000	121000
10	099	STA	R	10.040	MITCHELL ROAD	10300	129000	121000	9500	122000	121000
10	099	STA	R	11.908	CERES, WHITMORE AVENUE	9500	107000	106700	10900	108000	107000
10	099	STA	R	13.263	MODESTO, HATCH ROAD/9TH STREET	10100	120000	119000	11300	118000	117700
10	099	STA	R	14.473	MODESTO, CROWS LANDING ROAD	11300	118000	117700	11600	127000	126400
10	099	STA	R	15.098	MODESTO, TUOLUMNE BOULEVARD	11600	127000	126400	12000	132000	131800
10	099	STA	R	15.753	MODESTO, H STREET	12000	132000	131800	11500	131000	131800
10	099	STA	R	16.121	MODESTO, JCT. RTE. 132	11700	135000	134000	11300	146000	145000
10	099	STA	R	16.825	KANSAS AVENUE	11400	145000	141500	12000	148000	147000
10	099	STA	M	18.520	MODESTO, CARPENTER ROAD	12000	148000	147000	12500	149000	148000
10	099	STA	R	20.222	MODESTO, BECKWITH ROAD	12500	149000	148000	10100	136000	135700
10	099	STA	R	21.743	MODESTO, PELANDALE AVENUE	10100	136000	135700	10300	137000	136900
10	099	STA	R	22.558	SALIDA, JCT. RTE. 219 EAST	10300	139000	136900	10100	149000	145000
10	099	STA	R	24.272	HAMMET ROAD	10100	149000	145000	9200	119000	114200
10	099	SJ		0.000	STANISLAUS/SAN JOAQUIN COUNTY LINE				9200	119000	114200
10	099	SJ		0.888	RIPON, MAIN STREET	9200	119000	114200	10000	118000	116000
10	099	SJ		1.708	MILGEO AVENUE	9900	119000	118300	10000	158000	154800
10	099	SJ		2.374	JACKTONE ROAD	9700	144000	137000	12200	153000	147000
10	099	SJ		5.822	SOUTH JCT. RTE. 120	9600	118000	107000	10700	118000	117000
10	099	SJ		6.654	MANTECA, NORTH JCT. RTE. 120	7600	91000	83000	8400	93000	92500
10	099	SJ		8.829	NORTH MANTECA	6000	72000	66000	6300	74000	70000
10	099	SJ		11.468	TURNER STATION/FRENCH CAMP ROAD	6500	76000	74300	7200	88000	85000
10	099	SJ		12.526	LITTLE JOHN CREEK	7600	97000	91300	7600	97000	91300
10	099	SJ		16.698	STOCKTON, MARIPOSA ROAD	7700	84000	80600	8700	96000	92300
10	099	SJ		17.216	JCT. RTE. 4 EAST	8700	96000	92300	9400	100000	94000
10	099	SJ		18.022	JCT. RTE. 26 WEST	9500	100000	94000	9700	104000	96000
10	099	SJ		18.683	JCT. RTE. 4 WEST	9700	114000	105000	8500	108000	95000
10	099	SJ		19.290	JCT. RTE. 26 EAST	8500	108000	95000	14000	140000	139000
10	099	SJ		20.336	JCT. RTE. 88 NORTHEAST	10000	113000	99000	15400	125000	124000
10	099	SJ		20.876	CHEROKEE ROAD	11500	101000	92000	13800	118000	117000
10	099	SJ		21.674	WILSON WAY	9700	89000	82000	13300	134000	133000
10	099	SJ		22.922	HAMMER LANE	7300	86000	81000	7100	76000	73000
10	099	SJ		24.033	MORADA LANE	6200	77000	75000	8200	81000	80000
10	099	SJ		29.004	SOUTH LODI	6500	85000	79000	7200	74000	71000
10	099	SJ		29.499	LODI, JCT. RTE. 12 WEST	4850	79000	75000	7500	95000	94000
10	099	SJ		30.974	LODI, JCT. RTE. 12 EAST	6100	78000	76000	7800	104000	86000
10	099	SJ		31.578	LODI, TURNER ROAD	5100	79000	75000	6100	81000	67000
10	099	SJ		32.573	WOODBRIDGE ROAD	5200	74000	71000	5200	67000	66000
10	099	SJ		33.573	ACAMPO ROAD	5300	68000	66000	5300	68000	66000
10	099	SJ		35.597	JAHANT ROAD	5100	67000	66000	5300	69000	68000
10	099	SJ		38.783	SAN JOAQUIN/SACRAMENTO COUNTY LINE	6200	85000	80000			
03	099	SAC		0.123	SAN JOAQUIN/SACRAMENTO COUNTY LINE				6200	80000	76000
03	099	SAC		0.330	GALT, FRONTAGE ROAD CONNECTION	6100	80000	75800	6000	78000	75000
03	099	SAC		0.792	GALT, C STREET	6000	78000	75000	6200	81000	78000
03	099	SAC		1.566	GALT, SIMMERHORN ROAD	6200	81000	78000	5900	77000	75000
03	099	SAC		1.880	GALT, PRINGLE AVENUE CONNECTION	5900	77000	75000	6100	77000	77000
03	099	SAC		2.700	WALNUT STREET CONNECTION	6100	77000	77000	6000	77000	75000
03	099	SAC		3.525	JCT. RTE. 104 EAST	6000	77000	75000	6400	85000	80300
03	099	SAC		4.390	MINGO ROAD CONNECTION	6300	85000	80300	6300	85000	80300
03	099	SAC		6.008	ARNO ROAD	6300	85000	80300	6500	86000	81400
03	099	SAC		7.363	DILLARD ROAD	6500	86000	81400	6300	89000	84000
03	099	SAC		8.960	ESCHINGER ROAD	6300	89000	84000	6300	88000	82300
03	099	SAC		10.070	GRANT LINE ROAD	6400	89000	82300	6100	82000	77000
03	099	SAC		12.761	ELK GROVE BOULEVARD	6100	82000	77000	8600	118000	112000
03	099	SAC		13.838	LAGUNA BOULEVARD/ BOND ROAD	8600	118000	112000	11200	141000	133000
03	099	SAC		14.869	SHELDON ROAD	11200	141000	133000	11500	152000	142000
03	099	SAC		15.900	CALVINE ROAD	11500	152000	142000	11700	171000	159000
03	099	SAC		17.242	SACRAMENTO, STOCKTON BOULEVARD	11800	170000	159000	10100	146000	140500
03	099	SAC		17.656	SACRAMENTO, MACK ROAD	10100	146000	140500	13800	193000	186300
03	099	SAC		19.612	FLORIN ROAD	13800	193000	186300	14000	202000	196000
03	099	SAC		20.859	47TH AVENUE	14000	202000	196000	18200	223000	213000
03	099	SAC		21.573	MARTIN LUTHER KING JR. BOULEVARD	18200	223000	213000	17400	219000	209000
03	099	SAC		21.944	SACRAMENTO, FRUITRIDGE ROAD	17400	219000	209000	20000	232000	221000
03	099	SAC		23.128	SACRAMENTO, 12TH AVENUE	20000	232000	221000	16300	238000	235300
03	099	SAC	R	24.351	JCT. RTES. 50/51	16300	238000	235300			
	099	SAC	R	24.352	BREAK IN ROUTE						
03	099	SAC	R	32.124	JCT. ROUTE 5				5900	66000	62100
03	099	SAC		33.364	ELKHORN BOULEVARD	5900	66000	62100	4900	51000	48700
03	099	SAC		35.370	ELVERTA ROAD	4900	51000	48700	4500	48000	45500
03	099	SAC		36.863	SACRAMENTO/SUTTER COUNTY LINE	4500	48000	45500			
03	099	SUT		0.000	SACRAMENTO/SUTTER COUNTY LINE				4500	48000	45500
03	099	SUT		0.950	RIEGO ROAD	4500	48000	45500	3200	37800	35200
03	099	SUT	R	8.070	JCT. RTE. 70 NORTH	3200	39000	35900	1600	17700	16600

03	099	SUT		11.975	GARDEN HIGHWAY	1550	16600	16200	1550	16600	16500
03	099	SUT		12.029	FEATHER RIVER BRIDGE	1800	19000	18300	1800	19000	18300
03	099	SUT		13.678	SACRAMENTO AVENUE	1550	16600	16500	1550	17000	16700
03	099	SUT	R	20.051	JCT. RTE. 113	1600	17900	16700	1850	21100	19500
03	099	SUT		25.620	OSWALD ROAD	1850	21100	19500	1900	22300	21200
03	099	SUT		26.120	BARRY ROAD	1900	22300	21200	2100	23600	22600
03	099	SUT		27.650	BOGUE ROAD	2050	24400	22700	2400	28500	27000
03	099	SUT		28.670	YUBA CITY, LINCOLN ROAD	2450	29500	27500	2900	36500	33800
03	099	SUT		29.670	FRANKLIN ROAD	2900	36500	34200	3000	37500	35700
03	099	SUT		30.030	YUBA CITY, BRIDGE STREET	3000	37500	35700	2800	35500	33500
03	099	SUT		30.390	YUBA CITY, ONSTOTT ROAD CONNECTION	2800	35500	33500	2800	35500	33500
03	099	SUT	T	30.629	YUBA CITY, JCT. RTE. 20	2800	3550	33500	2000	24400	22800
03	099	SUT	R	31.311	YUBA CITY, QUEENS AVENUE	2000	24400	22800	1750	19700	18800
03	099	SUT	R	33.950	EAGER ROAD	1750	19700	18800	1800	19900	19100
03	099	SUT	T	35.960	ENCINAL ROAD/LIVE OAK BOULEVARD	1800	19900	19100	1800	21800	20400
03	099	SUT		40.250	LIVE OAK, PENNINGTON ROAD	1650	21100	19100	1650	21100	19400
03	099	SUT		42.389	SUTTER/BUTTE COUNTY LINE	1550	17500	16500			
03	099	BUT		0.000	SUTTER/BUTTE COUNTY LINE				1550	17500	16500
03	099	BUT		2.790	LIVE OAK GRIDLEY ROAD	1700	18700	17300	1950	20700	19700
03	099	BUT	R	3.746	ARCHER AVENUE	1950	20700	19700	2000	21700	20200
03	099	BUT		4.121	GRIDLEY, WILSON STREET	2000	21700	20200	2400	25000	23900
03	099	BUT		4.380	GRIDLEY, SPRUCE STREET	2400	25000	23900	1450	16600	15800
03	099	BUT		7.690	BIGGS HIGHWAY	1400	15700	14400	1200	13500	12400
03	099	BUT		11.159	JCT. RTE. 162 WEST	1150	13000	12000	1200	13100	12000
03	099	BUT		13.161	JCT. RTE. 162 EAST	1200	13100	12100	1050	13400	13100
03	099	BUT		16.190	NELSON SHIPPEE ROAD	1050	11800	10900	1050	11800	10900
03	099	BUT		22.538	JCT. RTE 149	1050	11800	10900	2700	29000	27100
03	099	BUT		23.863	PENTZ ROAD	3000	32000	29400	3300	35000	33200
03	099	BUT		26.040	NEAL HIGHWAY	3300	35000	33200	3700	41500	39000
03	099	BUT	R	30.603	CHICO, SKYWAY OVERCROSSING	3700	41500	39000	5500	64000	60000
03	099	BUT	R	31.498	EAST 20TH STREET	5500	64000	60000	7400	79000	76000
03	099	BUT	R	32.445	CHICO, JCT. RTE. 32 EAST	7400	79000	76000	7900	90000	88000
03	099	BUT	R	33.282	CHICO, EAST FIRST AVENUE	7900	90000	88000	6300	70000	66400
03	099	BUT	R	34.245	CHICO, COHASSET HIGHWAY	6300	70000	66400	4600	49000	46500
03	099	BUT	R	34.927	EAST AVENUE	4600	49000	46500	3250	35000	33500
03	099	BUT	R	36.305	EATON AVENUE	3250	35000	33500	2050	22200	21200
03	099	BUT		38.790	WILSON LANDING ROAD	2050	22200	21200	1750	19100	18100
03	099	BUT		40.220	KEEFER ROAD	1750	19100	18100	1400	15200	14300
03	099	BUT		44.320	BROYLES ROAD	1400	15200	14300	1400	15100	14000
03	099	BUT		45.975	BUTTE/TEHAMA COUNTY LINE	1400	15100	13900			
02	099	TEH		0.000	BUTTE/TEHAMA COUNTY LINE				1600	17800	16400
02	099	TEH		4.491	SOUTH AVENUE	1650	18200	16800	790	10300	9700
02	099	TEH		5.420	VINA ROAD	880	9600	9000	890	9900	9300
02	099	TEH		11.181	SHERMAN STREET	1200	10900	10100	1200	10900	10100
02	099	TEH		12.308	ARAMAYO WAY	1100	14600	13500	1000	11400	10700
02	099	TEH		19.517	KAUFMAN AVENUE	870	9800	9300	1150	12500	12000
02	099	TEH		24.943	JCT. RTE. 36	1150	12500	12000			
07	101	LA	S	0.000	LOS ANGELES, JCT. RTE. 5				9100	139000	136000
07	101	LA	S	0.624	LOS ANGELES, FOURTH STREET	9100	139000	136000	8000	126000	123000
07	101	LA	S	0.907	LOS ANGELES, FIRST STREET	8000	126000	123000	7700	124000	122000
07	101	LA	S	1.329	LOS ANGELES, JCT. RTE. 10	7700	124000	122000			
07	101	LA		0.000	LOS ANGELES, JCT. RTE. 10				13700	215000	211000
07	101	LA		0.387	LOS ANGELES, VIGNES STREET	13700	215000	211000	13200	212000	208000
07	101	LA		0.820	LOS ANGELES, ALAMEDA/ LOS ANGELES STREETS	13200	212000	208000	12500	203000	200000
07	101	LA		1.007	LOS ANGELES, SPRING STREET	12500	203000	200000	13400	220000	217000
07	101	LA		1.569	LOS ANGELES, JCT. RTE. 110	13400	220000	217000	15700	267000	264000
07	101	LA		2.483	LOS ANGELES, GLENDALE BOULEVARD	15700	267000	264000	15300	262000	258000
07	101	LA		2.857	LOS ANGELES, JCT. RTE. 2 NORTHEAST	15300	262000	258000	15900	270000	266000
07	101	LA		3.342	LOS ANGELES, BENTON WAY/RAMPART STREET	15900	270000	266000	15700	264000	260000
07	101	LA		3.760	LOS ANGELES, SILVER LAKE BOULEVARD	15700	264000	260000	14500	260000	254000
07	101	LA		4.397	LOS ANGELES, VERMONT AVENUE	14500	260000	254000	13500	239000	233000
07	101	LA		4.851	LOS ANGELES, MELROSE AVENUE	13500	239000	233000	13000	229000	223000
07	101	LA		5.554	LOS ANGELES, JCT. RTE. 2 WEST	13000	229000	223000	11600	201000	196000
07	101	LA		5.812	LOS ANGELES, WESTERN AVENUE	11600	201000	196000	13000	222000	217000
07	101	LA		6.380	LOS ANGELES, SUNSET/HOLLYWOOD BOULEVARDS	13000	222000	217000	11900	200000	196000
07	101	LA		6.912	LOS ANGELES, GOWER STREET/ARGYLE AVENUE	11900	200000	196000	12800	213000	208000
07	101	LA		7.459	LOS ANGELES, CAHUENGA BOULEVARD	12800	213000	208000	14100	231000	226000
07	101	LA		7.840	LOS ANGELES, HIGHLAND AVENUE	14100	231000	226000	17000	279000	269000
07	101	LA		9.221	LOS ANGELES, BARHAM BOULEVARD	17000	279000	269000	15900	257000	248000
07	101	LA		10.343	LOS ANGELES, LANKERSHIM/VENTURA BOULEVARDS	15900	257000	248000	16000	255000	247000
07	101	LA		11.112	LOS ANGELES, VINELAND AVENUE	16000	255000	247000	15000	244000	237000
07	101	LA		11.747 R	LOS ANGELES, JCT. RTES. 134/170	7500	122000	119000	8700	139000	137000
07	101	LA		11.747 L	LOS ANGELES, JCT. RTES. 134/170	7500	122000	119000	8700	139000	137000
07	101	LA		12.852	LOS ANGELES, LAUREL CANYON BOULEVARD	17400	278000	274000	17500	279000	274000
07	101	LA		13.878	LOS ANGELES, COLDWATER CANYON AVENUE	17500	279000	274000	17900	281000	277000
07	101	LA		14.885	LOS ANGELES, WOODMAN AVENUE	17900	281000	277000	18700	291000	286000
07	101	LA		15.908	LOS ANGELES, VAN NUYS BOULEVARD	18700	291000	286000	19800	305000	300000
07	101	LA		17.170 R	LOS ANGELES, JCT. RTE. 405	9900	153000	150000	14200	160000	159000

07	101	LA		17.170	L	LOS ANGELES, JCT. RTE. 405	9900	153000	150000	14200	160000	159000
07	101	LA		18.607		LOS ANGELES, HAVENHURST AVENUE	28500	320000	318000	27000	309000	305000
07	101	LA		19.217		LOS ANGELES, BALBOA BOULEVARD	27000	309000	305000	26500	308000	304000
07	101	LA		20.225		LOS ANGELES, WHITE OAK AVENUE	26500	308000	304000	26500	299000	293000
07	101	LA		21.252		LOS ANGELES, RESEDA BOULEVARD	26500	299000	293000	26000	290000	284000
07	101	LA		22.254		LOS ANGELES, TAMPA AVENUE	26000	290000	284000	25500	279000	272000
07	101	LA		23.264		LOS ANGELES, WINNETKA AVENUE	25500	279000	272000	25500	279000	272000
07	101	LA		24.311		LOS ANGELES, DE SOTO AVENUE	24900	269000	262000	24900	264000	256000
07	101	LA		24.851		LOS ANGELES, CANOGA AVENUE	24900	264000	256000	22600	236000	228000
07	101	LA		25.337		LOS ANGELES, JCT. RTE. 27	22600	236000	228000	14400	212000	205000
07	101	LA		25.755		LOS ANGELES, VENTURA BOULEVARD	14400	212000	205000	14500	209000	202000
07	101	LA		26.860		LOS ANGELES, WOODLAKE AVENUE	14500	209000	202000	15200	216000	208000
07	101	LA		27.364		LOS ANGELES, MULHOLLAND DRIVE	15200	216000	208000	14200	200000	193000
07	101	LA		28.287		CALABASAS, PARKWAY CALABASAS	14200	200000	193000	13700	190000	182000
07	101	LA		31.058		CALABASAS, LAS VIRGENES CANYON ROAD	13700	190000	182000	12200	173000	162000
07	101	LA		31.917		CALABASAS, LOST HILLS ROAD	12200	173000	162000	12700	177000	166000
07	101	LA		32.790		AGOURA HILLS, LIBERTY CANYON ROAD	12700	177000	166000	13000	178000	168000
07	101	LA		33.688		AGOURA HILLS, CHESEBRO/PALO COMADO CANYON ROADS	13000	178000	168000	12700	172000	162000
07	101	LA		35.035		AGOURA HILLS, KANAN ROAD	12700	172000	162000	12700	167000	160000
07	101	LA		36.180		AGOURA HILLS, REYES ADOBE ROAD	12700	167000	160000	12700	167000	160000
07	101	LA		37.536		WESTLAKE VILLAGE, LINDERO CANYON ROAD	12700	167000	160000	11700	184000	168000
07	101	LA		38.190		LOS ANGELES/VENTURA COUNTY LINE	11700	184000	168000			
07	101	VEN		0.000		LOS ANGELES/VENTURA COUNTY LINE				11700	184000	168000
07	101	VEN		0.701		THOUSAND OAKS, JCT. RTE. 23 SOUTH	11700	184000	168000	16400	181000	176000
07	101	VEN		1.622		THOUSAND OAKS, HAMPSHIRE ROAD	16400	181000	176000	18300	199000	193000
07	101	VEN		3.107		THOUSAND OAKS, JCT. RTE. 23 NORTH	18300	199000	193000	18200	196000	192000
07	101	VEN		4.060		THOUSAND OAKS, MOORPARK ROAD	18200	196000	192000	18100	192000	187000
07	101	VEN		5.046		THOUSAND OAKS, LYNN ROAD	18100	192000	187000	13200	184000	180000
07	101	VEN		6.186		THOUSAND OAKS, VENTU PARK ROAD	13200	184000	180000	11900	165000	161000
07	101	VEN		7.017		THOUSAND OAKS, BORCHARD ROAD	11900	165000	161000	10800	147000	145000
07	101	VEN		7.885		THOUSAND OAKS, WENDY DRIVE	10800	147000	145000	10400	141000	132000
07	101	VEN		10.738		CAMARILLO, CAMARILLO SPRINGS ROAD	10400	141000	132000	10300	140000	132000
07	101	VEN		12.298		CAMARILLO, PLEASANT VALLEY ROAD	10300	140000	132000	10500	144000	136000
07	101	VEN		13.848		CAMARILLO, JCT. RTE. 34, LEWIS ROAD	10500	144000	136000	11100	152000	144000
07	101	VEN		14.801		CAMARILLO, CARMEN DRIVE	11100	152000	144000	10900	149000	142000
07	101	VEN		15.888		CAMARILLO, LAS POSAS ROAD	10900	149000	142000	11300	154000	147000
07	101	VEN		17.747		CAMARILLO, CENTRAL AVENUE	11300	154000	147000	10900	149000	141000
07	101	VEN		19.172		OXNARD, ALMOND DRIVE	10900	149000	141000	10600	143000	136000
07	101	VEN		20.077		OXNARD, SANTA CLARA/RICE AVENUES	10600	143000	136000	10000	136000	129000
07	101	VEN		21.010		OXNARD, ROSE AVENUE	10000	136000	129000	10800	146000	139000
07	101	VEN		22.006		OXNARD, JCT. RTE. 232	10800	146000	139000	9800	133000	129000
07	101	VEN		22.729		OXNARD, JCT. RTE. 1 SOUTH	9800	133000	129000	11500	155000	150000
07	101	VEN	R	23.450		VENTURA, JOHNSON DRIVE	11500	155000	150000	10100	137000	132000
07	101	VEN	R	24.645		VENTURA, VICTORIA AVENUE	10100	137000	132000	9500	130000	125000
07	101	VEN		25.966		VENTURA, TELEPHONE ROAD	9500	130000	125000	7500	101000	96000
07	101	VEN		26.390		VENTURA, JCT. RTE. 126	7500	101000	96000	9800	134000	128000
07	101	VEN		28.452		VENTURA, SEAWARD AVENUE	9800	134000	128000	9900	132000	124000
07	101	VEN		29.450		VENTURA, VISTA DEL MAR DRIVE	9900	132000	124000	9900	128000	121000
07	101	VEN		30.147		VENTURA, CALIFORNIA STREET	9900	128000	121000	8500	107000	101000
07	101	VEN		30.906		VENTURA, JCT. RTE. 33	8500	107000	101000	6000	81000	75000
07	101	VEN	R	32.700		SOLIMAR BEACH, SOUTH JCT. RTE. 1	6000	81000	75000	5800	76000	71000
07	101	VEN	R	38.976		SEACLIFF, NORTH JCT. RTE. 1	5800	76000	71000	5900	76000	72000
07	101	VEN	R	43.622		VENTURA/SANTA BARBARA COUNTY LINE	7400	82000	75300			
05	101	SB	R	0.000		VENTURA/SANTA BARBARA COUNTY LINE				7400	82000	75300
05	101	SB	R	0.634		JCT. RTE. 150 EAST	7400	82000	75300	6100	71000	66000
05	101	SB		1.622		EL RINCON	6000	78000	70900	6100	80000	72000
05	101	SB		2.640		CARPINTERIA, CASITAS PASS ROAD	6100	80000	72000	5500	72000	65500
05	101	SB		3.059		CARPINTERIA, LINDEN AVENUE	5500	72000	65500	5900	77000	69200
05	101	SB		3.773		CARPINTERIA, SANTA MONICA ROAD	5900	77000	69200	5500	71000	64500
05	101	SB	R	5.283		SOUTH PADARO LANE	5600	73000	65800	5400	71000	63900
05	101	SB	R	7.138		PADARO LANE	5400	71000	63900	5400	70000	63500
05	101	SB	R	8.264		EVANS AVENUE	5400	70000	63500	5300	69000	62200
05	101	SB		9.003		MONTECITO, SHEFFIELD DRIVE	4700	63000	59600	5200	69000	63300
05	101	SB		10.023		SAN YSIDRO ROAD	4700	69000	63300	5100	75000	68800
05	101	SB		10.536		OLIVE MILL ROAD	5100	75000	68800	5300	71000	64700
05	101	SB		11.407		SANTA BARBARA, JCT. RTE. 225 WEST	6700	70000	63800	6700	89000	81300
05	101	SB		12.754		SANTA BARBARA, JCT. RTE. 144	6800	90000	82300	7900	105000	95900
05	101	SB		13.485		SANTA BARBARA, GARDEN STREET	7900	105000	95900	8300	111000	101000
05	101	SB	R	14.187		SANTA BARBARA, CASTILLO STREET	8300	111000	101000	9200	123000	112000
05	101	SB	R	14.758		SANTA BARBARA, CARRILLO STREET	9200	123000	112000	10500	139000	127000
05	101	SB	R	15.733		SANTA BARBARA, MISSION STREET	10600	140000	128000	11000	147000	134000
05	101	SB		16.552		SANTA BARBARA, JCT. RTE. 225 SOUTHEAST	11100	144000	141000	10800	139000	134000
05	101	SB		17.784		LA CUMBRE ROAD	10800	138000	133000	10800	138000	133000
05	101	SB		18.364		JCT. RTE. 154	11300	144000	139000	9800	124000	120000
05	101	SB		18.924		EL SUENO ROAD	9800	124000	120000	9800	125000	121000
05	101	SB		20.062		TURNPIKE ROAD	9800	125000	121000	9500	121000	117000
05	101	SB		21.414		JCT. RTE. 217 SOUTH	9600	121000	117000	7100	90000	86800
05	101	SB		22.533		FAIRVIEW AVENUE	7100	90000	86800	6300	80000	77100

05	101	SB		23.711	LOS CARNEROS ROAD	6300	80000	77100	5600	72000	69200
05	101	SB		24.762	STORKE ROAD	5400	73000	69300	3300	40500	38700
05	101	SB		26.907	HOLLISTER AVENUE	3300	40500	38700	2700	33000	30900
05	101	SB		33.852	EL CAPITAN BEACH STATE PARK	2600	32000	30400	2600	31000	29600
05	101	SB	R	48.847	LAS CRUCES, JCT. RTE. 1 NORTHWEST	2900	31500	29200	1700	18900	17700
05	101	SB	R	56.463	SANTA ROSA ROAD	1700	18900	17700	1700	18600	17400
05	101	SB	R	57.117	BUELLTON, JCT. RTE. 246	1700	18600	17400	1900	20900	19500
05	101	SB	R	57.552	NORTH BUELLTON	1900	20900	19500	2400	26000	24300
05	101	SB		62.671	ZACA, JCT. RTE. 154 EAST	1900	26000	24300	3100	34500	32100
05	101	SB		70.921	LOS ALAMOS, JCT. RTE. 135 NORTHWEST	3100	34500	32100	2600	33000	30400
05	101	SB		82.183	SANTA MARIA, CLARK AVENUE	3000	33000	30600	4000	45500	41900
05	101	SB		84.336	SOUTH SANTA MARIA	5100	60000	55000	4900	58000	53700
05	101	SB		86.588	BETTERAVIA ROAD	4900	58000	53700	5800	69000	63600
05	101	SB		87.603	EAST STOWELL ROAD	5800	69000	63600	6100	73000	67100
05	101	SB		88.601	SANTA MARIA, JCT. RTE. 166 WEST	6100	73000	67100	6100	72000	66100
05	101	SB		89.693	SANTA MARIA, DONOVAN ROAD	6100	72000	66100	5800	68000	63200
05	101	SB		90.749	JCT. RTE. 135 SOUTH	5800	68000	63200	6900	81000	74900
05	101	SB		90.988	SANTA BARBARA/SAN LUIS OBISPO COUNTY LINE	6900	81000	74900			
05	101	SLO		0.000	SANTA BARBARA/SAN LUIS OBISPO COUNTY LINE				7400	82000	75300
05	101	SLO		0.813	JCT. RTE. 166 EAST	7400	82000	75300	6100	71000	66000
05	101	SLO		4.851	TEFFT STREET	6100	72000	66000	6200	74000	67200
05	101	SLO		7.851	LOS BERROS ROAD	6200	74000	67400	6100	73000	66400
05	101	SLO		12.521	ARROYO GRANDE, BRIDGE STREET	6100	73000	66400	5400	65000	59300
05	101	SLO		13.173	ARROYO GRANDE, JCT. RTE. 227 NORTH	5700	69000	62600	5900	70000	63900
05	101	SLO		13.747	ARROYO GRANDE, BRISCO ROAD	5900	70000	63900	6100	72000	66100
05	101	SLO		14.613	PISMO BEACH, OAK PARK ROAD	6100	72000	66100	6400	77000	69900
05	101	SLO		15.579	PISMO BEACH, PISMO OAKS	6300	76000	69100	7100	85000	77700
05	101	SLO		16.398	PISMO BEACH, SOUTH PISMO BEACH	7800	93000	84900	5900	71000	64500
05	101	SLO		17.756	PISMO BEACH, JCT. RTE. 1 SOUTH	6000	76000	69800	6200	76000	70900
05	101	SLO	R	19.812	NORTH SHELL BEACH	6100	74000	68900	6300	76000	71200
05	101	SLO	R	21.105	AVILA ROAD	6300	76000	71200	6000	73000	68200
05	101	SLO	R	22.289	NORTH AVILA ROAD	6000	73000	68200	6700	81000	76300
05	101	SLO	R	24.296	SANTA FE	6700	81000	76300	6400	77000	72600
05	101	SLO		25.911	SAN LUIS OBISPO, LOS OSOS ROAD	8400	77000	72600	6400	75000	71400
05	101	SLO		27.501	SAN LUIS OBISPO, MADONNA ROAD	5800	69000	64100	7000	79000	74200
05	101	SLO		28.088	SAN LUIS OBISPO, JCT. RTE. 227	7500	84000	78700	6700	75000	70700
05	101	SLO		29.067	SAN LUIS OBISPO, JCT. RTE. 1 NORTH	5900	66000	62100	5100	57000	53400
05	101	SLO		29.375	SAN LUIS OBISPO, CALIFORNIA BOULEVARD	5100	57000	53400	4900	55000	51400
05	101	SLO		29.767	SAN LUIS OBISPO, GRAND AVENUE	4900	55000	51400	4300	48000	45100
05	101	SLO		29.985	SAN LUIS OBISPO, BUENA VISTA	4300	48000	45100	5100	56000	51100
05	101	SLO		30.360	SAN LUIS OBISPO, NORTH CITY LIMITS	5100	56000	51400	5200	57000	52100
05	101	SLO		37.863	JCT. RTE. 58 EAST	7800	54000	50800	7400	52000	48400
05	101	SLO		42.268	SANTA BARBARA ROAD	7400	52000	48400	7900	56000	51700
05	101	SLO		44.008	SANTA ROSA ROAD	7700	55000	50700	8300	59000	54600
05	101	SLO		44.841	CURBARIL AVENUE	8300	59000	54600	9000	64000	59000
05	101	SLO		45.572	ATASCADERO, JCT. RTE. 41	9000	64000	59000	10000	71000	65900
05	101	SLO		45.957	TRAFFIC WAY	10000	71000	65900	10000	71000	65700
05	101	SLO		46.867	SAN ANSELMO ROAD	10000	71000	65700	9700	69000	63600
05	101	SLO		48.331	DEL RIO ROAD	9700	69000	63600	9900	70000	65000
05	101	SLO		49.319	SAN RAMON ROAD	10600	74000	66900	10200	73000	66900
05	101	SLO		50.644	VINEYARD DRIVE	10200	73000	66900	9100	65000	60100
05	101	SLO		51.447	LAS TABLAS AVENUE	9100	65000	60100	9100	65000	59800
05	101	SLO		52.440	TEMPLETON, MAIN STREET	9100	65000	59800	5700	66000	55100
05	101	SLO		54.116	JCT. RTE. 46 WEST	6000	66000	55100	7400	82000	67700
05	101	SLO		55.674	SOUTH PASO ROBLES	7400	82000	67700	4600	51000	42100
05	101	SLO		56.880	PASO ROBLES, 13TH STREET	3800	41500	39600	4300	47000	39000
05	101	SLO		57.920	PASO ROBLES, JCT. RTE. 46 EAST	4300	47000	39000	2400	27500	24900
05	101	SLO		58.762	PASO ROBLES, NORTH PASO ROBLES	2900	31000	25500	3000	31500	25800
05	101	SLO		60.980	HUEY-EXLINE ROAD	2900	29500	26700	3300	34000	26500
05	101	SLO		63.735	SAN MARCOS ROAD	3000	34000	24000	3000	30500	24000
05	101	SLO		65.082	SOUTH SAN MIGUEL	2700	27500	21600	2600	26500	20600
05	101	SLO		65.557	SAN MIGUEL, 10TH STREET	2600	26500	20600	2500	25500	20000
05	101	SLO		67.228	NORTH SAN MIGUEL	2500	25500	20000	2500	26000	20300
05	101	SLO	R	67.712	SOUTH CAMP ROBERTS	2500	26000	20300	2500	26000	20300
05	101	SLO	R	69.322	SAN LUIS OBISPO/MONTEREY COUNTY LINE	2900	29500	20300			
05	101	MON	R	0.000	SAN LUIS OBISPO/MONTEREY COUNTY LINE				3000	32000	21900
05	101	MON	R	0.836	CAMP ROBERTS	2700	27000	21200	2700	27000	21200
05	101	MON	R	2.153	EAST GARRISON	2700	26500	20900	2700	26500	20900
05	101	MON	R	7.937	NORTH BRADLEY	2800	28000	22000	2800	28000	22000
05	101	MON	R	9.667	JOLON ROAD	2900	24300	22100	2800	30500	21400
05	101	MON	R	15.465	SAN BERNARDO	2800	26000	21400	1200	11500	9400
05	101	MON	R	17.856	LOS LOBOS	1200	11500	9400	1200	11500	9400
05	101	MON	R	21.989	SAN ARDO	820	8800	7500	1600	15500	12700
05	101	MON	R	29.883	LOCKWOOD SAN LUCAS ROAD	1600	15500	12700	1600	15500	12700
05	101	MON	R	32.015	SAN LUCAS, JCT. RTE. 198	1700	18000	15300	2100	18000	15900
05	101	MON	R	37.309	WILD HORSE ROAD	2100	18000	15800	2100	17600	15500
05	101	MON	R	39.766	KING CITY, FIRST STREET	2100	17600	15500	2000	16800	14800
05	101	MON	R	40.710	KING CITY, CANAL STREET	2000	16800	14800	1900	20400	15000

05	101	MON	R	41.048	R	BEGIN RIGHT ALIGN				3600	38500	26700		
05	101	MON	R	41.178	R	KING CITY, BROADWAY	3600	38500	26700	4800	51000	35200		
05	101	MON	R	41.954	R	JOLON ROAD, NORTH JCT.	4800	51000	35200	3700	39000	27200		
05	101	MON	R	42.394	R	END RIGHT ALIGN	3700	39000	27200					
05	101	MON	R	41.048	L	BEGIN LEFT ALIGN				4200	45000	31100		
05	101	MON	R	41.166	L	BROADWAY UC	3100	33000	22900	4100	44000	30600		
05	101	MON	R	41.921	L	JOLON ROAD, NORTH JUNCTION	4100	44000	30600	4000	48000	27500		
05	101	MON	R	42.401	L	END LEFT ALIGN	3600	41500	28900					
05	101	MON		47.693		BREAK IN ROUTE								
05	101	MON		47.694		TEAGUE AVENUE	2800	32000	22300	3000	33000	28800		
05	101	MON		52.660		SOUTH GREENFIELD	3000	32000	28800	3000	32000	28400		
05	101	MON		53.359		GREENFIELD, OAK AVENUE	3000	32000	28400	3400	36500	32500		
05	101	MON		53.861		WALNUT AVENUE	3400	36500	32500	3600	39000	34700		
05	101	MON		54.787		NORTH GREENFIELD	3600	39000	34700	3800	41000	36800		
05	101	MON		60.399		ARROYO SECO ROAD	3900	41000	36900	4100	43500	38900		
05	101	MON		61.583		JCT. RTE. 146 EAST	4100	43500	38900	3700	39500	35500		
05	101	MON		62.696		NORTH SOLEDAD	3700	39500	35500	5000	53000	47600		
05	101	MON		64.630		CAMPHORA	5000	53000	47600	4800	52000	46300		
05	101	MON		66.398		SOLEDAD PRISON	4500	54000	46300	4800	57000	49400		
05	101	MON		69.372		GLORIA ROAD	4800	57000	49400	4600	55000	47800		
05	101	MON		70.859		JOHNSON CANYON ROAD/ 5TH STREET	4600	55000	47800	5000	59000	51600		
05	101	MON		72.605		NORTH GONZALES	5000	59000	51600	5700	68000	58900		
05	101	MON		76.973		MAIN STREET	5700	68000	58900	6000	70000	61400		
05	101	MON		82.469		SPENCE	6000	70000	61400	4700	55000	48300		
05	101	MON		85.624		SALINAS, AIRPORT BOULEVARD	4700	55000	48700	5200	61000	53100		
05	101	MON		86.123		SALINAS, SANBORN ROAD	5200	61000	53100	5700	68000	59000		
05	101	MON		86.815		SALINAS, JCT. RTE. 68	6300	75000	64700	7000	83000	72100		
05	101	MON		87.297		SALINAS, EAST MARKET STREET	7000	83000	72100	7500	89000	77600		
05	101	MON	R	88.244		SALINAS, JCT. RTE. 183	7500	89000	77600	6400	77000	72300		
05	101	MON	R	89.265		WEST LAUREL DRIVE	7000	85000	72300	4500	54000	45900		
05	101	MON	R	91.012		BORONDA ROAD	4500	54000	45900	4100	50000	42500		
05	101	MON	R	91.900		SALINAS, ESPINOSA/RUSSELL ROADS	4100	50000	42500	2100	24900	21200		
05	101	MON		95.437		PRUNEDALE JUNCTION, JCT. RTE. 156 WEST	2100	24900	21200	4400	53000	45300		
05	101	MON		96.140		SAN MIGUEL CANYON ROAD	4100	56000	47200	3200	39000	33000		
05	101	MON		100.393		DUNBARTON ROAD	3200	39000	33000	4900	60000	50900		
05	101	MON		101.316		MONTEREY/SAN BENITO COUNTY LINE	6100	74000	62600					
05	101	SBT		0.000		MONTEREY/SAN BENITO COUNTY LINE				8200	96000	83800		
05	101	SBT		0.312	R	BEGIN RIGHT ALIGN				4600	55000	50200		
05	101	SBT		2.998	R	JCT. RTE. 156 EAST	4300	52000	47000	3500	44500	38100		
05	101	SBT		3.173	R	END RIGHT ALIGN	3900	44500	41700					
05	101	SBT		0.312	L	BEGIN LEFT ALIGN				4500	51000	48400		
05	101	SBT		3.049	L	N JCT. RTE. 156	4500	52000	48400	4200	52000	41700		
05	101	SBT		3.229	L	END LEFT ALIGN	4100	46000	40600					
05	101	SBT	R	4.898		JCT. RTE. 129 WEST	5200	56000	51700	6500	72000	63700		
05	101	SBT	R	6.485		LOMERIAS	6500	72000	63700	5000	54000	49000		
05	101	SBT		7.550		SAN BENITO/SANTA CLARA COUNTY LINE	5100	53000	49200					
04	101	SCL		0.028		SAN BENITO/SANTA CLARA COUNTY LINE				6000	71000	63000		
04	101	SCL		3.160		JCT. RTE. 25 EAST	5200	68000	61000	6100	89000	88000		
04	101	SCL	R	4.942		MONTEREY ROAD	6100	89000	88000	5900	96000	87000		
04	101	SCL	R	6.080		GILROY, JCT. RTE. 152 EAST	5900	96000	87000	8300	116000	109000		
04	101	SCL	R	7.532		GILROY, NORTH JCT. RTE. 152 WEST	8300	116000	109000	8800	122000	114000		
04	101	SCL	R	10.270		MASTEN AVENUE	8800	122000	114000	12400	150000	142000		
04	101	SCL	R	12.460		SAN MARTIN	12400	150000	142000	9900	144000	136000		
04	101	SCL	R	15.069		TENNANT AVENUE	9900	144000	136000	9500	137000	130000		
04	101	SCL	R	16.006		EAST DUNNE AVENUE	9500	137000	130000	10000	144000	136000		
04	101	SCL	R	17.820		MORGAN HILL, COCHRANE ROAD	10000	144000	136000	10500	150000	148000		
04	101	SCL	R	26.780		SAN JOSE, JCT. RTE. 85	10800	155000	152000	8700	146000	140000		
04	101	SCL	R	28.609		SAN JOSE, JCT. RTE. 82 NORTH	8700	146000	140000	10900	173000	170000		
04	101	SCL		30.097		HELLYER AVENUE	10900	173000	170000	11700	186000	183000		
04	101	SCL		31.695		SAN JOSE, CAPITOL EXPRESSWAY	10900	173000	170000	14400	232000	228000		
04	101	SCL		33.034		SAN JOSE, TULLY ROAD	14400	232000	228000	16800	274000	270000		
04	101	SCL		34.870		SAN JOSE, JCT. RTE. 280 WEST, JCT. RTE. 680 NORTH	16800	274000	270000	15300	229000	218000		
04	101	SCL	R	35.759		SAN JOSE, JCT. RTE. 130 EAST	15300	229000	218000	13000	190000	181000		
04	101	SCL	R	36.144		SAN JOSE, MC KEE ROAD	13000	190000	181000	13600	213000	202000		
04	101	SCL		37.726		SAN JOSE, OAKLAND ROAD	13600	213000	202000	14000	205000	194000		
04	101	SCL		38.300		SAN JOSE, JCT. RTE. 880	14000	205000	194000	10600	155000	148000		
04	101	SCL		38.800		SAN JOSE, NORTH FOURTH STREET CONNECTIONS	10600	155000	148000	10000	146000	140000		
04	101	SCL		39.285		SAN JOSE, NORTH FIRST STREET	10000	146000	140000	10100	152000	149000		
04	101	SCL		39.925		JCT. RTE. 87	10100	152000	149000	13100	196000	186000		
04	101	SCL		40.701		SAN JOSE, DE LA CRUZ BOULEVARD/TRIMBLE ROAD	13100	196000	186000	13800	205000	197000		
04	101	SCL		41.978		SAN TOMAS EXPRESSWAY	13800	205000	197000	14200	210000	202000		
04	101	SCL		42.734		GREAT AMERICA PARKWAY/ BOWERS AVENUE	14200	210000	202000	13400	199000	194000		
04	101	SCL		43.850		SUNNYVALE, LAWRENCE EXPRESSWAY	13400	199000	194000	13000	192000	189000		
04	101	SCL		44.831		SUNNYVALE, FAIR OAKS AVENUE	13000	192000	189000	12600	181000	178000		
04	101	SCL		45.684		SUNNYVALE, MATILDA AVENUE	12600	181000	178000	11600	174000	168000		
04	101	SCL		46.134		SUNNYVALE, JCT. RTE. 237	11600	174000	168000	13500	194000	188000		
04	101	SCL		47.014		SUNNYVALE, MOFFETT FIELD /ELLIS STREET	13500	194000	188000	13500	195000	188000		
04	101	SCL		47.891		MOUNTAIN VIEW, MOFFETT BOULEVARD	13500	195000	188000	13400	193000	186000		

04	101	SCL		48.103	MOUNTAIN VIEW, JCT. RTE. 85 SOUTH	13400	193000	186000	18000	253000	227000
04	101	SCL		48.974	MOUNTAIN VIEW, MIDDLEFIELD ROAD	18000	253000	227000	15800	221000	220000
04	101	SCL		49.611	MOUNTAIN VIEW, RENGSTORFF AVENUE	15800	221000	220000	15000	209000	206000
04	101	SCL		50.323	PALO ALTO, SAN ANTONIO ROAD	15000	209000	206000	16100	226000	222000
04	101	SCL		52.170	EMBARCADERO ROAD/OREGON AVENUE	16100	226000	222000	15800	222000	218000
04	101	SCL		52.550	SANTA CLARA/SAN MATEO COUNTY LINE	15800	222000	218000			
04	101	SM		0.000	SANTA CLARA/SAN MATEO COUNTY LINE				15800	222000	218000
04	101	SM		0.890	EAST PALO ALTO, UNIVERSITY AVENUE	15800	222000	218000	15500	218000	213000
04	101	SM		1.869	JCT. RTE. 114	15500	218000	213000	14600	204000	203000
04	101	SM		3.592	MENLO PARK, MARSH ROAD	14600	204000	203000	16000	224000	218000
04	101	SM		5.385	REDWOOD CITY, JCT. RTE. 84	16000	224000	218000	15600	219000	213000
04	101	SM		6.623	REDWOOD CITY, WHIPPLE AVENUE	15600	219000	213000	15800	226000	220000
04	101	SM		8.401	HOLLY STREET	15800	226000	220000	16600	234000	233000
04	101	SM		9.552	BELMONT, RALSTON AVENUE	16600	234000	233000	17700	249000	246000
04	101	SM		11.147	SAN MATEO, EAST HILLSDALE BOULEVARD	17700	249000	246000	17500	246000	245000
04	101	SM		11.895	SAN MATEO, JCT. RTE. 92	17500	246000	245000	17000	275000	267000
04	101	SM		12.690	SAN MATEO, KEHOE AVENUE CONNECTION	17000	275000	267000	16900	273000	264000
04	101	SM		13.461	SAN MATEO, THIRD AVENUE	16900	273000	264000	16600	268000	262000
04	101	SM		14.330	SAN MATEO, POPLAR/DORE AVENUE CONNECTIONS	16600	268000	262000	16100	281000	272000
04	101	SM		14.690	SAN MATEO, PENINSULA AVENUE	16100	281000	272000	17800	280000	271000
04	101	SM		16.575	BURLINGAME, BROADWAY	17900	275000	272000	16100	263000	254000
04	101	SM		17.947	MILLBRAE, MILLBRAE AVENUE	16100	263000	254000	15900	258000	250000
04	101	SM		19.120	SAN FRANCISCO AIRPORT	15900	258000	250000	15500	267000	256000
04	101	SM	R	20.719	SOUTH SAN FRANCISCO, JCT. RTE. 380 WEST	15500	267000	256000	15800	264000	254000
04	101	SM		21.691	SB OFF TO PRODUCE/AIRPORT	15800	264000	254000	14500	229000	222000
04	101	SM		21.915	SOUTH SAN FRANCISCO, GRAND AVENUE	14500	229000	222000	15000	235000	230000
04	101	SM		22.713	SOUTH SAN FRANCISCO, OYSTER POINT BOULEVARD	15000	235000	230000	14300	224000	219000
04	101	SM		23.393	S SAN FRANCISCO, OLD BAYSHORE CONNECT	14300	224000	219000	14900	220000	213000
04	101	SM		25.700	BRISBANE, CANDLESTICK PARK CONNECTIONS	15100	222000	215000	14500	223000	219000
04	101	SM		26.107	SAN FRANCISCO/SAN MATEO COUNTY LINE	14500	223000	219000			
04	101	SF		0.000	SAN FRANCISCO/SAN MATEO COUNTY LINE				14500	223000	219000
04	101	SF		0.774	SAN FRANCISCO, THIRD STREET	14500	223000	219000	15700	248000	241000
04	101	SF		1.108	SAN FRANCISCO, PAUL AVENUE CONNECTION	15700	248000	241000	17600	258000	251000
04	101	SF		1.976	SAN FRANCISCO, JCT. RTE. 280	17600	258000	251000	17400	257000	249000
04	101	SF		2.920	SAN FRANCISCO, ARMY STREET	17400	257000	249000	16500	231000	226000
04	101	SF		4.100	SAN FRANCISCO, VERMONT STREET CONNECTION	16500	231000	226000	15800	222000	218000
04	101	SF		4.241	SAN FRANCISCO, JCT. RTE. 80	15800	222000	218000			
04	101	SF	R	4.241 R	SAN FRANCISCO, JCT. RTE. 80, RIGHT ALIGN				7600	111000	105000
04	101	SF	R	4.241 L	SAN FRANCISCO, JCT. RTE. 80, LEFT ALIGN				7600	111000	105000
04	101	SF	T	4.850	BREAK IN ROUTE						
04	101	SF	T	4.860	MARKET ST	3400	48000	47300	3200	45500	44800
04	101	SF	T	5.260	SAN FRANCISCO, ON VAN NESS AVE AT GOLDEN GATE AVE	3200	45000	44300	3300	47000	46300
04	101	SF		5.352	SAN FRANCISCO, TURK STREET	3300	47000	46300	3400	46500	45300
04	101	SF		5.940	SAN FRANCISCO, CALIFORNIA STREET	3350	45500	44300	3350	44000	42800
04	101	SF		6.712	SAN FRANCISCO, LOMBARD STREET	3450	45500	44300	3000	40500	38700
04	101	SF		7.800	SAN FRANCISCO, BRODERICK STREET	3600	48500	46200	3800	51000	48700
04	101	SF		8.440	SAN FRANCISCO, MARINA BOULEVARD	3800	51000	48700	7100	89000	83000
04	101	SF		9.400	SAN FRANCISCO, JCT. RTE. 1	7100	89000	83000	10000	125000	117000
04	101	MRN		0.000	GOLDEN GATE BRIDGE;SF/MRN COUNTY LINE				10000	125000	117000
04	101	MRN		0.318	SAUSALITO ROAD	10000	125000	117000	9600	119000	113000
04	101	MRN		1.677	SAUSALITO, SPENCER AVENUE/ MONTE MAR	9600	119000	113000	9600	119000	113000
04	101	MRN		2.480	SAUSALITO, RODEO AVENUE CONNECTION	9600	119000	113000	9500	117000	112000
04	101	MRN		3.334	WALDO UC	9500	117000	112000	11800	144000	138000
04	101	MRN		4.134	JCT. RTE. 1 WEST	11800	144000	138000	12000	149000	140000
04	101	MRN		4.754	STRAWBERRY POINT CONNECTION/FRONTAGE ROAD	12000	149000	140000	11400	141000	133000
04	101	MRN		5.694	JCT. RTE. 131 EAST	11400	141000	133000	14200	174000	168000
04	101	MRN		7.365	CORTE MADERA, TAMALPAIS DRIVE	14200	174000	168000	14500	178000	170000
04	101	MRN		7.660	CORTE MADERA, MADERA BOULEVARD CONNECTION	14500	178000	170000	14600	179000	171000
04	101	MRN		8.250	CORTE MADERA, LUCKY DRIVE	14600	179000	171000	15700	194000	183000
04	101	MRN		8.600	LARKSPUR, SIR FRANCIS DRAKE BOULEVARD	15700	194000	183000	12900	161000	152000
04	101	MRN		9.960	JCT. RTE. 580	12900	161000	152000	17300	216000	202000
04	101	MRN		10.600	SAN RAFAEL, IRWIN STREET CONNECTION	17300	216000	202000	13100	163000	150000
04	101	MRN		11.250	SAN RAFAEL, MISSION AVENUE CONNECTION	13100	163000	150000	16900	211000	212000
04	101	MRN		12.190	SAN RAFAEL, LINCOLN/ VILLA AVENUES	16900	211000	202000	17500	218000	207000
04	101	MRN		12.694	SAN PEDRO ROAD	17500	218000	207000	16400	205000	195000
04	101	MRN		13.713	MANUEL FREITAS PARKWAY	16400	205000	195000	15700	196000	186000
04	101	MRN		14.707	LUCAS VALLEY ROAD	15700	196000	186000	15000	186000	178000
04	101	MRN		15.570	MILLER CREEK ROAD	15000	186000	178000	14900	185000	174000
04	101	MRN		16.641	HAMILTON FIELD ROAD	14900	185000	174000	13400	167000	157000
04	101	MRN		18.009	IGNACIO BOULEVARD	13400	167000	157000	13200	163000	154000
04	101	MRN		19.085	NOVATO, JCT. RTE. 37 EAST	13200	163000	154000	10800	130000	127000
04	101	MRN	R	20.190	NOVATO, ROWLAND AVENUE	10800	130000	127000	9100	117000	111000
04	101	MRN	R	21.111	NOVATO, DE LONG AVENUE	9100	117000	111000	7800	99000	93000
04	101	MRN	R	22.000	ATHERTON AVENUE	7800	99000	93000	7100	91000	85000
04	101	MRN		26.900	SAN ANTONIO ROAD	7100	91000	85000	7000	89000	84000
04	101	SON		2.232	KASTANIA ROAD	7000	89000	84000	7000	89000	84000
04	101	SON		2.925	SOUTH PETALUMA	7000	89000	84000	6800	83000	82000
04	101	SON		3.664	PETALUMA, SOUTH JCT. RTE. 116 EAST	6800	83000	82000	7900	103000	98000

04	101	SON		4.760	PETALUMA, EAST WASHINGTON STREET	7900	103000	98000	8000	105000	103000
04	101	SON		7.651	PETALUMA, OLD REDWOOD HIGHWAY	8000	105000	103000	8800	123000	117000
04	101	SON		8.800	PEPPER ROAD CONNECTION	8800	123000	117000	8500	119000	115000
04	101	SON		10.666	RAILROAD AVENUE CONNECTION	8500	119000	115000	8400	118000	114000
04	101	SON		11.995	COTATI, SIERRA AVENUE	8400	118000	114000	8000	113000	109000
04	101	SON		12.682	COTATI, NORTH JCT. RTE. 116	8000	113000	109000	9200	125000	119000
04	101	SON		13.830	ROHNERT PARK, ROHNERT PARK EXPRESSWAY	9200	125000	119000	9700	131000	125000
04	101	SON		15.018	ROHNERT PARK, WILFRED AVENUE	9700	131000	125000	9500	128000	121000
04	101	SON		15.528	SANTA ROSA AVENUE	9500	128000	121000	9700	131000	122000
04	101	SON		16.538	TODD ROAD	9700	131000	122000	10000	135000	127000
04	101	SON		18.492	HEARN AVENUE	10000	135000	127000	11000	148000	139000
04	101	SON		19.004	BAKER AVENUE	11000	148000	139000	11900	161000	153000
04	101	SON		19.646	SANTA ROSA, JCT. RTE. 12	11900	161000	153000	10800	144000	135000
04	101	SON		20.095	SANTA ROSA, FOURTH STREET	10800	144000	135000	11400	155000	147000
04	101	SON		20.740	SANTA ROSA, COLLEGE AVENUE	11400	155000	147000	10700	145000	141000
04	101	SON		21.741	SANTA ROSA, STEELE LANE	10700	145000	141000	9800	133000	129000
04	101	SON		22.520	BICENTENNIAL WAY	9800	133000	129000	8300	110000	108000
04	101	SON		22.814	SANTA ROSA, MENDOCINO AVENUE	8300	110000	108000	8300	109000	104000
04	101	SON		23.300	HOPPER AVENUE CONNECTIONS	8300	109000	104000	8900	114000	109000
04	101	SON		24.864	RIVER ROAD	8900	114000	109000	7800	100000	96000
04	101	SON		25.902	FULTON ROAD	7800	100000	96000	7800	100000	96000
04	101	SON		26.326	AIRPORT BOULEVARD	7800	100000	96000	7100	91000	91000
04	101	SON		27.618	SHILOH ROAD	7100	91000	91000	6000	78000	74000
04	101	SON		29.347	WINDSOR RIVER ROAD	6000	78000	74000	5400	65000	61000
04	101	SON		33.476	GRANT AVENUE	4600	56000	52000	4600	56000	52000
04	101	SON		34.551	SOUTH HEALDSBURG	4600	56000	52000	3300	39000	36000
04	101	SON		34.877	HEALDSBURG, WESTSIDE ROAD	3300	39000	36000	3700	44500	40000
04	101	SON		36.274	DRY CREEK ROAD	3700	44500	40000	3100	34000	31000
04	101	SON	R	38.558	LYTTON SPRINGS ROAD	3100	34000	31000	2800	32000	29000
04	101	SON	R	40.027	INDEPENDENCE LANE	2800	32000	29000	2800	32000	29000
04	101	SON	R	41.430	SOUTH GEYSERVILLE	2800	32000	29000	2500	27500	25000
04	101	SON	R	43.373	JCT. RTE. 128 EAST	2500	27500	25000	2400	27000	24000
04	101	SON	R	47.852	ASTI	2400	27000	24000	2400	27000	24000
04	101	SON	R	49.053	DUTCHER CREEK ROAD	2400	27000	24000	2400	27000	24000
04	101	SON	R	50.430	SOUTH CLOVERDALE	2400	27000	24000	2000	23400	20000
04	101	SON	R	51.616	CITRUS FAIR DRIVE	2000	23400	20000	1600	18100	16000
04	101	SON	R	54.201	JCT. RTE. 128 WEST	1600	18100	16000	1500	17200	14000
04	101	SON	R	56.219	SONOMA/MENDOCINO COUNTY LINE	1500	17200	14000			
01	101	MEN	R	0.103	SONOMA/MENDOCINO COUNTY LINE				1500	15100	14200
01	101	MEN		9.170	EAST SIDE ROAD	1200	15500	13500	1200	15500	13500
01	101	MEN		10.810	MOUNTAIN HOUSE ROAD	1200	15500	13500	1400	18200	15000
01	101	MEN		10.890	HOPLAND, JCT. RTE. 175 EAST	1400	17400	14900	1500	18000	16000
01	101	MEN		19.683	EL ROBLE	1450	17700	15700	1500	18000	16000
01	101	MEN		20.711	ROBINSON	1550	18000	16000	1600	18000	16600
01	101	MEN	R	21.590	JCT. RTE. 253 WEST	1600	18000	16600	2000	22000	19700
01	101	MEN	R	21.800	UKIAH, JCT. RTE. 222	2000	22000	19700	2000	22000	19700
01	101	MEN	R	23.450	UKIAH JCT 222 EAST	2000	22000	19700	2200	29500	25400
01	101	MEN	R	24.062	UKIAH, GOBBI STREET	2200	29500	25400	2450	31000	28100
01	101	MEN	R	24.527	UKIAH, EAST PERKINS STREET	2450	31000	28100	3000	39000	32800
01	101	MEN	R	26.161	NORTH STATE STREET	3000	39000	32800	3300	40500	30200
01	101	MEN		27.410	LAKE MENDOCINO DRIVE	3300	40500	30200	3000	34000	28700
01	101	MEN		30.434	MOORE AVENUE	3000	34000	28700	2700	32500	26700
01	101	MEN		30.833	JCT. RTE. 20 EAST	2700	32500	24000	2400	27500	24000
01	101	MEN	R	32.626	WEST ROAD	2300	27500	23700	1750	19700	16900
01	101	MEN	R	43.787	EB 10-128RL	800	8300	6800	800	8300	7200
01	101	MEN	R	48.220	EB 10-174	710	6800	5500	970	9900	7900
01	101	MEN		55.380	LONGVALE ROAD, JCT. RTE. 162 EAST	970	9700	8000	970	9700	8000
01	101	MEN		59.308	JCT RTE 162 EAST	970	9700	8000	800	7500	6500
01	101	MEN		68.780	LAYTONVILLE, SOUTH	960	9800	8000	960	8900	8000
01	101	MEN		69.490	LAYTONVILLE, BRANSCOMB ROAD	950	8800	8000	880	9800	8500
01	101	MEN	R	84.687	JCT. RTE. 271	950	9300	8000	900	9000	7500
01	101	MEN	R	89.565	SCANDIA ROAD	900	9000	7500	740	7500	6500
01	101	MEN	T	91.245	LEGGETT, JCT. RTE. 1	790	7500	6500	700	7600	5400
01	101	MEN	R	101.895	JCT. RTE. 271 NORTH	700	7600	5400	720	7200	5400
01	101	MEN	R	103.818	JCT. RTE. 271	720	7200	5400	800	7700	5600
01	101	MEN	T	106.801	MENDOCINO/HUMBOLDT COUNTY	800	7700	5600			
01	101	HUM	T	0.000	MENDOCINO/HUMBOLDT COUNTY				800	7700	5600
01	101	HUM	T	0.076	TEMPORARY JCT. RTE. 271 SOUTH	800	7700	5600	800	7700	5600
01	101	HUM		1.610	RICHARDSON GROVE	800	7700	5600	800	7700	5600
01	101	HUM	R	8.600	LAKE BENBOW	800	7700	5600	1100	9300	7200
01	101	HUM	R	11.125	GARBERVILLE, SPROWEL CREEK ROAD	1100	9300	7200	800	9300	7300
01	101	HUM	R	11.499	REDWOOD DRIVE	800	9300	7300	800	9300	7300
01	101	HUM	R	14.313	DEAN CREEK	800	9300	7300	900	9500	7500
01	101	HUM	R	17.907	JCT. RTE. 254 NORTHEAST	900	9500	7500	900	9000	6600
01	101	HUM	R	22.435	FRENCH ROAD	900	9000	6600	850	8900	6300
01	101	HUM		25.010	SALMON CREEK ROAD	850	8900	6300	850	9400	6500
01	101	HUM		27.936	JCT. RTE. 254	850	9000	6500	1000	9000	7200
01	101	HUM		33.246	WEOTT	1000	9000	7200	700	8300	6900

01	101	HUM		35.108	JCT. RTE. 254 SOUTH	860	8600	7300	860	8600	7300
01	101	HUM		35.698	SOUTH FORK ROAD	860	8600	7300	1000	10000	7600
01	101	HUM	R	39.667	REDCREST	1000	10000	7600	1100	10000	7900
01	101	HUM	R	43.318	BARKDULL ROAD	1100	10000	7900	1100	10000	8100
01	101	HUM	R	45.902	JCT. RTE. 254 SOUTHWEST	1100	10000	8100	1200	12000	9000
01	101	HUM	R	49.175	SHIVELY ROAD	1200	12000	9000	1100	12000	9300
01	101	HUM	R	50.585	SOUTH SCOTIA ROAD	1100	12000	9300	1100	12000	9100
01	101	HUM	R	51.840	JCT. RTE. 283 NORTHWEST	1100	12000	9100	1300	12700	10300
01	101	HUM	R	52.602	RIO DELL, DAVIS STREET	1300	12700	10300	1300	12800	11000
01	101	HUM	R	53.379	RIO DELL, SCENIC WAY	1300	12800	11000	1600	17000	15500
01	101	HUM		57.690	JCT. RTE. 36 EAST	1600	17000	14900	2000	22900	19700
01	101	HUM		58.690	DRAKE HILL ROAD	2000	22900	19700	2000	22900	19700
01	101	HUM		59.503	FORTUNA, KENMAR ROAD	2000	22900	19700	2300	24000	21500
01	101	HUM		60.493	12TH STREET	2300	24000	21500	2600	28000	24600
01	101	HUM		61.531	FORTUNA OVERHEAD	2600	28000	24600	2600	29000	24700
01	101	HUM		62.229	PALMER BOULEVARD	2600	29000	24700	2500	28500	24400
01	101	HUM		63.099	FINCH CREEK ROAD	2500	28500	24400	2100	23100	20100
01	101	HUM		64.290	JCT. RTE. 211	2100	23100	20100	2400	26000	23600
01	101	HUM		65.947	LOLETA DRIVE	2400	26000	23600	2200	26000	23600
01	101	HUM		68.207	HOOKTON ROAD	2200	26000	23400	2200	24600	22700
01	101	HUM		70.611	FIELDS LANDING OVERHEAD	2200	24600	22700	2900	27000	25300
01	101	HUM		72.031	ORCHARD STREET	2900	27000	25300	3000	28000	26200
01	101	HUM		72.876	KING SALMON AVENUE	3000	28000	26200	3000	30500	26800
01	101	HUM		73.719	SPRUCE POINT	3000	30500	26800	3500	36500	33100
01	101	HUM		74.780	HERRICK AVENUE	3500	36500	33100	2800	32000	29600
01	101	HUM		75.910	EUREKA, MC CULLEN AVENUE	2700	30500	28700	2500	31000	27500
01	101	HUM		76.330	EUREKA, HARRIS STREET	2500	31000	27500	3000	33000	32000
01	101	HUM		76.650	EUREKA, HENDERSON STREET	3000	33000	32000	2700	30000	28100
01	101	HUM		77.299	EUREKA, WABASH AVENUE	2700	30000	28100	2700	30000	28700
01	101	HUM		77.850	EUREKA, SEVENTH STREET	2700	30000	28700	2700	30000	27800
01	101	HUM		77.910	EUREKA, SIXTH STREET	2700	30000	27800	2500	29000	24600
01	101	HUM		77.967	EUREKA, ON FIFTH STREET AT BROADWAY	2500	29000	24600			
01	101	HUM		78.026 R	EUREKA, ON FIFTH ST AT BROADWAY, BEGIN RIGHT ALIGN				1600	12600	12000
01	101	HUM		78.560 R	EUREKA, ON FIFTH STREET AT G STREET	1700	15500	14900	1700	14700	14100
01	101	HUM		78.680 R	EUREKA, ON FIFTH STREET AT I STREET	2000	16800	16100	2000	19400	18500
01	101	HUM		79.126 R	EUREKA, ON FIFTH STREET AT MYRTLE AVENUE	2000	21300	20400	2400	26000	23400
01	101	HUM		79.168 R	EUREKA, ON FIFTH STREET AT JCT. RTE. 255 NORTH	2400	26000	23900	1950	20400	18700
01	101	HUM		79.574 R	EUREKA, END RIGHT ALIGN	1950	20400	18700			
01	101	HUM		77.967 L	EUREKA, ON BROADWAY AT FIFTH ST, BEGIN LEFT ALIGN				1900	13000	12500
01	101	HUM		78.026 L	EUREKA, ON FOURTH STREET AT BROADWAY	1900	13000	12500	1900	12600	12000
01	101	HUM		78.560 L	EUREKA, ON FOURTH STREET AT G STREET	1900	13500	12900	2000	14700	14100
01	101	HUM		78.680 L	EUREKA, ON FOURTH STREET AT I STREET	2000	16600	15900	2000	15500	14800
01	101	HUM		79.060 L	EUREKA, ON FOURTH STREET AT MYRTLE AVENUE	2100	19400	18500	1900	22500	20000
01	101	HUM		79.168 L	EUREKA, ON FOURTH STREET AT JCT. RTE. 255 NORTH	1900	22500	20000	2100	20400	19000
01	101	HUM		79.574 L	EUREKA, END LEFT ALIGN 1100 FT W EUREKA SLOUGH BDGE	2100	20400	19000			
01	101	HUM		79.574	EUREKA, BEGIN HIGHWAY				3400	36500	34800
01	101	HUM		80.260	EUREKA, COLE AVENUE	3900	33500	32200	4000	38000	35900
01	101	HUM		80.840	EUREKA, AIRPORT ROAD	4100	38000	36200	4000	39000	37200
01	101	HUM		82.680	INDIANOLA ROAD	4100	38000	36400	4300	40500	37600
01	101	HUM		83.920	ARCATA, BAYSIDE ROAD	4300	40500	37600	4000	40500	37900
01	101	HUM		85.030	ARCATA, G STREET EXTENSION	4000	40500	38000	4000	40500	38000
01	101	HUM		85.830	ARCATA, JCT. RTE. 255 SOUTH	4000	40500	44000	4500	43000	37600
01	101	HUM		86.501	ARCATA, 14TH STREET	4500	43000	42000	3900	37500	35400
01	101	HUM		86.942	ARCATA, SUNSET AVENUE	3900	37500	35400	4500	46500	44000
01	101	HUM		88.272	ARCATA, JCT. RTE. 299 EAST	4500	46500	44000	3600	36500	33800
01	101	HUM		88.803	ARCATA, GUINTOLI LANE	3600	36500	33800	3700	37500	34000
01	101	HUM	R	90.134	JCT. RTE. 200 EAST	3700	37500	34000	2300	23400	19000
01	101	HUM	R	91.473	MC KINLEYVILLE, SCHOOL ROAD	2300	23400	19000	1850	19500	16100
01	101	HUM	R	93.000	MC KINLEYVILLE, MURRAY ROAD	1850	19500	16100	1450	13300	12500
01	101	HUM	R	93.852	MC KINLEYVILLE, AIRPORT ROAD	1450	13300	12500	1300	13200	10800
01	101	HUM	R	95.620	NORTH CENTRAL AVENUE	1300	13200	10800	1300	14000	10700
01	101	HUM	R	97.020	CRANNELL ROAD	1500	14000	10700	1500	13800	11000
01	101	HUM		98.067	WESTHAVEN DRIVE	1500	13800	11000	1050	12200	8700
01	101	HUM		98.355	SIXTH STREET	1050	12200	8700	1200	12500	8900
01	101	HUM		100.705	TRINIDAD ROAD	1200	12500	8900	690	6600	4800
01	101	HUM	R	103.378	SEAWOOD DRIVE	690	6600	4800	670	6600	4700
01	101	HUM	R	106.069	PATRICKS POINT	670	6600	4700	690	7300	4800
01	101	HUM		108.220	BIG LAGOON PARK ROAD	690	7300	4800	570	6900	4500
01	101	HUM		109.550	GEORGIA PACIFIC ROAD	570	6900	4500	580	7200	4700
01	101	HUM		120.400	SOUTH LIMITS ORICK	580	7200	4700	700	8500	5600
01	101	HUM		121.610	NORTH LIMITS ORICK	700	8500	5600	580	7100	4700
01	101	HUM		122.250	BALD HILLS ROAD	600	7400	4900	600	7400	4900
01	101	HUM		123.730	REDWOOD MILL ROAD	600	7400	4900	690	6300	4400
01	101	HUM		123.820	DAVIDSON ROAD	640	6300	4400	640	6500	4200
01	101	HUM	R	126.098	ENTRANCE TO PRAIRIE CREEK STATE PARK	850	6100	4000	540	5900	3500
01	101	HUM	R	137.144	HUMBOLDT/DEL NORTE COUNTY LINE	540	5900	3500			
01	101	DN	M	0.000	HUMBOLDT/DEL NORTE COUNTY LINE				550	5400	3500
01	101	DN	R	3.560	SOUTH BANK ROAD	600	5400	3900	600	5400	4200

01	101	DN	R	4.638		KLAMATH, JCT. RTE. 169 SOUTHEAST	600	5400	5100	600	5400	4300
01	101	DN		8.176		REQUA ROAD	800	6600	5000	800	6600	4900
01	101	DN		8.804		NEW HUNTER CREEK ROAD	800	6600	4900	800	6600	5100
01	101	DN		10.870		TREES OF MYSTERY	840	8600	7200	620	6300	4100
01	101	DN		23.770		HUMBOLDT ROAD; BLUFF ROAD	600	6500	4700	600	6500	4300
01	101	DN		24.410		SANDMINE ROAD	600	6500	4200	600	6500	4300
01	101	DN		25.840		CRESCENT CITY, ELK VALLEY ROAD	1500	13700	10700	1750	19600	15500
01	101	DN		26.183		CRESCENT CITY, ON M STREET	3300	25500	20000			
01	101	DN		26.183	R	CRESCENT CITY, ON M STREET, BEGIN RIGHT ALIGN				900	12300	9800
01	101	DN		26.211	R	CRESCENT CITY, ON M STREET AT FRONT STREET	700	8200	6700	900	9600	7800
01	101	DN		26.380	R	CRESCENT CITY, ON M STREET AT 4TH STREET	900	9600	7800	900	9700	7900
01	101	DN		26.663	R	CRESCENT CITY, ON M STREET AT 9TH STREET	900	9700	7900	900	9700	8000
01	101	DN		26.771	R	CRESCENT CITY, N OF 9 TH ST, END RIGHT ALIGN	1000	10000	9000			
01	101	DN		26.183	L	CRESCENT CITY, ON L ST AT FRONT ST, BEGIN LEFT ALIGN				990	8800	7100
01	101	DN		26.268	L	CRESCENT CITY, ON L STREET AT FRONT STREET	990	8800	7100	940	9500	7500
01	101	DN		26.437	L	CRESCENT CITY, ON L STREET AT 4TH STREET	990	9500	7500	990	9500	7700
01	101	DN		26.720	L	CRESCENT CITY, ON L STREET AT 9TH STREET	990	9500	7700	990	9300	7500
01	101	DN	L	26.855	L	CRESCENT CITY, END OF L ST, END LEFT ALIGN	990	9300	7500			
01	101	DN		26.813		CRESCENT CITY, NORTH OF 9 TH STREET				2200	23000	20000
01	101	DN		27.010		CRESCENT CITY, NORTHCREST DRIVE	2200	23000	20000	1900	19700	15300
01	101	DN	R	27.872		WASHINGTON BOULEVARD	1900	19700	15300	1200	13500	10900
01	101	DN	R	30.810		JCT. RTE. 199 NORTHEAST	1200	13500	10600	710	8000	8000
01	101	DN		31.188		ELK VALLEY CROSS ROAD	710	8000	6100	800	9000	8000
01	101	DN		36.310		JCT. RTE. 197 SOUTHEAST	880	9300	7200	900	10400	7200
01	101	DN		39.830		FRED HAIGHT DRIVE	900	10400	7200	900	10500	7250
01	101	DN		46.492		OREGON STATE LINE	1000	10900	8800			
07	103	LA		0.000		NB OFF TO HENRY FORD BLVD/LOS ANGELES, JCT. RTE. 47				2100	18200	16900
07	103	LA		0.050		LOS ANGELES, HENRY FORD BOULEVARD	2100	18200	16900	640	5500	5100
07	103	LA		0.900		LOS ANGELES, ANAHEIM STREET	640	5500	5100	1350	11700	10900
07	103	LA		1.590		LOS ANGELES, JCT RTE 1	1350	11700	10900			
03	104	SAC		0.000		JCT. RTE. 99				1200	11900	10700
03	104	SAC		2.610		CHEROKEE LANE	1200	11900	10700	380	5900	5300
03	104	SAC		3.320		BORDEN ROAD	380	5900	5300	310	5150	4550
03	104	SAC		3.870		IVIE ROAD	310	5200	4550	350	3500	3350
03	104	SAC		5.110		ANGLE ROAD	350	3500	3350	690	6500	5900
03	104	SAC		9.215		CLAY EAST ROAD	690	6500	5900	680	6100	5600
03	104	SAC		12.183		RANCHO SECO ROAD	300	2650	2500	190	2050	1850
03	104	SAC		17.688		SACRAMENTO/ AMADOR COUNTY LINE	210	2550	1900			
10	104	AMA		0.000		SACRAMENTO/ AMADOR COUNTY LINE				210	2550	1900
10	104	AMA	R	2.407		MICHIGAN BAR ROAD	290	3450	3150	380	4400	4150
10	104	AMA	R	5.360		PRESTON RD	380	4500	4400	740	5000	4300
10	104	AMA	R	5.766		IONE, JCT. RTE. 124 NORTH	720	10000	9200	980	5500	4900
10	104	AMA	R	5.960		IONE, JCT. RTE. 124 SOUTH	970	9200	6500	620	9800	8200
10	104	AMA	R	6.364		IONE, FOOTHILL BOULEVARD	610	5200	4700	630	5000	4550
10	104	AMA	R	8.201		JCT. RTE. 88	590	5500	5300	530	5300	5200
10	104	AMA		10.072		SUTTER CREEK, JCT. RTE. 49	490	8100	7400			
07	105	LA	R	0.000		LOS ANGELES, LOS ANGELES INTERNATIONAL AIRPORT				4650	66000	61000
07	105	LA	R	0.500		LOS ANGELES, JCT. RTE. 1	4650	66000	61000	8900	131000	119000
07	105	LA	R	1.244		LOS ANGELES, DOUGLAS STREET	8900	131000	119000	10800	164000	152000
07	105	LA	R	2.106		LOS ANGELES, JCT. RTE. 405	10800	164000	152000	16400	235000	226000
07	105	LA	R	3.053		HAWTHORNE, HAWTHORNE BOULEVARD	16400	235000	226000	17100	253000	246000
07	105	LA	R	4.705		INGLEWOOD, CRENSHAW BOULEVARD	17100	253000	246000	17100	280000	271000
07	105	LA	R	6.766		LOS ANGELES, VERMONT AVENUE	17100	280000	271000	15800	263000	251000
07	105	LA	R	7.386		LOS ANGELES, JCT. RTE. 110	15800	263000	251000	15800	266000	246000
07	105	LA	R	8.903		LOS ANGELES, CENTRAL AVENUE	15800	266000	246000	14800	248000	230000
07	105	LA	R	9.775		WILLOWBROOK, WILMINGTON AVENUE	14800	248000	230000	14700	249000	224000
07	105	LA	R	11.506		LYNWOOD, LONG BEACH BOULEVARD	14700	249000	224000	13600	223000	205000
07	105	LA	R	13.471		LYNWOOD, JCT. RTE. 710	13600	223000	205000	12800	203000	197000
07	105	LA	R	14.650		SOUTHGATE, PARAMOUNT BOULEVARD	12800	203000	197000	14500	228000	220000
07	105	LA	R	15.763		DOWNEY, LAKEWOOD BOULEVARD	14500	228000	220000	14300	223000	215000
07	105	LA	R	16.639		DOWNEY, BELLFLOWER. BOULEVARD	14300	223000	215000	14400	225000	215000
07	105	LA	R	17.823		NORWALK, JCT. RTE. 605	14400	225000	215000	1850	21300	19700
07	105	LA	R	18.145		NORWALK, STUDEBAKER ROAD	1850	21300	19700			
07	107	LA		0.000		TORRANCE, JCT. RTE. 1				3700	43500	42500
07	107	LA		0.747		TORRANCE, LOMITA BOULEVARD	4400	52000	51000	5100	62000	61000
07	107	LA		1.410		TORRANCE, SEPULVEDA BOULEVARD	5300	65000	63000	4950	61000	60000
07	107	LA		1.829		TORRANCE, CARSON STREET	4950	61000	60000	5400	68000	66000
07	107	LA		2.250		TORRANCE, TORRANCE BOULEVARD	5400	68000	66000	5600	71000	69000
07	107	LA		3.010		TORRANCE, DEL AMO BOULEVARD	5600	71000	69000	6400	78000	67000
07	107	LA		3.683		TORRANCE, 190TH STREET	6400	78000	67000	6600	81000	70000
07	107	LA		4.696		TORRANCE, ARTESIA BOULEVARD	6600	81000	70000	4450	55000	47500
07	107	LA		4.794		REDONDO BEACH, REDONDO BEACH BOULEVARD	4450	55000	47500	4450	55000	57000
07	107	LA		4.801		REDONDO BEACH, END OF ROUTE	4450	55000	47500			
10	108	STA	R	22.438	R	JCT. RTE. 132, BEGIN RIGHT ALIGN				480	5800	4650
10	108	STA	R	22.921	R	MODESTO, K STREET AT NEEDHAM AVE, END RIGHT ALIGN	480	5800	4650			
10	108	STA	R	22.438	L	JCT 132 9TH ST VIA L ST, BEGIN LEFT ALIGN				480	5900	4850
10	108	STA	R	22.439	L	JCT ST 132 AT 9TH AND L	480	5900	4850	460	5600	4450
10	108	STA	R	22.836	L	MODESTO, L STREET AT NEEDHAM AVE, END LEFT ALIGN	460	5600	4450			

10	108	STA	L	22.836	MODESTO, K STREET AT NEEDHAM AVENUE				1400	18200	15600
10	108	STA	R	23.080	MODESTO, NEEDHAM/ MC HENRY AVENUES	1400	18400	15600	2300	31500	27000
10	108	STA		24.810	MODESTO, BRIGGSMORE AVENUE	3000	33000	30000	3200	40500	37000
10	108	STA		26.060	MODESTO, STANDIFORD/SYLVAN	3200	40500	37000	3150	40500	36000
10	108	STA		27.618	JCT. RTE. 219 WEST	2000	21800	19200	1800	22800	12700
10	108	STA		29.150	LADD ROAD/MC HENRY AVENUE	1600	20100	13300	1400	14400	13600
10	108	STA		31.050	RIVERBANK, OAKDALE ROAD	1600	21300	15000	1750	21500	16700
10	108	STA	R	32.446	RIVERBANK, FIRST STREET	1050	16600	15300	1450	18200	15600
10	108	STA		33.380	CLAUS ROAD	1250	16000	13300	1700	20400	16300
10	108	STA		36.151	CRANE ROAD	1550	17800	17200	1650	18000	17400
10	108	STA		37.310	OAKDALE, OAK AVENUE	1800	20700	16600	1650	19800	16000
10	108	STA		38.236	OAKDALE, EAST JCT. RTE. 120	1200	15100	14000			
10	108	TUO	L	0.000	OAKDALE, EAST JCT. RTE. 120				1000	16100	15200
10	108	TUO	R	0.000	SONORA, JCT. RTE. 49	1000	16100	15200	1900	21400	20200
10	108	TUO	R	2.201	MONO WAY	1600	20000	19300	1750	22500	20800
10	108	TUO		7.511	SOULSBYVILLE ROAD	1350	13800	10500	1350	8800	7900
10	108	TUO	R	9.580	WEST CONNECTION TO TWAIN HART/ LAIN VIEW ROAD	1400	9000	8100	900	9400	8000
10	108	TUO	R	11.752	EAST CONNECTION TO TWAIN HART/CEDAR SPRINGS ROAD	900	9400	8000	1100	11300	8100
10	108	TUO		15.170	CHIEF FULLER ROAD	1000	7400	3150	740	6800	4800
10	108	TUO	R	17.700	WEST LONG BARN CONNECTION	680	5400	3250	560	4800	3600
10	108	TUO	R	19.030	EAST LONG BARN CONNECTION	560	4800	3600	900	7100	4600
10	108	TUO		30.164	MC COY SADDLE	920	6400	4300	920	6000	3400
10	108	TUO		31.930	STRAWBERRY, EAST	780	4500	2050	650	3900	1550
10	108	TUO		36.550	COW CREEK ROAD	800	3250	1300	470	1450	940
10	108	TUO		49.269	CLARKS FORK ROAD	420	1550	800	160	1500	770
10	108	TUO		57.909	KENNEDY MEADOWS ROAD	110	670	660	60	590	500
10	108	TUO		66.972	TUOLUMNE/MONO COUNTY LINE	110	520	440			
09	108	MNO		0.000	TUOLUMNE/MONO COUNTY LINE				170	1100	500
09	108	MNO		7.900	LEAVITT MEADOWS	130	1350	700	320	2550	1320
09	108	MNO		9.600	CAMP CLOUDBURST U S M C	360	2550	1320	350	2950	1560
09	108	MNO		15.149	SONORA JUNCTION, JCT. RTE. 395	160	1500	700			
04	109	SM		1.103	NOTRE DAME AVENUE				4000	31500	30400
04	109	SM		1.870	MENLO PARK, JCT. RTE. 84	4000	31500	30400			
07	110	LA	R	0.745	LOS ANGELES, GAFFEY STREET				3700	54000	52000
07	110	LA	R	0.931	LOS ANGELES, JCT. RTE. 47	3700	54000	52000	5800	74000	71000
07	110	LA	R	1.230	LOS ANGELES, CHANNEL STREET	5800	74000	71000	7500	88000	87000
07	110	LA		2.771	LOS ANGELES, C STREET	7500	88000	87000	7300	92000	88000
07	110	LA		3.264	LOS ANGELES, ANAHEIM STREET	7300	92000	88000	7800	100000	96000
07	110	LA		4.061	LOS ANGELES, JCT. RTE. 1	7800	100000	96000	10700	140000	139000
07	110	LA		5.451	CARSON, SEPULVEDA BOULEVARD	10700	140000	139000	13500	182000	180000
07	110	LA		7.016	CARSON, CARSON STREET	13500	182000	180000	15100	210000	208000
07	110	LA		8.028	CARSON, TORRANCE/DEL AMO BOULEVARDS	15100	210000	208000	15600	222000	220000
07	110	LA		8.775	CARSON, JCT. RTE. 405	15600	222000	220000	21600	276000	271000
07	110	LA		9.870	LOS ANGELES, JCT. RTE. 91	21600	276000	271000	18700	246000	242000
07	110	LA		11.239	LOS ANGELES, REDONDO BEACH BOULEVARD	18700	246000	242000	18800	256000	251000
07	110	LA		11.891	LOS ANGELES, ROSECRANS AVENUE	18800	256000	251000	19000	267000	262000
07	110	LA		12.898	LOS ANGELES, EL SEGUNDO BOULEVARD	19000	267000	262000	18700	272000	267000
07	110	LA		13.820	LOS ANGELES, JCT. RTE. 105	18700	272000	267000	21300	305000	293000
07	110	LA		14.967	LOS ANGELES, CENTURY BOULEVARD	21300	305000	293000	22000	328000	315000
07	110	LA		15.976	LOS ANGELES, MANCHESTER AVENUE	22000	328000	315000	20900	319000	305000
07	110	LA		16.981	LOS ANGELES, FLORENCE AVENUE	20900	319000	305000	20800	323000	309000
07	110	LA		17.514	LOS ANGELES, GAGE AVENUE	20800	323000	309000	20300	321000	308000
07	110	LA		17.980	LOS ANGELES, SLAUSON AVENUE	20300	321000	308000	19300	309000	297000
07	110	LA		18.495	LOS ANGELES, 51ST STREET	19300	309000	297000	20200	315000	306000
07	110	LA		18.998	LOS ANGELES, VERNON AVENUE	20200	315000	306000	19800	315000	307000
07	110	LA		19.502	LOS ANGELES, MARTIN LUTHER KING JR. BOULEVARD	19800	315000	307000	17600	285000	278000
07	110	LA		19.996	LOS ANGELES, EXPOSITION BOULEVARD	17600	285000	278000	16800	276000	270000
07	110	LA		21.444	LOS ANGELES, JCT. RTE. 10	16800	276000	270000	19300	280000	279000
07	110	LA		22.123	LOS ANGELES, OLYMPIC BOULEVARD	19300	280000	279000	20200	292000	291000
07	110	LA		22.360	LOS ANGELES, 8TH/9TH STREETS	20200	292000	291000	19300	279000	278000
07	110	LA		22.834	LOS ANGELES, 5TH/6TH STREETS	19300	279000	278000	20300	292000	291000
07	110	LA		23.040	LOS ANGELES, 3RD/4TH STREETS	20300	292000	291000	19600	279000	278000
07	110	LA		23.727	LOS ANGELES, JCT. RTE. 101	19600	279000	278000	10000	162000	161000
07	110	LA		24.060	LOS ANGELES, FIGUEROA STREET/SUNSET BOULEVARD	10000	162000	161000	11100	171000	170000
07	110	LA		24.310	LOS ANGELES, HILL STREET/STADIUM WAY	11100	171000	170000	12600	187000	185000
07	110	LA	R	25.086	LOS ANGELES, SOLANO AVENUE	6300	94000	92500	6500	93000	91500
07	110	LA	L	25.086	LOS ANGELES, SOLANO AVENUE	6300	94000	91500	6500	93000	91500
07	110	LA		25.751	LOS ANGELES, JCT. RTE. 5	13000	185000	183000	9400	126000	123000
07	110	LA		27.119	LOS ANGELES, AVENUE 43	9400	126000	123000	8600	119000	118000
07	110	LA		28.050	LOS ANGELES, AVENUE 52	8600	119000	118000	8100	112000	109000
07	110	LA		28.375	LOS ANGELES, AVENUE 57/HERMON AVENUE	8100	112000	109000	7600	102000	99000
07	110	LA		28.762	LOS ANGELES, AVENUE 60	7600	102000	99000	7600	102000	99000
07	110	LA		29.028	LOS ANGELES, AVENUE 64	7600	102000	99000	6400	83000	81000
07	110	LA		29.500	LOS ANGELES, YORK BOULEVARD	6400	83000	81000	6400	83000	80000
07	110	LA		29.950	SOUTH PASADENA, BRIDEWELL STREET	6400	83000	80000	6500	82000	79000
07	110	LA		30.587	SOUTH PASADENA, ORANGE GROVE AVENUE	6500	82000	79000	5300	61000	59000
07	110	LA		31.170	SOUTH PASADENA, FAIR OAKS AVENUE	5300	61000	59000	4000	45000	43500
07	110	LA		31.912	PASADENA, GLENARM STREET	4000	45000	43500	4000	45000	43500

07	110	LA		31.913		PASADENA, END FREEWAY	4000	45000	43500				
11	111	IMP	R	0.000		CALEXICO, SOUTH CITY LIMITS, AT MEXICAN BOUNDARY				2300	30500	29500
11	111	IMP	R	0.200		CALEXICO, SECOND STREET	2300	30500	29500	2300	32000	29500
11	111	IMP	R	0.273		THIRD ST	2300	32000	29500	2600	35500	34000
11	111	IMP		0.836		CALEXICO, GRANT STREET (EIGHTH STREET)	2600	35500	34000	2600	35500	34000
11	111	IMP	R	1.183		JCT. RTE. 98	2600	35500	34000	2500	32500	31500
11	111	IMP	R	2.211		COLE ROAD	2600	33500	31500	2850	37500	34500
11	111	IMP	R	4.741		JCT. RTE. 86 WEST	2850	37500	34500	3000	36500	34500
11	111	IMP	R	6.242		MC CABE ROAD	2950	36000	34500	2650	36000	34000
11	111	IMP	R	7.714		JCT. RTE. 8	2650	36000	34000	2800	31500	29500
11	111	IMP	R	9.503		EVAN HEWES HWY	2000	26500	24000	2000	25500	22900
11	111	IMP	R	11.299		ATEN RD	2050	26500	22900	1300	17400	16900
11	111	IMP	R	12.874		WORTHINGTON ROAD	1300	17400	16900	1450	17700	15800
11	111	IMP	R	17.385		KEYSTONE ROAD	1450	17700	15800	1300	16400	15300
11	111	IMP	R	22.015		JCT. RTE. 78	1400	17500	15300	880	8000	7600
11	111	IMP		23.538		SHANK ROAD	880	8000	7600	620	6400	6000
11	111	IMP		23.787		DEL RIO RD. RT. Y	620	6400	6000	630	6500	6000
11	111	IMP		24.682		ANDRE RD. F	620	6400	6000	710	6800	5300
11	111	IMP		26.670		RUTHERFORD ROAD	810	7700	6000	900	8600	6800
11	111	IMP		32.010		CALIPATRIA, SOUTH CITY LIMITS	800	7700	6100	790	7600	6000
11	111	IMP		32.513		JCT. RTE. 115 EAST	750	7200	5700	710	6700	5400
11	111	IMP		32.740		CALIFORNIA STREET	710	6700	5400	860	7800	5900
11	111	IMP		36.090		SINCLAIR ROAD	860	7800	5900	620	5600	3500
11	111	IMP		39.820		NILAND AVENUE	620	5600	3500	400	3550	2800
11	111	IMP		40.400		THIRD STREET	400	3550	2800	470	4100	3150
11	111	IMP		40.710		BEAL ROAD	470	4100	3150	320	3150	2350
11	111	IMP		42.470		ENGLISH ROAD	310	2950	2250	300	2800	2200
11	111	IMP		57.625		BOMBAY BEACH ROAD	260	2200	1700	240	1850	1750
11	111	IMP		65.394		IMPERIAL/RIVERSIDE COUNTY LINE	270	2150	1800			
08	111	RIV		0.001		IMPERIAL/RIVERSIDE COUNTY LINE				240	1900	1650
08	111	RIV		7.670		SALTON SEA STATE PARK ROAD	170	1750	1650	340	3450	3300
08	111	RIV		18.428		MECCA,	580	5700	5000	890	8800	7700
08	111	RIV	R	18.511		LINCOLN ST -RT	570	5800	5500	730	7400	7000
08	111	RIV	R	19.318		JCT RTE 86	730	7400	7000	730	7400	7000
08	111	RIV		47.252		PALM SPRINGS, GOLF CLUB DRIVE	2850	31500	29000	3200	35500	32600
08	111	RIV	T	47.795		EAST PALM CANYON/GENE AUTRY TRAIL	2850	31500	29000	1300	13500	12700
08	111	RIV	T	48.318		GENE AUTRY TR N/O PALM CYN	1300	13500	12700	1250	13500	12700
08	111	RIV	T	49.370		PALM SPRINGS, RAMON ROAD	1250	13500	12700	1950	20100	18900
08	111	RIV	T	51.588		VISTA CHINO	2100	21700	20400	2700	31500	29600
08	111	RIV	T	52.371		PALM SPRINGS, FARRELL DRIVE	2700	31500	29600	2150	25000	23500
08	111	RIV	T	52.876		PALM SPRINGS, SUNRISE WAY	2150	25000	23500	2000	22800	21400
08	111	RIV	T	53.376		PALM SPRINGS, AVENIDA CABALLEROS	2000	22800	21400	1300	15000	14100
08	111	RIV	T	53.627		PALM SPRINGS, VIA MIRALESTE	1300	15000	14100	1300	15000	14100
08	111	RIV	T	53.877		PALM SPRINGS, INDIAN CANYON	1300	15000	14100	990	11400	10700
08	111	RIV	T	53.944		VISTA CHINO @ PALM CNYN	990	11400	10700	2200	20800	18500
08	111	RIV		54.955		PALM SPRINGS, TRAMWAY DRIVE	2000	19100	17000	2000	19100	17000
08	111	RIV	R	63.378		JCT. RTE. 10	1650	15700	14000			
04	112	ALA	R	0.000		SAN LEANDRO, JCT. RTE. 61				2400	31500	31000
04	112	ALA		0.602		JCT. RTE. 880	4400	59000	57800	2800	36400	35600
04	112	ALA		1.507		SAN LEANDRO, SAN LEANDRO BOULEVARD	2500	32000	31200	2100	27500	26900
04	112	ALA		1.782		SAN LEANDRO, JCT. RTE. 185	1600	21000	20400			
04	113	SOL		0.000		JCT. RTE. 12				600	5400	5100
04	113	SOL		11.610		ELMIRA/FRY ROADS	600	5000	4700	400	4000	3700
04	113	SOL		18.950		DIXON, CHERRY STREET	800	8000	7500	1000	9300	8800
04	113	SOL		19.290		DIXON, A STREET	1400	13200	12500	1100	10400	9800
04	113	SOL		19.960		DIXON, NORTH ADAMS STREET	1200	11300	10700	1300	12400	11700
04	113	SOL	R	21.240	R	DIXON, WEST JCT. RTE. 80, BEGIN RIGHT ALIGN				1600	20900	19900
04	113	SOL	R	21.772	R	EAST JCT. RTE. 80 NB	2200	23100	22000	2300	24600	23400
04	113	SOL	R	21.989	R	END RIGHT ALIGN	2200	23700	22500			
04	113	SOL	R	21.653	L	EAST JCT RTE 80, BEGIN LEFT ALIGN			14000	2200	23900	22700
04	113	SOL	R	21.989	L	END LEFT ALIGN	2200	23700	22500			
04	113	SOL	R	22.450		SOLANO/ YOLO COUNTY LINE (PUTAH CREEK BRIDGE)	4400	47000	44700			
03	113	YOL	R	0.000		SOLANO/ YOLO COUNTY LINE (PUTAH CREEK BRIDGE)				4200	46000	43500
03	113	YOL	R	0.420		HUTCHINSON DRIVE	4200	46000	43500	4150	42500	40000
03	113	YOL	R	1.082		DAVIS, RUSSELL BOULEVARD	4150	42500	40000	3650	37000	34700
03	113	YOL	R	2.082		COUNTY ROAD 31	3650	37000	34700	2600	28500	25200
03	113	YOL	R	4.105		COUNTY ROAD 29	2600	28500	25200	2900	31000	27200
03	113	YOL	R	6.114		COUNTY ROAD 27	2900	31000	27200	2350	30500	26000
03	113	YOL	R	7.666		COUNTY ROAD 25	2350	30500	26000	2150	28000	23900
03	113	YOL	R	9.228		GIBSON ROAD	2150	28000	23900	2250	22900	20600
03	113	YOL	R	10.218		WOODLAND, MAIN STREET	2250	22900	20600	1200	9700	8400
03	113	YOL	R	10.720		JCT. RTE. 5	1200	9700	8400	430	4200	3500
03	113	YOL		12.330		COUNTY ROAD P18C	430	4200	3500	380	4200	3650
03	113	YOL		14.089		COUNTY ROAD P100	380	4200	3650	180	2350	1950
03	113	YOL		18.660		COUNTY ROAD P13	180	2350	1950	220	2800	2400
03	113	YOL	M	21.200		COUNTY ROAD 102	220	2800	2400	980	10900	9450
03	113	YOL		21.900		KNIGHTS LANDING, JCT. RTE. 45 NORTH	840	9300	8150	900	8300	6750
03	113	YOL		22.076		YOLO/SUTTER COUNTY LINE	900	8300	6750			

03	113	SUT		0.000		YOLO/SUTTER COUNTY LINE				900	8300	6750
03	113	SUT		2.790		KNIGHTS ROAD	900	8300	6750	770	8200	7150
03	113	SUT		4.860		DEL MONTE AVENUE	770	8200	7150	580	6200	5350
03	113	SUT	R	10.814		SUTTER CAUSEWAY BRIDGE	580	6200	5350	580	6200	5350
03	113	SUT		14.290		GEORGE WASHINGTON BOULEVARD	580	6200	5350	480	4200	3800
03	113	SUT		16.461		JCT. RTE. 99	620	6400	4500			
04	114	SM		5.000		MENLO PARK, JCT. RTE. 101				5100	54000	51000
04	114	SM		5.926		JCT. RTE. 84	5100	54000	51000			
11	115	IMP	R	3.201		JCT. RTE. 8				140	1400	1100
11	115	IMP	R	7.190		KAVANAUGH ROAD	140	1400	1100	210	2300	1350
11	115	IMP	R	9.255		GRAPE AVENUE	210	2300	1350	370	4250	2600
11	115	IMP	L	9.540		WALNUT AVENUE/5TH STREET	370	4250	2600	460	7800	6400
11	115	IMP	L	9.756		HOLT AVENUE	460	7800	6400	560	6300	5400
11	115	IMP	L	10.116		FOURTH STREET	560	6300	5400	520	5800	5400
11	115	IMP	L	11.395		WEST JUNCTION, EVAN HEWES HIGHWAY	680	7300	6700	370	4650	4000
11	115	IMP		21.180		JCT. RTE. 78	250	2800	2400	150	1450	1300
11	115	IMP		25.990		RUTHERFORD ROAD	150	1500	1300	100	940	860
11	115	IMP		30.086		ALBRIGHT ROAD	100	940	860	100	900	830
11	115	IMP		31.630		WIRT ROAD	100	900	830	100	860	760
11	115	IMP		34.517		EAST AVENUE	100	860	760	190	1950	1850
11	115	IMP		34.882		INDUSTRIAL AVENUE	190	1950	1850	420	4450	4150
11	115	IMP		34.964		RAILROAD AVENUE	420	4450	4150	470	4200	4000
11	115	IMP		35.235		CALIPATRIA, JCT. RTE. 111	470	4200	4000			
04	116	SON		0.000		JCT. RTE. 1				500	3200	2500
04	116	SON		4.927		AUSTIN CREEK	1000	6300	5100	900	5600	4500
04	116	SON		7.780		MONTE RIO	900	8600	7400	1200	11600	9900
04	116	SON		11.164		GUERNEWOOD PARK, HULBERT CREEK BRIDGE	1200	11800	10100	1200	11800	10100
04	116	SON	R	12.067		GUERNEVILLE, ARMSTRONG WOODS ROAD	1700	14000	13100	600	4000	2900
04	116	SON		14.050		SANTA NELLA WINERY/ODD FELLOWS ROAD	1500	14000	12700	400	3100	3000
04	116	SON		19.390		FORESTVILLE, MIRABEL ROAD	1500	14000	12200	1600	13600	13300
04	116	SON		21.800		GUERNEVILLE ROAD	1200	13000	11700	1300	11300	11000
04	116	SON		23.050		GRATON/FREI ROADS	1700	14400	14100	2200	18500	18100
04	116	SON	R	24.054		OCCIDENTAL/MOLINO ROADS	2700	23300	22900	1800	18300	17900
04	116	SON		25.690		SEBASTOPOL, COVERT LANE	2100	21300	20900	2300	23700	23300
04	116	SON		26.510		SEBASTOPOL, MAIN STREET	2300	23700	23300	2700	29000	28400
04	116	SON	R	26.650	R	BEGIN RIGHT ALIGN				1500	14900	14600
04	116	SON	R	26.733	R	SEBASTOPOL, JCT. RTE. 12 EAST	1500	14900	14600	1300	13500	12900
04	116	SON	R	27.200	R	SEBASTOPOL, PALM AVENUE	1300	13500	12900	1200	13200	12600
04	116	SON	R	27.300	R	SEBASTOPOL, PETALUMA AVENUE, END RIGHT ALIGN	1200	13200	12100			
04	116	SON	R	26.650	L	SEBASTOPOL, ON MAIN STREET, BEGIN LEFT ALIGN				1300	13500	12900
04	116	SON	R	26.820	L	SEBASTOPOL, JCT. RTE. 12	1300	13800	13200	1300	14200	13500
04	116	SON	R	27.320	L	SEBASTOPOL, PALM AVE, END LEFT ALIGN	1300	14200	13500			
04	116	SON		27.300		SEBASTOPOL, PETALUMA AVENUE				2400	26500	25400
04	116	SON		28.560		BLOOMFIELD ROAD	2400	26500	25400	1700	18800	18000
04	116	SON		30.330		CUNNINGHAM, LONE PINE ROAD	1700	18800	18000	1700	18800	18000
04	116	SON		33.610		STONY POINT ROAD EAST	1600	17800	17100	1800	17000	15700
04	116	SON		35.030		PETALUMA, JCT. RTE. 101	2200	25000	24000			
04	116	SON		35.040		PETALUMA, JCT. RTE. 101				4800	42500	41500
04	116	SON		36.360		FRATES ROAD/CADER LANE	4500	40500	39500	2200	22500	21100
04	116	SON		39.270		LAKEVILLE ROAD	2200	22500	21100	2500	25500	23700
04	116	SON		41.810		ADOBE ROAD	2500	25500	23700	2500	27500	26300
04	116	SON		44.200		WATMAUGH ROAD	2500	27500	26300	2400	24900	23600
04	116	SON		44.840		ARNOLD DRIVE	2400	24900	23600	2200	22000	20900
04	116	SON		46.755		JCT. RTE. 121	2200	22000	20900			
07	118	VEN		0.516		VENTURA, JCT. RTE. 126				3950	39000	36000
07	118	VEN	R	1.019		TELEPHONE ROAD	3950	39000	36000	4250	44500	40000
07	118	VEN		2.200		JCT. RTE. 232	3650	39500	35500	2450	26500	24700
07	118	VEN		4.160		SANTA CLARA AVENUE	2450	26500	24700	1400	15100	14000
07	118	VEN		10.920		JCT. RTE. 34	1150	13100	12200	1800	21500	19500
07	118	VEN		14.686		GRIMES CANYON ROAD	1800	21500	19500	1850	22000	20200
07	118	VEN	R	17.494		MOORPARK, WEST JCT. RTE. 23	2450	31500	29000	3200	38500	38000
07	118	VEN	R	17.905		MOORPARK, EAST JCT. RTE. 23	3200	38500	38000	6900	83000	82000
07	118	VEN	T	19.127		MOORPARK, PRINCETON AVENUE	6900	83000	82000	6600	83000	82000
07	118	VEN	T	19.981		MOORPARK, COLLINS DRIVE	6600	83000	82000	7300	82000	77000
07	118	VEN	R	23.022		SIMI VALLEY, MADERA ROAD	7300	82000	77000	8900	98000	94000
07	118	VEN	R	23.821		SIMI VALLEY, FIRST STREET	8900	98000	94000	10300	114000	108000
07	118	VEN	R	24.808		SIMI VALLEY, ERRINGER ROAD	10300	114000	108000	12100	130000	122000
07	118	VEN	R	25.813		SIMI VALLEY, SYCAMORE DRIVE	12100	130000	122000	11100	140000	129000
07	118	VEN	R	27.304		SIMI VALLEY, TAPO CANYON ROAD	11100	140000	129000	12500	152000	139000
07	118	VEN	R	28.815		SIMI VALLEY, STEARNS STREET	12500	152000	139000	11900	144000	132000
07	118	VEN	R	29.563		SIMI VALLEY, YOSEMITE STREET	11900	144000	132000	11300	138000	126000
07	118	VEN	R	30.521		SIMI VALLEY, KUEHNER DRIVE	11300	138000	126000	11700	121000	119000
07	118	VEN	R	32.427		SIMI VALLEY, ROCKY PEAK ROAD	11700	121000	119000	11600	120000	118000
07	118	VEN	R	32.600		VENTURA/LOS ANGELES COUNTY LINE	11600	120000	118000			
07	118	LA	R	0.000		VENTURA/LOS ANGELES COUNTY LINE				11600	120000	118000
07	118	LA	R	1.799		LOS ANGELES, JCT. RTE. 27	11600	120000	118000	13400	139000	137000
07	118	LA	R	2.680		LOS ANGELES, DE SOTO AVENUE	13400	139000	137000	14300	157000	154000
07	118	LA	R	3.864		LOS ANGELES, PORTER RANCH DRIVE/WINNETKA AVENUE	15100	166000	163000	15400	169000	166000

07	118	LA	R	4.639		LOS ANGELES, TAMPA AVENUE	15400	169000	166000	15700	176000	173000
07	118	LA	R	5.804		LOS ANGELES, RESEDA BOULEVARD	18200	203000	200000	17600	200000	196000
07	118	LA	R	6.800		LOS ANGELES, WHITE OAK AVENUE	17600	200000	196000	19700	224000	220000
07	118	LA	R	7.800		LOS ANGELES, BALBOA BOULEVARD	19700	224000	220000	18500	221000	216000
07	118	LA	R	8.343		LOS ANGELES, HAYVENHURST AVENUE	18500	221000	216000	20300	258000	252000
07	118	LA	R	9.037		LOS ANGELES, WOODLEY AVENUE	20300	258000	252000	19500	252000	245000
07	118	LA	R	9.805		LOS ANGELES, JCT. RTE. 405	19500	252000	245000	20000	251000	244000
07	118	LA	R	10.997	R	BEGIN RIGHT ALIGN				1000	126000	122000
07	118	LA	R	11.447	R	LOS ANGELES, JCT. RTE. 5	10000	126000	122000	7600	85000	82000
07	118	LA	R	11.822	R	LOS ANGELES, END RIGHT ALIGN	7600	85000	82000			
07	118	LA	R	10.997	L	LOS ANGELES, LEFT ALIGN				7600	85000	82000
07	118	LA	R	12.385		LOS ANGELES, SAN FERNANDO ROAD	15100	170000	164000	13900	154000	149000
07	118	LA	R	13.182		LOS ANGELES, GLENOAKS BOULEVARD	13900	154000	149000	10400	119000	115000
07	118	LA	R	14.080		LOS ANGELES, JCT. RTE. 210	10400	119000	115000			
06	119	KER		0.000		TAFT, JCT. RTE. 33				530	5200	4800
06	119	KER		0.340		TAFT, EAST KERN STREET	530	5200	4800	650	6200	5900
06	119	KER		0.830		TAFT, SECOND STREET	650	6200	5900	750	7200	6800
06	119	KER		2.140		HARRISON STREET	570	5400	5200	840	8100	7600
06	119	KER	R	13.290		TUPMAN ROAD	1250	12500	11200	1350	13700	12100
06	119	KER		18.173		JCT. RTE. 43 NORTH	1200	13200	11500	650	6800	6100
06	119	KER		19.773		JCT. RTE. 5	650	6800	6100	740	7400	6800
06	119	KER		25.260		BUENA VISTA ROAD	1050	11900	9800	780	9500	7800
06	119	KER		26.520		EAST LIMITS OLD RIVER	780	9500	7800	1000	11800	10200
06	119	KER		30.410		WIBLE ROAD	1100	13100	11800	1300	15800	14000
06	119	KER		31.283		JCT. RTE. 99	1300	15800	14000			
10	120	SJ	R	0.493		MOSSDALE, JCT. RTE. 5				6800	105000	101000
10	120	SJ	R	1.328		YOSEMITE AVENUE UNDERCROSSING	6800	105000	101000	4500	68000	66000
10	120	SJ	R	3.323		AIRPORT WAY	5700	86000	84000	5300	73000	71000
10	120	SJ	R	5.310		MANTECA ROAD/MAIN STREET	6400	97000	94000	5300	81000	76900
10	120	SJ	T	6.870		SOUTH JCT. RTE. 99	5300	81000	76900	1650	18500	14100
10	120	SJ		6.197		MANTECA, NORTH JCT. RTE. 99	1650	18500	14100	1650	18500	14100
10	120	SJ		6.830		AUSTIN ROAD	1650	18500	14100	1600	17800	13200
10	120	SJ		8.840		JACKTONE ROAD	1250	13800	11200	1450	16300	13400
10	120	SJ		11.640		FRENCH CAMP ROAD	1450	16300	13400	1200	20000	16800
10	120	SJ	R	16.922		ESCALON, MAIN/KERN STREETS	1400	18600	15600	990	18400	15400
10	120	SJ		17.885		ESCALON, DAVID AVENUE	900	16700	14000	1200	13200	8700
10	120	SJ		21.184		SAN JOAQUIN/STANISLAUS COUNTY	1750	14800	13500			
10	120	STA		0.000		SAN JOAQUIN/STANISLAUS COUNTY				1600	13700	12200
10	120	STA		3.160		VALLEY HOME ROAD	1650	14300	12800	2400	29000	28000
10	120	STA		4.346		OAKDALE, A STREET	1850	23000	22000	2300	22100	20700
10	120	STA		5.116		OAKDALE, WEST JCT. RTE. 108	2300	22100	20700	2350	31000	30000
10	120	STA		7.225		DEO GLORIA ROAD	2350	31000	30000	2550	23200	20500
10	120	STA		8.860		ORANGE BLOSSOM ROAD	2100	23500	20800	1650	13500	11900
10	120	STA	T	18.017	R	BEGIN RIGHT ALIGN IN STA CO.				1300	7300	6300
10	120	STA	T	18.168	R	STANISLAUS/TUOLUME COUNTY LINE	1300	7300	6300			
10	120	TUO	R	0.000	R	STANISLAUS/TUOLUME COUNTY LINE				720	7300	6300
10	120	TUO	R	5.782	R	END RIGHT ALIGN	720	7300	6300			
10	120	STA	T	18.160	L	STANISLAUS/TUOLUMNE COUNTY, LEFT ALIGN				760	7300	6300
10	120	TUO	R	0.000	L	STANISLAUS/TUOLUMNE COUNTY LINE, LEFT ALIGN				760	7300	6300
10	120	TUO	R	5.852	L	END LEFT ALIGN	760	7300	6300			
10	120	TUO	R	5.982		KISTLER RANCH UC	1500	16000	12700	1750	16000	13200
10	120	TUO		8.190		LA GRANGE ROAD	1150	12000	9500	1350	15400	12900
10	120	TUO		12.077		EAST JCT. RTE. 108	1650	19400	15600	450	4900	3900
10	120	TUO		15.516		CHINESE CAMP, NORTH JCT. RTE. 49	450	3350	3000	850	6800	4150
10	120	TUO	R	21.803		JACKSONVILLE ROAD	590	4450	4400	670	5100	5050
10	120	TUO	R	23.897		SOUTH JCT. RTE. 49	900	7100	4700	580	5600	5150
10	120	TUO		30.320		WARDS FERRY/BIG OAK ROADS	680	5000	4950	860	5300	5200
10	120	TUO		30.470		BIG OAK FLAT	860	5300	5200	1050	10700	8600
10	120	TUO		32.184		GROVELAND	1050	10700	8600	790	3900	3850
10	120	TUO	R	38.900		HELLS HOLLOW ROAD	1100	9800	7100	1000	5800	3500
10	120	TUO	R	39.459		SMITHS STATION ROAD	850	5500	3100	1400	11100	5700
10	120	TUO	R	41.522		TUOLUMNE/MARIPOSA COUNTY LINE	1400	11100	5700			
10	120	MPA	R	41.522		TUOLUMNE/MARIPOSA COUNTY LINE				1400	12300	6200
10	120	MPA		43.090		BUCK MEADOWS	1400	3900	3750	1400	9000	6200
10	120	MPA		43.749		MARIPOSA/TUOLUMNE COUNTY LINE	1400	9000	6200			
10	120	TUO		43.749		MARIPOSA/TUOLUMNE COUNTY LINE				1400	9000	5500
10	120	TUO		47.250		CHERRY VALLEY ROAD	1050	6400	4000	1000	6300	3900
10	120	TUO	R	56.150		YOSEMITE NATIONAL PARK (WEST BOUNDARY)	1000	6300	3900			
09	120	MNO	R	0.000		TUOLUMNE/MONO COUNTY LINE				400	3600	2200
09	120	MNO	R	8.560		BIG BEND GATE	470	4550	2600	300	3750	2450
09	120	MNO	R	11.050		OLD ROUTE 120 ROAD	230	2900	1900	430	4350	1330
09	120	MNO	R	12.055		NORTH JCT. RTE 395	430	3850	1330	430	4350	1330
09	120	MNO	R	12.056		JCT. RTE. 395	460	4600	1460	140	1200	540
09	120	MNO		51.860		BENTON CROSSING RD	60	500	270	50	390	170
09	120	MNO		58.990		JCT. RTE. 6	70	700	480			
04	121	SON		0.000		JCT. RTE. 37				2250	20000	18900
04	121	SON		6.692		JCT. RTE. 116 WEST	2200	22800	22100	2500	26500	23400
04	121	SON	R	7.438		JCT. RTE. 12 NORTH	2000	25000	22100	2400	22000	20100

04	121	SON		8.120	SCHELLVILLE, EIGHTH STREET	1800	21800	19500	2200	22000	19200
04	121	SON		9.540	RAMAL ROAD	2200	22000	19200	1800	20000	18200
04	121	SON	R	10.788	NAPA ROAD	1800	20000	18200	2600	31000	27300
04	121	SON		11.618	SONOMA/NAPA COUNTY LINE	2600	31000	27300			
04	121	NAP		0.000	SONOMA/NAPA COUNTY LINE				2600	31000	27300
04	121	NAP		1.990	DUHIG ROAD	2600	31000	27300	2700	32500	28900
04	121	NAP		2.180	OLD SONOMA ROAD	2700	32500	28900	2700	32000	28400
04	121	NAP		3.040	CUTTING WHARF ROAD	2500	30500	26800	2700	32000	28400
04	121	NAP	R	4.469	SOUTH JCT. RTE. 29	2700	32000	28400	2700	32000	29400
04	121	NAP	R	4.835	NAPA, JEFFERSON STREET	2800	32000	29100	2800	29000	27300
04	121	NAP	R	5.080	NAPA, SOUTH COOMBS ST	2800	29000	27300	2300	28000	25100
04	121	NAP	R	5.891	JCT. RTE. 221 SOUTH	2700	26000	25400	3500	35500	33100
04	121	NAP		6.554	NAPA, SOSCOL AVENUE	2800	26000	21900	2400	22000	18400
04	121	NAP		7.370	NAPA, THIRD STREET	2400	22000	18400	2000	18000	14900
04	121	NAP		8.250	NAPA, LINCOLN AVENUE	2000	18000	14900	1500	14000	11400
04	121	NAP		9.403	NAPA, TRANCAS STREET	1500	14000	11400	1200	11000	8000
04	121	NAP		10.550	ATLAS PEAK ROAD	1200	11000	8000	1000	7000	6800
04	121	NAP		10.680	VICHY AVENUE	1000	7000	6800	800	4500	4400
04	121	NAP		16.075	WOODEN VALLEY ROAD	1000	6000	4900	700	3600	3000
04	121	NAP		22.083	JCT. RTE. 128	700	3600	3000			
04	123	ALA		0.000	OAKLAND, JCT. RTE. 580				2200	27500	26800
04	123	ALA		1.120	OAKLAND, STANDFORD AVENUE	1700	21900	21500	1600	20300	19900
04	123	ALA		1.906	BERKELEY, JCT. RTE. 13	1800	22400	21900	1900	23600	23100
04	123	ALA		3.150	BERKELEY, UNIVERSITY AVENUE	1500	19200	18800	1600	20700	20300
04	123	ALA		3.980	BERKELEY, GILMAN STREET	1800	22600	22100	1700	22300	21800
04	123	ALA		4.430	ALBANY, MARIN AVENUE	1800	22500	22000	1700	21100	20700
04	123	ALA		4.690	ALBANY, SOLANO AVENUE	2000	25500	24800	2000	24900	24400
04	123	ALA		5.177	ALAMEDA/CONTRA COSTA COUNTY LINE	2400	29500	28900			
04	123	CC		0.000	ALAMEDA/CONTRA COSTA COUNTY LINE				2400	29500	28900
04	123	CC		0.050	EL CERRITO, CARLSON BOULEVARD	2400	29500	28900	1800	22500	22000
04	123	CC		0.290	EL CERRITO, CENTRAL AVENUE	1800	23200	22700	1900	23900	23400
04	123	CC		1.750	EL CERRITO, POTRERO AVENUE	1600	20500	20100	1500	19500	19100
04	123	CC		2.100	CUTTING BOULEVARD	2500	31500	31000	1700	21800	21400
04	123	CC		2.198	RICHMOND, JCT. RTE. 80	1700	21800	21400			
10	124	AMA		0.000	JCT. RTE. 88, IONE SOUTH				320	6100	5800
10	124	AMA	R	2.291	IONE, WEST JCT RTE 104	390	9700	9200	290	3100	2700
10	124	AMA	R	2.420	IONE, RAYMOND DRIVE	320	5300	3000	250	4000	2300
10	124	AMA	R	10.335	WAITES STATION, JCT. RTE. 16	440	3750	3600			
11	125	SD	L	2.447	OTAY RIVER BRIDGE				1350	12200	11400
11	125	SD		3.061	OLYMPIC PARKWAY	2100	18200	16600	2150	23800	22900
11	125	SD		9.587	JCT RTE 54	2750	36500	34500	10000	122000	120000
11	125	SD		9.898	JAMACHA BOULEVARD/PARADISE VALLEY ROAD	9800	120000	117000	8300	112000	111000
11	125	SD		10.622	JAMACHA ROAD UNDERCROSSING	8300	112000	111000	10100	135000	133000
11	125	SD		12.967	EAST JCT. RTE. 94	10100	135000	133000	13000	182000	180000
11	125	SD		14.738	LEMON AVENUE	13000	182000	180000	14500	178000	176000
11	125	SD	R	15.094	LA MESA, GROSSMONT BOULEVARD	14500	178000	176000	13500	168000	166000
11	125	SD	R	15.409	JCT. RTE. 8	13500	168000	166000	8400	105000	104000
11	125	SD		18.663	LA MESA, AMAYA DRIVE	8400	105000	104000	8100	95000	83000
11	125	SD		19.530	NAVAJO ROAD	7400	85000	83000	6600	74000	72000
11	125	SD		20.393	GROSSMONT COLLEGE DRIVE	6600	74000	72000	6200	71000	68000
11	125	SD		22.172	JCT. RTE. 52, SANTEE	6300	71000	68000	3300	34500	32500
11	125	SD		22.301	MISSION GORGE ROAD	3200	33500	32500			
07	126	VEN		0.000	JCT. RTE. 101				4850	49000	47000
07	126	VEN		1.448	VENTURA, VICTORIA AVENUE	4850	49000	47000	4700	48000	46000
07	126	VEN		2.799	VENTURA, KIMBALL ROAD	4700	48000	46000	3750	39000	37500
07	126	VEN	R	5.031	VENTURA, JCT. RTE. 118	3750	39000	37500	4400	54000	51000
07	126	VEN	R	8.912	BRIGGS ROAD	4400	54000	51000	4150	51000	49000
07	126	VEN	R	10.380	SANTA PAULA, PECK ROAD	4150	51000	49000	3500	43500	41500
07	126	VEN	R	11.365	SANTA PAULA, PALM AVENUE	3500	43500	41500	3850	47000	36500
07	126	VEN	R	12.042	SANTA PAULA, JCT. RTE. 150	3850	47000	36500	2550	31500	29500
07	126	VEN	R	13.248	HALLOCK DRIVE	2550	31500	29500	3500	37500	34500
07	126	VEN	T	16.730	SESPE RANCH UNDERCROSSING	3500	37500	34500	3000	32000	29000
07	126	VEN		20.331	FILLMORE, WEST CITY LIMITS, LOS SERENOS ROAD	3000	32000	29000	2550	33000	29000
07	126	VEN		21.137	FILLMORE, JCT. RTE. 23	2700	35000	30500	2350	30000	26500
07	126	VEN		22.480	FILLMORE, EAST CITY LIMITS	2400	30000	26000	2400	30000	26000
07	126	VEN	R	29.296	CENTER STREET	2500	26500	22500	2650	27500	23500
07	126	VEN	R	36.640	VENTURA/LOS ANGELES COUNTY LINE	2650	27500	23500			
07	126	LA	R	0.000	VENTURA/LOS ANGELES COUNTY LINE				2250	26000	22600
07	126	LA	R	3.564	WOLCOTT WAY	2250	26000	22600	2500	29000	25500
07	126	LA	R	4.885	COMMERCE CENTER DRIVE	2500	29000	25500	3600	41500	36500
07	126	LA	R	5.460	THE OLD ROAD	3600	41500	36500	3600	42000	36500
07	126	LA	R	5.801	SANTA CLARITA, NORTH JCT. RTE. 5	3600	42000	36500	2200	30500	28000
07	126	LA	R	5.850	SANTA CLARITA, SOUTH JCT. RTE. 5	2200	30500	28000	2200	30500	28000
07	126	LA		6.036	SANTA CLARITA, TOURNEY ROAD (END OF ROUTE)	2200	30500	28000			
08	127	SBD	L	0.000	JCT. RTE. 15				1050	8900	7400
08	127	SBD	L	0.170	BAKER, JCT HIGHWAY	1050	8900	7400	390	3050	2400
08	127	SBD		0.642	SCHOOL ROAD	390	3050	2400	250	1600	1250
08	127	SBD		29.708	SARATOGA SPRINGS ROAD	250	1600	1250	170	1300	900

08	127	SBD		41.473	SAN BERNARDINO/INYO COUNTY LINE	170	1300	900			
09	127	INY		0.000	SAN BERNARDINO/INYO COUNTY LINE				180	1150	900
09	127	INY		6.510	OLD SPANISH TRAIL HWY	170	1000	750	140	1050	840
09	127	INY		14.749	SHOSHONE, SOUTH JCT. RTE. 178 EAST	170	1450	1100	190	1350	970
09	127	INY		16.249	NORTH JCT. RTE. 178 WEST, SHOSHONE, NORTH	90	680	450	60	480	390
09	127	INY		16.430	NORTH JCT RTE 178 WEST	90	690	520	60	490	370
09	127	INY		41.990	SOUTH OF STATELINE ROAD	60	470	350	180	1550	1170
09	127	INY		42.149	JCT. RTE. 190 WEST	220	1850	1640	120	1050	900
09	127	INY		49.420	NEVADA STATE LINE	100	1100	870			
01	128	MEN		0.000	JCT. RTE. 1				220	2000	1700
01	128	MEN		11.670	FLYNN CREEK ROAD	220	2000	1700	270	2500	2000
01	128	MEN		22.590	WEST LIMITS PHILO	280	2600	2100	540	4200	3900
01	128	MEN	R	26.840	CON CREEK	520	4800	4200	540	4800	3800
01	128	MEN	R	28.090	BOONVILLE STATE HIGHWAY MAINTENANCE STATION	610	5300	4400	610	5300	4400
01	128	MEN		28.400	MOUNTAIN VIEW ROAD	610	5300	4400	730	6200	5000
01	128	MEN		29.576	JCT. RTE. 253 EAST	730	5000	3900	390	2600	2000
01	128	MEN		41.130	YORKVILLE, WEST CITY LIMITS	200	2300	1800	210	2300	1750
01	128	MEN		50.902	MENDOCINO/SONOMA COUNTY LINE	210	2250	1800			
04	128	SON		0.000	MENDOCINO/SONOMA COUNTY LINE				300	4200	3300
04	128	SON	L	4.859	CLOVERDALE, NORTH JCT. RTE. 101	300	4200	3300	400	2900	2800
04	128	SON	L	4.970	CANYON ROAD/OLD REDWOOD HIGHWAY	400	3400	2900	300	3800	3300
04	128	SON	L	5.883	GEYSERVILLE, S JCT RTE OLD 101	500	4600	4000	400	3800	3400
04	128	SON		5.740	RIVER ROAD	500	4200	3600	400	3600	3200
04	128	SON		9.470	GEYSERS ROAD	400	3400	2900	400	3300	3000
04	128	SON		11.490	ALEXANDER VALLEY ROAD	400	3300	2800	400	3100	2800
04	128	SON		11.960	PINE FLAT ROAD	600	5100	4400	400	2900	2600
04	128	SON		15.420	CHALK HILL ROAD	300	2400	2000	300	2700	2400
04	128	SON		21.900	KELLOGG, FRANZ VALLEY ROAD	300	2700	2400	300	2300	2200
04	128	SON		24.761	SONOMA/NAPA COUNTY LINE	400	3300	2800			
04	128	NAP		0.000	SONOMA/NAPA COUNTY LINE				400	3300	2800
04	128	NAP		2.660	TUBBS LANE	400	3500	3000	1100	10600	9100
04	128	NAP		3.620	CALISTOGA, PETRIFIED FOREST ROAD	1400	13300	11500	1400	13600	11700
04	128	NAP		4.550	CALISTOGA, JCT. RTE. 29	1400	12000	11100	600	5200	4100
04	128	NAP		7.370	SILVERADO TRAIL	1300	11100	9500	600	4100	3300
04	128	NAP		11.280	CHILES/POPE VALLEY ROADS	1100	9300	8000	500	3100	2500
04	128	NAP		15.790	LOWER CHILES VALLEY ROAD	900	7600	6500	300	2000	1700
04	128	NAP		19.090	KNOXVILLE ROAD	700	5900	5000	400	1900	1600
04	128	NAP		23.896	JCT. RTE. 121 SOUTH	500	4400	3500	300	1600	1400
04	128	NAP		34.266	NAPA/SOLANO COUNTY LINE	400	3600	2600			
04	128	SOL		0.000	NAPA/SOLANO COUNTY LINE				500	3600	2800
04	128	SOL		0.754	SOLANO/YOLO COUNTY LINE	400	3600	2600			
03	128	YOL		0.000	SOLANO/YOLO COUNTY LINE				460	3500	2300
03	128	YOL		4.590	COUNTY ROAD 86	390	2700	1850	370	2800	2300
03	128	YOL		7.550	COUNTY ROAD 87 E	370	2800	2300	430	4100	3400
03	128	YOL		8.420	WINTERS, FOURTH STREET	890	8500	7200	1100	11200	10800
03	128	YOL		8.770	WINTERS, RAILROAD STREET	1100	11200	10800	1400	14100	14000
03	128	YOL		9.835	JCT. RTE. 505	1400	14100	14000			
05	129	SCR	L	0.000	JCT. RTE. 1				1500	27000	15700
05	129	SCR	L	1.469	MAIN ST	2600	27500	20900	3200	35500	26900
05	129	SCR		0.540	WATSONVILLE, BLACKBURN STREET	2400	28500	21500	1300	16400	13400
05	129	SCR		1.400	LAKEVIEW ROAD	1600	19500	15900	1700	19800	15000
05	129	SCR		3.350	CARLTON ROAD	1200	13100	12600	990	12900	10700
05	129	SCR		7.200	ROGGE LANE	980	13200	11000	1200	10700	10400
05	129	SCR		9.998	SAN BENITO/SANTA CLARA COUNTY LINE	920	10900	10300			
05	129	SBT		0.000	SAN BENITO/SANTA CLARA COUNTY LINE				1400	14600	14500
05	129	SBT	R	2.644	JCT. RTE. 101	2400	20300	14800			
04	130	SCL		3.660	MOUNT HAMILTON ROAD				500	2900	2600
04	130	SCL		6.060	CLAYTON ROAD	200	1100	1000	200	1000	900
04	130	SCL		11.230	QUIMBY ROAD	100	500	400	100	500	400
04	130	SCL		17.240	KINCAID ROAD	100	500	400	100	400	300
04	130	SCL		22.503	MOUNT HAMILTON	100	400	300			
04	131	MRN		0.000	JCT. RTE. 101				5300	51000	48300
04	131	MRN		0.666	STRAWBERRY DRIVE	3500	33600	31500	3600	35000	32100
04	131	MRN		1.860	TIBURON, TRESTLE GLEN DRIVE	2800	27500	25200	2700	27000	24400
04	131	MRN		3.220	TIBURON, SAN RAFAEL AVENUE	2300	22000	20000	1800	17400	15800
04	131	MRN		4.392	MAIN STREET	900	6300	6000			
10	132	SJ		0.000	JCT. RTE. 580				1550	17000	13200
10	132	SJ		0.243	CHRISMAN ROAD	1550	17000	14400	1500	15100	13000
10	132	SJ		3.240	JCT. RTE. 5	1950	19700	17000	1450	15200	14100
10	132	SJ	R	5.860	VERNALIS, JCT. RTE. 33	1900	19700	17600	2950	20200	19500
10	132	SJ		7.108	SAN JOAQUIN/STANISLAUS COUNTY	2350	22900	15000			
10	132	STA		0.000	SAN JOAQUIN/STANISLAUS COUNTY				3650	22900	15000
10	132	STA		8.380	HART ROAD	2200	14000	13000	1200	14400	13400
10	132	STA		11.390	DAKOTA AVENUE	1150	13600	12800	1150	14800	13200
10	132	STA		13.420	MODESTO, CARPENTER ROAD	1100	13100	12200	950	12600	11700
10	132	STA		14.732	MODESTO, JCT. RTE. 99	1450	15100	14300	1000	12000	10400
10	132	STA	L	14.983	JCT. RTE. 108 WEST; L STREET	1000	12000	10400	1000	8700	8650
10	132	STA	L	15.060	JCT. RTE. 108 EAST	1000	8700	8650	1350	16200	14400

10	132	STA	L	15.711	MODESTO, 9TH/D STREETS	1350	16200	14400	1200	13700	12000
10	132	STA		15.340	MODESTO, 14TH/D STREETS	1400	16700	14800	1400	16100	14100
10	132	STA		16.323	MODESTO, LA LOMA AVENUE	1700	20100	18100	2000	18000	17800
10	132	STA		17.140	EL VISTA AVENUE	2000	21000	20200	1950	20500	19200
10	132	STA		18.150	LINCOLN AVENUE	1850	21300	19100	1550	17900	15900
10	132	STA		19.130	MODESTO, CLAUS ROAD	1500	16200	13300	1300	14700	14600
10	132	STA		20.103	EMPIRE, SANTA FE DRIVE/ E STREET	1500	17000	14900	900	10000	9300
10	132	STA		20.352	I ST LT	990	11300	10100	740	8600	7600
10	132	STA		23.144	GEER/ALBERS ROADS	640	8300	7800	1150	11400	10700
10	132	STA		27.220	REINWAY AVE	910	10900	9300	820	10100	8700
10	132	STA		28.000	HICKMAN ROAD/F STREET	560	8000	7900	410	8500	7900
10	132	STA		28.242	TIM BELL ST / BAKER ST	460	7400	7000	460	6300	5500
10	132	STA		29.105	SKYLINE BOULEVARD	360	4750	3300	290	3750	2900
10	132	STA		35.980	ROBERTS FERRY ROAD	250	2300	1700	320	2550	2500
10	132	STA		45.810	LA GRANGE, LA GRANGE RD/COUNTY ROAD J59	270	2800	1700	310	1500	1400
10	132	STA		51.006	STANISLAUS/TUOLUMNE COUNTY LINE	200	1400	1350			
10	132	TUO		0.000	STANISLAUS/TUOLUMNE COUNTY LINE				200	1400	1350
10	132	MPA		3.774	MARIPOSA/TUOLUMNE COUNTY LINE	320	1750	1700			
10	132	TUO		3.774	MARIPOSA/TUOLUMNE COUNTY LINE				250	1950	1250
10	132	TUO		4.020	BONDS FLAT RD LT	250	1950	1400	330	2500	1850
10	132	TUO		5.960	LAS PALMAS WAY RT	330	2500	1850	320	2500	1850
10	132	TUO		6.320	MERCED FALLS RD RT	320	2500	1500	270	2650	1750
10	132	TUO	R	7.580	LOZAND ST/DON PEDRO BAR	310	2450	1450	260	1900	1150
10	132	TUO	R	7.636	TUOLUMNE/MARIPOSA COUNTY LINE	320	1750	1700			
10	132	MPA	R	7.636	TUOLUMNE/MARIPOSA COUNTY LINE				320	1750	1700
10	132	MPA		18.746	COULTERVILLE, JCT. RTE. 49	110	970	870			
12	133	ORA		0.000	LAGUNA BEACH, JCT. RTE. 1				2600	30500	22900
12	133	ORA		0.230	LAGUNA BEACH, N OF CLIFF DRIVE	2600	30000	26000	3050	36000	31400
12	133	ORA		0.962	LAGUNA BEACH, CANYON ACRES DRIVE	3250	37500	33800	2900	37500	33800
12	133	ORA		3.416	LAGUNA BEACH, EL TORO ROAD	3000	39000	38700	2300	28500	20700
12	133	ORA		8.376	JCT. RTE. 405	2900	35000	36100	3700	45000	36100
12	133	ORA		8.927	BARRANCA PARKWAY	3700	45000	39100	3750	44000	37700
12	133	ORA		9.565	IRVINE, JCT RTE 5	3650	44000	37700	5400	46000	45000
12	133	ORA		11.897	IRVINE BOULEVARD	6300	53000	48400	6300	53000	51700
12	133	ORA		13.644	JCT RTE 241	5600	47500	46700			
07	134	LA		0.000	LOS ANGELES, JCT. RTES. 101/170				14000	192000	190000
07	134	LA		0.509	LOS ANGELES, LANKERSHIM BOULEVARD	14000	192000	190000	14300	199000	198000
07	134	LA		0.857	LOS ANGELES, CAHUENGA BOULEVARD	14300	199000	198000	15100	218000	216000
07	134	LA		2.106	BURBANK, HOLLYWOOD WAY	15100	218000	216000	15400	218000	213000
07	134	LA		2.896	BURBANK, RIVERSIDE DRIVE	15400	218000	213000	16200	224000	217000
07	134	LA		3.811	LOS ANGELES, FOREST LAWN DRIVE	16200	224000	217000	15400	238000	234000
07	134	LA		4.811	LOS ANGELES, VICTORY BOULEVARD/RIVERSIDE DRIVE	15400	238000	234000	14800	221000	219000
07	134	LA	R	5.470 R	LOS ANGELES, JCT. RTE. 5, BEGIN RIGHT ALIGN	7400	111000	109500	9500	127000	118500
07	134	LA	R	5.667 R	LOS ANGELES, JCT. RTE. 5, END RIGHT ALIGN	9500	127000	118500			
07	134	LA		4.924 L	BEGIN LEFT ALIGN				7400	111000	109500
07	134	LA	R	5.076 L	LOS ANGELES, JCT. RTE. 5, LEFT ALIGN	7400	111000	109500	9500	127000	118500
07	134	LA	R	5.650 L	END LEFT ALIGN	9500	127000	118500			
07	134	LA	R	5.667	LOS ANGELES, JCT. RTE. 5				18900	253000	237000
07	134	LA	R	6.178	GLENDALE, CONCORD STREET/SAN FERNANDO ROAD	18900	253000	237000	19200	255000	242000
07	134	LA	R	6.574	GLENDALE, PACIFIC AVENUE	19200	255000	242000	19100	251000	240000
07	134	LA	R	7.127	GLENDALE, BRAND BOULEVARD	19100	251000	240000	18900	247000	239000
07	134	LA	R	7.870	GLENDALE, GLENDALE AVENUE	18900	247000	239000	18700	241000	234000
07	134	LA	R	8.256	GLENDALE, VERDUGO ROAD UNDERCROSSING	18700	241000	234000	18700	241000	234000
07	134	LA	R	8.963	GLENDALE, JCT. RTE. 2	18700	241000	234000	16300	211000	205000
07	134	LA	R	11.439	LOS ANGELES, EAGLE ROCK/FIGUEROA STREETS	16300	211000	205000	17100	218000	214000
07	134	LA	R	12.360	PASADENA, SAN RAFAEL AVENUE	17100	218000	214000	18300	224000	220000
07	134	LA	R	12.965	PASADENA, ORANGE GROVE BOULEVARD	18300	224000	220000	18700	225000	220000
07	134	LA	R	13.341	PASADENA, JCT. RTES. 210/710	18700	225000	220000			
05	135	SB		0.000	LOS ALAMOS, JCT. RTE. 101				430	4300	4000
05	135	SB		1.000	OLD STATE HIGHWAY	290	2900	2600	300	2100	1900
05	135	SB	M	9.095	CABRILLO HIGHWAY, JUNCTION OLD ROUTE 1	280	2200	2000	1300	12500	11500
05	135	SB	M	9.605	SAN ANTONIO ROAD	270	2400	2300	350	3100	2900
05	135	SB	M	11.722	SOUTH JCT. RTE. 1	940	8400	7900	1900	7600	7100
05	135	SB	R	9.100	ORCUTT, NORTH JCT. RTE. 1	1900	7600	7100	2000	18000	16900
05	135	SB	R	10.412	EAST CLARK AVENUE	2000	18000	16900	3000	26500	24900
05	135	SB		10.930	FOSTER ROAD	2400	24000	19100	1300	17500	16500
05	135	SB		11.730	LAKEVIEW ROAD/SKYWAY DRIVE	2200	21500	20300	1800	23700	23200
05	135	SB		12.740	MILLER STREET	2100	28000	27200	2500	32000	31300
05	135	SB		13.000	SANTA MARIA WAY	2600	33000	32500	2400	30500	30000
05	135	SB		13.540	BETTERAVIA ROAD	2700	35500	34600	2700	34500	34000
05	135	SB		14.780	SANTA MARIA, STOWELL ROAD	2500	32500	32000	2300	30000	29300
05	135	SB		15.770	N/O MAIN	2100	29000	28000	2000	26000	25000
05	135	SB		15.772	SANTA MARIA, JCT. RTE. 166	1800	23300	22600	2600	25500	22500
05	135	SB		16.770	SANTA MARIA, DONOVAN ROAD	1900	22400	21900	1900	22200	21700
05	135	SB		17.806	SANTA MARIA, JCT. RTE. 101	1800	20800	20500			
09	136	INY		0.000	JCT. RTE. 395				120	950	650
09	136	INY		17.730	JCT. RTE. 190	110	890	530			
06	137	KIN		0.000	JCT. RTE. 43				320	3000	2750

06	137	KIN		2.061	KINGS COUNTY/TULARE COUNTY	330	3200	2800			
06	137	TUL		0.000	KINGS COUNTY/TULARE COUNTY				420	4050	3600
06	137	TUL		1.860	ROAD 28	440	4150	3750	450	4250	3850
06	137	TUL		7.200	ROAD 228	410	3850	3500	230	2100	1900
06	137	TUL		13.280	ROAD 84	310	2950	2700	310	3050	2800
06	137	TUL		14.260	TULARE, SOUTH WEST STREET	530	5600	5200	560	6300	5900
06	137	TUL		14.760	TULARE, PRATT STREET	950	9400	9100	960	9800	9500
06	137	TUL		14.980	SOUTH E STREET	970	9800	9500	1450	14300	13800
06	137	TUL	R	15.381	J ST	1350	13200	12800	770	7200	7000
06	137	TUL	R	15.530	TULARE, SOUTH L STREET	770	7200	7000	660	6000	5800
06	137	TUL	R	15.600	TULARE, M STREET AT INYO	660	6000	5800	230	2200	2100
06	137	TUL	R	15.780	TULARE, HWY TURNS RT ONTO TULARE FR M ST	230	2200	2100	940	9800	9600
06	137	TUL		15.940	"O" ST	940	9800	9600	1200	12200	11800
06	137	TUL		16.116	TULARE, CHERRY AVENUE	1200	12200	11800	1250	12200	11900
06	137	TUL		16.489	TULARE, BLACKSTONE AVENUE	1250	12200	11900	1750	17700	16800
06	137	TUL		16.628	TULARE, JCT. RTE. 99	1750	17700	16800	1850	18700	18100
06	137	TUL		17.010	TULARE, LASPINA STREET (ROAD 112)	1850	18700	18100	1450	16600	16000
06	137	TUL		17.511	TULARE, JCT. RTE. 63 NORTH	1550	16100	15200	1250	13200	12200
06	137	TUL		20.460	LOVERS LANE (ROAD 140)	1050	12000	11100	1000	12100	11200
06	137	TUL		23.897	FARMERSVILLE ROAD (ROAD 168)	1100	12500	11500	1050	12900	11800
06	137	TUL		27.396	JCT. RTE. 65	1050	12900	11800			
07	138	LA		0.000	R JCT. RTE. 5, BEGIN RIGHT ALIGN				410	2550	2225
07	138	LA		1.392	R END RIGHT ALIGN	410	2550	2225			
07	138	LA		0.000	L BEGIN LEFT ALIGN				410	2550	2225
07	138	LA		1.392	L END LEFT ALIGN	410	2550	2225			
07	138	LA		1.711	GORMAN POST RD	810	5100	4450	550	4250	3600
07	138	LA		4.110	OLD RIDGE ROUTE ROAD	550	4250	3600	520	3950	3400
07	138	LA		14.534	245TH ST WEST	450	3800	3250	420	3550	3050
07	138	LA		28.054	110TH STREET WEST	700	3550	3150	620	3100	2750
07	138	LA		36.874	JCT. RTE. 14 NORTH	860	4300	3800	860	4300	3800
07	138	LA		43.418	JCT. RTE. 14 SOUTH	860	4300	3800	3000	36000	35000
07	138	LA		44.424	PALMDALE, SIERRA HIGHWAY	2000	24800	23700	2050	24600	23500
07	138	LA		44.692	PALMDALE, 10TH STREET EAST	2000	24100	23000	1900	22700	21700
07	138	LA		45.710	PALMDALE, 20TH STREET EAST	1900	22700	21700	1800	22200	21100
07	138	LA		46.730	PALMDALE, 30TH STREET EAST	1800	22200	21100	1700	20700	19600
07	138	LA		47.251	PALMDALE, 35TH STREET EAST	1700	20700	19600	1600	19500	18500
07	138	LA	R	48.520	50TH ST/PALMDALE BLVD	1650	20200	19000	930	11800	10700
07	138	LA		51.410	PALMDALE, PEARLBLOSSOM HIGHWAY/AVENUE T	1250	15900	14500	1650	23700	18100
07	138	LA		53.551	LITTLE ROCK CREEK	1600	22600	17200	1600	22600	17200
07	138	LA		56.170	96TH STREET EAST	1350	19500	14900	1400	19700	15000
07	138	LA		60.170	LONGVIEW ROAD	1300	18500	14100	1200	16900	12800
07	138	LA		63.680	165TH STREET EAST	1200	17000	12900	1200	17300	13100
07	138	LA		69.300	JCT. RTE. 18	1300	18500	14000	930	9300	9200
07	138	LA		74.973	LOS ANGELES/SAN BERNARDINO COUNTY LINE	770	9600	9500			
08	138	SBD		0.000	LOS ANGELES/SAN BERNARDINO COUNTY LINE				1300	14500	14000
08	138	SBD		2.906	PHELAN RD LT GREEN RD R	1700	18600	18000	2050	22800	22000
08	138	SBD		5.764	SHEEP CREEK ROAD	2050	22800	22000	2300	25500	24500
08	138	SBD		6.662	JCT. RTE. 2 WEST	2300	25500	24500	2150	24300	23500
08	138	SBD	R	15.203	JCT. RTE. 15	2150	24300	23500	720	7500	6500
08	138	SBD	R	23.959	JCT. RTE. 173 EAST	660	6900	6000	170	1750	1650
08	138	SBD	R	26.478	CLEGHORN CANYON ROAD	170	1750	1650	170	1750	1650
08	138	SBD		33.660	OLD MILL ROAD	170	1750	1650	190	1950	1850
08	138	SBD		35.740	WATERS DRIVE	190	1950	1850	600	6100	5800
08	138	SBD		36.270	CRESTLINE, KNAPPS CUTOFF	600	6100	5800	310	3200	3000
08	138	SBD		36.710	CRESTLINE, CREST FOREST DRIVE	410	4250	4000	700	7200	6800
08	138	SBD	R	37.848	JCT. RTE. 18	770	7800	7400			
02	139	LAS		0.000	SUSANVILLE, JCT. RTE. 36				640	6400	6200
02	139	LAS		1.420	LASSEN COLLEGE	380	3550	3450	120	1150	950
02	139	LAS		2.340	SUSANVILLE DUMP	120	1150	950	100	1200	600
02	139	LAS		61.460	COUNTY ROAD A-2	110	830	570	110	960	660
02	139	LAS		66.635	LASSEN/MODOC COUNTY LINE	110	960	660			
02	139	MOD		0.000	LASSEN/MODOC COUNTY LINE				110	960	660
02	139	MOD	R	0.231	JCT. RTE. 299	110	960	660	160	1450	1100
02	139	MOD		17.350	LOOKOUT/HACKMORE ROADS	160	1450	1100	180	1750	1350
02	139	MOD		40.450	COUNTY ROAD TO MALIN	180	1750	1350	150	2250	1900
02	139	MOD		44.505	NEWELL	150	2250	1900	260	2850	2400
02	139	MOD		50.684	MODOC/SISKIYOU COUNTY LINE	260	2850	2400			
02	139	SIS		0.000	MODOC/SISKIYOU COUNTY LINE				260	2850	2400
02	139	SIS		1.040	TULELAKE, EAST/WEST ROADS	260	2850	2400	510	4600	3300
02	139	SIS		5.042	JCT RTE 161	510	4600	3300	270	3900	2800
02	139	SIS		5.043	OREGON STATE LINE, JCT RTE 161 W	270	3900	2800			
10	140	MER		0.000	JCT. RTE. 5				110	1900	1400
10	140	MER		3.199	WHITWORTH RD	140	1800	1050	170	1950	1300
10	140	MER		4.194	GUSTINE, WEST JCT. RTE. 33	180	1750	1700	370	510	4950
10	140	MER		5.000	GUSTINE, LINDEN AVE	390	5100	5000	410	6000	5600
10	140	MER		5.790	GUSTINE, FOURTH AVENUE	420	8100	5500	680	8600	7200
10	140	MER		6.060	GUSTINE, EAST JCT. RTE. 33	550	8000	7100	480	4800	4100
10	140	MER		6.830	KNIEBES ROAD	340	4050	3650	470	4050	4000

10	140	MER		16.220	JCT. RTE. 165	390	4800	4550	250	4500	4400
10	140	MER		23.435	LINCOLN BOULEVARD	380	3900	3850	440	3750	3700
10	140	MER		29.470	APPLEGATE ROAD	530	5500	5400	620	5800	5600
10	140	MER		31.510	BUHACH ROAD	440	5400	5300	510	6900	6800
10	140	MER		33.550	FRANKLIN ROAD	500	6300	5500	590	7100	7050
10	140	MER		35.030	MERCED, MASSACIO STREET	580	7500	6000	600	7700	6000
10	140	MER		35.552	MERCED, X STREET	590	9600	9000	950	14500	12700
10	140	MER		35.780	MERCED, JCT. RTES. 99/59	1300	15000	14200	1650	18000	14700
10	140	MER		35.879	MERCED, GLEN AVENUE/ MOTEL DRIVE	1450	22700	19100	1100	13000	12200
10	140	MER		36.700	MERCED, PARSONS AVENUE	1150	13500	12500	1000	12200	11400
10	140	MER		37.400	MERCED, SANTA FE AVENUE	850	10300	9750	730	8800	8700
10	140	MER		43.700	PLANADA ROAD	760	8600	8500	620	8100	8000
10	140	MER		50.301	MERCED/MARIPOSA COUNTY LINE	590	4650	3900			
10	140	MPA		0.000	MERCED/MARIPOSA COUNTY LINE				590	4650	3900
10	140	MPA		9.500	HORNITOS ROAD	620	6200	3450	680	7000	5200
10	140	MPA		21.224	MARIPOSA, SOUTH JCT. RTE. 49	940	13400	11800	960	11500	9600
10	140	MPA		21.380	MARIPOSA, SIXTH ST	900	11500	9300	550	11100	9800
10	140	MPA		22.001	MARIPOSA, JCT RTE 49 NORTH	870	9100	8400	520	6500	5500
10	140	MPA		26.290	TRIANGLE ROAD	220	3650	3600	410	3350	3300
10	140	MPA		28.950	OAK ROAD	360	3150	3100	380	3150	3100
10	140	MPA		29.689	COLORADO ROAD	310	3700	2650	150	1850	1400
10	140	MPA		34.070	BRICEBURG STATION	120	3800	2500	160	3800	2500
10	140	MPA		48.170	FORESTA RD LT	130	2950	2900	120	2950	2900
10	140	MPA		50.320	EL PORTAL ROAD	380	3000	2900	120	1850	1200
10	140	MPA		51.803	YOSEMITE NATIONAL PARK	230	4050	2800			
12	142	ORA	R	0.753	JCT. RTE. 90				1700	16100	15700
12	142	ORA	R	1.410	BIRCH STREET/ROSE ROAD	1700	16100	15200	1850	16200	15700
12	142	ORA	R	1.768	CARBON CANYON ROAD EAST OF VALENCIA AVENUE	1900	16200	15700	2600	22300	21900
12	142	ORA		2.860	CARBON CANYON PARK ENTRANCE	2600	22300	21900	2600	23000	22000
12	142	ORA		4.270	OLINDA CREEK	2200	19800	18900	2200	19700	18900
12	142	ORA		6.350	ORANGE/SAN BERNARDINO COUNTY LINE	1650	15900	15000			
08	142	SBD		0.000	ORANGE/SAN BERNARDINO COUNTY LINE				1650	15900	15000
08	142	SBD	R	3.865	CHINO HILLS BL / RUSTIC	2050	19400	18300	3400	32500	30400
08	142	SBD		4.400	PEYTON DRIVE	3400	32500	30400	2950	28000	26400
08	142	SBD		5.428	PIPELINE AVENUE	3350	32000	30000	3650	39500	38500
08	142	SBD		5.782	JCT. RTE. 71	3850	41500	40500			
05	144	SB		0.890	SANTA BARBARA, SYCAMORE CANYON ROAD				350	3900	3500
05	144	SB		1.953	SANTA BARBARA, JCT. RTE. 192	310	3600	3100			
06	145	FRE		0.000	JCT. RTES. 5 AND 33				320	3050	2650
06	145	FRE		10.324	EXCELSIOR AVENUE	420	3750	3500	440	3750	3500
06	145	FRE		13.212	JCT. RTE. 269	600	5500	4800	680	6700	5300
06	145	FRE		15.220	CERINI ROAD	680	6700	5300	680	6700	5300
06	145	FRE		17.270	ELKHORN AVENUE	570	5800	5200	670	6500	6100
06	145	FRE		20.280	KAMM AVENUE	670	6500	6100	740	7200	6700
06	145	FRE		20.650	COLORADO ROAD	740	7200	6700	650	6200	5900
06	145	FRE		25.085	MADERA AVENUE	650	6200	5900	240	2400	2200
06	145	FRE		26.090	MANNING AVENUE	240	2400	2200	290	3550	3300
06	145	FRE		30.110	AMERICAN AVENUE	370	4650	4300	530	6600	6200
06	145	FRE		33.631	KERMAN, CHURCH AVENUE	640	8000	7500	610	8000	7500
06	145	FRE		34.150	R WEST A ST, BEGIN RIGHT ALIGN				320	4000	3850
06	145	FRE		34.290	R KERMAN, C ST., END RIGHT ALIGN	320	4000	3850			
06	145	FRE		34.150	L WEST A ST, BEGIN LEFT ALIGN				320	4000	3850
06	145	FRE		34.290	L KERMAN, C STREET, END LEFT ALIGN	320	4000	3850			
06	145	FRE		34.290	KERMAN, C ST.				830	10500	10100
06	145	FRE		34.370	KERMAN, D STREET	830	10500	10100	830	11100	10100
06	145	FRE		35.149	KERMAN, JCT. RTE. 180	1250	13100	12400	990	10500	8900
06	145	FRE		36.154	BELMONT AVENUE	990	10500	8900	1000	9800	9200
06	145	FRE		40.166	SHAW AVENUE	830	8000	7500	600	6900	6600
06	145	FRE	R	41.283	FRESNO/MADERA COUNTY LINE	600	6900	6600			
06	145	MAD	R	0.000	FRESNO/MADERA COUNTY LINE				600	6900	6600
06	145	MAD		7.060	AVENUE 12 (POLE LINE ROAD)	780	7200	6100	760	7700	7200
06	145	MAD		8.060	AVENUE 13	1250	12800	12100	1400	14300	13500
06	145	MAD		8.560	AVENUE 13 1/2 (ALMOND AVENUE)	1400	14300	13500	1650	18000	16300
06	145	MAD		9.077	MADERA, JCT. RTE. 99	1650	18000	16300	1500	16500	15100
06	145	MAD		9.317	MADERA, F STREET	1500	16500	15100	1500	16500	15100
06	145	MAD		9.600	MADERA, SIXTH STREET	1500	16600	15200	1350	14800	13500
06	145	MAD		9.680	MADERA, YOSEMITE AVENUE	1300	14800	12900	1550	17200	15500
06	145	MAD		9.910	MADERA, C STREET	1550	17200	15500	1550	17200	15600
06	145	MAD		10.150	MADERA, LAKE STREET	1600	17000	15900	1650	17700	16500
06	145	MAD		11.020	MADERA, TOZER STREET	1100	11200	10700	960	12200	11300
06	145	MAD		13.660	RIVER ROAD (COUNTY ROAD 400)	870	12200	10300	630	7900	7000
06	145	MAD		25.459	JCT. RTE. 41	540	6700	6000			
05	146	MON		3.480	METZ ROAD				40	750	440
05	146	MON		10.080	MONTEREY/SAN BENITO COUNTY LINE	40	700	410			
05	146	SBT		10.080	MONTEREY/SAN BENITO COUNTY LINE				100	500	430
05	146	SBT		15.152	JCT. RTE. 25	150	580	510			
02	147	PLU		0.000	CANYON DAM, JCT. RTE. 89				150	1300	970
02	147	PLU		7.370	BIG SPRINGS ROAD	120	1950	1150	140	1350	1050

02	147	PLU		9.891		PLUMAS/LASSEN COUNTY LINE	140	1350	1050				
02	147	LAS		0.000		PLUMAS/LASSEN COUNTY LINE				140	1350	1050	
02	147	LAS		1.140		COUNTY ROAD A-21	180	1550	1250	110	1100	860	
02	147	LAS		1.790		JCT. RTE. 36	110	1100	860				
03	149	BUT	R	0.000		JCT. RTE. 70				2000	19900	19000	
03	149	BUT	R	3.107		SHIPPEE LT/OPENSHAW RT	2000	20100	18900	2000	20100	18900	
05	150	SB	R	0.000		CARPINTERIA, JCT. RTE. 101				1500	6400	5400	
05	150	SB		2.197		SANTA BARBARA/VENTURA COUNTY LINE	920	3900	3300				
07	150	VEN		0.000		SANTA BARBARA/VENTURA COUNTY LINE				260	2900	2750	
07	150	VEN		11.270		SANTA ANA ROAD	260	2900	2750	330	3200	2800	
07	150	VEN	R	14.113		RICE ROAD	890	6900	6300	920	8700	8000	
07	150	VEN	R	14.406		JCT. RTE. 33 SOUTH	950	10800	10300	1750	20300	19400	
07	150	VEN		15.021		LOMA DRIVE	1750	20300	19400	1550	19800	18800	
07	150	VEN		16.076		OJAI, HERMOSA ROAD	1550	19800	18800	1550	19800	18800	
07	150	VEN		16.577		OJAI, JCT. RTE. 33 NORTH	1550	19800	18800	2250	23100	22500	
07	150	VEN		17.486		OJAI, VENTURA STREET	2300	22700	22100	1950	18800	18300	
07	150	VEN		18.581		OJAI, GRIDLEY/OAK GLEN ROADS	810	7500	7200	760	6700	6500	
07	150	VEN		19.040		GORHAM ROAD	760	6700	6500	640	5400	5300	
07	150	VEN		19.930		REEVES ROAD	640	5400	5300	350	2900	2800	
07	150	VEN		22.481		HAPPY VALLEY SCHOOL ROAD	340	3100	2900	300	2950	2800	
07	150	VEN		31.950		SANTA PAULA, NORTH CITY LIMIT	370	3900	3650	370	3900	3650	
07	150	VEN		34.100		SANTA PAULA, MAIN STREET	1400	16200	15300	1350	16100	15400	
07	150	VEN		34.398		SANTA PAULA, JCT. RTE. 126	1350	16100	15400				
02	151	SHA		0.000		SHASTA DAM				70	340	280	
02	151	SHA		3.781		LAKE BOULEVARD	70	340	280	330	2900	2050	
02	151	SHA		4.450		TOYON	330	2900	2050	380	3950	2750	
02	151	SHA		5.508		SOUTHERN PACIFIC RAILROAD UNDERPASS	620	6800	4750	620	6800	4750	
02	151	SHA		5.620		BEGIN INDEPENDENT ALIGN AT ASHBY ROAD	620	6800	4750				
02	151	SHA	R	5.620	R	BEGIN RIGHT ALIGN AT ASHBY ROAD				670	7000	4900	
02	151	SHA	R	5.931	R	ON SHASTA DAM BLVD AT HARDENBROOK AVE	670	7000	4900	710	6700	4650	
02	151	SHA	R	5.994	R	ON SHASTA DAM BOULEVARD; END RIGHT ALIGN	710	6700	4650				
02	151	SHA	R	5.620	L	ASHBY RD, BEGIN LEFT ALIGN				660	6000	4200	
02	151	SHA	R	5.930	L	On Front Street at Hardenbrook Avenue	660	6000	4200	410	6100	4300	
02	151	SHA	R	5.993	L	Front Street/Shasta Dam Boulevard, END LEFT ALIGN	410	6100	4300				
02	151	SHA		6.790		CASCADE BOULEVARD	1300	13500	13300	1350	13900	13700	
02	151	SHA	R	6.924		JCT. RTE. 5, PROJECT CITY	1350	13900	13700				
05	152	SCR	T	0.310		WATSONVILLE, JCT. RTE. 1				3100	31500	31000	
05	152	SCR	T	0.676		GREEN VALLEY RD	3100	34000	31400	4400	36000	34100	
05	152	SCR	T	2.500		WATSONVILLE, FREEDOM BLVD	4400	36000	34100	2800	30000	27900	
05	152	SCR	T	2.803		WATSONVILLE, MAIN STREET AT EAST LAKE STREET	2900	30000	28900	3700	33000	31800	
05	152	SCR	T	2.929		WATSONVILLE, ON EAST LAKE STREET AT MAIN STREET	3500	32000	30800				
05	152	SCR	T	2.929	R	WATSONVILLE, ON EAST LAKE STREET AT MAIN STREET				1400	12100	11000	
05	152	SCR	T	3.273	R	EAST BEACH ST AT LINCOLN, END RIGHT ALIGN	1200	10800	9700				
05	152	SCR	T	2.929	L	WATSONVILLE, EAST LAKE ST/MAIN ST, BEGIN LEFT ALIGN				1200	11200	10100	
05	152	SCR	T	3.273	L	WATSONVILLE, EAST LAKE ST/LINCOLN, END LEFT ALIGN	2400	21900	19600				
05	152	SCR		0.257		EAST BEACH ST AT LINCOLN				1600	14900	13500	
05	152	SCR		0.380		WATSONVILLE, ON EAST LAKE STREET AT LINCOLN STREET	1600	14900	13500	1900	22300	20200	
05	152	SCR		0.383		ON EAST LAKE ST AT LINCOLN ST	1900	22300	20200	2200	21800	19300	
05	152	SCR		0.714		BECK AVENUE	2200	21800	19300	2500	22800	21100	
05	152	SCR	R	1.995		HOLOHAN/COLLEGE ROADS	2500	19500	19100	1600	20700	16500	
05	152	SCR		3.690		CARLTON/CASSERLY ROAD	1200	14400	10300	1100	13300	8400	
05	152	SCR		8.290		SANTA CRUZ/SANTA CLARA COUNTY LINE	820	8800	7400				
04	152	SCL		0.000		SANTA CRUZ/SANTA CLARA COUNTY LINE				900	7600	6700	
04	152	SCL		5.030		WATSONVILLE RD	900	7600	6700	900	7300	6400	
04	152	SCL		7.930		GILROY, SANTA TERESA BL	1300	11700	10300	2400	23800	21000	
04	152	SCL	M	9.430		MONTEREY STREET	2300	22700	20000	2600	25500	22300	
04	152	SCL	M	9.780		GILROY ON LEEAVESLEY AVENUE	2600	25500	22300	2800	29000	25700	
04	152	SCL	M	10.277		GILROY, JCT. RTE. 101	4300	47500	41800	2700	33000	29000	
04	152	SCL		14.890		BLOOMFIELD AVE.	2700	33000	29000	2900	36000	31100	
04	152	SCL	R	21.977		JCT. RTE. 156 SOUTH	2600	32000	27800	4400	50000	42300	
04	152	SCL	R	23.409		CASA DE FRUTA	4400	51000	42300	4400	50000	41800	
04	152	SCL	R	26.309		PACHECO CREEK BRIDGE	4400	50000	41800	4400	50000	41800	
04	152	SCL	R	35.161		SANTA CLARA/MERCED COUNTY LINE	4200	48500	40700				
10	152	MER	R	0.000		SANTA CLARA/MERCED COUNTY LINE				3600	41500	34800	
10	152	MER	R	13.240		WEST JCT. RTE. 33	3050	35000	29100	3500	37000	33600	
10	152	MER		13.848		JCT. RTE. 5	3500	37000	33600	2150	31500	27000	
10	152	MER		19.268		LOS BANOS, ORTIGALITA ROAD	1900	24200	23000	2900	29500	28000	
10	152	MER		19.618		LOS BANOS, WEST I STREET	2900	31000	28000	2500	31500	30000	
10	152	MER		20.598		LOS BANOS, 7TH STREET	3000	35500	31500	2500	34000	33500	
10	152	MER		21.058		LOS BANOS, EAST I STREET	2250	31000	30500	2500	33500	29000	
10	152	MER		21.272		LOS BANOS, JCT. RTE. 165	2450	31500	28000	2850	38000	33500	
10	152	MER		22.252		LOS BANOS, WARD RD	2850	38000	33500	1900	22400	22100	
10	152	MER		23.915		LOS BANOS, SANTA FE ROAD	2300	25500	24000	2100	21700	21600	
10	152	MER	R	32.366		DOS PALOS WYE, EAST JCT. RTE. 33	2100	21600	21500	1700	19900	18800	
10	152	MER	R	40.770		JCT. RTE. 59	1800	18600	18500	1450	16000	15800	
10	152	MER	R	40.949		MERCED/MADERA COUNTY LINE	1650	19500	17400				
06	152	MAD	R	0.000		MERCED/MADERA COUNTY LINE				1650	19500	17400	
06	152	MAD		10.799		JCT. RTE. 233 NORTHWEST	1400	17000	15100	1350	16800	15300	

06	152	MAD		15.634		CALIFA, JCT. RTE. 99	1600	19600	17300			
03	153	ED		0.000		JCT. RTE. 49				200	3050	2050
03	153	ED		0.120		COLD SPRINGS ROAD	200	3050	2050	20	140	90
03	153	ED		0.550		MARSHALL'S MONUMENT	20	140	90			
05	154	SB	R	0.000		JCT RTE 101				1300	15000	12500
05	154	SB	R	8.110		JCT. RTE. 246 WEST	1100	11500	9500	1100	12100	10000
05	154	SB		14.770		ENTRANCE, LAKE CACHUMA COUNTY PARK	1400	15400	12700	1500	16100	13300
05	154	SB		23.380		STAGECOACH ROAD	1400	15300	12600	1500	15900	13100
05	154	SB		24.400		SAN MARCOS PASS; CAMINO CIELO	1500	15900	13100	1700	17000	13900
05	154	SB	R	31.551		JCT. RTE. 192 EAST	2700	22100	18000	3200	22100	17900
05	154	SB	R	32.268		SANTA BARBARA, JCT. RTE. 101	3000	23000	18000	2800	23500	19000
05	154	SB		32.285		JCT. RTE. 101	2500	24300	19700	3800	26000	21200
05	154	SB		32.840		STATE STREET AND NB 101 RAMPS	3800	26000	21000			
06	155	KER	L	0.000		DELANO ON FREMONT ST/9TH AVE, OFF/ON RAMPS NB RTE. 99				270	2850	2150
06	155	KER	L	0.270		DELANO, FREMONT STREET/6TH AVENUE	290	2500	2300	290	2500	2300
06	155	KER		0.000		DELANO ON ELLINGTON ST/9TH, OFF/ON RAMPS SB RTE. 99	290	2500	2300	500	5400	5000
06	155	KER		0.388		DELANO, ELLINGTON STREET/ 4TH AVENUE	500	5400	5000	1050	11700	10500
06	155	KER	R	0.000		DELANO, JCT. RTE. 99	1050	11700	10500	1200	12500	11900
06	155	KER	R	0.220		DELANO, HIGH STREET	1450	15500	14200	1150	12700	11600
06	155	KER	R	0.470		DELANO, LEXINGTON AVENUE	890	10100	9300	930	11200	10400
06	155	KER	R	1.460		DELANO, EAST CITY LIMITS, BROWNING ROAD	620	5200	4700	310	3400	3100
06	155	KER	R	3.469		ZACHARY AVENUE	250	2750	2500	370	2500	2300
06	155	KER	R	6.550		FAMOSO-PORTERVILLE HIGHWAY	260	1950	1700	80	630	510
06	155	KER	R	10.990		JCT. RTE. 65	80	630	510	30	210	170
06	155	KER	R	26.564		JUNCTION OLD ROUTE 155 AT WOODY ROAD	40	220	170	30	230	180
06	155	KER		38.250		GLENVILLE, GRANITE ROAD	110	830	690	110	860	710
06	155	KER		40.480		EAST LIMITS GLENVILLE	50	430	340	50	430	340
06	155	KER	R	53.220		ALTA SIERRA, VIA EVANS ROAD	50	420	340	50	370	330
06	155	KER	R	60.637		WOFFORD BOULEVARD	180	1900	1750	660	6800	6300
06	155	KER	R	61.040		JUNCTION OLD ROUTE 155	660	6800	6300	600	5900	5500
06	155	KER	R	70.991		JCT. RTE. 178	670	6200	5700			
05	156	MON	R	0.167		JCT. RTE. 1				2800	36000	31000
05	156	MON	R	1.109		JCT. RTE. 183	3000	36000	31000	2800	38500	32200
05	156	MON	T	5.185		SOUTH JCT. RTE. 101	2600	38500	31500	2200	33500	28500
05	156	SBT		3.022		ALAMEDA STREET	3500	37000	33400	3800	40000	37000
05	156	SBT		7.246		UNION/MITCHELL ROADS	3800	40000	37000	3300	33500	31000
05	156	SBT	R	11.369		HOLLISTER, JCT RTE 25	3900	33000	25000	2400	21100	19100
05	156	SBT	R	13.215		SAN FELIPE RD	2500	20600	17400	3000	22900	19000
05	156	SBT	R	16.536		FAIRVIEW ROAD	3000	22900	19000	2600	24500	20100
05	156	SBT	R	18.430		SAN BENITO/SANTA CLARA COUNTY LINE	2700	25500	21300			
04	156	SCL		0.000		SAN BENITO/SANTA CLARA COUNTY LINE				1600	17200	14300
04	156	SCL	M	0.664		JCT RTE 152	1600	17200	14300			
09	158	MNO		0.000		JUNE LAKE JUNCTION, SOUTH JCT. RTE. 395				420	3600	2060
09	158	MNO	R	2.822		LAKEVIEW DRIVE	270	2800	1500	270	2800	1500
09	158	MNO		3.860		NORTH SHORE DRIVE	310	2500	1700	290	2550	1600
09	158	MNO		7.180		SILVER LAKE CAMPGROUND	240	2050	1450	140	1100	720
09	158	MNO		15.836		GRANT LAKE JUNCTION, NORTH JCT. RTE. 395	160	990	480			
04	160	CC	L	0.000	R	JCT RTE 4, BEGIN RIGHT ALIGN				1600	18500	16000
04	160	CC	L	0.638	R	END RIGHT ALIGN	2700	31000	27000			
04	160	CC	L	0.000	L	JCT RTE 4, BEGIN LEFT ALIGN				2300	26500	23000
04	160	CC	L	0.438	L	END LEFT ALIGN	3200	37000	32000			
04	160	CC		0.000		JCT. E 18TH ST/MAIN ST	3800	45000	39000	3600	43000	37000
04	160	CC		0.486		WILBUR AVENUE	3700	42500	37000	1800	20800	18000
04	160	CC		1.327		CONTRA COSTA/SACRAMENTO COUNTY LINE	1800	20800	18000			
03	160	SAC	L	0.000		CONTRA COSTA/SACRAMENTO COUNTY LINE				2600	23700	18500
03	160	SAC	R	0.000		JCT. RTE. 12	3000	26500	20000	1600	10100	7600
03	160	SAC		5.950		SACRAMENTO RIVER, ISLETON BRIDGE	950	7300	5600	700	5500	4000
03	160	SAC		11.460		RYDE, JCT. RTE. 220 WEST	550	4100	3100	710	6100	4900
03	160	SAC		14.160		WALNUT GROVE, WALNUT GROVE BRIDGE	600	5500	4800	450	5000	4300
03	160	SAC		16.920		LEARY ROAD	250	2200	1750	250	2300	1800
03	160	SAC		20.983		PAINTERSVILLE BRIDGE	290	2000	1800	290	2000	1800
03	160	SAC		21.100		PAINTERSVILLE BRIDGE; RIVER ROAD	290	2400	1900	400	2800	2600
03	160	SAC		26.250		HOOD-FRANKLIN ROAD	600	3000	2500	250	1800	1600
03	160	SAC		34.070		FREEPORT BRIDGE ROAD	320	2300	2200	1000	7700	7400
03	160	SAC		35.045		SACRAMENTO, AMERICAN RIVER BRIDGE	1000	7700	7400			
03	160	SAC	R	44.456		SACRAMENTO, AMERICAN RIVER BRIDGE				7500	61000	57000
03	160	SAC	R	44.630		SACRAMENTO, NORTHGATE BOULEVARD	7500	61000	57000	4900	50000	47000
03	160	SAC	R	44.977		SACRAMENTO, DEL PASO BOULEVARD	4900	50000	47000	4100	40000	38000
03	160	SAC		45.604		SACRAMENTO, CANTERBURY ROAD	4100	40000	38000	4000	39000	37000
03	160	SAC		46.164		SACRAMENTO, DEADMAN'S SLOUGH, ROYAL OAKS DRIVE	4000	39000	37000	4500	41500	40000
03	160	SAC		46.330		SACRAMENTO, TRIBUTE ROAD	4500	41500	40000	5000	42500	40500
03	160	SAC		46.581		SACRAMENTO, JCT. RTE. 51	5000	42500	40500	5000	42500	40500
03	160	SAC		47.050		END OF ROUTE	5000	42500	40500			
02	161	SIS		0.037		JCT. RTE. 97				70	630	620
02	161	SIS		17.310		HILL ROAD	90	1100	1050	100	1100	1050
02	161	SIS		19.361		JCT. RTE. 139	110	1150	1100			
01	162	MEN	R	0.000		JCT. RTE. 101				120	1300	1100
01	162	MEN		2.000		RIVER BAR ROAD	100	1200	1100	100	1200	950

01	162	MEN		15.307	COUNTY ROAD 322/ DOS RIOS ROAD	100	1300	1100	100	1200	1050
01	162	MEN		26.780	COUNTY ROAD 327/ POOHKINY ROAD	90	1100	830	110	1300	1100
01	162	MEN		28.232	WATTENBURG ROAD	110	1300	1250	200	1950	1600
01	162	MEN		29.251	EAST LANE ROAD	210	2100	1800	300	3300	3100
01	162	MEN		30.768	MINA ROAD	270	3200	3000	110	1200	980
01	162	MEN		32.984	SHORT CREEK ROAD	70	800	430	60	800	600
01	162	MEN		34.045	NEAR SHORT CREEK BRIDGE	60	400	300			
03	162	GLE		37.648	COUNTY ROAD 307				20	310	250
03	162	GLE		41.379	COUNTY RD 306 AT COUNTY RD 307, NEAR MENDOCINO NATI(	20	310	250	40	450	350
03	162	GLE	R	45.117	COUNTY ROAD 306	40	450	350	70	750	690
03	162	GLE		45.382	COUNTY ROAD 304	70	750	690	80	1000	850
03	162	GLE		63.678	COUNTY ROAD D	160	2100	1600	210	2900	2200
03	162	GLE		64.880	COUNTY ROAD F	260	3250	2500	290	3550	3300
03	162	GLE		65.523	WILLOWS, JCT. RTE. 5	410	4300	3900	500	5000	4500
03	162	GLE		66.632	WILLOWS, TEHAMA STREET	350	3550	3450	340	3500	3300
03	162	GLE		67.106	WILLOWS, FIRST STREET	370	4000	3600	340	3700	3300
03	162	GLE		67.204	CENTRAL IRRIGATION CANAL	340	3700	3300	310	3700	3300
03	162	GLE		69.692	COUNTY ROAD P	320	3650	3200	310	3450	2900
03	162	GLE		73.549	COUNTY ROAD V	290	3400	2650	270	3300	2500
03	162	GLE		76.270	JCT. RTE. 45	260	2700	2400	300	3100	2700
03	162	GLE		77.534	BUTTE CITY	300	3000	2700	310	3250	2950
03	162	GLE		79.069	SACRAMENTO RIVER OVERFLOW	320	3000	2900	320	3000	2900
03	162	GLE		81.372	COUNTY ROAD Z	320	3000	2900	230	2050	2000
03	162	GLE		84.590	GLENN/BUTTE COUNTY LINE	230	2050	2000			
03	162	BUT		0.000	GLENN/BUTTE COUNTY LINE				230	2050	2000
03	162	BUT		6.660	RICHVALE SOUTH HIGHWAY	230	2050	2000	200	1700	1400
03	162	BUT	R	9.726	JCT. RTE. 99	200	1700	1400	340	3700	3300
03	162	BUT		14.030	OROVILLE, LARKIN ROAD	340	3700	3300	1100	11500	11000
03	162	BUT		14.960	OROVILLE, 12TH STREET	1100	11500	11000	1400	16500	16000
03	162	BUT		15.831	OROVILLE, JCT. RTE. 70	1400	16500	16000	3400	35000	33500
03	162	BUT		16.017	FEATHER RIVER BOULEVARD	3400	35000	33500	2900	33000	32000
03	162	BUT		17.142	OROVILLE, LINCOLN STREET	2900	33000	32000	3100	33000	32500
03	162	BUT		17.553	ON OLIVE HIGHWAY, SOUTH OF OROVILLE DAM BOULEVARD	3100	33000	32500	3000	31000	30500
03	162	BUT		18.006	OROVILLE, LOWER WYANDOTE ROAD	3000	31000	30500	1900	23000	22500
03	162	BUT		18.457	FOOTHILL BOULEVARD	1900	23000	22500	1450	15700	15300
03	162	BUT		20.449	OROVILLE QUINCY HIGHWAY	1450	15700	15300	1300	14000	13500
03	162	BUT		20.490	OAKVALE AVENUE	1300	13800	13500	1200	13000	12500
03	162	BUT		21.264	CANYON DRIVE	1200	13000	12500	850	9500	8600
03	162	BUT		21.457	HILLCREST AVENUE	850	9500	8600	590	7400	6400
03	162	BUT		22.899	KELLY RIDGE ROAD	590	7400	6400	540	6500	5200
03	162	BUT		24.194	FORBESTOWN ROAD	540	6500	5200	230	2800	2100
03	162	BUT		24.560	LOAFER CREEK CAMPGROUND	230	2800	2100	200	2350	1700
03	162	BUT		31.070	FOREMAN ROAD	200	2350	1700			
11	163	SD		0.531	R SAN DIEGO, ON 11TH AVE/ NORTH OF A ST RIGHT ALIGN				2950	32500	31500
11	163	SD		0.555	R SAN DIEGO, ON 11TH AVENUE AT RUSS BOULEVARD	2950	32000	31500	2950	31000	29500
11	163	SD		0.607	R SAN DIEGO, ON 11TH AVE, N OF ASH ST, END RIGHT ALIGN	2950	31000	29500			
11	163	SD		0.598	L SAN DIEGO ON 10TH AVENUE AT ASH ST. LEFT ALIGN				2750	27500	27000
11	163	SD		0.628	L SAN DIEGO, ON 10TH AVE, N OF ASH ST, END LEFT ALIGN	2850	27500	27000			
11	163	SD		0.890	JCT. RTE. 5	5100	60000	58000	10700	120000	112000
11	163	SD		1.623	SAN DIEGO, QUINCE STREET	10700	120000	112000	10500	118000	110000
11	163	SD		1.799	SAN DIEGO, RICHMOND STREET	10500	118000	110000	10300	116000	107000
11	163	SD		2.490	ROBINSON AVENUE	10300	116000	107000	7700	102000	97000
11	163	SD		2.749	SAN DIEGO, WASHINGTON STREET	7500	102000	97000	9900	130000	126000
11	163	SD		2.984	SAN DIEGO, SIXTH STREET	9900	130000	126000	12700	166000	157000
11	163	SD		3.742	SAN DIEGO, JCT. RTE. 8	12700	166000	157000	11700	154000	148000
11	163	SD		4.371	FRIARS ROAD	11700	154000	148000	16100	182000	178000
11	163	SD		5.792	SAN DIEGO, GENESEE AVENUE	16000	180000	178000	14200	162000	157000
11	163	SD		6.540	SAN DIEGO, MESA COLLEGE DRIVE	14200	162000	157000	13000	148000	144000
11	163	SD		7.043	SAN DIEGO, JCT. RTE. 805	13000	148000	144000	12300	139000	132000
11	163	SD		8.010	SAN DIEGO, BALBOA AVENUE	12300	139000	132000	12600	145000	136000
11	163	SD		8.807	SAN DIEGO, CLAIREMONT MESA BOULEVARD	12600	145000	136000	12800	145000	137000
11	163	SD		9.552	JCT. RTE. 52	12800	145000	137000	15300	160000	157000
11	163	SD	R	10.837	SAN DIEGO, KEARNEY VILLA ROAD	15100	165000	157000	14200	139000	135000
11	163	SD	R	11.230	JCT. RTE. 15S	14200	139000	135000	14400	149000	141000
11	163	SD	R	11.662	JCT. RTE. 15	14300	149000	141000			
07	164	LA		4.810	SOUTH EL MONTE, GARVEY AVENUE				6000	81000	77000
07	164	LA		5.599	EL MONTE, JCT. RTE. 10	6000	81000	77000	3950	56000	53000
07	164	LA		6.224	ROSEMEAD, VALLEY BOULEVARD	3950	56000	53000	4500	64000	59000
07	164	LA		6.640	ROSEMEAD, LOWER AZUSA ROAD	3500	49000	45500	3100	43000	40000
07	164	LA		6.899	END OF ROUTE	3100	43000	40000			
10	165	MER	L	0.000	JCT. RTE. 5				150	1800	1400
10	165	MER		3.749	CHARLESTON AVE	330	2600	1550	290	2950	2050
10	165	MER		7.782	PIONEER ROAD	420	6000	4300	660	7200	6400
10	165	MER		8.240	SCRIPPS DR	660	7200	6700	960	10600	7600
10	165	MER		8.786	LOS BANOS, JCT. RTE. 152	990	13000	12000	1650	20800	16000
10	165	MER		9.469	EAST B STREET	1450	14500	12000	1450	17100	13500
10	165	MER		9.947	LOS BANOS, OVERLAND AVENUE	1450	18200	13200	1250	15200	14700
10	165	MER		11.733	HENRY MILLER AVENUE	1300	13700	6600	710	8400	7850

10	165	MER		26.872	JCT. RTE. 140	970	8600	7400	850	10200	8800
10	165	MER		27.880	THIRD AVE	620	8400	5900	810	10600	6200
10	165	MER		32.366	WILLIAMS AVE	860	10800	8600	1200	14700	9200
10	165	MER		33.365	BLOSS AVENUE, HILMAR	1550	19400	10200	1600	21100	10800
10	165	MER		33.616	FIRST ST, HILMAR	1600	21100	10800	1500	24700	11800
10	165	MER		33.864	AMERICAN AVENUE	1500	24700	12400	1700	24700	14600
10	165	MER		36.445	BRADBURY ROAD	1700	24700	14700	1950	27500	14900
10	165	MER		36.722	MERCED / STANISLAUS COUNTY LINE	1950	27500	14900			
10	165	STA		0.000	MERCED / STANISLAUS COUNTY LINE				1950	27500	14900
10	165	STA		1.545	JCT. RTE. 99	2400	32000	18800			
05	166	SB		0.000	GUADALUPE, JCT. RTE. 1				970	11100	10500
05	166	SB		3.745	BONITA SCHOOL ROAD	940	10400	10200	1600	17500	17200
05	166	SB		4.817	BLACK ROAD	1600	17600	17300	1600	17300	17000
05	166	SB		6.870	SANTA MARIA, BLOSSER ROAD	1300	14100	13800	1400	15700	15400
05	166	SB		7.870	SANTA MARIA, JCT. RTE. 135	2000	18700	18200	2100	22600	22200
05	166	SB		8.927	SANTA MARIA, JCT. RTE. 101	2300	26000	25100	380	3500	3200
05	166	SLO		13.511	SUEY ROAD	550	4900	4500	380	3400	3100
05	166	SB	R	24.100	TEPESQUET ROAD	180	1600	1500	330	3000	2700
05	166	SLO	R	51.090	SAN LUIS OBISPO/SANTA BARBARA COUNTY LINE	330	3000	2700			
05	166	SB	R	51.090	SAN LUIS OBISPO/SANTA BARBARA COUNTY LINE				390	3300	3100
05	166	SB		64.300	PERKINS ROAD	420	3700	3400	370	3300	3000
05	166	SB		66.580	BELL ROAD	920	8200	7500	290	3500	3200
05	166	SB	R	70.141	SANTA BARBARA/SAN LUIS OBISPO COUNTY LINE	470	3900	3800			
05	166	SLO	R	70.141	SANTA BARBARA/SAN LUIS OBISPO COUNTY LINE				470	3900	3800
05	166	SLO		74.718	MARICOPA, JCT. RTE. 33	380	3200	3100			
06	166	KER		0.010	MARICOPA, JCT. RTE. 33				310	3300	3050
06	166	KER		2.960	PENTLAND ROAD	310	3300	3050	320	3350	3050
06	166	KER		14.860	OLD RIVER ROAD	960	6500	5500	520	3650	3000
06	166	KER		22.797	JCT. RTE. 5	580	4250	3150	660	3650	2650
06	166	KER		24.620	METTLER, JCT. RTE. 99	660	3650	2650			
09	167	MNO		0.000	JCT. RTE. 395				40	340	180
09	167	MNO		21.331	NEVADA STATE LINE	20	170	100			
06	168	FRE	R	0.674	JCT. RTE. 180				10200	110000	103000
06	168	FRE	R	0.993	MCKINLEY AVENUE	10200	110000	103000	12100	116000	112000
06	168	FRE	R	2.017	SHIELDS AVENUE	12100	116000	112000	11900	111000	109000
06	168	FRE	R	3.035	ASHLAN AVENUE	11900	111000	109000	9800	95000	91000
06	168	FRE	R	4.258	SHAW AVENUE	9800	95000	91000	7900	74000	71000
06	168	FRE	R	5.628	BULLARD AVENUE	7900	74000	71000	7100	62000	60000
06	168	FRE	R	6.866	HERNDON AVENUE	7100	62000	60000	5500	47000	45500
06	168	FRE	R	8.042	FOWLER AVENUE	5500	47000	45500	4050	36500	35000
06	168	FRE	R	9.150	TEMPERANCE AVENUE	4050	36500	35000	1850	17400	16700
06	168	FRE	R	11.839	SHEPHERD AVE	1800	17000	16200	850	7700	7300
06	168	FRE		15.470	ACADEMY AVENUE	850	7800	7300	860	7900	7100
06	168	FRE		18.550	SAMPLE/PITTMAN HILL ROADS	860	7900	7100	710	6800	5800
06	168	FRE	T	22.700	TOLLHOUSE RD AT MILLERTON	710	6800	5800	680	6400	5500
06	168	FRE	T	23.716	NICHOLAS ROAD	680	6400	5500	510	5500	4050
06	168	FRE	T	30.201	MORGAN CANYON ROAD AT AUBERRY ROAD	620	6600	4900	1150	11500	9300
06	168	FRE	T	31.311	AUBERRY ROAD AT LODGE ROAD	1150	11500	9300	860	8700	7000
06	168	FRE	R	36.179	AUBERRY ROAD	620	5500	3800	660	6100	3850
06	168	FRE		45.000	DINKEY CREEK ROAD	660	6100	3850	640	5600	3550
06	168	FRE		47.850	SHAVER HEIGHTS; DALTON AVENUE	490	4100	2750	360	2000	1300
06	168	FRE		49.660	HUNTINGTON LAKE ROAD	360	2000	1432	270	1950	1000
06	168	FRE		65.840	FLORENCE LAKE ROAD	270	1900	1000	270	1900	1000
06	168	FRE		65.932	LAKE SABRINA	270	1900	1000			
09	168	INY	R	0.000	LAKE SABRINA				70	500	400
09	168	INY	R	3.278	SOUTH LAKE ROAD	90	500	400	190	1350	700
09	168	INY		14.740	OTEY ROAD	210	1900	1410	180	1600	1200
09	168	INY		16.342	BROCKMAN LANE	650	6800	6300	750	7800	7100
09	168	INY		18.310	JCT. RTE. 395	820	8200	7700	120	800	530
09	168	INY		54.699	INYO/MONO COUNTY LINE	40	290	170			
09	168	MNO		0.000	INYO/MONO COUNTY LINE				40	290	170
09	168	MNO		1.450	OASIS, JCT. RTE. 266 NORTH	50	390	220			
01	169	DN	R	0.000	KLAMATH, JCT. RTE. 101				230	2300	1900
01	169	DN	R	0.248	SIMPSON MILL ROAD	110	1100	930	120	1200	900
01	169	DN		2.890	ARROW MILLS ROAD	120	1200	900	120	1200	890
01	169	DN		3.521	KLAMATH GLEN, RIFFLE ROAD	120	1200	890			
01	169	HUM		13.200	WAUTECK VILLAGE				40	280	200
01	169	HUM		29.950	MARTINS FERRY BRIDGE	60	400	300	60	400	300
01	169	HUM		33.840	WEITCHPEC, JCT. RTE. 96	60	400	300			
07	170	LA	R	14.500	LOS ANGELES, JCT. RTES. 101/134				13800	210000	188000
07	170	LA	R	14.780	LOS ANGELES, RIVERSIDE DRIVE	13800	210000	188000	15300	229000	205000
07	170	LA	R	15.367	LOS ANGELES, MAGNOLIA BOULEVARD	15300	229000	205000	15800	233000	209000
07	170	LA	R	15.988	LOS ANGELES, BURBANK BOULEVARD	15800	233000	209000	16000	238000	214000
07	170	LA	R	16.626	LOS ANGELES, OXNARD ST/LAUREL CANYON BLVD	16000	238000	214000	16100	236000	212000
07	170	LA	R	17.248	LOS ANGELES, VICTORY BOULEVARD	16100	236000	212000	15800	229000	206000
07	170	LA	R	18.274	LOS ANGELES, SHERMAN WAY	15800	229000	206000	13400	195000	175000
07	170	LA	R	19.721	LOS ANGELES, ROSCOE BOULEVARD	13400	195000	175000	12100	170000	156000
07	170	LA	R	20.101	LOS ANGELES, SHELDON/ ARLETA STREETS	12100	170000	156000	11100	157000	143000

07	170		LA	R	20.551	LOS ANGELES, JCT. RTE. 5	11100	157000	143000			
02	172		TEH		0.000	MINERAL, JCT. RTE. 36				40	300	190
02	172		TEH		5.770	MILL CREEK	40	300	190	50	250	160
02	172		TEH		8.917	MORGAN SPRINGS, JCT. RTE. 36	50	250	160			
08	173		SBD	L	0.000	JCT. RTE. 138				270	1600	1200
08	173		SBD	L	6.989	ARROWHEAD LAKE ROAD	270	1600	1200	30	200	150
08	173		SBD		12.850	NEAR RIFLE RANGE ROAD	60	340	250	140	810	600
08	173		SBD		17.206	NORTH BAY ROAD	140	810	600	310	3000	2400
08	173		SBD		19.772	LAKE ARROWHEAD, HOOK CREEK ROAD	310	3000	2400	590	5700	4500
08	173		SBD		20.970	LAKE ARROWHEAD, KUFFEL CANYON ROAD	870	8400	6700	1100	10700	8500
08	173		SBD		21.462	LAKE ARROWHEAD, JCT. RTE. 189	1100	10700	8500	520	4600	4100
08	173		SBD		23.040	JCT. RTE. 18	680	5900	5000			
03	174		PLA		0.000	COLFAX, JCT. RTE. 80				2500	17900	16300
03	174		PLA		0.140	COLFAX, AUBURN/CENTRAL STS	2500	17900	16300	740	6900	6400
03	174		PLA		0.730	COLFAX, MAIN STREET	740	6900	6400	730	7600	7000
03	174		PLA		1.633	ROLLINS LAKE ROAD	690	7400	6800	560	6100	5500
03	174		PLA		2.883	PLACER/NEVADA COUNTY LINE	570	5700	5400			
03	174		NEV		0.000	PLACER/NEVADA COUNTY LINE				570	5700	5400
03	174		NEV		3.350	ROLLINS LAKE ROAD	580	6300	5800	580	6500	5900
03	174		NEV		5.580	MEADOW VIEW DRIVE	630	7000	6300	680	7600	6800
03	174		NEV		6.830	BRUNSWICK ROAD	980	10000	9900	1250	8900	8400
03	174		NEV		8.940	EMPIRE MINE ROAD	1250	10100	9450	840	8400	8000
03	174		NEV		9.634	GRASS VALLEY, RACE STREET	950	8500	8200	1050	8700	8400
03	174		NEV		9.810	OPHIR STREET	1050	9600	9200	840	7600	7200
03	174		NEV		9.880	GRASS VALLEY, CENTRAL STREET	840	7600	7200	840	7400	7050
03	174		NEV		10.170	GRASS VALLEY, JCT. RTE. 20	840	7200	6800	740	6400	6200
03	174		NEV		10.218	JCT. RTE. 20; AUBURN STREET	740	6400	6200			
01	175		MEN		0.000	HOPLAND, JCT. RTE. 101				270	2950	2800
01	175		MEN		0.770	EAST SIDE ROAD, RIGHT	420	4400	3550	500	5500	4200
01	175		MEN		1.140	EAST SIDE ROAD, LEFT	390	4250	3400	300	3200	2800
01	175		MEN		2.790	YOUNCE ROAD	240	2900	2600	190	1950	1700
01	175		MEN		9.850	MENDOCINO/LAKE COUNTY LINE	140	1700	1400			
01	175		LAK		0.000	MENDOCINO/LAKE COUNTY LINE				140	1700	1400
01	175		LAK	R	8.193	JCT. RTE. 29	250	2400	2150			
01	175		LAK		19.620	COBB POST OFFICE	400	3500	3200	350	3300	2900
01	175		LAK		26.608	DRY CREEK ROAD	350	3350	2900	300	3000	2700
01	175		LAK		28.038	JCT. RTE. 29	300	3000	2700			
08	177		RIV		0.000	JCT. RTE. 10				440	3250	2650
08	177		RIV		0.180	RAGSDALE ROAD	440	3250	2650	400	2550	1900
08	177		RIV		0.260	KAISER MINE ROAD	400	2550	1900	320	2050	1550
08	177		RIV		2.232	OASIS ROAD	320	2050	1550	320	2050	1550
08	177		RIV		27.024	JCT. RTE. 62	320	2050	1550			
06	178	S	KER	S	1.736	R JCT RTE 178, BEGIN RIGHT ALIGN				200	2400	2050
06	178	S	KER	S	1.809	R BAKERSFIELD, 23RD & "O" ST, RIGHT ALIGN	200	2400	2050			
06	178	S	KER	S	1.749	L 24TH & "N" ST, BEGIN LEFT ALIGN			7800	130	1550	1350
06	178	S	KER	S	1.959	L END LEFT ALIGN @24TH AND Q ST	130	1550	1350			
06	178	S	KER	S	1.959	BAKERSFIELD, 24TH AND Q STREET				210	2700	2250
06	178	S	KER	S	2.163	NORTH JCT RTE 204	210	2700	2250			
06	178		KER		0.000	JCT. RTES. 99/58				5300	57000	55000
06	178		KER	R	1.821	R BAKERSFIELD, NEAR O STREET, RIGHT ALIGN	2600	28000	27000	2600	28000	27000
06	178		KER	R	1.821	L BAKERSFIELD, NEAR O STREET, LEFT ALIGN	2600	28000	27000	2600	28000	27000
06	178		KER	R	1.821	BAKERSFIELD, NEAR O STREET	4800	53000	49500	4800	53000	49500
06	178		KER	R	2.009	BAKERSFIELD, JCT. RTE. 204	4800	53000	49500	5900	65000	61000
06	178		KER	R	2.413	BAKERSFIELD, UNION AVENUE	5900	65000	61000	6800	76000	70000
06	178		KER	R	3.402	BAKERSFIELD, BEALE AVENUE	6800	76000	70000	6600	74000	68000
06	178		KER	R	4.100	HALEY STREET	6600	74000	68000	5800	66000	60000
06	178		KER	R	4.626	MOUNT VERNON AVENUE	5800	66000	60000	4500	49500	46500
06	178		KER	R	5.641	BAKERSFIELD, OSWELL STREET	4500	49500	46500	3900	41500	40500
06	178		KER	R	6.770	FAIRFAX ROAD, END FREEWAY	3900	42000	40500	3150	30500	28500
06	178		KER	T	9.614	JCT. RTE. 184	1550	17200	15900	1350	15300	14400
06	178		KER	R	11.663	COTTONWOOD CREEK	440	4850	4050	440	4850	4050
06	178		KER		26.630	DEMOCRAT SPRINGS ROAD	440	4850	4050	440	4750	4050
06	178		KER	R	27.621	CHINA GARDEN RD	440	4750	4050	440	4750	4050
06	178		KER	R	28.511	KERN CANYON RD	440	4300	4050	440	4600	4050
06	178		KER	R	41.646	BODFISH	440	4600	4050	440	4600	4050
06	178		KER	R	42.941	JCT. RTE. 155	430	4400	3950	420	4050	3850
06	178		KER		45.521	ISABELLA BOULEVARD	420	4000	3850	380	3650	3450
06	178		KER		55.684	SIERRA WAY	350	3300	3150	330	3200	3000
06	178		KER		57.076	KELSO VALLEY ROAD	320	3100	2900	230	1750	1400
09	178		KER		88.260	JCT. RTE. 14	230	1750	1400	960	3350	3000
09	178		KER	R	93.237	JCT. RTE. 395	960	3350	3000	600	6500	6250
09	178		KER		99.092	RIDGECREST, WEST CITY LIMITS	980	7500	6750	750	7600	6300
09	178		KER		100.608	NORTH CHINA LAKE BOULEVARD	750	7600	6300	1450	14300	13400
09	178		KER		102.616	RIDGECREST BLVD/CHINA LAKE	1900	20400	19700	1150	12000	11100
09	178		KER		103.850	RIDGECREST, RICHMOND ROAD	850	7200	7000	340	2450	2300
09	178		KER		104.622	SAN BERNARDINO/KERN COUNTY LINE	320	2900	2600			
08	178		SBD		0.000	SAN BERNARDINO/KERN COUNTY LINE				320	2900	2600
08	178		SBD		7.350	TRONA ROAD	320	2900	2600	300	2650	2400

08	178	SBD		14.778	TRONA ROAD	300	2650	2400			
09	178	INY		28.000	DEATH VALLEY MONUMENT, SOUTH BOUNDARY				50	400	250
09	178	INY		42.920	JCT. RTE. 127	50	290	170	190	1300	990
09	178	INY		62.186	NEVADA STATE LINE	190	1300	1010			
06	180	FRE		23.500	MENDOTA, NORTH JCT. RTE. 33				1250	13200	11500
06	180	FRE		24.010	MENDOTA, SEVENTH STREET	1150	12800	11300	1100	12100	11000
06	180	FRE		24.100	MENDOTA, EIGHTH STREET	1050	11800	10700	1100	12200	10900
06	180	FRE		24.595	MENDOTA, BELMONT AVENUE	680	7600	6800	730	8300	7400
06	180	FRE		26.124	PANOCHE ROAD	730	8300	7400	740	8400	7500
06	180	FRE		34.590	JAMES ROAD	680	8800	7300	780	8600	8000
06	180	FRE		40.110	SHASTA AVE	780	8600	8000	760	9400	8300
06	180	FRE		41.630	SISKIYOU AVENUE	840	10000	9100	1000	12200	11200
06	180	FRE		42.639	KERMAN, JCT. RTE. 145	1400	17000	15600	1350	17100	15300
06	180	FRE		43.630	GOLDENROD AVENUE	1350	17100	15300	1100	14000	12600
06	180	FRE		47.650	DICKENSON AVENUE	1050	13200	11800	1400	16200	14700
06	180	FRE		50.600	GRANTLAND AVENUE	1500	17000	15100	1400	17200	15200
06	180	FRE		52.590	CORNELIA AVENUE	1550	17900	16800	1500	18000	16400
06	180	FRE	R	53.601	BRAWLEY AVENUE	1650	18800	17500	1950	22600	21000
06	180	FRE	R	54.616	MARKS AVENUE	2700	28000	26000	3750	38500	36500
06	180	FRE	R	56.520	JCT RTE 99	3750	38500	36500	9200	116000	108000
06	180	FRE	R	57.242	FULTON AVENUE	9200	114000	108000	10200	124000	118000
06	180	FRE	R	57.341	VAN NESS AVENUE	10200	124000	118000	10200	124000	118000
06	180	FRE	R	57.800	BLACKSTONE AVENUE	10200	126000	118000	10600	131000	124000
06	180	FRE	R	57.916	ABBY STREET	10600	131000	124000	10600	135000	124000
06	180	FRE	R	58.664	JCT. RTE. 41	10600	135000	124000	10800	133000	125000
06	180	FRE	R	59.878	CEDAR AVENUE	10800	132000	125000	9700	118000	112000
06	180	FRE	R	60.071	JCT. RTE. 168	7100	87000	82000	9700	120000	112000
06	180	FRE	R	60.869	CHESTNUT AVENUE	11200	119000	112000	9300	113000	107000
06	180	FRE	R	61.895	PEACH AVENUE	10700	113000	107000	8300	88000	83000
06	180	FRE	R	62.893	CLOVIS AVENUE	8200	89000	83000	5800	63000	60000
06	180	FRE	R	63.800	FOWLER AVENUE	5800	64000	60000	4000	45000	42000
06	180	FRE	R	65.275	TEMPERANCE AVENUE	4000	44000	42000	3350	37000	34500
06	180	FRE		68.600	MC CALL AVENUE	3000	33000	31000	2600	28500	27000
06	180	FRE		71.610	ACADEMY AVENUE	2050	22500	21000	1500	16400	15300
06	180	FRE		74.610	CENTERVILLE, SMITH AVENUE	1550	16800	15700	1350	14000	13300
06	180	FRE		74.950	CENTERVILLE, TRIMMER SPRINGS ROAD	1350	14600	13900	1450	15200	14400
06	180	FRE		77.490	REED AVENUE	1500	15200	13300	770	8700	7400
06	180	FRE		87.706	JCT. RTE. 63 SOUTH	620	5200	4100	860	5200	4500
06	180	FRE		108.128	JCT. RTE. 245 SOUTH	290	2950	1500	510	2700	1450
06	180	FRE		109.528	FRESNO/TULARE COUNTY LINE	410	1800	1150			
06	180	TUL		109.528	FRESNO/TULARE COUNTY LINE				410	1800	1150
06	180	TUL		110.829	NORTH BOUNDARY GENERAL GRANT GROVE, KINGS CANYON	390	1700	1100			
06	180	FRE		112.090	NORTH BOUNDARY GENERAL GRANT GROVE				390	1700	1100
06	180	FRE		116.850	HUME LAKE ROAD	390	1700	1100	260	1100	720
06	180	FRE		137.940	KINGS CANYON NATIONAL PARK	260	1100	720			
09	182	MNO		0.000	BRIDGEPORT, JCT. RTE. 395				180	1650	1150
09	182	MNO	R	6.320	BRIDGEPORT RESERVOIR	170	1550	1050	80	690	420
09	182	MNO		12.651	NEVADA STATE LINE	70	650	390			
05	183	MON		0.000	SALINAS, JCT. RTE. 101				3600	55000	48300
05	183	MON	R	1.821	SALINAS, WEST CITY LIMITS	1600	20700	17700	1500	19700	10800
05	183	MON	R	7.651	ESPINOSA ROAD	1400	18500	15800	1500	19000	16200
05	183	MON		9.006	CASTROVILLE, JCT. RTE. 156	1900	34500	28400	2500	31500	26600
05	183	MON		9.980	NORTH, CASTROVILLE, JCT. RTE. 1	1300	16800	14400			
06	184	KER	L	0.000	JCT. RTE. 223				470	4800	4100
06	184	KER	L	2.000	WEEDPATCH LOOP	470	4800	4100	650	6900	6500
06	184	KER		1.004	DI GIORGIO ROAD	990	10400	9900	1250	13200	12500
06	184	KER		1.260	LAMONT, SEGRUE ROAD	1250	13200	12500	1700	19000	17800
06	184	KER		2.035	LAMONT; PANAMA ROAD	1700	19000	17800	1450	16300	15300
06	184	KER		4.050	PANAMA LANE	1150	13600	12300	1050	12700	11200
06	184	KER		7.830	KIMBER AVENUE	1200	13100	12600	1850	20800	19900
06	184	KER		7.937	JCT. RTE. 58	1850	20800	19900	2100	21500	21100
06	184	KER		8.082	BRUNDAGE LANE	2100	21500	21100	1500	16300	15000
06	184	KER		8.350	TEHACHAPI ROAD/ EDISON HIGHWAY	1500	16300	15000	1600	16300	16200
06	184	KER		9.600	BAKERSFIELD, NILES STREET	1400	14200	14000	1100	13300	11200
06	184	KER	R	12.031	JCT. RTE. 178	390	4750	3900			
04	185	ALA		3.693	SAN LEANDRO, 150TH AVENUE				1900	23300	22800
04	185	ALA		3.750	SAN LEANDRO, HESPERIAN BOULEVARD	1900	23300	22800	2100	26000	25500
04	185	ALA		5.180	SAN LEANDRO, SYBIL AVENUE	1400	18100	17700	1400	17400	17000
04	185	ALA		5.728	JCT. RTE. 112 WEST	2000	23800	23300	1700	20000	19600
04	185	ALA		7.240	OAKLAND, 98TH AVENUE	2100	24800	24300	2100	24500	24000
04	185	ALA		8.690	OAKLAND, 73RD AVENUE	2100	24500	24000	2300	27500	26800
04	185	ALA		9.750	OAKLAND, 55TH AVENUE	2200	27000	26100	1900	23500	23000
04	185	ALA		10.370	OAKLAND, 44TH AVE/12TH STREET	2300	27500	26800	2300	27500	26800
04	185	ALA		10.375	OAKLAND, 44TH AVENUE	2300	27500	26800	500	5600	5400
04	185	ALA		10.519	OAKLAND, HIGH/ 12TH STREETS	300	3400	3300			
11	186	IMP		0.000	MEXICAN BOUNDARY				560	3950	3900
11	186	IMP		2.070	JCT. RTE. 8	950	10700	8500	680	7500	5200
07	187	LA		8.802	LOS ANGELES, JCT. RTE. 10	4700	47500	44500	6000	59000	55000

07	187	LA		8.905	LOS ANGELES, CADILLAC AVENUE	6000	59000	55000				
11	188	SD		0.000	MEXICAN BOUNDARY				780	8100	7800	
11	188	SD		0.050	U. S. CUSTOMS STATION	780	8100	7800	770	7600	7500	
11	188	SD		1.850	JCT. RTE. 94	780	7600	7500				
08	189	SBD		0.000	JCT. RTE. 18				420	4400	3800	
08	189	SBD		0.030	LAKE GREGORY DRIVE	420	4400	3800	430	4500	3900	
08	189	SBD		1.810	TWIN PEAKS, ROSE LANE	430	4500	3900	490	5100	4400	
08	189	SBD		2.810	GRASS VALLEY ROAD	490	5100	4400	750	7800	6700	
08	189	SBD		3.090	DALEY CANYON ROAD	750	7800	6700	890	9300	8000	
08	189	SBD		5.565	JCT. RTE. 173	560	5800	5000				
06	190	TUL		0.000	TIPTON, JCT. RTE. 99				420	4850	4350	
06	190	TUL		9.474	POPLAR, COUNTY ROAD 192	420	4550	4300	630	6300	6100	
06	190	TUL	R	15.241	PORTERVILLE, JCT. RTE. 65	1100	11500	10500	2400	25500	24500	
06	190	TUL		16.452	SOUTH PORTERVILLE	2200	25000	23100	1700	19300	18400	
06	190	TUL		16.967	PLANO STREET (COUNTY ROAD 252)	1650	19300	18200	1100	12600	12100	
06	190	TUL		18.453	HOSPITAL ROAD	1150	12100	11600	870	9500	9000	
06	190	TUL		21.100	WORTH ROAD (COUNTY ROAD 284)	870	9500	9000	700	7500	7200	
06	190	TUL		22.550	GOVERNMENT ROAD TO SUCCESS DAM	700	7500	7200	690	6800	6500	
06	190	TUL		24.450	TULE INDIAN RESERVATION ROAD (AVENUE 160)	640	6800	6500	520	5800	5300	
06	190	TUL		27.295	RIVER ISLAND ROAD	420	4750	4350	390	4450	4050	
06	190	TUL	R	31.550	SPRINGVILLE, CRAMER DRIVE	390	3750	3600	380	3750	3600	
06	190	TUL		31.701	JCT OLD RTE 190	360	3400	3300	360	3550	3400	
06	190	TUL	R	32.704	BALCH PARK DRIVE	280	2750	2650	150	910	810	
06	190	TUL		47.980	CAMP NELSON ROAD	140	760	680	70	420	340	
06	190	TUL		56.567	QUAKING ASPEN CAMP	50	330	260				
09	190	INY		9.850	OLANCHA, JCT. RTE. 395				50	300	240	
09	190	INY		24.550	JCT. RTE. 136 NORTHWEST	60	410	300	110	1050	650	
09	190	INY		85.830	STOVEPIPE WELLS	190	1350	950	250	1200	900	
09	190	INY		93.210	SCOTTY'S CASTLE ROAD	210	1600	1300	180	1250	810	
09	190	INY		99.770	BEATTY CUTOFF ROAD	290	1900	1340	270	1550	1160	
09	190	INY		110.720	FURNACE CREEK RANCH	290	2200	1950	340	1500	1050	
09	190	INY		111.730	BAD WATER ROAD	340	1500	1050	240	1800	1550	
09	190	INY		140.692	DEATH VALLEY JUNCTION, JCT. RTE. 127	220	1600	1350				
03	191	BUT	R	0.000	JCT. RTE 70				610	5600	5000	
03	191	BUT		3.530	DURHAM-PENTZ ROAD	610	5600	5000	820	6700	6200	
03	191	BUT		3.925	BUTTE COLLEGE DRIVE	820	6700	6200	610	6200	5600	
03	191	BUT		8.655	PARADISE, AIRPORT ROAD	660	5600	5200	660	5600	5200	
03	191	BUT		10.080	EASY STREET	660	5600	5200	660	5600	5200	
03	191	BUT		11.130	PARADISE, BUSHMAN ROAD	560	6200	5900	960	10200	9200	
03	191	BUT		11.386	PARADISE, PEARSON ROAD	940	10100	9700	940	10100	9700	
03	191	BUT		11.387	END ROUTE	940	10100	9700				
05	192	SB	R	0.019	JCT. RTE. 154				1500	13800	13300	
05	192	SB		0.180	CIENEGITAS AVENUE	2500	13800	13300	2500	13900	13400	
05	192	SB		1.640	SANTA BARBARA, ONTARE ROAD	2200	12000	11600	2200	12200	11800	
05	192	SB		4.150	SANTA BARBARA, MOUNTAIN DRIVE	630	3500	3400	370	2100	2000	
05	192	SB		5.990	SANTA BARBARA, JCT. RTE. 144 SOUTH	520	2900	2800	480	2700	2600	
05	192	SB		8.280	HOT SPRINGS ROAD	990	5500	5300	2300	12900	12400	
05	192	SB		8.820	SAN YSIDRO ROAD	2100	11600	11200	1800	9400	9100	
05	192	SB		10.740	SHEFFIELD DRIVE	1000	5700	5500	600	3300	3200	
05	192	SB		11.800	FREEHAVEN DRIVE	560	3100	3000	390	2200	2100	
05	192	SB		12.480	TORO CANYON ROAD	390	2200	2100	840	4700	4500	
05	192	SB		12.490	TORO CANYON CREEK	280	1700	1400	250	1500	1300	
05	192	SB		17.440	CARPINTERIA, LINDEN AVENUE	580	3200	3100	1100	4600	4400	
05	192	SB		21.030	JCT RTE 150/192	1200	6000	4800				
03	193	PLA		3.000	SIERRA COLLEGE BOULEVARD	1300	11600	10900	850	9200	7900	
03	193	PLA		6.370	GOLD HILL ROAD	440	4900	4500	490	5600	5100	
03	193	PLA		9.770	TAYLOR ROAD	560	5900	5400	1000	9000	8400	
03	193	PLA		10.194	NEWCASTLE, JCT. RTE. 80	1000	9000	8400	950	8600	8000	
03	193	PLA		10.427	COOL, JCT. RTE. 49	950	8600	8000				
03	193	ED		0.000	COOL, JCT. RTE. 49				870	8200	7800	
03	193	ED		0.856	AMERICAN RIVER ROAD	770	7700	7400	670	6600	6400	
03	193	ED	R	2.169	AUBURN LAKE TRAIL ROAD	670	6600	6400	610	6400	6100	
03	193	ED		12.190	EVERGREEN COURT ROAD	460	5000	4700	460	5000	4700	
03	193	ED		12.699	GEORGETOWN, LOWER MAIN STREET	460	4900	4500	360	4000	3700	
03	193	ED		16.105	BLACK OAK MINE ROAD	260	3300	3100	200	2300	2200	
03	193	ED		19.400	GARDEN VALLEY ROAD	200	2300	2200	260	2400	2300	
03	193	ED		26.950	JCT. RTE. 49	300	2500	2300				
01	197	DN	R	0.000	JCT. RTE. 199				370	3600	2600	
01	197	DN		7.080	JCT. RTE. 101	370	3500	3000				
05	198	MON	R	0.111	SAN LUCAS, JCT. RTE. 101				370	4300	3400	
05	198	MON		0.500	SAN LUCAS, EAST	330	3600	3000	130	1500	1200	
05	198	MON		13.995	JCT. RTE. 25 NORTH	140	1600	1300	150	1700	1400	
05	198	MON		25.786	MONTEREY/FRESNO COUNTY LINE	170	1700	1500				
06	198	FRE		0.000	MONTEREY/FRESNO COUNTY LINE				100	990	840	
06	198	FRE		12.330	PARKFIELD JUNCTION	100	990	840	120	990	840	
06	198	FRE		19.145	COALINGA CREEK	140	1100	1000	150	1150	1050	
06	198	FRE		21.190	FIRESTONE AVENUE	140	1150	1050	150	1250	1150	
06	198	FRE		21.740	COALINGA, SOUTH CITY LIMITS	150	1250	1150	460	3700	3500	

06	198	FRE		22.370		COALINGA, 8TH/POLK STREETS	460	3700	3500	840	7500	7100
06	198	FRE		22.660		JCT. RTE. 33	830	7400	7000	190	2050	1900
06	198	FRE		26.814		JCT. RTE. 5	190	2050	1900	440	4900	4250
06	198	FRE		34.660		JCT. RTE. 269	400	4650	4050	530	6100	5400
06	198	FRE		42.731		FRESNO/KINGS COUNTY LINE	510	5900	5200			
06	198	KIN		0.000		FRESNO/KINGS COUNTY LINE				510	5900	5200
06	198	KIN		3.011		MAIN GATE LEMOORE NAVAL AIR STATION	510	5900	5200	1600	16200	14000
06	198	KIN		4.992		AVENAL CUTOFF ROAD	1600	16200	14000	2650	24500	21100
06	198	KIN	R	8.897		JCT. RTE. 41	2650	24500	21100	2350	26000	23800
06	198	KIN	R	9.470		19TH AVE	2350	26000	23800	2550	29000	27000
06	198	KIN	R	10.561		18TH AVENUE	2550	29000	27000	2900	32000	30500
06	198	KIN	R	12.106		HOUSTON AVENUE	2900	32000	30500	3700	42000	39000
06	198	KIN	R	14.767		14TH AVENUE	3700	42000	39000	3850	44000	42000
06	198	KIN	R	15.745		HANFORD/ARMONA ROAD	3850	44000	42000	3800	43500	41500
06	198	KIN	R	16.910		12TH AVENUE	3800	43500	41500	3650	42000	40000
06	198	KIN	R	17.912		HANFORD, 11TH AVENUE	3650	42000	40000	2900	33000	31500
06	198	KIN	R	18.959		HANFORD, 10TH AVENUE	2500	28500	27000	2850	33000	31000
06	198	KIN	R	20.975		JCT. RTE. 43	2850	33000	31000	3000	33500	31500
06	198	KIN		23.320		SIXTH AVENUE	2950	33000	31000	3000	33500	31500
06	198	KIN		28.325		KINGS/TULARE COUNTY LINE	3000	33500	31500			
06	198	TUL		0.000		KINGS/TULARE COUNTY LINE				3000	33500	31500
06	198	TUL	R	3.257	R	BEGIN RIGHT ALIGN				1500	16100	15700
06	198	TUL	R	3.835	R	JCT. RTE. 99	2050	22300	21700	2050	22300	21700
06	198	TUL	R	4.230	R	END RIGHT ALIGN	2050	22300	21700			
06	198	TUL	R	3.257	L	BEGIN LEFT ALIGN				1500	16200	15700
06	198	TUL	R	3.711	L	JCT. RTE. 99	1450	15500	15000	1950	21300	20700
06	198	TUL	R	4.248	L	END LEFT ALIGN	1950	21300	20700			
06	198	TUL	R	4.796		ALTA AVENUE; COUNTY ROAD 80	5900	64000	61000	6200	68000	65000
06	198	TUL		5.760		ROAD 92, SHIRK RD	6200	68000	65000	6200	68000	65000
06	198	TUL		6.760		ROAD 100, AKERS RD	6200	68000	65000	6700	73000	70000
06	198	TUL		7.760		DEMAREE ROAD	6700	73000	70000	7100	77000	74000
06	198	TUL		8.100		VISALIA, WEST MAIN STREET/ WHITNEY DRIVE	7100	77000	74000	7100	77000	74000
06	198	TUL	R	8.753		VISALIA, JCT. RTE. 63 SOUTH	7100	77000	74000	6800	74000	71000
06	198	TUL	R	9.967		VISALIA, JCT. RTE. 63 NORTH	6700	74000	71000	5700	63000	60000
06	198	TUL	R	10.734		BEN MADDOX WAY	5700	63000	60000	4550	50000	48000
06	198	TUL	R	11.719		LOVERS LANE	4550	50000	48000	3300	36500	35000
06	198	TUL	R	13.737		COUNTY ROAD 156	3300	36500	35000	2750	30500	29000
06	198	TUL	R	14.653		COUNTY ROAD 164	2750	30500	29000	2200	24900	23600
06	198	TUL	R	18.761		JCT. RTE. 65 SOUTH	2200	24900	23600	1500	17300	16400
06	198	TUL	R	19.762		JCT. RTE. 245 NORTH	1500	17300	16400	810	8700	7700
06	198	TUL		26.480		AVE 324	710	6600	5200	710	6600	5200
06	198	TUL		26.931		S LIM LEMON COVE	710	6600	5200	710	6600	5200
06	198	TUL		27.960		JCT. RTE. 216 WEST	710	6600	5200	760	6800	5100
06	198	TUL		30.750		LAKE KAWEAH BOAT LAUNCHING MARINA	760	6800	5100	780	6900	4850
06	198	TUL		35.910		MORO ROAD	720	6400	4450	750	6400	4450
06	198	TUL		37.401		W LIM THREE RIVERS	750	6400	4450	790	6700	4700
06	198	TUL		38.130		SOUTH FORK DRIVE	790	6700	4700	790	6700	4700
06	198	TUL		38.490		THREE RIVERS, NORTH FORK DRIVE	790	6700	4700	780	6400	4500
06	198	TUL		38.930		EGGERS DRIVE	780	6400	4500	780	6400	4100
06	198	TUL		39.691		E LIM THREE RIVERS	730	5900	4100	730	5900	4100
06	198	TUL		42.350		THREE RIVERS, MINERAL KING ROAD	730	5900	4100	420	3750	2350
06	198	TUL		44.163		SEQUOIA NATIONAL PARK BOUNDARY	420	3750	2350			
01	199	DN	T	0.506	R	JCT. RTE. 101, RIGHT ALIGN				450	3400	2700
01	199	DN	T	0.506	L	JCT. RTE. 101, LEFT ALIGN				450	3400	2700
01	199	DN		4.370		JCT. RTE. 197 NORTH	630	6000	4100	800	7700	5300
01	199	DN		5.900		HIOUCHI VILLAGE, EAST	820	9000	5900	770	7900	6000
01	199	DN	T	14.636		GASQUET, EAST	540	6600	5400	540	6600	5400
01	199	DN		36.408		OREGON STATE LINE	480	5900	4700			
01	200	HUM	R	0.000		JCT. RTE. 101				280	2800	2600
01	200	HUM		1.287		AZALEA AVENUE	280	2800	2600	260	2700	2500
01	200	HUM	R	2.681		JCT. RTE. 299	250	2600	2200			
06	201	FRE		0.000		KINGSBURG, JCT. RTE. 99				1200	14400	13600
06	201	FRE		0.140		KINGSBURG, SIMPSON STREET	1200	14500	13600	1300	13500	12600
06	201	FRE		0.280		KINGSBURG, MARION STREET	1300	13500	12600	830	9000	8000
06	201	FRE		0.720		KINGSBURG, DRAPER STREET	900	9200	8700	1200	12000	11400
06	201	FRE		0.752		KINGSBURG, 18TH AVENUE	1200	12000	11400	970	10300	9300
06	201	FRE		1.130		KINGSBURG, EAST CITY LIMITS	710	6600	6200	710	6600	6200
06	201	FRE		1.343		FRESNO/TULARE COUNTY LINE	690	6600	6100			
06	201	TUL		0.000		FRESNO/TULARE COUNTY LINE				690	6600	6100
06	201	TUL		1.400		ROAD 28	690	6600	6100	760	7600	6700
06	201	TUL	R	1.746		KINGS RIVER BRIDGE	760	7500	6700	760	7500	6700
06	201	TUL		7.950		ALTA AVENUE	400	3800	3450	370	3300	3050
06	201	TUL	L	13.980		JCT. RTE. 63	130	1300	1100	540	5500	5000
06	201	TUL		16.010		YETTEM, ROAD 144	540	5200	5000	470	4950	4250
06	201	TUL		20.520		ROAD 180	250	2700	2250	140	1450	1200
06	201	TUL		23.957		JCT. RTE. 245	150	1500	1350			
09	202	KER	R	1.476		TEHACHAPI MENS PRISON				310	2100	2000
09	202	KER	R	2.160		CUMMINGS VALLEY RD-W	360	2100	1800	1100	10500	10100

09	202		KER	R	5.500	OLD TOWN ROAD	850	9500	9200	1100	11100	9600
09	202		KER	R	7.400	WOODFORD ROAD	1400	14600	13900	1300	13000	12750
09	202		KER	R	8.870	TUCKER ROAD	1500	15800	15000	1450	14900	14100
09	202		KER		12.008	JCT. RTE. 58	1350	14100	13300	1200	12200	12000
09	202		KER		12.093	END OF KERN COUNTY	1200	12200	12000			
09	203		MNO	L	0.000	MINARET SUMMIT				130	780	620
09	203		MNO	R	2.350	MAINTENANCE SUBSTATION ROAD	740	4500	3750	740	4500	3750
09	203		MNO	R	4.490	MAMMOTH, FOREST TRAIL ROAD	890	6100	4800	1350	12400	8850
09	203		MNO	R	4.782	LAKE MARY/MINARET ROADS	1350	12600	9200	1450	14100	11000
09	203		MNO		5.750	OLD MAMMOTH ROAD	1750	18100	14600	890	9200	6500
09	203		MNO		6.866	MERIDIAN BLVD	1050	11000	8200	1050	10700	7400
09	203		MNO	R	8.560	JCT. RTE. 395	1300	13100	9600	1050	10700	7400
09	203		MNO	R	8.671	END ROUTE	1050	10700	7400			
06	204		KER	R	0.000	BAKERSFIELD, JCT. RTE. 58				2300	28000	26500
06	204		KER	R	0.098	BRUNDAGE LANE	2300	28000	26500	2750	33000	32000
06	204		KER		3.087	BAKERSFIELD, CALIFORNIA AVENUE	2750	35500	32000	2650	31500	31000
06	204		KER		3.760	BAKERSFIELD, 21ST STREET	2350	28500	26500	2350	28500	26500
06	204		KER		3.827	BAKERSFIELD, 22ND STREET	2350	28500	26500	2400	29000	27000
06	204		KER		4.057	BAKERSFIELD, 24TH STREET	2400	29000	27000	2400	29000	27000
06	204		KER		4.235	BAKERSFIELD, JCT. RTE. 178	2400	29000	27000	3000	33000	31500
06	204		KER		5.137	BAKERSFIELD, F STREET	3700	41000	39000	3800	46000	40500
06	204		KER		6.460	PIERCE ROAD	4000	48000	42500	4000	48000	42500
06	204		KER		6.752	BAKERSFIELD, JCT. RTE. 99	3150	31000	30500			
04	205		ALA		0.213	JCT. RTE. 580				14300	172000	160000
04	205		ALA		0.447	ALAMEDA/SAN JOAQUIN COUNTY LINE	9500	136000	131000			
10	205		SJ	L	0.000	ALAMEDA/SAN JOAQUIN COUNTY LINE				9500	136000	131000
10	205		SJ		1.377	PATTERSON PASS ROAD	9500	136000	131000	8400	113000	106000
10	205		SJ	R	3.369	OLD ROUTE 50	7600	103000	89000	6600	97000	83000
10	205		SJ	R	8.127	TRACY, MAC ARTHUR DRIVE	8900	146000	107000	10100	146000	137000
10	205		SJ	R	12.686	JCT. RTE. 5	7300	123000	102000			
10	207		ALP		0.000	JCT. RTE. 4				300	1100	750
10	207		ALP		1.360	MT. REBA SKI RESORT	300	1100	740			
08	210	U	SBD		15.767	SIERRA AVENUE				1150	12300	12000
08	210	U	SBD		19.521	RIALTO, RIVERSIDE AVENUE	1850	19400	19000	2650	28000	27500
08	210	U	SBD		20.020	ACACIA AVENUE	2650	28000	27500	2700	28500	28000
08	210	U	SBD		21.526	STATE ST	2700	28500	28000	2700	28500	28000
08	210	U	SBD		21.680	CAJON BOULEVARD	2700	28500	28000	2700	28500	28000
08	210	U	SBD		21.773	CALIFORNIA STREET	2700	28500	28000			
07	210		LA	R	0.000	LOS ANGELES, JCT. RTE. 5				7300	91000	84000
07	210		LA	R	0.843	LOS ANGELES, YARNELL STREET	7300	91000	84000	7000	89000	82000
07	210		LA	R	1.924	LOS ANGELES, ROXFORD STREET	7000	89000	82000	6900	88000	82000
07	210		LA	R	3.275	LOS ANGELES, POLK STREET	6900	88000	82000	8300	98000	95000
07	210		LA	R	4.110	LOS ANGELES, HUBBARD STREET	8300	98000	95000	10000	127000	117000
07	210		LA	R	4.936	LOS ANGELES, MACLAY STREET	10000	127000	117000	11400	142000	131000
07	210		LA	R	5.911	LOS ANGELES, JCT. RTE. 118	11400	142000	131000	12000	131000	129000
07	210		LA	R	7.822	LOS ANGELES, OSBORNE STREET/FOOTHILL BOULEVARD	12000	131000	129000	12100	132000	126000
07	210		LA	R	9.444	LOS ANGELES, WHEATLAND AVENUE	12100	132000	126000	12000	132000	127000
07	210		LA	R	11.084	LOS ANGELES, SUNLAND BOULEVARD	12000	132000	127000	11300	125000	120000
07	210		LA	R	14.173	LOS ANGELES,LA TUNA CANYON ROAD	11300	125000	120000	11800	132000	127000
07	210		LA	R	15.619	GLENDALE, LOWELL AVENUE	11800	132000	127000	15300	165000	156000
07	210		LA	R	16.773	GLENDALE, PENNSYLVANIA AVENUE	15300	165000	156000	16100	174000	166000
07	210		LA	R	17.383	LA CRESCENTA AVENUE	16100	174000	166000	17900	194000	186000
07	210		LA	R	18.872	LA CANADA-FLINTRIDGE, WEST JCT. RTE. 2	17900	194000	186000	12000	133000	131000
07	210		LA	R	19.881	LA CANADA-FLINTRIDGE, EAST JCT. RTE. 2	12000	133000	131000	14100	128000	126000
07	210		LA	R	20.600	LA CANADA-FLINTRIDGE, GOULD AVE/FOOTHILL BOULEVARD	14100	128000	126000	12600	116000	114000
07	210		LA	R	20.854	LA CANADA-FLINTRIDGE, HAMPTON AVE/FOOTHILL BOULEVAF	12600	116000	114000	13800	130000	127000
07	210		LA	R	21.532	LA CANADA-FLINTRIDGE, BERKSHIRE PLACE	13800	130000	127000	13300	128000	125000
07	210		LA	R	22.494	PASADENA, ARROYO BOULEVARD	13300	128000	125000	12400	121000	119000
07	210		LA	R	23.191	PASADENA, LINCOLN BOULEVARD	12400	121000	119000	14000	139000	136000
07	210		LA	R	24.060	PASADENA, MOUNTAIN STREET	14000	139000	136000	14000	146000	143000
07	210		LA	R	24.962	PASADENA, JCT. RTES. 134/710	14000	146000	143000	23600	339000	329000
07	210		LA	R	26.326	PASADENA, LAKE AVENUE	23600	339000	329000	24300	369000	358000
07	210		LA	R	26.941	PASADENA, HILL AVENUE	24300	369000	358000	21700	349000	337000
07	210		LA	R	27.409	PASADENA, ALLEN AVENUE	21700	349000	337000	22300	355000	342000
07	210		LA	R	28.249	PASADENA, ALTADENA DRIVE	22300	355000	342000	20700	332000	319000
07	210		LA	R	28.680	PASADENA, SAN GABRIEL BOULEVARD	20700	332000	319000	20300	319000	304000
07	210		LA	R	29.293	PASADENA, SIERRA MADRE VILLA	20300	319000	304000	18800	295000	279000
07	210		LA	L	29.795	PASADENA, ROSEMEAD BOULEVARD	18800	295000	279000	18800	272000	263000
07	210		LA	R	30.816	ARCADIA, BALDWIN AVENUE	18800	272000	263000	18900	274000	264000
07	210		LA	R	31.883	ARCADIA, SANTA ANITA AVENUE	18900	274000	264000	18300	263000	254000
07	210		LA	R	32.890	MONROVIA, HUNTINGTON DRIVE	18300	263000	254000	18100	263000	252000
07	210		LA	R	32.914	MONROVIA, MYRTLE AVENUE	18100	263000	252000	17800	257000	246000
07	210		LA	R	34.741	MONROVIA, MOUNTAIN AVENUE	17800	257000	246000	18300	264000	253000
07	210		LA	R	35.244	DUARTE, BUENA VISTA STREET	18300	264000	253000	18600	264000	256000
07	210		LA	R	36.410	DUARTE, JCT. RTE. 605	18600	264000	256000	19000	277000	269000
07	210		LA	R	37.862	IRWINDALE, IRWINDALE AVENUE	19000	277000	269000	18600	272000	265000
07	210		LA	R	38.957	AZUSA, VERNON AVENUE	18600	272000	265000	18200	267000	261000
07	210		LA	R	39.600	AZUSA, AZUSA AVENUE	18200	267000	261000	18000	264000	257000

07	210	LA	R	40.603	AZUSA, CITRUS AVENUE	18000	264000	257000	17700	262000	256000
07	210	LA	R	41.594	GLENDORA, GRAND AVENUE	17700	262000	256000	17700	262000	256000
07	210	LA	R	43.160	GLENDORA, SUNFLOWER AVENUE	17700	262000	256000	18000	262000	257000
07	210	LA	R	44.377	GLENDORA, JCT RTE 57	18000	262000	257000	14800	221000	198000
07	210	LA	R	45.456	SAN DIMAS, SAN DIMAS AVENUE	14000	209000	187000	13200	198000	193000
07	210	LA	R	46.628	LA VERNE, JCT. RTE. 66	13200	198000	193000	14000	186000	181000
07	210	LA	R	48.083	LA VERNE, FRUIT STREET	14000	186000	181000	14700	184000	181000
07	210	LA	R	49.533	CLAREMONT, TOWNE AVENUE	14700	184000	181000	14400	181000	178000
07	210	LA	R	51.849	CLAREMONT, BASELINE ROAD	14400	181000	178000	14400	180000	178000
07	210	LA	R	52.150	LOS ANGELES/SAN BERNARDINO COUNTY LINE	12400	182000	178000			
08	210	SBD		0.000	LOS ANGELES/SAN BERNARDINO COUNTY LINE				12300	183000	179000
08	210	SBD		1.497	MOUNTAIN AVENUE	12300	183000	179000	12500	186000	182000
08	210	SBD		3.471	CAMPUS AVENUE	12500	186000	182000	13100	194000	190000
08	210	SBD		4.599	CARNELIAN STREET	13100	194000	190000	13400	199000	195000
08	210	SBD		5.901	ARCHIBALD AVENUE	13400	199000	195000	13600	202000	198000
08	210	SBD		6.913	HAVEN AVENUE	13900	204000	198000	14200	207000	201000
08	210	SBD		7.909	MILLIKEN AVENUE	14200	207000	201000	13700	200000	194000
08	210	SBD		9.138	DAY CREEK BOULEVARD	13700	200000	194000	13200	193000	187000
08	210	SBD		11.498	JCT RTE 15	13200	193000	187000	13400	186000	182000
08	210	SBD		11.914	CHERRY AVENUE	13400	186000	182000	12700	176000	172000
08	210	SBD		13.927	CITRUS AVENUE	12700	176000	172000	12200	168000	165000
08	210	SBD		14.929	SIERRA AVENUE	12200	168000	165000	11800	163000	160000
08	210	SBD		15.936	ALDER AVENUE	11800	163000	160000	11800	163000	160000
08	210	SBD		17.437	AYALA DRIVE	11800	163000	160000	11900	164000	161000
08	210	SBD		18.689	RIVERSIDE AVENUE	11900	164000	161000	12300	160000	156000
08	210	SBD		20.694	STATE STREET	12300	160000	156000	12300	160000	156000
08	210	SBD	R	21.872	JCT RTE 215	12300	160000	156000	10200	134000	130000
08	210	SBD	R	22.944	SAN BERNARDINO, H STREET	10200	134000	130000	10200	134000	130000
08	210	SBD	R	23.095	NORTH JCT RTE 259	10200	134000	130000	11600	168000	162000
08	210	SBD	R	24.215	SAN BERNARDINO, JCT RTE 18 NORTH	11600	168000	162000	11600	143000	138000
08	210	SBD	R	25.718	DEL ROSA AVENUE	11600	143000	138000	9700	121000	117000
08	210	SBD	R	26.729	HIGHLAND AVENUE	8400	120000	117000	7100	103000	100000
08	210	SBD	R	28.664	SAN BERNARDINO, JCT RTE 330	7100	103000	100000	5700	82000	80000
08	210	SBD	R	29.322	HIGHLAND, BASELINE STREET	5700	82000	80000	6100	87000	85000
08	210	SBD	R	30.232	HIGHLAND, FIFTH STREET	6100	87000	85000	7100	103000	100000
08	210	SBD	R	31.700	E/O SANTA ANA RIVER BRIDGE	7100	103000	100000	7100	103000	100000
08	210	SBD	R	32.343	REDLANDS, SAN BERNARDINO AVE	7100	103000	100000	5900	85000	83000
08	210	SBD	R	33.180	JCT. RTE. 10	5900	85000	83000			
01	211	HUM		73.200	FERNDALE, OCEAN AVENUE				640	6600	6000
01	211	HUM	R	74.192	FERNDALE, VAN NESS AVENUE	640	6600	6000	640	6500	6200
01	211	HUM	R	75.782	SAGE ROAD	560	6100	5800	580	6100	5900
01	211	HUM	R	76.688	GOBLE LN-WADDINGTON RD	570	6300	5700	530	6300	5700
01	211	HUM		79.275	JCT. RTE. 101	510	6000	5500			
07	213	LA		0.000	LOS ANGELES, 25TH STREET				2850	31000	30500
07	213	LA		3.458	RANCHO PALOS VERDES, AVENDIA APPRENDA ROAD	3050	34000	33000	3450	38500	37500
07	213	LA		4.314	LOMITA, PALOS VERDES DRIVE NORTH	3450	38500	37500	2000	22900	22600
07	213	LA		5.085	LOS ANGELES, JCT. RTE. 1	2750	32000	31500	2000	21400	20900
07	213	LA		5.667	LOS ANGELES, LOMITA BOULEVARD	2200	23400	22900	2750	29000	28500
07	213	LA		6.996	LOS ANGELES, SEPULVEDA BOULEVARD	2750	29000	28500	3050	32500	31500
07	213	LA		7.983	CARSON STREET	3050	32500	31500	3050	32500	31500
07	213	LA		8.973	W 204TH STREET	3050	32500	31500			
08	215	RIV	R	8.430	MURRIETA, JCT. RTE. 15				7500	109000	106000
08	215	RIV	R	9.507	MURRIETA HOT SPRINGS ROAD	7500	109000	106000	8500	124000	120000
08	215	RIV	R	10.652	MURRIETA, LOS ALAMOS ROAD	8500	124000	120000	8100	118000	114000
08	215	RIV	R	12.510	MURRIETA, ANTELOPE ROAD	8100	118000	114000	8800	126000	121000
08	215	RIV	R	15.515	SCOTT ROAD	8800	126000	121000	8300	119000	114000
08	215	RIV	R	18.516	NEWPORT ROAD	8300	119000	114000	7200	103000	99000
08	215	RIV	R	20.842	SUN CITY, MC CALL BOULEVARD	7200	103000	99000	7100	102000	98000
08	215	RIV		22.760	PERRIS, ETHANAC ROAD	7100	102000	98000	6900	99000	95000
08	215	RIV		23.537	SOUTH JCT. RTE. 74	6900	99000	95000	8000	115000	110000
08	215	RIV		26.308	PERRIS, NORTH JCT. RTE. 74	8000	115000	110000	7500	109000	104000
08	215	RIV		27.230	PERRIS, D STREET	7500	109000	104000	9100	131000	125000
08	215	RIV	R	27.887	PERRIS, NUEVO ROAD; PERRIS	9100	131000	125000	9200	133000	127000
08	215	RIV	R	30.930	RAMONA EXPRESSWAY	9200	133000	127000	9300	146000	141000
08	215	RIV	R	32.330	OLEANDER AVENUE	9300	146000	141000	10300	161000	156000
08	215	RIV	R	34.170	VAN BUREN BOULEVARD	10300	161000	156000	10100	157000	152000
08	215	RIV	R	35.760	CACTUS AVENUE	10100	157000	152000	10300	161000	156000
08	215	RIV	R	36.419	ALLENSANDRO BOULEVARD	10300	161000	156000	10600	166000	160000
08	215	RIV	R	37.436	RIVERSIDE, EUCALYPTUS/EASTRIDGE AVE	10600	166000	160000	10500	164000	158000
08	215	RIV	R	38.339	JCT. RTE. 60 EAST	10500	164000	158000	15500	259000	238000
08	215	RIV	R	38.915	RIVERSIDE, FAIR ISLE DRIVE	15500	259000	238000	16200	271000	249000
08	215	RIV		39.484	RIVERSIDE, CENTRAL AVENUE	16200	271000	249000	16300	272000	250000
08	215	RIV		40.977	RIVERSIDE, PENNSYLVANIA AVENUE	16300	272000	250000	16400	275000	253000
08	215	RIV		41.488	UNIVERSITY AVENUE	16400	275000	253000	16000	268000	246000
08	215	RIV		42.163	RIVERSIDE, 3RD/ BLAINE STREETS	16000	268000	246000	16900	283000	260000
08	215	RIV		43.900	RIVERSIDE, COLUMBIA AVENUE	13300	197000	193000	12400	184000	180000
08	215	RIV		45.013	CENTER STREET	12400	184000	180000	11800	176000	172000
08	215	RIV		45.333	RIVERSIDE/SAN BERNARDINO COUNTY LINE	11800	176000	172000			

08	215	SBD		0.000	RIVERSIDE/SAN BERNARDINO COUNTY LINE				11600	172000	168000
08	215	SBD		0.402	IOWA AVENUE	12500	172000	168000	12500	185000	180000
08	215	SBD		1.312	BARTON ROAD	12500	185000	180000	12800	190000	185000
08	215	SBD		2.686	COLTON, MOUNT VERNON/ WASHINGTON AVENUES	12800	190000	185000	13900	205000	200000
08	215	SBD		4.052	COLTON, JCT. RTE. 10	13900	205000	200000	16100	217000	210000
08	215	SBD		5.025	SAN BERNARDINO, ORANGE SHOW ROAD	16100	217000	210000	15100	204000	198000
08	215	SBD		5.581	SAN BERNARDINO, INLAND CENTER DRIVE	15100	204000	198000	14600	197000	191000
08	215	SBD		6.060	SAN BERNARDINO, MILL STREET	14600	197000	191000	14700	198000	192000
08	215	SBD		6.787	SAN BERNARDINO, SECOND STREET	14700	198000	192000	13500	182000	177000
08	215	SBD		7.183	SAN BERNARDINO, JCT. RTE. 66 WEST	13500	182000	177000	13400	180000	175000
08	215	SBD		8.083	SAN BERNARDINO, BASELINE STREET	13400	180000	175000	12200	165000	160000
08	215	SBD		8.603	SAN BERNARDINO, JCT. RTE. 259 NORTH	12200	165000	160000	7500	101000	98000
08	215	SBD		9.029	SAN BERNARDINO, MASSACHUSETTS AVENUE	7500	101000	98000	7300	99000	96000
08	215	SBD		9.364	SAN BERNARDINO, HIGHLAND AVENUE	7300	99000	96000	7000	95000	92000
08	215	SBD		9.722	SAN BERNARDINO, MOUNT VERNON AVENUE/27TH STREET	7000	95000	92000	6500	88000	85000
08	215	SBD		10.051	JCT. RTE. 210U/215	6500	88000	85000	7200	94000	91000
08	215	SBD		11.634	UNIVERSITY PARKWAY	7200	94000	91000	5600	74000	71000
08	215	SBD		14.091	PALM AVENUE	5600	74000	71000	5600	74000	71000
08	215	SBD		14.104	SAN BERNARDINO, JCT RTE 206	5600	74000	71000	5600	74000	71000
08	215	SBD		17.323	DEVORE ROAD	5600	74000	71000			
06	216	TUL	R	0.000	VISALIA, JCT. RTE. 198				1850	19300	17200
06	216	TUL	R	0.349	MILL CREEK PARKWAY	2000	20300	18000	1600	16500	14200
06	216	TUL	R	0.488	VISALIA, GOSHEN AVENUE	1600	16500	14200	1500	14900	13700
06	216	TUL	R	0.824	ROOSEVELT AVENUE	1500	14900	13800	1400	14100	12800
06	216	TUL	R	0.990	LOVERS LANE	1400	14100	12800	1600	14100	13100
06	216	TUL		2.460	MACAULIFF AVE,RD 144	1600	14100	13100	560	4500	4250
06	216	TUL		6.950	IVANHOE, AVENUE 328	610	6400	6100	480	5000	4750
06	216	TUL		11.732	AVENUE 344	390	4200	4050	450	4900	4600
06	216	TUL		12.010	ROAD 196	450	4900	4600	600	6600	6200
06	216	TUL		14.006	WOODLAKE, JCT. RTE. 245	530	5700	5400	510	5100	4650
06	216	TUL		14.510	WOODLAKE, ROAD 216	510	5100	4650	280	2750	2550
06	216	TUL		18.670	DRY CREEK ROAD	130	1250	1150	140	1400	1250
06	216	TUL		19.245	JCT. RTE. 198	160	1400	1250			
05	217	SB		0.464	ENTRANCE, UC SANTA BARBARA				1500	13500	12000
05	217	SB		0.930	SANTA BARBARA, SANDSPIT ROAD	1400	13500	12000	1500	14500	12900
05	217	SB		2.232	HOLLISTER AVENUE	1500	14500	12900	2000	18500	16400
05	217	SB		2.756	JCT. RTE. 101	2100	19600	17400	2200	20000	18000
05	217	SB		2.989	END INDEP ALIGN AT RTE 101	2300	21500	19100			
05	218	MON	R	0.000	SEASIDE, JCT. RTE. 1				2100	26000	24000
05	218	MON	R	0.220	EAST OF DEL MONTE EASTBOUND	2100	26000	24000	1200	17000	13500
05	218	MON	L	0.920	FREMONT BOULEVARD	1200	16900	13600	2300	26500	21300
05	218	MON		0.100	DEL REY OAKS	2300	26500	21300	1600	20100	16300
05	218	MON		1.956	DEL REY OAKS, JCT. RTE. 68	1400	18700	15100			
10	219	STA		0.116	JCT. RTE. 99				2200	30000	27500
10	219	STA		4.858	JCT. RTE. 108	1600	14900	14200			
04	220	SOL		0.000	JCT. RTE. 84				100	300	200
04	220	SOL		3.050	RYER RD	100	300	200	100	400	300
04	220	SOL		3.200	SOLANO/SACRAMENTO COUNTY LINE	100	400	300			
03	220	SAC		0.000	SOLANO/SACRAMENTO COUNTY LINE				50	300	230
03	220	SAC		0.440	GRAND ISLAND ROAD	40	310	190	140	1200	730
03	220	SAC		3.114	RYDE, JCT. RTE. 160	150	1200	730			
04	221	NAP		0.000	JCT. RTE. 29				3100	42500	35200
04	221	NAP		1.511	NAPA, BASALT ROAD	3200	44500	36800	3300	45500	37800
04	221	NAP		2.525	ENTRANCE, NAPA STATE HOSPITAL	3300	45500	37800	2900	42500	33600
04	221	NAP		2.682	JCT. RTE. 121	3700	39000	36000			
01	222	MEN	R	0.000	UKIAH, JCT. RTE. 101				660	7900	7500
01	222	MEN		1.560	SANFORD RANCH ROAD	660	7900	7500	660	5400	5100
01	222	MEN		2.153	TALMAGE	590	4300	4100			
06	223	KER		1.850	JCT. RTE. 5				170	1550	1450
06	223	KER		4.864	OLD RIVER ROAD	170	1550	1450	470	4450	3950
06	223	KER		8.892	WIBLE ROAD	480	4450	4000	520	4500	4200
06	223	KER	R	10.536	JCT. RTE. 99	520	4500	4200	780	8000	7400
06	223	KER	R	10.940	UNION AVENUE	670	7500	7000	670	7500	7000
06	223	KER	R	16.014	JCT. RTE. 184 NORTH	730	8000	7500	830	9600	9000
06	223	KER	R	20.150	ARVIN, COMANCHE DRIVE	780	8900	8500	1150	13000	12400
06	223	KER		20.911	ARVIN, A STREET	970	10800	10400	990	10000	9900
06	223	KER		21.165	ARVIN, DERBY STREET	720	7500	7200	390	3950	3600
06	223	KER		22.200	TOWERLINE ROAD	390	3950	3600	250	2300	2200
06	223	KER		26.200	ARVIN, EAST	230	2300	2100	210	1800	1550
06	223	KER		31.920	JCT. RTE. 58	200	1750	1500			
05	227	SLO		0.971	BEGIN ROUTE				620	5300	4900
05	227	SLO		1.428	ARROYO GRANDE, CORBETT CANYON ROAD	540	4600	4300	540	4600	4300
05	227	SLO		1.450	TALLEY HO RD	540	4600	4300	400	3400	3200
05	227	SLO		1.490	ARROYO GRANDE, PRINTZ ROAD	400	3400	3200	290	2500	2300
05	227	SLO		2.590	PHILLIPS RD	250	2100	2000	240	2000	1900
05	227	SLO		4.280	NOYES RD	230	1900	1800	870	7400	6900
05	227	SLO		5.857	CORBETT CANYON LANDFILL	970	8300	7700	830	7100	6600
05	227	SLO	R	6.700	CORBETT CYN RD - RT	850	7500	7000	900	8000	7500

05	227	SLO		7.120	EDNA, PRICE CANYON ROAD	970	8300	7700	1800	15400	14600
05	227	SLO	R	8.249	BIDDLE RANCH ROAD	1800	15400	14600	1800	15100	14300
05	227	SLO	R	9.367	CRESTMONT DRIVE	2100	17900	17000	2000	16900	16000
05	227	SLO	R	10.239	WOODS ANIMAL SHELTER	2100	19000	18000	2600	15000	13000
05	227	SLO	R	10.264	END OF ROUTE	2600	15000	13000			
05	229	SLO		0.000	JCT. RTE. 58				60	240	180
05	229	SLO		9.160	JCT. RTE. 41	570	9800	6700			
07	232	VEN		0.441	OXNARD, JCT. RTE. 101				2150	22900	22700
07	232	VEN		2.579	CENTRAL AVENUE	1950	21600	20000	2000	21700	19800
07	232	VEN	R	4.110	JCT. RTE. 118	1600	16600	15600			
06	233	MAD	L	0.000	BEGIN ROUTE				360	3950	3600
06	233	MAD		0.005	JCT. RTE. 152	360	3950	3600	360	3950	3600
06	233	MAD		2.390	CHOWCHILLA, WASHINGTON AVENUE	950	10400	9600	1150	12300	11300
06	233	MAD		2.490	CHOWCHILLA, 15TH STREET	1150	12300	11300	1050	12500	10700
06	233	MAD		3.090	CHOWCHILLA, 6TH STREET	1150	12500	11300	1100	12900	11200
06	233	MAD		3.290	CHOWCHILLA, 3RD STREET	1350	15200	13900	1400	15400	14500
06	233	MAD		3.586	CHOWCHILLA, CHOWCHILLA AVENUE	1300	14300	13200	1300	14400	13500
06	233	MAD		3.887	JCT. RTE. 99	1300	14400	13500			
05	236	SCR		0.000	BOULDER CREEK, JCT. RTE. 9				940	8500	8400
05	236	SCR		2.670	JAMISON CREEK ROAD	330	3700	3000	340	3800	3000
05	236	SCR		8.740	SOUTH BOUNDARY BIG BASIN REDWOODS STATE PARK	110	720	560	110	720	560
05	236	SCR		9.321	GOVERNOR'S CAMP	80	380	280	80	380	280
05	236	SCR		12.720	EAST BOUNDARY BIG BASIN REDWOODS STATE PARK	80	380	280	80	540	390
05	236	SCR		17.670	JUNCTION ROUTE 9, END OF ROUTE	200	1600	1000			
04	237	SCL	R	0.000	MOUNTAIN VIEW, JCT. RTE. 82				3500	52000	50000
04	237	SCL	R	0.375	MOUNTAIN VIEW, JCT. RTE. 85	3500	52000	50000	5800	78000	74000
04	237	SCL	R	0.608	DANA STREET/WHISMAN ROAD	5800	78000	74000	5700	75000	72000
04	237	SCL	R	0.810	MOUNTAIN VIEW, SYLVAN AVENUE	5700	75000	72000	6100	90000	77000
04	237	SCL	M	1.547	MIDDLEFIELD ROAD/MAUDE AVENUE	6100	90000	77000	6100	90000	77000
04	237	SCL		2.480	SUNNYVALE, JCT. RTE. 101	6100	90000	77000	7200	124000	100000
04	237	SCL		2.990	SUNNYVALE, MATHILDA AVENUE	7200	124000	100000	7800	133000	108000
04	237	SCL	R	3.972	SUNNYVALE, FAIR OAKS AVENUE	7800	133000	108000	7400	126000	103000
04	237	SCL	R	4.599	SUNNYVALE, LAWRENCE EXPRESSWAY	7400	126000	103000	11300	163000	120000
04	237	SCL	R	5.834	GREAT AMERICA PARKWAY	11300	163000	120000	9300	121000	119000
04	237	SCL		6.866	SAN JOSE, NORTH FIRST/ TAYLOR STREETS	9300	121000	119000	9800	130000	125000
04	237	SCL		8.020	SAN JOSE, ZANKER ROAD	9800	130000	125000	10700	142000	131000
04	237	SCL	R	9.125	R McCARTHY BOULEVARD	4900	65000	62000	4700	63000	60000
04	237	SCL	R	9.125	L McCARTHY BOULEVARD	5400	72000	69000	2600	33500	32100
04	237	SCL		9.335	JCT. RTE. 880	10200	125000	121000	4700	70000	67000
04	237	SCL	T	10.000	MAIN STREET	4700	70000	67000	5100	75000	71200
04	237	SCL		11.080	MILPITAS, JCT. RTE. 680	5100	75000	71200			
04	238	ALA		0.000	FREMONT, JCT. RTE. 680				2700	31800	31200
04	238	ALA		3.314	FREMONT, SOUTH JCT. RTE. 84 WEST	2700	32000	31200	3000	36000	35000
04	238	ALA		3.644	NORTH JCT. RTE 84	3000	36000	35000	3100	33000	32200
04	238	ALA		4.300		3100	33000	32200	3100	33000	32200
04	238	ALA		4.720	FREMONT, NURSERY AVENUE	3100	33000	32200	2700	28500	27900
04	238	ALA		6.780	UNION CITY, DECOTO ROAD	2700	28500	27900	2700	33000	32200
04	238	ALA	R	14.469	JCT. RTE. 580	2700	33000	32200	15700	167000	162000
04	238	ALA		14.951	JCT. RTE. 185	15700	167000	162000	15700	167000	162000
04	238	ALA		16.279	SAN LEANDRO, HESPERIAN BOULEVARD	15700	167000	162000	9900	104000	102000
04	238	ALA		16.696	JCT. RTE. 880	9900	104000	102000			
12	241	ORA		14.545	BEGIN ROUTE				1050	8500	7950
12	241	ORA		14.550	OSO PARKWAY	1050	8500	7950	4150	33500	31100
12	241	ORA		17.768	ANTONIO PARKWAY	4150	33500	31100	3500	28000	25700
12	241	ORA		18.488	SANTA MARGARITA PARKWAY	3500	28000	25700	5200	41000	38000
12	241	ORA		20.077	LOS ALISOS BOULEVARD	5200	41000	38000	5200	41000	38100
12	241	ORA		21.802	PORTOLA PARKWAY UC	5200	41000	38100	4400	35000	32400
12	241	ORA		23.418	ALTON PARKWAY	5000	39500	36400	4550	39000	35900
12	241	ORA		24.968	PORTOLA PARKWAY	4550	39000	35900	5400	40000	37200
12	241	ORA		27.378	JCT RTE 133	5100	40000	37200	4950	37500	37000
12	241	ORA		32.541	CHAPMAN-SANTIAGO RD UC	4950	37500	36700	6000	58000	56600
12	241	ORA		36.099	WINDY RIDGE TOLL PLAZA	5000	49000	47800	5000	49000	47800
12	241	ORA		39.079	JCT RTE 91	5000	49000	49300			
04	242	CC	R	0.000	CONCORD, JCT. RTE. 680				4300	52000	49000
04	242	CC	R	0.872	CONCORD, WILLOW PASS ROAD	10100	119000	116000	7800	100000	96000
04	242	CC	R	1.468	CONCORD, CONCORD AVENUE	7800	100000	96000	10400	142000	137000
04	242	CC	R	2.145	CONCORD, SOLANO WAY	10400	142000	137000	10800	148000	143000
04	242	CC	R	2.789	CONCORD, OLIVERA ROAD	10800	148000	143000	9500	133000	130000
04	242	CC	R	3.398	CONCORD, JCT. RTE. 4	9500	133000	130000			
08	243	RIV		0.000	JCT. RTE. 74				470	4000	3700
08	243	RIV		3.613	COUNTRY CLUB DRIVE	470	4000	3700	640	6000	5300
08	243	RIV		4.450	CIRCLE DRIVE	640	6000	5300	710	7300	6500
08	243	RIV		4.514	PINECREST/DAIRY ROADS	710	7300	6500	470	4950	4300
08	243	RIV		7.525	MARION RIDGE DRIVE	510	3650	3000	340	2450	2000
08	243	RIV		28.280	BANNING, SAN GORGONIO AVENUE	340	2750	2200	540	5300	4900
08	243	RIV		29.480	LINCOLN/8TH ST	340	3800	3700	640	7200	7000
08	243	RIV		29.659	BANNING, JCT. RTE. 10	640	7200	7000			
03	244	SAC		0.000	SACRAMENTO, JCT. RTE. 80				1000	9600	8900

03	244	SAC		0.010	WATT AVENUE 0, BEGIN FREEWAY	1000	9600	8900	1800	16700	15700
03	244	SAC		0.457	SACRAMENTO, JCT. RTE. 51	1800	16700	15700	3800	34000	32700
03	244	SAC	T	1.076	AUBURN BLVD	3800	34000	32700			
06	245	TUL		0.000	JCT. RTE. 198				340	3650	3450
06	245	TUL		7.066	JCT. RTE. 216	510	5700	5400	660	7000	6600
06	245	TUL		8.061	WOODLAKE, AVENUE 352	230	2400	2250	170	1750	1650
06	245	TUL		10.470	ROAD 200	160	1650	1550	130	1300	1200
06	245	TUL		11.999	JCT. RTE. 201 WEST	130	1150	1100	90	720	640
06	245	TUL		19.293	OROSI ROAD/BOYD DRIVE	40	210	190	60	290	260
06	245	TUL		33.035	TULARE/FRESNO COUNTY LINE	60	260	250			
06	245	FRE		0.000	TULARE/FRESNO COUNTY LINE				60	260	250
06	245	FRE		8.972	JCT. RTE. 180	50	240	220			
05	246	SB		8.302	LOMPOC, WEST CITY LIMITS				340	3200	3100
05	246	SB		9.550	LOMPOC, JCT. RTE. 1	830	9200	9000	1000	11200	10900
05	246	SB	R	20.846	DOMINGUS ROAD	360	4100	4000	310	3600	3500
05	246	SB		26.286	BUELLTON, JCT. RTE. 101	1700	19500	19000	2600	30000	25800
05	246	SB		29.233	SOLVANG, FIFTH STREET	2400	25500	24700	1900	20300	19800
05	246	SB		30.280	ALAMO PINTADO ROAD	2000	21200	20700	2000	21500	21000
05	246	SB	R	34.601	SANTA YNEZ, JCT. RTE. 154	1100	13200	11000			
08	247	SBD		0.000	YUCCA VALLEY, JCT. RTE. 62				1100	11800	11400
08	247	SBD		39.598	CAMP ROCK ROAD	280	3000	2900	220	2400	2300
08	247	SBD		44.850	JCT. RTE. 18	280	3000	2900	350	2800	2700
08	247	SBD		46.114	RABBIT SPRING ROAD	350	2800	2700	330	2650	2550
08	247	SBD		56.475	LUCERNE VALLEY CUTOFF ROAD	330	2650	2550	370	3000	2900
08	247	SBD		73.181	STODDARD WELLS ROAD	370	3000	2900	320	2600	2500
08	247	SBD		76.422	BARSTOW CITY LIMITS	330	2650	2550	2150	21900	17000
08	247	SBD		78.096	BARSTOW, JCT. RTE. 15	3000	30500	23800			
01	253	MEN		0.000	BOONVILLE, JCT. RTE. 128				250	2800	2200
01	253	MEN		17.180	UKIAH, JCT. RTE. 101	340	3600	3100			
01	254	HUM		0.000	JCT. RTE. 101				200	1750	1300
01	254	HUM		4.837	MIRANDA BRIDGE RD	300	1500	1350	500	3000	2500
01	254	HUM		12.327	JCT. RTE. 101	500	2300	2000	250	2000	1200
01	254	HUM		16.840	BURLINGTON STATE PARK	160	1150	630	160	1150	630
01	254	HUM		18.800	WEOTT, NORTH	130	1250	900	200	1300	1100
01	254	HUM		24.210	ENGLEWOOD PARK , DYERVILLE, NORTH	210	1100	990	110	1000	800
01	254	HUM		46.530	JCT. RTE. 101, JORDAN RD	190	1100	900			
01	255	HUM		0.000	EUREKA, JCT. RTE. 101				1050	10300	8600
01	255	HUM		2.028	NAVY BASE ROAD	880	8100	7600	810	7500	7000
01	255	HUM		3.657	DEAN/PACIFIC AVENUES	790	6800	6100	790	6500	6100
01	255	HUM		4.728	YOUNG LANE	790	6500	6100	780	6300	5950
01	255	HUM	R	5.130	MAD RIVER SLOUGH BRIDGE	780	7700	5800	880	8400	6300
01	255	HUM		8.352	ARCATA, K STREET	860	8200	6200	930	8900	7150
01	255	HUM		8.525	ARCATA, H STREET	930	8900	7150	1200	12000	10500
01	255	HUM		8.584	ARCATA, G STREET	1200	12000	10700	1800	16700	16100
01	255	HUM		8.803	JCT. RTE. 101	1700	16900	15600			
08	259	SBD	R	0.000	SAN BERNARDINO, JCT. RTE. 215				3600	50000	48000
08	259	SBD	R	0.497	HIGHLAND AVENUE	3600	50000	48000			
08	259	SBD		1.250	JCT. RTE. 210	3400	47000	45000	3400	47000	45000
08	259	SBD		1.454	E STREET	3400	47000	45000	2800	38500	37000
08	259	SBD		1.515	END ROUTE 259	2800	38500	37000			
04	260	ALA	R	0.640	BEGIN ROUTE ATLANTIC AVE				3200	33000	32300
04	260	ALA	R	0.838	BEGIN RIGHT ALIGN	3200	33000	32300			
04	260	ALA	R	0.838 R	BEGIN RIGHT ALIGN				3200	33000	32300
04	260	ALA	R	1.124 R	ALAMEDA, POSEY TUBE	3200	33000	32300	2200	34000	32300
04	260	ALA	R	1.924 R	OAKLAND, JCT. RTE. 880	2200	34000	32300			
04	260	ALA	R	0.838 L	BEGIN LEFT ALIGN				1900	33500	32300
04	260	ALA	R	1.124 L	ALAMEDA, WEBSTER TUBE	1900	33500	32300	1900	33500	32300
04	260	ALA	R	1.924 L	END LEFT ALIGN	1900	33500	32300			
12	261	ORA		0.000	IRVINE, WALNUT AVENUE				11300	75000	71100
12	261	ORA		0.239	JAMBOREE OC	11300	75000	71100	6600	39000	37500
12	261	ORA		1.638	IRVINE BLVD OC	6800	39000	37500	7000	39500	37900
12	261	ORA		2.848	PORTOLA PARKWAY OC	6900	39500	37900	6900	40500	38600
12	261	ORA		6.035	CHAPMAN AVE OC	6900	40500	38600	5200	29500	28000
12	261	ORA		6.205	JCT RTE 241	5500	34500	28000			
04	262	ALA	R	0.000	FREMONT, JCT. RTE. 880				4800	73000	70400
04	262	ALA	R	0.394	KATO AVENUE 80	4800	73000	70400	4800	73000	70400
04	262	ALA	R	0.700	FREMONT, WARM SPRINGS BOULEVARD	4800	73000	70400	4800	74000	71400
04	262	ALA	R	1.070	FREMONT, JCT. RTE. 680	5700	84000	81900			
02	263	SIS		49.070	YREKA, JCT. RTE. 3				230	2150	1900
02	263	SIS		50.630	HAWKINSVILLE, HUMBUG ROAD	170	1850	1700	120	1100	970
02	263	SIS		57.195	JCT. RTE. 96	110	1150	950			
02	265	SIS		19.801	WEED, JCT. RTE. 97				190	1900	1700
02	265	SIS		20.328	WEED, JCT. RTE. 5	190	1900	1700			
09	266	MNO		0.000	NEVADA STATE LINE (SOUTH)				70	520	290
09	266	MNO		4.300	JCT. RTE. 168	40	330	180	30	260	170
09	266	MNO		11.721	NEVADA STATE LINE (NORTH)	40	320	140			
03	267	NEV	M	0.000	JCT RTE 80/89/267				1750	18900	14400
03	267	NEV	M	1.419	BRIDGE ST, RT/SOARNG WY LT	1700	18900	14300	1800	21000	16000

03	267	NEV	M	1.798	PLACER/NEVADA COUNTY LINE	2000	21400	16900					
03	267	PLA		0.000	PLACER/NEVADA COUNTY LINE				2050	21400	16900		
03	267	PLA		0.250	TAHOE TRUCKEE AIRPORT ROAD	2000	21400	16900	1600	17300	13300		
03	267	PLA		3.760	NORTH STAR DRIVE	1600	17400	13800	1350	14100	10900		
03	267	PLA		6.230	MARTIS PEAK ROAD	1400	15000	10600	1400	15000	10600		
03	267	PLA		9.280	KINGS BEACH, NORTH AVENUE	1250	14600	10500	1250	14600	10500		
03	267	PLA		9.898	JCT. RTE. 28	1150	12800	11300					
06	269	KIN		0.000	JCT. RTE. 33				240	2350	2100		
06	269	KIN		5.615	KINGS/FRESNO COUNTY LINE	620	5800	5500					
06	269	FRE		0.000	KINGS/FRESNO COUNTY LINE				620	5800	5500		
06	269	FRE		0.150	PLYMOUTH AVE/AVENAL CUTOFF ROAD EAST	610	5800	5400	560	5500	4800		
06	269	FRE		0.427	JCT. RTE. 5	560	5500	4900	230	2400	2100		
06	269	FRE		12.746	JCT. RTE. 198	540	5400	4600	390	3750	3350		
06	269	FRE		24.764	JCT. RTE. 145	310	3100	2650					
09	270	MNO		0.000	JCT. RTE. 395				110	680	290		
09	270	MNO		9.805	BODIE HISTORIC STATE PARK	120	700	450					
01	271	MEN		0.000	JCT RTE 101				20	150	140		
01	271	MEN		0.020	JCT. RTE. 101	20	160	140	20	140	120		
01	271	MEN		3.385	OLD ROUTE 101 BRIDGE	20	150	110	70	670	490		
01	271	MEN		5.601	JCT. RTE. 101, SCANDIA	70	650	490	70	620	510		
01	271	MEN	R	17.048	JCT. RTE. 101, REYNOLDS	70	620	510	20	140	110		
01	271	MEN		19.459	JCT. RTE. 101, PIERCY	30	130	120	30	180	140		
01	271	MEN		22.721	MENDOCINO/HUMBOLDT COUNTY LINE	40	270	220					
01	271	HUM		0.000	MENDOCINO/HUMBOLDT COUNTY LINE				40	270	240		
01	271	HUM	T	0.306	TEMPORARY JCT. RTE. 101	40	270	240					
02	273	SHA		3.812	JCT. RTE. 5				840	9100	8600		
02	273	SHA		4.440	ANDERSON, PINON AVENUE	830	9000	8500	1350	13600	12600		
02	273	SHA		5.206	ANDERSON, SOUTH STREET	1350	13600	12500	1200	12900	12100		
02	273	SHA		5.438	ANDERSON, NORTH STREET	1200	12900	12100	880	11400	9400		
02	273	SHA		6.387	ALEXANDER AVENUE	880	11400	9000	1700	13300	10100		
02	273	SHA		6.900	OX YOKE ROAD	1700	13300	10100	1900	16200	12600		
02	273	SHA		7.240	CHAMPION/FRONTAGE ROADS	1900	16200	12600	1950	14900	12000		
02	273	SHA		7.540	HILL STREET	1950	14900	12000	1100	11500	11000		
02	273	SHA		9.990	HAPPY VALLEY ROAD	1100	11500	11000	1150	12200	11900		
02	273	SHA		11.100	CANYON ROAD	1150	12200	11500	1950	21700	20600		
02	273	SHA		11.830	REDDING, CLEAR CREEK ROAD	1950	21700	20600	2000	21900	20900		
02	273	SHA		12.270	REDDING, WESTWOOD AVENUE	2000	21900	20900	2100	22600	22200		
02	273	SHA		12.680	REDDING, CEDARS/SOUTH BONNEYVIEW ROADS	2100	22600	22200	1600	18000	15500		
02	273	SHA		14.184	BRESLAUER WAY	1600	18000	15500	2050	21200	20400		
02	273	SHA		14.470	REDDING, BUENAVENTURA BOULEVARD	2050	21200	20400	1600	16600	15900		
02	273	SHA		15.921	MARKET/PINE STREETS	1850	17400	15600					
02	273	SHA		15.921	R MARKET/PINE STREETS, BEGIN RIGHT ALIGN				1200	10900	10400		
02	273	SHA		15.978	R REDDING, ON PINE ST. AT CYPRESS ST., RT	1050	10900	10400	1200	10900	10400		
02	273	SHA	R	16.450	R REDDING, ON PINE ST. AT PLACER ST., RT	1150	10300	10000	1150	10300	9900		
02	273	SHA	R	16.659	R REDDING, ON PINE ST AT TEHAMA ST, JCT RTE 44	1150	10300	9900	630	5900	5700		
02	273	SHA	R	16.730	R JCT RTE 299W AND RTE 44E, END RIGHT ALIGN	1150	10300	5700					
02	273	SHA		15.921	L REDDING, ON MARKET ST., BEGIN LEFT ALIGN				940	7900	7600		
02	273	SHA		15.978	L REDDING, ON MARKET ST. AT CYPRESS ST., LT	940	7900	7600	940	7900	7600		
02	273	SHA		16.255	L REDDING, MARKET/GOLD STREETS, LT	940	7900	7600	940	7900	7600		
02	273	SHA	R	16.326	L REDDING, GOLD/ CALIFORNIA STREETS, LT	890	7500	7200	900	7500	7200		
02	273	SHA	R	16.440	L REDDING, ON CALIFORNIA ST. AT SACRAMENTO ST., LT	840	7000	6800	720	6700	6500		
02	273	SHA	R	16.510	L REDDING, ON CALIFORNIA ST. AT PLACER ST., LT	720	6700	6500	690	6000	5800		
02	273	SHA	R	16.730	L REDDING, CALIFORNIA/ TEHAMA STREETS, LT	690	6000	5800	570	5500	5300		
02	273	SHA	R	16.801	L REDDING, TEHAMA/MARKET, JCT RTE 44, END LEFT ALIGN	570	5500	5300					
02	273	SHA		16.833	JCT RTE 299W AND RTE 44E				1500	17000	15700		
02	273	SHA		17.390	QUARTZ HILL/RIO	1700	17200	16300	1800	20100	19100		
02	273	SHA		17.810	REDDING, BENTON DRIVE	1800	20100	19100	1950	21400	20900		
02	273	SHA		18.622	LAKE BOULEVARD	1950	21400	20900	1150	13900	13100		
02	273	SHA		18.920	TWINVIEW BOULEVARD	1150	13900	13100	810	15400	9300		
02	273	SHA		19.770	CATERPILLAR ROAD	810	15400	9300	680	7100	6700		
02	273	SHA		20.033	JCT. RTE. 5	680	7100	6700					
03	275	YOL		12.009	JCT. RTE. 50				1350	11300	9300		
03	275	YOL		12.039	WEST SACRAMENTO, JCT. RTE. 84	1350	11300	9300	1850	18000	16500		
03	275	YOL		13.077	SAC/YOL COUNTY LINE, END OF ROUTE	1850	18000	16500					
03	275	SAC		0.000	SAC/YOL COUNTY LINE, END OF ROUTE	1850	18000	16500					
04	280	SCL	R	0.000	SAN JOSE, JCT. RTES. 101/680				16200	217000	202300		
04	280	SCL	R	0.366	MCLAUGHLIN AVENUE	18300	246000	231100	17100	264000	250300		
04	280	SCL	R	1.294	SAN JOSE, 10TH STREET	17100	264000	250300	15200	235000	223400		
04	280	SCL	R	1.992	SAN JOSE, JCT. RTE. 82	15200	235000	223400	12700	230000	222500		
04	280	SCL	R	2.522	SAN JOSE, JCT. RTE. 87	12700	230000	222500	14100	214000	204200		
04	280	SCL	R	2.875	SAN JOSE, BIRD AVENUE	14100	214000	204200	15000	227000	217700		
04	280	SCL	R	3.764	RACE STREET/SW EXWY	15000	227000	217700	13800	180000	171600		
04	280	SCL	L	4.663	SAN JOSE, LELAND AVENUE	13800	180000	171600	18200	228000	209000		
04	280	SCL	L	5.408	SAN JOSE, JCT. RTES. 17/880	18200	228000	209000	13900	175000	169700		
04	280	SCL	L	5.954	SAN JOSE, WINCHESTER BOULEVARD	13900	175000	169700	17200	210000	201400		
04	280	SCL		5.949	SAN JOSE, SARATOGA AVENUE	17200	210000	201400	14800	181000	174500		
04	280	SCL		7.123	SAN JOSE, LAWRENCE EXPRESSWAY	14800	181000	174500	11800	145000	139100		

04	280	SCL		7.388		STEVENS CREEK BOULEVARD	11800	145000	139100	13900	165000	157300
04	280	SCL		8.375		CUPERTINO, WOLFE ROAD	13900	165000	157300	14200	159000	149600
04	280	SCL		9.433		SARATOGA, SUNNYVALE/DE ANZA BOULEVARD	14200	159000	149600	14200	151000	140000
04	280	SCL		10.741		SUNNYVALE, JCT. RTE. 85	14200	151000	140000	15900	159000	148600
04	280	SCL		11.447		CUPERTINO, FOOTHILL BOULEVARD	15900	159000	148600	13800	138000	129500
04	280	SCL		14.098		MAGDALENA AVENUE	13800	138000	129500	14000	140000	130400
04	280	SCL		15.046		LOS ALTOS HILLS, EL MONTE AVENUE	14000	140000	130400	13000	130000	121800
04	280	SCL		18.379		PAGE MILL ROAD	13000	130000	121800	12200	123000	115100
04	280	SCL		20.613		ALPINE ROAD	12200	123000	115100	12500	126000	117000
04	280	SCL		20.625		SANTA CLARA/SAN MATEO COUNTY LINE	12500	126000	117000			
04	280	SM	R	0.000		SANTA CLARA/SAN MATEO COUNTY LINE				11300	113000	105500
04	280	SM	R	1.560		JCT RTE 114	11300	113000	105500	11500	115000	107400
04	280	SM	R	1.610		SAND HILL ROAD	11500	115000	107400	12500	126000	117000
04	280	SM	R	3.337		WOODSIDE, JCT. RTE. 84	12500	126000	117000	12800	123000	116000
04	280	SM	R	4.647		FARM HILL BOULEVARD	12800	123000	116000	13500	122000	115100
04	280	SM	R	5.600		1-MI. S/O CANADA ROAD	13500	122000	115100	13300	110000	103600
04	280	SM		6.654		EDGEWOOD ROAD	13300	110000	103600	11700	98000	92100
04	280	SM		10.866		JCT. RTE. 92	11700	98000	92100	15600	130000	122000
04	280	SM	R	12.319		JCT. RTE. 35	15600	130000	122000	16100	133000	125600
04	280	SM	R	14.223		HAYNE ROAD	16100	133000	125600	15700	130000	122800
04	280	SM	R	17.160		HILLSBOROUGH, TROUSDALE DRIVE	15700	130000	122800	16400	137000	129500
04	280	SM	R	17.921		HILLCREST BOULEVARD; MILLBRAE AVENUE	16400	137000	129500	16800	130000	123700
04	280	SM	R	18.524		MILLBRAE, LARKSPUR DRIVE	16800	130000	123700	15300	145000	136200
04	280	SM	R	19.278		SAN BRUNO, JCT. RTE. 35 NORTH	15300	145000	136200	13600	129000	120800
04	280	SM	R	20.218		SAN BRUNO, WHITMAN WAY/ JENEVEIN AVENUE	13600	129000	120800	14800	140000	132300
04	280	SM	R	20.747		SAN BRUNO, SAN BRUNO AVENUE	14800	140000	132300	13000	123000	116000
04	280	SM	R	21.015		SAN BRUNO, JCT. RTE. 380 EAST	13000	123000	116000	19300	183000	172600
04	280	SM	R	21.306		SAN BRUNO, SNEATH LANE	19300	183000	172600	21700	205000	193700
04	280	SM	R	22.043		SOUTH SAN FRANCISCO, AVALON DRIVE	21700	205000	193700	19500	185000	174500
04	280	SM	R	22.620		SOUTH SAN FRANCISCO, WESTBOROUGH BOULEVARD	19500	185000	174500	20900	199000	187000
04	280	SM	R	24.197		DALY CITY, HICKEY BOULEVARD	20900	199000	187000	15400	188000	177400
04	280	SM	R	24.627		DALY CITY, COLLINS AVENUE	15400	188000	177400	17900	223000	215700
04	280	SM	R	25.280		DALY CITY, JCT. RTE. 1 SOUTH	17900	223000	215700	16300	209000	208100
04	280	SM	R	26.042		JUNIPERO SIERRA	16300	209000	208100	18200	221000	216700
04	280	SM	M	26.877	R	BEGIN RIGHT ALIGN				8600	104000	101700
04	280	SM	M	27.165	R	DALY CITY, JCT. RTE. 1 NORTH	8600	104000	101700	11800	138000	135200
04	280	SM	M	27.421	R	SAN MATEO/SAN FRANCISCO CO LINE, END RIGHT ALIGN	11800	138000	135200			
04	280	SM	M	26.877	L	SB ON FR SB RTE 1, BEGIN LEFT ALIGN				9600	117000	115100
04	280	SM	M	27.165	L	DALY CITY, JCT. RTE. 1 NORTH	9600	117000	115100	11800	138000	135200
04	280	SM	M	27.433	L	SAN MATEO/SAN FRANCISCO CO LINE, END LEFT ALIGN	11800	138000	135200			
04	280	SF	R	0.000		SAN MATEO/SAN FRANCISCO COUNTY LINE				11800	138000	135200
04	280	SF	R	0.738		SAN FRANCISCO, JCT. RTE. 82	11800	138000	135200	14000	169000	165900
04	280	SF	R	1.768		SAN FRANCISCO, GENEVA/ OCEAN AVENUES	14000	169000	165900	14300	174000	170700
04	280	SF	R	2.701		SAN FRANCISCO, MONTEREY BOULEVARD/SAN JOSE AVENUE	14300	174000	170700	13000	164000	162100
04	280	SF	R	3.279		SAN FRANCISCO, ALEMANY BOULEVARD	13000	164000	162100	6600	82000	80600
04	280	SF	R	4.009	R	BEGIN RIGHT ALIGN				5300	66000	65200
04	280	SF	R	4.341	R	SAN FRANCISCO, JCT. RTE. 101	6600	82000	80600	5300	66000	65200
04	280	SF	R	5.620	R	SAN FRANCISCO, ARMY STREET	5300	66000	65200	4700	60000	58500
04	280	SF	R	5.951	R	END RIGHT ALIGN	4700	60000	58500			
04	280	SF	R	4.009	L	BEGIN LEFT ALIGN				5800	73000	71900
04	280	SF	R	4.341	L	JCT RTE 101	5800	73000	71900	5800	73000	71900
04	280	SF	R	5.620	L	SAN FRANCISCO, ARMY STREET	4800	60000	59500	3700	45000	44100
04	280	SF	R	5.951	L	END LEFT ALIGN	3700	45000	44100			
04	280	SF	R	6.050		INDIANA STREET/PENNSYLVANIA AVENUE	8400	105000	102600	8400	105000	102600
04	280	SF	R	6.603		SAN FRANCISCO, MARIPOSA STREET	8400	105000	102600	7300	92000	90200
04	280	SF	T	7.070		SAN FRANCISCO, 4TH STREET	7300	92000	90200	3900	48000	47000
04	280	SF	T	7.543		SAN FRANCISCO, BRANNAN STREET	3900	48000	47000			
01	281	LAK		14.000		BEGIN STATE HIGHWAY				210	2100	1800
01	281	LAK		15.060		POINT LAKEVIEW ROAD	220	2200	2000	620	7100	6400
01	281	LAK		17.000		JCT. RTE. 29	620	7100	6400			
11	282	SD		0.000	R	JCT. RTE. 75, BEGIN RIGHT ALIGN				2050	16400	15500
11	282	SD		0.150	R	3RD ST. AT E AVENUE	2300	16800	15500	1650	15300	13800
11	282	SD		0.366	R	3RD ST. AT H AVENUE	1650	15300	13800	2000	17100	15500
11	282	SD		0.510	R	3RD ST. AT J AVENUE	2000	17100	15500	1650	14300	13100
11	282	SD		0.581	R	3RD ST./ALAMEDA BLVD	1650	14300	13100	2750	26500	23400
11	282	SD		0.691	R	CORONADO, ALAMEDA/4TH N ISLAND AIR STA, END RIGHT	2750	26500	23400			
11	282	SD		0.000	L	JCT RTE 75				2050	18500	16000
11	282	SD		0.150	L	4TH ST. AT E AVENUE	2700	16500	16000	1750	15600	15300
11	282	SD		0.366	L	4TH ST. AT H AVENUE	1750	15600	15300	1650	14600	14300
11	282	SD		0.510	L	4TH ST. AT J AVENUE	1650	14600	14300	1600	14200	13700
11	282	SD		0.581	L	4TH ST. AT ALAMEDA BLVD, END LEFT ALIGN	1600	14200	13700			
01	283	HUM		0.000		JCT. RTE. 101				210	2100	1950
01	283	HUM		0.356		NORTH END OF EEL RIVER BRIDGE	210	2100	1950			
02	284	PLU		0.000		JCT. RTE. 70				150	980	690
02	284	PLU		8.302		FRENCHMAN RESERVOIR	100	580	390			
01	299	HUM		0.000		ARCATA, JCT. RTE. 101				1400	14400	13300
01	299	HUM		0.722		ARCATA, GUINTOLI LANE	1400	14400	13300	1050	12400	11200
01	299	HUM	R	1.802		JCT. RTE. 200 WEST	1050	12400	11200	1350	14400	12400

01	299	HUM	R	2.920	ESSEX LANE	1350	14400	12400	1200	12100	11000
01	299	HUM	R	4.036	GLENDALE	1200	12100	11000	1000	11200	10000
01	299	HUM	R	5.451	BLUE LAKE ROAD	1000	11200	10000	480	6100	5000
01	299	HUM	R	6.254	ELGARS ROAD	490	6000	5100	490	6000	5100
01	299	HUM	R	6.666	BUCKLEY ROAD	500	5600	4900	500	5600	4900
01	299	HUM	R	7.139	OLD HIGHWAY	480	5400	4700	530	5400	4100
01	299	HUM	R	7.158	END TRUCK LANE RIGHT	530	5400	4100	530	5400	4100
01	299	HUM		19.050	BAIR ROAD	380	4800	4300	530	5600	5400
01	299	HUM		38.833	WILLOW CREEK, JCT. RTE. 96 NORTH	530	5600	5300	540	5900	5500
01	299	HUM		38.900	WILLOW CREEK, RIVER ROAD	550	5900	4800	500	5300	4400
01	299	HUM		41.860	GAMBI VILLAGE, EAST	560	5500	4450	460	4600	3450
01	299	HUM		43.035	HUMBOLT/TRINITY COUNTY LINE	400	5000	3450			
02	299	TRI		0.000	HUMBOLT/TRINITY COUNTY LINE				470	4600	3450
02	299	TRI		1.300	EAST LIMITS SALYER	420	4100	3100	350	3500	2600
02	299	TRI		11.530	BURNT RANCH ROAD	330	3250	2450	280	2750	2150
02	299	TRI		21.731	DEL LOMA	260	2500	1950	250	2450	1950
02	299	TRI		24.263	LITTLE FRENCH CR	250	2450	1950	270	2550	2000
02	299	TRI		31.450	BIGFLATCMP-WHEELGLUCHRD	190	1950	1750	270	2800	2450
02	299	TRI		51.030	WEAVERVILLE, WEST CITY LIMITS	320	3400	2950	320	3400	2950
02	299	TRI		52.070	WEAVERVILLE, WASHINGTON STREET	1050	11000	9900	1050	11000	9900
02	299	TRI		52.720	MARTIN/NUGGET ROADS	870	9100	8200	700	6900	6200
02	299	TRI	R	58.110	EAST JCT. RTE. 3	550	6000	5000	470	5200	4300
02	299	TRI		63.510	LEWISTON ROAD	470	5200	4300	510	5500	4650
02	299	TRI		67.425	NEW LEWISTON ROAD	510	5500	4650	500	5400	4500
02	299	TRI		72.246	TRINITY/SHASTA COUNTY LINE	530	5700	4500			
02	299	SHA		0.000	TRINITY/SHASTA COUNTY LINE				530	5700	4500
02	299	SHA		8.648	FRENCH GULCH ROAD	440	4950	3900	620	5500	4300
02	299	SHA		16.470	KENNEDY DRIVE	480	5500	4300	750	5400	4250
02	299	SHA		17.739	ROCK CREEK ROAD	650	7400	5800	1050	11500	9100
02	299	SHA		21.648	REDDING, WEST CITY LIMITS	1050	11800	9300	1050	11800	9300
02	299	SHA		22.226	REDDING, BUENAVENTURA BLVD	1050	11800	9300	1400	15800	12400
02	299	SHA		23.810	REDDING, COURT STREET	2100	20900	19600	2100	20800	19600
02	299	SHA	G	24.088	JCT RTES 273 AND 299	2050	20500	19600	2350	23400	21700
02	299	SHA		25.540	HAWLEY ROAD	2350	23400	21700	1200	12600	11800
02	299	SHA		27.239	OLD OREGON TRAIL	1200	12600	11800	950	10300	9800
02	299	SHA		31.460	DESCHUTES ROAD	540	8800	7800	490	5500	4850
02	299	SHA		53.263	TERRY MILL ROAD	240	4450	3950	250	4500	4000
02	299	SHA		60.050	BIG BEND ROAD	260	4050	3600	260	3850	3400
02	299	SHA		73.130	TAMARACK ROAD	310	3800	3150	310	3800	3150
02	299	SHA		74.480	ELM STREET	390	3850	2400	380	9300	3300
02	299	SHA		74.980	BURNEY, PLUMAS STREET	380	9300	3300	890	9100	8400
02	299	SHA		76.181	BLACK RANCH ROAD	890	9100	8400	560	6300	5200
02	299	SHA		78.650	PINE ST LT	540	6500	5500	450	5100	4100
02	299	SHA		80.085	FOUR CORNERS, JCT. RTE. 89	500	5300	4500	370	3850	3200
02	299	SHA		91.080	GLENBURN/DANA ROADS	370	3850	3200	380	3750	3300
02	299	SHA		91.560	FALL RIVER MILLS, MAIN STREET	380	3750	3300	500	5200	4200
02	299	SHA		95.240	MCARTHUR-GLENBURN RD	420	4250	3900	360	3700	3250
02	299	SHA		96.780	PITTVILLE ROAD	360	3700	3250	160	1700	1400
02	299	SHA		99.361	SHASTA/LASSEN COUNTY LINE	160	1700	1400			
02	299	LAS		0.000	SHASTA/LASSEN COUNTY LINE				160	1700	1400
02	299	LAS		10.407	CEMETERY ROAD	160	1700	1400	180	1900	1600
02	299	LAS		15.101	LOOKOUT ROAD	190	2050	1800	120	1200	970
02	299	LAS		25.635	LASSEN/MODOC COUNTY LINE	120	1200	970			
02	299	MOD		0.000	LASSEN/MODOC COUNTY LINE				120	1200	970
02	299	MOD		0.332	ADIN, JCT. RTE. 139, SOUTH	100	1100	950	140	1700	1500
02	299	MOD		21.749	JCT. RTE. 139 NORTH	130	1450	1100	150	1800	1450
02	299	MOD		22.435	CANBY RANGER STA LT	160	1650	1500	160	1650	1500
02	299	MOD		40.276	ALTURAS, JUNIPER STREET	150	1700	1450	390	3200	2800
02	299	MOD		40.640	ALTURAS, JCT. RTE. 395	490	4750	4450	100	890	860
02	299	MOD		57.354	LAKE CITY ROAD	80	740	710	40	260	250
02	299	MOD		66.632	NEVADA STATE LINE	20	110	75			
08	330	SBD	R	28.696	JCT. RTE. 210				1750	14700	10200
08	330	SBD	R	29.605	SAN BERNARDINO, HIGHLAND AVENUE	1750	14700	10200	1750	14700	10200
08	330	SBD		44.118	RUNNING SPRINGS, JCT. RTE. 18	1950	16200	11300			
08	371	RIV	R	56.467	JCT RTE 79				620	6600	6300
08	371	RIV		60.230	WILSON VALLEY ROAD	740	7400	7100	780	7800	7500
08	371	RIV		67.657	CARY ROAD	740	7600	7300	740	7600	7300
08	371	RIV		71.310	ANZA, CONTRERAS ROAD	720	7400	7100	720	7400	7100
08	371	RIV		77.148	JCT. RTE. 74	480	3950	3800			
04	380	SM	T	4.703	SAN BRUNO, JCT. RTE. 280				10500	146000	139000
04	380	SM		5.465	SAN BRUNO, JCT. RTE. 82	10500	146000	139000	12300	171000	163000
04	380	SM		6.373	SOUTH SAN FRANCISCO, JCT. RTE. 101	12300	171000	163000	1700	24100	23000
04	380	SM		6.760	SOUTH AIRPORT ROAD	1700	24100	23000			
08	395	SBD	R	3.981	JCT. RTE. 15				2200	27500	26500
08	395	SBD	R	5.613	PHELAN ROAD/MAIN STREET	2500	31500	30000	2200	27500	26500
08	395	SBD		8.620	BEAR VALLY ROAD	2200	27500	26500	2150	27000	26000
08	395	SBD		10.213	LUNA ROAD	2150	27000	26000	2050	26000	25000
08	395	SBD		11.180	PALMDALE ROAD; JCT. RTE. 18	2050	26000	25000	1650	22900	22000

08	395	SBD		15.707		GEORGE AIR FORCE BASE ROAD	1650	22900	22000	2000	18800	16500
08	395	SBD		17.777		ADELANTO, EL MIRAGE ROAD	2000	18800	16500	1300	11900	10500
08	395	SBD		45.948		JCT. RTE. 58	860	9000	8500	620	5900	5000
08	395	SBD		72.770		TRONA ROAD	620	5900	5000	620	5900	5000
08	395	SBD		73.518		SAN BERNARDINO/KERN COUNTY LINE	620	5900	5000			
09	395	KER		0.000		SAN BERNARDINO/KERN COUNTY LINE				540	5700	4500
09	395	KER	R	1.152		REDROCK, RANDSBURG RD	580	5800	4500	590	5300	4200
09	395	KER	R	14.995		CHINA LAKE ROAD	570	5200	4100	410	3600	2950
09	395	KER	R	23.480		JCT. RTE. 178	500	4600	3750	500	4600	3750
09	395	KER	R	29.640		JCT. RTE. 14 SOUTH	490	3800	3350	1050	7200	5650
09	395	KER	R	36.824		KERN/INYO COUNTY LINE	1050	7500	5700			
09	395	INY	R	0.000		KERN/INYO COUNTY LINE				1050	7500	5600
09	395	INY	R	3.022		NINE MILE CYN RD	1200	8900	6800	1250	9200	7400
09	395	INY		34.674		JCT. RTE. 190 EAST	1250	9100	7200	1250	9000	7100
09	395	INY		55.827		JCT. RTE. 136 SOUTHEAST	1250	9400	7150	1300	10700	8000
09	395	INY		57.670		LONE PINE, WHITNEY PORTAL ROAD	1200	9300	7000	1150	8500	6500
09	395	INY	R	58.814		PANGBORN LANE	1100	8000	6000	1300	9700	7600
09	395	INY		73.410		INDEPENDENCE, MARKET STREET	1100	8400	6300	1250	10000	7800
09	395	INY		73.850		INDEPENDENCE MAINTENANCE STATION	1100	8400	6300	1050	8400	6300
09	395	INY		96.400		4.3 MI SOUTH OF JCT RTE 168 E	1200	9700	7500	1200	9300	7100
09	395	INY		96.500		3.5 MILES SOUTH OF BIG PINE	1200	9300	7100	1250	9700	7500
09	395	INY		100.833		BIG PINE, JCT. RTE. 168 NORTHEAST	1050	8100	6200	1500	10800	9400
09	395	INY		112.660		GERKIN ROAD	1350	11400	9300	1300	11300	9000
09	395	INY		115.195		BISHOP, SOUTH STREET	1600	16500	14100	1650	18200	15800
09	395	INY		115.403		BISHOP, JCT. RTE. 168 WEST	1600	16100	13900	1650	18000	15900
09	395	INY		116.250		JCT. RTE. 6 NORTH	1750	19100	17200	1500	15300	13100
09	395	INY		117.300		BISHOP BIKE PATH	1600	16300	14400	1500	15400	13100
09	395	INY		120.950		ED POWERS ROAD	1500	15300	13100	1250	11400	9100
09	395	INY	R	126.140		PINE CREEK ROAD	1100	9400	7300	1200	10000	7300
09	395	INY	R	129.459		INYO/MONO COUNTY LINE	1050	8900	6550			
09	395	MNO	R	0.000	R	INYO/MONO COUNTY LINE, RIGHT ALIGN				580	4700	3600
09	395	MNO	R	7.000	R	END RIGHT ALIGN	580	4700	3600			
09	395	MNO	R	0.000	L	INYO/MONO COUNTY LINE, LEFT ALIGN			2650	590	5000	3700
09	395	MNO	R	6.774	L	END LEFT ALIGN	590	5000	3700			
09	395	MNO	R	13.931		S OF CROWLEY LAKE RD	1200	10900	8000	1200	10500	7700
09	395	MNO	R	16.618		CROWLEY LAKE, MCGEE CREEK ROAD	1200	10400	7600	1000	10000	6900
09	395	MNO	R	25.750		JCT. RTE. 203 WEST	1400	14000	10100	970	9400	5300
09	395	MNO		40.336		SOUTH JCT. RTE. 158	1050	9700	5350	860	8200	4600
09	395	MNO		46.400		NORTH JCT. RTE. 158	860	7000	4550	960	9000	5000
09	395	MNO		50.744		TIOGA PASS JUNCTION, NORTH JCT. RTE. 120 WEST	960	9000	5000	730	5800	4100
09	395	MNO		51.690		LEE VINING VISITORS CENTER	660	6000	3600	780	7100	4400
09	395	MNO		58.240		JCT. RTE. 167 EAST	590	5100	3150	680	6100	3750
09	395	MNO		76.300		BRIDGEPORT, JCT. RTE. 182 NORTH	720	6400	4000	740	6600	3950
09	395	MNO		80.610		FARM HOUSE	510	4500	2800	480	5400	3650
09	395	MNO		93.700		JCT. RTE. 108 WEST	650	5100	3350	590	5500	3750
09	395	MNO		107.105		MILL CREEK BRIDGE	530	5100	3550	530	5100	3550
09	395	MNO		116.965		JCT. RTE. 89	640	6000	4350	500	5000	3500
09	395	MNO		120.490		NEVADA STATE LINE	630	6000	4100			
03	395	SIE	R	0.000	R	NEVADA STATE LINE				990	12000	8000
03	395	SIE	R	3.059	R	SIERRA/LASSEN COUNTY LINE	1050	10900	9000			
03	395	SIE	R	0.000	L	SIERRA/LASSEN COUNTY LINE				1050	10900	9000
03	395	SIE	R	3.124	L	SIERRA/LASSEN COUNTY LINE	1400	13500	9000			
02	395	LAS	R	0.000		SIERRA/LASSEN COUNTY LINE				1300	13100	10100
02	395	LAS	R	4.615		JCT. RTE. 70 WEST	1300	13100	10100	610	7200	6300
02	395	LAS		29.840		GARNIER ROAD	600	7000	6100	570	5800	4700
02	395	LAS		51.870		STANDISH ROAD	620	7000	5400	610	7400	5700
02	395	LAS		55.180		JANESVILLE ROAD	680	7700	5400	670	8500	7000
02	395	LAS	R	61.094		JCT. RTE. 36 WEST	1100	9700	8400	430	4150	4050
02	395	LAS		70.120		STANDISH, COUNTY ROAD A 3	190	2000	1750	200	1750	1550
02	395	LAS		72.943		LITCHFIELD, COUNTY ROAD A-27	200	1750	1550	140	1500	1300
02	395	LAS	R	76.927		WENDEL ROAD	140	1500	1300	130	1300	1150
02	395	LAS		108.455		RAVENDALE	170	1550	940	170	1550	920
02	395	LAS		129.195		MADELINE, ASH VALLEY ROAD	160	1550	890	150	1500	880
02	395	LAS		138.979		LASSEN/MODOC COUNTY LINE	140	1350	880			
02	395	MOD		0.055		LASSEN/MODOC COUNTY LINE				140	1350	880
02	395	MOD		3.216		LIKELY, JESS VALLEY ROAD	250	1600	1050	140	1700	1150
02	395	MOD	R	20.975		GLENN STREET	120	1700	1300	270	2150	1950
02	395	MOD		22.070		ALTURAS, FIRST STREET	700	6700	6000	670	6500	5700
02	395	MOD		22.764		ALTURAS, JCT. RTE. 299 WEST	380	7100	6300	360	5900	5500
02	395	MOD		23.040		ALTURAS STATE HIGHWAY MAINTENANCE STATION	340	3550	3050	340	3550	3050
02	395	MOD		28.285		JCT. RTE. 299 EAST	180	3250	1650	110	2150	1200
02	395	MOD		61.563		OREGON STATE LINE	90	1850	760			
12	405	ORA		0.230		IRVINE, JCT. RTE. 5				13700	195000	196100
12	405	ORA		0.949		IRVINE CENTER DRIVE	13800	195000	190500	15800	219000	212900
12	405	ORA		1.804		IRVINE, JCT. RTE. 133	15800	219000	219600	19900	258000	258200
12	405	ORA		2.876		IRVINE, SAND CANYON AVENUE	19900	258000	250400	19100	262000	255900
12	405	ORA		3.947		UNIVERSITY DRIVE	19100	262000	255900	20300	250000	251900
12	405	ORA		5.618		IRVINE, CULVER DRIVE	20300	250000	244300	20000	274000	268400

12	405	ORA		6.917	IRVINE, JAMBOREE BOULEVARD	20000	274000	268400	20100	283000	277000
12	405	ORA		7.803	IRVINE, MAC ARTHUR BOULEVARD	20100	283000	285700	19000	285000	287900
12	405	ORA		8.740	COSTA MESA, JCT. RTE. 55	19000	285000	279200	17700	244000	246700
12	405	ORA		9.508	COSTA MESA, BRISTOL STREET	17700	244000	239200	18100	231000	229200
12	405	ORA		10.282	COSTA MESA, JCT RTE 73	18100	232000	229300	22500	301000	292400
12	405	ORA		11.450	COSTA MESA, HARBOR BOULEVARD	22500	301000	292400	23400	320000	312400
12	405	ORA		12.470	FOUNTAIN VALLEY, EUCLID STREET	23400	320000	312400	23000	299000	291300
12	405	ORA		13.780	FOUNTAIN VALLEY, BROOKHURST STREET	23000	299000	291300	20500	275000	269200
12	405	ORA		14.817	FOUNTAIN VALLEY, WARNER AVENUE	20500	275000	269200	19300	257000	252400
12	405	ORA		15.210	HUNTINGTON BEACH, MAGNOLIA STREET	17800	257000	252400	20100	273000	266000
12	405	ORA		16.544	HUNTINGTON BEACH, JCT. RTE. 39	19900	273000	274300	19300	272000	274300
12	405	ORA		17.753	WESTMINSTER, BOLSA AVE NUE/GOLDEN WEST STREET	19100	272000	266000	18500	268000	262700
12	405	ORA		19.156	WESTMINSTER, WESTMINSTER AVENUE	18500	268000	262700	17600	249000	245400
12	405	ORA		20.751	JCT. RTE. 22 EAST	18900	267000	271400	26500	385000	389400
12	405	ORA		22.643	SEAL BEACH, SEAL BEACH BOULEVARD	26500	385000	377600	27000	396000	370100
12	405	ORA		24.044	SEAL BEACH, JCT. RTE. 605	27000	396000	381700	18100	262000	262500
12	405	ORA		24.178	ORANGE/ LOS ANGELES COUNTY LINE	18100	262000	254500			
07	405	LA		0.266	ORANGE/LOS ANGELES COUNTY LINE				19100	273000	264000
07	405	LA		0.448	LONG BEACH, STUDEBAKER ROAD	19100	273000	264000	17700	281000	272000
07	405	LA		1.112	LONG BEACH, PALO VERDE AVENUE	17700	281000	272000	17700	270000	261000
07	405	LA		1.640	LONG BEACH, WOODRUFF AVENUE	17700	270000	261000	17800	270000	266000
07	405	LA		2.184	LONG BEACH, BELLFLOWER BOULEVARD	17800	270000	266000	17400	281000	278000
07	405	LA		3.324	LONG BEACH, LAKEWOOD BOULEVARD	17400	281000	278000	19900	286000	285000
07	405	LA		4.879	LONG BEACH, CHERRY AVENUE	19900	286000	285000	20000	300000	299000
07	405	LA		5.388	SIGNAL HILL, ORANGE AVENUE	20000	300000	299000	19600	313000	300000
07	405	LA		6.076	LONG BEACH, ATLANTIC AVENUE	19600	313000	300000	19800	308000	296000
07	405	LA		6.340	SB ON FR WARDLOW/LONG BEACH BLVD and LONG BEACH, L(	19800	308000	296000	20100	306000	294000
07	405	LA		7.596	LONG BEACH, JCT. RTE. 710	20100	306000	294000	20200	290000	281000
07	405	LA		8.784	CARSON, ALAMEDA STREET	20200	290000	281000	20000	280000	271000
07	405	LA		9.556	CARSON, WILMINGTON AVENUE	20000	280000	271000	16900	265000	258000
07	405	LA		10.541	CARSON, CARSON STREET	16900	265000	258000	16600	261000	254000
07	405	LA		11.224	CARSON, AVALON BOULEVARD	16600	261000	254000	18300	280000	272000
07	405	LA		12.970	CARSON, JCT. RTE. 110	18300	280000	272000	18400	285000	274000
07	405	LA		13.280	LOS ANGELES, VERMONT AVENUE	18400	285000	274000	19000	297000	286000
07	405	LA		13.826	LOS ANGELES, NORMANDIE AVENUE	19000	297000	286000	17800	278000	268000
07	405	LA		14.398	LOS ANGELES, WESTERN AVENUE	17800	278000	268000	17100	267000	257000
07	405	LA		15.447	TORRANCE, CRENSHAW BOULEVARD	17100	267000	257000	16600	261000	251000
07	405	LA		16.573	TORRANCE, ARTESIA BOULEVARD	16600	261000	251000	17400	264000	256000
07	405	LA		17.589	LAWNDALE, HAWTHORNE BOULEVARD	17400	264000	256000	18300	277000	269000
07	405	LA		18.233	LAWNDALE, INGLEWOOD AVENUE	18300	277000	269000	19100	290000	282000
07	405	LA		19.205	HAWTHORNE, ROSECRANS AVENUE	19100	290000	282000	21100	322000	311000
07	405	LA		20.216	HAWTHORNE, EL SEGUNDO BOULEVARD	21100	322000	311000	17000	261000	252000
07	405	LA	R	21.175	LOS ANGELES, JCT. RTE 105	17000	261000	252000	20000	339000	326000
07	405	LA		22.216	INGLEWOOD, CENTURY BOULEVARD	20000	339000	326000	19700	336000	323000
07	405	LA		23.355	INGLEWOOD, MANCHESTER BOULEVARD	19700	336000	323000	17200	295000	283000
07	405	LA		24.273	LOS ANGELES, LA TIJERA BOULEVARD/HOWARD HUGHES PAI	17200	295000	283000	18700	322000	309000
07	405	LA		25.947	CULVER CITY, JCT. RTE. 90	18700	322000	309000	34000	323000	316000
07	405	LA		27.200	CULVER CITY, CULVER BOULEVARD	34000	323000	316000	35000	333000	326000
07	405	LA		27.964	CULVER CITY, JCT. RTE. 187	35000	333000	326000	35500	337000	331000
07	405	LA		29.538	LOS ANGELES, JCT. RTE. 10	35500	337000	331000	22100	320000	303000
07	405	LA		30.183	LOS ANGELES, OLYMPIC BOULEVARD	22100	320000	303000	23200	335000	327000
07	405	LA		30.856	LOS ANGELES, JCT. RTE. 2	23200	335000	327000	22700	325000	310000
07	405	LA		31.542	LOS ANGELES, WILSHIRE BOULEVARD	22700	325000	310000	21000	299000	285000
07	405	LA		32.502	LOS ANGELES, WATERFORD STREET/MONTANA AVENUE	21000	299000	285000	20200	291000	278000
07	405	LA		32.996	LOS ANGELES, SUNSET BOULEVARD	20200	291000	278000	18300	294000	281000
07	405	LA		33.290	LOS ANGELES, MORAGA DRIVE	18300	294000	281000	18300	299000	285000
07	405	LA		34.764	LOS ANGELES, GETTY CENTER DRIVE	18300	299000	285000	18300	296000	282000
07	405	LA		37.026	LOS ANGELES, MULHOLLAND DRIVE	18300	296000	282000	18300	294000	283000
07	405	LA		39.432	LOS ANGELES, JCT. RTE. 101	18300	294000	283000	15600	231000	224000
07	405	LA		40.285	LOS ANGELES, BURBANK BOULEVARD	15600	231000	224000	16000	228000	224000
07	405	LA		41.359	LOS ANGELES, VICTORY BOULEVARD	16000	228000	224000	15900	227000	219000
07	405	LA		42.364	LOS ANGELES, SHERMAN WAY	15900	227000	219000	15100	223000	217000
07	405	LA		43.756	LOS ANGELES, ROSCOE BOULEVARD	15100	223000	217000	15500	221000	216000
07	405	LA		44.735	LOS ANGELES, NORDHOFF STREET	15500	221000	216000	16100	226000	218000
07	405	LA		46.850	LOS ANGELES, JCT. RTE. 118	16100	226000	218000	10800	158000	154000
07	405	LA		47.239	LOS ANGELES, SAN FERNANDO MISSION BOULEVARD	10800	158000	154000	10600	152000	147000
07	405	LA		47.754	LOS ANGELES, RINALDI STREET	10500	152000	147000	10600	153000	147000
07	405	LA		48.643	LOS ANGELES, JCT. RTE. 5	10600	153000	147000			
04	505	SOL	R	0.000	VACAVILLE, JCT. RTE. 80				3900	40500	36000
04	505	SOL	R	1.450	VACA VALLEY PARKWAY	3900	40500	36000	3400	35000	31000
04	505	SOL	R	3.058	MIDWAY ROAD	3400	35000	31000	3000	30500	26000
04	505	SOL	R	5.586	ALLENDALE ROAD	3000	30500	26000	3000	30500	26000
04	505	SOL	R	10.626	SOLANO/YOLO COUNTY LINE	3000	30500	26000			
03	505	YOL		0.000	SOLANO/YOLO COUNTY LINE				3000	30500	26000
03	505	YOL		0.396	JCT. RTE. 128 WEST	2800	29000	24500	2200	23000	18900
03	505	YOL		4.026	COUNTY ROAD 29A	2200	23000	18900	2200	23000	18800
03	505	YOL		6.534	COUNTY ROAD 27	2200	23000	18800	2100	22900	18800
03	505	YOL		10.623	JCT. RTE. 16	2100	22900	18800	1600	16100	12300

03	505	YOL		13.429		COUNTY ROAD 19	1600	16100	12300	1550	15100	11900
03	505	YOL		17.447		COUNTY ROAD 14	1550	15100	11900	15500	14600	11500
03	505	YOL		20.125		COUNTY ROAD 12A	1550	14600	11500	1500	14800	11200
03	505	YOL	R	22.356		JCT. RTE. 5	1500	14800	11200			
10	580	SJ	L	0.000		BEGIN LEFT ALIGN				1400	15750	14000
10	580	SJ		1.413		BIRD ROAD OC	2800	31500	29000	2800	31500	29000
10	580	SJ		4.329		JCT. RTE. 132 EAST	2200	23100	21000	5700	56000	52000
10	580	SJ		8.149		CORRAL HOLLOW ROAD	2850	44000	41300	3050	43500	40600
10	580	SJ		13.539		PATTERSON PASS RD	3050	43500	40600	4700	52000	47200
10	580	SJ		15.308	R	BEGIN INDEP ALIGN				2150	24000	21600
10	580	SJ		15.358	R	SAN JOAQUIN/ALAMEDA CNTY LINE, END RIGHT ALIGN	2150	24000	21600			
10	580	SJ		15.308	L	BEGIN LEFT ALIGN				2550	28000	25600
10	580	SJ		15.340	L	SAN JOAQUIN/ALAMEDA COUNTY LINE, LEFT ALIGN	4700	52000	47200			
04	580	ALA		0.092	R	SAN JOAQUIN/ALAMEDA CNTY LINE, RIGHT ALIGN				1400	16800	15900
04	580	ALA		0.390	R	JCT. RTE. 205 EAST, RIGHT ALIGN	1400	16800	15900	1400	16800	15900
04	580	ALA		0.422	R	JCT RTE 205/239 UNC, RIGHT ALIGN	1400	16800	15900	1400	16800	15900
04	580	ALA	L	1.101	R	END RIGHT ALIGN	6900	84000	73600			
04	580	ALA		0.074	L	SAN JOAQUIN/ALAMEDA COUNTY LINE, LEFT ALIGN				1400	16800	15900
04	580	ALA		0.422	L	JCT RTE 205/239 UNC, LEFT ALIGN	1400	16800	15900	1400	16800	15900
04	580	ALA	L	0.988	L	END LEFT ALIGN	6800	83000	72700			
04	580	ALA	R	1.476		GRANT LINE ROAD	13600	167000	146300	13600	158000	145400
04	580	ALA	R	1.622	R	BEGIN RIGHT ALIGN				6900	84000	73600
04	580	ALA	R	5.980	R	NORTH FLYNN ROAD	6900	84000	73600	6800	83000	72700
04	580	ALA	R	6.053	R	END RIGHT ALIGN	6800	83000	72700			
04	580	ALA	R	1.622	L	BEGIN LEFT ALIGN				6800	83000	72700
04	580	ALA	R	5.933	L	NORTH FLYNN ROAD	6800	83000	72700	6800	83000	72700
04	580	ALA	R	6.014	L	END LEFT ALIGN	6800	83000	72700			
04	580	ALA	R	8.265		LIVERMORE, GREENVILLE ROAD	14600	181000	159300	14800	184000	162100
04	580	ALA		9.683		VASCO ROAD	14800	184000	162100	17700	220000	190100
04	580	ALA		10.689		FIRST STREET	17700	220000	190100	18200	227000	192900
04	580	ALA		12.530		NORTH LIVERMORE AVENUE	18200	227000	192900	15700	207000	193800
04	580	ALA		14.974		JCT. RTE. 84/AIRPORT	15700	207000	193800	16900	211000	202200
04	580	ALA		16.703		EL CHARRO ROAD	16900	211000	202200	17200	214000	205900
04	580	ALA		17.947		TASSAJARA ROAD	17200	214000	205900	18800	234000	224500
04	580	ALA		18.821		HACIENDA DRIVE	18800	234000	224500	19700	246000	236700
04	580	ALA		19.859		HOPYARD ROAD	19700	246000	236700	19700	234000	231100
04	580	ALA		20.726		PLEASANTON, JCT. RTE. 680	19700	234000	231100	16000	204000	194700
04	580	ALA	R	21.427		SAN RAMON ROAD	16000	204000	194700	15800	202000	192900
04	580	ALA	R	26.228		PALOMARES/EDEN CANYON ROAD	15800	202000	192900	14200	199000	183600
04	580	ALA	R	28.745		CROW CANYON ROAD/CENTER STREET	14200	199000	183600	14200	190000	185400
04	580	ALA	R	29.365		REDWOOD ROAD	14200	190000	185400	14500	199000	192900
04	580	ALA		30.354		STROBRIDGE AVENUE	14500	199000	192900	13900	198000	190100
04	580	ALA	R	30.807		JCT. RTE. 238	13900	198000	190100	12000	150000	147200
04	580	ALA	R	31.714		LIBERTY STREET/164TH AVENUE	12000	150000	147200	11700	153000	147200
04	580	ALA	R	32.717		PLAZA DRIVE	11700	153000	147200	9400	125000	119300
04	580	ALA	R	32.844		150TH AVENUE	9400	125000	119300	11200	151000	143500
04	580	ALA	R	33.430		SAN LEANDRO, BENEDICT DRIVE	11200	151000	143500	10500	142000	134200
04	580	ALA	R	33.943		SAN LEANDRO, GRAND AVENUE	10500	142000	134200	9900	135000	127700
04	580	ALA	R	34.478		SAN LEANDRO, ESTUDILLO AVENUE	9900	135000	127700	10100	138000	130500
04	580	ALA	R	35.105		OAKLAND, FOOTHILL BOULEVARD	10100	138000	130500	10100	138000	130500
04	580	ALA	R	35.713		OAKLAND, 106TH AVENUE	10100	138000	130500	10900	148000	139800
04	580	ALA	R	36.343		OAKLAND, GOLF LINKS ROAD	10900	148000	139800	12500	171000	161200
04	580	ALA	R	37.797		OAKLAND, KELLER AVENUE	12500	171000	161200	12800	174000	164000
04	580	ALA	R	38.309		OAKLAND, EDWARDS AVENUE	12800	174000	164000	13900	189000	178000
04	580	ALA	R	38.915		OAKLAND, KUHNLE AVENUE	13900	189000	178000	13600	184000	172400
04	580	ALA	R	39.240		OAKLAND, JCT. RTE. 13 NORTH	13600	184000	172400	11000	149000	139800
04	580	ALA	R	39.910		OAKLAND, MAC ARTHUR BOULEVARD	11000	149000	139800	10900	147000	137900
04	580	ALA	R	40.078		OAKLAND, HIGH STREET	10900	147000	137900	12400	167000	155600
04	580	ALA	R	40.647		OAKLAND, 35TH AVENUE	12400	167000	155600	13900	192000	183600
04	580	ALA	R	41.143		OAKLAND, COOLIDGE AVENUE	13900	192000	183600	12300	170000	162100
04	580	ALA	R	41.427		OAKLAND, FRUITVALE AVENUE	12300	170000	162100	13800	190000	181700
04	580	ALA	R	42.184		OAKLAND, BEAUMONT AVENUE	13800	190000	181700	11700	160000	152800
04	580	ALA		42.665		OAKLAND, PARK BOULEVARD	11700	160000	152800	13500	185000	177000
04	580	ALA		43.479		OAKLAND, LAKESHORE/PARK AVENUES	13500	185000	177000	13000	179000	170500
04	580	ALA		43.747		OAKLAND, VAN BUREN/GRAND AVENUES	13000	179000	170500	15000	206000	196600
04	580	ALA		44.279		OAKLAND, OAKLAND AVENUE	15000	206000	196600	14300	197000	187300
04	580	ALA		45.151		OAKLAND, JCT. RTES. 24/980	14300	197000	187300	14100	194000	184500
04	580	ALA		46.009		OAKLAND, JCT. RTE. 123	14100	194000	184500	14100	194000	184500
04	580	ALA		46.262	R	BEGIN RIGHT ALIGN				10200	122000	98800
04	580	ALA		46.460	R	OAKLAND, JCT. RTES. 80/880	10200	122000	98800	10200	122000	98800
04	580	ALA		46.946	R	END RIGHT ALIGN	10200	122000	98800			
04	580	ALA		46.262	L	BEGIN LEFT ALIGN				6900	87000	85800
04	580	ALA		46.946	L	SOUTH JCT 80 NEAR BAY BRIDGE	6900	87000	85800	6900	87000	85800
04	580	ALA		47.168	L	END LEFT ALIGN	6900	87000	85800			
04	580	ALA	R	47.350		ALBANY, NORTH JCT. RTE. 80	17000	209000	184500	7300	93000	92300
04	580	ALA		48.044		ALAMEDA/CONTRA COSTA COUNTY LINE	7300	93000	92300			
04	580	CC		0.000		ALAMEDA/CONTRA COSTA COUNTY LINE				7300	93000	92300
04	580	CC		0.236		CENTRAL AVENUE	7300	93000	92300	7200	93000	91300

04	580	CC		1.214	RICHMOND, BAYVIEW AVENUE/ 51ST STREET	7200	93000	91300	7400	95000	93200
04	580	CC	R	2.087	RICHMOND, ERLANDSON STREET	7400	95000	93200	7600	99700	96900
04	580	CC	R	2.887	RICHMOND, SOUTH 23RD STREET	7600	100000	96900	7100	89000	83900
04	580	CC	R	3.600	RICHMOND, HARBOUR WAY/ CUTTING BOULEVARD	7100	89000	83900	6600	81000	76400
04	580	CC	R	4.643	RICHMOND, CANAL BOULEVARD	6600	81000	76400	5700	71000	67100
04	580	CC	R	5.428	RICHMOND, CASTRO/MARINE STREET	5700	71000	67100	6600	81000	76400
04	580	CC		6.007	RICHMOND, WESTERN DRIVE	6600	81000	76400	6600	81000	76400
04	580	CC		6.125	RICHMOND, TOLL PLAZA EAST END RICHMOND/SAN RAFAEL B	6600	81000	76400	6600	81000	76400
04	580	CC		7.786	CONTRA COSTA/MARIN COUNTY LINE	6600	81000	76400			
04	580	MRN		0.000	CONTRA COSTA/MARIN COUNTY LINE				6600	81000	76400
04	580	MRN		2.477	SAN RAFAEL, WEST END RICHMOND-SAN RAFAEL BRIDGE	6600	81000	76400	6900	82000	76400
04	580	MRN		2.633	SAN RAFAEL, SAN QUENTIN	6900	82000	76400	7200	86000	79200
04	580	MRN		3.087	WB OFF TO SIR FRANCIS DRAKE BLVD	7200	86000	79200	4800	57000	52200
04	580	MRN		4.498	BELLAM BOULEVARD	4800	57000	52200	6000	72000	66200
04	580	MRN		4.782	JCT. RTE. 101	6000	72000	66200			
12	605	ORA		3.092	SEAL BEACH, JCT RTE 22				3250	47000	46100
12	605	ORA	R	0.000	JCT. RTE. 405	3250	47000	44700	11700	172000	167500
12	605	ORA	R	1.405	LOS ALAMITOS, KATELLA AVENUE	11600	169000	159800	14100	173000	167000
12	605	ORA	R	1.643	ORANGE/LOS ANGELES COUNTY LINE	14800	177000	170000			
07	605	LA	R	0.000	ORANGE/LOS ANGELES COUNTY LINE				14800	177000	170000
07	605	LA	R	0.287	LONG BEACH, SPRING STREET	14800	177000	170000	15400	195000	187000
07	605	LA	R	1.740	LAKEWOOD, CARSON STREET	15400	195000	187000	15700	208000	202000
07	605	LA	R	2.866	CERRITOS, DEL AMO BOULEVARD	15700	208000	202000	17500	224000	218000
07	605	LA	R	3.753	CERRITOS, SOUTH STREET	17500	224000	218000	18900	253000	246000
07	605	LA	R	5.046	CERRITOS, JCT. RTE. 91	18900	253000	246000	21500	307000	301000
07	605	LA	R	5.811	NORWALK, ALONDRA BOULEVARD	21500	307000	301000	20900	309000	303000
07	605	LA	R	7.653	NORWALK, JCT. RTE. 105	20900	309000	303000	18100	317000	299000
07	605	LA	R	9.612	SANTA FE SPRINGS, JCT. RTE. 5	18100	317000	299000	17400	268000	248000
07	605	LA	R	10.245	SANTA FE SPRINGS, TELEGRAPH ROAD	17400	268000	248000	15900	245000	227000
07	605	LA	R	11.543	SLAUSON AVENUE	15900	245000	227000	16400	249000	230000
07	605	LA	R	12.048	WASHINGTON BOULEVARD	16400	249000	230000	17300	260000	240000
07	605	LA	R	13.569	WHITTIER, JCT. RTE. 72	17300	260000	240000	15700	260000	248000
07	605	LA	R	14.407	PICO RIVERA, BEVERLY BOULEVARD	15700	260000	248000	16300	264000	252000
07	605	LA	R	15.565	PICO RIVERA, ROSE HILLS ROAD	16300	264000	252000	17000	271000	259000
07	605	LA	R	16.648	INDUSTRY, PECK ROAD	17000	271000	259000	16100	264000	253000
07	605	LA	R	17.407	INDUSTRY, JCT. RTE. 60	16100	264000	253000	15200	240000	230000
07	605	LA	R	19.389	INDUSTRY, VALLEY BOULEVARD	15200	240000	230000	16500	249000	238000
07	605	LA	R	20.189	BALDWIN PARK, JCT. RTE. 10	16500	249000	238000	14100	201000	197000
07	605	LA		21.074	BALDWIN PARK, RAMONA BOULEVARD	14100	201000	197000	13800	194000	190000
07	605	LA		22.153	IRWINDALE, LOWER AZUSA ROAD/LOS ANGELES STREET	13800	194000	190000	13100	180000	176000
07	605	LA		23.515	IRWINDALE, LIVE OAK AVENUE	13100	180000	176000	13400	148000	146000
07	605	LA		23.958	IRWINDALE, ARROW HIGHWAY	13400	148000	146000	14600	161000	160000
07	605	LA		25.760	IRWINDALE, JCT. RTE. 210	14600	161000	160000	14600	161000	160000
07	605	LA		26.000	JCT. RTE. 210	14600	161000	160000			
04	680	SCL	M	0.000	SAN JOSE, JCT. RTES. 101/280				20900	252000	245000
04	680	SCL	M	0.385	SAN JOSE, KING ROAD	20900	252000	245000	20800	252000	244000
04	680	SCL	M	1.189	SAN JOSE, JACKSON AVENUE	20800	252000	244000	17200	208000	201000
04	680	SCL	M	1.410	SAN JOSE, CAPITOL EXPRESSWAY	17200	208000	201000	17900	217000	209000
04	680	SCL	M	1.740	SAN JOSE, JCT. RTE. 130	17900	217000	209000	16300	197000	191000
04	680	SCL	M	2.376	SAN JOSE, MC KEE ROAD	16300	197000	191000	15500	188000	182000
04	680	SCL	M	3.842	SAN JOSE, BERRYESSA ROAD	15500	188000	182000	15300	184000	178000
04	680	SCL	M	4.800	SAN JOSE, HOSTETTER ROAD	15300	184000	178000	14200	168000	162000
04	680	SCL	M	5.068	SAN JOSE, CAPITOL AVENUE	14200	168000	162000	14200	171000	166000
04	680	SCL	M	6.173	MILPITAS, LANDESS AVENUE , MONTAGUE EXPRESSWAY	14200	171000	166000	12800	155000	149000
04	680	SCL	M	7.647	MILPITAS, JCT. RTE. 237 WEST	12800	155000	149000	13000	143000	136000
04	680	SCL	M	8.496	MILPITAS, JACKLIN ROAD	13000	143000	136000	13200	145000	137000
04	680	SCL	M	9.935	SANTA CLARA/ALAMEDA COUNTY LINE	13200	145000	137000			
04	680	ALA	M	0.000	SANTA CLARA/ALAMEDA COUNTY LINE				13200	145000	137000
04	680	ALA	M	0.125	FREMONT, SCOTT CREEK ROAD	13200	145000	137000	13000	144000	136000
04	680	ALA	M	2.382	FREMONT, JCT. RTE. 262 WEST	13000	144000	136000	11400	146000	138000
04	680	ALA	M	4.015	FREMONT, DURHAM ROAD	11400	146000	138000	12400	159000	150000
04	680	ALA	M	5.372	FREMONT, WASHINGTON BOULEVARD	12400	159000	150000	13100	169000	159000
04	680	ALA	R	6.396	FREMONT, JCT. RTE. 238 NORTH	13100	169000	159000	12600	161000	152000
04	680	ALA	R	7.482	FREMONT, VARGAS ROAD	12600	161000	152000	12600	161000	152000
04	680	ALA	R	8.312	SHERIDAN ROAD	12600	161000	152000	12400	159000	150000
04	680	ALA	R	9.709	ANDRADE ROAD	12400	159000	150000	12200	154000	146000
04	680	ALA	R	11.042	JCT. RTE. 84 WEST	12200	154000	146000	11600	148000	140000
04	680	ALA	R	11.845	JCT. RTE. 84 EAST	11600	148000	140000	10900	138000	133000
04	680	ALA	R	12.443	SUNOL ROAD	10900	138000	133000	11600	147000	140500
04	680	ALA	R	15.261	PLEASANTON/SUNOL ROADS	11600	147000	140500	11200	140000	135000
04	680	ALA	R	16.750	PLEASANTON, BERNAL AVENUE	11200	140000	135000	12100	152000	147000
04	680	ALA	R	19.300	STONERIDGE DRIVE	12100	152000	147000	13200	166000	159000
04	680	ALA	R	20.057	PLEASANTON, JCT. RTE. 580	13200	166000	159000	12700	172000	165000
04	680	ALA	R	21.879	ALAMEDA/CONTRA COSTA COUNTY LINE	12700	172000	165000			
04	680	CC	R	0.000	ALAMEDA/CONTRA COSTA COUNTY LINE				12700	172000	165000
04	680	CC	R	0.010	SAN RAMON, ALCOSTA BOULEVARD	12700	172000	165000	13700	178000	173000
04	680	CC	R	2.885	BOLLINGER CANYON ROAD	13700	178000	173000	12900	168000	163000
04	680	CC	R	4.182	CROW CANYON ROAD	12900	168000	163000	12300	161000	156000

04	680	CC	R	6.764	DANVILLE, SYCAMORE VALLEY ROAD	12300	161000	156000	14000	183000	178000
04	680	CC	R	7.553	DANVILLE, DIABLO ROAD	14000	183000	178000	13600	177000	172000
04	680	CC	R	8.175	EL CERRO BOULEVARD	13600	177000	172000	13600	179000	174000
04	680	CC	R	8.751	DANVILLE, EL PINTADO ROAD	13600	179000	174000	13600	181000	176000
04	680	CC	R	10.371	ALAMO, STONE VALLEY ROAD	13600	181000	176000	12900	171000	165000
04	680	CC	R	11.280	LIVORNA ROAD	12900	171000	165000	12700	166000	161000
04	680	CC	R	12.611	WALNUT CREEK, RUDGEAR ROAD	12700	166000	161000	12300	161000	156000
04	680	CC		13.082	WALNUT CREEK, SOUTH MAIN STREET	12300	161000	156000	12400	162000	156000
04	680	CC		13.930	WALNUT CREEK ROAD, OLYMPIC BOULEVARD	12400	162000	156000	14000	185000	177000
04	680	CC		14.383	WALNUT CREEK, JCT. RTE. 24 WEST	14000	185000	177000	20700	283000	271000
04	680	CC		14.846	WALNUT CREEK, YGNACIO VALLEY ROAD	20700	283000	271000	20700	283000	271000
04	680	CC		15.606	WALNUT CREEK, NORTH MAIN STREET	20700	283000	271000	22300	302000	291000
04	680	CC		16.403	GEARY ROAD	22300	302000	291000	20200	276000	265000
04	680	CC		16.890	PLEASANT HILL, OAK PARK BOULEVARD	20200	276000	265000	20900	283000	272500
04	680	CC	R	17.290	PLEASANT HILL, CONTRA COSTA BOULEVARD	20900	283000	272500	19300	262000	252000
04	680	CC	R	17.702	PLEASANT HILL, MONUMENT BOULEVARD	19300	262000	252000	20000	272000	261000
04	680	CC	R	18.707	CONCORD, JCT. RTE. 242 NORTH	20000	272000	261000	13500	164000	157000
04	680	CC	R	19.236	CONCORD, WILLOW PASS ROAD	13500	164000	157000	14200	173000	166000
04	680	CC		19.855	PLEASANT HILL, CONCORD AVENUE	14200	173000	166000	14200	171000	165000
04	680	CC		21.191	JCT. RTE. 4	14200	171000	165000	11600	145000	140000
04	680	CC		22.429	MARTINEZ, PACHECO BOULEVARD	11600	145000	140000	10500	133000	127000
04	680	CC		22.697	ARTHUR ROAD	10500	133000	126500	10800	137000	129000
04	680	CC		24.264	WATERFRONT , MARINA VISTA	10800	137000	129000	10200	133000	123000
04	680	CC		24.560	BENICIA MARTINEZ BRIDGE	10200	133000	123000	10200	133000	123000
04	680	CC	R	24.934	R BEGIN RIGHT ALIGN				5000	65000	60000
04	680	CC	R	25.520	R CC/SOL CO. LINE	5000	65000	60000			
04	680	CC		24.934	L BEGIN LEFT ALIGN				5200	68000	63000
04	680	CC		25.461	L CC/SOL CO. LINE	5200	68000	63000			
04	680	SOL	R	0.001	R NORTH OF CC/SOL CO LINE				5000	65000	60000
04	680	SOL	M	1.496	R JCT. RTE. 780, END RIGHT ALIGN	5000	65000	60000			
04	680	SOL		0.000	L LEFT ALIGN				5200	68000	63000
04	680	SOL		1.577	L END LEFT ALIGN	5200	68000	63000			
04	680	SOL	R	0.627	JCT. RTE. 780				7900	100000	96000
04	680	SOL	R	1.002	BENICIA, BAYSHORE ROAD	7900	100000	96000	7900	92000	86000
04	680	SOL	R	1.461	BENCIA, INDUSTRIAL WAY	7900	92000	86000	8200	94000	88000
04	680	SOL	R	2.819	LAKE HERMAN ROAD	8200	94000	88000	8100	93000	87000
04	680	SOL	R	5.023	PARISH ROAD	8100	93000	87000	7700	89000	83000
04	680	SOL	R	7.324	MARSHVIEW ROAD	7700	89000	83000	6800	78000	73000
04	680	SOL	R	10.018	GOLD HILL ROAD	6800	78000	73000	7800	88000	83000
04	680	SOL		13.126	CORDELIA WYE, JCT. RTE. 80	7800	88000	83000			
07	710	LA		4.960	LONG BEACH, BEGIN ROUTE 710				4700	59000	58000
07	710	LA		5.459	LONG BEACH, OCEAN/HARBOR SCENIC/PICO AVENUE	4700	59000	58000	4900	61000	60000
07	710	LA		6.058	LONG BEACH, SHORELINE DRIVE	4900	61000	60000	9700	121000	118000
07	710	LA		6.384	LONG BEACH, ANAHEIM STREET	9700	121000	118000	10900	136000	133000
07	710	LA		6.881	LONG BEACH, JCT. RTE. 1	10900	136000	133000	11300	155000	153000
07	710	LA		7.887	LONG BEACH, WILLOW STREET	11300	155000	153000	12800	169000	169000
07	710	LA		9.410	LONG BEACH, JCT. RTE. 405	12800	169000	169000	14200	193000	186000
07	710	LA		10.823	LONG BEACH, DEL AMO BOULEVARD	14000	191000	184000	14400	200000	190000
07	710	LA		12.012	LONG BEACH, LONG BEACH BOULEVARD	14400	200000	190000	15000	210000	199000
07	710	LA		12.970	LONG BEACH, JCT. RTE. 91	15000	210000	199000	17500	240000	233000
07	710	LA		13.945	COMPTON, ALONDRA BOULEVARD	17500	240000	233000	17900	248000	240000
07	710	LA	R	15.692	LYNWOOD, JCT. RTE. 105	17900	248000	240000	17800	250000	241000
07	710	LA		16.986	SOUTH GATE, IMPERIAL HIGHWAY	17800	250000	241000	16200	234000	225000
07	710	LA		18.440	SOUTH GATE, FIRESTONE BOULEVARD	16200	234000	225000	15000	224000	213000
07	710	LA		19.730	BELL, FLORENCE AVENUE	15000	224000	213000	14700	216000	207000
07	710	LA		21.915	BELL, ATLANTIC BOULEVARD	14700	216000	207000	16100	226000	217000
07	710	LA		22.452	COMMERCE, WASHINGTON BOULEVARD	16100	226000	217000	19100	264000	253000
07	710	LA		23.282	COMMERCE, JCT. RTE. 5	19100	264000	253000	16500	218000	210000
07	710	LA		23.770	WHITTIER BOULEVARD	16500	218000	210000	15300	198000	192000
07	710	LA		24.627	JCT. RTE. 60	15300	198000	192000	10200	134000	127000
07	710	LA		26.497	MONTEREY PARK, JCT. RTE. 10	10200	134000	127000	4650	59000	54000
07	710	LA	T	27.475	LOS ANGELES, VALLEY BOULEVARD	4650	59000	54000	4650	59000	54000
07	710	LA	T	30.953	PASADENA, ON PASADENA/COLUMBIA STREET	4650	59000	54000	3350	28500	25500
07	710	LA	T	31.402	PASADENA, ON PASADENA AVENUE S BELLEFONTAINE	3350	28500	25500	2350	20100	17700
07	710	LA	T	31.403	PASADENA, ON ST. JOHN/BELLEFONTAINE ST	2350	20100	17700	2200	18900	16700
07	710	LA	T	31.474	PASADENA, ON PASADENA/BELLEFONTAINE ST	2350	20100	17700	1950	16800	14800
07	710	LA	T	31.475	PASADENA, ON ST JOHN AVE/BELLEFONTAINE ST	2200	18900	16700	1750	15100	13300
07	710	LA	T	31.761	PASADENA, ON PASADENA AVE/CALIFORNIA ST	1950	16800	14800	3350	30500	26500
07	710	LA	T	32.080	PASADENA, TEMPORARY BEGIN LONG BEACH FREEWAY	5500	53000	47000	5500	53000	47000
07	710	LA	T	32.105	PASADENA, DEL MAR BOULEVARD	5500	53000	47000	7800	75000	66000
07	710	LA	T	32.130	PASADENA, ON PASADENA AVE/END OF COUPLET	3350	30500	26500	7800	75000	66000
07	710	LA	R	32.720	PASADENA, JCT. RTES. 134/210	7800	75000	66000			
04	780	SOL		1.221	BEGIN ROUTE 780				5200	60100	58000
04	780	SOL		2.015	BENICIA, SECOND STREET	5600	63000	61000	5600	64000	62000
04	780	SOL		2.955	BENICIA, WEST 7TH STREET	5600	64000	62000	5600	63000	61000
04	780	SOL		3.995	WEST BENICIA	5600	63000	61000	5800	69000	66000
04	780	SOL		4.770	COLUMBUS PARKWAY	5800	69000	66000	5100	60000	58000
04	780	SOL		5.998	GLEN COVE ROAD	5100	60000	58000	5800	69000	66000

04	780		SOL		6.656		BENECIA, HOME ACRES AVENUE POC, EAST OF RTE 80	5800	69000	66000	5800	69000	66000
04	780		SOL		7.186		VALLEJO, JCT. RTE. 80	6000	71000	68000	3850	48500	47000
04	780		SOL		7.440		LEMON STREET	3850	48500	47000	2300	28500	27500
11	805		SD		0.486		SAN DIEGO, JCT. RTE. 5				4150	56000	50000
11	805		SD		0.652		SAN DIEGO, SAN YSIDRO BOULEVARD	4150	56000	50000	5200	69000	66000
11	805		SD		1.805		SAN DIEGO, JCT. RTE. 905	5200	69000	66000	15800	206000	170000
11	805		SD		2.897		SAN DIEGO, PALM AVENUE	15800	206000	170000	14800	202000	199000
11	805		SD		3.654		CHULA VISTA, AUTO PARKWAY DRIVE/MAIN STREET	14800	202000	199000	14800	210000	205000
11	805		SD		4.415		CHULA VISTA, ORANGE AVENUE	14800	210000	205000	15300	202000	198000
11	805		SD		6.059		TELEGRAPH CANYON ROAD	14800	203000	198000	17600	254000	250000
11	805		SD		7.163		CHULA VISTA, H STREET	17600	254000	250000	19000	277000	272000
11	805		SD		7.756		CHULA VISTA, BONITA ROAD	19000	277000	272000	19800	269000	251000
11	805		SD		8.854		JCT. RTE. 54, SWEETWATER ROAD	20000	264000	251000	17100	229000	224000
11	805		SD		10.281		NATIONAL CITY, PLAZA BOULEVARD	16300	243000	224000	17200	235000	232000
11	805		SD		11.096		SAN DIEGO, 47TH STREET	17100	237000	232000	18000	248000	245000
11	805		SD		12.344		SAN DIEGO, IMPERIAL AVENUE	18000	248000	245000	19700	268000	266000
11	805		SD		12.953		SAN DIEGO, MARKET STREET	19700	268000	266000	17500	245000	234000
11	805		SD		13.507		SAN DIEGO, JCT. RTE. 94	17500	245000	234000	18500	241000	235000
11	805		SD		13.950		SAN DIEGO, HOME AVENUE	18500	241000	235000	16500	237000	228000
11	805		SD		14.641		SAN DIEGO, JCT. RTE. 15	17300	245000	228000	13600	181000	174000
11	805		SD		15.950		SAN DIEGO, UNIVERSITY AVENUE	13600	181000	174000	14700	193000	190000
11	805		SD		16.431		EL CAJON BOULEVARD	14900	197000	190000	16000	195000	194000
11	805		SD		16.989		SAN DIEGO, ADAMS AVENUE	16000	195000	194000	17900	217000	215000
11	805		SD		17.645		JCT. RTE. 8	17900	217000	215000	14600	202000	192000
11	805		SD		18.888		MURRAY RIDGE	14500	199000	192000	16000	191000	188000
11	805		SD		20.230		SAN DIEGO, KEARNY VILLA ROAD	16000	191000	188000	14000	169000	166000
11	805		SD		20.600		SAN DIEGO, JCT. RTE. 163	14000	169000	166000	16000	194000	187000
11	805		SD		21.654		SAN DIEGO, BALBOA AVENUE	16000	194000	187000	15500	187000	185000
11	805		SD		22.561		SAN DIEGO, CLAIREMONT MESA DRIVE	15500	187000	185000	14800	196000	190000
11	805		SD		23.651		JCT. RTE. 52	15000	204000	190000	16600	222000	210000
11	805		SD		24.440		GOVERNOR DRIVE	16600	222000	210000	16200	216000	205000
11	805		SD		25.476		SAN DIEGO, NOBEL DRIVE	16200	216000	205000	14800	197000	185000
11	805		SD		25.935		SAN DIEGO, MIRAMAR ROAD	14800	197000	185000	14600	195000	184000
11	805		SD		27.067		SAN DIEGO, MIRA MESA BOULEVARD	14600	195000	184000	13100	162000	158000
11	805		SD		28.502		JCT. RTE. 5	13300	163000	158000			
04	880	S	ALA		0.000	R	BEGIN RIGHT ALIGN, PORT OF OAKLAND				8200	91000	88600
04	880	S	ALA		1.257	R	END RIGHT ALIGN AT WB 80	8200	91000	88600			
04	880	S	ALA		0.000	L	BEGIN LEFT ALIGN. PORT OF OAKLAND				7900	88000	85700
04	880	S	ALA		1.463	L	END LEFT ALIGN	7900	88000	85700			
04	880		SCL		0.000		JCT. RTE. 280				14600	162000	159300
04	880		SCL		1.250		BASCOM AVENUE	14600	162000	159300	14400	166000	156400
04	880		SCL		2.075		SAN JOSE, JCT. RTE. 82	14400	166000	156400	14200	164000	157300
04	880		SCL		2.667		SAN JOSE, COLEMAN AVENUE	14200	164000	157300	14000	162000	156400
04	880		SCL		3.565		SAN JOSE, NORTH FIRST STREET	14000	162000	156400	15400	178000	171200
04	880		SCL		4.078		SAN JOSE, JCT. RTE. 101	15400	178000	171200	17100	198000	190000
04	880		SCL		4.275		SAN JOSE, OLD BAYSHORE HIGHWAY	17100	198000	190000	16200	187000	183000
04	880		SCL		5.337		COYOTE CREEK	16200	187000	183000	15200	176000	169200
04	880		SCL		6.712		TRIMBLE ROAD , MONTAGUE EXPRESSWAY	15200	176000	169200	16000	185000	178100
04	880		SCL		7.690		MILPITAS, GREAT MALL PARKWAY	16000	185000	178100	16000	185000	178100
04	880		SCL		8.422		JCT. RTE. 237	16000	185000	178100	19900	232000	222600
04	880		SCL		10.407		DIXON ROAD	19900	232000	222600	20800	232000	222600
04	880		SCL		10.502		SANTA CLARA/ALAMEDA COUNTY LINE	20800	232000	222600			
04	880		ALA	R	0.000		SANTA CLARA/ALAMEDA COUNTY LINE				20800	232000	222600
04	880		ALA		2.283		FREMONT, JCT. RTE. 262 EAST	20800	232000	222600	19200	235000	221600
04	880		ALA		3.247		FREMONT, LANDING ROAD/ FREMONT BOULEVARD	19200	235000	221600	15600	212000	203800
04	880		ALA		4.712		FREMONT, DURHAM ROAD/ GRIMMER BOULEVARD	15600	212000	203800	16600	226000	216700
04	880		ALA		6.239		FREMONT, STEVENSON BOULEVARD	16600	226000	216700	16100	220000	210800
04	880		ALA		7.189		FREMONT, MOWERY AVENUE	16100	220000	210800	16700	228000	218700
04	880		ALA		8.842		FREMONT, SOUTH JCT. RTE. 84	16700	228000	218700	17200	235000	225600
04	880		ALA		10.300		FREMONT, NORTH JCT. RTE. 84	17200	235000	226000	16900	231000	222000
04	880		ALA		11.404		FREMONT, FREMONT BOULEVARD	16900	231000	222000	13800	215000	211000
04	880		ALA		13.669		HAYWARD, WHIPPLE ROAD	14200	224000	213000	14500	228000	217000
04	880		ALA		14.537		HAYWARD, INDUSTRIAL PARKWAY	14500	228000	216700	15300	244000	226000
04	880		ALA		15.645		HAYWARD, TENNYSON ROAD	15300	244000	226000	20500	306000	242400
04	880		ALA		16.696		HAYWARD, JCT. RTE. 92	20500	306000	242400	23700	353000	280000
04	880		ALA		17.604		WINTON AVENUE	23700	353000	280000	24600	365000	290000
04	880		ALA		18.353		HAYWARD, A STREET	24600	365000	290000	23900	355000	282000
04	880		ALA		20.162		HESPERIAN BOULEVARD	23900	355000	282000	20400	285000	190000
04	880		ALA		20.678		JCT. RTE. 238 EAST	20400	285000	190000	19800	288000	237500
04	880		ALA		22.837		SAN LEANDRO, MARINA BOULEVARD	19800	288000	237500	19500	283000	233500
04	880		ALA		23.644		RTE 112, DAVIS STREET	19500	283000	233500	19200	278000	229600
04	880		ALA		24.767		OAKLAND, 98TH AVENUE	19200	278000	229600	17100	246000	202800
04	880		ALA		25.497		OAKLAND, HEGENBERGER ROAD	17100	246000	202800	13600	206000	202800
04	880		ALA		26.607		OAKLAND, 66TH AVENUE	13600	206000	202800	14200	214000	209800
04	880		ALA		27.709		OAKLAND, JCT. RTE. 77	14200	214000	209800	14400	218000	213700
04	880		ALA		28.687		OAKLAND, 29TH/FRUITVALE AVENUES	14400	218000	213700	14600	220000	215700
04	880		ALA		28.934		OAKLAND, 23RD AVENUE	14600	220000	215700	15000	227000	222600
04	880		ALA		29.800		OAKLAND, EMBARCADERO CONNECTION	15000	227000	222600	14600	221000	216700

04	880	ALA		30.380		OAKLAND, 10TH/5TH AVENUE CONNECTIONS	14600	221000	216700	14600	221000	216700
04	880	ALA		31.091		OAK/MADISON STREETS	14600	221000	216700	13000	196000	193000
04	880	ALA		31.230		OAKLAND, JACKSON/ BROADWAY CONNECTIONS	13000	196000	193000	13100	197000	194000
04	880	ALA		31.681		OAKLAND, JCT RTE 980	13100	197000	194000	8400	126000	123700
04	880	ALA	R	32.790		ADELINE/UNION STREETS	8400	126000	123700	8700	130000	127700
04	880	ALA	R	33.270		7TH STREET	8700	130000	127700	7600	114000	111800
04	880	ALA	R	33.920	R	BEGIN RIGHT ALIGN				3800	56000	55400
04	880	ALA	R	34.180	R	CONNECT TO SAN FRANCISCO-OAKLAND BAY BRIDGE	3800	56000	55400	2400	34500	33700
04	880	ALA	R	34.700	R	WEST GRAND AVENUE	2400	34500	33700	2800	40500	39600
04	880	ALA	R	35.797	R	NB LANES @ EB RTE 80, END RIGHT ALIGN	2800	40500	39600			
04	880	ALA	R	33.920	L	BEGIN LEFT ALIGN				3900	57000	56400
04	880	ALA	R	34.180	L	CONNECT TO SAN FRANCISCO-OAKLAND BAY BRIDGE	3900	57000	56400	2600	37500	36700
04	880	ALA	R	34.700	L	WEST GRAND AVENUE	2600	37500	36700	2800	40500	39600
04	880	ALA	R	35.400	L	WEST JCT RTE 80, END LEFT ALIGN	2800	40500	39600			
11	905	SD		2.840		27TH STREET/ORO VISTA ROAD				1950	22200	22100
11	905	SD		2.960	R	BEGIN RIGHT ALIGN				1000	11400	11000
11	905	SD		3.207	R	JCT RTE 5	1000	11400	11000	2950	30000	29000
11	905	SD		3.544	R	END RIGHT ALIGN	2950	30000	29000			
11	905	SD		2.960	L	BEGIN LEFT ALIGN				1100	11900	11400
11	905	SD		3.190	L	SAN DIEGO, JCT. RTE. 5	1100	11900	11400	2750	32000	31000
11	905	SD		3.550	L	END LEFT ALIGN	2750	32000	31000	5500	62000	60000
11	905	SD		3.818		SAN DIEGO, BEYER BOULEVARD	5500	63000	60000	6600	69000	67000
11	905	SD		4.409		SAN DIEGO, PICADOR BOULEVARD	6600	69000	67000	6500	69000	67000
11	905	SD		5.164		JCT. RTE. 805	6500	69000	67000	8700	105000	100000
11	905	SD	R	6.723		CALIENTE ROAD	8700	105000	100000	7800	91000	89000
11	905	SD	R	8.782		BRITANNIA BLVD	7800	91000	89000	6100	80000	73000
11	905	SD	R	9.778		LA MEDIA ROAD	8000	115000	83000	5200	83000	66000
11	905	SD	R	11.366		SIEMPRE VIVA RD O.C.	3050	45000	44500	1950	28500	28000
11	905	SD	R	11.736		MEXICAN BORDER POE-TRUCK ENTRANCE	180	2600	2450			
04	980	ALA		0.009		OAKLAND, JCT. RTE. 880				6600	95000	91500
04	980	ALA		0.702		OAKLAND, FOURTEENTH STREET	6600	95000	91500	7600	109000	105000
04	980	ALA		0.904		OAKLAND, 18TH STREET	7600	109000	105000	8500	121000	117000
04	980	ALA		2.036		OAKLAND, JCT. RTE. 580	8500	121000	87000			

On-Site Construction Leq

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	637	60.0
Noise Level	50	87.6
Nearest Sensitive Receptor	2800	41.6

Sensitive receptor located approx. 2,800 feet from eastern boudary of project site

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Excavator	85	0.4
Concrete Saw	90	0.2
Grader	85	0.4
Scraper	85	0.4

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Excavator	81.0
Concrete Saw	83.0
Grader	81.0
Scraper	81.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
87.6

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

On-Site Construction Lmax

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	1,035	60.0
Noise Level	50	92.9
Nearest Sensitive Receptor	2800	46.9

Sensitive receptor located approx. 2,800 feet from eastern boudary of project site

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Excavator	85	1
Grader	85	1
Concrete Saw	90	1
Scraper	85	1

Ground Type	soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Excavator	85.0
Grader	85.0
Concrete Saw	90.0
Scraper	85.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
93

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Off-Site Construction Leq

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	405	60.0
Residence 1	50	82.7
Residence 2	340	60.8
Limit for Mitigation	635	53.6

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Excavator	85	0.4
Compactor (ground)	80	0.2
Compressor (air)	80	0.4

Ground Type	soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Excavator	81.0
Compactor (ground)	73.0
Compressor (air)	76.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
82.7

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Off-Site Construction Lmax

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	608	60.0
Noise Level	50	87.1
Nearest Sensitive Receptor	340	65.2

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Excavator	85	1
Compactor (ground)	80	1
Compressor (air)	80	1

Ground Type	soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Excavator	85.0
Compactor (ground)	80.0
Compressor (air)	80.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
87

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Equipment Description	Acoustical Usage Factor (%)	Spec 721.560 Lmax @ 50ft (dBA slow)	Actual Measured Lmax @ 50ft (dBA slow)	No. of Actual Data Samples (count)	Spec 721.560 LmaxCalc	Spec 721.560 Leq	Distance	Actual Measured LmaxCalc	Actual Measured Leq
Auger Drill Rig	20	85	84	36	79.0	72.0	100	78.0	71.0
Backhoe	40	80	78	372	74.0	70.0	100	72.0	68.0
Bar Bender	20	80	na	0	74.0	67.0	100		
Blasting	na	94	na	0	88.0		100		
Boring Jack Power Unit	50	80	83	1	74.0	71.0	100	77.0	74.0
Chain Saw	20	85	84	46	79.0	72.0	100	78.0	71.0
Clam Shovel (dropping)	20	93	87	4	87.0	80.0	100	81.0	74.0
Compactor (ground)	20	80	83	57	74.0	67.0	100	77.0	70.0
Compressor (air)	40	80	78	18	74.0	70.0	100	72.0	68.0
Concrete Batch Plant	15	83	na	0	77.0	68.7	100		
Concrete Mixer Truck	40	85	79	40	79.0	75.0	100	73.0	69.0
Concrete Pump Truck	20	82	81	30	76.0	69.0	100	75.0	68.0
Concrete Saw	20	90	90	55	84.0	77.0	100	84.0	77.0
Crane	16	85	81	405	79.0	71.0	100	75.0	67.0
Dozer	40	85	82	55	79.0	75.0	100	76.0	72.0
Drill Rig Truck	20	84	79	22	78.0	71.0	100	73.0	66.0
Drum Mixer	50	80	80	1	74.0	71.0	100	74.0	71.0
Dump Truck	40	84	76	31	78.0	74.0	100	70.0	66.0
Excavator	40	85	81	170	79.0	75.0	100	75.0	71.0
Flat Bed Truck	40	84	74	4	78.0	74.0	100	68.0	64.0
Front End Loader	40	80	79	96	74.0	70.0	100	73.0	69.0
Generator	50	82	81	19	76.0	73.0	100	75.0	72.0
Generator (<25KVA, VMS si	50	70	73	74	64.0	61.0	100	67.0	64.0
Gradall	40	85	83	70	79.0	75.0	100	77.0	73.0
Grader	40	85	na	0	79.0	75.0	100		
Grapple (on Backhoe)	40	85	87	1	79.0	75.0	100	81.0	77.0
Horizontal Boring Hydr. Jacl	25	80	82	6	74.0	68.0	100	76.0	70.0
Hydra Break Ram	10	90	na	0	84.0	74.0	100		
Impact Pile Driver	20	95	101	11	89.0	82.0	100	95.0	88.0
Jackhammer	20	85	89	133	79.0	72.0	100	83.0	76.0
Man Lift	20	85	75	23	79.0	72.0	100	69.0	62.0
Mounted Impact Hammer (	20	90	90	212	84.0	77.0	100	84.0	77.0
Pavement Scarafier	20	85	90	2	79.0	72.0	100	84.0	77.0
Paver	50	85	77	9	79.0	76.0	100	71.0	68.0
Pickup Truck	40	55	75	1	49.0	45.0	100	69.0	65.0
Pneumatic Tools	50	85	85	90	79.0	76.0	100	79.0	76.0
Pumps	50	77	81	17	71.0	68.0	100	75.0	72.0
Refrigerator Unit	100	82	73	3	76.0	76.0	100	67.0	67.0
Rivit Buster/chipping gun	20	85	79	19	79.0	72.0	100	73.0	66.0
Rock Drill	20	85	81	3	79.0	72.0	100	75.0	68.0
Roller	20	85	80	16	79.0	72.0	100	74.0	67.0
Sand Blasting (Single Nozzle	20	85	96	9	79.0	72.0	100	90.0	83.0
Scraper	40	85	84	12	79.0	75.0	100	78.0	74.0
Shears (on backhoe)	40	85	96	5	79.0	75.0	100	90.0	86.0
Slurry Plant	100	78	78	1	72.0	72.0	100	72.0	72.0
Slurry Trenching Machine	50	82	80	75	76.0	73.0	100	74.0	71.0
Soil Mix Drill Rig	50	80	na	0	74.0	71.0	100		
Tractor	40	84	na	0	78.0	74.0	100		
Vacuum Excavator (Vac-tru	40	85	85	149	79.0	75.0	100	79.0	75.0
Vacuum Street Sweeper	10	80	82	19	74.0	64.0	100	76.0	66.0
Ventilation Fan	100	85	79	13	79.0	79.0	100	73.0	73.0
Vibrating Hopper	50	85	87	1	79.0	76.0	100	81.0	78.0
Vibratory Concrete Mixer	20	80	80	1	74.0	67.0	100	74.0	67.0
Vibratory Pile Driver	20	95	101	44	89.0	82.0	100	95.0	88.0
Warning Horn	5	85	83	12	79.0	66.0	100	77.0	64.0
Welder / Torch	40	73	74	5	67.0	63.0	100	68.0	64.0
chipper		75							

Source:
FHWA Roadway Construction Noise Model, January 2006. Table 9.1
U.S. Department of Transportation
CA/T Construction Spec. 721.560

Addition of Noise Levels from Multiple Sources at a Discrete Receptor

OBJECTIVE: This work sheet is designed to estiamte the combined level of noise exposure at a single discrete receptor from multiple point sources.

KEY: Orange cells are for input.
Grey cells are intermediate calculations performed by the model.
Green cells are data to present in a written analysis (output).

Receptor Name: **Single-family residence south of Stoddard Wells Road**

STEP 1: Identify the noise sources and enter the reference noise levels (dBA and distance).
STEP 2: Select the ground type (hard or soft), and enter the source and receiver heights.
STEP 3: Select the distance to the receptor and the reduction provided by any intervening barrier.

Step 1.				Step 2.				Step 3.				
Noise Source	**Reference Noise Level**			**Attenuation Characteristics**				**Attenuated Noise Level at Receptor**				
	Reference Noise Level (dBA)	@	Reference Distance (ft)	Ground Type (soft/hard)	Source Height (ft)	Receiver Height (ft)	Ground Factor		Noise Level (dBA)	@	Distance to Receptor (ft)	Reduction Provided by Barrier, if any (dBA)
Ambient Noise Level at Receptor	46.8	@	50	soft	8	5	0.63		46.8	@	50	
Combined Construction Noise	87.6	@	50	soft	8	5	0.63		41.6	@	2800	

Combined level of noise exposure at receptor from all noise sources (dBA): **47.9**
Change in noise level (dBA): **1.1**

Notes:

Computation of the attenuated noise level is based on the equation presented on pg. 12-3 and 12-4 of FTA 2006.

Computation of the ground factor is based on the equation presentd in Figure 6-23 on pg. 6-23 of FTA 2006, where the distance of the reference noise leve can be adjusted and the usage factor is not applied (i.e., the usage factor is equal to 1).

Summation of noise levels from different stationary noise sources at the same receptor is based on the equation presented on page 2-3 of FTA 2006.

Reference noise levels for surface parking lots were calculated based on the number of parking spots in the lot.

Sources:

Federal Transit Association (FTA). 2006 (May). Transit Noise and Vibration Impact Assessment. FTA-VA-90-1003-06. Washington, D.C. Available: <http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf>. Accessed: March 5, 2020.

Addition of Noise Levels from Multiple Sources at a Discrete Receptor

OBJECTIVE: This work sheet is designed to estiamte the combined level of noise exposure at a single discrete receptor from multiple point sources.

KEY: Orange cells are for input.
Grey cells are intermediate calculations performed by the model.
Green cells are data to present in a written analysis (output).

Receptor Name: **Single-family residence south of Stoddard Wells Road**

STEP 1: Identify the noise sources and enter the reference noise levels (dBA and distance).
STEP 2: Select the ground type (hard or soft), and enter the source and receiver heights.
STEP 3: Select the distance to the receptor and the reduction provided by any intervening barrier.

Step 1.				Step 2.				Step 3.				
Noise Source	**Reference Noise Level**			**Attenuation Characteristics**				**Attenuated Noise Level at Receptor**				
	Reference Noise Level (dBA)	@	Reference Distance (ft)	Ground Type (soft/hard)	Source Height (ft)	Receiver Height (ft)	Ground Factor		Noise Level (dBA)	@	Distance to Receptor (ft)	Reduction Provided by Barrier, if any (dBA)
Ambient Noise Level at Receptor	46.8	@	50	soft	8	5	0.63		46.8	@	50	
Combined Construction Noise	82.7	@	50	soft	8	5	0.63		60.8	@	340	

Combined level of noise exposure at receptor from all noise sources (dBA): **60.9**
Change in noise level (dBA): **14.1**

Notes:

Computation of the attenuated noise level is based on the equation presented on pg. 12-3 and 12-4 of FTA 2006.

Computation of the ground factor is based on the equation presentd in Figure 6-23 on pg. 6-23 of FTA 2006, where the distance of the reference noise leve can be adjusted and the usage factor is not applied (i.e., the usage factor is equal to 1).

Summation of noise levels from different stationary noise sources at the same receptor is based on the equation presented on page 2-3 of FTA 2006.

Reference noise levels for surface parking lots were calculated based on the number of parking spots in the lot.

Sources:

Federal Transit Association (FTA). 2006 (May). Transit Noise and Vibration Impact Assessment. FTA-VA-90-1003-06. Washington, D.C. Available: <http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf>. Accessed: March 5, 2020.

Traffic Noise Spreadsheet Calculator

Project:

Noise Level Descriptor: Leq
Site Conditions: Soft
Traffic Input: ADT
Traffic K-Factor: 6

Segment Description and Location				Input										Output				
Number	Name	From	To	ADT	Speed (mph)	Distance to Directional Centerline, (feet)$_4$ Near	Far	Traffic Distribution Characteristics % Auto	% Medium	% Heavy	% Day	% Eve	% Night	Leq, (dBA)$_{5,6,7}$	Distance to Contour, (feet)$_3$ 75 dBA	70 dBA	65 dBA	60 dBA
Existing Conditions																		
1	Quarry Road	I-15 SB Ramps to Stoddard Wells Road		2,322	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	51.7	3	6	13	28
2	Stoddard Wells Road	Quarry Road to I-15 NB Ramps		2,941	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	52.8	3	7	15	33
3	Stoddard Wells Road	East of I-15 NB Ramps		4,419	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	54.5	4	9	20	43
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Traffic Noise Spreadsheet Calculator
Plus Project Leq

Project:

Noise Level Descriptor: Leq
Site Conditions: Soft
Traffic Input: ADT
Traffic K-Factor: 6

Segment Description and Location				Input										Output				
						Distance to Directional Centerline, (feet)[4]		Traffic Distribution Characteristics							Distance to Contour, (feet)[3]			
Number	Name	From	To	ADT	Speed (mph)	Near	Far	% Auto	% Medium	% Heavy	% Day	% Eve	% Night	Leq, (dBA)[5,6,7]	75 dBA	70 dBA	65 dBA	60 dBA
Existing-Plus-Project Conditions																		
1	Quarry Road	I-15 SB Ramps to Stoddard Wells Road		4,982	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	55.0	5	10	22	47
2	Stoddard Wells Road	Quarry Road to I-15 NB Ramps		5,712	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	55.6	5	11	24	51
3	Stoddard Wells Road	East of I-15 NB Ramps		9,905	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	58.0	7	16	34	74
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Traffic Noise Spreadsheet Calculator
Existing Ldn

Project:

Noise Level Descriptor: Ldn
Site Conditions: Soft
Traffic Input: ADT
Traffic K-Factor:

		Segment Description and Location		Input										Output				
						Distance to Directional Centerline, (feet)$_4$		Traffic Distribution Characteristics							Distance to Contour, (feet)$_3$			
Number	Name	From	To	ADT	Speed (mph)	Near	Far	% Auto	% Medium	% Heavy	% Day	% Eve	% Night	Ldn, (dBA)$_{5,6,7}$	75 dBA	70 dBA	65 dBA	60 dBA
Existing Conditions																		
1	Quarry Road	I-15 SB Ramps to Stoddard Wells Road		2,322	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	51.8	3	6	13	28
2	Stoddard Wells Road	Quarry Road to I-15 NB Ramps		2,941	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	52.8	3	7	15	33
3	Stoddard Wells Road	East of I-15 NB Ramps		4,419	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	54.6	4	9	20	43
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Traffic Noise Spreadsheet Calculator
Plus Project Ldn

Project:

Noise Level Descriptor: Ldn
Site Conditions: Soft
Traffic Input: ADT
Traffic K-Factor:

				Input										Output				
		Segment Description and Location				Distance to Directional Centerline, (feet)[4]		Traffic Distribution Characteristics						Ldn,	Distance to Contour, (feet)[3]			
Number	Name	From	To	ADT	Speed (mph)	Near	Far	% Auto	% Medium	% Heavy	% Day	% Eve	% Night	(dBA)[5,6,7]	75 dBA	70 dBA	65 dBA	60 dBA
Existing-Plus-Project Conditions																		
1	Quarry Road	I-15 SB Ramps to Stoddard Wells Road		4,982	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	55.1	5	10	22	47
2	Stoddard Wells Road	Quarry Road to I-15 NB Ramps		5,712	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	55.7	5	11	24	51
3	Stoddard Wells Road	East of I-15 NB Ramps		9,905	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	58.1	7	16	34	74
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Traffic Noise Spreadsheet Calculator
Existing I-15 Ldn

Project:

Noise Level Descriptor: Ldn
Site Conditions: Soft
Traffic Input: ADT
Traffic K-Factor:

				Input										Output				
		Segment Description and Location				Distance to Directional Centerline, (feet)[4]		Traffic Distribution Characteristics							Distance to Contour, (feet)[3]			
Number	Name	From	To	ADT	Speed (mph)	Near	Far	% Auto	% Medium	% Heavy	% Day	% Eve	% Night	Ldn, (dBA)[5,6,7]	75 dBA	70 dBA	65 dBA	60 dBA
Existing Conditions																		
1	I-15	North junction Stoddard Wells Rd (Bell Mountain)		64,000	70	100	100	74.1%	5.9%	20.0%	30.0%	25.0%	45.0%	84.1	403	867	1869	4026
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Traffic Noise Spreadsheet Calculator
Plus Project I-15 Ldn

Project:

Noise Level Descriptor: Ldn
Site Conditions: Soft
Traffic Input: ADT
Traffic K-Factor:

				Input										Output				
		Segment Description and Location				Distance to Directional Centerline, (feet)[4]		Traffic Distribution Characteristics						Ldn,	Distance to Contour, (feet)[3]			
Number	Name	From	To	ADT	Speed (mph)	Near	Far	% Auto	% Medium	% Heavy	% Day	% Eve	% Night	(dBA)[5,6,7]	75 dBA	70 dBA	65 dBA	60 dBA
Existing-Plus-Project Conditions																		
1	I-15	North junction Stoddard Wells Rd (Bell Mountain)		64,615	70	100	100	74.1%	5.9%	20.0%	30.0%	25.0%	45.0%	84.1	405	873	1881	4052
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Traffic Noise Spreadsheet Calculator
Existing I-15 Leq

Project:

Noise Level Descriptor: Leq
Site Conditions: Soft
Traffic Input: ADT
Traffic K-Factor: 10

		Segment Description and Location		Input										Output				
						Distance to Directional Centerline, (feet)[4]		Traffic Distribution Characteristics							Distance to Contour, (feet)[3]			
Number	Name	From	To	ADT	Speed (mph)	Near	Far	% Auto	% Medium	% Heavy	% Day	% Eve	% Night	Leq, (dBA)[5,6,7]	75 dBA	70 dBA	65 dBA	60 dBA
Existing Conditions																		
1	I-15	North junction Stoddard Wells Rd (Bell Mountain)		64,000	70	100	100	74.1%	5.9%	20.0%	30.0%	25.0%	45.0%	80.8	245	528	1138	2452
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Traffic Noise Spreadsheet Calculator
Plus Project I-15 Leq

Project:

Noise Level Descriptor: Leq
Site Conditions: Soft
Traffic Input: ADT
Traffic K-Factor: 10

		Segment Description and Location		Input										Output				
						Distance to Directional Centerline, (feet)[4]		Traffic Distribution Characteristics							Distance to Contour, (feet)[3]			
Number	Name	From	To	ADT	Speed (mph)	Near	Far	% Auto	% Medium	% Heavy	% Day	% Eve	% Night	Leq, (dBA)[5,6,7]	75 dBA	70 dBA	65 dBA	60 dBA
Existing-Plus-Project Conditions																		
1	I-15	North junction Stoddard Wells Rd (Bell Mountain)		64,615	70	100	100	74.1%	5.9%	20.0%	30.0%	25.0%	45.0%	80.9	247	532	1145	2468
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Traffic Noise Spreadsheet Calculator
Cumulative No Project Ldn

Project:

Noise Level Descriptor: Ldn
Site Conditions: Soft
Traffic Input: ADT
Traffic K-Factor:

		Segment Description and Location		Input										Output				
						Distance to Directional Centerline, (feet)$_4$		Traffic Distribution Characteristics										
Number	Name	From	To	ADT	Speed (mph)	Near	Far	% Auto	% Medium	% Heavy	% Day	% Eve	% Night	Ldn, (dBA)$_{5,6,7}$	75 dBA	70 dBA	65 dBA	60 dBA
Existing-Plus-Project Conditions																		
1	Quarry Road	I-15 SB Ramps to Stoddard Wells Road		6,550	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	56.3	6	12	26	56
2	Stoddard Wells Road	Quarry Road to I-15 NB Ramps		7,070	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	56.6	6	13	28	59
3	Stoddard Wells Road	East of I-15 NB Ramps		12,340	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	59.0	9	19	40	86
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Traffic Noise Spreadsheet Calculator
Cumulative Plus Project Ldn

Project:

Noise Level Descriptor: Ldn
Site Conditions: Soft
Traffic Input: ADT
Traffic K-Factor:

		Segment Description and Location		Input										Output				
						Distance to Directional Centerline, (feet)[4]		Traffic Distribution Characteristics							Distance to Contour, (feet)[3]			
Number	Name	From	To	ADT	Speed (mph)	Near	Far	% Auto	% Medium	% Heavy	% Day	% Eve	% Night	Ldn, (dBA)[5,6,7]	75 dBA	70 dBA	65 dBA	60 dBA
Existing-Plus-Project Conditions																		
1	Quarry Road	I-15 SB Ramps to Stoddard Wells Road		9,210	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	57.7	7	15	33	71
2	Stoddard Wells Road	Quarry Road to I-15 NB Ramps		9,841	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	58.0	7	16	34	74
3	Stoddard Wells Road	East of I-15 NB Ramps		17,826	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	60.6	11	24	51	110
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Citation #	Citations	
1	Caltrans Technical Noise Supplement. 2009 (November). Table (5-11), Pg 5-60.	Caltrans Technical Noise Supplement. 2013 (September). Table (4-2), Pg 4-17.
2	Caltrans Technical Noise Supplement. 2009 (November). Equation (5-26), Pg 5-60.	Caltrans Technical Noise Supplement. 2013 (September). Equation (4-5), Pg 4-17
3	Caltrans Technical Noise Supplement. 2009 (November). Equation (2-16), Pg 2-32.	FHWA 2004 TNM Version 2.5
4	Caltrans Technical Noise Supplement. 2009 (November). Equation (5-11), Pg 5-47, 48.	FHWA 2004 TNM Version 2.5
5	Caltrans Technical Noise Supplement. 2009 (November). Equation (2-26), Pg 2-55, 56.	Caltrans Technical Noise Supplement. 2013 (September). Equation (2-23), Pg 2-5
6	Caltrans Technical Noise Supplement. 2009 (November). Equation (2-27), Pg 2-57.	Caltrans Technical Noise Supplement. 2013 (September). Equation (2-24), Pg 2-5
7	Caltrans Technical Noise Supplement. 2009 (November). Pg 2-53.	Caltrans Technical Noise Supplement. 2013 (September). Pg 2-57.
8	Caltrans Technical Noise Supplement. 2009 (November). Equation (5-7), Pg 5-45.	FHWA 2004 TNM Version 2.5
9	Caltrans Technical Noise Supplement. 2009 (November). Equation (5-8), Pg 5-45.	FHWA 2004 TNM Version 2.5
10	Caltrans Technical Noise Supplement. 2009 (November). Equation (5-9), Pg 5-45.	FHWA 2004 TNM Version 2.5
11	Caltrans Technical Noise Supplement. 2009 (November). Equation (5-13), Pg 5-49.	FHWA 2004 TNM Version 2.5
12	Caltrans Technical Noise Supplement. 2009 (November). Equation (5-14), Pg 5-49.	FHWA 2004 TNM Version 2.5
13	Federal Highway Administration Traffic Noise Model Technical Manual. Report No. FHWA-PD-96-010. 1998 (January). Equation (16), Pg 67	
14	Federal Highway Administration Traffic Noise Model Technical Manual. Report No. FHWA-PD-96-010. 1998 (January). Equation (20), Pg 69	
15	Federal Highway Administration Traffic Noise Model Technical Manual. Report No. FHWA-PD-96-010. 1998 (January). Equation (18), Pg 69	

References

California Department of Transportation (Caltrans). 2009 (November). Technical Noise Supplement. Available: http://www.dot.ca.gov/hq/env/noise/pub/tens_complete.pdf. Accessed A
2017.

Addition of Noise Levels from Multiple Sources at a Discrete Receptor

OBJECTIVE: This work sheet is designed to estiamte the combined level of noise exposure at a single discrete receptor from multiple point sources.

KEY: Orange cells are for input.
Grey cells are intermediate calculations performed by the model.
Green cells are data to present in a written analysis (output).

Receptor Name: **Single-family residence south of Stoddard Wells Road**

STEP 1: Identify the noise sources and enter the reference noise levels (dBA and distance).
STEP 2: Select the ground type (hard or soft), and enter the source and receiver heights.
STEP 3: Select the distance to the receptor and the reduction provided by any intervening barrier.

Step 1.				Step 2.				Step 3.				
Noise Source	**Reference Noise Level**			**Attenuation Characteristics**				**Attenuated Noise Level at Receptor**				
	Reference Noise Level (dBA)	@	Reference Distance (ft)	Ground Type (soft/hard)	Source Height (ft)	Receiver Height (ft)	Ground Factor	Noise Level (dBA)	@	Distance to Receptor (ft)	Reduction Provided by Barrier, if any (dBA)
Traffic along I-15	80.8	@	100	soft	8	5	0.63	37.3	@	4500	0
Traffic along Stoddard Wells Road (east of I-15 ramps)	54.5	@	100	soft	8	5	0.63	46.3	@	205	0
							0.66				0
							0.66				
							0.66				
							0.66				

Combined level of noise exposure at receptor from all noise sources (dBA): **46.8**

Notes:

1 - Computation of the attenuated noise level is based on the equation presented on pg. 176 and 177 of FTA 2018.

2 - Computation of the ground factor is based on the equation presentd in Table 4-26 on pg. 86 of FTA 2018, where the distance of the reference noise leve can be adjusted and the usage factor is not applied (i.e., the usage factor is equal to 1).

3 - Summation of noise levels from different stationary noise sources at the same receptor is based on the equation presented on page 201 of FTA 2018.

Sources:

Federal Transit Association (FTA). 2018 (September). Transit Noise and Vibration Impact Assessment. Washington, D.C. Available: <http://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf>Accessed: March 5,

Sources:

Federal Transit Association (FTA). 2006 (May). Transit Noise and Vibration Impact Assessment. FTA-VA-90-1003-06. Washington, D.C. Available: <http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf>. Accessed: March 5, 2020.

Addition of Noise Levels from Multiple Sources at a Discrete Receptor

OBJECTIVE: This work sheet is designed to estiamte the combined level of noise exposure at a single discrete receptor from multiple point sources.

KEY: Orange cells are for input.
Grey cells are intermediate calculations performed by the model.
Green cells are data to present in a written analysis (output).

Receptor Name: **Single-family residence south of Stoddard Wells Road**

STEP 1: Identify the noise sources and enter the reference noise levels (dBA and distance).
STEP 2: Select the ground type (hard or soft), and enter the source and receiver heights.
STEP 3: Select the distance to the receptor and the reduction provided by any intervening barrier.

Step 1.				Step 2.				Step 3.				
Noise Source	**Reference Noise Level**			**Attenuation Characteristics**				**Attenuated Noise Level at Receptor**				
	Reference Noise Level (dBA)	@	Reference Distance (ft)	Ground Type (soft/hard)	Source Height (ft)	Receiver Height (ft)	Ground Factor		Noise Level (dBA)	@	Distance to Receptor (ft)	Reduction Provided by Barrier, if any (dBA)
Traffic along I-15	84.1	@	100	soft	8	5	0.63		40.6	@	4500	0
Traffic along Stoddard Wells Road (east of I-15 ramps)	58.1	@	100	soft	8	5	0.63		49.9	@	205	0
							0.66					0
							0.66					
							0.66					
							0.66					

Combined level of noise exposure at receptor from all noise sources (dBA): **50.4**

Notes:

1 - Computation of the attenuated noise level is based on the equation presented on pg. 176 and 177 of FTA 2018.

2 - Computation of the ground factor is based on the equation presentd in Table 4-26 on pg. 86 of FTA 2018, where the distance of the reference noise leve can be adjusted and the usage factor is not applied (i.e., the usage factor is equal to 1).

3 - Summation of noise levels from different stationary noise sources at the same receptor is based on the equation presented on page 201 of FTA 2018.

Sources:

Federal Transit Association (FTA). 2018 (September). Transit Noise and Vibration Impact Assessment. Washington, D.C. Available: <http://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf>Accessed: March 5,

Sources:

Federal Transit Association (FTA). 2006 (May). Transit Noise and Vibration Impact Assessment. FTA-VA-90-1003-06. Washington, D.C. Available: <http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf>. Accessed: March 5, 2020.

Attenuation Calculations for Stationary Noise Sources

KEY: Orange cells are for input.
Grey cells are intermediate calculations performed by the model.
Green cells are data to present in a written analysis (output).

STEP 1: Identify the noise source and enter the reference noise level (dBA and distance).

STEP 2: Select the ground type (hard or soft), and enter the source and receiver heights.

STEP 3: Select the distance to the receiver.

Noise Source/ID	Reference Noise Level			Attenuation Characteristics				Attenuated Noise Level at Receptor		
	noise level (dBA)	@	distance (ft)	Ground Type (soft/hard)	Source Height (ft)	Receiver Height (ft)	Ground Factor	noise level (dBA)	@	distance (ft)
High range of typical SENL (Haul Truck)	90.0	@	50	hard	12	5	0.00	74.2	@	307
							0.66			
							0.66			
							0.66			
							0.66			
							0.66			
							0.66			

Notes:

Estimates of attenuated noise levels do not account for reductions from intervening barriers, including walls, trees, vegetation, or structures of any type.

Computation of the attenuated noise level is based on the equation presented on pg. 176 and 177 of FTA 2018.

Computation of the ground factor is based on the equation presentd in Table 4-26 on pg. 86 of FTA 2018, where the distance of the reference noise leve can be adjusted and the usage factor is not applied (i.e., the usage factor is equal to 1).

Sources:

Federal Transit Association (FTA). 2018 (September). Transit Noise and Vibration Impact Assessment. Washington, D.C. Available: <http://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-

Addition of Noise Levels from Multiple Sources at a Discrete Receptor

OBJECTIVE: This work sheet is designed to estiamte the combined level of noise exposure at a single discrete receptor from multiple point sources.

KEY: Orange cells are for input.
Grey cells are intermediate calculations performed by the model.
Green cells are data to present in a written analysis (output).

Receptor Name: **Single-family residence south of Stoddard Wells Road**

STEP 1: Identify the noise sources and enter the reference noise levels (dBA and distance).
STEP 2: Select the ground type (hard or soft), and enter the source and receiver heights.
STEP 3: Select the distance to the receptor and the reduction provided by any intervening barrier.

Step 1.				Step 2.				Step 3.				
Noise Source	**Reference Noise Level**			**Attenuation Characteristics**				**Attenuated Noise Level at Receptor**				
	Reference Noise Level (dBA)	@	Reference Distance (ft)	Ground Type (soft/hard)	Source Height (ft)	Receiver Height (ft)	Ground Factor		Noise Level (dBA)	@	Distance to Receptor (ft)	Reduction Provided by Barrier, if any (dBA)
Traffic along I-15	46.8	@	50	soft	8	5	0.63		46.8	@	50	0
Operational Non-Transportation Activities	38.0	@	50	soft	8	5	0.63		38.0	@	50	0
							0.66					0
							0.66					
							0.66					
							0.66					

Combined level of noise exposure at receptor from all noise sources (dBA): **47.3**
Change in noise level (dBA): **0.5**

Notes:

1 - Computation of the attenuated noise level is based on the equation presented on pg. 176 and 177 of FTA 2018.

2 - Computation of the ground factor is based on the equation presentd in Table 4-26 on pg. 86 of FTA 2018, where the distance of the reference noise leve can be adjusted and the usage factor is not applied (i.e., the usage factor is equal to 1).

3 - Summation of noise levels from different stationary noise sources at the same receptor is based on the equation presented on page 201 of FTA 2018.

Sources:

Federal Transit Association (FTA). 2018 (September). Transit Noise and Vibration Impact Assessment. Washington, D.C. Available: <http://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf>Accessed: March 5,

Sources:

Federal Transit Association (FTA). 2006 (May). Transit Noise and Vibration Impact Assessment. FTA-VA-90-1003-06. Washington, D.C. Available: <http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf>. Accessed: March 5, 2020.

Appendix H

Transportation Impact Study

LOVE'S TRAVEL CENTER

DRAFT
Transportation Impact Study

July 2022

Prepared For
Love's Travel Stops & Country Stores
10601 N. Pennsylvania Avenue
The Village, OK 73120

Prepared By
CR Associates
3900 Fifth Avenue, Suite 310
San Diego, CA 92103

Executive Summary

Project Description and Setting

The Love's Travel Center (the "Proposed Project") proposes to develop a Travel Center with the primary development components including a 9,659 square foot convenience store, a 3,043 square foot fast-foot restaurant, and 25 fueling positions (9 for trucks and 16 for autos). The Proposed Project also includes a maintenance building (Love's Speedco Truck Care), which provides tire changes and other light maintenance repairs only for trucks. The maintenance building provides for 4 trucks bays and a building of approximately 13,786 square feet. The Proposed Project also proposes to develop a Recreational Vehicle (RV) stop with 80 overnight parking spots with ancillary recreational uses (shuffleboard, basketball court, dog park, etc.). The Proposed Project will be located at the northeast quadrant of the Stoddard Wells Road and Interstate 15 (I-15) interchange within the Town of Apple Valley in San Bernardino County. The project site is currently vacant and is bordered by Stoddard Wells Road on the south side and I-15 on the west side. A new north-south roadway, Traveler's Way, will divide the project site with the travel center to the west and the RV stop to the east. Project site access will be provided via four driveways on Traveler's Way, with three serving the travel center and one serving the RV stop.

The Town of Apply Valley utilizes the County of San Bernadino's Transportation Impact Study Guidelines and as per these guidelines, vehicle trips should be derived using trip rates from the Institute of Transportation Engineer (ITE) Trip Generation Manual (11th Edition). The manual includes trip rates for "Truck Stops" (Land Use 950); however, these rates are based on only 11 sample studies that were surveyed in the 2000s and 2010s in Colorado, Florida, Tennessee, Vermont, and Virginia. Given the low survey sample size and locations surveyed at states other than California, the ITE Trip Generation Manual was determined not to be the most appropriate source for calculating trip generation for the Travel Center component of the Proposed Project. Instead, observed trip generation counts collected at six Love's Travel Centers in California were used in the analysis. The ITE trip generation rate associated with "Campground/Recreational Vehicle Park" (Land Use 416) was used for the RV stop component of the Proposed Project since the six other Love's Travel Centers in California do not have an RV stop component.

Omni-Means prepared the *Love's Trip Generation and Travel Characteristics* Study (June 2018) (Appendix B) where six Love's Travel Centers in California were surveyed (Lodi, Santa Nella, Tulare, Lost Hills, Barstow, and Coachella). All six sites are similar to the Proposed Project in land use and size – all including gas positions, a convenience store, and a drive-through fast food restaurant. The average trip generation rate for the six sites from the Omni-Means study was applied to the Travel Center component of the Proposed Project. Detailed trip generation calculations are provided in Chapter 3.1.

The Proposed Project land uses are anticipated to generate 5,542 daily trips, with 285 trips during the AM peak hour and 325 trips during the PM peak hour. These project trips were analyzed along adjacent roadway segments and intersections to determine if improvements are needed for study facilities to operate acceptable levels of service.

Due to the extremely rural location of the project site, the limited roadway connections in the study area, and few adjacent land uses, most project trips will be vehicles currently traveling on I-15, with only a small portion of new trips generated for the employees traveling to and from work. As such, 90 percent of the project trips for the Travel Center component were assumed to be passenger vehicles and 95 percent of trucks that are passing through the area, already traveling on the adjacent I-15

freeway. Due to this, only 615 daily trips, 37 AM peak hour trips, and 45 PM peak hour trips are expected to be net new generated trips in the study area by the Proposed Project. While this data was not used in the level of service analysis, it is directly related and important to Vehicle Miles Traveled (VMT), as it explains how the Proposed Project's Travel Center's VMT is anticipated to be low since majority of trips are short, diverted trips from the freeway. This is described in detail in Chapter 7.3.

The following three (3) roadway segments and four (4) intersections were included for analysis:

Roadway Segments

- Quarry Road, between I-15 Southbound Ramps and Stoddard Wells Road
- Stoddard Wells Road, between Quarry Road and I-15 Northbound Ramps/Outer Highway 15
- Stoddard Wells Road, between I-15 Northbound Ramps/Outer Highway 15 and Traveler's Way (new road)

Intersections

1. Quarry Road & I-15 Southbound Ramps (Side-Street Stop-Controlled)
2. Quarry Road & Stoddard Wells Road (Side-Street Stop-Controlled)
3. I-15 Northbound Ramps/Outer Highway 15 & Stoddard Wells Road (Side-Street Stop-Controlled)
4. Traveler's Way & Stoddard Wells Road (Side-Street Stop-Controlled)

General Plan Inconsistencies and Improvements Required

Near-Term Year 2023 Conditions

Roadway Segment Analysis

No improvements required.

Intersection Analysis

Table ES.1 displays LOS analysis results both before and after the implementation of the recommended improvements at the affected intersection under Near-Term Year 2023 Base with Project conditions.

Table ES.1 Peak Hour Intersection LOS Results – Near-Term Year 2023 Base with Project Conditions - Recommended Improvements

		Before Improvements				After Improvements			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
ID #	Intersection	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS
3	I-15 NB Ramps/Outer Highway 15 & Stoddard Wells Rd	15.6	C	66.1	**F**	9.8	A	16.5	C

Note:
Bold letter indicates substandard LOS D, E, or F.

The Proposed Project shall convert the intersection from a side-street stop-controlled intersection of I-15 NB Ramps/Outer Highway 15 & Stoddard Wells Rd to an all-way stop controlled intersection. As shown in Table ES.1, this intersection would operate at LOS A during the AM peak hour and LOS C

during the PM peak hour with the recommended improvement under Near-Term Year 2023 Base with Project conditions. The off-ramp queue for vehicles exiting the freeway would also improve from ten (10) vehicle lengths to four (4) vehicle lengths during the PM peak hour.

However, the intersection of I-15 NB Ramps/Outer Highway 15 & Stoddard Wells Road is under Caltrans jurisdiction and the Town of Apple Valley does not have control over improvements. Currently, an intersection control evaluation (ICE) for this intersection is being conducted per Caltrans' request and the results of the analysis will determine the ultimate traffic control at the intersection. Further coordination with Caltrans will continue before implementation of any improvements at the intersection.

Horizon Year 2040 Conditions

Roadway Segment Analysis

No improvements required.

Intersection Analysis

Table ES.2 displays LOS analysis results both before and after the implementation of the recommended improvements at the effected intersection under Horizon Year 2040 with Project conditions.

Table ES.2 Peak Hour Intersection LOS Results – Horizon Year 2040 with Project Conditions - Recommended Improvements

		Before Improvements				After Improvements			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
ID #	Intersection	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS
3	I-15 NB Ramps/Outer Highway 15 & Stoddard Wells Rd	21.9	C	208.8	**F**	11.7	B	25.0	C

Note:
Bold letter indicates substandard LOS D, E, or F.

At the intersection of I-15 NB Ramps/Outer Highway 15 & Stoddard Wells Rd, the Proposed Project shall pay a 50.13% fair share contribution towards the widening of the southbound approach to add an exclusive southbound left-turn lane on the I-15 Northbound off-ramp and convert the intersection from a side-street stop-controlled intersection to an all-way stop controlled intersection. As shown in Table ES.2, this intersection would operate at LOS B during the AM peak hour and LOS C during the PM peak hour with the recommended improvements under Horizon Year 2040 with Project conditions. The off-ramp queue for vehicles exiting the freeway would also improve from twenty-two (22) vehicle lengths to three (3) vehicle lengths during the PM peak hour.

However, the intersection of I-15 NB Ramps/Outer Highway 15 & Stoddard Wells Road is under Caltrans jurisdiction and the Town of Apple Valley does not have control over improvements. Currently, an intersection control evaluation (ICE) for this intersection is being conducted per Caltrans' request and the results of the analysis will determine the ultimate traffic control at the intersection. Further coordination with Caltrans will continue before implementation of any improvements at the intersection.

Conditions of Approval Required (City General Plan Policy)

As of late 2018, lead agencies conducting transportation analysis under the California Environmental Quality Act (CEQA) may no longer use "automobile delay, as described solely by level of service [LOS] or similar measures of vehicular capacity or traffic congestion" in assessing the significance of impacts. (Public Resources Code section 21099(b)(2).) Rather, as of mid-2020, "vehicle miles traveled [VMT] is the most appropriate measure of transportation impacts." (State CEQA Guidelines Section 15064.3.) Thus, lead agencies may no longer find significant transportation-related impacts due to unacceptable LOS and no longer impose "mitigation measures" aimed at improving LOS. Rather, the focus under CEQA should be on VMT.

Many cities and counties, however, still have General Plan policies intended to maintain or achieve what community leaders consider to be acceptable LOS. Such policies are enforceable even though CEQA no longer addresses LOS. Program 1.A.4 of the Town of Apple Valley Circulation Element provides that "The Town shall require that all intersections maintain a Level of Service D during both the morning and evening peak hour." The Town may impose conditions of approval on new development as a means of achieving consistency with Program 1.A.4. Such conditions may require the construction of particular physical improvements or the payment of fees to be used towards the future construction of physical improvements.

The Proposed Project would also affect LOS on transportation facilities subject to the jurisdiction of San Bernardino County, though the policies of the County General Plan are not binding on the Town of Apple Valley. Under Policy TM-1.2 (Roadway Level of Service), the County's Circulation Element states that roadways should be built to achieve the following minimal LOS commute periods (typically 7:00-9:00 AM and 4:00-6:00 PM on a weekday):

- LOS D in the Valley Region
- LOS D in the Mountain Region
- LOS C in the North and East Desert Regions

The Proposed Project's is anticipated to result in minimal impacts on LOS since majority of the trips are short, diverted trips from the adjacent I-15 freeway, so no conditions of approval addressing LOS are necessary.

Additionally, the VMT for trips diverting from I-15 to the project site is approximately 0.5 miles, which represents majority (i.e., 90% of automobile and 95% of heavy vehicles) of the total trips traveling to the site. As such, the Proposed Project is anticipated to generate a low VMT per service population and would be much less than the Town of Apple Valley's General Plan Buildout VMT per service population. Therefore, the Proposed Project is anticipated to result in a less-than-significant VMT impact and no mitigation measures addressing VMT impacts is required.

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1.0 Introduction

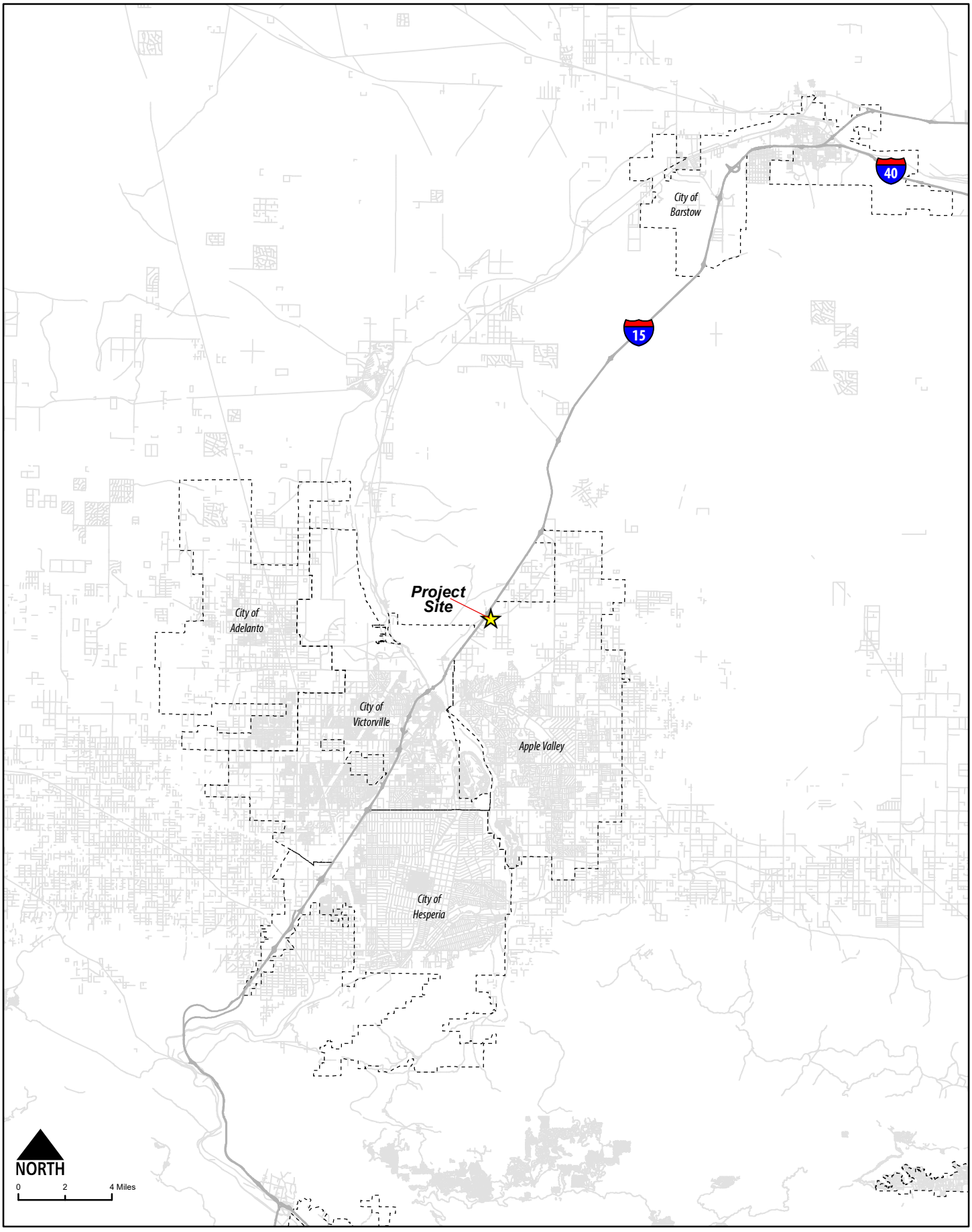
The purposes of this Transportation Impact Study are to identify and document any transportation related inconsistencies with the Town of Apple Valley General Plan associated with the Love's Travel Center (the "Proposed Project"), and to recommend improvements related to level of service (LOS) or mitigation measures related to vehicle miles traveled (VMT), as necessary.

1.1 Project Description

The Proposed Project proposes to develop a travel center with the primary development components including a 9,659 square foot convenience store, a 3,043 square foot fast-foot restaurant, and 25 fueling positions (9 for trucks and 16 for autos). The Proposed Project also includes a maintenance building (Love's Speedco Truck Care), which provides tire changes and other light maintenance repairs only for trucks. The maintenance building provides for 4 trucks bays and a building of approximately 13,786 square feet. The Proposed Project also proposes to develop a Recreational Vehicle (RV) stop with 80 overnight parking spots with ancillary recreational uses (shuffleboard, basketball court, dog park, etc.). The Proposed Project will be located at the northeast quadrant of the Stoddard Wells Road and Interstate 15 (I-15) interchange within the Town of Apple Valley in San Bernardino County. The project site is currently vacant and is bordered by Stoddard Wells Road on the south side and I-15 on the west side. A new north-south roadway, Traveler's Way, will divide the project site with the travel center to the west and the RV stop to the east. Per the Town's General Plan, the site is designated with Regional Commercial (C-R) land use.

Project site access will be provided via four driveways on Traveler's Way, with three serving the travel center and one serving the stop. The assumed opening year of the Proposed Project is 2023. **Figure 1.1** displays the Proposed Project's regional location. **Figure 1.2** displays the Proposed Project site plan.

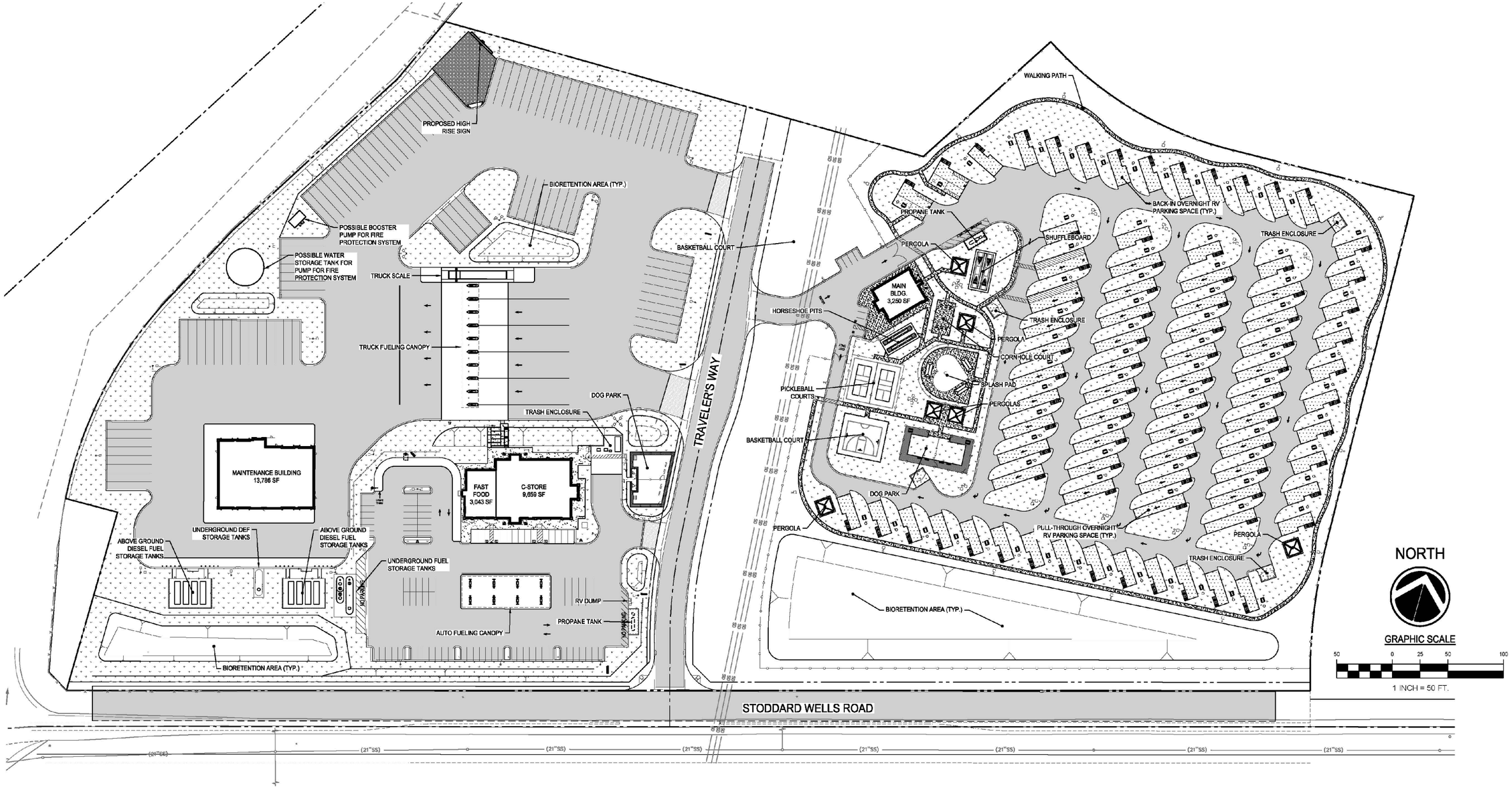
Both LOS and SB-743 VMT analyses were conducted. The LOS analysis was used to ensure that the Proposed Project is consistent with the policies in the Town of Apple Valley's Circulation Element within the Town's General Plan and to assist in developing conditions of approval to ensure that transportation facilities are sized in a way that ensures the smooth flow of traffic into and out of the project site. The VMT analysis was prepared to satisfy the requirements of the California Environmental Quality Act (CEQA).



Love's Travel Center
Transportation Impact Study

C+R

Figure 1.1
Project Regional Location



Love's Travel Center
Transportation Impact Study

Figure 1.2
Project Site Plan

1.2 Report Organization

Following this introductory chapter, this report is organized into the following chapters:

2. *Analysis Methodology* – This chapter reviews the methods utilized to evaluate any potential General Plan inconsistencies associated with the implementation of the Proposed Project, as is required by the *County of San Bernardino Transportation Impact Study (TIS) Guidelines*.

3. *Project Traffic* – This chapter describes the Proposed Project's land uses and associated trip generation. Additional information such as trip distribution patterns and project trip assignment are also included in this chapter, which is used to determine the project study area.

4. *Existing Conditions* – This chapter describes and evaluates the existing transportation network. Vehicular operations within the study area are evaluated. Level of Service (LOS) analysis results are also provided for existing vehicular traffic conditions.

5. *Near-Term Year 2023 Conditions* – This chapter describes and establishes a near-term baseline against which traffic generated by the Proposed Project can be compared to at the project opening day, assumed to be Year 2023. Ambient growth rates were used in developing the Opening Year 2023 Base Conditions. LOS analysis results are also provided for Near-Term Year 2023 Base and Near-Term Year 2023 Base with Project vehicular traffic conditions. Additionally, this chapter provides improvement recommendations to improve substandard facilities to General Plan levels in relation to LOS.

6. *Horizon Year 2040 Conditions* – This chapter describes projected long-range conditions of the transportation network within the study area. Horizon Year 2040 scenario analysis is required per County TIS Guidelines. LOS analysis results are also provided for Horizon Year 2040 and Horizon Year 2040 with Project vehicular traffic conditions. Additionally, this chapter provides improvement recommendations to improve substandard facilities to General Plan levels in relation to LOS.

7. *CEQA Senate Bill 743 Analysis* – This chapter derives and analyzes the projected Vehicle Miles Traveled (VMT) that will be generated by the Proposed Project. This chapter also identifies if VMT related to the Proposed Project would create a significant impact, as it relates to the Town's thresholds.

8. *Site Access &* Circulation – This chapter addresses access to the Proposed Project site and discusses the functionality of the Proposed Project's internal circulation. Additionally, the Proposed Project's pedestrian and bicycle facilities are evaluated. Recommendations are offered to enhance the experience and safety for both pedestrians and bicyclist.

2.0 Analysis Methodology

This study was performed in accordance with the standards and requirements in the County of San Bernardino Transportation Impact Study (TIS) Guidelines provided in **Appendix A**.

2.1 Level of Service (LOS) Definition

Level of Service (LOS) is a quantitative measure describing operational conditions within a traffic stream, and the motorist's and/or passengers' perception of operations. A LOS definition generally describes these conditions in terms of such factors as delay, speed, travel time, freedom to maneuver, interruptions in traffic flow, queuing, comfort, and convenience. **Table 2.1** describes generalized definitions of the various LOS categories (A through F) as applied to roadway operations.

Table 2.1 LOS Definitions

LOS Category	Definition of Operation
A	This LOS represents a completely free-flow condition, where the operation of vehicles is virtually unaffected by the presence of other vehicles and only constrained by the geometric features of the highway and by driver preferences.
B	This LOS represents a relatively free-flow condition, although the presence of other vehicles becomes noticeable. Average travel speeds are the same as in LOS A, but drivers have slightly less freedom to maneuver.
C	At this LOS, the influence of traffic density on operations becomes marked. The ability to maneuver within the traffic stream is clearly affected by other vehicles.
D	At this LOS, the ability to maneuver is notably restricted due to traffic congestion, and only minor disruptions can be absorbed without extensive queues forming and the service deteriorating.
E	This LOS represents operations at or near capacity. LOS E is an unstable level, with vehicles operating with minimum spacing for maintaining uniform flow. At LOS E, disruptions cannot be dissipated readily thus causing deterioration down to LOS F.
F	At this LOS, forced or breakdown of traffic flow occurs, although operations appear to be at capacity, queues form behind these breakdowns. Operations within queues are highly unstable, with vehicles experiencing brief periods of movement followed by stoppages.

Source: Highway Capacity Manual 6th Edition

2.2 Roadway Segment LOS Standards and Thresholds

Roadway segment LOS standards and thresholds provide the basis for analysis of arterial roadway segment performance. The analysis of roadway segment LOS is based on the functional classification of the roadway, the maximum capacity, roadway geometrics, and existing or forecast ADT volumes. Roadway segment operations within this traffic study have been evaluated using the applicable ADT roadway capacity values provided in the Town of Apple Valley General Plan Circulation Element (Table II-7).

2.3 Peak Hour Intersection LOS Standards and Thresholds

This section presents the methodologies used to perform peak hour intersection capacity analyses at unsignalized intersections within the study area. The following assumptions were utilized in conducting all intersection LOS analyses:

- Peak Hour Factor (PHF) – Field-collected PHF for Existing and Near-Term Year 2023 Base Conditions. A PHF of 0.95 was assumed for Horizon Year 2040 analysis per County TIS Guidelines.

- Heavy Truck Percentage – Stoddard Wells Road has been identified as a local truck route within the Town of Apply Valley. Vehicle classification counts were collected along Stoddard Wells Road east of the I-15 northbound ramps on May 6, 2021. Per classification counts, a value of 18.0% heavy truck was used on all intersection movements identified truck routes and freeway ramps within the project study area for all scenarios. A value 2% heavy truck was assumed for all other intersection movements for all scenarios.

- Lane Utilization Factor – HCM 6th Edition defaults were used for all scenarios.

2.3.1 Unsignalized Intersections

Unsignalized intersections were analyzed using the Highway Capacity 6th Edition side-street stop (Chapter 20) and all-way stop (Chapter 21) intersection analysis methodology. The computerized analysis of intersection operations was performed utilizing the Synchro Version 10 traffic analysis software by Trafficware Ltd.

LOS was determined as follows:

- All-way stop intersections: Reported for the entire intersection as an average value
- Side-street stop intersections: Reported for the worst-case movement

The LOS criteria used for the analysis of unsignalized intersections are described in **Table 2.2**.

Table 2.2 LOS Criteria for Stop-Controlled Unsignalized Intersections

Average Stopped Delay Per Vehicle (Seconds)	LOS
0 – 10	A
>10 – 15	B
>15 – 25	C
>25 – 35	D
>35 – 50	E
> 50	F

Source: Highway Capacity Manual 6th Edition

2.4 Determination of Project Study Area

Per County TIS guidelines, the study area was defined using the following criteria:

- Intersections in which the Proposed Project would add 50 or more trips during any peak hour
- Roadway segments adjacent to the Proposed Project
- Site access driveways
- Transit accessibility to the Proposed Project

2.5 General Plan Consistency Requirements

Consistent with the Town of Apple Valley General Plan, LOS for the Desert, Valley, and Mountain regions should consider thresholds and improvement requirements provided in this section for both unsignalized intersections and roadway segments:

Unsignalized Intersections

An improvement would be required if section a) or both sections b) and c) occur:

a) The addition of Proposed Project traffic causes the intersection to degrade from an LOS D or better to a LOS E or worse in the Valley and Mountain regions or from an LOS C or better to an LOS D or worse in the Desert region.

OR

b) The Proposed Project adds 5.0 seconds or more of delay to an intersection that is already projected to operate without project traffic at an LOS E or F in the Valley and Mountain regions or at an LOS D, E, or F in the Desert region.

AND

c) One or both of the following conditions are met:

   1) The Proposed Project adds ten (10) or more trips to any minor street approach.
   2) The intersection meets the peak hour traffic signal warrant after the addition of project traffic.

Improvements should be identified to achieve the following:

- In the Valley and Mountain regions, improvements should be identified that would achieve LOS D or better for case a) above or to pre-project LOS and delay for case b) above.

- In the Desert region, improvements should be identified that would achieve LOS C or better for case a) above or to pre-project conditions LOS and delay for case b) above.

Roadway Segments

An improvement would be required if:

- Any study roadway segment in the Valley or Mountain regions that is operating at an LOS D or better without project traffic in which the addition of project traffic causes the segment to degrade to an LOS E or F should identify improvements to achieve LOS D.

- Any study roadway segment in the Desert region that is operating at an LOS C or better without project traffic in which the addition of project traffic causes the segment to degrade to an LOS D, E, or F should identify improvements to achieve LOS D.

- Any roadway segment that operates unacceptably in the no project scenario where the project adds traffic in excess of 5% of the roadway capacity (e.g., a volume-to-capacity ratio increase of 0.05) should identify improvements to add capacity to the segment.

All study facilities are within the Desert region within the County of San Bernardino; therefore, the Desert thresholds were applied in the analysis. Additionally, the Town of Apple Valley's General Plan does not include roadway level of service thresholds, but instead identifies whether a roadway is acceptable or unacceptable based on the volume-to-capacity ratio. Consequently, the same approach for identifying roadways as unacceptable or acceptable operations was used in the analysis.

3.0 Project Traffic

This chapter describes the Proposed Project including the Proposed Project's trip generation, trip distribution patterns, and project trip assignment.

3.1 Project Trip Generation

Per County TIS Guidelines, vehicle trips should be derived using trip rates from the Institute of Transportation Engineer (ITE) Trip Generation Manual (11th Edition). The manual includes trip rates for "Truck Stops" (Land Use 950); however, these rates are based on only 11 sample studies that were surveyed in the 2000s and 2010s in Colorado, Florida, Tennessee, Vermont, and Virginia. Given the low survey sample size and locations surveyed at states other than California, the ITE Trip Generation Manual was determined not to be the most appropriate source for calculating trip generation for the Travel Center component of the Proposed Project. Instead, observed trip generation counts collected at six Love's Travel Centers in California will be used in the analysis. The ITE trip generation rate associated with "Campground/Recreational Vehicle Park (Land Use 416) was used for the RV stop component of the Proposed Project since the six other Love's Travel Centers in California do not have an RV stop component.

Omni-Means prepared the *Love's Trip Generation and Travel Characteristics Study* (June 2018), provided in **Appendix B**, where six Love's Travel Centers in California were surveyed (Lodi, Santa Nella, Tulare, Lost Hills, Barstow, and Coachella). All six sites are similar to the Proposed Project in land use and size – all including gas positions, a convenience store, and a drive-through fast food restaurant. The average trip generation rate for the six sites from the Omni-Means study was applied to the Travel Center component of the Proposed Project.

Due to the extremely rural location of the project site, the limited roadway connections in the study area, and few adjacent land uses, most project trips will be vehicles currently traveling on I-15, with only a small portion of new trips generated for the employees traveling to and from work. As such, 90 percent of the project trips for the Travel Center component were assumed to be passenger vehicles and 95 percent of trucks that are passing through the area, already traveling on the adjacent I-15 freeway. This is consistent what was surveyed in the Omni-Means study. These trips are diverted link trips, which are defined as "trips that are attracted from the traffic volume on roadways within the vicinity of the generator but require a diversion from that roadway to another to gain access to the site…" (Trip Generation Handbook, 3rd Edition). Consequently, these trips are not considered new trips on the roadway network, but instead, they are trips that are diverted from their original route to another to access the project site.

Table 3.1 displays the anticipated daily and peak hour trip generation for the Proposed Project uses.

Table 3.1 Proposed Project Trip Generation

Land Use	Units	Vehicle Type	Daily Trip Rate	Daily Total	AM Peak Hour Trip Rate	AM Peak Hour Total	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour Trip Rate	PM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out
		Total Travel Center Trips[1] (A)										
		Auto	106.52	2,663	5.24	131	66	66	6.92	173	87	86
		Truck	106.52	2,663	5.48	137	68	68	5.20	130	65	65
		Both		5,326		268	134	134		303	152	151
		Diverted Trip Reduction (B)										
Travel Center	25 fuel positions	Auto	*90%*	*-2,397*	*90%*	*-118*	*-59*	*-59*	*90%*	*-156*	*-78*	*-77*
		Truck	*95%*	*-2,530*	*95%*	*-130*	*-65*	*-65*	*95%*	*-124*	*-62*	*-62*
		Both		*-4,927*		*-248*	*-124*	*-124*		*-280*	*-140*	*-139*
		Net New Travel Center Trips (C) = (A+B)										
		Auto		266		13	7	7		17	9	9
		Truck		133		7	3	3		6	3	3
		Both		399		20	10	10		23	12	12
		Total RV Stop Trips (D)										
RV Stop[2]	80 Overnight Parking Spots	-	2.7	216[3]	0.21	17	6	11	0.27	22	14	8
Proposed Project Total Trips (A+D)												
				5,542		**285**	**140**	**145**		**325**	**166**	**159**
Proposed Project Net New Trips (C+D)												
				615		**37**	**16**	**21**		**45**	**26**	**20**

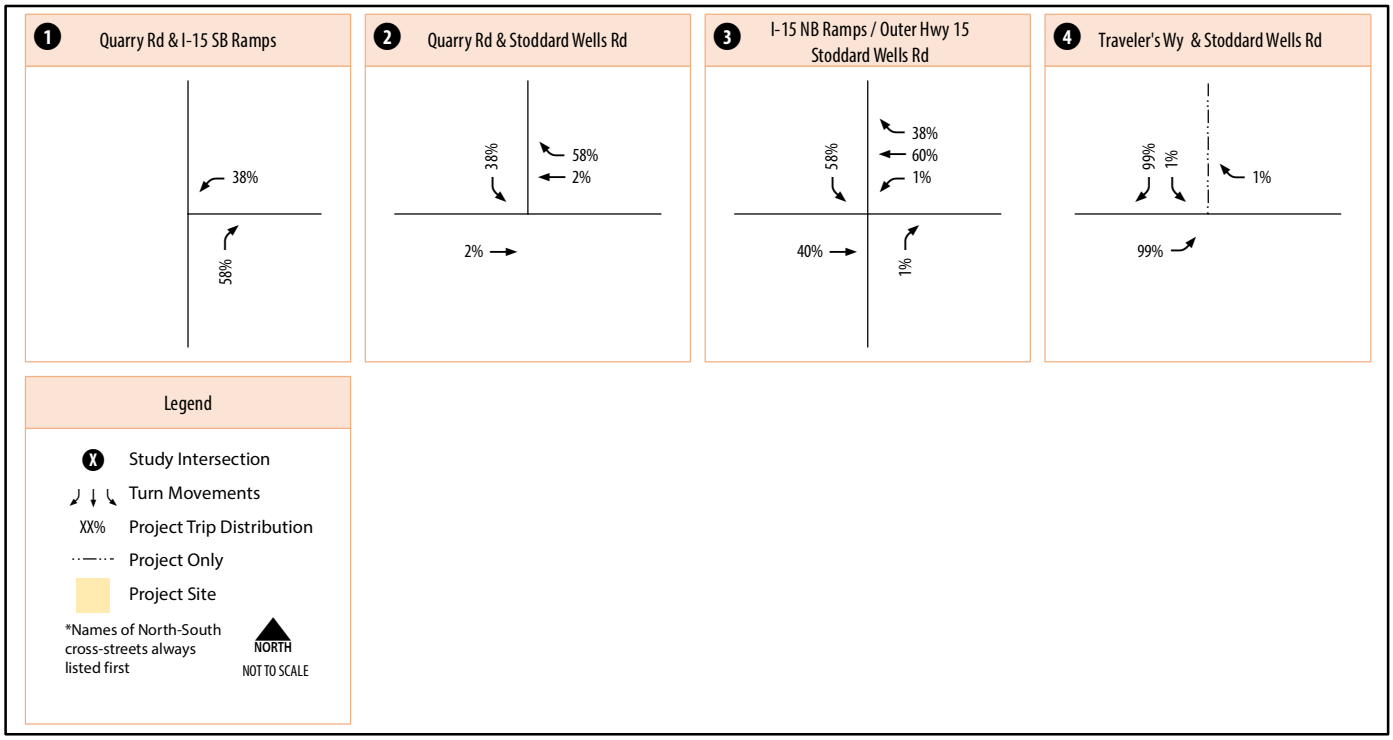
Notes:
[1]Trip generation rate from *Love's Trip Generation and Travel Characteristic Study (Omni-Means, June 2018).*
[2]Trip generation rate from ITE Trip Generation 11th Edition for LU Code 416 Campground/Recreational Vehicle Park.
[3]Daily trip rate not available for RV stop, therefore PM peak hour trips assumed to be 10 percent of daily traffic.

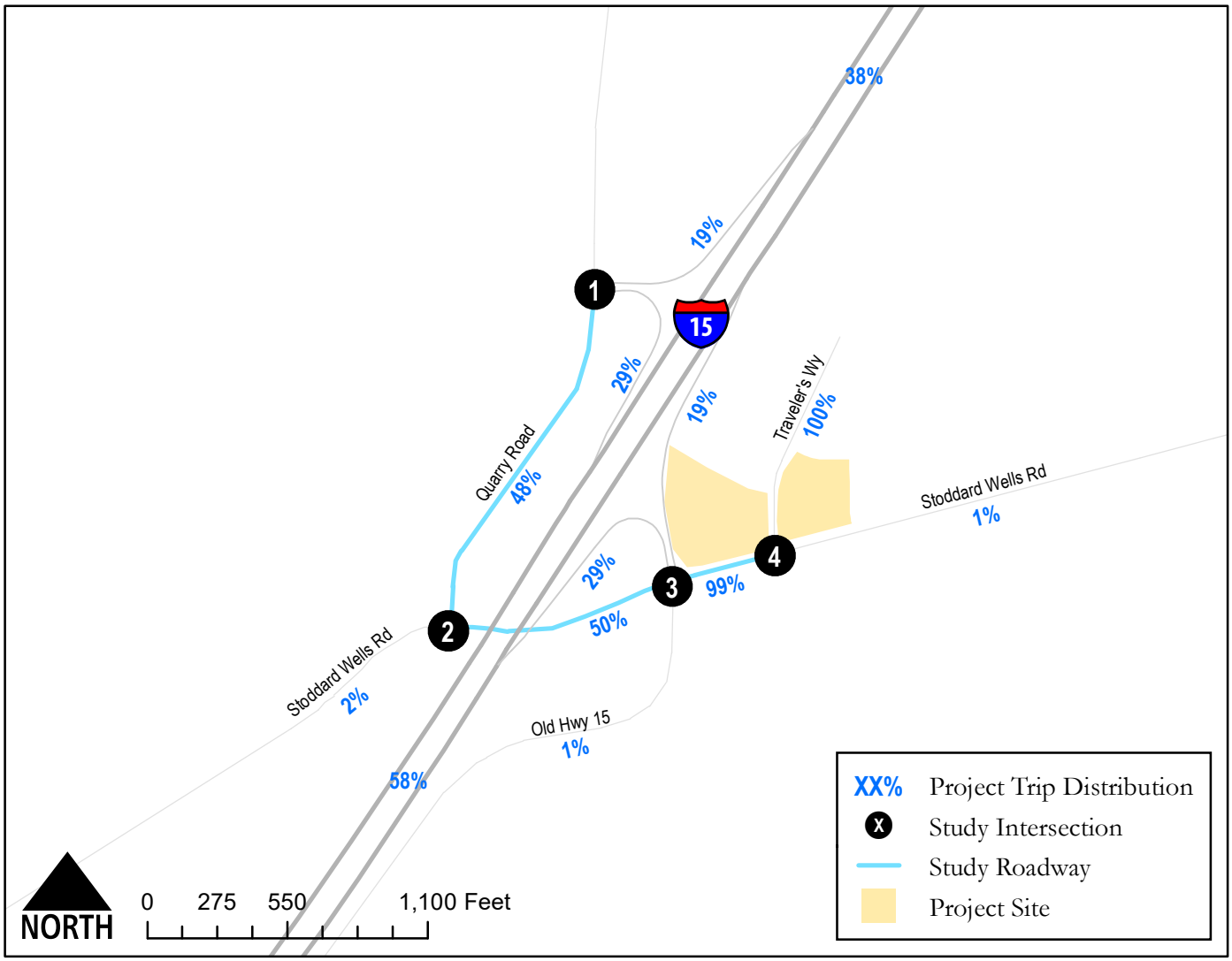
As shown, the Proposed Project land uses are anticipated to generate 5,542 daily trips, with 285 trips during the AM peak hour and 325 trips during the PM peak hour. These project trips were analyzed along adjacent roadway segments and intersections to determine if improvements are needed for study facilities to operate at acceptable levels of service.

Since most trips are assumed to be existing diverted trips, only 615 daily trips, 37 AM peak hour trips, and 45 PM peak hour trips are expected to be net new generated trips in the study area by the Proposed Project. This is important to Vehicle Miles Traveled (VMT) and further explained in Chapter 7.3 as most of the trips to the Travel Center are diverted, resulting in a low VMT for the Travel Center component.

3.2 Project Trip Distribution and Assignment

The project trip distribution was developed using engineering judgment based upon project land use characteristics, location, proximity to freeway access points, and corresponding land uses in the vicinity of the project site. **Figure 3.1** displays the regional trip distribution for the Proposed Project. Based upon the project trip distribution patterns, daily and AM/PM peak hour project trips were assigned to the adjacent roadway network. **Figure 3.2** displays the Proposed Project roadway and intersection trip assignment, respectively.

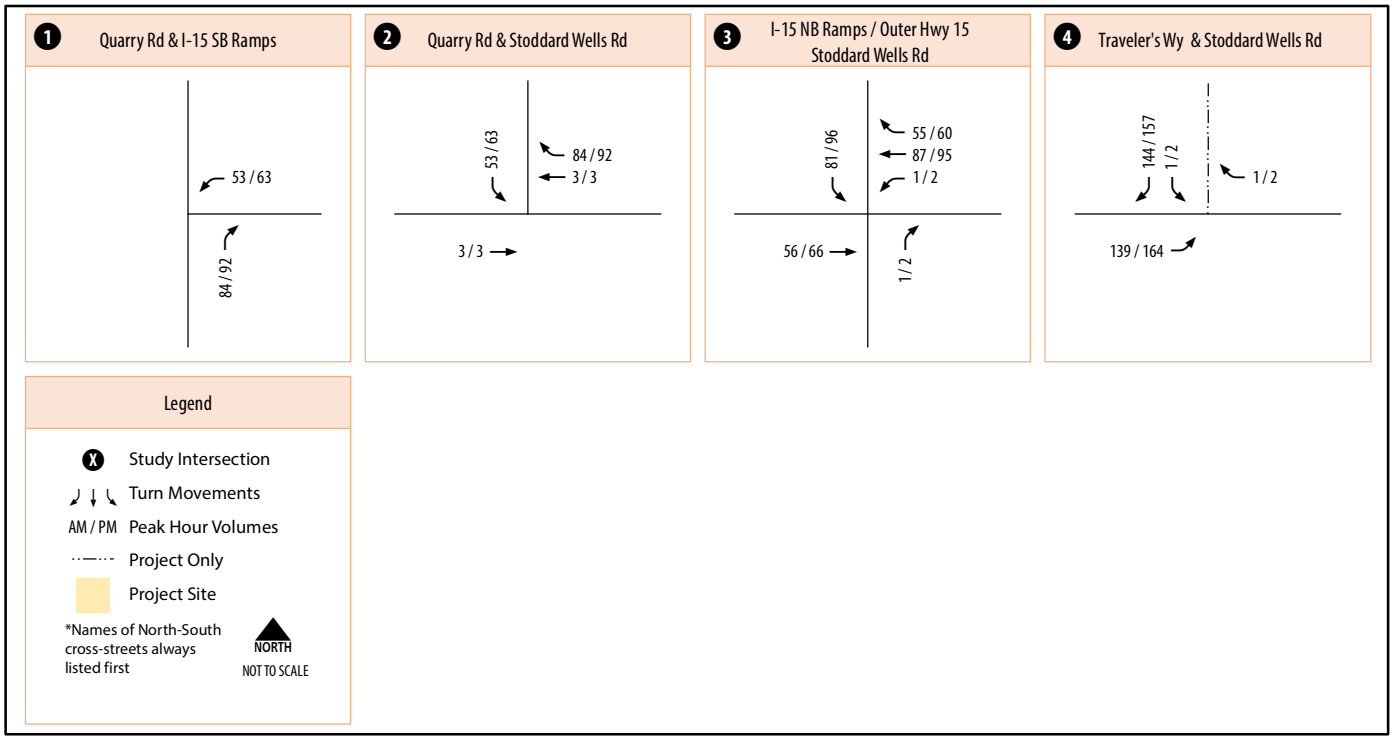


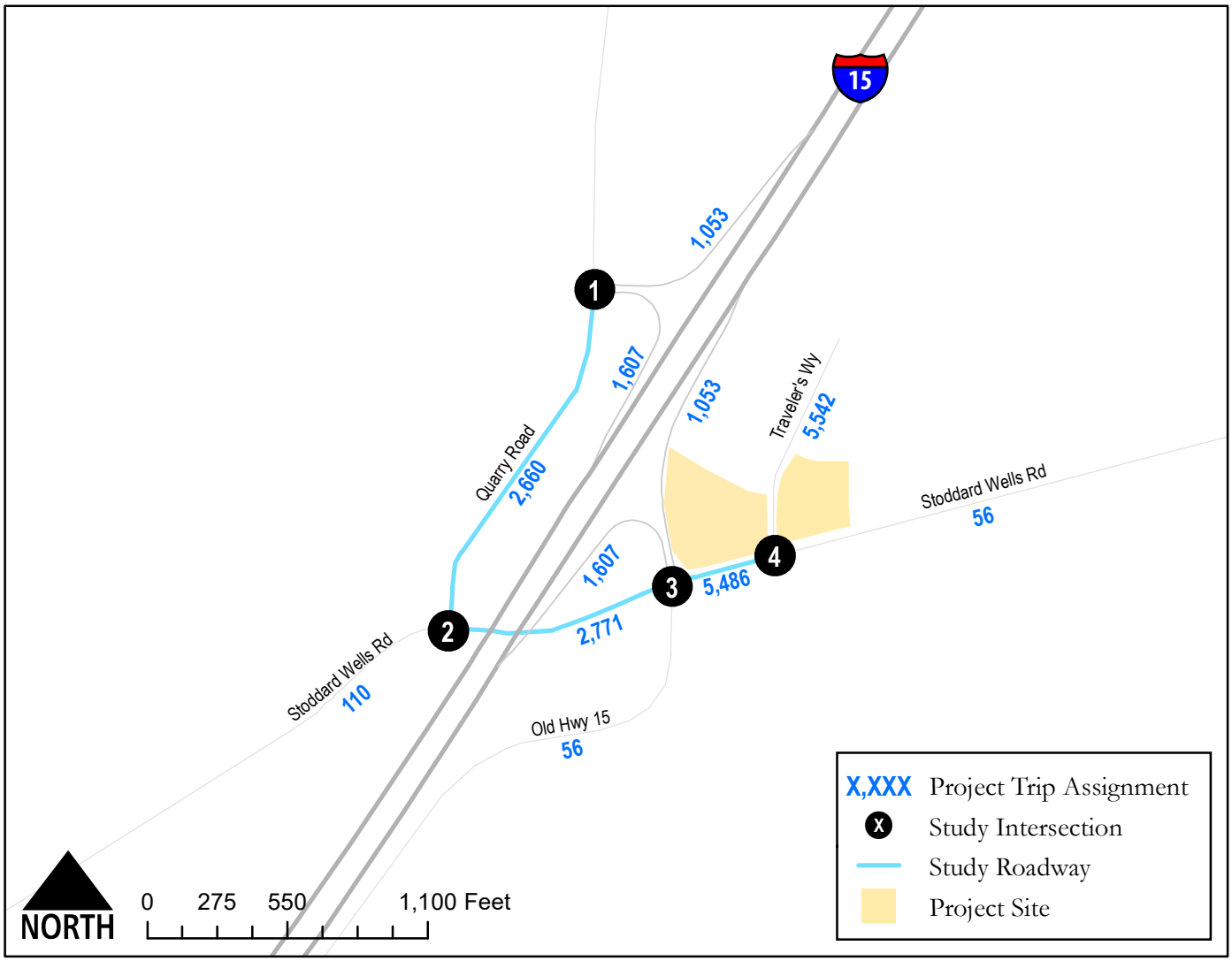


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Figure 3.1
Project Trip Distribution





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Figure 3.2
Project Trip Assignment

3.3 Project Study Area

Based on the criteria previously outlined in Chapter 2.4, the project trip assignment shown in Figure 3.2, and preliminary project scoping with Town of Apply Valley Planning Division, the following three (3) roadway segments and four (4) intersections were included for analysis:

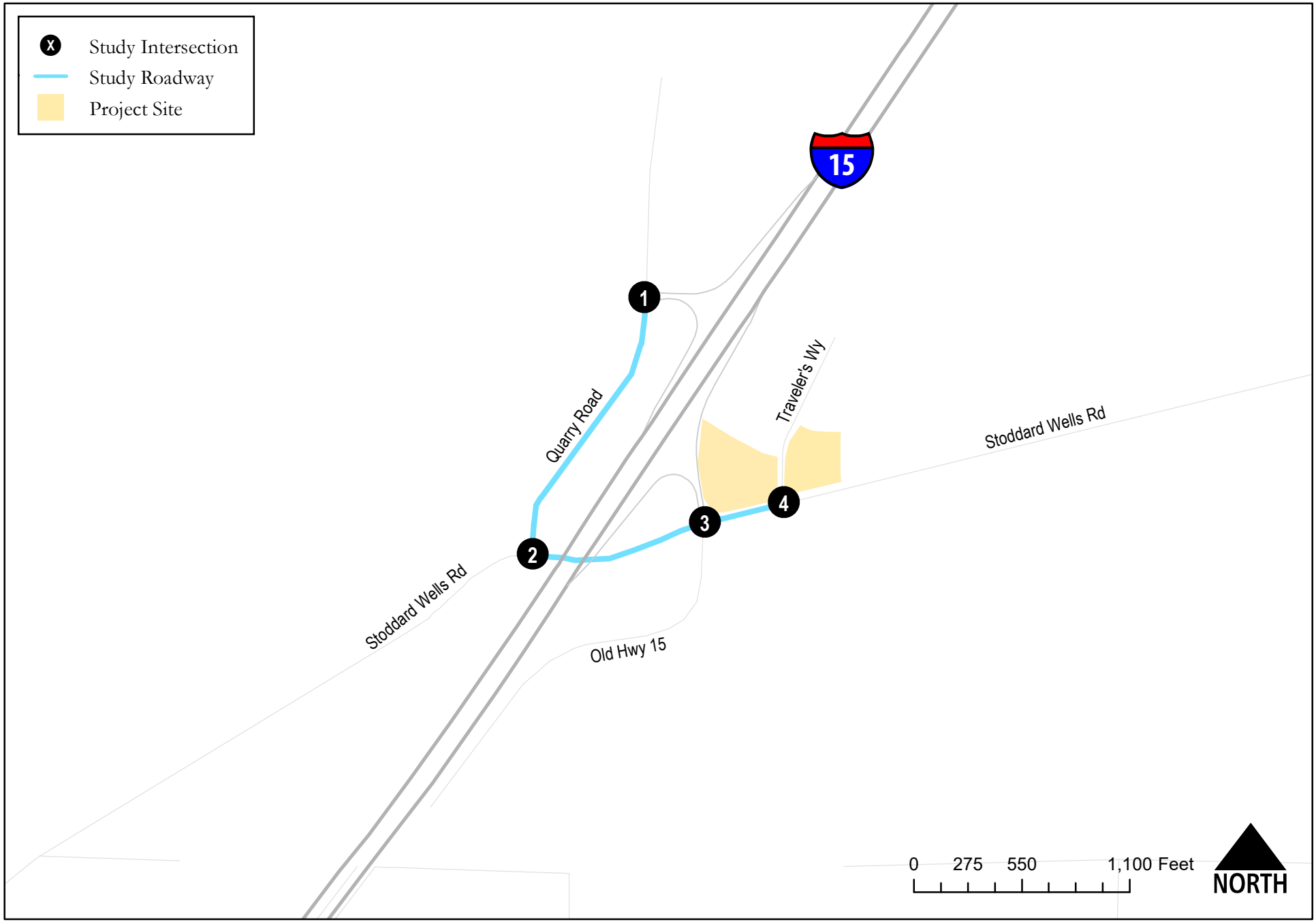
Roadway Segments

- Quarry Road, between I-15 Southbound Ramps and Stoddard Wells Road
- Stoddard Wells Road, between Quarry Road and I-15 Northbound Ramps/Outer Highway 15
- Stoddard Wells Road, between I-15 Northbound Ramps/Outer Highway 15 and Traveler's Way (new road)

Intersections

1. Quarry Road & I-15 Southbound Ramps (Side-Street Stop-Controlled)
2. Quarry Road & Stoddard Wells Road (Side-Street Stop-Controlled)
3. I-15 Northbound Ramps/Outer Highway 15 & Stoddard Wells Road (Side-Street Stop-Controlled)
4. Traveler's Way & Stoddard Wells Road (Side-Street Stop-Controlled)

Figure 3.3 displays the overall project study area including roadway segments and intersections.



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Figure 3.3
Project Study Area

4.0 Existing Conditions

This chapter provides a qualitative description of the transportation facilities located in the Proposed Project study area. A LOS analysis of the existing operations of the local transportation network facilities is also provided for roadway segments and intersections.

4.1 Existing Transportation Network

Access to the Proposed Project from the regional transportation network will be provided via Interstate 15 (I-15) freeway and Stoddard Wells Road. These facilities will either provide a direct connection to Proposed Project, via project driveway, or will provide a critical link between the Proposed Project and the regional transportation network.

Table 4.1 summarizes the existing physical characteristics of roadways within the study area.

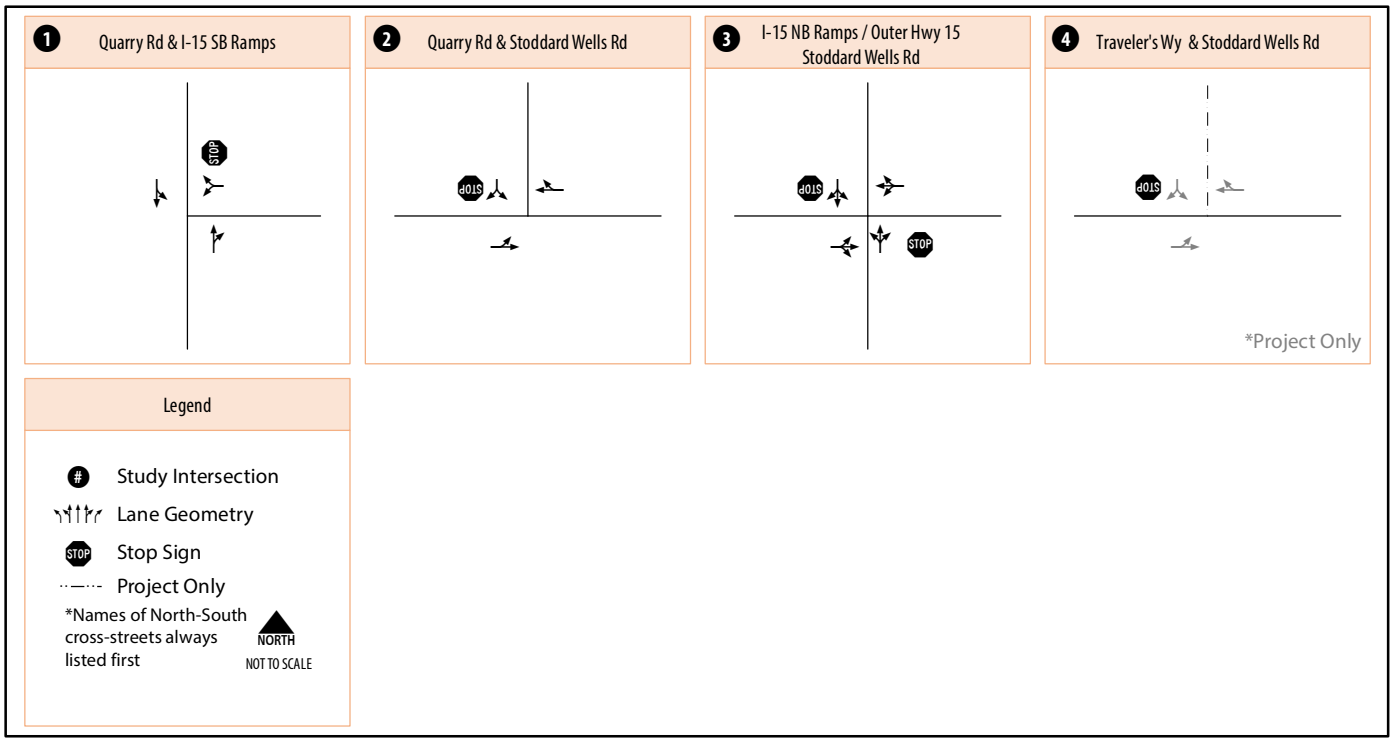
Table 4.1 Existing Transportation Network Characteristics

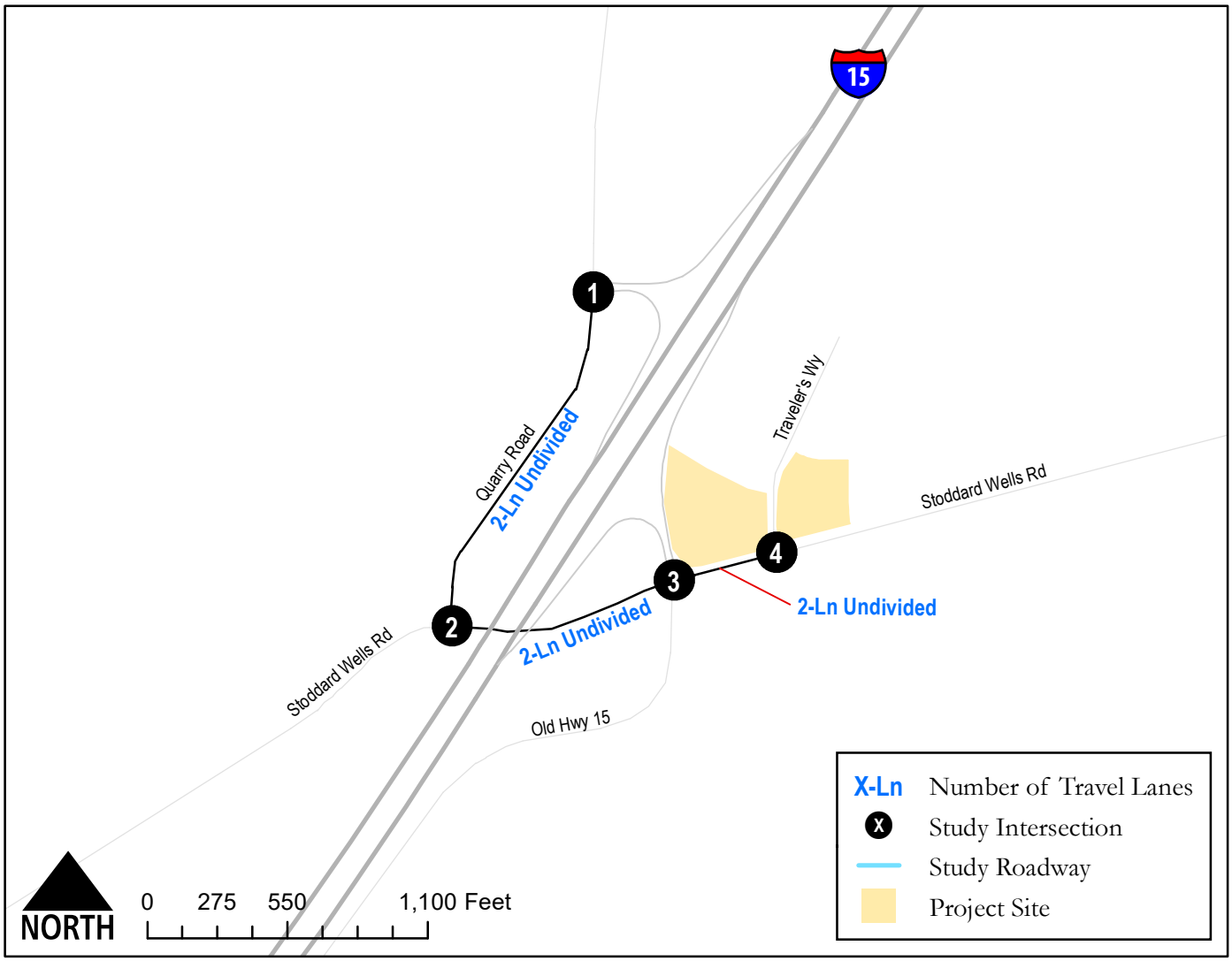
Roadway	From	To	Number of Lanes	Median Type	Sidewalk?	Bike lanes?	Transit Route	Posted Speed Limit
Quarry Road	I-15 SB Ramps	Stoddard Wells Road	1 NB/1 SB	None	None	None	None	None
Stoddard Wells Road	Quarry Road	I-15 NB Ramps	1 EB/1 WB	None	None	None	None	None
Stoddard Wells Road	East of I-15 NB Ramps		1 EB/1 WB	None	None	None	None	None

Figure 4.1 displays the study roadway classifications and study intersection geometrics under Existing Conditions.

4.2 Existing Intersection and Roadway Volumes

Study area intersection and roadway traffic volumes were counted on Thursday, May 6, 2021, by Counts Unlimited, Inc. **Figure 4.2** displays existing daily traffic volumes for study area roadway segments and the AM/PM peak hour turning movement volumes for study area intersections. Traffic count worksheets are provided in **Appendix C**.

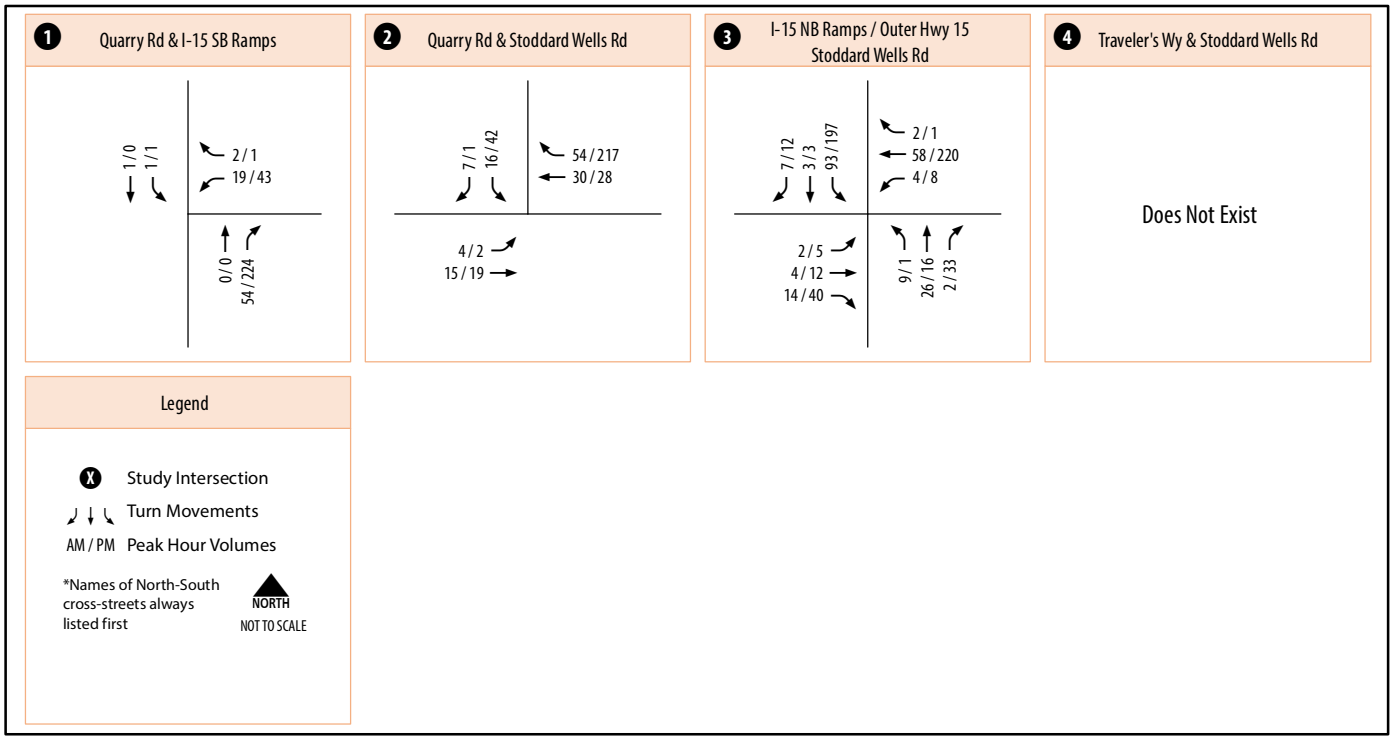


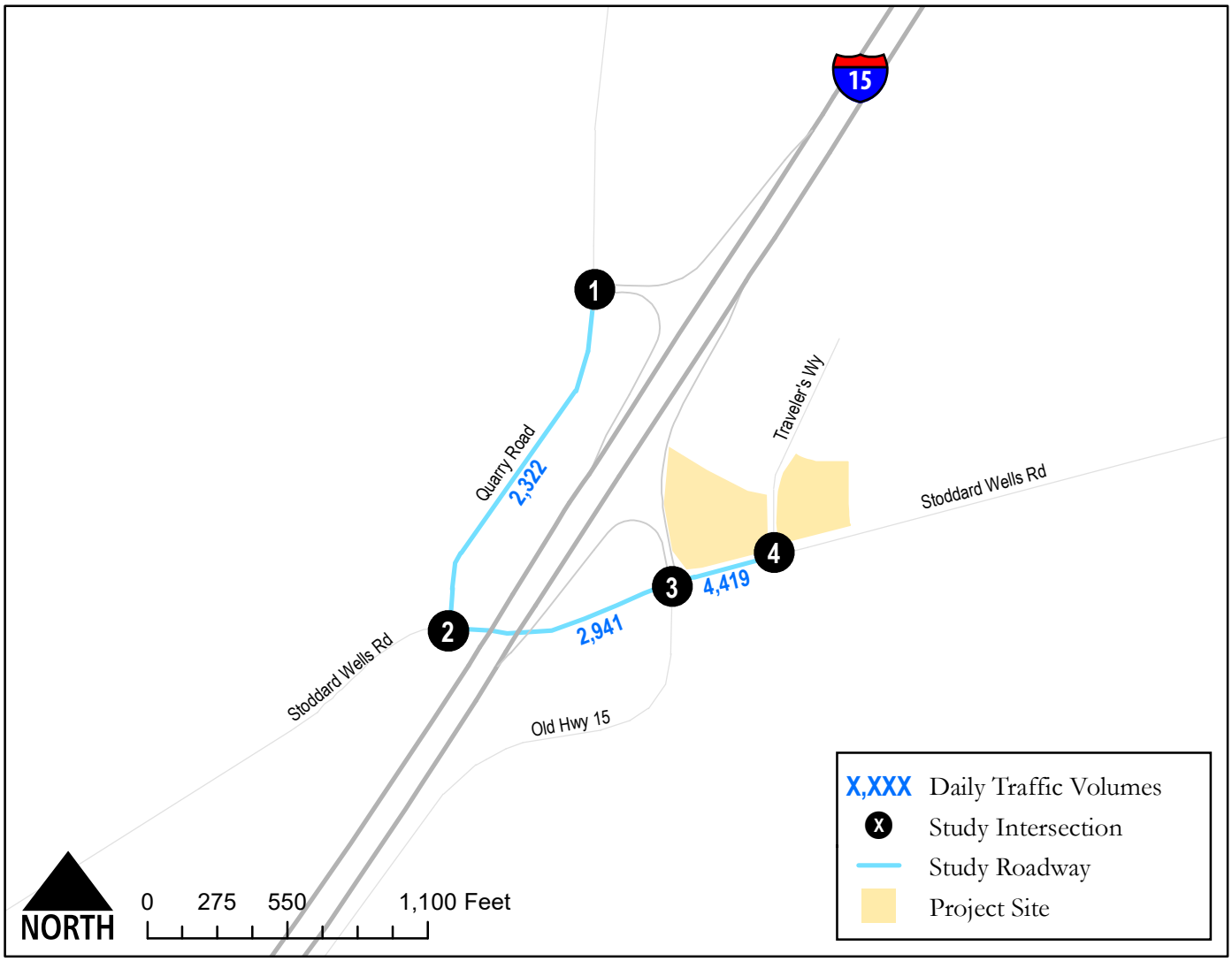


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Figure 4.1
Roadway Classification and Intersection Geometrics
Existing Conditions





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Figure 4.2
Traffic Volumes
Existing Conditions

4.3 Existing Traffic Conditions

LOS analyses under Existing Conditions were conducted using the methodologies described in Chapter 2. Roadway segment LOS and intersection LOS analysis results are discussed below.

4.3.1 Roadway Segment Analysis

Table 4.2 displays roadway segment LOS analysis results for key study roadway segments under Existing Conditions.

Table 4.2 Roadway Segment LOS Results – Existing Conditions

Roadway	Segment	Functional Classification	Roadway Capacity[1]	Daily Volume (ADT)	V/C	Threshold[2]
Quarry Road	I-15 SB Ramps to Stoddard Wells Road	2-Ln Undivided	12,700	2,322	0.183	Acceptable
Stoddard Wells Road	Quarry Road to I-15 NB Ramps/Outer Highway 15	2-Ln Undivided	12,700	2,941	0.232	Acceptable
Stoddard Wells Road	East of I-15 NB Ramps/Outer Highway	2-Ln Undivided	12,700	4,419	0.348	Acceptable

Notes:
[1]Capacity (vehicles per day): 2-Ln Undivided = 12,700 (Town of Apple Valley, 2008)
[2]Threshold based on *Terra Nova/Town of Apple Valley General Plan/Circulation Element (2008)*
V/C = Volume/Capacity

As shown in Table 4.2, all of the study roadway segments currently operate at acceptable conditions under Existing Conditions.

4.3.2 Intersection Analysis

Table 4.3 displays intersection LOS and average vehicle delay results for the key study area intersections under Existing Conditions. LOS calculation worksheets for Existing Conditions are provided in **Appendix D**.

Table 4.3 Peak Hour Intersection LOS Results – Existing Conditions

			AM Peak Hour		PM Peak Hour	
ID #	Intersection	Control Type	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS
1	Quarry Rd & I-15 SB Ramps	SSSC	8.9	A	9.7	A
2	Quarry Rd & Stoddard Wells Rd	SSSC	9.1	A	10.1	B
3	I-15 NB Ramps/Outer Highway 15 & Stoddard Wells Rd	SSSC	10.6	B	22.9	C

Notes:
SSSC = Side-Street Stop Controlled. For SSSC intersections, the delay shown is the worst delay experienced by any of the movements.
Bold letter indicates substandard LOS D, E, or F (Desert Region).

As shown in Table 4.3, all study area intersections currently operate at acceptable LOS under Existing Conditions.

5.0 Near-Term Year 2023 Conditions

This section provides an analysis of Near-Term Year 2023 Base traffic conditions both with and without the Proposed Project. The scenarios analyzed in this section include:

- Near-Term Year 2023 Base
- Near-Term Year 2023 Base with Project

5.1 Near-Term Year 2023 Base Roadway Network and Traffic Volumes

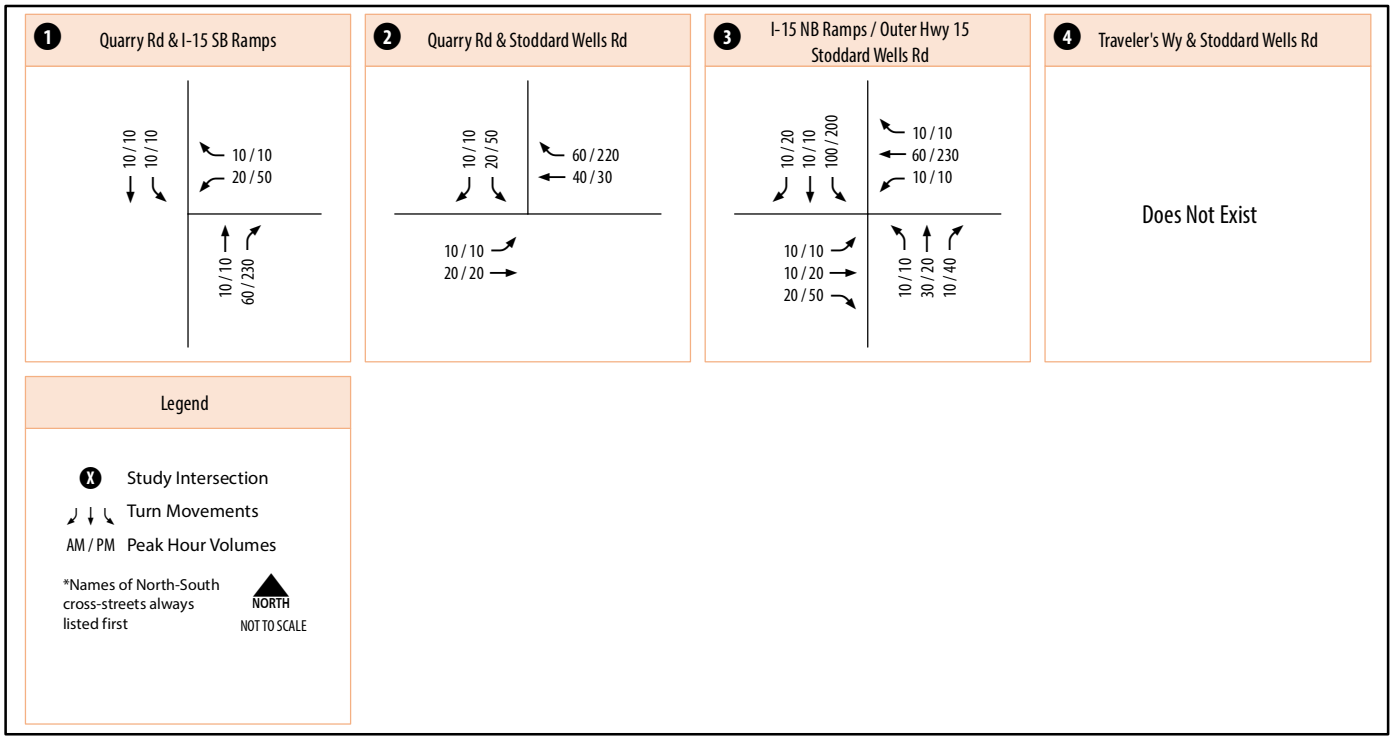
Roadway and intersection geometrics under Near-Term Year 2023 Base Conditions were assumed to be identical to the Existing Conditions, as previously shown in Figure 4.1.

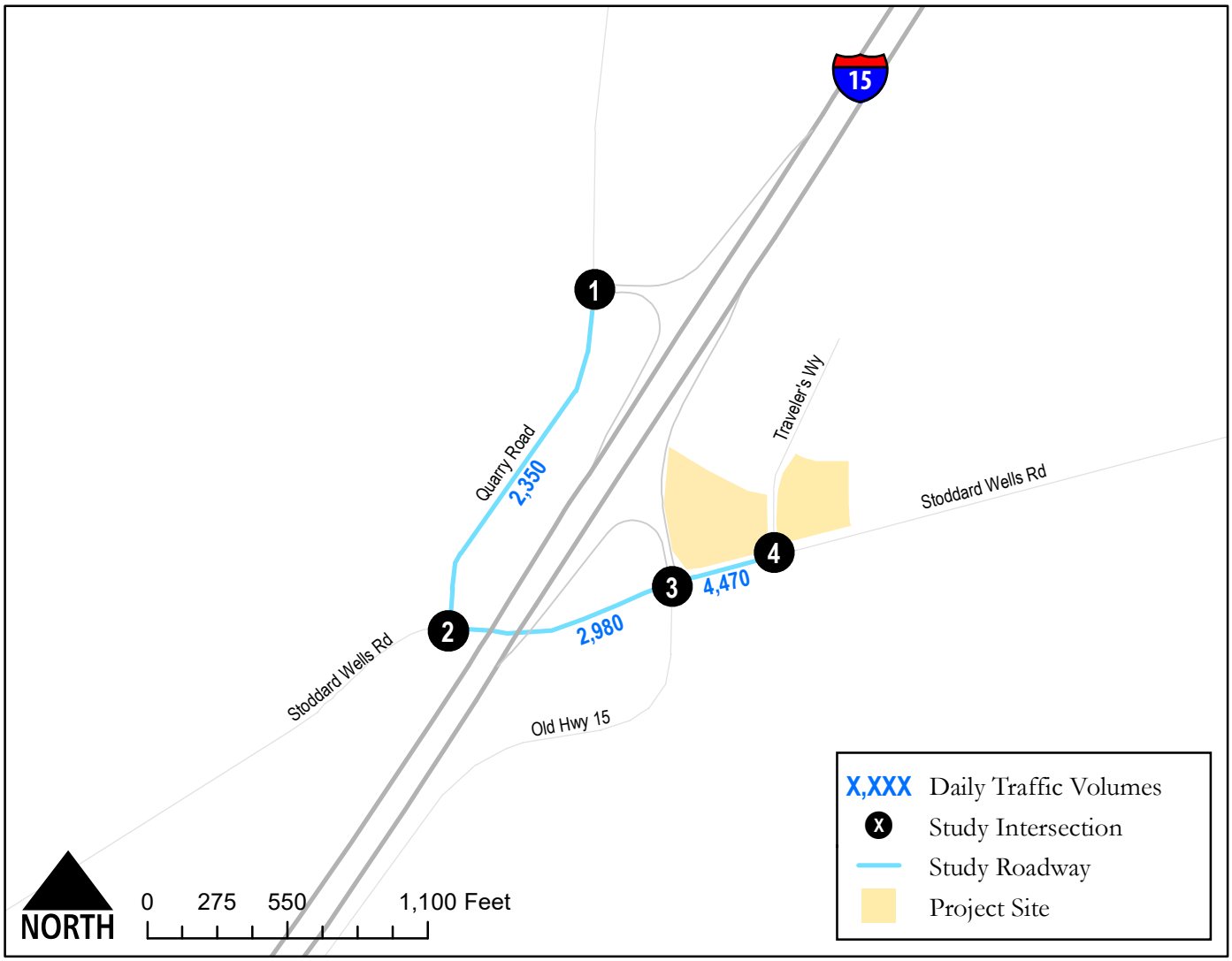
The Near-Term Year 2023 Base conditions traffic volumes were derived by using the formula below. For the Near-Term Year 2023 Base scenario, a conservative growth factor of 0.5% was utilized over two (2) years between Year 2021 and Year 2023. This growth factor is considered to be conservative due to the rural location of the Proposed Project and lack of planned developments in the project study area. **Figure 5.1** displays daily roadway and intersection volumes under Near-Term Year 2023 Base conditions for both the AM and PM peak hours.

$$\text{Future Volume} = \text{Existing Volume} \times \left(1 + \frac{\text{rate}}{100}\right)^{\#\text{years}}$$

where

Future Volume = future year projected traffic volume (veh. /hr.)
Existing Volume = current year traffic volume counts, typically peak hour (veh. /hr.)
Rate = average yearly growth factor, expressed as a decimal
years = number of years projected out in the future





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Figure 5.1
Traffic Volumes
Near-Term Year 2023 Base Conditions

5.2 Near-Term Year 2023 Base Traffic Conditions

LOS analyses under Near-Term Year 2023 Base Conditions were conducted using the methodologies described in Chapter 2. Roadway segment and intersection analysis results are discussed below.

5.2.1 Roadway Segment Analysis

Table 5.1 displays roadway segment LOS analysis results for key study roadway segments under Near-Term Year 2023 Base Conditions.

Table 5.1 Roadway Segment LOS Results – Near-Term Year 2023 Base Conditions

Roadway	Segment	Functional Classification	Roadway Capacity[1]	Daily Volume (ADT)	V/C	Threshold[2]
Quarry Road	I-15 SB Ramps to Stoddard Wells Road	2-Ln Undivided	12,700	2,350	0.185	Acceptable
Stoddard Wells Road	Quarry Road to I-15 NB Ramps/Outer Highway 15	2-Ln Undivided	12,700	2,980	0.235	Acceptable
Stoddard Wells Road	East of I-15 NB Ramps/Outer Highway	2-Ln Undivided	12,700	4,470	0.352	Acceptable

Notes:
[1]Capacity (vehicles per day): 2-Ln Undivided = 12,700 (Town of Apple Valley, 2008)
[2]Threshold based on *Terra Nova/Town of Apple Valley General Plan/Circulation Element (2008)*
V/C = Volume/Capacity

As shown in Table 5.1, all of the study roadway segments are projected to operate at acceptable conditions under Near-Term Year 2023 Base Conditions.

5.2.2 Intersection Analysis

Table 5.2 displays intersection LOS and average vehicle delay results for the key study area intersections under Near-Term Year 2023 Base Conditions. LOS calculation worksheets for Near-Term Year 2023 Base Conditions are provided in **Appendix E**.

Table 5.2 Peak Hour Intersection LOS Results – Near-Term Year 2023 Base Conditions

			AM Peak Hour		PM Peak Hour	
ID #	Intersection	Control Type	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS
1	Quarry Rd & I-15 SB Ramps	SSSC	9.1	A	10.1	B
2	Quarry Rd & Stoddard Wells Rd	SSSC	9.3	A	10.3	B
3	I-15 NB Ramps/Outer Highway 15 & Stoddard Wells Rd	SSSC	11.7	B	32.5	**D**

Notes:
SSSC = Side-Street Stop Controlled. For SSSC intersections, the delay shown is the worst delay experienced by any of the movements.
Bold letter indicates substandard LOS D, E, or F (Desert Region).

As shown in Table 5.2, the following study area intersection is projected to operate at an unacceptable LOS (LOS C or better required for Desert Region) under Near-Term Year 2023 Base Conditions:

3. I-15 NB Ramps/Outer Highway 15 & Stoddard Wells Rd – LOS D during the PM peak hour.

5.3 Near-Term Year 2023 Base with Project Roadway Network and Traffic Volumes

Roadway and intersection geometrics under the Near-Term Year 2023 Base with Project conditions were assumed to be identical to the Near-Term Year 2023 Base conditions geometrics, with exception to the following project feature:

- New north/south roadway in Traveler's Way located approximately 350 feet east of the I-15 northbound ramps along Stoddard Wells Road, which provides for main access point for the Proposed Project. Traveler's Way forms a T-intersection along Stoddard Wells Road and operates as a side-street stop-controlled intersection.

Daily and peak hour intersection volumes for the Near-Term Year 2023 Base with Project conditions were derived by combining the Proposed Project trips (as previously shown in Figure 3.2) to the Near-Term Year 2023 Base traffic volumes (as previously shown in Figure 5.1). Daily roadway and peak hour intersection volumes for this scenario are displayed in **Figure 5.2**.

5.4 Near-Term Year 2023 Base with Project Traffic Conditions

LOS analyses under Near-Term Year 2023 Base with Project conditions were conducted using the methodologies described in Chapter 2. Roadway segment and intersection analysis results are discussed below.

5.4.1 Roadway Segment Analysis

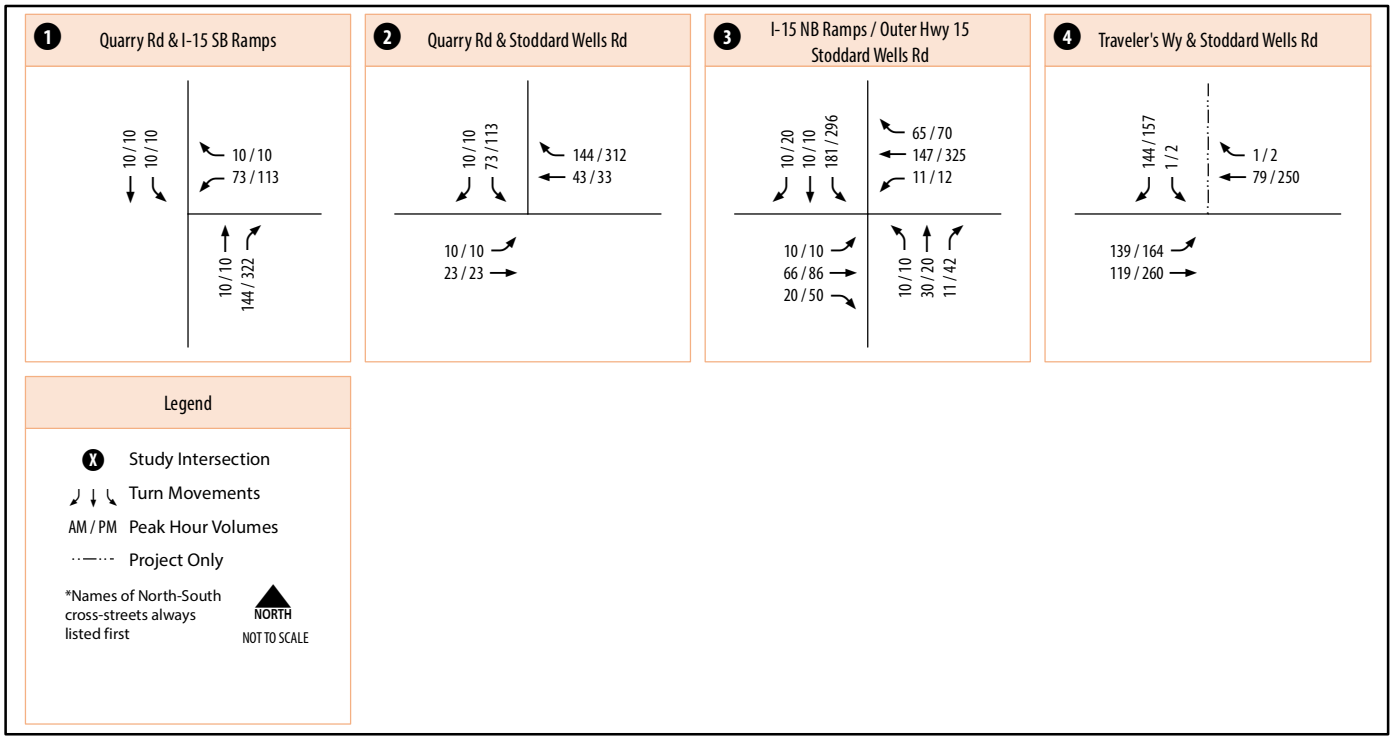
Table 5.3 displays roadway segment LOS analysis results for key study roadway segments under Near-Term Year 2023 Base with Project conditions.

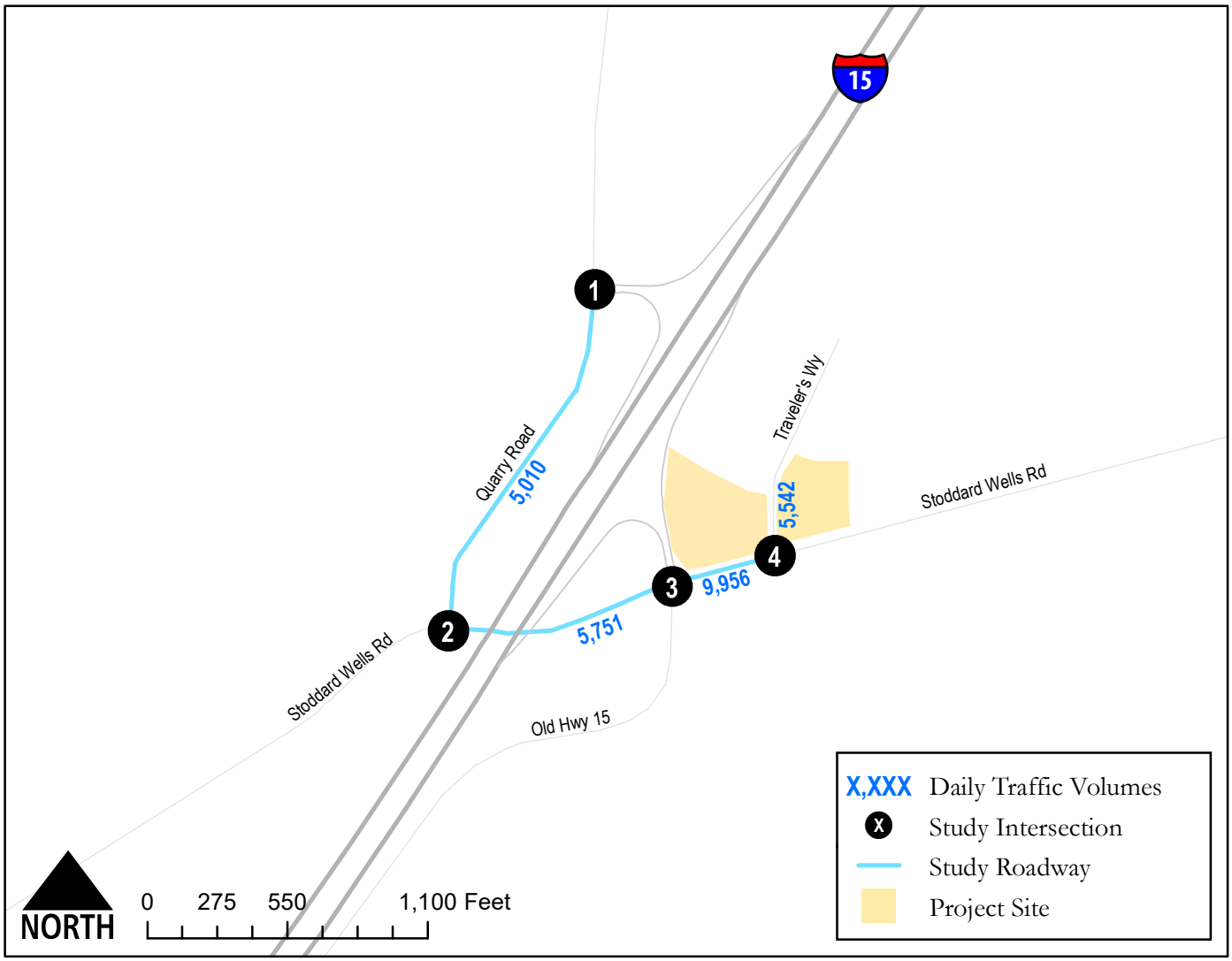
Table 5.3 Roadway Segment LOS Results – Near-Term Year 2023 Base with Project Conditions

Roadway	Segment	Functional Classification	Roadway Capacity[1]	Daily Volume (ADT)	V/C	Threshold[2]	No Project ADT / V/C / Threshold[2]	I?
Quarry Road	I-15 SB Ramps to Stoddard Wells Road	2-Ln Undivided	12,700	5,010	0.394	Acceptable	2,350 / 0.185 / A	No
Stoddard Wells Road	Quarry Road to I-15 NB Ramps/Outer Highway 15	2-Ln Undivided	12,700	5,751	0.453	Acceptable	2,980 / 0.235 / A	No
Stoddard Wells Road	East of I-15 NB Ramps/Outer Highway	2-Ln Undivided	12,700	9,956	0.784	Acceptable	4,470 / 0.352 / A	No

Notes:
[1]Capacity (vehicles per day): 2-Ln Undivided = 12,700 (Town of Apple Valley, 2008)
[2]Threshold based on *Terra Nova/Town of Apple Valley General Plan/Circulation Element (2008)*
V/C = Volume/Capacity
A = Acceptable
I? = Improvement Required?

As shown in Table 5.3, all of the study roadway segments are projected to operate at acceptable conditions. Therefore, no roadway segments are anticipated to degrade in LOS with implementation of the Proposed Project and no improvements will be required.





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Figure 5.2
Traffic Volumes
Near-Term Year 2023 Base with Project Conditions

5.4.2 Intersection Analysis

Table 5.4 displays intersection LOS and average vehicle delay results for the key study area intersections under Near-Term Year 2023 Base with Project Conditions. LOS calculation worksheets for Near-Term Year 2023 Base with Project conditions are provided in **Appendix F**.

As shown in Table 5.4, the following study area intersection is projected to operate at an unacceptable LOS (LOS C or better required for Desert Region) under Near-Term Year 2023 Base with Project Conditions:

3. I-15 NB Ramps/Outer Highway 15 & Stoddard Wells Rd – LOS F during the PM peak hour. The trips associated with the Proposed Project would increase the delay at this intersection by 33.6 seconds during the PM peak hour and degrade the LOS from LOS D to LOS F, which surpasses the 5-second threshold for intersections operating at LOS D in the Desert region. Therefore, an improvement is required at this intersection to achieve pre-project LOS and delay.

Table 5.4 Peak Hour Intersection LOS Results – Near-Term Year 2023 Base with Project Conditions

ID #	Intersection	Control Type	AM Peak Hour Avg. Delay (sec.)	AM Peak Hour LOS	PM Peak Hour Avg. Delay (sec.)	PM Peak Hour LOS	Delay w/o Project (AM/PM)	LOS w/o Project (AM/PM)	Δ in Delay (AM/PM)	I?
1	Quarry Rd & I-15 SB Ramps	SSSC	9.8	A	11.0	B	9.1 / 10.1	A / B	0.7 / 0.9	No
2	Quarry Rd & Stoddard Wells Rd	SSSC	10.1	B	11.3	B	9.3 / 10.3	A / B	0.8 / 1.0	No
3	I-15 NB Ramps/Outer Highway 15 & Stoddard Wells Rd	SSSC	15.6	C	66.1	**F**	11.7 / 32.5	B / **D**	3.9 / 33.6	Yes
4	Traveler's Way & Stoddard Wells Rd	SSSC	9.7	A	11.7	B	- / -	- / -	9.7 / 11.7	No

Notes:
SSSC = Side-Street Stop Controlled. For SSSC intersections, the delay shown is the worst delay experienced by any of the movements.
Bold letter indicates substandard LOS D, E, or F (Desert Region).
I? = Improvement Required?

5.5 Determination of the Need for Off-Site Improvements to Accommodate Project Traffic – Near-Term Year 2023 with Project Conditions

This section identifies required improvements for roadway and intersection that are associated with the Proposed Project under Near-Term Year 2023 Base with Project conditions.

Roadway Segment Analysis

No improvements required.

Intersection Analysis

Table 5.5 displays LOS analysis results both before and after the implementation of the recommended improvements at the effected intersection under Near-Term Year 2023 Base with Project conditions. LOS calculation worksheets for Near-Term Year 2023 Base with Project conditions – Recommended Improvements are provided in **Appendix G**.

Table 5.5 Peak Hour Intersection LOS Results – Near-Term Year 2023 Base with Project Conditions - Recommended Improvements

		Before Improvements				After Improvements			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
ID #	Intersection	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS
3	I-15 NB Ramps/Outer Highway 15 & Stoddard Wells Rd	15.6	C	66.1	**F**	9.8	A	16.5	C

Note:
Bold letter indicates substandard LOS D, E, or F (Desert Region).

The Proposed Project shall convert the intersection of I-15 NB Ramps/Outer Highway 15 & Stoddard Wells Rd from a side-street stop-controlled intersection to an all-way stop controlled intersection. As shown in Table 5.5, this intersection would operate at LOS A during the AM peak hour and LOS C during the PM peak hour with the recommended improvement under Near-Term Year 2023 Base with Project conditions. The queue for vehicles exiting the freeway would also improve from ten (10) vehicle lengths to four (4) vehicle lengths during the PM peak hour.

However, the intersection of I-15 NB Ramps/Outer Highway 15 & Stoddard Wells Road is under Caltrans jurisdiction and the Town of Apple Valley does not have control over improvements. Currently, an intersection control evaluation (ICE) for this intersection is being conducted per Caltrans' request and the results of the analysis will determine the ultimate traffic control at the intersection. Further coordination with Caltrans will continue before implementation of any improvements at the intersection.

6.0 Horizon Year 2040 Conditions

This section provides an analysis of Horizon Year 2040 traffic conditions both with and without the Proposed Project. The scenarios analyzed in this section include:

- Horizon Year 2040
- Horizon Year 2040 with Project

6.1 Horizon Year 2040 Roadway Network and Traffic Volumes

Roadway and intersection geometrics under Horizon Year 2040 Conditions were assumed to be largely identical to the Existing Conditions, as previously shown in Figure 4.1, with exception of the following:

Roadway Segments

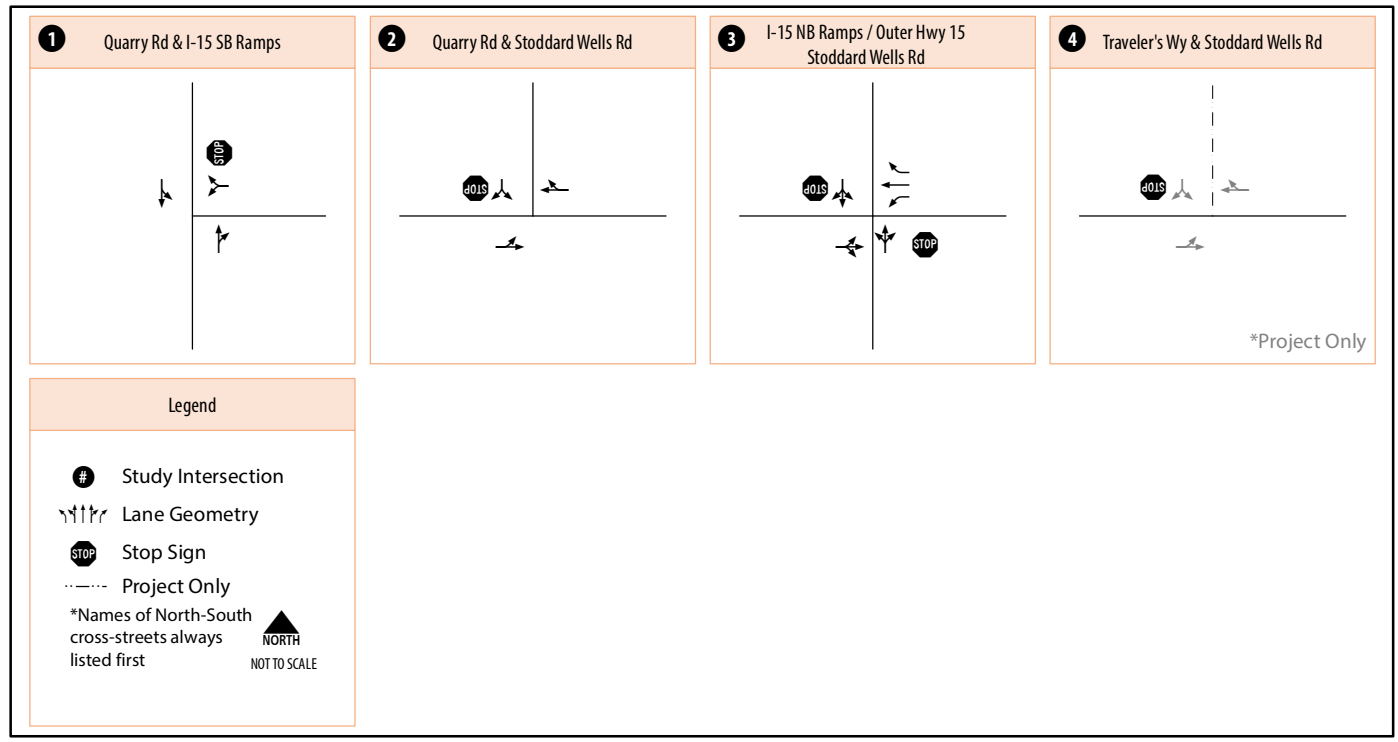
- Stoddard Wells Road east of I-15 northbound ramps improved from a 2-lane undivided roadway to a 6-lane divided major arterial.

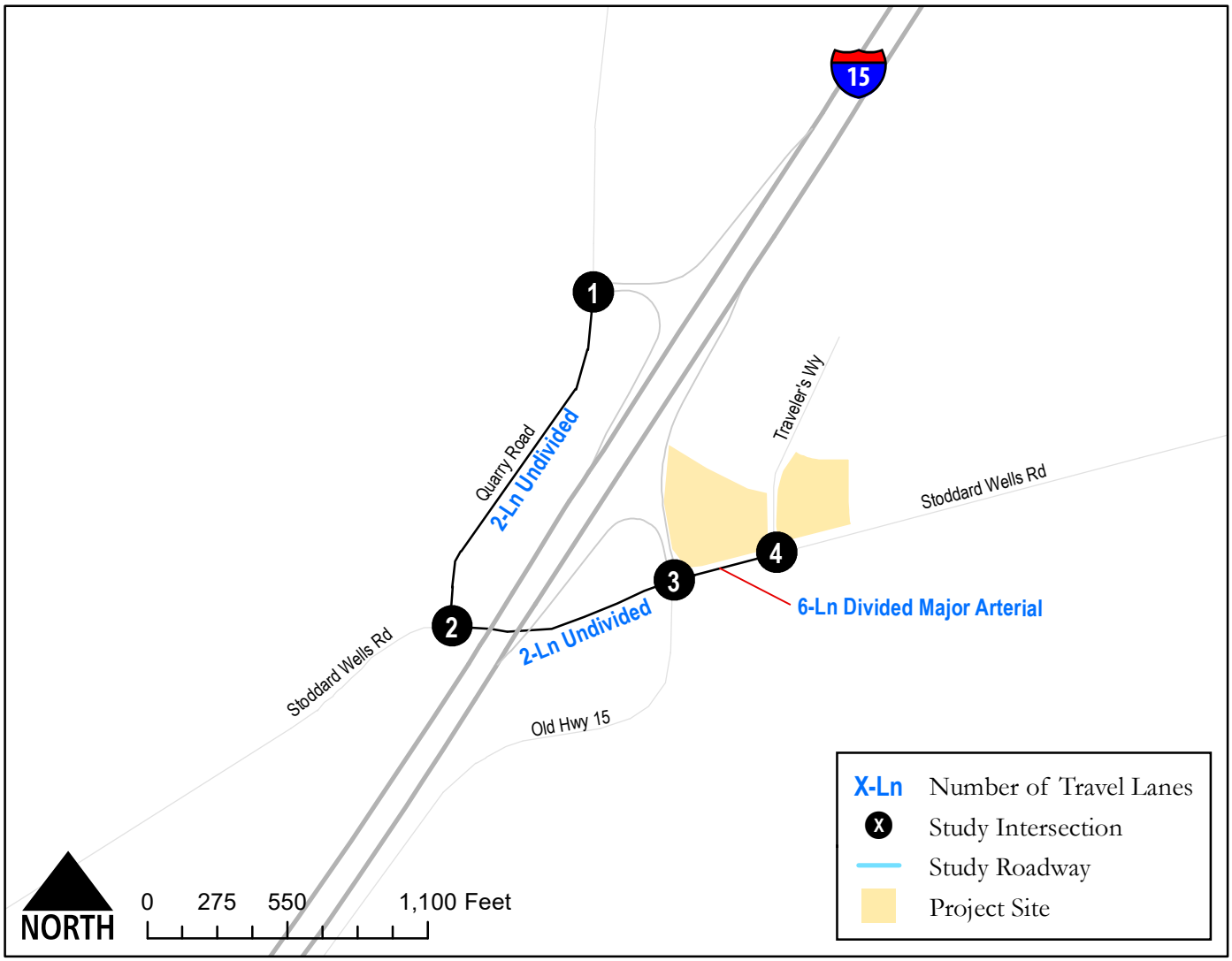
Intersections

- I-15 NB Ramps/Outer Highway 15 & Stoddard Wells Rd – Westbound approach configuration upgraded from a single lane to a three-lane configuration (separate lanes for left-turn, through, and right-turn movements).

Figure 6.1 displays the study roadway classifications and study intersection geometrics under Horizon Year 2040 conditions.

Horizon Year 2040 ADT forecasts were obtained from the San Bernardino County Transportation Analysis Model (SBTAM). Intersection turning movement volumes were developed utilizing the roadway volumes analyzed for the roadway segment analysis. Growth was applied per approach based on existing and forecasted Horizon Year 2040 ADT, distributed based on existing travel patterns, and balanced utilizing engineering judgement. SBTAM model plots for base year 2016 and horizon year 2040 are provided in **Appendix H**. Roadway ADT and intersection peak hour volumes for this scenario are displayed in **Figure 6.2.**

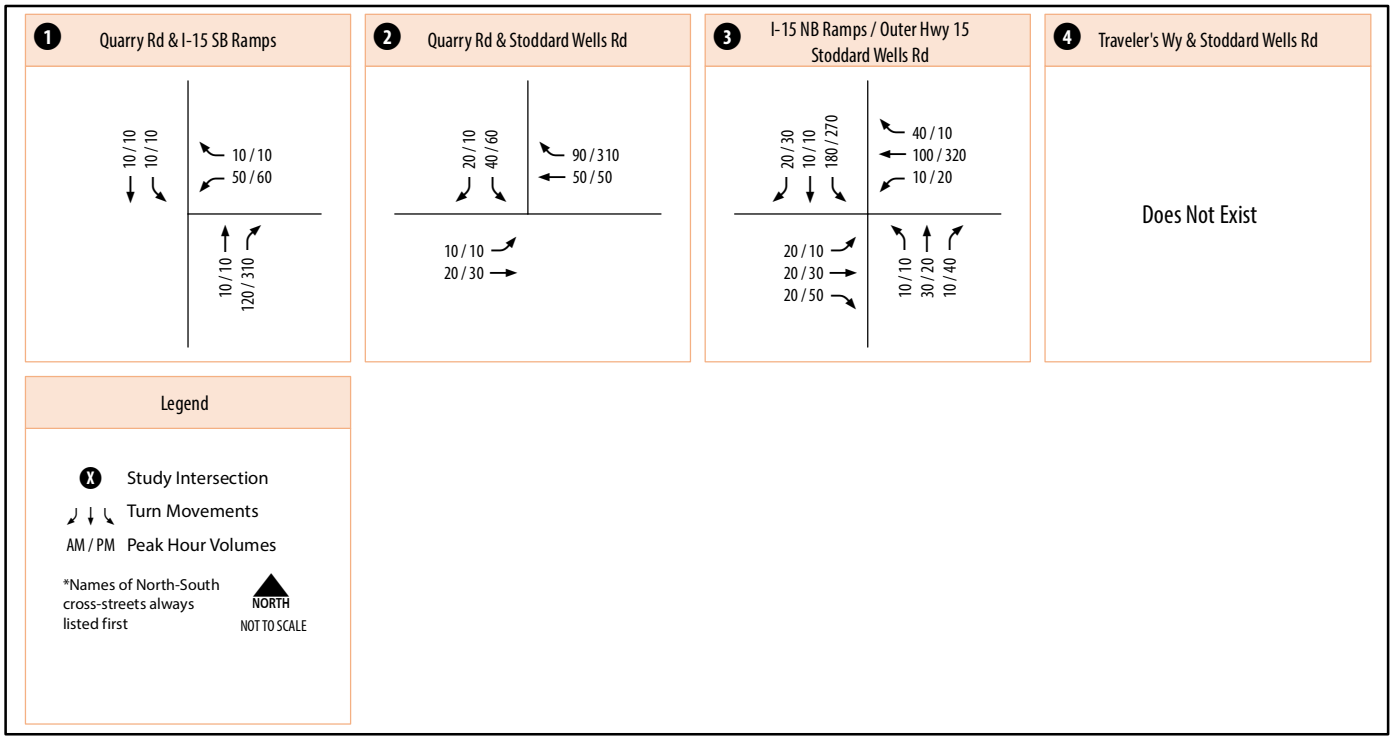


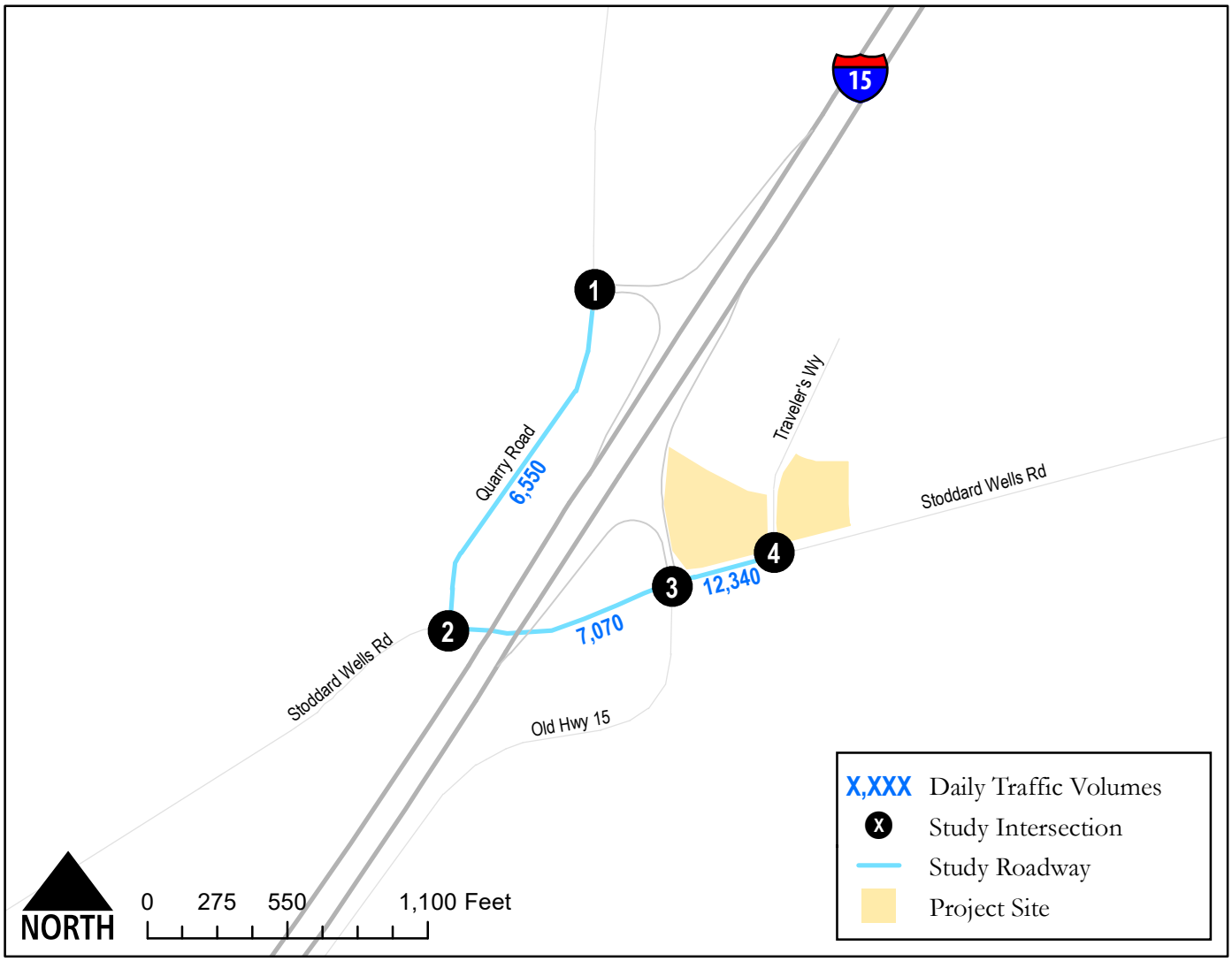


Love's Travel Center
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Figure 6.1
Roadway Classification and Intersection Geometrics
Horizon Year 2040 Conditions





Love's Travel Center
Transportation Impact Study

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Figure 6.2
Traffic Volumes
Horizon Year 2040 Conditions

6.2 Horizon Year 2040 Traffic Conditions

LOS analyses under Horizon Year 2040 Conditions were conducted using the methodologies described in Chapter 2. Roadway segment and intersection analysis results are discussed below.

6.2.1 Roadway Segment Analysis

Table 6.1 displays roadway segment LOS analysis results for key study roadway segments under Horizon Year 2040 Conditions.

Table 6.1 Roadway Segment LOS Results – Horizon Year 2040 Conditions

Roadway	Segment	Classification	Roadway Capacity[1]	Daily Volume (ADT)	V/C	Threshold[2]
Quarry Road	I-15 SB Ramps to Stoddard Wells Road	2-Ln Undivided	12,700	6,550	0.516	Acceptable
Stoddard Wells Road	Quarry Road to I-15 NB Ramps/Outer Highway 15	2-Ln Undivided	12,700	7,070	0.557	Acceptable
Stoddard Wells Road	East of I-15 NB Ramps/Outer Highway	6-Ln Divided	69,300	12,340	0.178	Acceptable

Notes:
[1]Capacity (vehicles per day): 2-Ln Undivided = 12,700, 6-Ln Divided = 69,300 (Town of Apple Valley, 2008)
[2]Threshold based on *Terra Nova/Town of Apple Valley General Plan/Circulation Element (2008)*
V/C = Volume/Capacity

As shown in Table 6.1, all of the study roadway segments are projected to operate at an acceptable conditions under Horizon Year 2040 Conditions.

6.2.2 Intersection Analysis

Table 6.2 displays intersection LOS and average vehicle delay results for the key study area intersections under Horizon Year 2040 Conditions. LOS calculation worksheets for Horizon Year 2040 Conditions are provided in **Appendix I**.

Table 6.2 Peak Hour Intersection LOS Results – Horizon Year 2040 Conditions

			AM Peak Hour		PM Peak Hour	
ID #	Intersection	Control Type	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS
1	Quarry Rd & I-15 SB Ramps	SSSC	9.5	A	10.3	B
2	Quarry Rd & Stoddard Wells Rd	SSSC	9.6	A	10.8	B
3	I-15 NB Ramps/Outer Highway 15 & Stoddard Wells Rd	SSSC	13.0	B	34.0	**D**

Notes:
SSSC = Side-Street Stop Controlled. For SSSC intersections, the delay shown is the worst delay experienced by any of the movements.
Bold letter indicates substandard LOS D, E, or F (Desert Region).

As shown in Table 6.2, the following study area intersection is projected to operate at an unacceptable LOS (LOS C or better required for Desert Region) under Horizon Year 2040 Conditions:

3. I-15 NB Ramps/Outer Highway 15 & Stoddard Wells Rd – LOS D during the PM peak hour.

6.3 Horizon Year 2040 with Project Roadway Network and Traffic Volumes

Roadway and intersection geometrics under the Horizon Year 2040 with Project Conditions were assumed to be identical to the Horizon Year 2040 Conditions geometrics, as previously discussed in Chapter 6.1, with exception to the following project feature:

- New north/south roadway in Traveler's Way located approximately 350 feet east of the I-15 northbound ramps along Stoddard Wells Road, which provides for main access point for the Proposed Project. Traveler's Way forms a T-intersection along Stoddard Wells Road and operates as a side-street stop-controlled intersection.

Daily and peak hour intersection volumes for the Horizon Year 2040 with Project Conditions were derived by combining the Proposed Project trips (as previously shown in Figure 3.2) to the Horizon Year 2040 traffic volumes (as previously shown in Figure 6.2). Daily roadway and peak hour intersection volumes for this scenario are displayed in **Figure 6.3**.

6.4 Horizon Year 2040 with Project Traffic Conditions

LOS analyses under Horizon Year 2040 with Project Conditions were conducted using the methodologies described in Chapter 2. Roadway segment and intersection analysis results are discussed below.

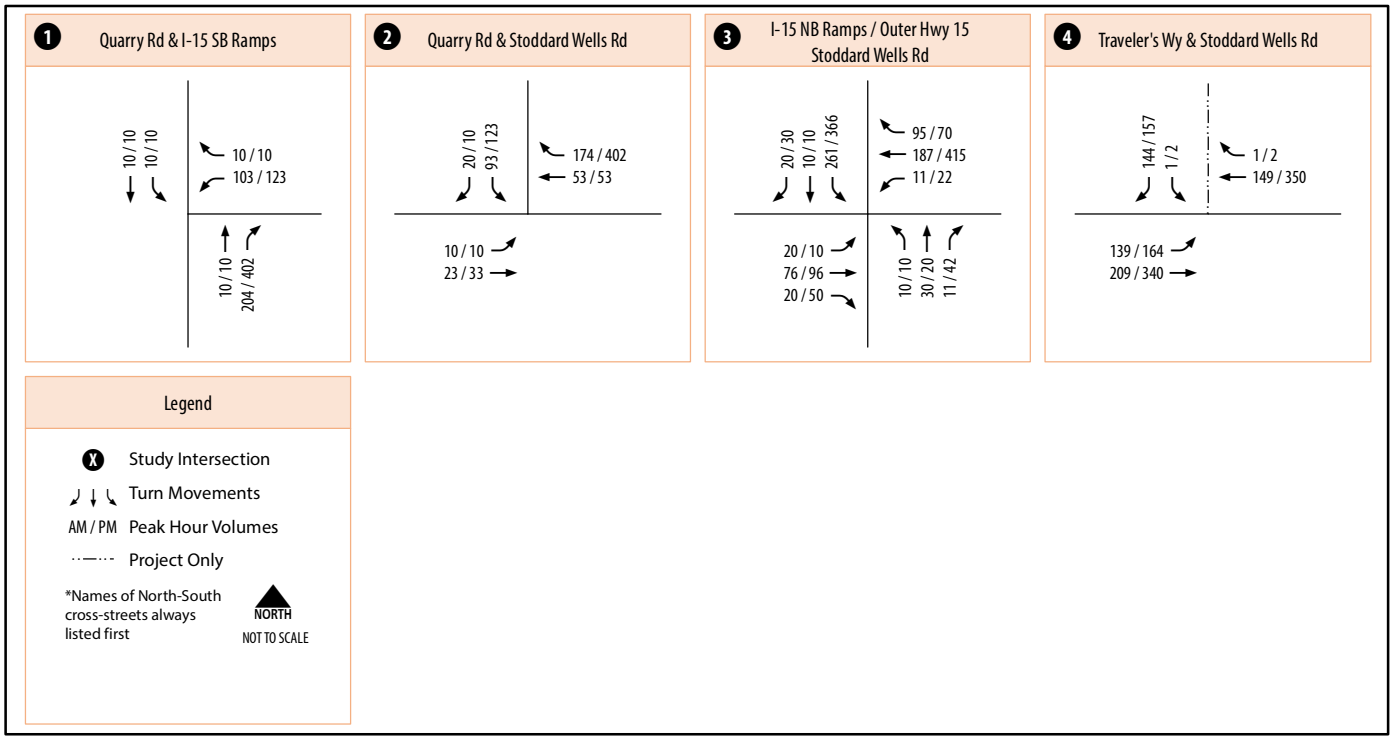
6.4.1 Roadway Segment Analysis

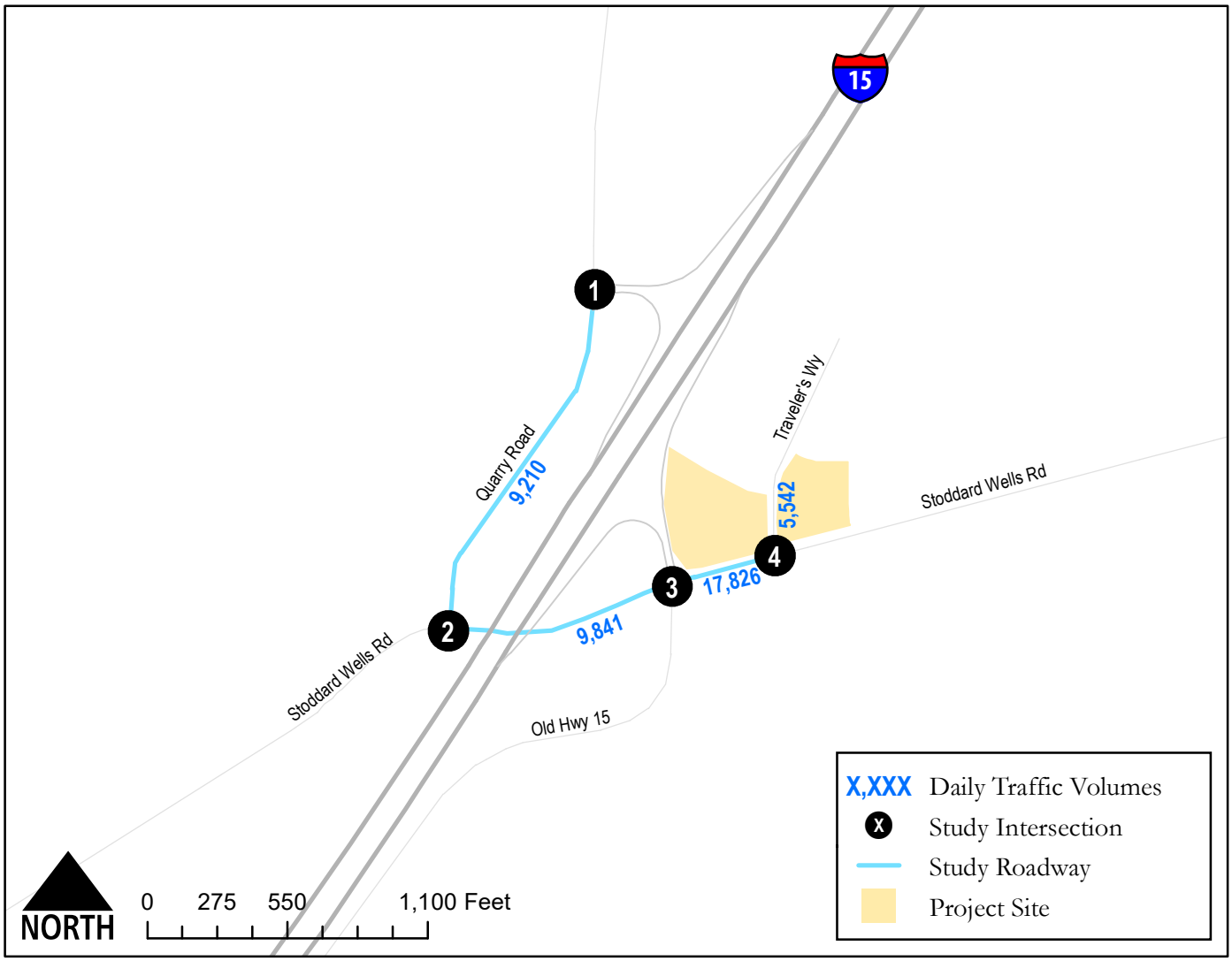
Table 6.3 displays roadway segment LOS analysis results for key study roadway segments under Horizon Year 2040 with Project Conditions.

Table 6.3 Roadway Segment LOS Results – Horizon Year 2040 with Project Conditions

Roadway	Segment	Functional Classification	Roadway Capacity[1]	Daily Volume (ADT)	V/C	Threshold[2]	No Project ADT / V/C / Threshold[2]	I?
Quarry Road	I-15 SB Ramps to Stoddard Wells Road	2-Ln Undivided	12,700	9,210	0.725	Acceptable	6,550 / 0.516 / A	No
Stoddard Wells Road	Quarry Road to I-15 NB Ramps/Outer Highway 15	2-Ln Undivided	12,700	9,841	0.775	Acceptable	7,070 / 0.557 / A	No
Stoddard Wells Road	East of I-15 NB Ramps/Outer Highway	6-Ln Divided	69,300	17,826	0.257	Acceptable	12,340 / 0.178 / A	No

Notes:
[1]Capacity (vehicles per day): 2-Ln Undivided = 12,700, 6-Ln Divided = 69,300 (Town of Apple Valley, 2008)
[2]Threshold based on *Terra Nova/Town of Apple Valley General Plan/Circulation Element (2008)*
V/C = Volume/Capacity
A = Acceptable
I? = Improvement Required?





Love's Travel Center
Transportation Impact Study

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Figure 6.3
Traffic Volumes
Horizon Year 2040 with Project Conditions

As shown in Table 6.3, all of the study roadway segments are projected to operate at acceptable conditions. Therefore, no roadway segments are anticipated to degrade in LOS with implementation of the Proposed Project and no improvements will be required.

6.4.2 Intersection Analysis

Table 6.4 displays intersection LOS and average vehicle delay results for the key study area intersections under Horizon Year 2040 with Project Conditions. LOS calculation worksheets for Horizon Year 2040 with Project Conditions are provided in **Appendix J**.

As shown in Table 6.4, the following study area intersection is projected to operate at an unacceptable LOS (LOS C or better required for Desert Region) under Horizon Year 2040 with Project Conditions:

3. I-15 NB Ramps/Outer Highway 15 & Stoddard Wells Rd – LOS F during the PM peak hour. The trips associated with the Proposed Project would increase the delay at this intersection by 174.8 seconds during the PM peak hour and degrade the LOS from LOS D to LOS F, which surpasses the 5-second threshold for intersections operating at LOS D in the Desert region. Therefore, an improvement is required at this intersection to achieve pre-project LOS and delay.

Table 6.4 Peak Hour Intersection LOS Results – Horizon Year 2040 with Project Conditions

ID #	Intersection	Control Type	AM Peak Hour		PM Peak Hour		Delay w/o Project (AM/PM)	LOS w/o Project (AM/PM)	Δ in Delay (AM/PM)	I?
			Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS				
1	Quarry Rd & I-15 SB Ramps	SSSC	10.3	B	11.5	B	9.5 / 10.3	A / B	0.8 / 1.2	No
2	Quarry Rd & Stoddard Wells Rd	SSSC	10.6	B	12.3	B	9.6 / 10.8	A / B	1.0 / 1.5	No
3	I-15 NB Ramps/Outer Highway 15 & Stoddard Wells Rd	SSSC	21.9	C	208.8	**F**	13.0 / 34.0	B / **D**	8.9 / 174.8	Yes
4	Traveler's Way & Stoddard Wells Rd	SSSC	10.9	B	12.6	B	- / -	- / -	10.9 / 12.6	No

Notes:
SSSC = Side-Street Stop Controlled. For SSSC intersections, the delay shown is the worst delay experienced by any of the movements.
Bold letter indicates substandard LOS D, E, or F (Desert Region).
I? = Improvement Required?

6.5 Determination of the Need for Off-Site Improvements to Accommodate Project Traffic – Horizon Year 2040 with Project Conditions

This section identifies required improvements for roadway and intersection that are associated with the Proposed Project under Horizon Year 2040 with Project conditions.

Roadway Segment Analysis

No improvements required.

Intersection Analysis

Table 6.5 displays LOS analysis results both before and after the implementation of the recommended improvements at the effected intersection under Horizon Year 2040 with Project conditions. LOS calculation worksheets and fair share calculations for Horizon Year 2040 with Project conditions – Recommended Improvements are provided in **Appendix K**.

Table 6.5 Peak Hour Intersection LOS Results – Horizon Year 2040 with Project Conditions – Recommended Improvements

		Before Improvements				After Improvements			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
ID #	Intersection	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS
3	I-15 NB Ramps/Outer Highway 15 & Stoddard Wells Rd	21.9	C	208.8	**F**	11.7	B	25.0	C

Note:
Bold letter indicates substandard LOS D, E, or F (Desert Region).

At the intersection of I-15 NB Ramps/Outer Highway 15 & Stoddard Wells Rd, the Proposed Project shall pay a 50.13% fair share contribution towards the widening of the southbound approach to add an exclusive southbound left-turn lane on the I-15 Northbound off-ramp and convert the intersection from a side-street stop-controlled intersection to an all-way stop controlled intersection. As shown in Table 6.5, this intersection would operate at LOS B during the AM peak hour and LOS C during the PM peak hour with the recommended improvements under Horizon Year 2040 with Project conditions. The queue for vehicles exiting the freeway would also improve from twenty-two (22) vehicle lengths to three (3) vehicle lengths during the PM peak hour.

However, the intersection of I-15 NB Ramps/Outer Highway 15 & Stoddard Wells Road is under Caltrans jurisdiction and the Town of Apple Valley does not have control over improvements. Currently, an intersection control evaluation (ICE) for this intersection is being conducted per Caltrans' request and the results of the analysis will determine the ultimate traffic control at the intersection. Further coordination with Caltrans will continue before implementation of any improvements at the intersection.

7.0 CEQA Senate Bill 743 Analysis

This section provides a California Environmental Quality Act (CEQA) analysis to identify any potential significant vehicle miles traveled (VMT) related impacts associated with the development of the Proposed Project, and to recommend mitigation measures for identified impacts, as necessary.

7.1 Background

On September 27, 2013, Governor Jerry Brown signed Senate Bill (SB) 743 into law. (See Public Resources Code section 21099.). This legislation started a years-long rulemaking process intended to fundamentally change the way in which transportation impacts are analyzed under CEQA. This process culminated in the adoption, at the end of December 2018, of section 15064.3 of the CEQA Guidelines, which had been proposed by the Office of Planning and Research (OPR) and put through rulemaking by the California Natural Resources Agency. This provision states that "generally, vehicle miles traveled [VMT] is the most appropriate measure of transportation impacts." It states that VMT "refers to the amount of automobile travel and distance of automobile travel attributable to a project." As of the effective date of section 15064.3, "automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion shall not be considered a significant impact on the environment pursuant to [CEQA]," with exceptions not relevant here. (Pub. Resources Code, § 21099[b][2].)

7.2 Analysis Methodology

The following section describes the analysis methods outlined in the County TIS Guidelines and VMT thresholds per Town of Appley Valley's VMT Guidelines adopted by Council in May 2021.

7.2.1 Analysis Metrics

For land use development projects, the County TIS Guidelines require the following metric be analyzed to determine if the Proposed Project has a significant transportation-related impact:

- *VMT/Service Population (Employee + Visitors)* for the Non-Home Based, Home-Based Work, and Home-Based Other attraction trips, which represent trips taken by both workers and visitors.

7.2.2 Determination of Significance

A project would result in a significant project-generated VMT impact if either of the following conditions are satisfied:

1. The baseline project-generated VMT per service population exceeds the Town of Apple Valley General Plan Buildout VMT per service population, or

2. The cumulative project-generated VMT per service population exceeds Town of Apple Valley General Plan Buildout VMT per service population

The project's effect on VMT would be considered significant if it resulted in either of the following conditions to be satisfied:

1. The baseline link-level boundary Town-wide VMT per service population increases under the plus project condition compared to the no project condition, or

2. The cumulative link-level boundary Town-wide VMT per service population increases under the plus project condition compared to the no project condition.

7.3 Project VMT Analysis

For projects in San Bernardino County, VMT is typically calculated using the San Bernardino County Transportation Analysis Model (SBTAM), which considers the interaction between different land uses. However, for projects with unique land uses and travel patterns, such as the Proposed Project, the model's limitations in accurately capturing travel for those uses make it an inappropriate tool to use for the analysis. Per Section 10564.3, "*Qualitative Analysis. If existing models or methods are not available to estimate the vehicle miles traveled for the particular project being considered, a lead agency may analyze the project's vehicle miles traveled qualitatively. Such a qualitative analysis would evaluate factors such as the availability of transit, proximity to other destinations, etc.*" Consequently, a qualitative analysis was conducted for the Proposed Project:

As described in the Project Traffic Chapter (Chapter 3), due to the extremely rural location of the project site, the limited roadway connections in the study area, and few adjacent land uses, most project trips will be vehicles currently traveling on I-15, with only a small portion of new trips generated for the employees traveling to and from work at the proposed Travel Center. The Omni Means trip generation study (provided in Appendix B) includes travel surveys for visitors traveling to several Love's Travel Centers throughout California, and similarly, majority of trips to those sites were existing trips diverted off the adjacent highway.

Similar to the Travel Center, the RV stop is anticipated to serve existing trips on their way to their final destination by providing a place for customers to relax, refuel, and recharge. Given that there are no corresponding adjacent travel destinations to the project site, such as recreational uses or major tourist destinations, it is not anticipated that the RV stop will generate new trips solely to the project site. There are several other existing overnight RV stops within the adjacent communities providing similar services to the Proposed Project, as such, the RV stop is not expected to create regional diversion of trips. Furthermore, the project applicant anticipates the average night per stay is only one night per visitor.

The VMT for trips diverting from I-15 to the project site is approximately 0.5 miles, which represents majority (i.e., 90% of automobile and 95% of heavy vehicles) of the total trips traveling to the site. This travel pattern is consistent with the travel survey of trips traveling to the existing Love's Travel Center sites in the Omni-Means study. As such, the Proposed Project is anticipated to generate a low VMT per service population and would be much less than the Town of Apple Valley's General Plan Buildout VMT per service population. Therefore, the Proposed Project is anticipated to result in a less-than-significant VMT impact.

Mitigation Measures

VMT related impacts can be mitigated by reducing the total project VMT, which in turn reduces the generated VMT per service population. Mitigation measures to reduce VMT include Transportation Demand Management, Active Transportation Improvements, and/or Transit Route Extensions or Improvements.

The Proposed Project is anticipated to result in a less-than-significant impact, so no mitigation measure is necessary.

8.0 Site Access & Circulation

This chapter addresses access to the project site and discusses the functionality of the project's internal circulation.

8.1 Driveway Access

The Proposed Project will be located at the northeast quadrant of the Stoddard Wells Road and Interstate 15 (I-15) interchange within the Town of Apple Valley. The project site is bordered by Stoddard Wells Road on the south side and I-15 on the west side.

A new north-south roadway, Traveler's Way, will divide the project site with the travel center to the west and the RV stop to the east. Traveler's Way will create the north leg of a new side-street stop-controlled intersection along Stoddard Wells Road approximately 350 feet east of the I-15 northbound ramps. This is an unsignalized intersection with Traveler's Way as stop controlled and Stoddard Wells Road as uncontrolled. Traveler's Way would include one inbound and one outbound lane and projected to operate at acceptable conditions under all study scenarios.

Project site access will be provided via four driveways along Traveler's Way, each with one inbound and one outbound lane. A brief description of each of the four driveways is provided below:

- Project Driveway #1 is located approximately 75 feet north of Stoddard Wells Road and forms the west leg of a side-street stop-controlled intersection along Traveler's Way and function with full access. This driveway provides the only access point to a lot containing auto fueling station, auto parking (80 total), RV parking (4 total), an RV dump station, and a dog park. The convenience store and fast-food restaurant are located on the north side of this lot. This project driveway is projected to operate LOS A under all study scenarios.

- Project Driveway #2 is located approximately 150 feet north of Stoddard Wells Road and forms the west leg of a side-street stop-controlled intersection along Traveler's Way and function with full access. This driveway provides one of two access points to a lot containing truck fueling stations, a truck scale, maintenance building (Love's Speedco Truck Care), and truck parking (97 total). This project driveway is projected to operate LOS A under all study scenarios.

- Project Driveway #3 is located approximately 250 feet north of Stoddard Wells Road and forms the west leg of a side-street stop-controlled intersection along Traveler's Way and function with full access. This driveway provides one of two access points to the same lot described for Project Driveway #2. This project driveway is projected to operate LOS A under all study scenarios.

- Project Driveway #4 is located is located approximately 200 feet north of Stoddard Wells Road and forms the east leg of a side-street stop-controlled intersection along Traveler's Way and function with full access. This driveway provides the only access point to the RV stop component of the Proposed Project which includes auto parking (8 total), overnight RV parking (80 total), and all recreational facilities (shuffleboard, basketball court, dog park, etc.). This project driveway is projected to operate LOS A under all study scenarios.

After further review of the project site plan, the following recommendations are provided:

- Driveways are recommended to be constructed in accordance with County standards
- Stop signs installed at all project driveways

8.2 Internal Circulation

As discussed, Interstate 15 and Stoddard Wells Road front the project site and provides regional access to the project site. A new north-south roadway in Traveler's Way will be constructed connecting Stoddard Wells Road to the project site via four driveways.

The truck-stop component lots provide for two-way flow of traffic for both auto and truck vehicles with exception to the truck fueling stations, which flow one-way to the west. None of the aisles/internal roadways are long enough to allow for excessive on-site vehicle speeds.

The RV stop component provides for a single lane roadway with a singular access point auto and RV vehicles flow in one-way clock-wise direction. There are one-way drive aisles with no "dead-end" aisles.

After further review of the project site plan, the following recommendations are provided:

- Provide for adequate space aisle space for trucks to circulate and complete basic parking maneuvers within the truck-stop
- Posted speed limit of 15 mph along Traveler's Way and 5 mph within internal roadway at the RV stop to prevent speeding
- Installation of speed bumps within the RV stop as the aisles are excessively long and may result in excessive speeds
- Appropriate signage and lane markings to warn drivers of pedestrian foot traffic within the RV stop

8.3 Pedestrian and Bicycle

This section discusses the project site's alternative transportation modes

8.3.1 Pedestrian

Concrete sidewalks are proposed to surround the fast-fast restaurant, convenience store, and the dog park at the travel center component of the Proposed Project. For the RV stop component, concrete sidewalks are proposed to link all the recreational facilities as well as to surround the main building. Additionally, a pedestrian path (non-concrete) will circumnavigate the perimeter of the RV stop.

After further review of the project site plan, the following recommendations are provided:

- To improve connectivity and walkability between all components of the Proposed Project, concrete sidewalks are recommended to be constructed along the project frontage and along Traveler's Way between the truck-stop and RV stop component and built to County standards
- Driveways are recommended to be constructed with detectable surface warning tactiles (yellow truncated domes)
- High visibility pedestrian crossings and signage should be provided at the driveway(s) between the truck-stop and the RV stop to improve pedestrian safety between the two project components

With implementation of the recommendations list above, the overall pedestrian environment should be enhanced for both walkability and safety.

8.3.2 Bicycle

Bicycle racks are proposed at the northeast corner outside of the convenience store in the first lot accessible from Project Driveway #1. As discussed in Chapter 4, under Existing conditions, there are no bicycle facilities constructed along the project frontage. However, per the Apple Valley General Plan, Class II bicycle lanes are proposed along the project frontage between Interstate 15 freeway and Alembic Street.

After review of the project site plan, the following recommendations are provided:

- The Proposed Project should accommodate and reserve space for planned Class II bicycle facilities along the project frontage on Stoddard Wells Road
- Planned Class II bicycle facilities along the project frontage should be painted green for high visibility due to its close proximity to the freeway

With implementation of the recommendations listed above, the Proposed Project will remain consistent with the goals outlined in the Apple Valley General Plan by accommodating for bicycle facilities along the project frontage.

9.0 Queue Analysis

A queue analysis was conducted at intersections along the project frontage and freeway ramps to determine if extensive queues could form on the project's fronting roadway that would impede driveway operations or if the queue would spill back onto the freeway main line.

Table 9.1 displays the 95th percentile queue results determined using Synchro Version 10 traffic analysis software by Trafficware Ltd. **Table 9.2** displays 95th percentile queue results with implementation of recommended off-site improvements from Chapters 5.5 and 6.5. Queue results are provided in **Appendix L**.

As shown in Table 9.1 and 9.2, the vehicle queues for turning movements are expected to fit within storage with implementation of the Proposed Project.

Table 9.1 Intersection Queuing Analysis

Intersection	Movement	Storage (ft)[1]	Existing		Near-Term		Near-Term w/ Project		Horizon Year 2040		Horizon Year 2040 w/ Project	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1. Quarry Rd & I-15 SB Ramps	WBLR	995	25	25	25	25	25	25	25	25	25	25
3. I-15 NB Ramps/Outer Highway 15 & Stoddard Wells Rd	SBLR	950	25	100	25	150	50	250	50	175	100	550
	WBLR	340	0	0	0	0	0	0	0	0	0	25

Note:
[1] Queues are rounded to the nearest 25 feet to represent one vehicle length

Table 9.2 Intersection Queuing Analysis with Recommended Off-Site Improvements

Intersection	Movement	Storage (ft)[1]	Near-Term w/ Project + Improvements		Horizon Year 2040 w/ Project + Improvements	
			AM	PM	AM	PM
1. Quarry Rd & I-15 SB Ramps	WBLR	995	25	25	25	25
3. I-15 NB Ramps/Outer Highway 15 & Stoddard Wells Rd[2]	SBLR	950	50	100	50	75
	WBLR	340	50	125	50	250

Notes:
[1] Queues are rounded to the nearest 25 feet to represent one vehicle length.
[2] Final improvements to be determined via an intersection control evaluation (ICE) based on Caltrans guidelines. Further coordination with Caltrans will be required.

Appendix A - County of San Bernardino Transportation Impact Study Guidelines

TRANSPORTATION IMPACT STUDY GUIDELINES

Date: July 9, 2019

Subject: Transportation Impact Study Guidelines

Senate Bill 743 (SB 743), signed by the Governor in 2013, is changing the way transportation impacts are identified. Specifically, the legislation has directed the Office of Planning and Research (OPR) to look at different metrics for identifying transportation as a CEQA impact. The Final OPR guidelines were released in December 2018 and has identified vehicle miles of travel (VMT) as the preferred metric moving forward. The Natural Resources Agency completed the rule making process to modify the CEQA guidelines in December of 2018 as well. Given the timing of this implementation with the County General Plan, it is prudent to address VMT and develop draft significance criteria to evaluate the General Plan related to VMT.

The County has identified that vehicle level of service (LOS) is still of value to the residents of San Bernardino County. As such, the General Plan includes policies that address LOS and identify LOS standards for which County infrastructure will strive to maintain. Therefore, County projects will also be required to complete a transportation impact study (TIS), in addition to VMT assessment, to demonstrate consistency with the General Plan. We recognize that the San Bernardino County Transportation Analysis Model (SBTAM) is currently the most appropriate travel demand model to use in San Bernardino County and our recommended methodologies reflect that. However, the recommended methodologies in this memorandum will continue to be applicable even if other traffic models supersede SBTAM in the future.

As such, the purpose of this memorandum is to provide recommendations related to VMT assessment (both thresholds of significance and methodology for identifying VMT related

impacts) and to refine the County's existing TIS guidelines to reflect state of the practice methodologies for identifying project impacts.

Finally, it should be noted that the County should update these guidelines on an as needed basis to reflect changes in CEQA requirements, new methodology development, or refinement of process moving forward. As such, the County should continually review these guidelines for applicability and consultants should contact the County to ensure that they are applying the most recent guidelines for project impact assessment.

The remainder of this memorandum is organized as follows. We have attempted to organize this memorandum to provide background information, assessment for congestion management/ General Plan Consistency (e.g. Level of Service analysis), and CEQA assessment (e.g. VMT analysis).

1. Introduction
2. Need for Transportation Impact Study
3. Level of Service Assessment for General Plan Consistency
4. CEQA Assessment - VMT Analysis
5. CEQA Assessment - Active Transportation and Public Transit Analysis
6. Transportation Impact Study Format

1. INTRODUCTION

The purpose of Transportation Impact Study (TIS) Guidelines is to provide a general guide in assessing the potential transportation impacts of proposed development projects, General Plan Amendments and changes in zoning in the County of San Bernardino. This memorandum presents the recommended format and methodology that should generally be utilized in the preparation of traffic studies. These recommendations are based on the County's most recent TIS Guidelines with updates provided to recommend state of the practice methodologies, address recent California Environmental Quality Act (CEQA) legislation such as Senate Bill 743 (SB 743), and provide consistency for future transportation studies in the County.

These recommendations are general guidelines for the preparation of a TIS Report. The Department of Public Works should reserve the right to modify the TIS requirements based on the unique characteristics of a particular project.

All TIS's shall be prepared by a registered Traffic Engineer (State of California) or a registered Civil Engineer with experience in traffic. The TIS must contain a Title Page that includes, at a minimum, the Tract or Parcel number of the project, the applicant's name and address and the Engineer's name, Engineer's signature, address, phone number and stamp.

To avoid unnecessary delays or revisions and to stream line the TIS preparation and review process, the County should require that the applicant submit and have approved, by the Department of Public Works Traffic Division, a scoping form prior to the preparation and submittal of a draft TIS. A version of this document in Word format is attached to this memo.

1.1 CEQA CHANGES

Since the last TIS Guidelines update, SB 743 was signed into law. A key element of this law is the elimination or deemphasizing of auto delay, level of service (LOS), and other similar measures of vehicular capacity or traffic congestion as a basis for determining significant impacts. This change can assist in balancing the needs of congestion management with statewide goals related to infill development, promotion of public health through active transportation, and reduction of greenhouse gas emissions.

SB 743 contains amendments to current congestion management law that allows cities and counties to effectively opt-out of the LOS standards that would otherwise apply in areas where Congestion Management Plans (CMPs) are still used. Further, SB 743 requires the Governor's Office of Planning and Research (OPR) to update the California Environmental Quality Act (CEQA)

Guidelines and establish criteria for determining the significance of transportation impacts. In December 2018, OPR released their final recommended guidelines based on feedback with the public, public agencies, and various organizations and individuals. OPR recommends Vehicle Miles Traveled (VMT) as the most appropriate measure of project transportation impacts. SB 743 does not prevent a city or county from continuing to analyze delay or LOS as part of other plans (i.e., the general plan), studies, congestion mitigation, or ongoing network monitoring; but these metrics may no longer constitute the sole basis for CEQA impacts.

In recognition of SB 743 and OPR's VMT recommendations, the recommendations in this memorandum include VMT thresholds and mitigation to ensure consistency with CEQA Guidelines. However, it should be noted that these recommendations are in advance of the County's General Plan Update, which will also include LOS standards since automobile level of service continues to be of importance to the County's unincorporated communities. Therefore, these TIS Guidelines also contain LOS analyses and threshold recommendations to maintain consistency with the General Plan.

2. NEED FOR TRANSPORTATION IMPACT STUDY

In order to ensure that projects are consistent with the Countywide General Plan, roadway facilities operate at an acceptable level of service, and region wide VMT is reduced, the County should require a study for any development if there are concerns over safety or operational issues such as congestion, VMT, etc. This can include development projects, Specific and Area Plans, or requests by an applicant for General Plan Amendments. Our recommendations, consistent with the most recent County TIS Guidelines, are provided below.

First, prior to the applicant filing an application with Land Use Services Department, the Traffic Division should determine both whether a TIS is required and what type of TIS should be prepared.

The requirement to prepare a TIS should be based upon, but not limited to, one or more of the following criteria:

- If a project generates 100 or more trips without consideration of pass-by trips during any peak hour.
- If a project is located within 300 feet of
    - The intersection of two streets designated as Collector or higher in the County's General Plan or the Department's Master Plan **or**
    - An impacted intersection as determined by the Traffic Division.
- If this project creates safety or operational concerns.
- The project has the potential to generate VMT that could result in a transportation impact as noted in the significance criteria presented later in this memorandum.
- If a project generates less than 100 trips without consideration of pass-by trips during any peak hour, a study maybe required if there are special concerns.

The Traffic Division should also reserve the right to require an applicant to prepare additional traffic analysis based on the project location, configuration, unique aspects of the project, proximity to major roadways, interchanges or intersections, evaluating corner site distance at the driveways or other requirements as determined by the Traffic Division, including after the scoping agreement is approved.

2.1 TYPES OF TRANSPORTATION IMPACT STUDIES

The type of study used should depend on the location of the project, the amount of project trips generated, the estimated VMT and whether the project falls within a fee plan area. As noted

previously, Traffic Division should determine the type of study to be submitted by the applicant. There are two types of TIS that can be requested by the Department of Public Works:

1. **Transportation Impact Study:** This type is required when thresholds are met and conducted based on these recommendations. Since these recommendations are in compliance with SBCTA guidelines, a TIS required by the County may be used to meet requirements for a TIS under the SBCTA Congestion Management Program.
2. **Letter Report:** A letter to address the significant impacts of the project in the immediate area. This type of report is primarily intended for specific concerns or small projects and thus limited to special situations. Letter reports may be sufficient when documenting potential VMT impacts and recommending mitigation measures to reduce VMT or when addressing a limited number of study locations.

2.2 COORDINATION WITH THE DEPARTMENT OF PUBLIC WORKS

Prior to filing an application with Land Use Services, the applicant should obtain a scoping form from Land Use Services or the Traffic Division and submit the completed form to Department of Public Works at Land Use Office or Traffic Division. Traffic Division can then make a determination regarding the need for and type of TIS.

If a TIS is needed, the applicant shall retain the services of a qualified registered Traffic or a registered Civil Engineer with experience in traffic engineering and initiate the process of finalizing a scoping agreement that will govern the conduct of the TIS. Studies submitted for review without an approved scoping agreement could be subject to significant revisions and could increase the cost for review that will be charged to the applicant by the Department. Additionally, the scoping agreement is an initial agreed-upon scope between the County and the engineer and the scope may need to be amended during the process based on potential changes to the project, input received during the project, or other items that may necessitate the need to expand or contract the scope of the study.

The TIS should be completed and submitted at the time an application is filed with Land Use Services. The applicant should obtain the approval of the submitted TIS prior to the approval of the proposed project.

3. LEVEL OF SERVICE ASSESSMENT FOR GENERAL PLAN CONSISTENCY

3.1 SCOPE OF TRANSPORTATION IMPACT STUDY

The locations and scenarios analyzed in a transportation impact study should insure that potential impacts are discussed and mitigated across a variety of possible facilities and horizon years. Our recommendations for study area and scenarios are given below.

3.1.2 Study Area Boundaries for LOS assessment

The area to be studied should include all intersections, which the proposed project will add 50 or more trips during any peak hour and roadway segments adjacent to the project if directed by the County. All key study facilities within this study area should be analyzed to identify impacts to capacity and Level of Service (LOS). The study facilities should be listed in the scoping form for review and approval by the Traffic Division.

At a minimum, the following subject/locations should be studied:

a) Site access driveways
b) On-site circulation
c) Roadway(s) adjacent to the project (if requested by County staff)
d) Intersections in the immediate vicinity of the project
e) Pedestrian and bicycle circulation
f) Consistency with County Plans and Policies
g) Transit (bus and light commuter rail) accessibility to project site
h) Any intersection on which the project will add 50 or more peak hour project trips

3.1.2 Study Scenarios for LOS Assessment

The following study scenarios should be included for intersection capacity analysis:

a) Existing Conditions
b) Background Conditions – Defined as Opening Year Conditions with ambient growth and traffic from approved projects
c) Background Plus Project Conditions – Defined as background conditions plus traffic from the proposed project

d) Cumulative No Project Conditions – Defined as ambient growth to the Cumulative Horizon (typically coinciding with the forecast horizon of the SBTAM travel demand forecasting model) plus traffic approved and pending projects in the area
e) Cumulative Plus Project Conditions – Defined as Cumulative No Project Conditions plus traffic from the proposed project

The purpose of Background Condition analyses is to document the potential near-term impacts of the Project on the County's transportation facilities. However, if the if the project opening year is more than five years beyond the Existing Conditions assessment, then an Existing Plus Project scenario should be analyzed as an additional scenario.

Phased projects could be evaluated in three ways. First, the analyst can identify which phase of a project triggers an impact based on the comparison of Background Conditions to Background Plus Project Conditions. Alternatively, they can provide a phased assessment looking at opening years of each phase. Finally, for large phased projects, the project as a whole could be evaluated initially; however, subsequent traffic studies would have to be completed for each proposed phase implementation to ensure that improvements are implemented when they are needed. The County should be consulted to identify which approach is most appropriate for a proposed project if phasing is proposed recognizing the County's desire to ensure that infrastructure is delivered concurrent with proposed development when needed.

Recommendations for developing Ambient Traffic and Cumulative Traffic are provided in the next section of this document.

3.2. DATA COLLECTION, PROJECT TRIP, AND FORECASTING METHODOLOGIES

The following recommendations pertaining to traffic count collection, project trip development, and traffic forecasting methodologies have been developed to maintain consistency across different transportation impact studies and reflect current state of the practice.

3.2.1 Traffic Counts

Data for existing traffic conditions should be collected for the project using the following guidelines:

- Peak period turning movement counts at all study intersections, roadway segments (if required) and/or driveways, including bicycle and pedestrian counts at intersections with high non-automotive use, should be collected. For intersections with high percentages of heavy vehicles, turning movement counts should count heavy vehicles separately.
- Average Daily Traffic (ADT) for all roadways within study area (if required) and vehicle classification counts in areas with a high percentage of heavy vehicle use.
- Traffic counts should not be used if more than one (1) year old without prior Traffic Division approval.
- Traffic data should not be collected on weeks that include a holiday and non-school session time periods unless approved by the Traffic Division.
- Traffic data should not be collected between Thanksgiving and the first week of the new year without prior Traffic Division approval.
- Traffic counts should be conducted on Tuesdays, Wednesdays, or Thursdays.

Unless directed otherwise by the Traffic Division, counts should be collected during the following time frames:

- Morning (7:00 a.m. to 9:00 a.m.)
- Afternoon/evening (4:00 p.m. to 6:00 p.m.)
- Midday and "School-Release" peak hours – As directed by the Traffic Division
- Other peak hours, off-peak, weekend or special event, may also be required depending on the project location and type of use

Count data should be included in the study appendices.

3.2.2 Trip Generation

The latest edition of the Institute of Transportation Engineers' (ITE) Trip Generation should be used for trip generation forecasts. Local data (if available) is preferred, but should be approved by

the County prior to application. Trip generation for high truck generating uses such as high cube warehouses, logistics space, etc. shall be determined with County input on a case-by-case basis. The proposed trip generation should be listed in the scoping form for review and approval by the Traffic Division.

Trip internalization for mixed use developments (if applicable) should be calculated using state of the practice methodologies. At the time of this memorandum, the EPA's mixed-use trip generation (or MXD) methodology is the state of the practice and should be approved by the Traffic Division prior to use in any studies. Trip internalization calculations (including gross trips, net trips after internalization, and MXD input assumptions (such as intersection density, TOD assumptions, acres, etc.)) should be documented in the TIS.

For projects that anticipate the generation of significant truck traffic, all truck trips should be converted into passenger car equivalents (PCE) for the capacity analysis or the analyst should adjust the heavy vehicle percentage in the capacity assessment appropriately.

3.2.3 Trip Distribution

A graphical representation of the proposed project trip distribution should be based on the relative location of population, commercial, recreational and employment centers; existing peak hour link and turning movement volumes; ADT volumes; proximity to regional transportation corridors knowledge of local and regional traffic circulation; and/or a select zone assignment from SBTAM. A preliminary trip distribution pattern should be submitted in the scoping form for review and approval by the Traffic Division.

The trip distribution may be further refined, after consultation with the Traffic Division, based on consideration of following factors:

- Type of proposed development
- Location and intensity of development
- Conditions on the roadway network in the vicinity
- Similar land use in the vicinity
- Truck route system
- As directed by Traffic Division

3.3 TRIP FORECASTS

For Cumulative Conditions, SBTAM should be used to develop future traffic volume forecasts. For all projects, the applicant should include cumulative development projects in the study. A list of proposed and approved developments can be obtained from the County's Land Use Services

Planning Division. For proposed projects that are in close proximity to incorporated cities, those cities should also be contacted to obtain a list of proposed and approved development projects in those jurisdictions. At a minimum, future projects located within two miles of the study area should be included. Projects outside that radius should be included if the traffic generated by that project can reasonably be expected to impact a study intersection and/or road segment.

3.4 INTERSECTION ANALYSIS

3.4.1 Analysis Methodology

Intersection analyses should be performed using the latest version of the Transportation Research Board, Highway Capacity Manual (the HCM 6th Edition) is the latest version at the time this memorandum was written methodology which reflects current state of the practice. The HCM methodology assigns an LOS grade to an intersection based on estimated delay at that intersection.

Level of service analysis based on the current Highway Capacity Manual shall be used in the analysis with the following assumptions:

- Existing signal timing for Existing Conditions; Optimized signal timing for non-coordinated intersections for all other analysis scenarios
- For coordinated intersections, the existing coordination timing plan should be obtained from the responsible agency.
- Four (4) seconds of lost time per critical phase should be assumed if signal timing data is not available
- Field-collected heavy vehicle factor if available; otherwise, 2% shall be assumed
- Field-collected peak hour factor (PHF) for existing and background conditions analyses; for cumulative assessment, 0.95 shall be assumed

Saturation flow rates should be used based on actual field measurements of particular intersections if possible and with approval from the Traffic Division. Otherwise, the following saturation flow rates can be used, consistent with the SBCTA CMP:

- For Existing and Background scenarios:
    - 1,800 vehicles per hour green per lane (vphgpl) for exclusive thru and exclusive right turn lanes
    - 1,700 vphgpl for exclusive left turn lanes
    - 1,600 vphgpl for exclusive dual left turn lanes
    - 1,500 vphgpl for exclusive triple left turn lanes

- For the Cumulative and General Plan Build-Out scenarios:
    - 1,900 vphgpl for exclusive thru and exclusive right turn lanes
    - 1,800 vphgpl for exclusive double right turn lanes
    - 1,800 vphgpl for exclusive left turn lanes
    - 1,700 vphgpl for exclusive dual left turn lanes
    - 1,600 vphgpl for exclusive triple left turn lanes

3.4.2 Signalized Intersection General Plan Consistency Requirements

Consistent with the acceptable LOS for the Desert, Valley, and Mountain regions as described in the General Plan[1], the County should consider the following signalized intersection criteria for application in a traffic study. Please note that this will be completed to demonstrate General Plan Consistency. Specific CEQA thresholds, which are based on VMT requirements, are described later in this memorandum.

- Any signalized study intersection in the Valley or Mountain regions that is operating at an acceptable LOS D or better without project traffic in which the addition of project traffic causes the intersection to degrade to an LOS E or F shall identify improvements to improve operations to LOS D or better.
- Any signalized study intersection in the Desert region that is operating at an LOS C or better without project traffic in which the addition of project traffic causes the intersection to degrade to an LOS D, E, or F shall identify improvements to improve operations to LOS C.
- Any signalized study intersection in the Valley or Mountain regions that is operating at LOS E or F without project traffic where the project increases delay by 5.0 or more seconds shall identify improvements to offset the increase in delay.
- Any signalized study intersection in the Desert region that is operating at LOS D, E, or F without project traffic where the project increases delay by 5.0 or more seconds shall identify improvements to offset the increase in delay.

3.4.3 Unsignalized Intersection General Plan Consistency Requirements

Consistent with the acceptable LOS for the Desert, Valley, and Mountain regions as described in the current General Plan, the County should consider the following unsignalized intersection criteria when identifying operational deficiencies:

[1] These standards are subject to change; please review the General Plan to ensure the most recent standards are utilized.

An operational improvement would be required if the study determines that either section a) or both sections b) and c) occur:

a) The addition of project related traffic causes the intersection to degrade from an LOS D or better to a LOS E or worse in the Valley and Mountain regions or from an LOS C or better to an LOS D or worse in the Desert region.

OR

b) The project adds 5.0 seconds or more of delay to an intersection that is already projected to operate without project traffic at an LOS E or F in the Valley and Mountain regions or at an LOS D, E, or F in the Desert region (per Section 10.5.2 b))

AND

c) One or both of the following conditions are met:
   1) The project adds ten (10) or more trips to any minor street approach
   2) The intersection meets the peak hour traffic signal warrant after the addition of project traffic (per Section 10.5.2 c)).

If the conditions above are satisfied, improvements should be identified that achieve the following:

- In the Valley and Mountain regions, improvements should be identified that would achieve LOS D or better for case a) above or to pre-project LOS and delay for case b) above.
- In the Desert region, improvements should be identified that would achieve LOS C or better for case a) above or to pre-project LOS and delay for case b) above

3.5 ROADWAY SEGMENT ANALYSIS

Intersections typically provide the transportation constraint on vehicle capacity. As such, these guidelines focus on the evaluation of intersections. However, in some instances, roadway segment assessment could be appropriate and may be requested by the County Transportation Department. The following sections describe the appropriate methodology for evaluating roadway segments in those situations where required by the department.

3.5.1 Analysis Methodology

Daily roadway segment analysis should be performed using thresholds from the latest version of the Transportation Research Board, Highway Capacity Manual 6th Edition methodology which

reflects current state of the practice. The HCM methodology assigns an LOS grade to a roadway segment based on whether the daily volumes surpass given thresholds.

3.5.2 General Plan Consistency Requirements

Consistent with the acceptable LOS for the Desert, Valley, and Mountain regions as described in the current General Plan, the County should consider the following roadway segment thresholds and improvement requirements:

- Any study roadway segment in the Valley or Mountain regions that is operating at an LOS D or better without project traffic in which the addition of project traffic causes the segment to degrade to an LOS E or F should identify improvements to achieve LOS D.
- Any study roadway segment in the Desert region that is operating at an LOS C or better without project traffic in which the addition of project traffic causes the segment to degrade to an LOS D, E, or F should identify improvements to achieve LOS D.
- Any roadway segment that operates unacceptably in the no project scenario where the project adds traffic in excess of 5% of the roadway capacity (e.g. a volume-to-capacity ratio increase of 0.05) should identify improvements to add capacity to the segment.

3.6 SITE ACCESS, SAFETY, AND OTHER ANALYSES

A project's TIS should analyze site access and safety around the project and on adjacent streets. The recommended analyses, based on the previous TIS Guidelines, are given below.

3.6.1 Site Access Analysis

The following analyses are recommended to improve the project access circulation and to limit driveways and local street access on arterial streets:

a) **Intersection Sight Distance –** All on-site intersections, project access driveways or streets to public roadways should provide adequate sight distance. Adequate intersection sight distance should be determined using the Caltrans Highway Design Manual.

b) **Driveway Length and Gated Entrance –** Primary project driveways should have a throat of sufficient length to allow vehicles to enter the project area without causing subsequent vehicles to back out onto the County street system. A turn around should be provided at all gated entrances.

c) **Limit Driveway Impacts –** Driveways and local streets access on arterial streets should be limited to minimize the impacts on arterial streets. Driveways should be located so as to maintain a reasonable distance from an adjacent intersection and/or driveway. Whenever possible, driveways shall be consolidated with adjacent properties.

d) **Corner Clearance –** A driveway should be a sufficient distance from a signalized intersection so that right-turn egress movements do not interfere with the right-turn queue at the intersection. In addition, every effort should be made to provide right-turn egress movements with sufficient distance to enter the left-turn pocket at the adjacent intersection.

e) **Right Turn Lanes at Driveways –** If the project right turn peak hour volume is 50 or more vehicles, a right-turn deceleration lane should be reviewed for appropriateness on all driveways accessing major arterial and secondary streets. The length of right turn lane should be sufficient to allow a vehicle traveling at the posted speed to decelerate before entering the driveway as outlined in the Caltrans Highway Design Manual.

f) Adequacy of pedestrian facilities

g) Bicycle accessibility

h) Accessibility from adjacent transit stops

3.7 SAFETY AND OPERATION IMPROVEMENT ANALYSIS

The TIS should analyze opening year roadway conditions to determine if safety and/or operational improvements are necessary due to an increase in traffic from the project or cumulative projects. The following improvements should be analyzed:

a) Addition of through lane(s), right turn lane(s) and left turn lane(s)

b) Left and/or right turn lane pocket length (queue length)

c) Bus Turnouts – Coordinate potential bus top locations on arterial streets adjacent to the proposed project site with local transit agencies. Review appropriateness of bus turnouts for each of the identified bus stop locations.

d) Intersection Geometrics – Projects that generate heavy vehicle traffic should also review intersections along the routes to/from the site to determine that the intersections have been designed appropriately to accommodate the addition of heavy vehicles (e.g. curb returns and geometrics can accommodate turning trucks).

e) Parking restrictions on adjacent streets

f) Free Right Turn Lane – Free right turn lane should be considered when right turn volumes exceed 300 vehicles per hour.

g) Traffic Signal Coordination – For new or modified traffic signals, the Traffic Division should consider requiring signal coordination timing plans and, under certain conditions, traffic simulation based on the latest Highway Capacity Manual. The traffic simulation and coordination timing plan should include signalized intersections as identified by the Traffic Division. A copy of any software program files to develop these plans should be available to the Traffic Division for review.

h) Bicycle Circulation – Identify and implement bike lane facilities adjacent to the project site in accordance with the County's Bicycle Master Plan.

3.8 TRAFFIC SIGNAL WARRANT ANALYSIS

A traffic signal warrant analysis should be performed for all unsignalized study intersections for the project opening year (if applicable) and build-out year conditions. Traffic signal warrant analysis should be performed using the latest edition of the California MUTCD. The warrant analysis should be included in the study appendices.

In determining the location of a new traffic signal on an arterial street or approaching an arterial street, traffic progression and simulation analysis may be required using Synchro/SimTraffic software or equivalent at the direction of the Traffic Division.

3.9 IMPROVEMENTS FOR TRANSPORTATION IMPACTS

Several options exist to improve identified impacts and are dependent on the specific identified impact. Potential measures are noted below.

As part of the final acceptance of a transportation impact study, the Traffic Division should review and approve any required improvements and/or fair share contributions necessary to mitigate the transportation related impacts from the development. These should be included as part of the conditions of approval and should be in addition to any improvements required by any other Divisions of Public Works and/or Departments. Any transportation improvements based on a transportation study will be in addition to any other fees related to the existing Transportation Facilities Plans or any fees required by other Divisions of Public Works and/or Departments.

Fair share contributions identified in the transportation impact study and subsequently listed in the conditions of approval shall be required before a building permit will be issued. Improvements required in a transportation impact study and subsequently listed in the conditions of approval shall be completed prior to occupancy.

3.9.1 Level of Service Improvements

Improvements for project level impacts should focus on providing operations that offset the project impact (e.g. achieve a "no project" level of service). Improvements could consist of signal timing improvements, lane restriping, or new lanes to study facilities.

Cumulative impacts should include a fair-share contribution toward achieving acceptable levels of service as noted below. Alternatively, if a cumulative location is included in an existing traffic impact fee program, payment of those fees would constitute an appropriate contribution.

Finally, the project applicant could revisit the project description in an effort to potential reduce the project impacts if viable.

3.10 COUNTY FEE PLANS

The study should state if the proposed project falls within any of the adopted fee plans in the County's unincorporated areas. Further information can be found on the following website: http://www.sbcounty.gov/dpw/transportation/transportation_planning.asp.

3.11 FAIR SHARE CONTRIBUTIONS

For improvements that are needed where the applicant is not solely responsible, a fair share computation should be computed and reported for each such mitigation. The fair share amount should be calculated using the following formula:

$$\text{Fair share} = \frac{\text{project trips}}{\text{project trips + future development trips}} \text{ X } 100\%$$

Trips noted above should correspond to the peak hour where the impact occurs for intersection assessment or daily trips for roadway segment impacts. If a project has impacts during both peak hours, then the analysis should identify the peak hour for fair share assessment that has the highest project burden for fair share contribution.

4. CEQA ASSESSMENT - VMT ANALYSIS

A key element of SB 743, signed in 2013, is the elimination of automobile delay and level of service as the sole basis of determining CEQA impacts. The most recent CEQA guidelines, released in December 2018, recommend VMT as the most appropriate measure of project transportation impacts. However, SB 743 does not prevent a city or county from continuing to analyze delay or LOS as part of other plans (i.e., the general plan), studies, or ongoing network monitoring.

The following recommendations assist in determining VMT impact thresholds and mitigation requirements for various land use projects' Transportation Impact Studies.

4.1 ANALYSIS METHODOLOGY

For purposes of SB 743 compliance, a VMT analysis should be conducted for land use projects as deemed necessary by the Traffic Division and would apply to projects that have the potential to increase the average VMT per person or employee. Normalizing to VMT per person/employee essentially provides a transportation efficiency metric that the analysis is based on. Using this efficiency metric allows the user to compare the project to the remainder of the unincorporated area for purposes of identifying transportation impacts.

Please note that SBCTA is leading a SB 743 Implementation Study which will further refine the methodology identified in this section and will create tools to assist in VMT screening. The analyst and County should monitor those efforts for applicability for VMT assessment for subsequent projects and update this section of the guidance accordingly as new information and tools become available for use in the County.

Projects which serve the local community and have the potential to reduce VMT should not be required to complete a VMT assessment. These projects are noted below:

- K-12 schools
- Local-serving retail less than 50,000 sq. ft.
- Local parks
- Day care centers
- Local serving gas stations
- Local serving banks
- Student housing projects
- Local serving community colleges that are consistent with the assumptions noted in the RTP/SCS

- Projects generating less than 110 daily vehicle trips[2]
    - This generally corresponds to the following "typical" development potentials:
        - 11 single family housing units
        - 16 multi-family, condominiums, or townhouse housing units
        - 10,000 sq. ft. of office
        - 15,000 sq. ft. of light industrial[3]
        - 63,000 sq. ft. of warehousing[3]
        - 79,000 sq. ft. of high cube transload and short-term storage warehouse[3]
        - 12 hotel rooms
- Projects located within a Transit Priority Area (TPA) as determined by the most recent SCAG RTP/SCS (map of HQTAs can be reviewed on SCAG's website currently located here and will further be refined through SBCTA's efforts: http://gisdata.scag.ca.gov/Pages/GISStaticMaps.aspx but should be verified by the analyst
- Projects located within a low VMT generating area as determined by the analyst (e.g. development in efficient areas of the County will reduce VMT per person/employee and is beneficial to the region)

For all remaining projects, VMT should be estimated by multiplying average trip length by the trip generation for the project. It is recommended that average trip length information be obtained for each trip purpose from the SBTAM model. We also recommend use trip generation rates from the SBTAM model. Using SBTAM to determine both trip generation and trip lengths allows the user to use an identical methodology when comparing project VMT per person/employee to the regional VMT per person/employee.

Consistent with the OPR guidelines, the following specific VMT components will be utilized to complete a VMT impact assessment:

- **Residential Projects** - VMT/Person for all home-based trips (productions)

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[2] This threshold ties directly to the OPR technical advisory and notes that CEQA provides a categorical exemption for existing facilities, including additions to existing structures of up to 10,000 square feet, so long as the project is in an area where public infrastructure is available to allow for maximum planned development and the project is not in an environmentally sensitive area. (CEQA Guidelines, § 15301, subd. (e)(2).) Typical project types for which trip generation increases relatively linearly with building footprint (i.e., general office building, single tenant office building, office park, and business park) generate or attract an additional 110-124 trips per 10,000 square feet. Therefore, absent substantial evidence otherwise, it is reasonable to conclude that the addition of 110 or fewer trips could be considered not to lead to a significant impact.

[3] Threshold may be higher depending on the tenant and the use of the site. This number was estimated using rates from ITE's Trip Generation Manual.

- **Employment Projects** – VMT/Employee for only the home-based-work trip purpose (attractions) and would apply to office, industrial, governmental, and institutional projects
- **Regional Retail** – VMT/(Employee + Visitors) for the Non-Home Based, Home-Based Work, and Home-Based Other *attraction* trips, which represent trips taken by both workers and visitors.
- **University (with on-campus housing)** – VMT/(Person + Employee + Student) for the Home-Based Work, Home-Based Other, and Non-Home Base trip purposes.
- **Mixed-Use:** Since a mixed-use project consists of the different project types listed above, the recommended analysis consists of Home-Based Work, Home-Based Other, and Non-Home Based.

The impact criteria, described later in this section, require the project to compare the VMT per person/employee to the VMT per person/employee for the unincorporated County. The VMT for the unincorporated County should also be derived from SBTAM for comparison and impact analysis purposes. The unincorporated County VMT per person/employee must be estimated consistent with the environmental baseline for the project; which typically is consistent with the notice of preparation released for the project or when technical studies are initiated. Since SBTAM base year land use and transportation network will likely not match the environmental baseline for the project, the user should use linear interpolation between the base year and future year model projection horizons to estimate VMT per person/employee for the region.

In addition to evaluating the project VMT per person/employee, the user must also evaluate the cumulative effects of the project on VMT. To complete this cumulative analysis, the user must compare the unincorporated VMT per person/employee with the project to the VMT per person/employee that would occur consistent with the RTP/SCS projections (if the project is already consistent with eh RTP/SCS, then no cumulative assessment would be required). If a project is not consistent with the RTP/SCS, then the user has two options of how to add the project to the model and extract VMT information:

- Add the proposed land uses to the travel demand model, complete a full model run, and determine if VMT per person/employee increases or decreases compared to the RTP/SCS assumptions; or
- Hold the regional land use control totals constant and determine where development would not occur if the proposed project were to occur. In this example, an economist could be utilized to provide this information, a land use allocation tool could be applied to provide this information, or the user can review future growth within a five to ten-mile

radius of the project and proportionately decrease development in those TAZs to match the level of development proposed by the project.

Finally, for projects that have the potential to increase congestion along major corridors, a network-based VMT assessment should be completed under the cumulative year (with and without the project) and countywide network VMT shall be evaluated to determine if increased congestion caused by the project displaces regional through trips that would increase VMT relative to the RTP/SCS. Total VMT can be used for this assessment (if the future land use is consistent between the no project and with project scenarios) or VMT per person/employee can be used for the assessment if the land use control totals are not consistent.

4.2 CEQA VMT IMPACT THRESHOLD AND MITIGATION

4.2.1 Project VMT Impacts

A project should be considered to have a significant impact if the project VMT per person/employee is greater than 4% below the existing VMT per person for the unincorporated County.

4% below existing was identified as an appropriate threshold through an exercise completed by Fehr & Peers as part of the General Plan process. The process focused on development in the growth areas of the County (where major development is expected to occur) and utilized the California Air Pollution Control Officers Association (CAPCOA) *Quantifying Greenhouse Gas Mitigation Measures* (August 2010) to estimate the maximum feasible VMT mitigation that could be achieved through TDM. The TDM effort identified that the ***maximum*** achievable TDM reduction associated with development in the identified growth areas would be just over 4% for both residential projects and for commute trips associated with employment uses. Utilizing the maximum achievable TDM reduction as the threshold provides an achievable threshold for County development to consider when processing applications.

Once a significant impact is identified, the project's VMT per person/employee should be mitigated to 4% below the baseline VMT per person. Mitigation should consist of Transportation Demand Management (TDM) measures analyzed under a VMT-reduction methodology consistent with Chapter 7 of the California Air Pollution Control Officers Association (CAPCOA) *Quantifying Greenhouse Gas Mitigation Measures* (August 2010) and approved by the Traffic Division and Land Use Services Department (if applicable); or the project description should be reviewed and modified to promote reduced VMT.

4.2.2 Cumulative VMT Impacts

Cumulative impacts should be evaluated for consistency with the adopted RTP/SCS. For example, if a project is included in the RTP/SCS, the project's cumulative impacts shall be less-than-significant. However, if the project is inconsistent with the adopted RTP/SCS, then the analysis should evaluate the project's effect on VMT and determine if the unincorporated Countywide VMT increases or decreases with the project relative to the VMT generated by the RTP/SCS. A significant impact would occur if the project increases the regional VMT per person/employee compared to the RTP/SCS assumptions.

4.2.3 VMT Mitigation Measures

To mitigate VMT impacts, the applicant can consider several factors noted below:

- Revisit project design features and or land use to reduce project trips or reduce trip length
- Consider development in a more efficient area
- Look for other measures to reduce trip lengths or the number of trips generated through the use of transportation demand management (TDM) measures

If a regional program is available to reduce VMT, a fair share payment toward that program would be deemed acceptable.

As part of the threshold setting exercise the following TDM measures were identified as feasible and should be considered for development in the County. However, the CAPCOA guidelines should be followed to quantify the VMT reduction associated with each considered measure (in addition to the land use TDM measures that are already accounted for in the travel demand forecasting):

- LUT-6 Integrate affordable and below market rate housing: 0.04% - 1.20%
  Amount of affordable housing would be project-specific
- LUT-9 Improve Design of Development: 3.0% - 21.3%
- SDT-1 Provide pedestrian network improvements
  Applicable for subdivisions connecting to other development, in areas identified for growth in the Countywide Plan, unincorporated Valley region areas, or unincorporated spheres of influence
- SDT-2 Provide Traffic Calming Measures: 0.25% - 1%
  Applicable for subdivisions connecting to other development, in areas identified for growth in the Countywide Plan, unincorporated Valley region areas, or unincorporated spheres of influence

- TRT-4 Implement Subsidized or Discounted Transit Passes: 0% - 16%
  Applicable to development within 1/2 mile of a transit system. As such, it would be applicable in the Valley region (but less applicable in other areas).
- TRT-6 Encourage Telecommuting and Alternative Work Schedules: 0.2% - 4.5%
  Applicable to the County as the County is and will continue to partner with internet providers to increase coverage within the County to facilitate this application.
- TRT-10 Implement a School Pool Program: 7.2% - 15.8% reduction in school VMT
  Applicable for large developments (approximately 300 households or more).

5. CEQA ASSESSMENT - ACTIVE TRANSPORTATION AND PUBLIC TRANSIT ANALYSIS

The California Environmental Quality Act (CEQA) Guidelines set the following criteria for assessing significant impacts to non-automotive facilities:

- A significant impact occurs if the project conflicts with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decreases the performance or safety of such facilities.

Therefore, the TIS should include analysis of a project to examine if it is inconsistent with adopted policies, plans, or programs regarding active transportation or public transit facilities, or otherwise decreases the performance or safety of such facilities.

6. TRANSPORTATION IMPACT STUDY FORMAT

The recommended TIS format is as follows:

1. Executive Summary
    a. Table summarizing significant impacts and mitigation measures
2. Introduction
    a. Purpose of the TIS and study objective
    b. Project location and vicinity map (Exhibit)
    c. Project size and description
    d. Existing and proposed land use and zoning
    e. Site plan and proposed project (Exhibit)
    f. Proposed project opening year and phase opening
3. Methodology and Impact Thresholds
4. Existing Condition
    a. Existing roadway network
    b. Existing traffic control and intersection geometrics (Exhibit)
    c. Existing traffic volumes – AM and PM peak hour and ADT (Exhibit)
    d. Existing level of service (LOS) at intersections (Table)
    e. Existing bicycle facilities (Exhibit)
    f. Existing transit facilities (Exhibit)
    g. Existing pedestrian facilities
5. Project Traffic
    a. Trip generation (Table)
    b. Trip distribution and assignment (Exhibit)
    c. Project peak hour turning movements and ADT (Exhibit)
6. Existing Plus Project Analysis (if required)
    a. Peak turning movement and ADT (Exhibit)
    b. Intersection level of service (Table)
    c. Roadway segment level of service (Table)
    d. Identification of intersection and roadway segment impacts
7. Background Conditions (Opening Year) Analysis
    a. No Project analysis
        i. Committed (funded) roadway improvements
        ii. Pending and approved project trip generation (Table, if required)
        iii. Pending and approved project trip assignment and distribution (Exhibit, if required)

iv. Opening Year peak turning movement and ADT (Exhibit)
v. Intersection level of service (Table)
vi. Roadway segment level of service (Table)

b. Plus Project analysis
i. Plus Project peak turning movement and ADT (Exhibit)
ii. Intersection level of service (Table)
iii. Roadway segment level of service (Table)
iv. Identification of intersection and roadway segment deficiencies

8. Cumulative Year Analysis
a. No Project analysis
i. Committed (funded) roadway improvements
ii. Pending and approved project trip generation (Table, if required)
iii. Pending and approved project trip assignment and distribution (Table, if required)
iv. Cumulative Year peak turning movement and ADT (Exhibit)
v. Intersection level of service (Table)
vi. Roadway segment level of service (Table)

b. Plus Project Analysis
i. Plus Project peak turning movement and ADT (Exhibit)
ii. Intersection level of service (Table)
iii. Roadway segment level of service (Table)
iv. Identification of intersection and roadway segment deficiencies

9. Traffic Signal Warrant Analysis
10. Site Access Analysis
11. Safety and Operation Improvement Analysis
12. Active Transportation and Public Transit Analysis
13. Improvements and Recommendations
a. Proposed improvements at impacted intersections
b. Proposed improvements at impacted roadway segments
c. Recommended Improvements categorized by whether they are included in fee plan or not. (Identify if these improvements are included in an adopted fee program)
14. Vehicle Miles Traveled (VMT) Analysis
a. Project VMT per person/employee
b. Project effect on VMT
c. Identification of VMT impacts
d. Proposed VMT Mitigation Measures

15. Appendix
    a. Approved scope of work
    b. Traffic counts
    c. Intersection analysis worksheets
    d. VMT and TDM mitigation calculations
    e. Signal warrant worksheets

Appendix B - Omni-Means Love's Trip Generation and Travel Characteristics (June 2018) Study

FINAL Technical Paper:

Love's Trip Generation and Travel Characteristic Study

Prepared for:

Love's Travel Stops & Country Stores

Prepared by:

omni · means
A GHD Company

GHD

Love's Trip Generation and Travel Characteristics Study

Prepared for:
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June 2018

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Driveway Counts (Metro Traffic Data, Inc.)
Diverted Link Trip Lengths (Lane Engineers, Inc.)

Introduction

Transportation planning and traffic engineering rely on trip generation analysis to estimate the number of vehicle trips that will be generated from a proposed development. Planners and engineers can then analyze a project's impact on traffic congestion and air quality, particularly in California. However, existing methods utilized to determine actual traffic impacts at truck stops are not consistent with current conditions occurring at these multi-purpose facilities.

With past limited and applicable trip generation data, studies available for truck stops do not include the array of services provided in modern travel stops. Traffic consultants and others have turned to combining available trip generation studies, largely available from the Institute of Transportation Engineers (ITE), to estimate proposed truck stop trip generation to identify potential traffic impacts and vehicle miles travelled (VMT[1]) based upon trip generation.

These often include many assumptions to account for pass-by trips, diverted-link trips and internal capture rates to develop reasonable trip generation. This approach can potentially over-predict trip generation as there are many multi-purpose benefits from this land use, including:

- Fuel sales;
- Retail purchases;
- Restaurants (fast-food and sit-down);
- Restrooms;
- Rest areas;
- Parking;
- Scales;
- Tire care center;
- Laundry facilities;
- ATMs; and,
- Other truck stop uses dependent upon region.

Due do the uncertainty of industry standard assumptions, local and state reviewing agencies often scrutinize these assumptions as a result of limited documentation. When assumed discounts need to be applied to trip generation rates for stand-alone commercial uses, it is difficult to determine actual trip generation rates of these land uses.

Additionally, it is difficult to provide a generic truck stop description as a result of the commercial uses that can be assembled in any given truck stop. In an effort to collect additional data and further research trip generation characteristics of Love's Travel Stops & Country Store sites in California, data for several additional sites in the same retail chain were collected in different geographical areas of the state and the design of the in-field survey questionnaire was in draft form.

[1] VMT is calculated by multiplying daily traffic on a roadway segment by the length of the segment.

With the potential for such over prediction of trip generation from truck stops, the ramifications are potentially significant. Therefore, the need for accurate, representative and transportation industry recognized trip generation rates and travel characterizations is imperative.

VMT is a critical component of this study. With passage of SB 743 in California, a new process changes the way that transportation impacts are analyzed under the California Environmental Quality Act (CEQA). Specifically, SB 743 requires the Office of Planning & Research (OPR) to amend the CEQA Guidelines to provide an alternative to level of service (LOS) for evaluating transportation impacts. Specifically, assessment of VMT, thresholds of significance and mitigation measures will be used to address transportation impacts. In summary, it was determined by the legislature that VMT is the most appropriate measure for transportation impacts.

This Technical Paper provides data to assist in documentation of actual VMT based upon diverted link distance between the origin and destination of the trip end. Today, VMT is calculated based on land use or use of technical travel demand forecast models; however, based upon the results of this study, VMT should only be calculated based upon diverted trip distance rather than overall trip potential, thereby providing a more accurate representation of VMT. This calculation is further discussed in the Conclusions & Recommendations section of this Technical Paper.

As a result, Love's Travel Stops and Country Stores has embarked on an undertaking to determine actual trip generation characteristics at six (6) locations throughout California. Therefore, the objective of this research study related to trip generation characteristics of Love's Travel Stops in California with the intention to determine if trip generation characteristics of these facilities differs from those contained in the *Institute of Transportation Engineers (ITE) Trip Generation, 10th Edition.* Importance with following ITE's established guidelines of conducting information report study are provided below.

ITE Guidance

Per ITE standard guidelines, an ITE information report study should include the following components:

- Phase 1 – Design Industry Recognized (ITE) Trip Generation and Travel Characterization Methodology;
- Phase 2 – Conduct In-Field Surveys Consistent with the Prescribed Methodology Developed in Phase 1;
- Phase 3 – Prepare a Technical Paper on the Analysis of In-Field Surveys, Summarizing Findings, Conclusions & Recommendations; and,
- Phase 4 – Publish the Research Study and Share at Industry Conferences *(To Be Determined)*.

As a result, the following sections were prepared.

Phase 1 - Design Industry Recognized Trip Generation and Travel Characterization Methodology

Current Methodology

Today's standard practices used to develop trip generation rates for truck stops is derived from the *Trip Generation Manual*, published by ITE. Many versions have been published with the most

recent being the *10th Edition*. ITE Land Use 950: Truck Stop description is as follows:

> *A truck stop facility is a facility located on or near major roadways and provides refueling, food, and other services to motorists and truck drivers. These facilities typically contain convenience stores, showers, restaurants and on-site truck parking spaces. Gasoline/service station (Land Use 944) and gasoline/service station with convenience market (Land Use 945) are related uses.*

Trip generation rates for this Land Use 950 were developed from eight studies surveyed in the 2000s and 2010s in Colorado, Florida, Tennessee, Vermont and Virginia. Trip generation rates were calculated for 1,000 sq. ft. gross floor area on a weekday with peak hour of adjacent street traffic, one hour between 4:00 and 6:00 p.m. However, this data does not include all of the amenities of modern travel stops (discussed below) and certain attributes of the data collected for Land Use 950, e.g., vehicle fueling positions, contain a small sample size. As a result, transportation professionals have sought solutions outside of solely utilizing Land Use 950.

Alternatives include development of trip generation from other land uses provided in the ITE Manual, specifically Land Uses 853, 944 and 945. Table 1 summarizes *ITE Trip Generation (10th Edition)* Land Uses 853, 944, 945 and 950 and provides a brief description of the primary activity of business and weekday trip generation average rates per vehicle fueling position and per 1,000 square feet of floor area. Table 1 further identifies average trip generation rate by time of day for peak hour of adjacent street, i.e., AM peak hour of generator (between 7:00 to 9:00 a.m.) and PM peak hour of generator (between 4:00 and 6:00 p.m.). The average weekday trip rate (the weighted average of the number of vehicle trips or trip ends per unit of independent variable) is shown in Table 1.

TABLE 1
ITE TRIP GENERATION, 10TH EDITION, VOLUME 3

			Weekday Trip Generation Average Rates			
			Trips per Vehicle Fueling Position		Trips per 1,000 Sq. Ft. Gross Floor Area	
Land Use Title	ITE Land Use Code	Primary Business Activity	AM Peak Hour of Adj. Street	PM Peak Hour of Adj. Street	AM Peak Hour of Adj. Street	PM Peak Hour of Adj. Street
Convenience Market w/ Gasoline Pumps	853	Selling of Convenience Items	16.57	19.07	40.92	50.92
Gasoline Service Station	944	Fueling of Motor Vehicles	12.16	13.87	N/A	N/A
Gasoline Service Station w/ Convenience Market	945	Fueling of Motor Vehicles	10.16	13.51	82.13	97.47
Truck Stop	950	Refueling, Food and Other Services	7.18[1]	8.41[1]	26.49	22.73

Table 1 demonstrates a noticeable difference between trip generation rates of Land Use Code (LUC) 853, where the primary business activity is selling convenience items, and LUCs 944 and 945, where fuel sales are the primary business activity. LUC 950, which provides fuel sales, food and other services, also demonstrates differences in trip generation rates [with its minor sample size]. Based upon data provided in *ITE Trip Generation*, LUC 853 generates more trips per vehicle fueling position (VFP) during both AM and PM peak periods, but much fewer trips than LUC 945 per gross floor area (GFA). LUC 950 has the lowest trip generation rates per GFA.

[1] *Small sample size (1 survey)*

These observations show that the independent variable associated with the primary business activity VFP and GFA play an important role in determining the trip generation rate. Table 1 also demonstrates that PM peak hour rates generate more traffic than the AM peak hour rate based upon adjacent street demand.

The physical type of fast food restaurant is also a factor in user (customer) choice. Drive-thru vs. walk-up or sit down establishments attract different types of clientele. Some travel stops provide either both or have one or the other [with or without drive-thru]. Additionally, the brand name of restaurant is critical to on-site sales based upon discussions with regional managers. Regional influences for popular restaurants, be they fast food or sit down, vary for any given truck stop. As a result, this variable may constitute development of a special trip generation rate, e.g., convenience market with fast food restaurant (with and without drive-thru) and with gasoline pumps.

Following use of these common high trip generating land uses, it is shared practice to apply trip reductions for pass-by trips, diverted-link trips, internal capture rates and other trip reduction strategies identified in the ITE *Trip Generation Handbook*. As a result, additional variables and assumptions (trip reduction rates) are applied to the LUC, thus creating differing trip generation rates at varying locations and jurisdictions.

However, these land uses are not compatible to specific modern travel stops developed in recent years. For example, the land uses identified above [944, 945 & 950] do not encompass the variety of services provided at the modern Love's Travel Stops & Country Stores.

The description of a Love's Travel Stops & Country Stores is as follows:

> *Truck stop and travel center facilities that provide professional truck drivers and motorists with 24-hour access to purchase gasoline, diesel fuel, CNG, travel items, electronics, snacks, light grocery items and more, as well as a wide variety of restaurant (both drive-through and walk up) offerings. ATMs, CAT scales, truck parking, private showers, laundry services, RV dump service, WiFi and other amenities are also offered at select locations. Love's Truck Tire Care offers heavy duty tire care, including TirePass, light mechanical services and roadside assistance. Love's Hospitality offers hotels and storage rental locations.*

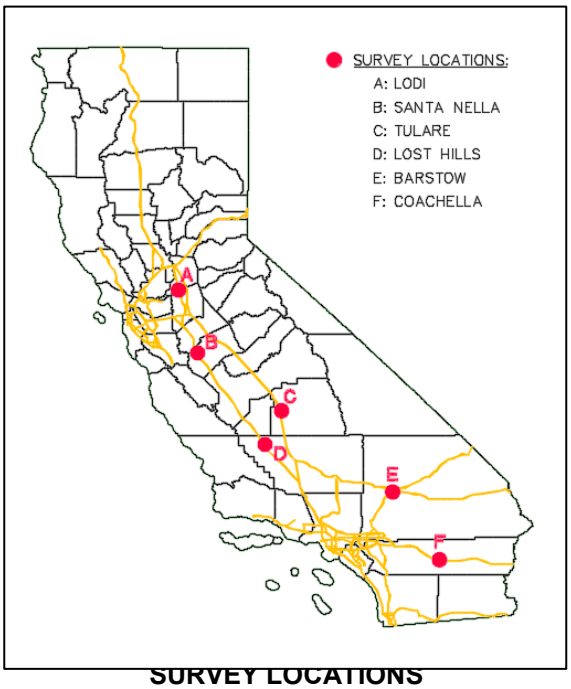
As described above, today's modern travel stops and/or travel centers offer many more services for the travelling public and professional truck drivers that use major road facilities (freeways, highways, etc.). The intention of Love's Travel Stops & Country Stores is to facilitate drivers that are on the roadway system and need to stop for services. As such, the trips that use a Love's facility are not intended to be primary trips. With the exception of home-work trips for employees, the trip types are generally pass-by or diverted-link.

The above land use description suggests that the Love's Travel Stops & Country Store sites have different trip generation characteristics from the study sites included in ITE LUCs 853, 944, 945 and 950, and may need to be classified under a new land use code in *Trip Generation*, or combined with one or more land use types to reflect today's modern travel stops as designed by Love's. In general, the trend of modern travel stops may not be just a characteristic of future Love's, but could be applicable to future modern truck stops proposed by others.

Phase 2 – Data Collection

Survey Sites

The survey sites included in this study were chosen in varying geographic regions in the State of California. Six (6) Love's Travel Stops & Country Stores were selected of nine (9) total locations serving California. Figure 1 below identifies the Love's Travel Stops in their geographic area. Table 2 describes existing sites configurations, including square footage, fueling positions (auto/truck), primary restaurant, tire shop facility and highways/cross streets. Additionally, Figure 2 identifies each Love's Travel Stops study locations (Google aerial image), adjacent street and project driveway operations (access points) that were evaluated.



SURVEY LOCATIONS

In order to determine the days and times of the in-person travel survey, it was first necessary to define peak periods of usage at the individual locations. Therefore, weekday daily traffic counts were conducted along the primary street/road accessing the Love's facility to understand adjacent street traffic in relation to driveway volumes.

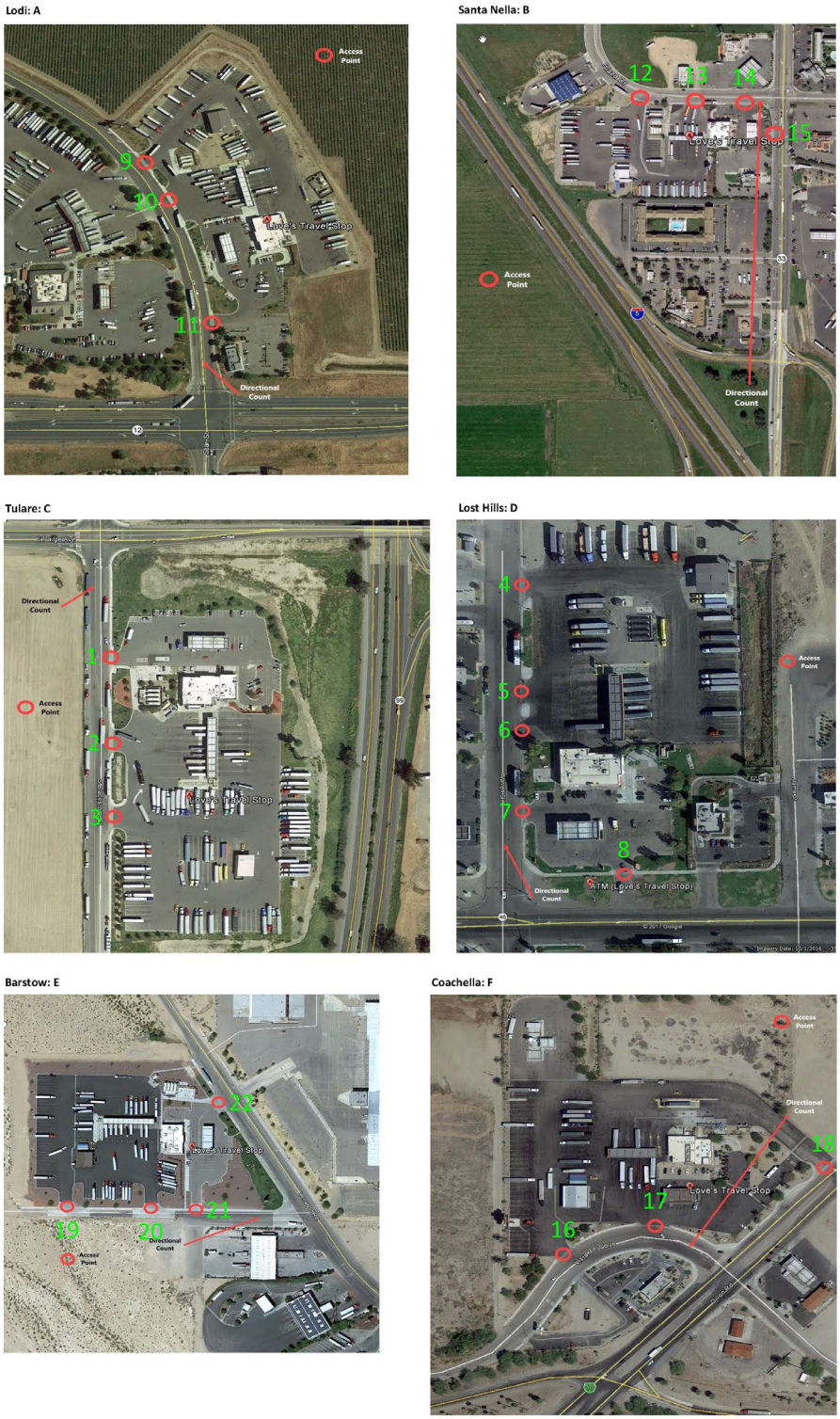
Based upon the peak day and time period of the daily traffic counts, peak period driveway volumes (recorded on video) were observed and documented. Additionally, the peak period times were selected to conduct in-person travel surveys the following week, which generally occurred in the early afternoon. This provided a reasonable time period to collect necessary data.

TABLE 2
LOVE'S TRAVEL STOPS FEATURES

	Love's Locations (CA)	Store #	Approximate Building Size	Auto Fueling Positions	Truck Fueling Positions	Restaurant	Tire Care	Adjacent Highway	Intersecting Local Road
A	**Lodi**	538	10,500 SF	16	8	Arby's	Yes	I-5	SR-12
B	**Santa Nella**	441	9,900 SF	12	8	Del Taco	Yes	I-5	SR-33
C	**Tulare**	382	10,400 SF	16	9	McDonald's, Subway	Yes	SR-99	Paige Avenue
D	**Lost Hills**	230	7,900 SF	12	7	Arby's	Yes	I-5	SR-46
E	**Barstow**	374	9,400 SF	16	10	Chester's, Godfathers, Love's Subs (no drive-thru's)	Yes	I-15	Lenwood Road
F	**Coachella**	207	7,300 SF	12	6	Carl's Jr.	Yes	I-10	Dillon Road

Notes: SF = Sq. Ft.

FIGURE 2: LOVE'S TRAVEL STOPS GOOGLE AERIAL PHOTO SURVEY LOCATIONS



Under this phase, Omni-Means/GHD and Project Team, consisting of Love's representatives and Lane Engineers, Inc., developed the in-field survey questionnaires.

In-Field Survey Questionnaires

Under this task the Project Team, with collaboration with Metro Traffic Data, Inc., prepared a list of questions and coordinated to schedule in-person surveys. The survey was modified as necessary based upon correspondence with the Project Team. A site visit was conducted by Omni-Means/GHD and Lane Engineers, Inc., to document in-field survey techniques and finalize in-person survey questions. The following is the final list of questions for the in-field survey:

Survey Questionnaire

1. ***Where did you begin your trip?***
2. ***Where will you end your trip?***
3. ***Are you a trucker or an auto costumer?***
4. ***Is this your only stop on your trip today?***
5. ***Did you exit the freeway to get to Love's Travel Stop?***
6. ***What are the PRIMARY and SECONDARY purpose(s) for stopping at Love's Travel Stop? (Two Part Question)***
    a. ***Gasoline or Diesel***
    b. ***Convenience Store***
    c. ***Restaurant***
    d. ***Restroom***
    e. ***Tire Care Center (Truckers Only)***
    f. ***Other***
7. ***If you did not stop here, would you have stopped at another nearby location on your trip for purposes identified in Questions #6.***
8. ***What do you like best about Love's Travel Stop***
    a. ***Fuel Prices***
    b. ***Food***
    c. ***Ease of Access***
    d. ***Variety of Services/Convenience***
    e. ***My Love Rewards***



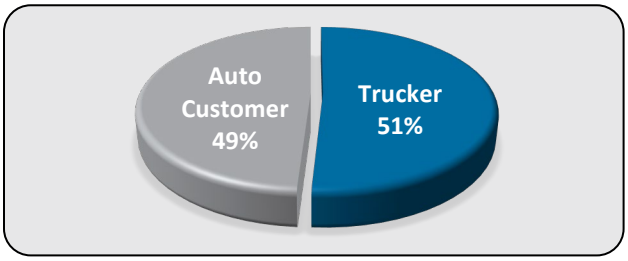
An advantage to in-field surveys is that the research produces data based on real-world observations (empirical data). In order to substantiate the data collected the sample size was a factor that the Project Team focused on. Therefore, a minimum of 100 samples were collected at each site. As an incentive to the patrons participating in the in-field survey, the Project Team offered a $5 Love's Travel Stop gift card. As the number of sample size validates the in-field survey, the time that the in-field survey is completed is also is a factor. In terms of capturing the peak operations of the facility, the surveys were generally conducted during the peak hour of driveway operations.



Photo taken at the Love's Truck Stop (Tulare location).

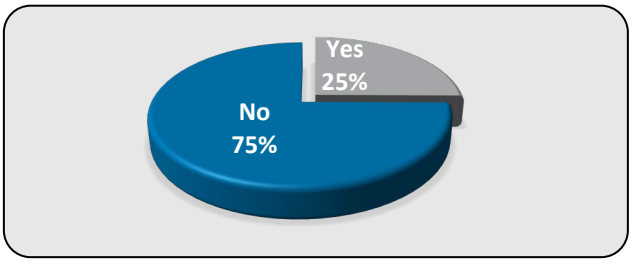
A summary of the results of the survey questions (3-8) for the six (6) sites are illustrated in the following pie charts along with the total number of participants:

3. Are you a trucker or an auto customer?



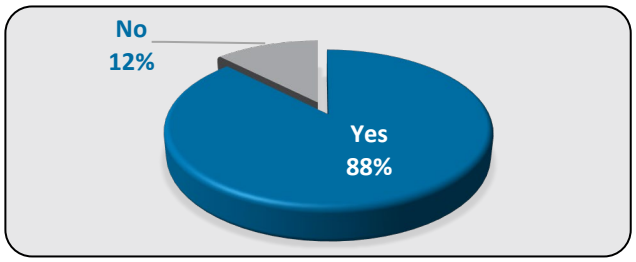
Trucker	*337*	*51%*
Auto Customer	*323*	*49%*
Total	***660***	***100%***

4. Is this your only stop on this trip today?



Yes	*166*	*25%*
No	*494*	*75%*
Total	***660***	***100%***

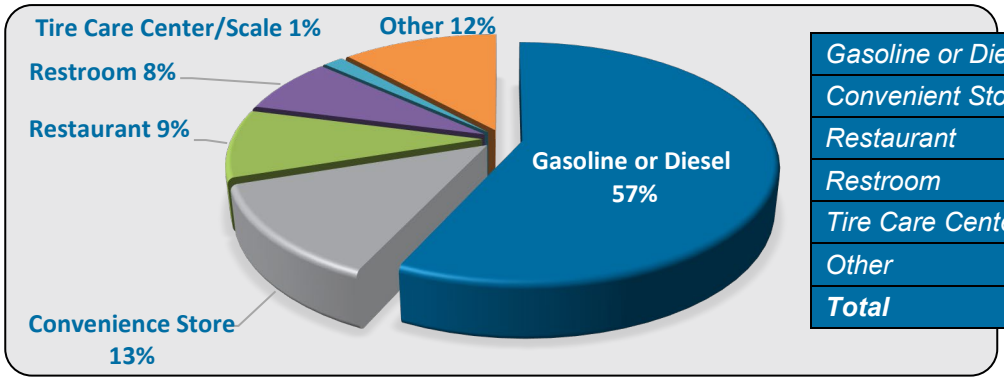
5. Did you exit the freeway to get to Love's Travel Stop?



Yes	*578*	*88%*
No	*82*	*12%*
Total	***660***	***100%***

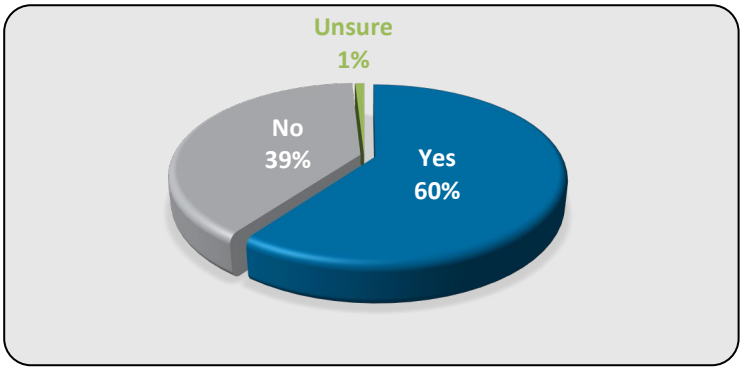
6. What are the Primary and Secondary purpose(s) for stopping at Love's Travel Stop?

a. *Gasoline or Diesel*
b. *Convenient Store*
c. *Restaurant*
d. *Restroom*
e. *Tire Care Center*
f. *Other*



Gasoline or Diesel	*376*	*57%*
Convenient Store	*85*	*13%*
Restaurant	*61*	*9%*
Restroom	*50*	*8%*
Tire Care Center/Scale	*10*	*2%*
Other	*78*	*12%*
Total	***660***	***100%***

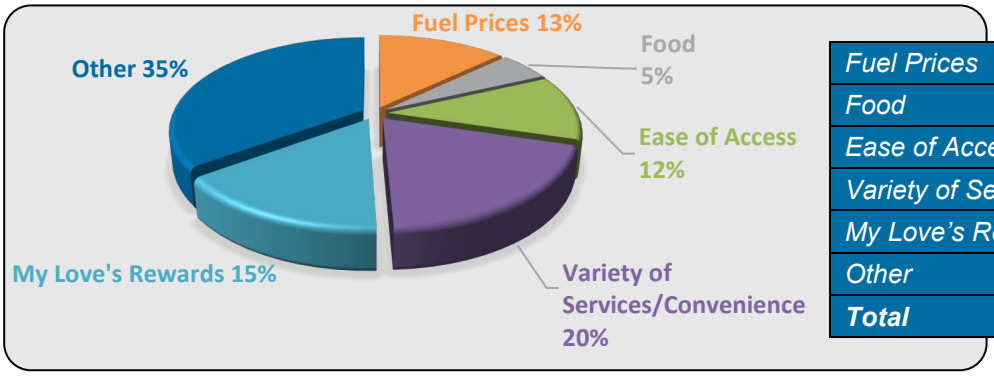
7. If you did not stop here, would you have stopped at another nearby location on your trip for purposes identified in Question #6?



Yes	*394*	*60%*
No	*256*	*39%*
Unsure	*6*	*1%*
Total	***656***	***100%***

8. What do you like best about Love's Travel Stops?

a. Fuel Prices
b. Food
c. Ease of Access
d. Variety of Services
e. My Love's Rewards
f. Other



Fuel Prices	*82*	*13%*
Food	*33*	*5%*
Ease of Access	*74*	*12%*
Variety of Services	*125*	*20%*
My Love's Rewards	*99*	*15%*
Other	*223*	*35%*
Total	***636***	***100%***

The in-field survey data collected at the six (6) Love's Travel Stops & Country Stores revealed that the majority of patrons are truckers (51%). Additionally, the primary business of Love's Travel Stops & Country Stores to be linked to truck drivers that utilize the vehicle fueling services. This is further validated by participant's answers to Question #6 that demonstrates 57% of respondents stated gasoline or diesel is the primary reason for stopping at Love's Truck Stop & Country Stores. These responses further reinforce that refueling is the primary purpose of the stop along the survey participant's route.

A key finding that resulted from the in-person survey was revealed in Question #5: Did you exit the freeway to get to the Love's Travel Stop? The overwhelming percentage (88% of participants) indicated that they exited the freeway to get to the Love's Travel Stop. This can be interpreted that these trip types [coming off of the freeway] are diverted link trips. When calculating VMT for this type of use, the diverted trip length from freeway exit to destination to freeway entrance can be summed per trip to derive VMT for 88% of the all vehicles.

Daily Traffic Volumes

Based upon the daily traffic counts collected by Metro Traffic Data, Inc., Omni-Means/GHD assessed adjacent street traffic volumes at the six (6) study sites. Daily counts were collected for a 3-day period beginning on Tuesday, November 7, 2017, thru Thursday, November 9, 2017. Daily and peak period of adjacent street peak hour are important components of trip generation analysis when comparing to peak hour of generator (i.e., project site traffic).

Table 3 below summarizes the 24-hour count for each of the six (6) study sites. This table identifies the average daily traffic (ADT) and AM/PM Peak period of the adjacent street. Proximity to nearest adjoining highway is a contributing factor for the daily and peak hour volume totals along the adjacent street corridor.

TABLE 3
LOVE'S TRAVEL STOPS DAILY TRAFFIC VOLUME AND PEAK HOURS

	Tulare		Lost Hills		Lodi		Santa Nella		Coachella		Barstow	
ADT Tues. (11/9/17)	7,580		3,592		11,190		3,624		4,687		2,605	
AM Peak	449	11:00-12:00	211	9:30-10:30	698	10:00-11:00	214	8:15-9:15	262	9:00-10:00	155	6:00-7:00
PM Peak	459	12:00-1:00	229	3:30-4:30	723	3:00-4:00	270	1:30-2:30	325	1:15-2:15	155	12:00-1:00
ADT Wed. (11/10/17)	7,361		3,355		10,879		3,537		4,812		2,601	
AM Peak	481	6:45-7:45	173	6:30-7:30	687	11:00-12:00	192	7:30-8:30	277	10:30-11:30	156	9:00-10:00
PM Peak	489	12:00-1:00	226	4:30-5:30	686	3:00-4:00	238	1:45-2:45	348	12:30-1:30	148	1:00-2:00
ADT Thurs. (11/11/17)	7,847		4,065		11,365		4,076		5,305		2,696	
AM Peak	469	7:15-8:15	201	8:30-9:30	695	11:00-12:00	236	11:00-12:00	329	9:45-10:45	149	6:00-7:00
PM Peak	489	12:15-1:15	242	4:15-5:15	735	12:00-1:00	262	4:15-5:15	335	12:45-1:45	172	3:45-4:45
ADT Total	**22,788**		**11,012**		**33,434**		**11,237**		**14,804**		**7,902**	
ADT Average	**7,596**		**3,671**		**11,145**		**3,746**		**4,935**		**2,634**	

As shown in Table 3, adjacent street average traffic volumes vary substantially, i.e., they range from approximately 2,600 to 11,150, depending upon geographic location of the site. In addition, the traffic generated at each project site have is a range of other attributes, including proximity of a state, interstate highway facility, or major arterial street; traffic volumes of highway facility; location of nearest competitor; on-site service provided; etc.

Table 4 shows daily traffic volumes and peak hours at the nearest adjoining street or street segment that provide direct access to the Love's Travel Stop. Traffic data at these locations represent a 3-day average (Tuesday thru Thursday) along the local street. Additionally, Table 4 shows daily traffic volumes of nearest adjoining highway volumes (per Caltrans 2016), including a breakdown between vehicle and truck ADT and percentage trucks.

TABLE 4
LOVE'S TRAVEL STOPS DAILY TRAFFIC VOLUMES AND PEAK HOURS

	Nearest Adjoining Street/Street Segment				Nearest Adjoining Highway Volumes (per Caltrans 2016)				
	Love's Location	Street	Segment	3-Day ADT Average*	Adjoining Major Highway	Intersecting Local Road	Vehicle ADT	Truck ADT	Truck %
A	**Lodi**	Thornton Road	North of SR12	11,145	I-5	SR-12	58,100	11,879	20.5
B	**Santa Nella**	Plaza Drive	West of Santa Nella Blvd	3,746	I-5	SR-33	29,100	8,780	30.2
C	**Tulare**	Blackstone Street	South of Paige Avenue	7,596	SR-99	Paige Avenue	57,000	13,678	24.0
D	**Lost Hills**	Warren Street	North of SR 46	3,671	I-5	SR-46	40,500	10,530	26.0
E	**Barstow**	High Desert Road	West of Lenwood Road	2,634	I-15	Lenwood Road	58,000	13,869	23.9
F	**Coachella**	Vista Del Norte	West of Dillon Road	4,935	I-10	Dillon Road	27,000	8,588	35.5

* *3-Day ADT Average from Table 3*

Project Traffic Volumes

As a result of video data collection efforts, Omni-Means/GHD evaluated project driveway operations in terms peak periods and traffic volumes. Typical AM (7:00 to 9:00 AM) and PM (4:00 to 6:00 PM) peak hour driveway traffic volumes were extracted from video data. The data was further delineated between passenger cars (P) and trucks (T) at each study site and summarized for the 6 study sites. Because all Love's Travel Stops have multiple driveways, the driveway #s were also identified, as previously shown in Figure 2. Table 5 summarizes daily, AM and PM driveway trips at each location and summarizes the results cumulatively.

TABLE 5
LOVE'S TRAVEL STOPS DAILY DRIVEWAY OPERATIONS VOLUMES AND PEAK HOURS

Location	Driveway (#)	Daily Trips				AM Peak Hour (7:00 - 9:00 AM)				PM Peak Hour (4:00 - 6:00 PM)			
		Ins (P)	Ins (T)	Outs (P)	Outs (T)	Ins (P)	Ins (T)	Outs (P)	Outs (T)	Ins (P)	Ins (T)	Outs (P)	Outs (T)
Tulare	1	1,917	87	1,936	99	106	7	102	10	115	2	121	2
	2	44	1,149	17	83	3	54	1	3	2	63	1	3
	3	40	208	63	1,269	5	15	5	70	2	14	4	63
Subtotal		*2,001*	*1,443*	*2,016*	*1,451*	*114*	*77*	*109*	*83*	*119*	*80*	*126*	*68*
Lost Hills	4	15	820	7	182	0	42	0	12	2	45	1	7
	5	3	26	14	420	0	1	1	20	0	1	1	20
	6	17	52	11	295	2	2	1	14	1	3	1	15
	7	174	11	720	31	8	0	31	0	10	0	42	1
	8	845	27	299	13	34	1	8	1	46	0	19	0
Subtotal		*1,055*	*936*	*1,051*	*941*	*45*	*47*	*40*	*47*	*58*	*50*	*64*	*44*
Lodi	9	24	171	35	952	0	6	1	52	0	8	3	38
	10	305	853	247	77	12	45	12	2	22	35	20	7
	11	1,340	41	1,397	45	65	5	63	3	91	3	99	3
Subtotal		*1,669*	*1,066*	*1,679*	*1,074*	*77*	*56*	*77*	*57*	*113*	*46*	*122*	*48*
Santa	12	14	254	19	988	1	16	2	54	1	17	1	45
Nella	13	12	744	8	17	0	38	0	0	0	40	0	0
	14	397	26	145	11	19	3	5	0	28	2	11	1
	15	111	4	390	24	8	0	19	1	4	0	27	1
Subtotal		*534*	*1,028*	*562*	*1,041*	*28*	*56*	*26*	*56*	*33*	*58*	*39*	*47*
Coachella	16	18	209	16	440	0	8	1	35	1	11	0	21
	17	900	70	919	903	47	4	44	38	55	4	64	38
	18	21	1,128	12	57	1	52	1	1	1	52	1	5
Subtotal		*939*	*1,406*	*946*	*1,401*	*48*	*64*	*45*	*74*	*57*	*67*	*66*	*65*
Barstow	19	7	27	25	1,036	0	1	1	52	1	3	3	52
	20	24	1,010	10	61	1	50	1	2	0	57	1	2
	21	88	14	168	21	4	1	9	1	6	2	12	3
	22	645	30	569	22	37	2	28	2	46	1	43	1
Subtotal		*764*	*1,081*	*772*	*1,141*	*42*	*55*	*38*	*57*	*54*	*63*	*58*	*58*
TOTAL (AVG.)		***6,962***	***6,961***	***7,026***	***7,048***	***355***	***354***	***335***	***374***	***433***	***364***	***475***	***329***

(P) = Passenger; (T) = Trucks

Table 5 demonstrates that although passenger vehicles and trucks vary by specific location, overall (when summarizing the 6 data sets), there is a fairly even split between the vehicle types, i.e., cars vs. trucks. This is very similar to Travel Survey Response #3 [*Are you a trucker or an auto customer?*], where 51% of the respondents said they were truck customers and 49% of the respondents said that they were automobile customers.

Phase 3 – Summary, Conclusions and Recommendations

Trip Generation Rates Summary

Based upon the data collected in Phase 2, trip generation rates were developed for each location and cumulatively for all 6 locations. The trip generation rates were calculated for typical weekday conditions only. Data was not collected during the weekend. However, trip generation rates were calculated for vehicle fueling positions (VFP) and per gross floor area (GFA) per 1,000 sq. ft. of building area. Daily, AM and PM trip rates and percentages (ins and outs) are shown for each category.

Vehicle Fueling Positions

Table 6 identifies number of vehicle fueling positions (VFP), trips, rate, and in and out percentage for daily, AM and PM periods at each of the sites. The last row of Table 6 shows the cumulative average of the VFP daily and peak hour rates. Additionally, Figures 3 – 5 show the cumulative average vehicle trip generation for VFP under Weekday, AM and PM conditions, respectively.

TABLE 6
LOVE'S TRAVEL STOPS VFP DAILY AND PEAK HOURS RATES

	Unit	Daily Trips/Rate		AM Peak Hour Trips/Rates						PM Peak Hour Trips/Rates					
Location	VFP	Daily Trips	VFP Rate	AM Peak Hour Trips	AM Rate	AM Peak Hour (Trips In)	AM Peak Hour (Trips Out)	In (%)	Out (%)	PM Peak Hour Trips	PM Rate	PM Peak Hour (Trips In)	PM Peak Hour (Trips Out)	In (%)	Out (%)
Tulare	25	6,911	276.43	383	15.31	191	192	0.50	0.50	393	15.72	199	194	0.51	0.49
Lost Hills	19	3,982	209.60	179	9.42	92	87	0.51	0.49	216	11.39	108	108	0.50	0.50
Lodi	24	5,488	228.67	267	11.11	133	134	0.50	0.50	328	13.68	159	169	0.48	0.52
Santa Nella	20	3,165	158.27	167	8.35	85	82	0.51	0.49	177	8.85	91	86	0.52	0.48
Coachella	18	4,692	260.69	231	12.85	112	119	0.48	0.52	254	14.09	123	130	0.49	0.51
Barstow	26	3,758	144.55	191	7.36	97	95	0.51	0.49	233	8.97	117	117	0.50	0.50
Average	**22**	**4,666**	**213.03**	**236**	**10.73**	**118**	**118**	**0.50**	**0.50**	**267**	**12.12**	**133**	**134**	**0.50**	**0.50**

VFP = Vehicle Fueling Positions (number of pumps)

FIGURE 3: LOVE'S TRAVEL STOPS TRIP GENERATION RATES PER VFP (WEEKDAY)

Love's Travel Stop

Vehicle Trip Ends vs:	**Vehicle Fueling Positions**
On a:	**Weekday**
Setting/Location:	**General Urban/Suburban**
Number of Studies:	6
Avg. Num. of Vehicle Fueling Positions:	22
Directional Distribution:	50% entering, 50% exiting

Vehicle Trip Generation per Vehicle Fueling Position

Average Rate	Range of Rates	Standard Deviation
213.03	144.55 - 273.43	3.41

Data Plot and Equation

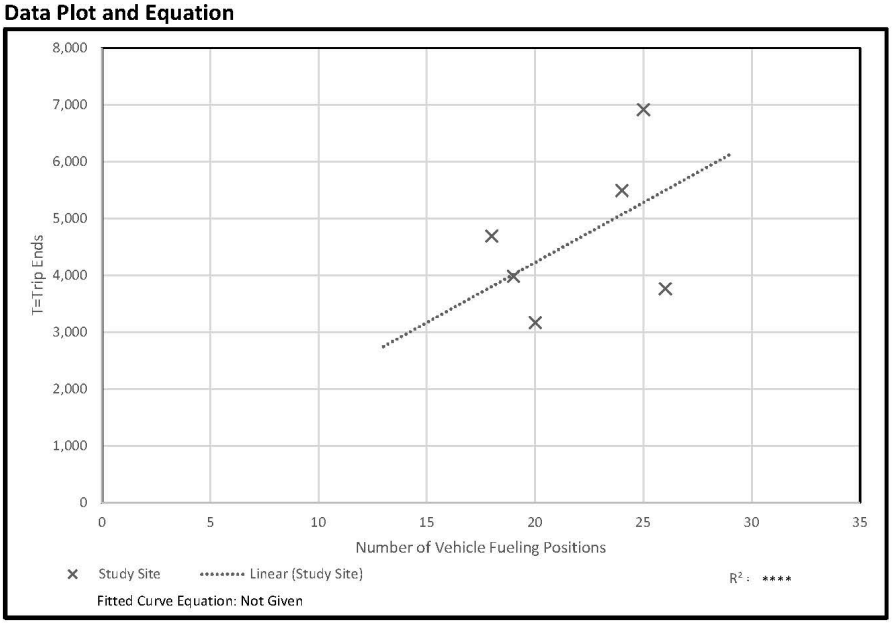


FIGURE 4: LOVE'S TRAVEL STOPS TRIP GENERATION RATES PER VFP (AM PEAK)

Love's Travel Stop

Vehicle Trip Ends vs:	**Vehicle Fueling Positions**
On a:	**Weekday,**
	AM Peak Hour of Generator
Setting/Location:	**General Urban/Suburban**
Number of Studies:	6
Avg. Num. of Vehicle Fueling Positions:	22
Directional Distribution:	50% entering, 50% exiting

Vehicle Trip Generation per Vehicle Fueling Position

Average Rate	Range of Rates	Standard Deviation
10.73	7.36 - 15.31	3.41

Data Plot and Equation

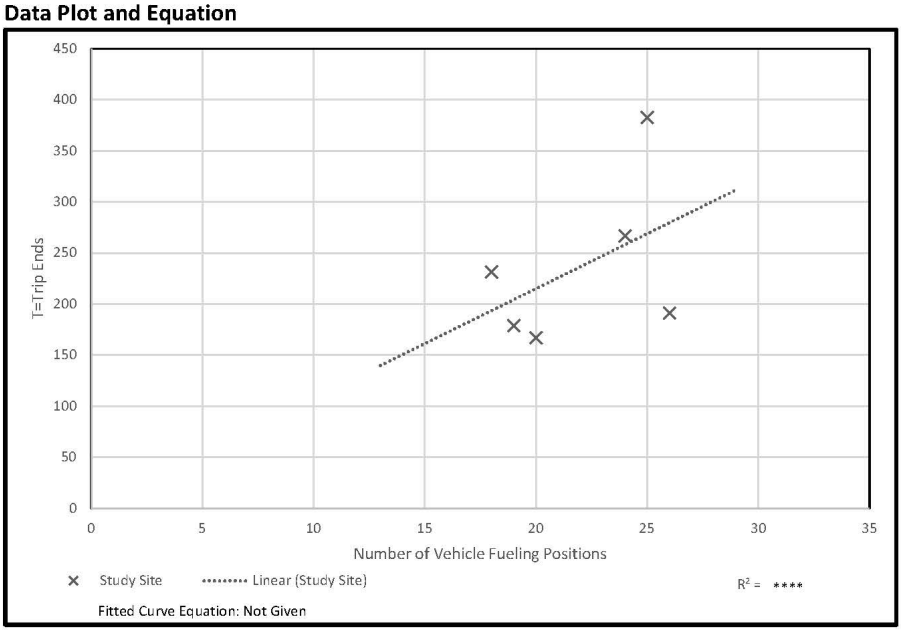


FIGURE 5: LOVE'S TRAVEL STOPS TRIP GENERATION RATES PER VFP (PM PEAK)

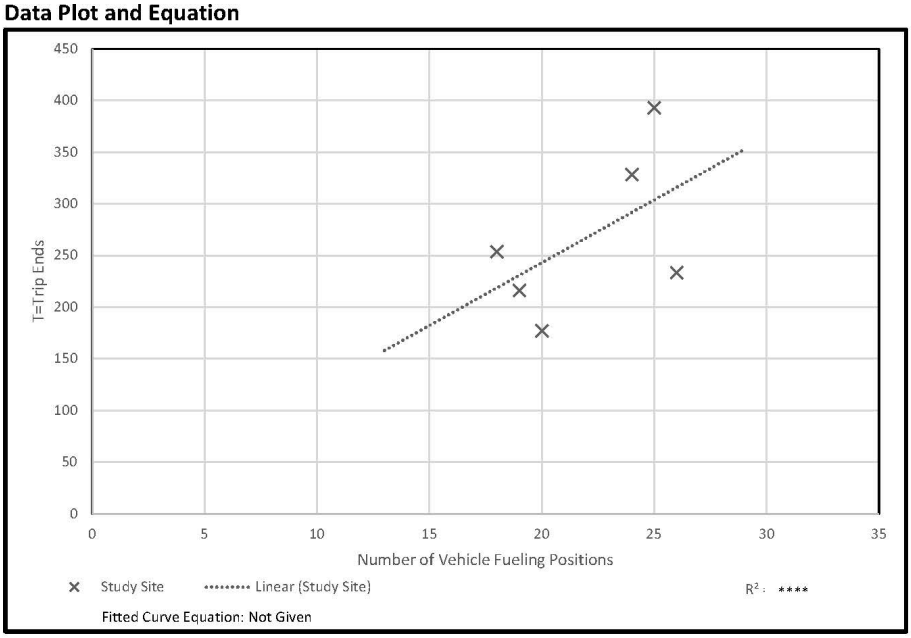
Love's Travel Stop

Vehicle Trip Ends vs:	**Vehicle Fueling Positions**
On a:	**Weekday,**
	PM Peak Hour of Generator
Setting/Location:	**General Urban/Suburban**
Number of Studies:	6
Avg. Num. of Vehicle Fueling Positions:	22
Directional Distribution:	50% entering, 50% exiting

Vehicle Trip Generation per Vehicle Fueling Position

Average Rate	Range of Rates	Standard Deviation
12.12	8.97 - 15.72	3.41

Data Plot and Equation



Fitted Curve Equation: Not Given

Gross Floor Area

Table 7 identifies number of gross floor area (GFA x 1,000 sf), trips, rates, and ins and outs percentage for daily, AM and PM periods at each of the sites. The last row of Table 7 shows the cumulative average of the GFA daily and peak hour rates. Additionally, Figures 6 – 8 show the average vehicle trip generation for GFA under Weekday, AM and PM conditions, respectively.

TABLE 7
LOVE'S TRAVEL STOPS GFA DAILY AND PEAK HOURS RATES

	Unit (x 1,000)	Daily Trips/Rate		AM Peak Hour Trips/Rates						PM Peak Hour Trips/Rates					
Location	GFA (sf)	Daily Trips	GFA Rate	AM Peak Hour Trips	AM Rate	AM Peak Hour (Trips In)	AM Peak Hour (Trips Out)	In (%)	Out (%)	PM Peak Hour Trips	PM Rate	AM Peak Hour (Trips In)	AM Peak Hour (Trips Out)	In (%)	Out (%)
Tulare	10.4	6,911	664.49	383	36.79	191	192	0.50	0.50	393	37.79	199	194	0.51	0.49
Lost Hills	7.9	3,982	504.09	179	22.66	92	87	0.51	0.49	216	27.38	108	108	0.50	0.50
Lodi	10.5	5,488	522.67	267	25.40	133	134	0.50	0.50	328	31.27	159	169	0.48	0.52
Santa Nella	9.9	3,165	319.73	167	16.87	85	82	0.51	0.49	177	17.88	91	86	0.52	0.48
Coachella	7.3	4,692	642.79	231	31.69	112	119	0.48	0.52	254	34.75	123	130	0.49	0.51
Barstow	9.4	3,758	399.82	191	20.35	97	95	0.51	0.49	233	24.82	117	117	0.50	0.50
Average	**9.2**	**4,666**	**508.93**	**236**	**25.63**	**118**	**118**	**0.50**	**0.50**	**267**	**28.98**	**133**	**134**	**0.50**	**0.50**

GFA = Gross Floor Area per 1,000 sq.ft. (sf)

FIGURE 6: LOVE'S TRAVEL STOPS TRIP GENERATION RATES PER GFA (WEEKDAY)

Love's Travel Stop

Vehicle Trip Ends vs:	**1000 Sq. Ft. GFA**
On a:	**Weekday**
Setting/Location:	**General Urban/Suburban**
Number of Studies:	6
Avg. 1000 Sq.Ft. GFA:	9.2
Directional Distribution:	50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
508.93	319.73 - 664.49	1.34

Data Plot and Equation

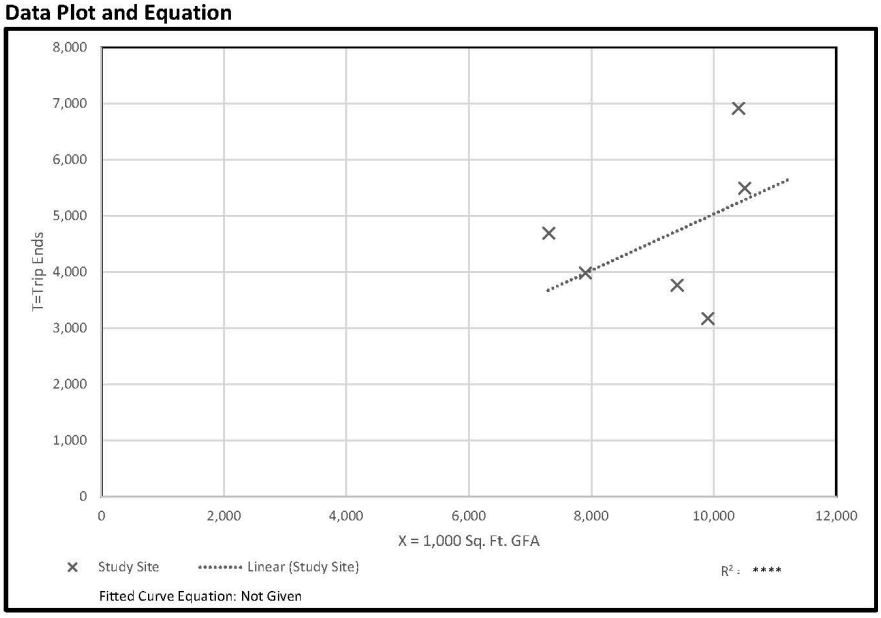


FIGURE 7: LOVE'S TRAVEL STOPS TRIP GENERATION RATES PER GFA (AM PEAK)

Love's Travel Stop

Vehicle Trip Ends vs:	**1000 Sq. Ft. GFA**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	6
Avg. 1000 Sq.Ft. GFA:	9.2
Directional Distribution:	50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
25.63	16.87 - 36.79	1.34

Data Plot and Equation

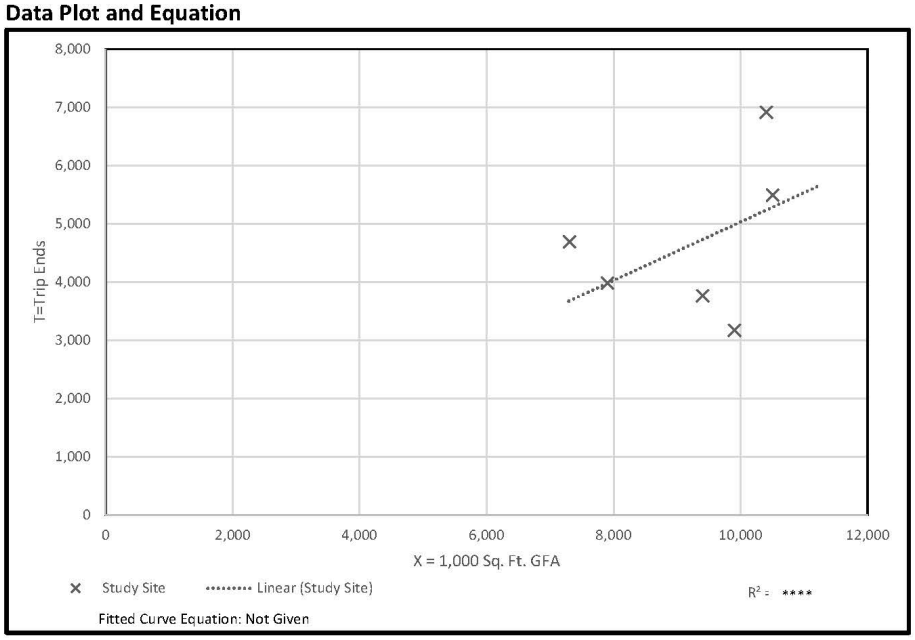


FIGURE 8: LOVE'S TRAVEL STOPS TRIP GENERATION RATES PER GFA (PM PEAK)

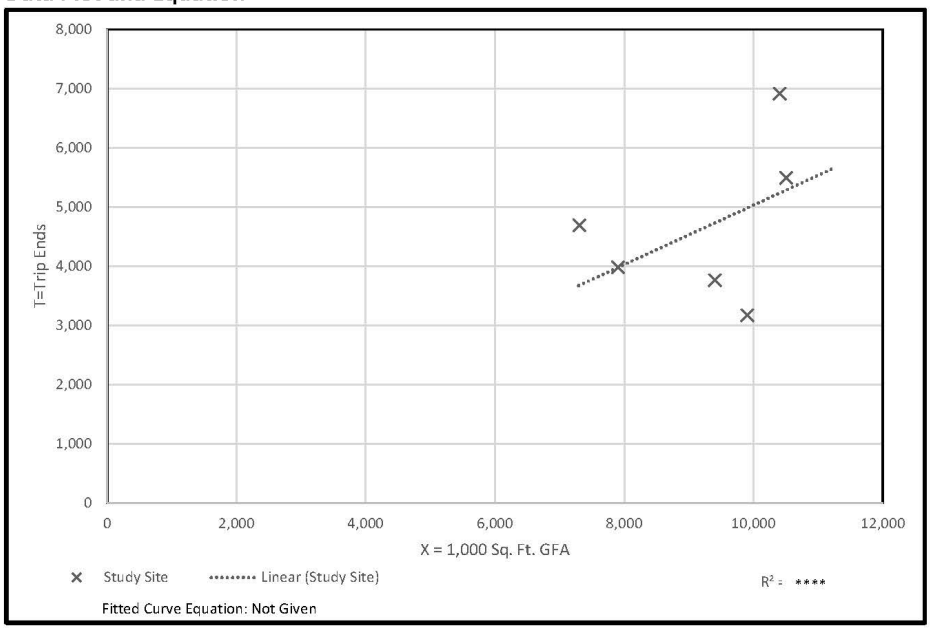
Love's Travel Stop

Vehicle Trip Ends vs:	**1000 Sq. Ft. GFA**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	6
Avg. 1000 Sq.Ft. GFA:	9.2
Directional Distribution:	50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
28.98	17.99 - 37.79	1.34

Data Plot and Equation



Conclusions & Recommendations

As a result of this Technical Paper, it is recommended that the data provided in this report be used solely for development of modern travel stops of this nature as described in the Introduction. Or this data could be used in combination with a more compatible land use, i.e., ITE Land Use Code 950 (Truck Stop), to encompass a larger data set. However, detailed information pertaining to trip generation rates and data collected for LUC 950 would need to be further examined in order to correspond to data collected in this Technical Paper.

Moreover, trips of this nature (modern travel stops) should be recognized as containing an extremely high percentage (88% in this case) of pass-by and/or diverted-link trips. These pass-by and/or diverted-link trips play a substantial role in calculating VMT, particularly in California. These pass-by and/or diverted-link trips are already on the roadway system and need to be accounted for as such when calculating VMT. A sample equation for development of how diverted link trip distance is measured using the following formula per one direction (on and off)[2]:

[PER DIRCTION (N, S, E, W)]

$VMT_{DL} = VMT_{GDL} - VMT_{NDL}$

Where:

VMT_{DL} = Diverted Link VMT
VMT_{GDL} = Gross Diverted Link VMT
VMT_{NDL} = Net Diverted Link VMT

And:

$VMT_{GDL} = [(ADT_T * L_{PBOFF} + ADT_C * L_{PBOFF}) + (ADT_T * L_{PBON} + ADT_C * L_{PBON})]$;

L_{PBOFF} = Pass-by Off-Ramp Length to Driveway (Mi.)
L_{PBON} = Pass-by On-Ramp Length from Driveway to On-Ramp Merging Point (Mi.)
ADT_T = Truck Average Daily Traffic
ADT_C = Car Average Daily Traffic

And:

$VMT_{NDL} = VMT_{GDL} – (ADT_T * L_{PB} + ADT_C * L_{PB})$;

L_{PB} = Distance between Off-Ramp Exit to On-Ramp Merging Point (Mi.)

Following calculation of diverted-link trips (88%) as identified above for two directions of travel, the remaining 12% of primary trips would need to be calculated following local [or state] VMT

[2] Diverted Link Trip Lengths Figures for the Love's Travel Stops and Country Stores study sites is included as an Attachment. Figures provided by Lane Engineers, Inc.

guidelines and standards. For example, the California Emissions Estimator Model (CalEEMod) estimates the average trip length of convenience market (24-hours) is 2.1 miles and the average trip length of a gasoline/service station is 1.6 miles. To estimate overall VMT, these two components would need to be combined to identify projected VMT.

It should be noted that the VMT calculation for cars and trucks only assumes a single trip to/from the Love's Travel Stops and Country Stores; additional trips to adjacent land uses near the ramp terminus for other purposes is not identified in this formula.

Attachments

- Vehicle and Truck Trip Survey (Questionnaire)
- Vehicle and Truck Trip Survey Summary Results by Location
- Driveway Counts (Metro Traffic Data, Inc.)
- Diverted Link Trip Lengths (Lane Engineers, Inc.)

Vehicle and Truck Trip Survey (Questionnaire)

Vehicle and Truck Trip Survey

SURVEY TO BE COMPLETED BY SURVEYOR

For Surveyor Use Only
Date:
Time:
Location:

QUESTIONS

1 **Where did you begin your trip? (City or Town)** _____

2 **Where will you end your trip? (City or Town)** _____

3 **Are you a trucker or an auto customer?**

a) Trucker
b) Auto Customer

4 **Is this your only stop on your trip today? (Yes or No)**

a) Yes
b) No

5 **Did you exit the freeway to get to Love's Travel Stop? (Circle One)**

a) Yes
b) No

6 **What are the PRIMARY and SECONDARY purpose(s) for stopping at Love's Travel Stop? (Two Part Question)**

PRIMARY	SECONDARY (Circle All That Apply)	
☐	*a) Gasoline or Diesel*	
☐	*b) Covenience Store*	
☐	*c) Restaurant*	
☐	*d) Restroom*	
☐	*e) Tire Care Center (Truckers Only)*	
☐	*f) Other (Please Specify)*	_____

Surveyor: Indicate PRIMARY reason for stop by checking box ☒

7 **If you did not stop here, would you have stopped at another nearby location on your trip for purposes indentified in Questions #6? (Circle One)**

a) Yes
b) No
c) Unsure

8 **What do you like best about Love's Travel Stop? (Circle One)**

a) Fuel Prices
b) Food
c) Ease of Access
d) Variety of Services/Convenience
e) My Love Rewards
f) Other (Please Specify) _____

Vehicle and Truck Trip Survey Summary Results by Location

Vehicle and Truck Trip Survey

DRAFT - FOR DISCUSSION PURPOSES ONLY

			Overall		*Barstow*		*Coachella*		*Lodi*		*Lost Hills*		*Santa Nella*		*Tulare*		*Comments*
3	**Are you a trucker or an auto customer?**		**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	
	a) Trucker		337	51.1%	61	53.5%	41	40.6%	54	51.9%	58	54.2%	68	64.8%	55	42.6%	
	b) Auto Customer		323	48.9%	53	46.5%	60	59.4%	50	48.1%	49	45.8%	37	35.2%	74	57.4%	
		TOT	660		114		101		104		107		105		129		
4	**Is this your only stop on your trip today? (Yes or No)**		**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	
	a) Yes		166	25.2%	38	33.3%	44	43.6%	17	16.3%	2	1.9%	11	10.5%	54	41.9%	
	b) No		494	74.8%	76	66.7%	57	56.4%	87	83.7%	105	98.1%	94	89.5%	75	58.1%	
		TOT	660		114		101		104		107		105		129		
5	**Did you exit the freeway to get to Love's Travel Stop? (Circle One)**		**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	
	a) Yes		578	87.6%	99	86.8%	88	87.1%	93	89.4%	101	94.4%	96	91.4%	101	78.3%	
	b) No		82	12.4%	15	13.2%	13	12.9%	11	10.6%	6	5.6%	9	8.6%	28	21.7%	
		TOT	660		114		101		104		107		105		129		
6	**What are the PRIMARY and SECONDARY purpose(s) for stopping at Love's Travel Stop?**		**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	
	PRIMARY	**a) Gasoline or Diesel**	376	57.0%	74	64.9%	68	67.3%	54	51.9%	65	60.7%	56	53.3%	59	45.7%	
		b) Covenience Store	85	12.9%	10	8.8%	11	10.9%	17	16.3%	13	12.1%	12	11.4%	22	17.1%	
		c) Restaurant	61	9.2%	9	7.9%	12	11.9%	5	4.8%	7	6.5%	4	3.8%	24	18.6%	
		d) Restroom	50	7.6%	0	0.0%	6	5.9%	15	14.4%	7	6.5%	12	11.4%	10	7.8%	
		e) Tire Care Center/Scale	10	1.5%	2	1.8%	1	1.0%	3	2.9%	0	0.0%	2	1.9%	2	1.6%	
		f) Other (Please Specify)	78	11.8%	19	16.7%	3	3.0%	10	9.6%	15	14.0%	19	18.1%	12	9.3%	
		TOT	660		114		101		104		107		105		129		Break, shower, sleep, rest, oil, battery, Transflow, load check
7	**If you did not stop here, would you have stopped at another nearby location on your trip for purposes idenified in Question #6:**		**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	
	a) Yes		394	60.1%	66	57.9%	62	61.4%	52	50.0%	79	73.8%	68	64.8%	67	51.9%	Nearby location mave have been misunderstood
	b) No		256	39.0%	48	42.1%	39	38.6%	51	49.0%	24	22.4%	36	34.3%	58	45.0%	
	c) Unsure		6	0.9%	0	0.0%	0	0.0%	1	1.0%	4	3.7%	1	1.0%	4	3.1%	
		TOT	656		114		101		104		107		105		129		
8	**What do you like best about Love's Travel Stop?**		**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	
		a) Fuel Prices	82	12.9%	14	12.3%	18	17.8%	15	14.4%	9	8.6%	9	8.6%	17	15.9%	
		b) Food	33	5.2%	10	8.8%	5	5.0%	4	3.8%	3	2.9%	3	2.9%	8	7.5%	
		c) Ease of Access	74	11.6%	15	13.2%	12	11.9%	10	9.6%	14	13.3%	14	13.3%	9	8.4%	
		d) Variety of Services/Convenience	125	19.7%	16	14.0%	23	22.8%	20	19.2%	21	20.0%	21	20.0%	24	22.4%	
		e) My Love's Rewards	99	15.6%	18	15.8%	10	9.9%	13	12.5%	18	17.1%	18	17.1%	22	20.6%	
		f) Other (Please Specify)	223	35.1%	41	36.0%	33	32.7%	42	40.4%	40	38.1%	40	38.1%	27	25.2%	Friendly, clean, showers, hours, everything, sweet tea, fast, staff, the girls (Barstow), tire pass, hospitality, coffee, the name, atmoshpere, rewards
		TOT	636		114		101		104		105		105		107		



Driveway Counts
(Metro Traffic Data, Inc.)

Location: Love's Truck Stops - Tulare
Driveway #: 1
Latitude: 36.1812
Longitude: -119.3310
Start Date: 11/14/2017

Tuesday, November 14, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	11	0	**11**	15	1	**16**	**27**
0:15	4	0	**4**	9	0	**9**	**13**
0:30	7	0	**7**	9	0	**9**	**16**
0:45	12	0	**12**	7	0	**7**	**19**
1:00	5	1	**6**	9	0	**9**	**15**
1:15	14	0	**14**	12	1	**13**	**27**
1:30	9	1	**10**	15	0	**15**	**25**
1:45	2	3	**5**	4	0	**4**	**9**
2:00	4	0	**4**	6	4	**10**	**14**
2:15	6	0	**6**	4	1	**5**	**11**
2:30	6	0	**6**	4	0	**4**	**10**
2:45	6	1	**7**	8	1	**9**	**16**
3:00	5	4	**9**	3	0	**3**	**12**
3:15	8	3	**11**	5	5	**10**	**21**
3:30	9	0	**9**	8	0	**8**	**17**
3:45	10	0	**10**	11	3	**14**	**24**
4:00	13	1	**14**	11	0	**11**	**25**
4:15	17	1	**18**	12	1	**13**	**31**
4:30	9	0	**9**	17	2	**19**	**28**
4:45	18	1	**19**	13	1	**14**	**33**
5:00	19	0	**19**	17	0	**17**	**36**
5:15	22	0	**22**	20	0	**20**	**42**
5:30	18	2	**20**	18	0	**18**	**38**
5:45	18	1	**19**	20	2	**22**	**41**
6:00	15	2	**17**	16	1	**17**	**34**
6:15	23	2	**25**	19	1	**20**	**45**
6:30	26	2	**28**	24	2	**26**	**54**
6:45	25	3	**28**	22	2	**24**	**52**
7:00	26	2	**28**	22	1	**23**	**51**
7:15	22	3	**25**	30	6	**36**	**61**
7:30	29	1	**30**	21	1	**22**	**52**
7:45	23	1	**24**	24	1	**25**	**49**
8:00	15	1	**16**	19	1	**20**	**36**
8:15	25	1	**26**	22	1	**23**	**49**
8:30	28	4	**32**	33	1	**34**	**66**
8:45	23	0	**23**	22	2	**24**	**47**
9:00	25	2	**27**	22	2	**24**	**51**
9:15	25	0	**25**	29	2	**31**	**56**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
9:30	20	2	**22**	23	0	**23**	**45**
9:45	29	1	**30**	23	2	**25**	**55**
10:00	27	0	**27**	36	3	**39**	**66**
10:15	30	3	**33**	27	2	**29**	**62**
10:30	19	0	**19**	21	0	**21**	**40**
10:45	23	2	**25**	17	0	**17**	**42**
11:00	37	0	**37**	39	2	**41**	**78**
11:15	26	2	**28**	26	3	**29**	**57**
11:30	28	1	**29**	27	1	**28**	**57**
11:45	26	1	**27**	22	1	**23**	**50**
12:00	33	0	**33**	26	0	**26**	**59**
12:15	28	2	**30**	30	1	**31**	**61**
12:30	30	0	**30**	28	1	**29**	**59**
12:45	27	2	**29**	33	1	**34**	**63**
13:00	31	1	**32**	30	4	**34**	**66**
13:15	25	1	**26**	34	1	**35**	**61**
13:30	25	0	**25**	26	0	**26**	**51**
13:45	27	0	**27**	28	0	**28**	**55**
14:00	23	1	**24**	21	0	**21**	**45**
14:15	25	0	**25**	28	1	**29**	**54**
14:30	29	2	**31**	22	0	**22**	**53**
14:45	21	0	**21**	23	2	**25**	**46**
15:00	18	0	**18**	20	0	**20**	**38**
15:15	31	1	**32**	23	1	**24**	**56**
15:30	36	2	**38**	44	3	**47**	**85**
15:45	21	1	**22**	21	0	**21**	**43**
16:00	22	0	**22**	19	0	**19**	**41**
16:15	25	1	**26**	29	3	**32**	**58**
16:30	26	0	**26**	25	1	**26**	**52**
16:45	22	0	**22**	24	0	**24**	**46**
17:00	26	1	**27**	26	0	**26**	**53**
17:15	32	2	**34**	26	1	**27**	**61**
17:30	24	0	**24**	31	2	**33**	**57**
17:45	25	0	**25**	24	0	**24**	**49**
18:00	15	0	**15**	19	0	**19**	**34**
18:15	21	0	**21**	29	0	**29**	**50**
18:30	14	0	**14**	11	0	**11**	**25**
18:45	15	0	**15**	16	0	**16**	**31**
19:00	15	1	**16**	9	0	**9**	**25**
19:15	14	2	**16**	17	2	**19**	**35**
19:30	17	0	**17**	18	2	**20**	**37**
19:45	21	0	**21**	18	0	**18**	**39**
20:00	23	1	**24**	18	0	**18**	**42**
20:15	15	0	**15**	18	1	**19**	**34**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
20:30	14	0	**14**	18	1	**19**	**33**
20:45	17	0	**17**	15	0	**15**	**32**
21:00	17	0	**17**	14	0	**14**	**31**
21:15	16	1	**17**	14	1	**15**	**32**
21:30	13	0	**13**	21	1	**22**	**35**
21:45	12	1	**13**	14	1	**15**	**28**
22:00	17	1	**18**	6	1	**7**	**25**
22:15	17	0	**17**	17	0	**17**	**34**
22:30	16	1	**17**	11	1	**12**	**29**
22:45	18	0	**18**	25	0	**25**	**43**
23:00	10	0	**10**	16	0	**16**	**26**
23:15	13	0	**13**	18	0	**18**	**31**
23:30	12	0	**12**	12	0	**12**	**24**
23:45	10	0	**10**	11	0	**11**	**21**
TOTALS:	**1851**	**80**	**1931**	**1869**	**93**	**1962**	**3893**
PERCENTAGES:	***48%***	***2%***	***50%***	***48%***	***2%***	***50%***	***100%***

Peak Hour: 12:15 to 13:15

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
116	**5**	**121**	**121**	**7**	**128**	**249**

Wednesday, November 15, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	9	1	**10**	8	0	**8**	**18**
0:15	11	1	**12**	12	0	**12**	**24**
0:30	4	0	**4**	9	1	**10**	**14**
0:45	9	2	**11**	5	1	**6**	**17**
1:00	4	0	**4**	13	2	**15**	**19**
1:15	6	1	**7**	3	1	**4**	**11**
1:30	10	0	**10**	6	0	**6**	**16**
1:45	8	0	**8**	10	0	**10**	**18**
2:00	6	1	**7**	6	0	**6**	**13**
2:15	14	1	**15**	10	1	**11**	**26**
2:30	6	0	**6**	7	0	**7**	**13**
2:45	8	7	**15**	11	0	**11**	**26**
3:00	6	1	**7**	4	3	**7**	**14**
3:15	11	1	**12**	6	6	**12**	**24**
3:30	8	1	**9**	13	0	**13**	**22**
3:45	9	0	**9**	7	1	**8**	**17**
4:00	7	0	**7**	7	0	**7**	**14**
4:15	10	0	**10**	14	1	**15**	**25**
4:30	15	1	**16**	6	0	**6**	**22**
4:45	13	2	**15**	19	1	**20**	**35**
5:00	23	0	**23**	20	1	**21**	**44**
5:15	21	1	**22**	28	0	**28**	**50**
5:30	31	1	**32**	20	0	**20**	**52**
5:45	23	0	**23**	25	0	**25**	**48**
6:00	24	1	**25**	23	0	**23**	**48**
6:15	25	0	**25**	23	1	**24**	**49**
6:30	26	5	**31**	26	2	**28**	**59**
6:45	28	1	**29**	25	3	**28**	**57**
7:00	19	3	**22**	22	2	**24**	**46**
7:15	33	1	**34**	24	1	**25**	**59**
7:30	27	1	**28**	27	3	**30**	**58**
7:45	36	5	**41**	28	3	**31**	**72**
8:00	21	1	**22**	40	3	**43**	**65**
8:15	23	2	**25**	24	1	**25**	**50**
8:30	24	3	**27**	18	1	**19**	**46**
8:45	22	1	**23**	17	7	**24**	**47**
9:00	23	0	**23**	34	0	**34**	**57**
9:15	22	2	**24**	20	3	**23**	**47**
9:30	33	1	**34**	17	2	**19**	**53**
9:45	28	2	**30**	33	1	**34**	**64**
10:00	30	0	**30**	30	1	**31**	**61**
10:15	27	2	**29**	26	2	**28**	**57**
10:30	17	1	**18**	20	2	**22**	**40**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
10:45	29	3	**32**	28	0	**28**	**60**
11:00	27	4	**31**	19	4	**23**	**54**
11:15	23	1	**24**	26	2	**28**	**52**
11:30	25	0	**25**	23	3	**26**	**51**
11:45	27	0	**27**	30	0	**30**	**57**
12:00	35	1	**36**	28	1	**29**	**65**
12:15	27	3	**30**	27	3	**30**	**60**
12:30	21	0	**21**	24	1	**25**	**46**
12:45	29	0	**29**	36	1	**37**	**66**
13:00	27	2	**29**	29	0	**29**	**58**
13:15	19	1	**20**	25	2	**27**	**47**
13:30	29	0	**29**	26	0	**26**	**55**
13:45	17	1	**18**	26	1	**27**	**45**
14:00	27	0	**27**	24	0	**24**	**51**
14:15	25	2	**27**	30	0	**30**	**57**
14:30	24	2	**26**	23	3	**26**	**52**
14:45	25	1	**26**	27	2	**29**	**55**
15:00	31	2	**33**	28	2	**30**	**63**
15:15	19	1	**20**	20	1	**21**	**41**
15:30	22	0	**22**	24	1	**25**	**47**
15:45	25	1	**26**	26	0	**26**	**52**
16:00	29	1	**30**	27	3	**30**	**60**
16:15	28	1	**29**	28	0	**28**	**57**
16:30	28	1	**29**	23	1	**24**	**53**
16:45	24	0	**24**	28	1	**29**	**53**
17:00	29	0	**29**	25	0	**25**	**54**
17:15	27	0	**27**	36	0	**36**	**63**
17:30	18	2	**20**	22	1	**23**	**43**
17:45	21	1	**22**	15	1	**16**	**38**
18:00	27	0	**27**	23	0	**23**	**50**
18:15	21	1	**22**	26	1	**27**	**49**
18:30	17	1	**18**	19	2	**21**	**39**
18:45	29	2	**31**	25	1	**26**	**57**
19:00	16	0	**16**	28	3	**31**	**47**
19:15	15	1	**16**	15	0	**15**	**31**
19:30	19	0	**19**	11	0	**11**	**30**
19:45	18	0	**18**	21	0	**21**	**39**
20:00	12	0	**12**	16	1	**17**	**29**
20:15	17	2	**19**	19	1	**20**	**39**
20:30	20	1	**21**	14	1	**15**	**36**
20:45	17	1	**18**	15	1	**16**	**34**
21:00	14	0	**14**	23	1	**24**	**38**
21:15	15	0	**15**	16	0	**16**	**31**
21:30	20	0	**20**	14	0	**14**	**34**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
21:45	17	0	**17**	17	1	**18**	**35**
22:00	17	2	**19**	18	1	**19**	**38**
22:15	12	0	**12**	7	1	**8**	**20**
22:30	17	0	**17**	19	0	**19**	**36**
22:45	9	1	**10**	12	0	**12**	**22**
23:00	11	1	**12**	12	1	**13**	**25**
23:15	19	0	**19**	16	1	**17**	**36**
23:30	16	0	**16**	20	0	**20**	**36**
23:45	8	1	**9**	12	0	**12**	**21**
TOTALS:	**1900**	**99**	**1999**	**1917**	**108**	**2025**	**4024**
PERCENTAGES:	***49%***	***3%***	***51%***	***49%***	***3%***	***52%***	***103%***

Peak Hour: 9:00 to 10:00

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
106	**5**	**111**	**104**	**6**	**110**	**221**

Thursday, November 16, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	11	0	**11**	13	0	**13**	**24**
0:15	10	0	**10**	11	0	**11**	**21**
0:30	10	1	**11**	5	0	**5**	**16**
0:45	11	0	**11**	11	2	**13**	**24**
1:00	6	0	**6**	12	0	**12**	**18**
1:15	7	0	**7**	13	1	**14**	**21**
1:30	6	1	**7**	3	0	**3**	**10**
1:45	7	1	**8**	9	1	**10**	**18**
2:00	9	0	**9**	7	0	**7**	**16**
2:15	6	1	**7**	7	0	**7**	**14**
2:30	5	1	**6**	8	2	**10**	**16**
2:45	9	1	**10**	6	2	**8**	**18**
3:00	7	0	**7**	5	0	**5**	**12**
3:15	8	0	**8**	6	0	**6**	**14**
3:30	11	0	**11**	13	1	**14**	**25**
3:45	5	1	**6**	5	0	**5**	**11**
4:00	5	0	**5**	6	1	**7**	**12**
4:15	17	1	**18**	7	1	**8**	**26**
4:30	12	1	**13**	15	0	**15**	**28**
4:45	15	1	**16**	18	2	**20**	**36**
5:00	19	1	**20**	15	0	**15**	**35**
5:15	18	0	**18**	17	1	**18**	**36**
5:30	29	0	**29**	27	0	**27**	**56**
5:45	17	1	**18**	24	0	**24**	**42**
6:00	24	0	**24**	19	1	**20**	**44**
6:15	29	1	**30**	21	0	**21**	**51**
6:30	27	0	**27**	21	0	**21**	**48**
6:45	28	5	**33**	27	1	**28**	**61**
7:00	24	4	**28**	16	4	**20**	**48**
7:15	25	1	**26**	37	0	**37**	**63**
7:30	30	0	**30**	24	3	**27**	**57**
7:45	25	0	**25**	31	5	**36**	**61**
8:00	20	0	**20**	25	0	**25**	**45**
8:15	28	0	**28**	25	0	**25**	**53**
8:30	14	0	**14**	22	0	**22**	**36**
8:45	24	1	**25**	16	0	**16**	**41**
9:00	29	1	**30**	25	1	**26**	**56**
9:15	26	0	**26**	31	0	**31**	**57**
9:30	26	3	**29**	28	0	**28**	**57**
9:45	23	2	**25**	30	3	**33**	**58**
10:00	24	1	**25**	23	2	**25**	**50**
10:15	20	0	**20**	23	2	**25**	**45**
10:30	33	3	**36**	21	3	**24**	**60**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
10:45	22	0	**22**	30	5	**35**	**57**
11:00	27	2	**29**	27	1	**28**	**57**
11:15	26	1	**27**	29	2	**31**	**58**
11:30	24	1	**25**	20	2	**22**	**47**
11:45	30	3	**33**	28	2	**30**	**63**
12:00	43	3	**46**	32	2	**34**	**80**
12:15	30	2	**32**	40	2	**42**	**74**
12:30	33	0	**33**	32	1	**33**	**66**
12:45	44	3	**47**	35	2	**37**	**84**
13:00	33	5	**38**	35	6	**41**	**79**
13:15	29	1	**30**	43	1	**44**	**74**
13:30	25	0	**25**	23	3	**26**	**51**
13:45	18	2	**20**	30	1	**31**	**51**
14:00	23	1	**24**	23	1	**24**	**48**
14:15	21	0	**21**	16	1	**17**	**38**
14:30	28	1	**29**	28	0	**28**	**57**
14:45	22	0	**22**	27	0	**27**	**49**
15:00	27	0	**27**	29	0	**29**	**56**
15:15	37	0	**37**	26	1	**27**	**64**
15:30	36	2	**38**	35	1	**36**	**74**
15:45	30	0	**30**	38	1	**39**	**69**
16:00	23	1	**24**	24	0	**24**	**48**
16:15	26	1	**27**	28	1	**29**	**56**
16:30	28	0	**28**	24	0	**24**	**52**
16:45	34	0	**34**	29	0	**29**	**63**
17:00	37	2	**39**	31	1	**32**	**71**
17:15	42	0	**42**	43	1	**44**	**86**
17:30	30	0	**30**	42	0	**42**	**72**
17:45	34	2	**36**	36	1	**37**	**73**
18:00	22	1	**23**	24	1	**25**	**48**
18:15	24	1	**25**	27	2	**29**	**54**
18:30	27	2	**29**	21	0	**21**	**50**
18:45	23	0	**23**	22	2	**24**	**47**
19:00	16	1	**17**	20	0	**20**	**37**
19:15	13	0	**13**	12	1	**13**	**26**
19:30	17	1	**18**	16	0	**16**	**34**
19:45	12	1	**13**	17	1	**18**	**31**
20:00	23	0	**23**	20	1	**21**	**44**
20:15	18	0	**18**	16	0	**16**	**34**
20:30	13	0	**13**	16	0	**16**	**29**
20:45	15	1	**16**	16	0	**16**	**32**
21:00	18	0	**18**	17	1	**18**	**36**
21:15	7	1	**8**	14	0	**14**	**22**
21:30	16	0	**16**	14	3	**17**	**33**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
21:45	12	0	**12**	15	0	**15**	**27**
22:00	17	1	**18**	16	0	**16**	**34**
22:15	14	1	**15**	8	1	**9**	**24**
22:30	19	1	**20**	18	0	**18**	**38**
22:45	14	0	**14**	16	0	**16**	**30**
23:00	15	0	**15**	17	1	**18**	**33**
23:15	19	0	**19**	21	0	**21**	**40**
23:30	15	1	**16**	14	2	**16**	**32**
23:45	11	1	**12**	12	2	**14**	**26**
TOTALS:	**2001**	**81**	**2082**	**2020**	**96**	**2116**	**4198**
PERCENTAGES:	***51%***	***2%***	***53%***	***52%***	***2%***	***54%***	***108%***

Peak Hour: 12:00 to 13:00

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
150	**8**	**158**	**139**	**7**	**146**	**304**

Location: Love's Truck Stops - Tulare
Driveway #: 2
Latitude: 36.1805
Longitude: -119.3310
Start Date: 11/14/2017

Tuesday, November 14, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	0	9	**9**	0	0	**0**	**9**
0:15	0	6	**6**	0	0	**0**	**6**
0:30	0	13	**13**	0	0	**0**	**13**
0:45	0	14	**14**	0	2	**2**	**16**
1:00	0	9	**9**	0	1	**1**	**10**
1:15	0	5	**5**	0	0	**0**	**5**
1:30	0	8	**8**	0	0	**0**	**8**
1:45	0	7	**7**	0	1	**1**	**8**
2:00	0	10	**10**	0	0	**0**	**10**
2:15	0	12	**12**	0	2	**2**	**14**
2:30	0	17	**17**	0	0	**0**	**17**
2:45	1	9	**10**	0	1	**1**	**11**
3:00	0	15	**15**	0	2	**2**	**17**
3:15	0	12	**12**	0	0	**0**	**12**
3:30	0	8	**8**	0	0	**0**	**8**
3:45	0	12	**12**	0	0	**0**	**12**
4:00	0	15	**15**	0	1	**1**	**16**
4:15	0	15	**15**	0	0	**0**	**15**
4:30	0	6	**6**	0	1	**1**	**7**
4:45	0	11	**11**	0	0	**0**	**11**
5:00	0	9	**9**	0	1	**1**	**10**
5:15	0	18	**18**	0	0	**0**	**18**
5:30	0	14	**14**	0	0	**0**	**14**
5:45	1	14	**15**	0	2	**2**	**17**
6:00	0	14	**14**	0	1	**1**	**15**
6:15	0	17	**17**	0	0	**0**	**17**
6:30	0	12	**12**	0	2	**2**	**14**
6:45	0	15	**15**	0	0	**0**	**15**
7:00	0	13	**13**	0	2	**2**	**15**
7:15	0	12	**12**	0	1	**1**	**13**
7:30	1	20	**21**	1	1	**2**	**23**
7:45	1	14	**15**	0	1	**1**	**16**
8:00	1	12	**13**	0	0	**0**	**13**
8:15	1	12	**13**	1	1	**2**	**15**
8:30	3	9	**12**	0	0	**0**	**12**
8:45	1	11	**12**	1	0	**1**	**13**
9:00	1	14	**15**	1	3	**4**	**19**
9:15	2	21	**23**	2	4	**6**	**29**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
9:30	0	13	**13**	0	2	**2**	**15**
9:45	2	8	**10**	1	3	**4**	**14**
10:00	0	9	**9**	0	0	**0**	**9**
10:15	1	10	**11**	0	0	**0**	**11**
10:30	3	16	**19**	1	1	**2**	**21**
10:45	2	14	**16**	0	0	**0**	**16**
11:00	0	16	**16**	0	1	**1**	**17**
11:15	1	20	**21**	0	0	**0**	**21**
11:30	1	13	**14**	0	2	**2**	**16**
11:45	0	16	**16**	0	1	**1**	**17**
12:00	0	11	**11**	0	4	**4**	**15**
12:15	1	12	**13**	1	3	**4**	**17**
12:30	1	17	**18**	0	2	**2**	**20**
12:45	1	13	**14**	0	1	**1**	**15**
13:00	2	13	**15**	0	2	**2**	**17**
13:15	1	18	**19**	1	0	**1**	**20**
13:30	0	13	**13**	0	0	**0**	**13**
13:45	0	13	**13**	0	0	**0**	**13**
14:00	1	11	**12**	0	1	**1**	**13**
14:15	0	8	**8**	0	1	**1**	**9**
14:30	2	15	**17**	1	1	**2**	**19**
14:45	1	16	**17**	0	4	**4**	**21**
15:00	0	13	**13**	1	1	**2**	**15**
15:15	1	13	**14**	0	1	**1**	**15**
15:30	1	12	**13**	0	0	**0**	**13**
15:45	0	10	**10**	0	3	**3**	**13**
16:00	1	13	**14**	2	0	**2**	**16**
16:15	4	11	**15**	0	0	**0**	**15**
16:30	1	10	**11**	0	1	**1**	**12**
16:45	0	16	**16**	0	0	**0**	**16**
17:00	3	14	**17**	0	0	**0**	**17**
17:15	0	14	**14**	0	2	**2**	**16**
17:30	0	19	**19**	0	0	**0**	**19**
17:45	1	17	**18**	0	0	**0**	**18**
18:00	3	15	**18**	0	2	**2**	**20**
18:15	0	13	**13**	0	3	**3**	**16**
18:30	0	13	**13**	0	5	**5**	**18**
18:45	0	10	**10**	1	1	**2**	**12**
19:00	0	17	**17**	0	1	**1**	**18**
19:15	1	12	**13**	0	0	**0**	**13**
19:30	0	13	**13**	0	0	**0**	**13**
19:45	0	17	**17**	2	2	**4**	**21**
20:00	1	11	**12**	2	1	**3**	**15**
20:15	1	8	**9**	0	1	**1**	**10**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
20:30	0	12	**12**	0	1	**1**	**13**
20:45	0	14	**14**	0	2	**2**	**16**
21:00	0	17	**17**	0	0	**0**	**17**
21:15	0	9	**9**	0	0	**0**	**9**
21:30	0	10	**10**	0	0	**0**	**10**
21:45	0	6	**6**	0	0	**0**	**6**
22:00	0	12	**12**	0	0	**0**	**12**
22:15	0	8	**8**	0	0	**0**	**8**
22:30	0	13	**13**	0	3	**3**	**16**
22:45	1	8	**9**	0	1	**1**	**10**
23:00	0	5	**5**	0	1	**1**	**6**
23:15	1	11	**12**	0	0	**0**	**12**
23:30	0	8	**8**	0	0	**0**	**8**
23:45	0	9	**9**	0	1	**1**	**10**
TOTALS:	**53**	**1192**	**1245**	**19**	**92**	**111**	**1356**
PERCENTAGES:	***4%***	***88%***	***92%***	***1%***	***7%***	***8%***	***100%***

Peak Hour: 9:00 to 10:00

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
3	**35**	**38**	**3**	**7**	**10**	**48**

Wednesday, November 15, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	0	9	**9**	0	0	**0**	**9**
0:15	0	11	**11**	0	0	**0**	**11**
0:30	0	11	**11**	0	0	**0**	**11**
0:45	0	13	**13**	0	0	**0**	**13**
1:00	0	9	**9**	0	0	**0**	**9**
1:15	0	5	**5**	0	0	**0**	**5**
1:30	0	16	**16**	0	0	**0**	**16**
1:45	0	4	**4**	0	1	**1**	**5**
2:00	0	14	**14**	0	0	**0**	**14**
2:15	0	7	**7**	0	1	**1**	**8**
2:30	0	12	**12**	1	1	**2**	**14**
2:45	0	9	**9**	0	5	**5**	**14**
3:00	0	8	**8**	0	0	**0**	**8**
3:15	0	10	**10**	0	0	**0**	**10**
3:30	1	8	**9**	0	0	**0**	**9**
3:45	0	9	**9**	0	0	**0**	**9**
4:00	0	13	**13**	0	1	**1**	**14**
4:15	1	5	**6**	0	1	**1**	**7**
4:30	0	11	**11**	0	0	**0**	**11**
4:45	0	10	**10**	0	0	**0**	**10**
5:00	0	4	**4**	0	1	**1**	**5**
5:15	2	5	**7**	1	0	**1**	**8**
5:30	0	8	**8**	0	2	**2**	**10**
5:45	1	10	**11**	0	0	**0**	**11**
6:00	0	9	**9**	0	0	**0**	**9**
6:15	0	20	**20**	0	2	**2**	**22**
6:30	0	6	**6**	0	1	**1**	**7**
6:45	0	8	**8**	0	2	**2**	**10**
7:00	0	13	**13**	0	1	**1**	**14**
7:15	0	14	**14**	0	2	**2**	**16**
7:30	0	15	**15**	0	1	**1**	**16**
7:45	3	11	**14**	1	1	**2**	**16**
8:00	2	14	**16**	0	0	**0**	**16**
8:15	0	15	**15**	0	1	**1**	**16**
8:30	1	11	**12**	0	0	**0**	**12**
8:45	0	10	**10**	0	2	**2**	**12**
9:00	0	18	**18**	0	2	**2**	**20**
9:15	2	12	**14**	2	0	**2**	**16**
9:30	1	10	**11**	0	1	**1**	**12**
9:45	0	17	**17**	0	0	**0**	**17**
10:00	1	16	**17**	0	1	**1**	**18**
10:15	1	14	**15**	0	1	**1**	**16**
10:30	1	14	**15**	0	0	**0**	**15**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
10:45	1	10	**11**	1	1	**2**	**13**
11:00	0	15	**15**	0	1	**1**	**16**
11:15	0	15	**15**	0	1	**1**	**16**
11:30	1	6	**7**	0	1	**1**	**8**
11:45	0	12	**12**	0	0	**0**	**12**
12:00	0	15	**15**	0	1	**1**	**16**
12:15	1	11	**12**	0	0	**0**	**12**
12:30	0	7	**7**	0	1	**1**	**8**
12:45	1	13	**14**	0	2	**2**	**16**
13:00	1	15	**16**	2	0	**2**	**18**
13:15	2	15	**17**	1	3	**4**	**21**
13:30	1	8	**9**	0	2	**2**	**11**
13:45	0	19	**19**	0	2	**2**	**21**
14:00	0	9	**9**	0	0	**0**	**9**
14:15	0	12	**12**	0	0	**0**	**12**
14:30	1	15	**16**	0	1	**1**	**17**
14:45	0	6	**6**	0	4	**4**	**10**
15:00	0	11	**11**	0	0	**0**	**11**
15:15	0	16	**16**	0	1	**1**	**17**
15:30	1	14	**15**	1	1	**2**	**17**
15:45	0	12	**12**	0	1	**1**	**13**
16:00	1	14	**15**	0	0	**0**	**15**
16:15	0	15	**15**	0	0	**0**	**15**
16:30	2	13	**15**	0	1	**1**	**16**
16:45	0	12	**12**	1	2	**3**	**15**
17:00	0	19	**19**	0	1	**1**	**20**
17:15	0	13	**13**	0	0	**0**	**13**
17:30	0	19	**19**	0	0	**0**	**19**
17:45	0	12	**12**	0	1	**1**	**13**
18:00	0	17	**17**	0	2	**2**	**19**
18:15	0	14	**14**	0	4	**4**	**18**
18:30	1	8	**9**	0	2	**2**	**11**
18:45	1	20	**21**	0	1	**1**	**22**
19:00	1	16	**17**	0	0	**0**	**17**
19:15	1	14	**15**	0	0	**0**	**15**
19:30	0	13	**13**	0	1	**1**	**14**
19:45	0	6	**6**	0	0	**0**	**6**
20:00	0	8	**8**	0	0	**0**	**8**
20:15	0	14	**14**	0	0	**0**	**14**
20:30	0	11	**11**	0	0	**0**	**11**
20:45	1	13	**14**	0	0	**0**	**14**
21:00	1	6	**7**	0	0	**0**	**7**
21:15	1	12	**13**	0	1	**1**	**14**
21:30	0	3	**3**	0	1	**1**	**4**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
21:45	0	8	**8**	0	0	**0**	**8**
22:00	0	6	**6**	0	0	**0**	**6**
22:15	0	12	**12**	0	0	**0**	**12**
22:30	1	11	**12**	0	0	**0**	**12**
22:45	0	11	**11**	0	1	**1**	**12**
23:00	0	6	**6**	0	0	**0**	**6**
23:15	0	7	**7**	0	0	**0**	**7**
23:30	0	7	**7**	0	0	**0**	**7**
23:45	0	8	**8**	0	0	**0**	**8**
TOTALS:	**38**	**1092**	**1130**	**11**	**72**	**83**	**1213**
PERCENTAGES:	***3%***	***81%***	***83%***	***1%***	***5%***	***6%***	***89%***

Peak Hour: 9:00 to 10:00

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
3	**57**	**60**	**2**	**3**	**5**	**65**

Thursday, November 16, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	1	7	**8**	0	0	**0**	**8**
0:15	0	13	**13**	0	1	**1**	**14**
0:30	1	15	**16**	1	1	**2**	**18**
0:45	1	11	**12**	1	1	**2**	**14**
1:00	0	10	**10**	0	1	**1**	**11**
1:15	1	9	**10**	0	1	**1**	**11**
1:30	0	14	**14**	0	0	**0**	**14**
1:45	0	5	**5**	0	1	**1**	**6**
2:00	0	8	**8**	0	2	**2**	**10**
2:15	0	15	**15**	0	0	**0**	**15**
2:30	0	8	**8**	0	2	**2**	**10**
2:45	0	5	**5**	0	1	**1**	**6**
3:00	0	9	**9**	0	0	**0**	**9**
3:15	0	12	**12**	0	2	**2**	**14**
3:30	2	5	**7**	0	0	**0**	**7**
3:45	0	8	**8**	0	1	**1**	**9**
4:00	0	4	**4**	0	0	**0**	**4**
4:15	0	5	**5**	0	0	**0**	**5**
4:30	0	12	**12**	0	0	**0**	**12**
4:45	0	7	**7**	0	1	**1**	**8**
5:00	0	10	**10**	0	0	**0**	**10**
5:15	0	16	**16**	0	0	**0**	**16**
5:30	0	8	**8**	0	0	**0**	**8**
5:45	0	14	**14**	0	0	**0**	**14**
6:00	0	13	**13**	0	1	**1**	**14**
6:15	0	17	**17**	0	0	**0**	**17**
6:30	0	15	**15**	0	1	**1**	**16**
6:45	0	10	**10**	0	2	**2**	**12**
7:00	0	12	**12**	0	2	**2**	**14**
7:15	2	12	**14**	1	0	**1**	**15**
7:30	0	10	**10**	0	1	**1**	**11**
7:45	0	10	**10**	0	1	**1**	**11**
8:00	0	10	**10**	0	0	**0**	**10**
8:15	0	20	**20**	0	1	**1**	**21**
8:30	0	15	**15**	0	2	**2**	**17**
8:45	2	12	**14**	1	0	**1**	**15**
9:00	0	17	**17**	0	0	**0**	**17**
9:15	0	8	**8**	0	0	**0**	**8**
9:30	1	16	**17**	4	0	**4**	**21**
9:45	1	17	**18**	0	1	**1**	**19**
10:00	1	12	**13**	0	1	**1**	**14**
10:15	0	11	**11**	0	1	**1**	**12**
10:30	2	15	**17**	1	3	**4**	**21**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
10:45	2	10	**12**	0	1	**1**	**13**
11:00	0	12	**12**	0	0	**0**	**12**
11:15	0	12	**12**	0	1	**1**	**13**
11:30	1	10	**11**	2	1	**3**	**14**
11:45	3	16	**19**	0	1	**1**	**20**
12:00	0	16	**16**	0	4	**4**	**20**
12:15	1	14	**15**	0	2	**2**	**17**
12:30	0	17	**17**	0	0	**0**	**17**
12:45	1	14	**15**	0	4	**4**	**19**
13:00	0	16	**16**	0	1	**1**	**17**
13:15	1	15	**16**	0	2	**2**	**18**
13:30	0	20	**20**	1	1	**2**	**22**
13:45	2	17	**19**	1	4	**5**	**24**
14:00	0	16	**16**	0	1	**1**	**17**
14:15	1	17	**18**	0	1	**1**	**19**
14:30	0	14	**14**	0	0	**0**	**14**
14:45	0	18	**18**	2	1	**3**	**21**
15:00	1	14	**15**	1	2	**3**	**18**
15:15	1	17	**18**	0	1	**1**	**19**
15:30	0	15	**15**	0	1	**1**	**16**
15:45	0	11	**11**	0	1	**1**	**12**
16:00	1	14	**15**	1	1	**2**	**17**
16:15	0	12	**12**	0	1	**1**	**13**
16:30	0	17	**17**	0	0	**0**	**17**
16:45	0	18	**18**	0	0	**0**	**18**
17:00	0	16	**16**	0	1	**1**	**17**
17:15	1	15	**16**	0	0	**0**	**16**
17:30	1	15	**16**	3	2	**5**	**21**
17:45	0	11	**11**	0	1	**1**	**12**
18:00	1	7	**8**	0	0	**0**	**8**
18:15	1	13	**14**	0	0	**0**	**14**
18:30	1	11	**12**	0	1	**1**	**13**
18:45	0	12	**12**	0	2	**2**	**14**
19:00	0	17	**17**	0	1	**1**	**18**
19:15	0	11	**11**	0	3	**3**	**14**
19:30	0	14	**14**	0	2	**2**	**16**
19:45	0	9	**9**	0	0	**0**	**9**
20:00	0	12	**12**	0	0	**0**	**12**
20:15	0	12	**12**	0	0	**0**	**12**
20:30	0	11	**11**	0	0	**0**	**11**
20:45	0	14	**14**	0	1	**1**	**15**
21:00	0	6	**6**	0	1	**1**	**7**
21:15	1	15	**16**	0	1	**1**	**17**
21:30	0	8	**8**	0	1	**1**	**9**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
21:45	0	7	**7**	0	0	**0**	**7**
22:00	0	17	**17**	0	1	**1**	**18**
22:15	2	9	**11**	0	1	**1**	**12**
22:30	0	8	**8**	0	0	**0**	**8**
22:45	0	6	**6**	0	0	**0**	**6**
23:00	1	9	**10**	0	0	**0**	**10**
23:15	1	8	**9**	0	1	**1**	**10**
23:30	0	7	**7**	0	1	**1**	**8**
23:45	1	8	**9**	0	0	**0**	**9**
TOTALS:	**41**	**1162**	**1203**	**20**	**85**	**105**	**1308**
PERCENTAGES:	***3%***	***86%***	***89%***	***1%***	***6%***	***8%***	***96%***

Peak Hour: 13:30 to 14:30

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
3	**70**	**73**	**2**	**7**	**9**	**82**

Location: Love's Truck Stops - Tulare
Driveway #: 3
Latitude: 36.1799
Longitude: -119.3310
Start Date: 11/14/2017

Tuesday, November 14, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	0	0	**0**	0	13	**13**	**13**
0:15	0	1	**1**	0	8	**8**	**9**
0:30	0	0	**0**	0	8	**8**	**8**
0:45	0	0	**0**	1	12	**13**	**13**
1:00	0	0	**0**	0	8	**8**	**8**
1:15	0	0	**0**	1	9	**10**	**10**
1:30	0	0	**0**	0	6	**6**	**6**
1:45	0	1	**1**	0	9	**9**	**10**
2:00	0	0	**0**	0	5	**5**	**5**
2:15	0	1	**1**	0	12	**12**	**13**
2:30	0	0	**0**	0	14	**14**	**14**
2:45	0	1	**1**	0	11	**11**	**12**
3:00	0	1	**1**	1	13	**14**	**15**
3:15	0	0	**0**	1	16	**17**	**17**
3:30	0	0	**0**	0	12	**12**	**12**
3:45	0	2	**2**	0	8	**8**	**10**
4:00	0	1	**1**	0	16	**16**	**17**
4:15	0	0	**0**	0	16	**16**	**16**
4:30	0	0	**0**	0	14	**14**	**14**
4:45	0	1	**1**	0	11	**11**	**12**
5:00	0	1	**1**	0	9	**9**	**10**
5:15	0	0	**0**	0	9	**9**	**9**
5:30	0	0	**0**	0	14	**14**	**14**
5:45	0	0	**0**	0	13	**13**	**13**
6:00	1	2	**3**	0	24	**24**	**27**
6:15	0	1	**1**	2	18	**20**	**21**
6:30	0	0	**0**	0	22	**22**	**22**
6:45	1	1	**2**	0	12	**12**	**14**
7:00	0	2	**2**	0	15	**15**	**17**
7:15	0	5	**5**	0	18	**18**	**23**
7:30	1	3	**4**	0	14	**14**	**18**
7:45	2	3	**5**	3	25	**28**	**33**
8:00	2	5	**7**	1	20	**21**	**28**
8:15	1	2	**3**	0	19	**19**	**22**
8:30	0	3	**3**	1	19	**20**	**23**
8:45	0	1	**1**	3	13	**16**	**17**
9:00	0	2	**2**	0	17	**17**	**19**
9:15	2	3	**5**	0	10	**10**	**15**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
9:30	0	8	**8**	4	18	**22**	**30**
9:45	0	3	**3**	1	14	**15**	**18**
10:00	2	1	**3**	2	12	**14**	**17**
10:15	0	2	**2**	1	12	**13**	**15**
10:30	3	0	**3**	1	15	**16**	**19**
10:45	1	0	**1**	1	13	**14**	**15**
11:00	0	4	**4**	1	18	**19**	**23**
11:15	2	1	**3**	4	18	**22**	**25**
11:30	0	6	**6**	0	13	**13**	**19**
11:45	0	3	**3**	1	20	**21**	**24**
12:00	0	4	**4**	0	12	**12**	**16**
12:15	0	3	**3**	0	18	**18**	**21**
12:30	0	2	**2**	2	18	**20**	**22**
12:45	0	3	**3**	0	18	**18**	**21**
13:00	0	4	**4**	1	8	**9**	**13**
13:15	0	4	**4**	1	15	**16**	**20**
13:30	0	4	**4**	2	12	**14**	**18**
13:45	1	7	**8**	0	19	**19**	**27**
14:00	0	6	**6**	0	15	**15**	**21**
14:15	2	3	**5**	0	13	**13**	**18**
14:30	0	7	**7**	0	17	**17**	**24**
14:45	0	5	**5**	1	15	**16**	**21**
15:00	1	3	**4**	1	18	**19**	**23**
15:15	0	1	**1**	5	18	**23**	**24**
15:30	2	1	**3**	0	7	**7**	**10**
15:45	4	5	**9**	2	17	**19**	**28**
16:00	1	10	**11**	3	10	**13**	**24**
16:15	1	3	**4**	1	9	**10**	**14**
16:30	1	7	**8**	3	10	**13**	**21**
16:45	0	6	**6**	0	12	**12**	**18**
17:00	2	4	**6**	1	20	**21**	**27**
17:15	0	2	**2**	1	12	**13**	**15**
17:30	0	3	**3**	1	15	**16**	**19**
17:45	2	5	**7**	2	17	**19**	**26**
18:00	0	4	**4**	1	18	**19**	**23**
18:15	1	4	**5**	1	20	**21**	**26**
18:30	1	4	**5**	5	10	**15**	**20**
18:45	2	4	**6**	0	10	**10**	**16**
19:00	0	0	**0**	0	16	**16**	**16**
19:15	0	1	**1**	0	17	**17**	**18**
19:30	0	5	**5**	0	18	**18**	**23**
19:45	3	1	**4**	1	12	**13**	**17**
20:00	0	1	**1**	1	17	**18**	**19**
20:15	0	0	**0**	0	8	**8**	**8**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
20:30	1	3	**4**	1	11	**12**	**16**
20:45	0	0	**0**	0	9	**9**	**9**
21:00	0	1	**1**	1	14	**15**	**16**
21:15	0	1	**1**	0	16	**16**	**17**
21:30	0	1	**1**	0	11	**11**	**12**
21:45	0	0	**0**	0	10	**10**	**10**
22:00	0	1	**1**	0	9	**9**	**10**
22:15	0	1	**1**	0	8	**8**	**9**
22:30	1	1	**2**	0	13	**13**	**15**
22:45	0	3	**3**	0	8	**8**	**11**
23:00	0	2	**2**	0	14	**14**	**16**
23:15	1	2	**3**	1	7	**8**	**11**
23:30	0	2	**2**	0	12	**12**	**14**
23:45	0	1	**1**	0	10	**10**	**11**
TOTALS:	**45**	**216**	**261**	**69**	**1308**	**1377**	**1638**
PERCENTAGES:	***3%***	***13%***	***16%***	***4%***	***80%***	***84%***	***100%***

Peak Hour: 7:45 to 8:45

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
5	**13**	**18**	**5**	**83**	**88**	**106**

Wednesday, November 15, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	0	0	**0**	0	6	**6**	**6**
0:15	1	0	**1**	1	11	**12**	**13**
0:30	0	0	**0**	1	5	**6**	**6**
0:45	0	1	**1**	0	15	**15**	**16**
1:00	0	0	**0**	0	10	**10**	**10**
1:15	0	0	**0**	0	9	**9**	**9**
1:30	0	0	**0**	0	9	**9**	**9**
1:45	0	0	**0**	0	11	**11**	**11**
2:00	0	0	**0**	0	10	**10**	**10**
2:15	0	0	**0**	0	12	**12**	**12**
2:30	0	1	**1**	0	11	**11**	**12**
2:45	0	0	**0**	0	10	**10**	**10**
3:00	0	0	**0**	0	10	**10**	**10**
3:15	0	0	**0**	0	10	**10**	**10**
3:30	0	0	**0**	0	12	**12**	**12**
3:45	0	0	**0**	1	11	**12**	**12**
4:00	0	0	**0**	0	11	**11**	**11**
4:15	0	1	**1**	0	13	**13**	**14**
4:30	0	0	**0**	0	6	**6**	**6**
4:45	1	1	**2**	0	17	**17**	**19**
5:00	0	2	**2**	0	12	**12**	**14**
5:15	1	1	**2**	2	13	**15**	**17**
5:30	0	1	**1**	1	10	**11**	**12**
5:45	0	2	**2**	1	16	**17**	**19**
6:00	0	1	**1**	0	14	**14**	**15**
6:15	2	1	**3**	1	17	**18**	**21**
6:30	1	1	**2**	2	21	**23**	**25**
6:45	1	3	**4**	1	12	**13**	**17**
7:00	2	5	**7**	1	10	**11**	**18**
7:15	0	4	**4**	2	12	**14**	**18**
7:30	1	3	**4**	1	20	**21**	**25**
7:45	0	3	**3**	3	17	**20**	**23**
8:00	0	7	**7**	0	11	**11**	**18**
8:15	2	4	**6**	3	22	**25**	**31**
8:30	0	1	**1**	1	11	**12**	**13**
8:45	1	1	**2**	1	11	**12**	**14**
9:00	1	0	**1**	2	15	**17**	**18**
9:15	2	1	**3**	2	20	**22**	**25**
9:30	0	1	**1**	0	15	**15**	**16**
9:45	0	2	**2**	1	18	**19**	**21**
10:00	0	2	**2**	0	16	**16**	**18**
10:15	0	3	**3**	1	17	**18**	**21**
10:30	0	2	**2**	1	17	**18**	**20**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
10:45	0	0	**0**	0	17	**17**	**17**
11:00	0	5	**5**	0	11	**11**	**16**
11:15	0	2	**2**	0	8	**8**	**10**
11:30	0	3	**3**	0	10	**10**	**13**
11:45	0	5	**5**	1	16	**17**	**22**
12:00	0	3	**3**	1	10	**11**	**14**
12:15	0	8	**8**	0	19	**19**	**27**
12:30	1	4	**5**	2	13	**15**	**20**
12:45	0	6	**6**	1	17	**18**	**24**
13:00	0	1	**1**	0	13	**13**	**14**
13:15	0	6	**6**	1	11	**12**	**18**
13:30	0	5	**5**	1	16	**17**	**22**
13:45	0	4	**4**	2	15	**17**	**21**
14:00	0	3	**3**	0	18	**18**	**21**
14:15	2	2	**4**	0	13	**13**	**17**
14:30	1	3	**4**	1	11	**12**	**16**
14:45	0	2	**2**	0	11	**11**	**13**
15:00	1	2	**3**	1	17	**18**	**21**
15:15	1	2	**3**	0	15	**15**	**18**
15:30	0	4	**4**	2	8	**10**	**14**
15:45	1	4	**5**	0	5	**5**	**10**
16:00	0	2	**2**	1	14	**15**	**17**
16:15	1	3	**4**	0	18	**18**	**22**
16:30	0	7	**7**	1	7	**8**	**15**
16:45	0	2	**2**	1	13	**14**	**16**
17:00	0	3	**3**	0	19	**19**	**22**
17:15	1	7	**8**	2	14	**16**	**24**
17:30	0	6	**6**	0	14	**14**	**20**
17:45	0	2	**2**	1	17	**18**	**20**
18:00	0	2	**2**	0	17	**17**	**19**
18:15	0	2	**2**	0	8	**8**	**10**
18:30	0	2	**2**	0	13	**13**	**15**
18:45	0	1	**1**	1	17	**18**	**19**
19:00	0	1	**1**	1	8	**9**	**10**
19:15	0	2	**2**	1	12	**13**	**15**
19:30	0	2	**2**	0	18	**18**	**20**
19:45	1	0	**1**	0	11	**11**	**12**
20:00	0	2	**2**	0	10	**10**	**12**
20:15	1	2	**3**	3	8	**11**	**14**
20:30	1	3	**4**	1	15	**16**	**20**
20:45	0	1	**1**	1	8	**9**	**10**
21:00	0	1	**1**	0	14	**14**	**15**
21:15	1	0	**1**	3	7	**10**	**11**
21:30	0	1	**1**	0	9	**9**	**10**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
21:45	0	1	**1**	0	9	**9**	**10**
22:00	0	1	**1**	0	4	**4**	**5**
22:15	0	1	**1**	0	7	**7**	**8**
22:30	1	2	**3**	1	13	**14**	**17**
22:45	1	2	**3**	0	11	**11**	**14**
23:00	0	2	**2**	1	16	**17**	**19**
23:15	0	0	**0**	0	6	**6**	**6**
23:30	0	0	**0**	0	7	**7**	**7**
23:45	0	1	**1**	0	10	**10**	**11**
TOTALS:	**31**	**193**	**224**	**62**	**1204**	**1266**	**1490**
PERCENTAGES:	***2%***	***12%***	***14%***	***4%***	***74%***	***77%***	***91%***

Peak Hour: 9:00 to 10:00

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
3	**4**	**7**	**5**	**68**	**73**	**80**

Thursday, November 16, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	0	1	**1**	0	13	**13**	**14**
0:15	0	2	**2**	0	4	**4**	**6**
0:30	1	2	**3**	0	13	**13**	**16**
0:45	0	0	**0**	0	15	**15**	**15**
1:00	0	1	**1**	0	10	**10**	**11**
1:15	0	0	**0**	0	8	**8**	**8**
1:30	0	0	**0**	2	13	**15**	**15**
1:45	0	2	**2**	0	9	**9**	**11**
2:00	0	1	**1**	0	7	**7**	**8**
2:15	0	0	**0**	0	12	**12**	**12**
2:30	0	2	**2**	0	14	**14**	**16**
2:45	0	1	**1**	0	14	**14**	**15**
3:00	0	1	**1**	0	5	**5**	**6**
3:15	0	2	**2**	0	9	**9**	**11**
3:30	0	0	**0**	0	8	**8**	**8**
3:45	0	0	**0**	2	8	**10**	**10**
4:00	0	1	**1**	0	14	**14**	**15**
4:15	0	0	**0**	0	12	**12**	**12**
4:30	0	0	**0**	0	10	**10**	**10**
4:45	0	1	**1**	0	11	**11**	**12**
5:00	0	0	**0**	0	12	**12**	**12**
5:15	0	2	**2**	0	16	**16**	**18**
5:30	0	0	**0**	0	15	**15**	**15**
5:45	0	4	**4**	0	15	**15**	**19**
6:00	0	2	**2**	0	16	**16**	**18**
6:15	0	4	**4**	1	13	**14**	**18**
6:30	1	3	**4**	2	17	**19**	**23**
6:45	1	7	**8**	1	20	**21**	**29**
7:00	1	5	**6**	0	20	**20**	**26**
7:15	0	4	**4**	0	22	**22**	**26**
7:30	2	4	**6**	1	22	**23**	**29**
7:45	0	6	**6**	2	14	**16**	**22**
8:00	1	3	**4**	0	12	**12**	**16**
8:15	2	2	**4**	2	15	**17**	**21**
8:30	0	3	**3**	0	23	**23**	**26**
8:45	0	1	**1**	1	19	**20**	**21**
9:00	0	2	**2**	2	10	**12**	**14**
9:15	0	1	**1**	0	13	**13**	**14**
9:30	2	3	**5**	0	18	**18**	**23**
9:45	0	2	**2**	0	11	**11**	**13**
10:00	0	2	**2**	2	18	**20**	**22**
10:15	0	3	**3**	1	14	**15**	**18**
10:30	0	4	**4**	1	16	**17**	**21**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
10:45	0	5	**5**	1	14	**15**	**20**
11:00	0	1	**1**	0	14	**14**	**15**
11:15	1	0	**1**	0	19	**19**	**20**
11:30	0	3	**3**	1	15	**16**	**19**
11:45	1	2	**3**	1	16	**17**	**20**
12:00	0	5	**5**	0	15	**15**	**20**
12:15	0	1	**1**	1	17	**18**	**19**
12:30	0	4	**4**	1	16	**17**	**21**
12:45	0	6	**6**	0	16	**16**	**22**
13:00	0	4	**4**	0	20	**20**	**24**
13:15	0	2	**2**	1	16	**17**	**19**
13:30	1	4	**5**	2	16	**18**	**23**
13:45	1	6	**7**	0	9	**9**	**16**
14:00	2	2	**4**	1	20	**21**	**25**
14:15	1	5	**6**	1	20	**21**	**27**
14:30	0	4	**4**	0	16	**16**	**20**
14:45	5	4	**9**	2	19	**21**	**30**
15:00	3	7	**10**	3	23	**26**	**36**
15:15	2	3	**5**	3	16	**19**	**24**
15:30	0	1	**1**	1	15	**16**	**17**
15:45	0	4	**4**	0	11	**11**	**15**
16:00	3	1	**4**	1	14	**15**	**19**
16:15	0	5	**5**	2	13	**15**	**20**
16:30	1	0	**1**	1	12	**13**	**14**
16:45	0	3	**3**	0	11	**11**	**14**
17:00	0	6	**6**	0	22	**22**	**28**
17:15	0	1	**1**	2	16	**18**	**19**
17:30	0	3	**3**	0	15	**15**	**18**
17:45	1	1	**2**	1	9	**10**	**12**
18:00	1	0	**1**	1	16	**17**	**18**
18:15	1	2	**3**	1	11	**12**	**15**
18:30	0	5	**5**	1	9	**10**	**15**
18:45	1	2	**3**	1	13	**14**	**17**
19:00	1	1	**2**	0	7	**7**	**9**
19:15	1	1	**2**	1	10	**11**	**13**
19:30	0	2	**2**	1	13	**14**	**16**
19:45	0	0	**0**	0	10	**10**	**10**
20:00	0	1	**1**	0	6	**6**	**7**
20:15	0	3	**3**	0	15	**15**	**18**
20:30	0	1	**1**	1	13	**14**	**15**
20:45	0	3	**3**	0	14	**14**	**17**
21:00	0	3	**3**	0	15	**15**	**18**
21:15	1	2	**3**	0	10	**10**	**13**
21:30	0	2	**2**	0	14	**14**	**16**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
21:45	0	3	**3**	0	9	**9**	**12**
22:00	0	1	**1**	0	11	**11**	**12**
22:15	1	0	**1**	1	13	**14**	**15**
22:30	0	0	**0**	1	10	**11**	**11**
22:45	0	2	**2**	0	9	**9**	**11**
23:00	0	1	**1**	2	7	**9**	**10**
23:15	3	3	**6**	1	9	**10**	**16**
23:30	0	0	**0**	0	6	**6**	**6**
23:45	0	0	**0**	1	9	**10**	**10**
TOTALS:	**43**	**215**	**258**	**59**	**1294**	**1353**	**1611**
PERCENTAGES:	***3%***	***13%***	***16%***	***4%***	***79%***	***83%***	***98%***

Peak Hour: 14:15 to 15:15

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
9	**20**	**29**	**6**	**78**	**84**	**113**

Location: Love's Truck Stops - Lost Hills
Driveway #: 4
Latitude: 35.6181
Longitude: -119.6593
Start Date: 2/6/2018

Tuesday, February 06, 2018

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	1	9	**10**	0	1	**1**	**11**
0:15	0	7	**7**	0	1	**1**	**8**
0:30	0	8	**8**	0	2	**2**	**10**
0:45	0	5	**5**	0	1	**1**	**6**
1:00	0	6	**6**	0	1	**1**	**7**
1:15	0	4	**4**	0	0	**0**	**4**
1:30	0	5	**5**	0	0	**0**	**5**
1:45	0	8	**8**	0	1	**1**	**9**
2:00	0	5	**5**	0	0	**0**	**5**
2:15	0	3	**3**	0	1	**1**	**4**
2:30	0	7	**7**	0	1	**1**	**8**
2:45	0	9	**9**	0	1	**1**	**10**
3:00	1	5	**6**	0	1	**1**	**7**
3:15	0	3	**3**	0	1	**1**	**4**
3:30	0	8	**8**	0	2	**2**	**10**
3:45	0	5	**5**	0	0	**0**	**5**
4:00	0	5	**5**	0	3	**3**	**8**
4:15	0	6	**6**	0	2	**2**	**8**
4:30	0	8	**8**	0	0	**0**	**8**
4:45	0	6	**6**	0	2	**2**	**8**
5:00	0	6	**6**	0	0	**0**	**6**
5:15	0	9	**9**	0	2	**2**	**11**
5:30	1	5	**6**	0	0	**0**	**6**
5:45	0	5	**5**	0	3	**3**	**8**
6:00	0	6	**6**	0	5	**5**	**11**
6:15	0	6	**6**	0	2	**2**	**8**
6:30	0	12	**12**	0	4	**4**	**16**
6:45	1	11	**12**	0	0	**0**	**12**
7:00	0	12	**12**	0	2	**2**	**14**
7:15	0	5	**5**	0	3	**3**	**8**
7:30	0	12	**12**	0	3	**3**	**15**
7:45	0	7	**7**	0	1	**1**	**8**
8:00	0	17	**17**	0	1	**1**	**18**
8:15	0	8	**8**	0	1	**1**	**9**
8:30	0	11	**11**	0	0	**0**	**11**
8:45	0	5	**5**	0	2	**2**	**7**
9:00	0	8	**8**	0	3	**3**	**11**
9:15	0	8	**8**	0	1	**1**	**9**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
9:30	0	7	**7**	0	2	**2**	**9**
9:45	0	4	**4**	0	4	**4**	**8**
10:00	1	8	**9**	0	4	**4**	**13**
10:15	0	5	**5**	0	4	**4**	**9**
10:30	0	8	**8**	1	1	**2**	**10**
10:45	0	2	**2**	1	2	**3**	**5**
11:00	0	8	**8**	0	1	**1**	**9**
11:15	0	5	**5**	0	1	**1**	**6**
11:30	1	5	**6**	0	3	**3**	**9**
11:45	0	10	**10**	0	3	**3**	**13**
12:00	0	10	**10**	0	3	**3**	**13**
12:15	1	6	**7**	0	1	**1**	**8**
12:30	1	7	**8**	1	0	**1**	**9**
12:45	0	7	**7**	0	0	**0**	**7**
13:00	0	13	**13**	0	2	**2**	**15**
13:15	0	11	**11**	0	1	**1**	**12**
13:30	1	10	**11**	0	6	**6**	**17**
13:45	1	12	**13**	1	5	**6**	**19**
14:00	0	9	**9**	1	4	**5**	**14**
14:15	0	9	**9**	0	5	**5**	**14**
14:30	0	6	**6**	0	2	**2**	**8**
14:45	0	10	**10**	0	3	**3**	**13**
15:00	0	8	**8**	0	3	**3**	**11**
15:15	0	11	**11**	0	2	**2**	**13**
15:30	0	7	**7**	0	1	**1**	**8**
15:45	0	18	**18**	0	4	**4**	**22**
16:00	0	6	**6**	0	0	**0**	**6**
16:15	0	6	**6**	0	3	**3**	**9**
16:30	1	15	**16**	2	1	**3**	**19**
16:45	1	10	**11**	1	1	**2**	**13**
17:00	2	13	**15**	0	2	**2**	**17**
17:15	0	9	**9**	0	7	**7**	**16**
17:30	0	7	**7**	0	3	**3**	**10**
17:45	0	11	**11**	0	2	**2**	**13**
18:00	0	4	**4**	0	1	**1**	**5**
18:15	0	10	**10**	0	1	**1**	**11**
18:30	1	14	**15**	0	2	**2**	**17**
18:45	0	3	**3**	0	2	**2**	**5**
19:00	0	4	**4**	0	3	**3**	**7**
19:15	0	9	**9**	0	1	**1**	**10**
19:30	0	10	**10**	0	0	**0**	**10**
19:45	0	11	**11**	0	4	**4**	**15**
20:00	0	9	**9**	0	0	**0**	**9**
20:15	0	10	**10**	0	1	**1**	**11**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
20:30	1	8	**9**	0	4	**4**	**13**
20:45	1	4	**5**	0	0	**0**	**5**
21:00	0	8	**8**	0	1	**1**	**9**
21:15	0	8	**8**	0	1	**1**	**9**
21:30	0	4	**4**	0	0	**0**	**4**
21:45	0	8	**8**	0	0	**0**	**8**
22:00	0	12	**12**	0	1	**1**	**13**
22:15	0	12	**12**	0	0	**0**	**12**
22:30	0	9	**9**	0	0	**0**	**9**
22:45	0	5	**5**	0	2	**2**	**7**
23:00	0	15	**15**	0	0	**0**	**15**
23:15	0	6	**6**	0	1	**1**	**7**
23:30	0	8	**8**	0	1	**1**	**9**
23:45	0	6	**6**	0	2	**2**	**8**
TOTALS:	**17**	**765**	**782**	**8**	**168**	**176**	**958**
PERCENTAGES:	***2%***	***80%***	***82%***	***1%***	***18%***	***18%***	***100%***

Peak Hour: 16:30 to 17:30

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
4	**47**	**51**	**3**	**11**	**14**	**65**

Wednesday, February 07, 2018

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	0	5	**5**	0	0	**0**	**5**
0:15	0	8	**8**	0	0	**0**	**8**
0:30	0	9	**9**	0	4	**4**	**13**
0:45	0	10	**10**	0	0	**0**	**10**
1:00	0	9	**9**	0	0	**0**	**9**
1:15	0	8	**8**	0	3	**3**	**11**
1:30	0	5	**5**	0	2	**2**	**7**
1:45	0	10	**10**	0	3	**3**	**13**
2:00	0	8	**8**	0	2	**2**	**10**
2:15	0	9	**9**	0	2	**2**	**11**
2:30	0	14	**14**	0	1	**1**	**15**
2:45	0	6	**6**	0	2	**2**	**8**
3:00	0	6	**6**	0	0	**0**	**6**
3:15	1	6	**7**	0	2	**2**	**9**
3:30	0	6	**6**	0	1	**1**	**7**
3:45	1	5	**6**	0	3	**3**	**9**
4:00	0	1	**1**	0	0	**0**	**1**
4:15	0	5	**5**	0	0	**0**	**5**
4:30	0	5	**5**	0	1	**1**	**6**
4:45	1	6	**7**	0	0	**0**	**7**
5:00	1	5	**6**	0	2	**2**	**8**
5:15	0	6	**6**	0	2	**2**	**8**
5:30	0	8	**8**	0	2	**2**	**10**
5:45	0	6	**6**	0	2	**2**	**8**
6:00	0	6	**6**	0	1	**1**	**7**
6:15	0	4	**4**	0	1	**1**	**5**
6:30	0	5	**5**	0	0	**0**	**5**
6:45	0	9	**9**	0	4	**4**	**13**
7:00	0	12	**12**	0	1	**1**	**13**
7:15	0	8	**8**	0	2	**2**	**10**
7:30	0	6	**6**	0	0	**0**	**6**
7:45	0	17	**17**	0	6	**6**	**23**
8:00	0	5	**5**	0	3	**3**	**8**
8:15	0	10	**10**	0	3	**3**	**13**
8:30	1	10	**11**	0	6	**6**	**17**
8:45	0	5	**5**	0	5	**5**	**10**
9:00	1	9	**10**	0	2	**2**	**12**
9:15	0	12	**12**	0	4	**4**	**16**
9:30	0	11	**11**	0	1	**1**	**12**
9:45	0	9	**9**	0	0	**0**	**9**
10:00	0	4	**4**	0	6	**6**	**10**
10:15	0	11	**11**	0	2	**2**	**13**
10:30	1	4	**5**	0	1	**1**	**6**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
10:45	0	6	**6**	0	2	**2**	**8**
11:00	0	9	**9**	0	4	**4**	**13**
11:15	0	6	**6**	0	3	**3**	**9**
11:30	0	8	**8**	0	1	**1**	**9**
11:45	0	6	**6**	0	2	**2**	**8**
12:00	0	8	**8**	0	2	**2**	**10**
12:15	0	11	**11**	1	2	**3**	**14**
12:30	0	4	**4**	0	1	**1**	**5**
12:45	0	8	**8**	0	2	**2**	**10**
13:00	0	11	**11**	0	1	**1**	**12**
13:15	0	12	**12**	0	3	**3**	**15**
13:30	0	7	**7**	0	5	**5**	**12**
13:45	0	11	**11**	0	1	**1**	**12**
14:00	0	10	**10**	0	4	**4**	**14**
14:15	0	12	**12**	0	3	**3**	**15**
14:30	0	17	**17**	1	4	**5**	**22**
14:45	1	13	**14**	0	2	**2**	**16**
15:00	0	9	**9**	0	3	**3**	**12**
15:15	0	10	**10**	0	5	**5**	**15**
15:30	0	12	**12**	0	4	**4**	**16**
15:45	0	9	**9**	0	4	**4**	**13**
16:00	0	13	**13**	0	1	**1**	**14**
16:15	0	12	**12**	0	2	**2**	**14**
16:30	2	10	**12**	1	2	**3**	**15**
16:45	0	11	**11**	0	0	**0**	**11**
17:00	0	10	**10**	0	1	**1**	**11**
17:15	0	9	**9**	0	1	**1**	**10**
17:30	0	11	**11**	0	2	**2**	**13**
17:45	0	8	**8**	0	2	**2**	**10**
18:00	0	11	**11**	0	1	**1**	**12**
18:15	1	4	**5**	1	2	**3**	**8**
18:30	0	10	**10**	0	1	**1**	**11**
18:45	0	9	**9**	0	1	**1**	**10**
19:00	1	8	**9**	0	0	**0**	**9**
19:15	0	5	**5**	0	4	**4**	**9**
19:30	1	12	**13**	0	1	**1**	**14**
19:45	0	11	**11**	0	0	**0**	**11**
20:00	0	8	**8**	0	3	**3**	**11**
20:15	0	10	**10**	0	1	**1**	**11**
20:30	0	13	**13**	0	0	**0**	**13**
20:45	0	6	**6**	0	2	**2**	**8**
21:00	0	8	**8**	0	2	**2**	**10**
21:15	0	10	**10**	0	1	**1**	**11**
21:30	0	13	**13**	0	0	**0**	**13**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
21:45	0	11	**11**	0	2	**2**	**13**
22:00	0	8	**8**	0	1	**1**	**9**
22:15	0	8	**8**	0	2	**2**	**10**
22:30	0	6	**6**	0	0	**0**	**6**
22:45	0	5	**5**	0	0	**0**	**5**
23:00	0	9	**9**	0	1	**1**	**10**
23:15	1	6	**7**	0	1	**1**	**8**
23:30	0	8	**8**	0	1	**1**	**9**
23:45	0	6	**6**	0	1	**1**	**7**
TOTALS:	**14**	**811**	**825**	**4**	**179**	**183**	**1008**
PERCENTAGES:	***1%***	***85%***	***86%***	***0%***	***19%***	***19%***	***105%***

Peak Hour: 14:00 to 15:00

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
1	**52**	**53**	**1**	**13**	**14**	**67**

Thursday, February 08, 2018

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	0	8	**8**	0	1	**1**	**9**
0:15	0	13	**13**	0	0	**0**	**13**
0:30	0	10	**10**	0	1	**1**	**11**
0:45	0	13	**13**	0	2	**2**	**15**
1:00	0	7	**7**	0	0	**0**	**7**
1:15	0	8	**8**	0	0	**0**	**8**
1:30	1	6	**7**	2	2	**4**	**11**
1:45	0	5	**5**	0	2	**2**	**7**
2:00	0	9	**9**	0	3	**3**	**12**
2:15	0	6	**6**	1	1	**2**	**8**
2:30	0	5	**5**	0	1	**1**	**6**
2:45	0	0	**0**	0	1	**1**	**1**
3:00	0	8	**8**	0	2	**2**	**10**
3:15	0	9	**9**	0	2	**2**	**11**
3:30	0	9	**9**	0	2	**2**	**11**
3:45	0	5	**5**	0	2	**2**	**7**
4:00	0	13	**13**	0	3	**3**	**16**
4:15	0	6	**6**	0	3	**3**	**9**
4:30	0	5	**5**	0	0	**0**	**5**
4:45	0	7	**7**	0	2	**2**	**9**
5:00	0	6	**6**	0	1	**1**	**7**
5:15	0	10	**10**	0	1	**1**	**11**
5:30	0	3	**3**	0	4	**4**	**7**
5:45	0	7	**7**	0	4	**4**	**11**
6:00	1	9	**10**	1	2	**3**	**13**
6:15	0	8	**8**	0	0	**0**	**8**
6:30	0	10	**10**	0	3	**3**	**13**
6:45	0	9	**9**	0	2	**2**	**11**
7:00	0	9	**9**	0	3	**3**	**12**
7:15	0	10	**10**	1	3	**4**	**14**
7:30	0	8	**8**	0	2	**2**	**10**
7:45	0	11	**11**	0	1	**1**	**12**
8:00	0	9	**9**	0	9	**9**	**18**
8:15	0	11	**11**	0	5	**5**	**16**
8:30	0	9	**9**	0	0	**0**	**9**
8:45	0	8	**8**	0	8	**8**	**16**
9:00	1	8	**9**	1	1	**2**	**11**
9:15	0	9	**9**	0	2	**2**	**11**
9:30	0	8	**8**	0	2	**2**	**10**
9:45	1	7	**8**	0	2	**2**	**10**
10:00	0	6	**6**	0	5	**5**	**11**
10:15	0	8	**8**	0	3	**3**	**11**
10:30	0	11	**11**	0	1	**1**	**12**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
10:45	0	12	**12**	0	1	**1**	**13**
11:00	0	6	**6**	0	3	**3**	**9**
11:15	1	7	**8**	0	3	**3**	**11**
11:30	0	5	**5**	0	3	**3**	**8**
11:45	0	10	**10**	1	3	**4**	**14**
12:00	0	18	**18**	0	1	**1**	**19**
12:15	0	6	**6**	0	1	**1**	**7**
12:30	0	11	**11**	0	3	**3**	**14**
12:45	0	7	**7**	0	4	**4**	**11**
13:00	0	13	**13**	0	4	**4**	**17**
13:15	0	6	**6**	0	7	**7**	**13**
13:30	0	4	**4**	0	3	**3**	**7**
13:45	1	16	**17**	0	4	**4**	**21**
14:00	0	7	**7**	0	1	**1**	**8**
14:15	0	17	**17**	0	2	**2**	**19**
14:30	0	11	**11**	0	3	**3**	**14**
14:45	1	16	**17**	0	2	**2**	**19**
15:00	0	14	**14**	1	3	**4**	**18**
15:15	0	9	**9**	0	5	**5**	**14**
15:30	0	8	**8**	0	1	**1**	**9**
15:45	0	13	**13**	0	2	**2**	**15**
16:00	1	15	**16**	0	1	**1**	**17**
16:15	0	12	**12**	0	3	**3**	**15**
16:30	0	10	**10**	0	4	**4**	**14**
16:45	0	16	**16**	0	0	**0**	**16**
17:00	0	11	**11**	0	1	**1**	**12**
17:15	0	9	**9**	0	2	**2**	**11**
17:30	1	12	**13**	0	2	**2**	**15**
17:45	0	23	**23**	0	3	**3**	**26**
18:00	1	9	**10**	0	1	**1**	**11**
18:15	0	12	**12**	0	4	**4**	**16**
18:30	0	9	**9**	0	0	**0**	**9**
18:45	0	11	**11**	0	2	**2**	**13**
19:00	0	11	**11**	0	0	**0**	**11**
19:15	0	11	**11**	0	2	**2**	**13**
19:30	0	12	**12**	0	0	**0**	**12**
19:45	0	4	**4**	0	2	**2**	**6**
20:00	1	4	**5**	0	2	**2**	**7**
20:15	1	11	**12**	0	0	**0**	**12**
20:30	0	8	**8**	0	1	**1**	**9**
20:45	0	4	**4**	0	0	**0**	**4**
21:00	0	8	**8**	1	1	**2**	**10**
21:15	0	11	**11**	0	1	**1**	**12**
21:30	0	10	**10**	0	1	**1**	**11**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
21:45	0	12	**12**	0	0	**0**	**12**
22:00	0	2	**2**	0	3	**3**	**5**
22:15	0	10	**10**	0	0	**0**	**10**
22:30	2	8	**10**	0	1	**1**	**11**
22:45	0	11	**11**	0	1	**1**	**12**
23:00	0	12	**12**	0	3	**3**	**15**
23:15	1	5	**6**	0	0	**0**	**6**
23:30	0	10	**10**	0	1	**1**	**11**
23:45	0	9	**9**	1	3	**4**	**13**
TOTALS:	**15**	**884**	**899**	**10**	**198**	**208**	**1107**
PERCENTAGES:	***2%***	***92%***	***94%***	***1%***	***21%***	***22%***	***116%***

Peak Hour: 14:15 to 15:15

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
1	**58**	**59**	**1**	**10**	**11**	**70**

Location: Love's Truck Stops - Lost Hills
Driveway #: 5
Latitude: 35.6175
Longitude: -119.6593
Start Date: 2/6/2018

Tuesday, February 06, 2018

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	0	0	**0**	1	5	**6**	**6**
0:15	0	1	**1**	0	7	**7**	**8**
0:30	0	0	**0**	0	5	**5**	**5**
0:45	0	0	**0**	0	3	**3**	**3**
1:00	0	1	**1**	0	4	**4**	**5**
1:15	0	0	**0**	0	3	**3**	**3**
1:30	0	0	**0**	0	3	**3**	**3**
1:45	0	0	**0**	0	5	**5**	**5**
2:00	0	0	**0**	0	2	**2**	**2**
2:15	0	0	**0**	0	4	**4**	**4**
2:30	0	0	**0**	1	1	**2**	**2**
2:45	0	2	**2**	0	4	**4**	**6**
3:00	0	0	**0**	0	6	**6**	**6**
3:15	0	0	**0**	0	1	**1**	**1**
3:30	0	0	**0**	1	1	**2**	**2**
3:45	0	0	**0**	0	4	**4**	**4**
4:00	0	1	**1**	0	4	**4**	**5**
4:15	0	0	**0**	0	3	**3**	**3**
4:30	0	0	**0**	0	4	**4**	**4**
4:45	0	3	**3**	0	5	**5**	**8**
5:00	0	0	**0**	0	1	**1**	**1**
5:15	0	0	**0**	0	6	**6**	**6**
5:30	0	0	**0**	0	4	**4**	**4**
5:45	0	0	**0**	0	5	**5**	**5**
6:00	0	0	**0**	0	0	**0**	**0**
6:15	0	0	**0**	0	2	**2**	**2**
6:30	0	0	**0**	0	3	**3**	**3**
6:45	0	0	**0**	1	5	**6**	**6**
7:00	0	0	**0**	1	9	**10**	**10**
7:15	0	0	**0**	0	3	**3**	**3**
7:30	0	0	**0**	0	4	**4**	**4**
7:45	0	1	**1**	0	6	**6**	**7**
8:00	0	0	**0**	0	7	**7**	**7**
8:15	0	0	**0**	0	4	**4**	**4**
8:30	0	0	**0**	0	6	**6**	**6**
8:45	0	0	**0**	0	5	**5**	**5**
9:00	0	0	**0**	1	3	**4**	**4**
9:15	0	0	**0**	1	4	**5**	**5**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
9:30	0	0	**0**	0	4	**4**	**4**
9:45	0	2	**2**	0	4	**4**	**6**
10:00	1	0	**1**	0	6	**6**	**7**
10:15	0	0	**0**	1	3	**4**	**4**
10:30	0	1	**1**	0	4	**4**	**5**
10:45	0	0	**0**	0	5	**5**	**5**
11:00	0	0	**0**	0	5	**5**	**5**
11:15	0	0	**0**	0	2	**2**	**2**
11:30	0	1	**1**	1	3	**4**	**5**
11:45	0	0	**0**	0	1	**1**	**1**
12:00	0	3	**3**	1	7	**8**	**11**
12:15	0	0	**0**	0	4	**4**	**4**
12:30	0	0	**0**	0	5	**5**	**5**
12:45	0	1	**1**	1	4	**5**	**6**
13:00	0	0	**0**	0	2	**2**	**2**
13:15	0	0	**0**	0	8	**8**	**8**
13:30	0	0	**0**	1	2	**3**	**3**
13:45	0	0	**0**	0	2	**2**	**2**
14:00	0	0	**0**	0	5	**5**	**5**
14:15	0	0	**0**	0	0	**0**	**0**
14:30	0	0	**0**	0	4	**4**	**4**
14:45	0	0	**0**	0	6	**6**	**6**
15:00	0	0	**0**	0	5	**5**	**5**
15:15	0	0	**0**	0	5	**5**	**5**
15:30	0	0	**0**	0	4	**4**	**4**
15:45	0	1	**1**	0	8	**8**	**9**
16:00	0	0	**0**	0	6	**6**	**6**
16:15	0	0	**0**	0	3	**3**	**3**
16:30	0	0	**0**	0	3	**3**	**3**
16:45	0	0	**0**	0	8	**8**	**8**
17:00	0	0	**0**	0	5	**5**	**5**
17:15	0	0	**0**	1	3	**4**	**4**
17:30	0	0	**0**	0	6	**6**	**6**
17:45	0	0	**0**	0	6	**6**	**6**
18:00	0	1	**1**	1	7	**8**	**9**
18:15	0	3	**3**	0	3	**3**	**6**
18:30	0	2	**2**	0	4	**4**	**6**
18:45	0	0	**0**	0	5	**5**	**5**
19:00	0	0	**0**	0	3	**3**	**3**
19:15	0	1	**1**	0	3	**3**	**4**
19:30	0	1	**1**	0	2	**2**	**3**
19:45	0	0	**0**	0	7	**7**	**7**
20:00	1	2	**3**	0	6	**6**	**9**
20:15	0	0	**0**	0	5	**5**	**5**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
20:30	0	0	**0**	1	4	**5**	**5**
20:45	0	0	**0**	0	3	**3**	**3**
21:00	0	0	**0**	0	4	**4**	**4**
21:15	0	0	**0**	0	3	**3**	**3**
21:30	0	0	**0**	0	4	**4**	**4**
21:45	0	0	**0**	0	6	**6**	**6**
22:00	0	0	**0**	0	11	**11**	**11**
22:15	1	1	**2**	0	5	**5**	**7**
22:30	0	0	**0**	0	9	**9**	**9**
22:45	0	0	**0**	0	2	**2**	**2**
23:00	0	0	**0**	0	8	**8**	**8**
23:15	0	1	**1**	0	2	**2**	**3**
23:30	0	0	**0**	0	4	**4**	**4**
23:45	0	0	**0**	0	4	**4**	**4**
TOTALS:	**3**	**30**	**33**	**15**	**413**	**428**	**461**
PERCENTAGES:	***1%***	***7%***	***7%***	***3%***	***90%***	***93%***	***100%***

Peak Hour: 21:45 to 22:45

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
1	**1**	**2**	**0**	**31**	**31**	**33**

Wednesday, February 07, 2018

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	0	0	**0**	0	7	**7**	**7**
0:15	0	0	**0**	0	4	**4**	**4**
0:30	0	0	**0**	0	4	**4**	**4**
0:45	0	0	**0**	0	1	**1**	**1**
1:00	0	0	**0**	0	7	**7**	**7**
1:15	0	0	**0**	0	8	**8**	**8**
1:30	0	0	**0**	0	3	**3**	**3**
1:45	0	0	**0**	0	1	**1**	**1**
2:00	0	0	**0**	0	5	**5**	**5**
2:15	0	0	**0**	0	4	**4**	**4**
2:30	0	0	**0**	0	3	**3**	**3**
2:45	0	0	**0**	0	8	**8**	**8**
3:00	0	1	**1**	0	6	**6**	**7**
3:15	0	0	**0**	0	3	**3**	**3**
3:30	0	0	**0**	0	2	**2**	**2**
3:45	0	0	**0**	0	5	**5**	**5**
4:00	0	0	**0**	0	3	**3**	**3**
4:15	0	0	**0**	0	1	**1**	**1**
4:30	0	0	**0**	0	1	**1**	**1**
4:45	0	0	**0**	0	1	**1**	**1**
5:00	0	0	**0**	0	2	**2**	**2**
5:15	0	1	**1**	1	5	**6**	**7**
5:30	0	0	**0**	1	1	**2**	**2**
5:45	0	0	**0**	0	6	**6**	**6**
6:00	0	0	**0**	0	2	**2**	**2**
6:15	0	0	**0**	0	4	**4**	**4**
6:30	0	0	**0**	0	3	**3**	**3**
6:45	0	0	**0**	0	0	**0**	**0**
7:00	0	0	**0**	0	5	**5**	**5**
7:15	0	0	**0**	0	8	**8**	**8**
7:30	0	0	**0**	1	3	**4**	**4**
7:45	0	0	**0**	0	4	**4**	**4**
8:00	0	0	**0**	0	6	**6**	**6**
8:15	0	0	**0**	0	5	**5**	**5**
8:30	0	0	**0**	0	3	**3**	**3**
8:45	0	0	**0**	1	3	**4**	**4**
9:00	0	0	**0**	1	4	**5**	**5**
9:15	0	0	**0**	0	3	**3**	**3**
9:30	0	0	**0**	0	2	**2**	**2**
9:45	0	1	**1**	1	4	**5**	**6**
10:00	0	0	**0**	0	6	**6**	**6**
10:15	0	0	**0**	0	4	**4**	**4**
10:30	0	0	**0**	1	8	**9**	**9**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
10:45	0	3	**3**	1	1	**2**	**5**
11:00	0	2	**2**	0	2	**2**	**4**
11:15	0	0	**0**	1	6	**7**	**7**
11:30	0	0	**0**	0	1	**1**	**1**
11:45	0	0	**0**	0	6	**6**	**6**
12:00	0	0	**0**	0	3	**3**	**3**
12:15	0	0	**0**	0	4	**4**	**4**
12:30	0	0	**0**	0	3	**3**	**3**
12:45	0	0	**0**	0	4	**4**	**4**
13:00	0	0	**0**	0	2	**2**	**2**
13:15	0	1	**1**	1	3	**4**	**5**
13:30	0	0	**0**	0	2	**2**	**2**
13:45	0	1	**1**	1	4	**5**	**6**
14:00	0	0	**0**	0	3	**3**	**3**
14:15	0	0	**0**	0	5	**5**	**5**
14:30	0	0	**0**	0	5	**5**	**5**
14:45	0	0	**0**	0	4	**4**	**4**
15:00	0	0	**0**	1	4	**5**	**5**
15:15	0	0	**0**	0	4	**4**	**4**
15:30	0	1	**1**	0	5	**5**	**6**
15:45	0	1	**1**	0	5	**5**	**6**
16:00	0	0	**0**	0	8	**8**	**8**
16:15	0	0	**0**	0	4	**4**	**4**
16:30	1	0	**1**	0	6	**6**	**7**
16:45	0	1	**1**	0	3	**3**	**4**
17:00	0	0	**0**	1	2	**3**	**3**
17:15	0	1	**1**	0	3	**3**	**4**
17:30	0	0	**0**	0	5	**5**	**5**
17:45	0	0	**0**	0	5	**5**	**5**
18:00	0	0	**0**	0	8	**8**	**8**
18:15	0	4	**4**	0	6	**6**	**10**
18:30	0	0	**0**	0	6	**6**	**6**
18:45	0	0	**0**	0	4	**4**	**4**
19:00	0	0	**0**	0	7	**7**	**7**
19:15	0	1	**1**	0	4	**4**	**5**
19:30	0	0	**0**	0	7	**7**	**7**
19:45	0	1	**1**	0	3	**3**	**4**
20:00	0	0	**0**	0	5	**5**	**5**
20:15	0	1	**1**	0	6	**6**	**7**
20:30	0	0	**0**	0	7	**7**	**7**
20:45	0	2	**2**	0	9	**9**	**11**
21:00	0	1	**1**	0	6	**6**	**7**
21:15	0	0	**0**	0	8	**8**	**8**
21:30	0	0	**0**	0	7	**7**	**7**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
21:45	1	0	**1**	0	6	**6**	**7**
22:00	0	0	**0**	0	7	**7**	**7**
22:15	0	0	**0**	0	5	**5**	**5**
22:30	0	0	**0**	0	4	**4**	**4**
22:45	0	0	**0**	0	2	**2**	**2**
23:00	0	2	**2**	0	5	**5**	**7**
23:15	0	0	**0**	1	3	**4**	**4**
23:30	0	1	**1**	0	1	**1**	**2**
23:45	0	0	**0**	0	4	**4**	**4**
TOTALS:	**2**	**27**	**29**	**14**	**410**	**424**	**453**
PERCENTAGES:	***0%***	***6%***	***6%***	***3%***	***89%***	***92%***	***98%***

Peak Hour: 20:00 to 21:00

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0	**3**	**3**	**0**	**27**	**27**	**30**

Thursday, February 08, 2018

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	0	0	**0**	0	6	**6**	**6**
0:15	0	0	**0**	0	3	**3**	**3**
0:30	0	0	**0**	0	3	**3**	**3**
0:45	0	1	**1**	0	9	**9**	**10**
1:00	0	0	**0**	0	11	**11**	**11**
1:15	0	0	**0**	0	6	**6**	**6**
1:30	1	0	**1**	0	2	**2**	**3**
1:45	0	0	**0**	0	6	**6**	**6**
2:00	0	0	**0**	0	3	**3**	**3**
2:15	0	0	**0**	0	4	**4**	**4**
2:30	0	0	**0**	0	2	**2**	**2**
2:45	0	0	**0**	0	1	**1**	**1**
3:00	0	0	**0**	0	3	**3**	**3**
3:15	0	0	**0**	0	5	**5**	**5**
3:30	0	0	**0**	0	5	**5**	**5**
3:45	0	0	**0**	0	5	**5**	**5**
4:00	0	0	**0**	0	7	**7**	**7**
4:15	0	0	**0**	0	8	**8**	**8**
4:30	0	0	**0**	0	2	**2**	**2**
4:45	0	1	**1**	0	5	**5**	**6**
5:00	0	0	**0**	0	1	**1**	**1**
5:15	0	0	**0**	0	5	**5**	**5**
5:30	0	0	**0**	0	2	**2**	**2**
5:45	0	0	**0**	0	3	**3**	**3**
6:00	0	0	**0**	0	5	**5**	**5**
6:15	0	0	**0**	0	6	**6**	**6**
6:30	0	0	**0**	0	4	**4**	**4**
6:45	0	1	**1**	0	2	**2**	**3**
7:00	0	0	**0**	0	6	**6**	**6**
7:15	0	3	**3**	0	3	**3**	**6**
7:30	0	0	**0**	0	3	**3**	**3**
7:45	0	0	**0**	0	5	**5**	**5**
8:00	0	0	**0**	0	3	**3**	**3**
8:15	0	0	**0**	0	9	**9**	**9**
8:30	0	0	**0**	1	3	**4**	**4**
8:45	0	0	**0**	0	4	**4**	**4**
9:00	0	0	**0**	0	7	**7**	**7**
9:15	0	0	**0**	0	3	**3**	**3**
9:30	0	0	**0**	1	4	**5**	**5**
9:45	0	0	**0**	0	1	**1**	**1**
10:00	0	2	**2**	0	2	**2**	**4**
10:15	0	0	**0**	0	6	**6**	**6**
10:30	1	0	**1**	0	1	**1**	**2**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
10:45	0	1	**1**	0	0	**0**	**1**
11:00	0	1	**1**	0	4	**4**	**5**
11:15	0	0	**0**	1	2	**3**	**3**
11:30	0	0	**0**	0	6	**6**	**6**
11:45	0	0	**0**	0	2	**2**	**2**
12:00	0	0	**0**	0	5	**5**	**5**
12:15	0	0	**0**	0	3	**3**	**3**
12:30	0	0	**0**	0	4	**4**	**4**
12:45	0	0	**0**	0	1	**1**	**1**
13:00	0	0	**0**	0	4	**4**	**4**
13:15	0	0	**0**	0	3	**3**	**3**
13:30	0	3	**3**	0	3	**3**	**6**
13:45	0	0	**0**	1	5	**6**	**6**
14:00	1	0	**1**	0	5	**5**	**6**
14:15	0	0	**0**	0	11	**11**	**11**
14:30	0	1	**1**	0	7	**7**	**8**
14:45	0	1	**1**	0	10	**10**	**11**
15:00	0	1	**1**	0	4	**4**	**5**
15:15	0	0	**0**	0	7	**7**	**7**
15:30	0	0	**0**	0	8	**8**	**8**
15:45	0	1	**1**	0	3	**3**	**4**
16:00	0	0	**0**	0	7	**7**	**7**
16:15	0	0	**0**	2	6	**8**	**8**
16:30	0	0	**0**	0	5	**5**	**5**
16:45	0	1	**1**	0	4	**4**	**5**
17:00	0	0	**0**	0	7	**7**	**7**
17:15	0	0	**0**	0	5	**5**	**5**
17:30	0	2	**2**	1	6	**7**	**9**
17:45	0	0	**0**	0	8	**8**	**8**
18:00	0	0	**0**	2	9	**11**	**11**
18:15	0	0	**0**	0	5	**5**	**5**
18:30	0	0	**0**	0	8	**8**	**8**
18:45	0	0	**0**	0	4	**4**	**4**
19:00	0	0	**0**	0	4	**4**	**4**
19:15	0	0	**0**	0	4	**4**	**4**
19:30	0	0	**0**	0	5	**5**	**5**
19:45	0	0	**0**	0	4	**4**	**4**
20:00	0	0	**0**	0	1	**1**	**1**
20:15	0	0	**0**	0	3	**3**	**3**
20:30	0	0	**0**	0	6	**6**	**6**
20:45	0	0	**0**	0	2	**2**	**2**
21:00	1	0	**1**	0	4	**4**	**5**
21:15	0	0	**0**	0	1	**1**	**1**
21:30	0	0	**0**	2	3	**5**	**5**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
21:45	0	1	**1**	0	8	**8**	**9**
22:00	0	0	**0**	0	8	**8**	**8**
22:15	0	0	**0**	0	2	**2**	**2**
22:30	0	0	**0**	1	5	**6**	**6**
22:45	0	0	**0**	0	3	**3**	**3**
23:00	0	0	**0**	0	6	**6**	**6**
23:15	0	0	**0**	1	8	**9**	**9**
23:30	0	0	**0**	0	4	**4**	**4**
23:45	1	0	**1**	1	1	**2**	**3**
TOTALS:	**5**	**21**	**26**	**14**	**437**	**451**	**477**
PERCENTAGES:	***1%***	***5%***	***6%***	***3%***	***95%***	***98%***	***103%***

Peak Hour: 14:00 to 15:00

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
1	**2**	**3**	**0**	**33**	**33**	**36**

Location: Love's Truck Stops - Lost Hills
Driveway #: 6
Latitude: 35.6172
Longitude: -119.6593
Start Date: 2/6/2018

Tuesday, February 06, 2018

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	0	1	**1**	0	2	**2**	**3**
0:15	0	0	**0**	0	2	**2**	**2**
0:30	0	2	**2**	0	2	**2**	**4**
0:45	0	0	**0**	0	5	**5**	**5**
1:00	0	0	**0**	0	1	**1**	**1**
1:15	0	0	**0**	0	3	**3**	**3**
1:30	0	0	**0**	0	0	**0**	**0**
1:45	0	1	**1**	0	4	**4**	**5**
2:00	0	1	**1**	0	2	**2**	**3**
2:15	0	1	**1**	0	5	**5**	**6**
2:30	1	0	**1**	0	2	**2**	**3**
2:45	0	0	**0**	0	4	**4**	**4**
3:00	0	0	**0**	0	2	**2**	**2**
3:15	0	0	**0**	0	4	**4**	**4**
3:30	0	0	**0**	0	1	**1**	**1**
3:45	0	1	**1**	0	5	**5**	**6**
4:00	0	0	**0**	0	3	**3**	**3**
4:15	0	1	**1**	0	3	**3**	**4**
4:30	0	0	**0**	0	1	**1**	**1**
4:45	0	2	**2**	0	2	**2**	**4**
5:00	0	0	**0**	0	4	**4**	**4**
5:15	0	0	**0**	0	5	**5**	**5**
5:30	0	0	**0**	0	3	**3**	**3**
5:45	0	1	**1**	0	1	**1**	**2**
6:00	0	1	**1**	1	5	**6**	**7**
6:15	0	0	**0**	0	3	**3**	**3**
6:30	0	0	**0**	0	3	**3**	**3**
6:45	1	1	**2**	0	4	**4**	**6**
7:00	0	1	**1**	0	2	**2**	**3**
7:15	0	1	**1**	0	3	**3**	**4**
7:30	0	0	**0**	0	4	**4**	**4**
7:45	0	0	**0**	0	5	**5**	**5**
8:00	0	0	**0**	0	6	**6**	**6**
8:15	0	1	**1**	0	1	**1**	**2**
8:30	0	0	**0**	0	6	**6**	**6**
8:45	1	1	**2**	2	4	**6**	**8**
9:00	1	0	**1**	0	3	**3**	**4**
9:15	1	1	**2**	0	1	**1**	**3**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
9:30	0	0	**0**	0	4	**4**	**4**
9:45	0	1	**1**	0	0	**0**	**1**
10:00	0	4	**4**	1	1	**2**	**6**
10:15	1	0	**1**	1	3	**4**	**5**
10:30	3	0	**3**	1	4	**5**	**8**
10:45	0	0	**0**	1	1	**2**	**2**
11:00	0	1	**1**	0	0	**0**	**1**
11:15	0	1	**1**	0	3	**3**	**4**
11:30	1	0	**1**	0	3	**3**	**4**
11:45	0	0	**0**	0	1	**1**	**1**
12:00	0	1	**1**	0	4	**4**	**5**
12:15	0	0	**0**	1	3	**4**	**4**
12:30	0	0	**0**	0	4	**4**	**4**
12:45	0	0	**0**	0	0	**0**	**0**
13:00	0	2	**2**	0	2	**2**	**4**
13:15	1	0	**1**	1	2	**3**	**4**
13:30	2	0	**2**	1	4	**5**	**7**
13:45	0	0	**0**	1	7	**8**	**8**
14:00	1	0	**1**	0	2	**2**	**3**
14:15	1	2	**3**	0	3	**3**	**6**
14:30	0	0	**0**	0	0	**0**	**0**
14:45	0	0	**0**	0	2	**2**	**2**
15:00	0	2	**2**	0	1	**1**	**3**
15:15	0	0	**0**	0	4	**4**	**4**
15:30	0	0	**0**	0	2	**2**	**2**
15:45	1	0	**1**	0	1	**1**	**2**
16:00	0	2	**2**	0	2	**2**	**4**
16:15	0	1	**1**	0	1	**1**	**2**
16:30	1	3	**4**	0	5	**5**	**9**
16:45	0	2	**2**	0	2	**2**	**4**
17:00	0	0	**0**	0	5	**5**	**5**
17:15	0	1	**1**	1	3	**4**	**5**
17:30	0	0	**0**	0	4	**4**	**4**
17:45	0	1	**1**	0	0	**0**	**1**
18:00	1	0	**1**	0	3	**3**	**4**
18:15	0	0	**0**	0	4	**4**	**4**
18:30	0	0	**0**	0	2	**2**	**2**
18:45	0	1	**1**	0	4	**4**	**5**
19:00	0	0	**0**	0	1	**1**	**1**
19:15	0	0	**0**	0	3	**3**	**3**
19:30	0	0	**0**	0	2	**2**	**2**
19:45	0	1	**1**	0	4	**4**	**5**
20:00	0	0	**0**	1	1	**2**	**2**
20:15	0	1	**1**	0	2	**2**	**3**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
20:30	0	0	**0**	0	6	**6**	**6**
20:45	0	0	**0**	1	3	**4**	**4**
21:00	0	0	**0**	0	3	**3**	**3**
21:15	0	2	**2**	0	4	**4**	**6**
21:30	0	1	**1**	0	2	**2**	**3**
21:45	0	1	**1**	0	3	**3**	**4**
22:00	0	2	**2**	0	4	**4**	**6**
22:15	0	2	**2**	0	2	**2**	**4**
22:30	0	0	**0**	1	2	**3**	**3**
22:45	0	0	**0**	0	3	**3**	**3**
23:00	0	0	**0**	0	4	**4**	**4**
23:15	0	1	**1**	0	3	**3**	**4**
23:30	0	0	**0**	0	4	**4**	**4**
23:45	0	0	**0**	0	3	**3**	**3**
TOTALS:	**18**	**54**	**72**	**15**	**271**	**286**	**358**
PERCENTAGES:	***5%***	***15%***	***20%***	***4%***	***76%***	***80%***	***100%***

Peak Hour: 13:30 to 14:30

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
4	**2**	**6**	**2**	**16**	**18**	**24**

Wednesday, February 07, 2018

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	0	2	**2**	0	3	**3**	**5**
0:15	0	0	**0**	0	1	**1**	**1**
0:30	0	1	**1**	0	4	**4**	**5**
0:45	0	1	**1**	0	4	**4**	**5**
1:00	0	0	**0**	0	2	**2**	**2**
1:15	0	0	**0**	0	6	**6**	**6**
1:30	0	0	**0**	0	2	**2**	**2**
1:45	0	2	**2**	0	2	**2**	**4**
2:00	0	0	**0**	0	4	**4**	**4**
2:15	0	0	**0**	0	1	**1**	**1**
2:30	0	0	**0**	0	4	**4**	**4**
2:45	0	0	**0**	0	4	**4**	**4**
3:00	0	0	**0**	0	3	**3**	**3**
3:15	1	0	**1**	1	1	**2**	**3**
3:30	0	0	**0**	0	3	**3**	**3**
3:45	0	0	**0**	0	3	**3**	**3**
4:00	0	0	**0**	0	2	**2**	**2**
4:15	0	0	**0**	0	1	**1**	**1**
4:30	0	0	**0**	0	2	**2**	**2**
4:45	0	0	**0**	1	3	**4**	**4**
5:00	0	0	**0**	0	3	**3**	**3**
5:15	0	3	**3**	0	3	**3**	**6**
5:30	0	0	**0**	0	4	**4**	**4**
5:45	0	0	**0**	0	2	**2**	**2**
6:00	0	0	**0**	0	6	**6**	**6**
6:15	0	1	**1**	0	1	**1**	**2**
6:30	0	1	**1**	0	3	**3**	**4**
6:45	0	0	**0**	0	5	**5**	**5**
7:00	0	0	**0**	0	3	**3**	**3**
7:15	0	0	**0**	0	3	**3**	**3**
7:30	0	0	**0**	0	4	**4**	**4**
7:45	0	0	**0**	0	4	**4**	**4**
8:00	1	1	**2**	0	3	**3**	**5**
8:15	0	2	**2**	0	0	**0**	**2**
8:30	0	0	**0**	0	6	**6**	**6**
8:45	0	0	**0**	0	2	**2**	**2**
9:00	0	1	**1**	0	3	**3**	**4**
9:15	0	2	**2**	0	3	**3**	**5**
9:30	0	0	**0**	0	3	**3**	**3**
9:45	1	0	**1**	0	6	**6**	**7**
10:00	0	1	**1**	1	3	**4**	**5**
10:15	0	1	**1**	0	2	**2**	**3**
10:30	2	0	**2**	0	1	**1**	**3**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
10:45	0	0	**0**	0	2	**2**	**2**
11:00	0	0	**0**	0	2	**2**	**2**
11:15	1	0	**1**	0	2	**2**	**3**
11:30	0	1	**1**	0	1	**1**	**2**
11:45	0	0	**0**	0	3	**3**	**3**
12:00	0	1	**1**	0	3	**3**	**4**
12:15	1	0	**1**	0	2	**2**	**3**
12:30	0	1	**1**	0	4	**4**	**5**
12:45	0	0	**0**	0	4	**4**	**4**
13:00	0	0	**0**	0	3	**3**	**3**
13:15	1	0	**1**	1	2	**3**	**4**
13:30	0	0	**0**	0	5	**5**	**5**
13:45	1	1	**2**	0	1	**1**	**3**
14:00	0	0	**0**	0	4	**4**	**4**
14:15	0	1	**1**	0	3	**3**	**4**
14:30	1	0	**1**	0	2	**2**	**3**
14:45	0	0	**0**	0	5	**5**	**5**
15:00	0	0	**0**	0	5	**5**	**5**
15:15	0	1	**1**	0	3	**3**	**4**
15:30	1	0	**1**	0	5	**5**	**6**
15:45	0	1	**1**	1	3	**4**	**5**
16:00	0	1	**1**	0	3	**3**	**4**
16:15	0	0	**0**	0	2	**2**	**2**
16:30	0	0	**0**	0	4	**4**	**4**
16:45	0	0	**0**	1	3	**4**	**4**
17:00	0	1	**1**	0	4	**4**	**5**
17:15	0	0	**0**	0	6	**6**	**6**
17:30	0	0	**0**	0	1	**1**	**1**
17:45	0	1	**1**	0	3	**3**	**4**
18:00	0	5	**5**	0	2	**2**	**7**
18:15	0	1	**1**	0	5	**5**	**6**
18:30	0	1	**1**	0	0	**0**	**1**
18:45	0	1	**1**	0	4	**4**	**5**
19:00	0	0	**0**	0	2	**2**	**2**
19:15	0	0	**0**	0	3	**3**	**3**
19:30	0	1	**1**	1	2	**3**	**4**
19:45	0	0	**0**	0	3	**3**	**3**
20:00	0	1	**1**	0	4	**4**	**5**
20:15	0	3	**3**	0	3	**3**	**6**
20:30	0	0	**0**	0	3	**3**	**3**
20:45	0	2	**2**	0	4	**4**	**6**
21:00	0	0	**0**	0	1	**1**	**1**
21:15	0	0	**0**	0	5	**5**	**5**
21:30	0	1	**1**	0	1	**1**	**2**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
21:45	0	3	**3**	1	4	**5**	**8**
22:00	0	0	**0**	0	4	**4**	**4**
22:15	0	1	**1**	0	8	**8**	**9**
22:30	0	1	**1**	0	3	**3**	**4**
22:45	0	2	**2**	0	3	**3**	**5**
23:00	0	0	**0**	0	3	**3**	**3**
23:15	1	0	**1**	0	1	**1**	**2**
23:30	0	1	**1**	0	3	**3**	**4**
23:45	0	0	**0**	0	5	**5**	**5**
TOTALS:	**12**	**53**	**65**	**8**	**294**	**302**	**367**
PERCENTAGES:	***3%***	***15%***	***18%***	***2%***	***82%***	***84%***	***103%***

Peak Hour: 21:45 to 22:45

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0	**5**	**5**	**1**	**19**	**20**	**25**

Thursday, February 08, 2018

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	0	2	**2**	0	6	**6**	**8**
0:15	0	0	**0**	0	1	**1**	**1**
0:30	0	0	**0**	0	5	**5**	**5**
0:45	1	0	**1**	0	4	**4**	**5**
1:00	0	1	**1**	0	2	**2**	**3**
1:15	0	1	**1**	0	3	**3**	**4**
1:30	0	1	**1**	0	6	**6**	**7**
1:45	0	0	**0**	0	0	**0**	**0**
2:00	0	2	**2**	0	3	**3**	**5**
2:15	0	0	**0**	0	2	**2**	**2**
2:30	0	0	**0**	0	4	**4**	**4**
2:45	0	1	**1**	0	4	**4**	**5**
3:00	0	0	**0**	0	2	**2**	**2**
3:15	0	0	**0**	0	2	**2**	**2**
3:30	0	1	**1**	0	4	**4**	**5**
3:45	0	0	**0**	0	4	**4**	**4**
4:00	0	1	**1**	0	3	**3**	**4**
4:15	0	1	**1**	0	6	**6**	**7**
4:30	0	0	**0**	0	1	**1**	**1**
4:45	0	0	**0**	0	6	**6**	**6**
5:00	0	2	**2**	0	5	**5**	**7**
5:15	0	0	**0**	0	1	**1**	**1**
5:30	0	2	**2**	0	0	**0**	**2**
5:45	0	1	**1**	0	6	**6**	**7**
6:00	0	1	**1**	0	3	**3**	**4**
6:15	0	0	**0**	0	4	**4**	**4**
6:30	0	2	**2**	0	3	**3**	**5**
6:45	0	0	**0**	0	3	**3**	**3**
7:00	0	0	**0**	0	2	**2**	**2**
7:15	0	0	**0**	0	3	**3**	**3**
7:30	0	1	**1**	0	3	**3**	**4**
7:45	0	0	**0**	0	7	**7**	**7**
8:00	0	0	**0**	0	2	**2**	**2**
8:15	0	2	**2**	0	3	**3**	**5**
8:30	2	0	**2**	0	6	**6**	**8**
8:45	3	0	**3**	0	4	**4**	**7**
9:00	1	0	**1**	0	3	**3**	**4**
9:15	1	0	**1**	1	4	**5**	**6**
9:30	0	0	**0**	0	1	**1**	**1**
9:45	0	0	**0**	1	4	**5**	**5**
10:00	1	3	**4**	0	3	**3**	**7**
10:15	0	0	**0**	0	3	**3**	**3**
10:30	1	0	**1**	1	3	**4**	**5**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
10:45	1	0	**1**	0	1	**1**	**2**
11:00	0	0	**0**	0	5	**5**	**5**
11:15	0	0	**0**	0	4	**4**	**4**
11:30	0	1	**1**	0	3	**3**	**4**
11:45	0	0	**0**	0	1	**1**	**1**
12:00	1	0	**1**	0	3	**3**	**4**
12:15	0	0	**0**	0	2	**2**	**2**
12:30	0	0	**0**	0	2	**2**	**2**
12:45	0	1	**1**	1	3	**4**	**5**
13:00	0	1	**1**	0	2	**2**	**3**
13:15	0	1	**1**	0	5	**5**	**6**
13:30	1	0	**1**	0	6	**6**	**7**
13:45	0	2	**2**	0	2	**2**	**4**
14:00	0	1	**1**	1	5	**6**	**7**
14:15	0	0	**0**	0	2	**2**	**2**
14:30	0	1	**1**	0	1	**1**	**2**
14:45	1	1	**2**	1	2	**3**	**5**
15:00	0	0	**0**	0	3	**3**	**3**
15:15	0	1	**1**	0	6	**6**	**7**
15:30	0	4	**4**	0	1	**1**	**5**
15:45	1	0	**1**	0	1	**1**	**2**
16:00	0	0	**0**	0	3	**3**	**3**
16:15	0	0	**0**	0	4	**4**	**4**
16:30	1	1	**2**	1	3	**4**	**6**
16:45	0	0	**0**	0	4	**4**	**4**
17:00	0	1	**1**	0	2	**2**	**3**
17:15	0	0	**0**	0	4	**4**	**4**
17:30	1	0	**1**	0	5	**5**	**6**
17:45	0	0	**0**	0	4	**4**	**4**
18:00	0	1	**1**	0	3	**3**	**4**
18:15	0	0	**0**	0	4	**4**	**4**
18:30	0	0	**0**	0	3	**3**	**3**
18:45	0	0	**0**	0	4	**4**	**4**
19:00	0	0	**0**	0	3	**3**	**3**
19:15	0	1	**1**	0	4	**4**	**5**
19:30	0	1	**1**	0	4	**4**	**5**
19:45	0	0	**0**	0	8	**8**	**8**
20:00	0	0	**0**	0	1	**1**	**1**
20:15	1	0	**1**	1	6	**7**	**8**
20:30	0	0	**0**	1	6	**7**	**7**
20:45	0	0	**0**	0	3	**3**	**3**
21:00	0	0	**0**	0	4	**4**	**4**
21:15	2	0	**2**	0	2	**2**	**4**
21:30	0	0	**0**	0	1	**1**	**1**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
21:45	0	0	**0**	0	5	**5**	**5**
22:00	0	3	**3**	0	2	**2**	**5**
22:15	0	0	**0**	0	2	**2**	**2**
22:30	0	0	**0**	0	3	**3**	**3**
22:45	0	1	**1**	0	4	**4**	**5**
23:00	0	0	**0**	0	4	**4**	**4**
23:15	0	0	**0**	0	6	**6**	**6**
23:30	0	0	**0**	0	3	**3**	**3**
23:45	1	0	**1**	0	2	**2**	**3**
TOTALS:	**21**	**48**	**69**	**9**	**320**	**329**	**398**
PERCENTAGES:	***6%***	***13%***	***19%***	***3%***	***89%***	***92%***	***111%***

Peak Hour: 8:30 to 9:30

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
7	**0**	**7**	**1**	**17**	**18**	**25**

Location: Love's Truck Stops - Lost Hills
Driveway #: 7
Latitude: 35.6168
Longitude: -119.6593
Start Date: 2/6/2018

Tuesday, February 06, 2018

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	0	0	**0**	2	0	**2**	**2**
0:15	1	0	**1**	1	0	**1**	**2**
0:30	1	0	**1**	3	0	**3**	**4**
0:45	1	0	**1**	3	0	**3**	**4**
1:00	1	0	**1**	1	1	**2**	**3**
1:15	0	0	**0**	4	0	**4**	**4**
1:30	0	0	**0**	0	0	**0**	**0**
1:45	0	0	**0**	4	0	**4**	**4**
2:00	0	0	**0**	1	0	**1**	**1**
2:15	0	0	**0**	2	0	**2**	**2**
2:30	1	0	**1**	3	0	**3**	**4**
2:45	2	0	**2**	4	0	**4**	**6**
3:00	0	0	**0**	2	0	**2**	**2**
3:15	0	0	**0**	3	0	**3**	**3**
3:30	0	0	**0**	4	0	**4**	**4**
3:45	0	0	**0**	1	0	**1**	**1**
4:00	0	0	**0**	2	0	**2**	**2**
4:15	1	0	**1**	1	1	**2**	**3**
4:30	1	0	**1**	4	0	**4**	**5**
4:45	2	0	**2**	4	0	**4**	**6**
5:00	4	0	**4**	10	1	**11**	**15**
5:15	0	0	**0**	3	0	**3**	**3**
5:30	1	0	**1**	10	0	**10**	**11**
5:45	2	0	**2**	3	1	**4**	**6**
6:00	0	0	**0**	13	0	**13**	**13**
6:15	3	0	**3**	11	0	**11**	**14**
6:30	1	0	**1**	9	0	**9**	**10**
6:45	4	0	**4**	12	0	**12**	**16**
7:00	0	0	**0**	4	0	**4**	**4**
7:15	2	0	**2**	4	0	**4**	**6**
7:30	1	0	**1**	9	0	**9**	**10**
7:45	2	0	**2**	3	0	**3**	**5**
8:00	1	0	**1**	7	0	**7**	**8**
8:15	2	0	**2**	6	1	**7**	**9**
8:30	1	0	**1**	8	0	**8**	**9**
8:45	2	1	**3**	9	0	**9**	**12**
9:00	1	1	**2**	9	2	**11**	**13**
9:15	2	0	**2**	7	0	**7**	**9**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
9:30	0	0	**0**	12	1	**13**	**13**
9:45	3	0	**3**	6	0	**6**	**9**
10:00	5	0	**5**	13	0	**13**	**18**
10:15	2	0	**2**	9	0	**9**	**11**
10:30	2	0	**2**	10	0	**10**	**12**
10:45	0	0	**0**	5	0	**5**	**5**
11:00	3	0	**3**	13	1	**14**	**17**
11:15	1	0	**1**	9	0	**9**	**10**
11:30	3	0	**3**	12	0	**12**	**15**
11:45	1	0	**1**	7	0	**7**	**8**
12:00	4	0	**4**	10	0	**10**	**14**
12:15	5	0	**5**	13	1	**14**	**19**
12:30	0	0	**0**	12	0	**12**	**12**
12:45	2	0	**2**	6	0	**6**	**8**
13:00	2	0	**2**	10	1	**11**	**13**
13:15	3	0	**3**	9	0	**9**	**12**
13:30	3	0	**3**	15	0	**15**	**18**
13:45	1	0	**1**	9	0	**9**	**10**
14:00	3	0	**3**	13	0	**13**	**16**
14:15	1	0	**1**	12	1	**13**	**14**
14:30	0	0	**0**	9	0	**9**	**9**
14:45	0	0	**0**	12	0	**12**	**12**
15:00	0	1	**1**	12	0	**12**	**13**
15:15	1	0	**1**	6	0	**6**	**7**
15:30	1	0	**1**	13	0	**13**	**14**
15:45	1	0	**1**	12	1	**13**	**14**
16:00	4	0	**4**	17	0	**17**	**21**
16:15	3	0	**3**	8	0	**8**	**11**
16:30	2	0	**2**	12	1	**13**	**15**
16:45	1	0	**1**	7	0	**7**	**8**
17:00	3	0	**3**	7	0	**7**	**10**
17:15	1	0	**1**	9	0	**9**	**10**
17:30	0	0	**0**	5	0	**5**	**5**
17:45	0	0	**0**	13	0	**13**	**13**
18:00	4	0	**4**	12	0	**12**	**16**
18:15	4	1	**5**	9	0	**9**	**14**
18:30	0	0	**0**	8	2	**10**	**10**
18:45	0	1	**1**	3	1	**4**	**5**
19:00	2	0	**2**	8	2	**10**	**12**
19:15	3	0	**3**	8	0	**8**	**11**
19:30	0	0	**0**	4	0	**4**	**4**
19:45	2	0	**2**	3	0	**3**	**5**
20:00	2	0	**2**	4	0	**4**	**6**
20:15	2	0	**2**	4	0	**4**	**6**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
20:30	1	0	**1**	7	1	**8**	**9**
20:45	0	0	**0**	2	1	**3**	**3**
21:00	1	0	**1**	2	0	**2**	**3**
21:15	1	0	**1**	9	0	**9**	**10**
21:30	0	0	**0**	5	0	**5**	**5**
21:45	2	0	**2**	5	0	**5**	**7**
22:00	0	0	**0**	4	1	**5**	**5**
22:15	1	0	**1**	6	0	**6**	**7**
22:30	1	0	**1**	0	1	**1**	**2**
22:45	2	0	**2**	5	0	**5**	**7**
23:00	0	0	**0**	5	1	**6**	**6**
23:15	0	0	**0**	4	0	**4**	**4**
23:30	0	0	**0**	6	0	**6**	**6**
23:45	0	0	**0**	5	0	**5**	**5**
TOTALS:	**129**	**5**	**134**	**661**	**24**	**685**	**819**
PERCENTAGES:	***16%***	***1%***	***16%***	***81%***	***3%***	***84%***	***100%***

Peak Hour: 15:45 to 16:45

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
10	**0**	**10**	**49**	**2**	**51**	**61**

Wednesday, February 07, 2018

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	0	1	**1**	4	0	**4**	**5**
0:15	2	0	**2**	1	0	**1**	**3**
0:30	0	0	**0**	6	2	**8**	**8**
0:45	0	0	**0**	2	0	**2**	**2**
1:00	1	0	**1**	1	0	**1**	**2**
1:15	0	0	**0**	1	0	**1**	**1**
1:30	0	0	**0**	0	0	**0**	**0**
1:45	0	0	**0**	1	0	**1**	**1**
2:00	0	0	**0**	3	0	**3**	**3**
2:15	0	0	**0**	0	1	**1**	**1**
2:30	1	0	**1**	3	0	**3**	**4**
2:45	1	0	**1**	0	0	**0**	**1**
3:00	1	0	**1**	2	0	**2**	**3**
3:15	3	0	**3**	2	0	**2**	**5**
3:30	0	0	**0**	4	0	**4**	**4**
3:45	1	0	**1**	1	0	**1**	**2**
4:00	0	0	**0**	2	0	**2**	**2**
4:15	1	0	**1**	2	0	**2**	**3**
4:30	1	0	**1**	2	2	**4**	**5**
4:45	1	0	**1**	3	0	**3**	**4**
5:00	0	0	**0**	2	0	**2**	**2**
5:15	0	0	**0**	5	1	**6**	**6**
5:30	2	0	**2**	12	0	**12**	**14**
5:45	2	1	**3**	6	0	**6**	**9**
6:00	2	0	**2**	7	1	**8**	**10**
6:15	1	0	**1**	11	0	**11**	**12**
6:30	3	0	**3**	9	0	**9**	**12**
6:45	2	0	**2**	7	0	**7**	**9**
7:00	1	0	**1**	2	1	**3**	**4**
7:15	2	0	**2**	4	1	**5**	**7**
7:30	1	0	**1**	10	0	**10**	**11**
7:45	3	0	**3**	2	0	**2**	**5**
8:00	1	0	**1**	4	0	**4**	**5**
8:15	2	0	**2**	6	0	**6**	**8**
8:30	1	0	**1**	9	0	**9**	**10**
8:45	2	0	**2**	10	0	**10**	**12**
9:00	4	0	**4**	10	1	**11**	**15**
9:15	4	1	**5**	10	0	**10**	**15**
9:30	0	0	**0**	9	2	**11**	**11**
9:45	2	1	**3**	7	0	**7**	**10**
10:00	2	0	**2**	6	1	**7**	**9**
10:15	4	0	**4**	10	1	**11**	**15**
10:30	1	0	**1**	8	0	**8**	**9**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
10:45	2	1	**3**	10	1	**11**	**14**
11:00	2	1	**3**	10	1	**11**	**14**
11:15	3	0	**3**	9	0	**9**	**12**
11:30	2	0	**2**	10	0	**10**	**12**
11:45	3	0	**3**	6	1	**7**	**10**
12:00	7	0	**7**	13	0	**13**	**20**
12:15	8	0	**8**	12	1	**13**	**21**
12:30	1	0	**1**	10	0	**10**	**11**
12:45	1	0	**1**	5	0	**5**	**6**
13:00	8	0	**8**	10	0	**10**	**18**
13:15	1	0	**1**	11	0	**11**	**12**
13:30	1	0	**1**	10	0	**10**	**11**
13:45	3	1	**4**	14	2	**16**	**20**
14:00	1	0	**1**	13	0	**13**	**14**
14:15	3	2	**5**	10	0	**10**	**15**
14:30	1	0	**1**	14	1	**15**	**16**
14:45	5	0	**5**	13	2	**15**	**20**
15:00	2	0	**2**	9	2	**11**	**13**
15:15	1	0	**1**	12	1	**13**	**14**
15:30	1	1	**2**	11	0	**11**	**13**
15:45	0	0	**0**	9	1	**10**	**10**
16:00	3	0	**3**	14	0	**14**	**17**
16:15	1	0	**1**	11	1	**12**	**13**
16:30	4	0	**4**	6	0	**6**	**10**
16:45	1	1	**2**	9	0	**9**	**11**
17:00	2	0	**2**	8	1	**9**	**11**
17:15	1	0	**1**	12	0	**12**	**13**
17:30	3	0	**3**	8	0	**8**	**11**
17:45	4	0	**4**	6	1	**7**	**11**
18:00	0	0	**0**	12	0	**12**	**12**
18:15	1	1	**2**	9	0	**9**	**11**
18:30	3	0	**3**	7	1	**8**	**11**
18:45	3	0	**3**	13	0	**13**	**16**
19:00	1	0	**1**	10	0	**10**	**11**
19:15	2	0	**2**	10	0	**10**	**12**
19:30	5	0	**5**	5	0	**5**	**10**
19:45	2	0	**2**	9	0	**9**	**11**
20:00	1	0	**1**	7	0	**7**	**8**
20:15	2	0	**2**	2	0	**2**	**4**
20:30	2	0	**2**	6	0	**6**	**8**
20:45	4	0	**4**	6	0	**6**	**10**
21:00	2	0	**2**	6	0	**6**	**8**
21:15	2	1	**3**	7	1	**8**	**11**
21:30	1	1	**2**	4	0	**4**	**6**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
21:45	3	0	**3**	7	0	**7**	**10**
22:00	2	0	**2**	7	1	**8**	**10**
22:15	0	0	**0**	3	0	**3**	**3**
22:30	0	0	**0**	7	0	**7**	**7**
22:45	0	1	**1**	7	0	**7**	**8**
23:00	0	1	**1**	3	0	**3**	**4**
23:15	1	0	**1**	4	2	**6**	**7**
23:30	2	0	**2**	13	0	**13**	**15**
23:45	1	0	**1**	5	0	**5**	**6**
TOTALS:	**170**	**16**	**186**	**670**	**35**	**705**	**891**
PERCENTAGES:	***21%***	***2%***	***23%***	***82%***	***4%***	***86%***	***109%***

Peak Hour: 13:45 to 14:45

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
8	**3**	**11**	**51**	**3**	**54**	**65**

Thursday, February 08, 2018

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	1	1	**2**	5	0	**5**	**7**
0:15	0	0	**0**	4	0	**4**	**4**
0:30	0	0	**0**	0	0	**0**	**0**
0:45	1	0	**1**	1	1	**2**	**3**
1:00	1	0	**1**	3	0	**3**	**4**
1:15	1	0	**1**	2	0	**2**	**3**
1:30	2	0	**2**	4	1	**5**	**7**
1:45	1	0	**1**	2	0	**2**	**3**
2:00	2	1	**3**	2	0	**2**	**5**
2:15	2	0	**2**	0	0	**0**	**2**
2:30	2	0	**2**	2	0	**2**	**4**
2:45	0	0	**0**	1	0	**1**	**1**
3:00	1	0	**1**	4	0	**4**	**5**
3:15	0	0	**0**	0	0	**0**	**0**
3:30	1	0	**1**	0	0	**0**	**1**
3:45	1	0	**1**	2	1	**3**	**4**
4:00	0	0	**0**	4	0	**4**	**4**
4:15	0	0	**0**	2	2	**4**	**4**
4:30	1	0	**1**	4	0	**4**	**5**
4:45	1	0	**1**	5	0	**5**	**6**
5:00	0	0	**0**	4	0	**4**	**4**
5:15	2	0	**2**	12	1	**13**	**15**
5:30	2	0	**2**	7	0	**7**	**9**
5:45	3	0	**3**	2	0	**2**	**5**
6:00	8	0	**8**	13	0	**13**	**21**
6:15	0	0	**0**	15	0	**15**	**15**
6:30	7	0	**7**	10	2	**12**	**19**
6:45	1	0	**1**	10	0	**10**	**11**
7:00	5	1	**6**	8	1	**9**	**15**
7:15	5	1	**6**	9	0	**9**	**15**
7:30	3	0	**3**	12	2	**14**	**17**
7:45	3	0	**3**	7	0	**7**	**10**
8:00	3	0	**3**	6	0	**6**	**9**
8:15	3	0	**3**	12	0	**12**	**15**
8:30	3	0	**3**	11	0	**11**	**14**
8:45	3	0	**3**	6	0	**6**	**9**
9:00	2	0	**2**	6	1	**7**	**9**
9:15	2	0	**2**	8	0	**8**	**10**
9:30	4	0	**4**	11	1	**12**	**16**
9:45	0	0	**0**	11	0	**11**	**11**
10:00	2	0	**2**	12	1	**13**	**15**
10:15	2	0	**2**	6	2	**8**	**10**
10:30	3	0	**3**	8	0	**8**	**11**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
10:45	4	0	**4**	7	0	**7**	**11**
11:00	6	0	**6**	13	0	**13**	**19**
11:15	5	0	**5**	10	0	**10**	**15**
11:30	3	0	**3**	13	1	**14**	**17**
11:45	6	0	**6**	13	1	**14**	**20**
12:00	1	0	**1**	7	0	**7**	**8**
12:15	3	0	**3**	16	1	**17**	**20**
12:30	3	0	**3**	10	0	**10**	**13**
12:45	4	0	**4**	21	1	**22**	**26**
13:00	3	0	**3**	16	0	**16**	**19**
13:15	0	0	**0**	13	0	**13**	**13**
13:30	1	0	**1**	13	0	**13**	**14**
13:45	2	0	**2**	13	0	**13**	**15**
14:00	5	0	**5**	11	0	**11**	**16**
14:15	1	1	**2**	12	1	**13**	**15**
14:30	2	0	**2**	14	0	**14**	**16**
14:45	2	0	**2**	12	0	**12**	**14**
15:00	2	0	**2**	11	0	**11**	**13**
15:15	0	0	**0**	9	0	**9**	**9**
15:30	3	0	**3**	16	0	**16**	**19**
15:45	0	0	**0**	11	0	**11**	**11**
16:00	2	0	**2**	10	1	**11**	**13**
16:15	2	0	**2**	9	1	**10**	**12**
16:30	2	0	**2**	14	0	**14**	**16**
16:45	4	0	**4**	10	0	**10**	**14**
17:00	1	1	**2**	13	0	**13**	**15**
17:15	2	0	**2**	13	1	**14**	**16**
17:30	2	0	**2**	8	1	**9**	**11**
17:45	3	0	**3**	8	0	**8**	**11**
18:00	3	0	**3**	11	0	**11**	**14**
18:15	5	0	**5**	7	0	**7**	**12**
18:30	1	0	**1**	13	1	**14**	**15**
18:45	2	0	**2**	8	0	**8**	**10**
19:00	2	0	**2**	13	0	**13**	**15**
19:15	2	0	**2**	10	0	**10**	**12**
19:30	6	0	**6**	10	0	**10**	**16**
19:45	1	1	**2**	4	2	**6**	**8**
20:00	4	1	**5**	9	0	**9**	**14**
20:15	0	0	**0**	5	0	**5**	**5**
20:30	0	0	**0**	7	0	**7**	**7**
20:45	2	0	**2**	2	0	**2**	**4**
21:00	3	0	**3**	6	0	**6**	**9**
21:15	0	0	**0**	10	0	**10**	**10**
21:30	3	0	**3**	7	0	**7**	**10**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
21:45	5	0	**5**	18	0	**18**	**23**
22:00	3	0	**3**	8	1	**9**	**12**
22:15	4	0	**4**	10	2	**12**	**16**
22:30	2	0	**2**	9	2	**11**	**13**
22:45	7	2	**9**	16	1	**17**	**26**
23:00	2	1	**3**	10	0	**10**	**13**
23:15	4	0	**4**	10	0	**10**	**14**
23:30	2	0	**2**	18	0	**18**	**20**
23:45	1	0	**1**	9	0	**9**	**10**
TOTALS:	**222**	**11**	**233**	**829**	**34**	**863**	**1096**
PERCENTAGES:	***27%***	***1%***	***28%***	***101%***	***4%***	***105%***	***134%***

Peak Hour: 12:15 to 13:15

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
13	**0**	**13**	**63**	**2**	**65**	**78**

Location: Love's Truck Stops - Lost Hills
Driveway #: 8
Latitude: 35.6164
Longitude: -119.6587
Start Date: 2/6/2018

Tuesday, February 06, 2018

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	5	0	**5**	2	0	**2**	**7**
0:15	4	0	**4**	4	0	**4**	**8**
0:30	1	0	**1**	1	0	**1**	**2**
0:45	3	1	**4**	1	0	**1**	**5**
1:00	4	0	**4**	5	1	**6**	**10**
1:15	1	0	**1**	0	0	**0**	**1**
1:30	4	0	**4**	1	0	**1**	**5**
1:45	4	1	**5**	2	0	**2**	**7**
2:00	4	0	**4**	1	1	**2**	**6**
2:15	5	0	**5**	3	0	**3**	**8**
2:30	4	0	**4**	0	0	**0**	**4**
2:45	2	0	**2**	2	0	**2**	**4**
3:00	3	0	**3**	1	0	**1**	**4**
3:15	5	0	**5**	0	0	**0**	**5**
3:30	2	0	**2**	5	0	**5**	**7**
3:45	5	0	**5**	1	0	**1**	**6**
4:00	1	2	**3**	2	0	**2**	**5**
4:15	3	0	**3**	0	0	**0**	**3**
4:30	7	0	**7**	1	0	**1**	**8**
4:45	7	0	**7**	4	0	**4**	**11**
5:00	11	1	**12**	3	0	**3**	**15**
5:15	7	0	**7**	2	0	**2**	**9**
5:30	9	0	**9**	4	0	**4**	**13**
5:45	6	0	**6**	2	0	**2**	**8**
6:00	14	0	**14**	1	0	**1**	**15**
6:15	13	1	**14**	3	0	**3**	**17**
6:30	12	1	**13**	3	0	**3**	**16**
6:45	8	0	**8**	1	1	**2**	**10**
7:00	8	0	**8**	4	0	**4**	**12**
7:15	12	0	**12**	2	0	**2**	**14**
7:30	4	1	**5**	5	0	**5**	**10**
7:45	5	0	**5**	1	0	**1**	**6**
8:00	6	2	**8**	0	0	**0**	**8**
8:15	8	0	**8**	2	1	**3**	**11**
8:30	7	1	**8**	2	1	**3**	**11**
8:45	10	0	**10**	2	0	**2**	**12**
9:00	8	0	**8**	0	0	**0**	**8**
9:15	10	0	**10**	2	1	**3**	**13**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
9:30	11	0	**11**	2	0	**2**	**13**
9:45	6	0	**6**	1	0	**1**	**7**
10:00	15	0	**15**	2	0	**2**	**17**
10:15	11	0	**11**	5	0	**5**	**16**
10:30	9	1	**10**	3	0	**3**	**13**
10:45	10	1	**11**	2	0	**2**	**13**
11:00	12	0	**12**	2	1	**3**	**15**
11:15	10	0	**10**	2	0	**2**	**12**
11:30	13	0	**13**	0	0	**0**	**13**
11:45	7	0	**7**	6	0	**6**	**13**
12:00	12	1	**13**	4	0	**4**	**17**
12:15	19	1	**20**	6	0	**6**	**26**
12:30	8	0	**8**	5	0	**5**	**13**
12:45	7	0	**7**	2	0	**2**	**9**
13:00	16	0	**16**	2	0	**2**	**18**
13:15	14	0	**14**	7	0	**7**	**21**
13:30	18	1	**19**	8	0	**8**	**27**
13:45	11	1	**12**	4	1	**5**	**17**
14:00	12	1	**13**	3	0	**3**	**16**
14:15	13	0	**13**	3	0	**3**	**16**
14:30	14	0	**14**	3	0	**3**	**17**
14:45	17	0	**17**	2	0	**2**	**19**
15:00	14	0	**14**	4	0	**4**	**18**
15:15	14	0	**14**	8	1	**9**	**23**
15:30	14	1	**15**	6	0	**6**	**21**
15:45	13	0	**13**	2	0	**2**	**15**
16:00	11	0	**11**	3	0	**3**	**14**
16:15	11	1	**12**	5	0	**5**	**17**
16:30	13	0	**13**	6	0	**6**	**19**
16:45	13	0	**13**	4	0	**4**	**17**
17:00	7	0	**7**	7	0	**7**	**14**
17:15	8	0	**8**	4	0	**4**	**12**
17:30	11	0	**11**	4	0	**4**	**15**
17:45	15	2	**17**	3	0	**3**	**20**
18:00	18	2	**20**	3	0	**3**	**23**
18:15	7	0	**7**	5	1	**6**	**13**
18:30	11	0	**11**	5	0	**5**	**16**
18:45	7	0	**7**	5	0	**5**	**12**
19:00	9	1	**10**	3	0	**3**	**13**
19:15	9	0	**9**	3	0	**3**	**12**
19:30	6	0	**6**	5	0	**5**	**11**
19:45	4	0	**4**	2	0	**2**	**6**
20:00	4	0	**4**	4	0	**4**	**8**
20:15	4	1	**5**	0	0	**0**	**5**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
20:30	4	0	**4**	2	0	**2**	**6**
20:45	4	0	**4**	2	0	**2**	**6**
21:00	9	0	**9**	3	0	**3**	**12**
21:15	9	1	**10**	3	0	**3**	**13**
21:30	8	1	**9**	4	0	**4**	**13**
21:45	6	1	**7**	5	0	**5**	**12**
22:00	5	0	**5**	4	0	**4**	**9**
22:15	4	1	**5**	3	0	**3**	**8**
22:30	4	1	**5**	2	0	**2**	**7**
22:45	9	2	**11**	2	0	**2**	**13**
23:00	4	0	**4**	5	0	**5**	**9**
23:15	4	0	**4**	0	0	**0**	**4**
23:30	7	0	**7**	1	0	**1**	**8**
23:45	7	0	**7**	2	0	**2**	**9**
TOTALS:	**804**	**33**	**837**	**278**	**10**	**288**	**1125**
PERCENTAGES:	***71%***	***3%***	***74%***	***25%***	***1%***	***26%***	***100%***

Peak Hour: 13:00 to 14:00

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
59	**2**	**61**	**21**	**1**	**22**	**83**

Wednesday, February 07, 2018

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	3	0	**3**	1	0	**1**	**4**
0:15	9	1	**10**	5	0	**5**	**15**
0:30	0	0	**0**	3	0	**3**	**3**
0:45	3	0	**3**	0	0	**0**	**3**
1:00	3	0	**3**	3	0	**3**	**6**
1:15	1	0	**1**	2	0	**2**	**3**
1:30	2	0	**2**	0	0	**0**	**2**
1:45	2	0	**2**	0	0	**0**	**2**
2:00	2	0	**2**	0	1	**1**	**3**
2:15	2	1	**3**	0	0	**0**	**3**
2:30	3	0	**3**	0	0	**0**	**3**
2:45	2	0	**2**	4	0	**4**	**6**
3:00	3	0	**3**	1	0	**1**	**4**
3:15	1	0	**1**	1	0	**1**	**2**
3:30	3	0	**3**	1	0	**1**	**4**
3:45	4	0	**4**	1	0	**1**	**5**
4:00	3	0	**3**	1	0	**1**	**4**
4:15	2	1	**3**	2	0	**2**	**5**
4:30	4	0	**4**	2	0	**2**	**6**
4:45	5	0	**5**	3	0	**3**	**8**
5:00	5	0	**5**	2	0	**2**	**7**
5:15	6	1	**7**	1	0	**1**	**8**
5:30	9	0	**9**	2	0	**2**	**11**
5:45	9	0	**9**	2	1	**3**	**12**
6:00	11	1	**12**	4	0	**4**	**16**
6:15	13	1	**14**	4	0	**4**	**18**
6:30	7	0	**7**	2	0	**2**	**9**
6:45	5	1	**6**	0	0	**0**	**6**
7:00	3	0	**3**	0	0	**0**	**3**
7:15	5	0	**5**	0	2	**2**	**7**
7:30	4	0	**4**	0	0	**0**	**4**
7:45	2	0	**2**	1	0	**1**	**3**
8:00	9	0	**9**	0	0	**0**	**9**
8:15	8	0	**8**	3	0	**3**	**11**
8:30	10	0	**10**	2	0	**2**	**12**
8:45	10	0	**10**	1	0	**1**	**11**
9:00	10	0	**10**	4	0	**4**	**14**
9:15	10	1	**11**	4	0	**4**	**15**
9:30	11	0	**11**	3	0	**3**	**14**
9:45	10	0	**10**	3	0	**3**	**13**
10:00	7	1	**8**	5	0	**5**	**13**
10:15	10	0	**10**	3	0	**3**	**13**
10:30	12	0	**12**	3	0	**3**	**15**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
10:45	8	0	**8**	3	0	**3**	**11**
11:00	11	0	**11**	2	0	**2**	**13**
11:15	11	1	**12**	6	1	**7**	**19**
11:30	9	1	**10**	2	0	**2**	**12**
11:45	10	0	**10**	2	0	**2**	**12**
12:00	12	0	**12**	4	0	**4**	**16**
12:15	11	0	**11**	8	0	**8**	**19**
12:30	10	1	**11**	5	0	**5**	**16**
12:45	4	0	**4**	1	0	**1**	**5**
13:00	15	1	**16**	5	0	**5**	**21**
13:15	14	1	**15**	4	0	**4**	**19**
13:30	12	1	**13**	0	0	**0**	**13**
13:45	13	0	**13**	1	0	**1**	**14**
14:00	13	0	**13**	2	1	**3**	**16**
14:15	14	0	**14**	1	1	**2**	**16**
14:30	11	1	**12**	2	0	**2**	**14**
14:45	11	3	**14**	4	0	**4**	**18**
15:00	14	1	**15**	4	0	**4**	**19**
15:15	21	0	**21**	3	2	**5**	**26**
15:30	8	0	**8**	8	0	**8**	**16**
15:45	18	1	**19**	6	0	**6**	**25**
16:00	13	1	**14**	3	0	**3**	**17**
16:15	4	0	**4**	3	0	**3**	**7**
16:30	11	0	**11**	3	0	**3**	**14**
16:45	10	0	**10**	6	1	**7**	**17**
17:00	13	0	**13**	4	0	**4**	**17**
17:15	9	0	**9**	2	0	**2**	**11**
17:30	5	1	**6**	1	0	**1**	**7**
17:45	16	0	**16**	3	0	**3**	**19**
18:00	10	1	**11**	2	0	**2**	**13**
18:15	6	0	**6**	3	0	**3**	**9**
18:30	11	0	**11**	1	1	**2**	**13**
18:45	11	0	**11**	4	0	**4**	**15**
19:00	11	0	**11**	5	0	**5**	**16**
19:15	12	0	**12**	6	0	**6**	**18**
19:30	6	0	**6**	4	0	**4**	**10**
19:45	7	0	**7**	3	0	**3**	**10**
20:00	3	0	**3**	0	0	**0**	**3**
20:15	5	0	**5**	1	0	**1**	**6**
20:30	6	0	**6**	3	0	**3**	**9**
20:45	10	0	**10**	4	0	**4**	**14**
21:00	13	1	**14**	5	0	**5**	**19**
21:15	6	0	**6**	7	0	**7**	**13**
21:30	10	0	**10**	5	1	**6**	**16**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
21:45	9	0	**9**	4	1	**5**	**14**
22:00	6	0	**6**	6	0	**6**	**12**
22:15	8	0	**8**	3	0	**3**	**11**
22:30	8	0	**8**	2	0	**2**	**10**
22:45	14	1	**15**	5	1	**6**	**21**
23:00	3	1	**4**	6	0	**6**	**10**
23:15	12	0	**12**	0	1	**1**	**13**
23:30	3	0	**3**	6	0	**6**	**9**
23:45	4	0	**4**	2	0	**2**	**6**
TOTALS:	**768**	**27**	**795**	**264**	**15**	**279**	**1074**
PERCENTAGES:	***68%***	***2%***	***71%***	***23%***	***1%***	***25%***	***95%***

Peak Hour: 15:00 to 16:00

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
61	**2**	**63**	**21**	**2**	**23**	**86**

Thursday, February 08, 2018

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	4	0	**4**	1	1	**2**	**6**
0:15	8	0	**8**	2	0	**2**	**10**
0:30	3	1	**4**	3	0	**3**	**7**
0:45	2	0	**2**	5	1	**6**	**8**
1:00	5	1	**6**	2	0	**2**	**8**
1:15	3	0	**3**	3	0	**3**	**6**
1:30	4	0	**4**	1	0	**1**	**5**
1:45	1	0	**1**	2	0	**2**	**3**
2:00	3	0	**3**	2	0	**2**	**5**
2:15	1	0	**1**	1	0	**1**	**2**
2:30	0	1	**1**	2	0	**2**	**3**
2:45	4	0	**4**	1	1	**2**	**6**
3:00	6	2	**8**	4	1	**5**	**13**
3:15	2	0	**2**	1	0	**1**	**3**
3:30	1	0	**1**	1	0	**1**	**2**
3:45	3	0	**3**	0	0	**0**	**3**
4:00	7	1	**8**	3	0	**3**	**11**
4:15	3	0	**3**	1	0	**1**	**4**
4:30	9	0	**9**	1	0	**1**	**10**
4:45	8	1	**9**	4	0	**4**	**13**
5:00	10	0	**10**	4	0	**4**	**14**
5:15	9	0	**9**	2	0	**2**	**11**
5:30	7	0	**7**	3	0	**3**	**10**
5:45	7	1	**8**	3	0	**3**	**11**
6:00	13	0	**13**	5	1	**6**	**19**
6:15	15	0	**15**	1	0	**1**	**16**
6:30	11	0	**11**	3	0	**3**	**14**
6:45	11	0	**11**	3	1	**4**	**15**
7:00	9	0	**9**	3	0	**3**	**12**
7:15	10	0	**10**	1	0	**1**	**11**
7:30	6	0	**6**	5	0	**5**	**11**
7:45	5	0	**5**	5	0	**5**	**10**
8:00	6	0	**6**	3	0	**3**	**9**
8:15	16	0	**16**	2	0	**2**	**18**
8:30	9	0	**9**	3	0	**3**	**12**
8:45	4	0	**4**	3	0	**3**	**7**
9:00	9	0	**9**	1	0	**1**	**10**
9:15	9	1	**10**	2	0	**2**	**12**
9:30	15	0	**15**	4	0	**4**	**19**
9:45	6	0	**6**	1	0	**1**	**7**
10:00	15	0	**15**	3	0	**3**	**18**
10:15	9	0	**9**	4	0	**4**	**13**
10:30	6	0	**6**	3	0	**3**	**9**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
10:45	14	0	**14**	6	0	**6**	**20**
11:00	8	0	**8**	3	0	**3**	**11**
11:15	13	0	**13**	3	0	**3**	**16**
11:30	14	1	**15**	3	1	**4**	**19**
11:45	10	0	**10**	3	0	**3**	**13**
12:00	14	0	**14**	4	0	**4**	**18**
12:15	11	1	**12**	7	0	**7**	**19**
12:30	20	0	**20**	3	0	**3**	**23**
12:45	19	0	**19**	4	0	**4**	**23**
13:00	16	0	**16**	5	0	**5**	**21**
13:15	17	0	**17**	2	0	**2**	**19**
13:30	16	0	**16**	3	0	**3**	**19**
13:45	13	0	**13**	4	0	**4**	**17**
14:00	20	0	**20**	4	0	**4**	**24**
14:15	14	0	**14**	7	0	**7**	**21**
14:30	13	0	**13**	5	0	**5**	**18**
14:45	14	0	**14**	8	0	**8**	**22**
15:00	16	0	**16**	6	0	**6**	**22**
15:15	14	0	**14**	4	0	**4**	**18**
15:30	13	1	**14**	3	1	**4**	**18**
15:45	12	0	**12**	3	0	**3**	**15**
16:00	14	0	**14**	2	0	**2**	**16**
16:15	14	0	**14**	6	0	**6**	**20**
16:30	11	1	**12**	6	0	**6**	**18**
16:45	16	0	**16**	2	0	**2**	**18**
17:00	15	0	**15**	6	0	**6**	**21**
17:15	12	0	**12**	6	0	**6**	**18**
17:30	11	2	**13**	3	1	**4**	**17**
17:45	10	0	**10**	4	0	**4**	**14**
18:00	18	1	**19**	7	0	**7**	**26**
18:15	7	0	**7**	5	0	**5**	**12**
18:30	10	0	**10**	6	0	**6**	**16**
18:45	12	0	**12**	4	0	**4**	**16**
19:00	15	0	**15**	4	0	**4**	**19**
19:15	11	1	**12**	1	0	**1**	**13**
19:30	14	1	**15**	5	0	**5**	**20**
19:45	9	0	**9**	10	1	**11**	**20**
20:00	6	0	**6**	7	0	**7**	**13**
20:15	11	0	**11**	8	0	**8**	**19**
20:30	5	0	**5**	5	0	**5**	**10**
20:45	5	0	**5**	6	1	**7**	**12**
21:00	11	1	**12**	4	0	**4**	**16**
21:15	15	0	**15**	2	0	**2**	**17**
21:30	11	1	**12**	4	0	**4**	**16**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
21:45	14	1	**15**	4	1	**5**	**20**
22:00	9	0	**9**	5	0	**5**	**14**
22:15	19	1	**20**	7	0	**7**	**27**
22:30	11	0	**11**	2	0	**2**	**13**
22:45	13	0	**13**	6	1	**7**	**20**
23:00	12	0	**12**	6	0	**6**	**18**
23:15	16	0	**16**	6	0	**6**	**22**
23:30	6	0	**6**	2	1	**3**	**9**
23:45	6	0	**6**	7	0	**7**	**13**
TOTALS:	**964**	**22**	**986**	**355**	**14**	**369**	**1355**
PERCENTAGES:	***86%***	***2%***	***88%***	***32%***	***1%***	***33%***	***120%***

Peak Hour: 12:15 to 13:15

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
66	**1**	**67**	**19**	**0**	**19**	**86**

Location: Love's Truck Stops - Lodi
Driveway #: 9
Latitude: 38.1186
Longitude: -121.3934
Start Date: 11/28/2017

Tuesday, November 28, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	0	1	**1**	1	8	**9**	**10**
0:15	1	2	**3**	1	6	**7**	**10**
0:30	0	1	**1**	0	8	**8**	**9**
0:45	0	3	**3**	0	2	**2**	**5**
1:00	0	3	**3**	0	11	**11**	**14**
1:15	0	2	**2**	0	3	**3**	**5**
1:30	1	1	**2**	0	3	**3**	**5**
1:45	0	2	**2**	1	4	**5**	**7**
2:00	0	1	**1**	0	11	**11**	**12**
2:15	0	0	**0**	0	5	**5**	**5**
2:30	0	0	**0**	0	8	**8**	**8**
2:45	0	1	**1**	1	7	**8**	**9**
3:00	0	2	**2**	0	4	**4**	**6**
3:15	0	0	**0**	0	8	**8**	**8**
3:30	0	0	**0**	0	2	**2**	**2**
3:45	0	0	**0**	0	11	**11**	**11**
4:00	0	0	**0**	1	11	**12**	**12**
4:15	0	0	**0**	0	11	**11**	**11**
4:30	0	0	**0**	0	7	**7**	**7**
4:45	0	1	**1**	0	9	**9**	**10**
5:00	0	1	**1**	0	8	**8**	**9**
5:15	0	2	**2**	0	12	**12**	**14**
5:30	0	2	**2**	0	12	**12**	**14**
5:45	0	1	**1**	0	8	**8**	**9**
6:00	1	2	**3**	1	11	**12**	**15**
6:15	0	0	**0**	1	25	**26**	**26**
6:30	1	0	**1**	0	18	**18**	**19**
6:45	0	1	**1**	0	6	**6**	**7**
7:00	1	1	**2**	0	17	**17**	**19**
7:15	2	2	**4**	1	9	**10**	**14**
7:30	0	1	**1**	0	19	**19**	**20**
7:45	0	2	**2**	1	18	**19**	**21**
8:00	0	2	**2**	0	20	**20**	**22**
8:15	0	0	**0**	0	15	**15**	**15**
8:30	0	2	**2**	0	13	**13**	**15**
8:45	1	3	**4**	0	18	**18**	**22**
9:00	0	0	**0**	0	6	**6**	**6**
9:15	0	2	**2**	0	13	**13**	**15**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
9:30	0	0	**0**	2	16	**18**	**18**
9:45	0	1	**1**	1	15	**16**	**17**
10:00	0	2	**2**	0	17	**17**	**19**
10:15	0	0	**0**	0	10	**10**	**10**
10:30	0	5	**5**	0	12	**12**	**17**
10:45	0	3	**3**	3	18	**21**	**24**
11:00	0	5	**5**	0	12	**12**	**17**
11:15	0	3	**3**	1	14	**15**	**18**
11:30	0	2	**2**	1	11	**12**	**14**
11:45	0	1	**1**	0	15	**15**	**16**
12:00	0	0	**0**	0	13	**13**	**13**
12:15	0	2	**2**	0	15	**15**	**17**
12:30	1	2	**3**	0	11	**11**	**14**
12:45	1	5	**6**	1	13	**14**	**20**
13:00	0	1	**1**	0	8	**8**	**9**
13:15	0	3	**3**	0	15	**15**	**18**
13:30	1	0	**1**	0	15	**15**	**16**
13:45	0	3	**3**	1	14	**15**	**18**
14:00	0	1	**1**	1	13	**14**	**15**
14:15	1	2	**3**	1	15	**16**	**19**
14:30	0	5	**5**	0	13	**13**	**18**
14:45	0	3	**3**	1	18	**19**	**22**
15:00	1	2	**3**	0	14	**14**	**17**
15:15	0	1	**1**	1	7	**8**	**9**
15:30	0	1	**1**	0	11	**11**	**12**
15:45	0	8	**8**	0	8	**8**	**16**
16:00	1	1	**2**	2	18	**20**	**22**
16:15	0	3	**3**	1	14	**15**	**18**
16:30	0	5	**5**	0	11	**11**	**16**
16:45	0	3	**3**	1	9	**10**	**13**
17:00	3	3	**6**	1	8	**9**	**15**
17:15	1	5	**6**	1	8	**9**	**15**
17:30	0	2	**2**	0	12	**12**	**14**
17:45	0	0	**0**	0	7	**7**	**7**
18:00	0	1	**1**	0	7	**7**	**8**
18:15	0	0	**0**	0	12	**12**	**12**
18:30	1	8	**9**	1	12	**13**	**22**
18:45	0	7	**7**	0	9	**9**	**16**
19:00	1	1	**2**	0	20	**20**	**22**
19:15	2	5	**7**	1	15	**16**	**23**
19:30	1	2	**3**	1	11	**12**	**15**
19:45	0	1	**1**	1	11	**12**	**13**
20:00	0	4	**4**	0	4	**4**	**8**
20:15	0	5	**5**	1	11	**12**	**17**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
20:30	1	3	**4**	1	12	**13**	**17**
20:45	0	3	**3**	0	13	**13**	**16**
21:00	1	1	**2**	0	9	**9**	**11**
21:15	1	3	**4**	2	17	**19**	**23**
21:30	0	2	**2**	0	11	**11**	**13**
21:45	0	2	**2**	0	8	**8**	**10**
22:00	1	4	**5**	0	9	**9**	**14**
22:15	0	3	**3**	1	8	**9**	**12**
22:30	1	2	**3**	0	6	**6**	**9**
22:45	0	3	**3**	0	6	**6**	**9**
23:00	1	7	**8**	0	11	**11**	**19**
23:15	0	3	**3**	0	11	**11**	**14**
23:30	2	4	**6**	0	5	**5**	**11**
23:45	0	1	**1**	1	4	**5**	**6**
TOTALS:	**31**	**202**	**233**	**39**	**1059**	**1098**	**1331**
PERCENTAGES:	***2%***	***15%***	***18%***	***3%***	***80%***	***82%***	***100%***

Peak Hour: 18:30 to 19:30

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
4	**21**	**25**	**2**	**56**	**58**	**83**

Wednesday, November 29, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	0	2	**2**	0	8	**8**	**10**
0:15	0	0	**0**	0	6	**6**	**6**
0:30	0	2	**2**	1	5	**6**	**8**
0:45	1	0	**1**	0	6	**6**	**7**
1:00	0	1	**1**	2	5	**7**	**8**
1:15	1	1	**2**	0	2	**2**	**4**
1:30	0	0	**0**	0	5	**5**	**5**
1:45	0	0	**0**	0	5	**5**	**5**
2:00	0	0	**0**	0	3	**3**	**3**
2:15	0	2	**2**	2	9	**11**	**13**
2:30	0	2	**2**	0	9	**9**	**11**
2:45	0	1	**1**	1	12	**13**	**14**
3:00	0	1	**1**	0	6	**6**	**7**
3:15	0	0	**0**	0	7	**7**	**7**
3:30	0	0	**0**	0	6	**6**	**6**
3:45	0	2	**2**	0	12	**12**	**14**
4:00	1	0	**1**	0	8	**8**	**9**
4:15	0	0	**0**	0	10	**10**	**10**
4:30	1	1	**2**	0	11	**11**	**13**
4:45	1	0	**1**	1	11	**12**	**13**
5:00	0	1	**1**	1	13	**14**	**15**
5:15	1	1	**2**	0	12	**12**	**14**
5:30	0	2	**2**	0	14	**14**	**16**
5:45	0	0	**0**	0	10	**10**	**10**
6:00	0	1	**1**	1	13	**14**	**15**
6:15	0	3	**3**	0	17	**17**	**20**
6:30	0	1	**1**	0	13	**13**	**14**
6:45	0	1	**1**	0	15	**15**	**16**
7:00	1	1	**2**	2	10	**12**	**14**
7:15	0	3	**3**	0	12	**12**	**15**
7:30	0	1	**1**	0	16	**16**	**17**
7:45	0	1	**1**	1	6	**7**	**8**
8:00	0	0	**0**	0	9	**9**	**9**
8:15	0	0	**0**	0	13	**13**	**13**
8:30	0	2	**2**	0	11	**11**	**13**
8:45	0	1	**1**	2	15	**17**	**18**
9:00	0	3	**3**	1	14	**15**	**18**
9:15	0	4	**4**	0	18	**18**	**22**
9:30	0	2	**2**	0	13	**13**	**15**
9:45	0	2	**2**	0	17	**17**	**19**
10:00	0	2	**2**	1	15	**16**	**18**
10:15	0	0	**0**	0	12	**12**	**12**
10:30	0	2	**2**	0	10	**10**	**12**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
10:45	0	4	**4**	0	7	**7**	**11**
11:00	0	5	**5**	0	16	**16**	**21**
11:15	0	4	**4**	0	14	**14**	**18**
11:30	1	3	**4**	0	21	**21**	**25**
11:45	0	6	**6**	1	14	**15**	**21**
12:00	0	3	**3**	0	21	**21**	**24**
12:15	0	1	**1**	0	20	**20**	**21**
12:30	0	0	**0**	0	11	**11**	**11**
12:45	0	2	**2**	0	16	**16**	**18**
13:00	0	2	**2**	0	13	**13**	**15**
13:15	0	3	**3**	0	14	**14**	**17**
13:30	0	2	**2**	0	15	**15**	**17**
13:45	1	2	**3**	1	11	**12**	**15**
14:00	0	3	**3**	0	12	**12**	**15**
14:15	0	1	**1**	0	21	**21**	**22**
14:30	1	0	**1**	0	16	**16**	**17**
14:45	0	0	**0**	1	10	**11**	**11**
15:00	3	2	**5**	0	11	**11**	**16**
15:15	2	2	**4**	1	14	**15**	**19**
15:30	2	4	**6**	0	5	**5**	**11**
15:45	1	4	**5**	1	9	**10**	**15**
16:00	0	1	**1**	0	10	**10**	**11**
16:15	0	1	**1**	1	6	**7**	**8**
16:30	0	4	**4**	1	7	**8**	**12**
16:45	0	1	**1**	0	9	**9**	**10**
17:00	1	3	**4**	3	7	**10**	**14**
17:15	1	2	**3**	0	3	**3**	**6**
17:30	2	0	**2**	1	12	**13**	**15**
17:45	2	1	**3**	0	4	**4**	**7**
18:00	0	2	**2**	0	9	**9**	**11**
18:15	0	0	**0**	2	6	**8**	**8**
18:30	1	2	**3**	1	10	**11**	**14**
18:45	0	4	**4**	1	8	**9**	**13**
19:00	0	2	**2**	0	13	**13**	**15**
19:15	0	3	**3**	0	12	**12**	**15**
19:30	0	0	**0**	1	9	**10**	**10**
19:45	0	2	**2**	0	10	**10**	**12**
20:00	0	0	**0**	0	8	**8**	**8**
20:15	0	1	**1**	0	9	**9**	**10**
20:30	0	4	**4**	0	8	**8**	**12**
20:45	0	3	**3**	0	8	**8**	**11**
21:00	0	0	**0**	0	14	**14**	**14**
21:15	1	3	**4**	0	7	**7**	**11**
21:30	0	2	**2**	1	7	**8**	**10**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
21:45	0	0	**0**	0	5	**5**	**5**
22:00	0	1	**1**	0	7	**7**	**8**
22:15	0	3	**3**	0	6	**6**	**9**
22:30	0	3	**3**	0	8	**8**	**11**
22:45	0	1	**1**	0	4	**4**	**5**
23:00	0	2	**2**	0	5	**5**	**7**
23:15	0	1	**1**	0	8	**8**	**9**
23:30	0	0	**0**	0	6	**6**	**6**
23:45	0	7	**7**	0	11	**11**	**18**
TOTALS:	**26**	**161**	**187**	**33**	**991**	**1024**	**1211**
PERCENTAGES:	***2%***	***12%***	***14%***	***2%***	***74%***	***77%***	***91%***

Peak Hour: 8:45 to 9:45

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0	**10**	**10**	**3**	**60**	**63**	**73**

Thursday, November 30, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	1	4	**5**	1	7	**8**	**13**
0:15	1	3	**4**	0	2	**2**	**6**
0:30	0	0	**0**	0	7	**7**	**7**
0:45	0	3	**3**	1	7	**8**	**11**
1:00	0	2	**2**	0	2	**2**	**4**
1:15	0	2	**2**	0	6	**6**	**8**
1:30	0	2	**2**	0	3	**3**	**5**
1:45	0	3	**3**	0	8	**8**	**11**
2:00	0	0	**0**	0	7	**7**	**7**
2:15	0	1	**1**	0	4	**4**	**5**
2:30	0	0	**0**	0	4	**4**	**4**
2:45	0	0	**0**	0	2	**2**	**2**
3:00	0	0	**0**	1	5	**6**	**6**
3:15	1	0	**1**	0	4	**4**	**5**
3:30	0	0	**0**	0	6	**6**	**6**
3:45	0	2	**2**	0	9	**9**	**11**
4:00	0	0	**0**	1	5	**6**	**6**
4:15	0	1	**1**	1	2	**3**	**4**
4:30	1	0	**1**	1	12	**13**	**14**
4:45	0	1	**1**	0	6	**6**	**7**
5:00	0	2	**2**	1	20	**21**	**23**
5:15	0	0	**0**	0	5	**5**	**5**
5:30	0	0	**0**	0	14	**14**	**14**
5:45	0	0	**0**	0	10	**10**	**10**
6:00	0	0	**0**	0	9	**9**	**9**
6:15	0	1	**1**	0	12	**12**	**13**
6:30	1	0	**1**	0	15	**15**	**16**
6:45	1	0	**1**	0	13	**13**	**14**
7:00	0	1	**1**	0	10	**10**	**11**
7:15	0	1	**1**	0	11	**11**	**12**
7:30	1	0	**1**	0	11	**11**	**12**
7:45	0	0	**0**	0	10	**10**	**10**
8:00	0	1	**1**	0	7	**7**	**8**
8:15	0	2	**2**	0	11	**11**	**13**
8:30	0	2	**2**	1	10	**11**	**13**
8:45	0	3	**3**	0	14	**14**	**17**
9:00	0	1	**1**	0	18	**18**	**19**
9:15	0	1	**1**	0	14	**14**	**15**
9:30	0	1	**1**	0	9	**9**	**10**
9:45	0	1	**1**	1	11	**12**	**13**
10:00	0	0	**0**	0	12	**12**	**12**
10:15	0	3	**3**	0	16	**16**	**19**
10:30	0	0	**0**	2	7	**9**	**9**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
10:45	0	5	**5**	1	8	**9**	**14**
11:00	0	4	**4**	1	12	**13**	**17**
11:15	0	5	**5**	0	10	**10**	**15**
11:30	0	1	**1**	0	13	**13**	**14**
11:45	1	3	**4**	0	15	**15**	**19**
12:00	0	3	**3**	1	8	**9**	**12**
12:15	1	4	**5**	0	8	**8**	**13**
12:30	0	1	**1**	0	13	**13**	**14**
12:45	0	1	**1**	0	13	**13**	**14**
13:00	0	5	**5**	2	16	**18**	**23**
13:15	0	2	**2**	0	9	**9**	**11**
13:30	1	2	**3**	1	4	**5**	**8**
13:45	0	6	**6**	1	14	**15**	**21**
14:00	0	4	**4**	1	9	**10**	**14**
14:15	0	2	**2**	3	11	**14**	**16**
14:30	0	4	**4**	0	10	**10**	**14**
14:45	1	2	**3**	0	14	**14**	**17**
15:00	0	2	**2**	1	13	**14**	**16**
15:15	1	3	**4**	1	11	**12**	**16**
15:30	0	0	**0**	2	11	**13**	**13**
15:45	0	3	**3**	1	8	**9**	**12**
16:00	0	2	**2**	0	10	**10**	**12**
16:15	0	2	**2**	0	10	**10**	**12**
16:30	0	1	**1**	0	5	**5**	**6**
16:45	0	1	**1**	2	4	**6**	**7**
17:00	0	2	**2**	0	7	**7**	**9**
17:15	0	0	**0**	0	4	**4**	**4**
17:30	0	1	**1**	0	6	**6**	**7**
17:45	0	1	**1**	0	7	**7**	**8**
18:00	0	0	**0**	0	7	**7**	**7**
18:15	0	6	**6**	0	7	**7**	**13**
18:30	1	2	**3**	0	6	**6**	**9**
18:45	0	3	**3**	1	9	**10**	**13**
19:00	0	0	**0**	0	9	**9**	**9**
19:15	0	1	**1**	0	4	**4**	**5**
19:30	1	3	**4**	0	6	**6**	**10**
19:45	0	4	**4**	1	5	**6**	**10**
20:00	0	1	**1**	0	15	**15**	**16**
20:15	0	0	**0**	0	4	**4**	**4**
20:30	0	0	**0**	0	8	**8**	**8**
20:45	0	1	**1**	0	10	**10**	**11**
21:00	0	1	**1**	0	4	**4**	**5**
21:15	0	0	**0**	0	4	**4**	**4**
21:30	0	2	**2**	0	4	**4**	**6**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
21:45	0	0	**0**	0	4	**4**	**4**
22:00	0	3	**3**	0	5	**5**	**8**
22:15	0	2	**2**	0	7	**7**	**9**
22:30	0	0	**0**	0	8	**8**	**8**
22:45	0	3	**3**	0	1	**1**	**4**
23:00	0	0	**0**	0	6	**6**	**6**
23:15	0	1	**1**	0	4	**4**	**5**
23:30	0	1	**1**	1	7	**8**	**9**
23:45	0	1	**1**	0	2	**2**	**3**
TOTALS:	**14**	**151**	**165**	**32**	**806**	**838**	**1003**
PERCENTAGES:	***1%***	***11%***	***12%***	***2%***	***61%***	***63%***	***75%***

Peak Hour: 11:00 to 12:00

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
1	**13**	**14**	**1**	**50**	**51**	**65**

Location: Love's Truck Stops - Lodi
Driveway #: 10
Latitude: 38.1181
Longitude: -121.3931
Start Date: 11/28/2017

Tuesday, November 28, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	1	4	**5**	1	2	**3**	**8**
0:15	0	5	**5**	1	0	**1**	**6**
0:30	2	3	**5**	0	0	**0**	**5**
0:45	1	5	**6**	3	0	**3**	**9**
1:00	0	7	**7**	1	2	**3**	**10**
1:15	0	3	**3**	1	0	**1**	**4**
1:30	3	3	**6**	0	1	**1**	**7**
1:45	5	7	**12**	2	1	**3**	**15**
2:00	1	5	**6**	0	0	**0**	**6**
2:15	0	8	**8**	2	0	**2**	**10**
2:30	0	5	**5**	4	0	**4**	**9**
2:45	4	6	**10**	1	0	**1**	**11**
3:00	1	5	**6**	1	1	**2**	**8**
3:15	2	7	**9**	0	0	**0**	**9**
3:30	2	5	**7**	2	0	**2**	**9**
3:45	1	12	**13**	0	2	**2**	**15**
4:00	4	7	**11**	1	2	**3**	**14**
4:15	0	4	**4**	3	0	**3**	**7**
4:30	1	8	**9**	1	0	**1**	**10**
4:45	2	9	**11**	2	0	**2**	**13**
5:00	1	11	**12**	0	4	**4**	**16**
5:15	3	11	**14**	0	2	**2**	**16**
5:30	2	9	**11**	5	1	**6**	**17**
5:45	1	6	**7**	1	1	**2**	**9**
6:00	4	17	**21**	2	2	**4**	**25**
6:15	2	9	**11**	1	0	**1**	**12**
6:30	2	9	**11**	2	0	**2**	**13**
6:45	3	9	**12**	5	4	**9**	**21**
7:00	2	14	**16**	1	0	**1**	**17**
7:15	1	20	**21**	4	1	**5**	**26**
7:30	4	8	**12**	1	1	**2**	**14**
7:45	2	17	**19**	1	1	**2**	**21**
8:00	2	12	**14**	1	1	**2**	**16**
8:15	4	11	**15**	6	0	**6**	**21**
8:30	7	16	**23**	1	2	**3**	**26**
8:45	4	12	**16**	4	0	**4**	**20**
9:00	4	7	**11**	2	1	**3**	**14**
9:15	3	14	**17**	6	1	**7**	**24**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
9:30	2	17	**19**	5	1	**6**	**25**
9:45	3	9	**12**	1	0	**1**	**13**
10:00	0	15	**15**	2	1	**3**	**18**
10:15	0	8	**8**	2	0	**2**	**10**
10:30	9	12	**21**	2	1	**3**	**24**
10:45	7	12	**19**	4	0	**4**	**23**
11:00	2	12	**14**	4	0	**4**	**18**
11:15	6	11	**17**	3	1	**4**	**21**
11:30	3	14	**17**	4	0	**4**	**21**
11:45	3	16	**19**	1	0	**1**	**20**
12:00	2	9	**11**	4	0	**4**	**15**
12:15	6	12	**18**	2	0	**2**	**20**
12:30	5	8	**13**	3	0	**3**	**16**
12:45	5	11	**16**	5	2	**7**	**23**
13:00	3	14	**17**	4	2	**6**	**23**
13:15	3	9	**12**	2	0	**2**	**14**
13:30	6	16	**22**	4	0	**4**	**26**
13:45	2	10	**12**	6	0	**6**	**18**
14:00	3	14	**17**	5	1	**6**	**23**
14:15	3	11	**14**	3	1	**4**	**18**
14:30	3	13	**16**	8	1	**9**	**25**
14:45	8	15	**23**	5	1	**6**	**29**
15:00	3	9	**12**	4	0	**4**	**16**
15:15	4	13	**17**	3	0	**3**	**20**
15:30	2	11	**13**	4	1	**5**	**18**
15:45	7	11	**18**	1	1	**2**	**20**
16:00	7	15	**22**	4	0	**4**	**26**
16:15	5	17	**22**	5	0	**5**	**27**
16:30	2	7	**9**	5	0	**5**	**14**
16:45	8	4	**12**	5	2	**7**	**19**
17:00	3	14	**17**	4	0	**4**	**21**
17:15	6	13	**19**	3	2	**5**	**24**
17:30	6	13	**19**	6	3	**9**	**28**
17:45	5	10	**15**	5	4	**9**	**24**
18:00	5	7	**12**	0	1	**1**	**13**
18:15	6	11	**17**	4	0	**4**	**21**
18:30	5	10	**15**	2	0	**2**	**17**
18:45	4	15	**19**	2	2	**4**	**23**
19:00	1	20	**21**	2	2	**4**	**25**
19:15	4	4	**8**	1	3	**4**	**12**
19:30	1	10	**11**	2	2	**4**	**15**
19:45	1	6	**7**	0	1	**1**	**8**
20:00	2	6	**8**	4	3	**7**	**15**
20:15	3	14	**17**	2	0	**2**	**19**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
20:30	3	12	**15**	1	0	**1**	**16**
20:45	5	3	**8**	3	0	**3**	**11**
21:00	3	13	**16**	3	1	**4**	**20**
21:15	3	11	**14**	2	0	**2**	**16**
21:30	4	7	**11**	3	0	**3**	**14**
21:45	2	11	**13**	1	1	**2**	**15**
22:00	2	4	**6**	0	2	**2**	**8**
22:15	1	6	**7**	3	1	**4**	**11**
22:30	2	3	**5**	1	0	**1**	**6**
22:45	1	1	**2**	2	0	**2**	**4**
23:00	2	6	**8**	1	1	**2**	**10**
23:15	3	4	**7**	2	0	**2**	**9**
23:30	1	10	**11**	1	1	**2**	**13**
23:45	1	4	**5**	0	1	**1**	**6**
TOTALS:	**288**	**933**	**1221**	**239**	**80**	**319**	**1540**
PERCENTAGES:	***19%***	***61%***	***79%***	***16%***	***5%***	***21%***	***100%***

Peak Hour: 17:00 to 18:00

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
20	**50**	**70**	**18**	**9**	**27**	**97**

Wednesday, November 29, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	5	5	**10**	1	1	**2**	**12**
0:15	5	6	**11**	1	1	**2**	**13**
0:30	1	6	**7**	0	1	**1**	**8**
0:45	2	3	**5**	0	0	**0**	**5**
1:00	3	5	**8**	0	1	**1**	**9**
1:15	1	2	**3**	2	1	**3**	**6**
1:30	1	3	**4**	1	0	**1**	**5**
1:45	3	6	**9**	0	0	**0**	**9**
2:00	2	9	**11**	1	0	**1**	**12**
2:15	3	5	**8**	1	2	**3**	**11**
2:30	2	12	**14**	0	0	**0**	**14**
2:45	1	5	**6**	1	0	**1**	**7**
3:00	4	6	**10**	2	0	**2**	**12**
3:15	2	4	**6**	2	0	**2**	**8**
3:30	3	4	**7**	1	1	**2**	**9**
3:45	6	9	**15**	0	0	**0**	**15**
4:00	6	9	**15**	6	0	**6**	**21**
4:15	3	8	**11**	2	0	**2**	**13**
4:30	3	4	**7**	3	2	**5**	**12**
4:45	5	9	**14**	5	0	**5**	**19**
5:00	3	9	**12**	0	1	**1**	**13**
5:15	1	14	**15**	4	2	**6**	**21**
5:30	3	6	**9**	4	1	**5**	**14**
5:45	1	8	**9**	0	1	**1**	**10**
6:00	4	14	**18**	1	0	**1**	**19**
6:15	0	8	**8**	4	4	**8**	**16**
6:30	2	12	**14**	4	0	**4**	**18**
6:45	4	10	**14**	3	0	**3**	**17**
7:00	6	5	**11**	9	2	**11**	**22**
7:15	2	9	**11**	3	2	**5**	**16**
7:30	1	12	**13**	2	0	**2**	**15**
7:45	2	5	**7**	3	1	**4**	**11**
8:00	3	11	**14**	6	0	**6**	**20**
8:15	1	14	**15**	4	1	**5**	**20**
8:30	1	14	**15**	3	0	**3**	**18**
8:45	1	12	**13**	1	2	**3**	**16**
9:00	2	13	**15**	0	0	**0**	**15**
9:15	6	9	**15**	6	1	**7**	**22**
9:30	3	8	**11**	4	1	**5**	**16**
9:45	5	12	**17**	1	0	**1**	**18**
10:00	4	18	**22**	2	0	**2**	**24**
10:15	3	6	**9**	3	0	**3**	**12**
10:30	5	14	**19**	6	0	**6**	**25**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
10:45	4	12	**16**	2	0	**2**	**18**
11:00	1	16	**17**	6	0	**6**	**23**
11:15	5	15	**20**	1	1	**2**	**22**
11:30	2	14	**16**	2	2	**4**	**20**
11:45	7	15	**22**	4	0	**4**	**26**
12:00	2	15	**17**	4	0	**4**	**21**
12:15	3	10	**13**	5	0	**5**	**18**
12:30	5	12	**17**	2	0	**2**	**19**
12:45	2	13	**15**	2	3	**5**	**20**
13:00	2	16	**18**	3	1	**4**	**22**
13:15	5	12	**17**	3	0	**3**	**20**
13:30	4	12	**16**	4	1	**5**	**21**
13:45	4	18	**22**	3	1	**4**	**26**
14:00	2	8	**10**	1	1	**2**	**12**
14:15	4	12	**16**	5	1	**6**	**22**
14:30	4	17	**21**	5	0	**5**	**26**
14:45	5	14	**19**	2	0	**2**	**21**
15:00	2	11	**13**	3	1	**4**	**17**
15:15	1	8	**9**	1	1	**2**	**11**
15:30	3	13	**16**	5	2	**7**	**23**
15:45	4	7	**11**	5	2	**7**	**18**
16:00	3	6	**9**	0	1	**1**	**10**
16:15	4	8	**12**	2	2	**4**	**16**
16:30	2	12	**14**	1	2	**3**	**17**
16:45	6	8	**14**	2	1	**3**	**17**
17:00	7	6	**13**	1	2	**3**	**16**
17:15	4	10	**14**	4	0	**4**	**18**
17:30	4	6	**10**	4	1	**5**	**15**
17:45	8	7	**15**	4	0	**4**	**19**
18:00	2	13	**15**	1	1	**2**	**17**
18:15	3	9	**12**	5	0	**5**	**17**
18:30	2	11	**13**	4	0	**4**	**17**
18:45	3	15	**18**	2	2	**4**	**22**
19:00	6	11	**17**	6	0	**6**	**23**
19:15	2	9	**11**	2	0	**2**	**13**
19:30	2	15	**17**	0	3	**3**	**20**
19:45	6	5	**11**	3	3	**6**	**17**
20:00	5	6	**11**	2	1	**3**	**14**
20:15	2	14	**16**	3	2	**5**	**21**
20:30	1	13	**14**	0	2	**2**	**16**
20:45	0	5	**5**	2	1	**3**	**8**
21:00	1	9	**10**	0	0	**0**	**10**
21:15	3	9	**12**	2	0	**2**	**14**
21:30	1	4	**5**	1	1	**2**	**7**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
21:45	4	7	**11**	0	0	**0**	**11**
22:00	3	3	**6**	1	1	**2**	**8**
22:15	1	11	**12**	1	5	**6**	**18**
22:30	1	5	**6**	0	1	**1**	**7**
22:45	3	5	**8**	3	0	**3**	**11**
23:00	5	3	**8**	1	0	**1**	**9**
23:15	0	6	**6**	0	1	**1**	**7**
23:30	2	7	**9**	0	0	**0**	**9**
23:45	1	4	**5**	1	1	**2**	**7**
TOTALS:	**292**	**895**	**1187**	**228**	**80**	**308**	**1495**
PERCENTAGES:	***19%***	***58%***	***77%***	***15%***	***5%***	***20%***	***97%***

Peak Hour: 9:00 to 10:00

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
16	**42**	**58**	**11**	**2**	**13**	**71**

Thursday, November 30, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	0	5	**5**	0	0	**0**	**5**
0:15	0	3	**3**	1	0	**1**	**4**
0:30	1	4	**5**	1	0	**1**	**6**
0:45	2	4	**6**	0	0	**0**	**6**
1:00	2	3	**5**	0	0	**0**	**5**
1:15	0	4	**4**	1	0	**1**	**5**
1:30	0	5	**5**	0	0	**0**	**5**
1:45	1	5	**6**	3	1	**4**	**10**
2:00	1	4	**5**	0	0	**0**	**5**
2:15	0	6	**6**	0	0	**0**	**6**
2:30	1	4	**5**	1	0	**1**	**6**
2:45	0	4	**4**	1	2	**3**	**7**
3:00	1	6	**7**	2	2	**4**	**11**
3:15	1	8	**9**	2	0	**2**	**11**
3:30	4	4	**8**	1	0	**1**	**9**
3:45	1	3	**4**	0	0	**0**	**4**
4:00	3	4	**7**	1	0	**1**	**8**
4:15	3	6	**9**	3	2	**5**	**14**
4:30	4	3	**7**	3	1	**4**	**11**
4:45	1	8	**9**	0	0	**0**	**9**
5:00	2	11	**13**	2	2	**4**	**17**
5:15	3	4	**7**	3	1	**4**	**11**
5:30	5	6	**11**	5	0	**5**	**16**
5:45	8	7	**15**	4	0	**4**	**19**
6:00	2	5	**7**	2	1	**3**	**10**
6:15	3	9	**12**	1	1	**2**	**14**
6:30	5	16	**21**	1	0	**1**	**22**
6:45	3	8	**11**	5	0	**5**	**16**
7:00	1	9	**10**	1	1	**2**	**12**
7:15	3	7	**10**	4	2	**6**	**16**
7:30	3	9	**12**	1	2	**3**	**15**
7:45	5	10	**15**	1	1	**2**	**17**
8:00	4	4	**8**	2	1	**3**	**11**
8:15	4	8	**12**	1	0	**1**	**13**
8:30	4	11	**15**	3	0	**3**	**18**
8:45	1	10	**11**	5	0	**5**	**16**
9:00	3	7	**10**	3	0	**3**	**13**
9:15	6	12	**18**	3	0	**3**	**21**
9:30	7	11	**18**	2	0	**2**	**20**
9:45	4	6	**10**	1	1	**2**	**12**
10:00	5	12	**17**	4	0	**4**	**21**
10:15	0	10	**10**	2	0	**2**	**12**
10:30	5	14	**19**	3	0	**3**	**22**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
10:45	3	11	**14**	3	1	**4**	**18**
11:00		13	**13**	4	2	**6**	**19**
11:15	6	12	**18**	8	2	**10**	**28**
11:30	6	13	**19**	5	2	**7**	**26**
11:45	10	7	**17**	3	1	**4**	**21**
12:00	4	17	**21**	1	0	**1**	**22**
12:15	5	15	**20**	6	2	**8**	**28**
12:30	3	9	**12**	5	0	**5**	**17**
12:45	4	8	**12**	2	0	**2**	**14**
13:00	5	14	**19**	6	0	**6**	**25**
13:15	8	7	**15**	6	1	**7**	**22**
13:30	4	11	**15**	1	1	**2**	**17**
13:45	3	15	**18**	4	1	**5**	**23**
14:00	3	17	**20**	7	1	**8**	**28**
14:15	6	12	**18**	2	0	**2**	**20**
14:30	7	11	**18**	5	0	**5**	**23**
14:45	6	11	**17**	1	0	**1**	**18**
15:00	6	13	**19**	3	5	**8**	**27**
15:15	3	9	**12**	5	1	**6**	**18**
15:30	2	9	**11**	4	1	**5**	**16**
15:45	9	6	**15**	6	0	**6**	**21**
16:00	5	9	**14**	3	0	**3**	**17**
16:15	3	7	**10**	6	0	**6**	**16**
16:30	9	10	**19**	9	2	**11**	**30**
16:45	4	4	**8**	8	1	**9**	**17**
17:00	10	8	**18**	8	3	**11**	**29**
17:15	4	4	**8**	9	3	**12**	**20**
17:30	4	9	**13**	6	2	**8**	**21**
17:45	4	5	**9**	7	0	**7**	**16**
18:00	15	6	**21**	6	0	**6**	**27**
18:15	2	5	**7**	3	2	**5**	**12**
18:30	4	11	**15**	2	0	**2**	**17**
18:45	6	8	**14**	4	0	**4**	**18**
19:00	2	8	**10**	6	1	**7**	**17**
19:15	4	10	**14**	2	0	**2**	**16**
19:30	2	5	**7**	1	0	**1**	**8**
19:45	1	7	**8**	3	2	**5**	**13**
20:00	4	6	**10**	3	2	**5**	**15**
20:15	1	9	**10**	1	1	**2**	**12**
20:30	4	4	**8**	2	2	**4**	**12**
20:45	1	6	**7**	3	0	**3**	**10**
21:00	0	5	**5**	2	0	**2**	**7**
21:15	6	7	**13**	2	2	**4**	**17**
21:30	3	8	**11**	0	1	**1**	**12**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
21:45	4	2	**6**	1	0	**1**	**7**
22:00	0	4	**4**	0	0	**0**	**4**
22:15	2	2	**4**	0	0	**0**	**4**
22:30	4	5	**9**	2	0	**2**	**11**
22:45	5	3	**8**	3	0	**3**	**11**
23:00	3	3	**6**	0	2	**2**	**8**
23:15	2	4	**6**	1	0	**1**	**7**
23:30	0	7	**7**	3	1	**4**	**11**
23:45	2	2	**4**	2	1	**3**	**7**
TOTALS:	**335**	**732**	**1067**	**274**	**70**	**344**	**1411**
PERCENTAGES:	***22%***	***48%***	***69%***	***18%***	***5%***	***22%***	***92%***

Peak Hour: 11:15 to 12:15

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
26	**49**	**75**	**17**	**5**	**22**	**97**

Location: Love's Truck Stops - Lodi
Driveway #: 11
Latitude: 38.1169
Longitude: -121.3927
Start Date: 11/28/2017

Tuesday, November 28, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	Passenger	Trucks	In-Total	Passenger	Trucks	Out-Total	TOTAL
0:00			**0**			**0**	**0**
0:15	3	1	**4**	4	0	**4**	**8**
0:30	6	1	**7**	7	1	**8**	**15**
0:45	1	0	**1**	10	0	**10**	**11**
1:00	5	0	**5**	1	1	**2**	**7**
1:15	1	0	**1**	2	0	**2**	**3**
1:30	3	0	**3**	3	0	**3**	**6**
1:45	5	0	**5**	7	0	**7**	**12**
2:00	3	0	**3**	6	0	**6**	**9**
2:15	3	1	**4**	2	0	**2**	**6**
2:30	6	0	**6**	3	0	**3**	**9**
2:45	6	0	**6**	5	1	**6**	**12**
3:00	6	1	**7**	11	0	**11**	**18**
3:15	6	0	**6**	5	0	**5**	**11**
3:30	5	0	**5**	8	0	**8**	**13**
3:45	4	0	**4**	3	0	**3**	**7**
4:00	5	0	**5**	10	0	**10**	**15**
4:15	12	0	**12**	7	1	**8**	**20**
4:30	8	0	**8**	8	0	**8**	**16**
4:45	11	0	**11**	10	0	**10**	**21**
5:00	11	0	**11**	15	0	**15**	**26**
5:15	11	0	**11**	15	0	**15**	**26**
5:30	15	1	**16**	12	0	**12**	**28**
5:45	12	0	**12**	8	0	**8**	**20**
6:00	12	0	**12**	17	1	**18**	**30**
6:15	9	0	**9**	7	0	**7**	**16**
6:30	26	0	**26**	16	0	**16**	**42**
6:45	16	0	**16**	13	0	**13**	**29**
7:00	14	2	**16**	24	1	**25**	**41**
7:15	13	0	**13**	16	2	**18**	**31**
7:30	12	1	**13**	17	0	**17**	**30**
7:45	14	4	**18**	9	2	**11**	**29**
8:00	16	0	**16**	16	1	**17**	**33**
8:15	17	1	**18**	16	0	**16**	**34**
8:30	16	0	**16**	21	1	**22**	**38**
8:45	12	1	**13**	16	0	**16**	**29**
9:00	16	1	**17**	17	2	**19**	**36**
9:15	18	0	**18**	15	0	**15**	**33**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
9:30	10	2	**12**	12	0	**12**	**24**
9:45	16	0	**16**	18	2	**20**	**36**
10:00	22	1	**23**	15	0	**15**	**38**
10:15	14	0	**14**	20	2	**22**	**36**
10:30	10	1	**11**	17	1	**18**	**29**
10:45	19	0	**19**	13	1	**14**	**33**
11:00	15	1	**16**	24	0	**24**	**40**
11:15	12	1	**13**	18	1	**19**	**32**
11:30	7	0	**7**	10	1	**11**	**18**
11:45	18	0	**18**	8	0	**8**	**26**
12:00	22	1	**23**	18	2	**20**	**43**
12:15	17	0	**17**	18	0	**18**	**35**
12:30	29	0	**29**	20	0	**20**	**49**
12:45	20	0	**20**	32	0	**32**	**52**
13:00	20	0	**20**	19	0	**19**	**39**
13:15	15	0	**15**	26	0	**26**	**41**
13:30	14	1	**15**	14	0	**14**	**29**
13:45	21	0	**21**	16	0	**16**	**37**
14:00	20	1	**21**	15	0	**15**	**36**
14:15	27	2	**29**	21	1	**22**	**51**
14:30	17	0	**17**	21	2	**23**	**40**
14:45	16	0	**16**	21	0	**21**	**37**
15:00	18	0	**18**	19	0	**19**	**37**
15:15	17	3	**20**	21	0	**21**	**41**
15:30	22	1	**23**	19	0	**19**	**42**
15:45	22	2	**24**	25	6	**31**	**55**
16:00	18	1	**19**	29	0	**29**	**48**
16:15	26	0	**26**	19	1	**20**	**46**
16:30	22	1	**23**	14	2	**16**	**39**
16:45	25	2	**27**	28	1	**29**	**56**
17:00	31	0	**31**	26	3	**29**	**60**
17:15	23	0	**23**	29	0	**29**	**52**
17:30	24	1	**25**	22	0	**22**	**47**
17:45	26	1	**27**	27	0	**27**	**54**
18:00	20	0	**20**	21	0	**21**	**41**
18:15	23	1	**24**	27	1	**28**	**52**
18:30	21	4	**25**	26	0	**26**	**51**
18:45	15	0	**15**	26	2	**28**	**43**
19:00	14	1	**15**	12	1	**13**	**28**
19:15	18	0	**18**	21	1	**22**	**40**
19:30	10	0	**10**	16	0	**16**	**26**
19:45	11	0	**11**	8	0	**8**	**19**
20:00	9	0	**9**	10	0	**10**	**19**
20:15	11	0	**11**	9	1	**10**	**21**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
20:30	6	0	**6**	8	0	**8**	**14**
20:45	11	0	**11**	8	0	**8**	**19**
21:00	9	0	**9**	15	1	**16**	**25**
21:15	12	0	**12**	10	0	**10**	**22**
21:30	6	0	**6**	8	0	**8**	**14**
21:45	6	0	**6**	6	0	**6**	**12**
22:00	5	0	**5**	6	0	**6**	**11**
22:15	12	0	**12**	8	0	**8**	**20**
22:30	6	0	**6**	10	0	**10**	**16**
22:45	10	0	**10**	9	0	**9**	**19**
23:00	8	0	**8**	10	1	**11**	**19**
23:15	9	0	**9**	9	0	**9**	**18**
23:30	3	0	**3**	13	0	**13**	**16**
23:45	2	0	**2**	6	0	**6**	**8**
TOTALS:	**1271**	**44**	**1315**	**1358**	**48**	**1406**	**2721**
PERCENTAGES:	***47%***	***2%***	***48%***	***50%***	***2%***	***52%***	***100%***

Peak Hour: 16:45 to 17:45

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
103	**3**	**106**	**105**	**4**	**109**	**215**

Wednesday, November 29, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	4	1	**5**	6	0	**6**	**11**
0:15	3	0	**3**	8	0	**8**	**11**
0:30	6	0	**6**	6	0	**6**	**12**
0:45	3	0	**3**	2	0	**2**	**5**
1:00	1	0	**1**	5	0	**5**	**6**
1:15	4	0	**4**	2	0	**2**	**6**
1:30	3	0	**3**	6	0	**6**	**9**
1:45	4	0	**4**	3	0	**3**	**7**
2:00	5	0	**5**	7	0	**7**	**12**
2:15	3	0	**3**	6	0	**6**	**9**
2:30	5	0	**5**	3	0	**3**	**8**
2:45	5	0	**5**	4	0	**4**	**9**
3:00	5	0	**5**	8	0	**8**	**13**
3:15	10	0	**10**	10	0	**10**	**20**
3:30	8	0	**8**	8	0	**8**	**16**
3:45	8	0	**8**	14	0	**14**	**22**
4:00	10	0	**10**	13	0	**13**	**23**
4:15	12	0	**12**	12	0	**12**	**24**
4:30	11	0	**11**	11	0	**11**	**22**
4:45	9	0	**9**	6	0	**6**	**15**
5:00	16	0	**16**	13	1	**14**	**30**
5:15	6	0	**6**	6	0	**6**	**12**
5:30	14	0	**14**	6	0	**6**	**20**
5:45	10	0	**10**	11	0	**11**	**21**
6:00	14	0	**14**	12	0	**12**	**26**
6:15	11	0	**11**	11	0	**11**	**22**
6:30	19	1	**20**	19	0	**19**	**39**
6:45	21	0	**21**	13	1	**14**	**35**
7:00	16	2	**18**	16	2	**18**	**36**
7:15	19	0	**19**	20	0	**20**	**39**
7:30	25	1	**26**	17	0	**17**	**43**
7:45	16	0	**16**	14	0	**14**	**30**
8:00	16	0	**16**	15	0	**15**	**31**
8:15	14	0	**14**	9	0	**9**	**23**
8:30	12	0	**12**	17	1	**18**	**30**
8:45	14	0	**14**	8	1	**9**	**23**
9:00	15	0	**15**	17	1	**18**	**33**
9:15	15	1	**16**	16	0	**16**	**32**
9:30	17	0	**17**	14	1	**15**	**32**
9:45	19	0	**19**	22	0	**22**	**41**
10:00	16	0	**16**	19	0	**19**	**35**
10:15	16	0	**16**	13	1	**14**	**30**
10:30	21	1	**22**	17	1	**18**	**40**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
10:45	9	0	**9**	14	0	**14**	**23**
11:00	16	0	**16**	17	0	**17**	**33**
11:15	12	0	**12**	15	0	**15**	**27**
11:30	16	0	**16**	11	1	**12**	**28**
11:45	19	1	**20**	22	1	**23**	**43**
12:00	27	1	**28**	22	2	**24**	**52**
12:15	19	1	**20**	25	1	**26**	**46**
12:30	25	1	**26**	26	1	**27**	**53**
12:45	14	0	**14**	20	0	**20**	**34**
13:00	25	0	**25**	16	0	**16**	**41**
13:15	17	1	**18**	25	1	**26**	**44**
13:30	18	0	**18**	23	0	**23**	**41**
13:45	16	0	**16**	22	0	**22**	**38**
14:00	21	0	**21**	14	0	**14**	**35**
14:15	18	0	**18**	19	0	**19**	**37**
14:30	23	0	**23**	22	0	**22**	**45**
14:45	21	1	**22**	23	0	**23**	**45**
15:00	24	0	**24**	24	0	**24**	**48**
15:15	12	2	**14**	18	3	**21**	**35**
15:30	21	1	**22**	15	1	**16**	**38**
15:45	19	0	**19**	28	0	**28**	**47**
16:00	16	0	**16**	21	0	**21**	**37**
16:15	16	0	**16**	17	0	**17**	**33**
16:30	22	1	**23**	23	0	**23**	**46**
16:45	23	0	**23**	23	1	**24**	**47**
17:00	24	0	**24**	23	0	**23**	**47**
17:15	16	1	**17**	21	0	**21**	**38**
17:30	18	1	**19**	22	1	**23**	**42**
17:45	18	0	**18**	23	1	**24**	**42**
18:00	22	1	**23**	20	0	**20**	**43**
18:15	17	0	**17**	22	0	**22**	**39**
18:30	20	0	**20**	13	0	**13**	**33**
18:45	24	0	**24**	33	1	**34**	**58**
19:00	16	3	**19**	22	0	**22**	**41**
19:15	12	1	**13**	15	2	**17**	**30**
19:30	17	2	**19**	12	6	**18**	**37**
19:45	12	1	**13**	17	0	**17**	**30**
20:00	10	0	**10**	15	0	**15**	**25**
20:15	12	0	**12**	16	0	**16**	**28**
20:30	13	0	**13**	11	0	**11**	**24**
20:45	14	0	**14**	14	0	**14**	**28**
21:00	9	0	**9**	12	0	**12**	**21**
21:15	4	0	**4**	6	0	**6**	**10**
21:30	4	0	**4**	3	0	**3**	**7**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
21:45	12	0	**12**	8	0	**8**	**20**
22:00	7	0	**7**	9	0	**9**	**16**
22:15	3	1	**4**	5	0	**5**	**9**
22:30	7	0	**7**	5	1	**6**	**13**
22:45	12	0	**12**	6	0	**6**	**18**
23:00	6	0	**6**	9	0	**9**	**15**
23:15	2	0	**2**	4	0	**4**	**6**
23:30	5	2	**7**	5	1	**6**	**13**
23:45	5	0	**5**	5	1	**6**	**11**
TOTALS:	**1291**	**30**	**1321**	**1346**	**36**	**1382**	**2703**
PERCENTAGES:	***47%***	***1%***	***49%***	***49%***	***1%***	***51%***	***99%***

Peak Hour: 11:45 to 12:45

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
90	**4**	**94**	**95**	**5**	**100**	**194**

Thursday, November 30, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	9	0	**9**	7	0	**7**	**16**
0:15	2	0	**2**	3	0	**3**	**5**
0:30	4	0	**4**	4	0	**4**	**8**
0:45	4	0	**4**	6	0	**6**	**10**
1:00	4	0	**4**	5	0	**5**	**9**
1:15	2	0	**2**	2	0	**2**	**4**
1:30	6	1	**7**	5	0	**5**	**12**
1:45	2	0	**2**	6	0	**6**	**8**
2:00	2	0	**2**	3	1	**4**	**6**
2:15	8	0	**8**	4	0	**4**	**12**
2:30	4	0	**4**	9	0	**9**	**13**
2:45	7	0	**7**	10	0	**10**	**17**
3:00	7	1	**8**	6	0	**6**	**14**
3:15	7	0	**7**	5	0	**5**	**12**
3:30	3	0	**3**	10	1	**11**	**14**
3:45	8	0	**8**	9	0	**9**	**17**
4:00	8	0	**8**	9	0	**9**	**17**
4:15	10	0	**10**	11	0	**11**	**21**
4:30	11	0	**11**	9	0	**9**	**20**
4:45	10	0	**10**	10	0	**10**	**20**
5:00	16	0	**16**	14	0	**14**	**30**
5:15	12	0	**12**	12	0	**12**	**24**
5:30	12	0	**12**	9	0	**9**	**21**
5:45	14	0	**14**	12	0	**12**	**26**
6:00	9	0	**9**	14	0	**14**	**23**
6:15	13	0	**13**	10	0	**10**	**23**
6:30	22	1	**23**	18	1	**19**	**42**
6:45	10	0	**10**	11	0	**11**	**21**
7:00	25	2	**27**	18	1	**19**	**46**
7:15	7	1	**8**	12	1	**13**	**21**
7:30	15	0	**15**	14	0	**14**	**29**
7:45	18	1	**19**	13	0	**13**	**32**
8:00	16	2	**18**	15	1	**16**	**34**
8:15	16	0	**16**	17	1	**18**	**34**
8:30	10	2	**12**	15	3	**18**	**30**
8:45	18	3	**21**	18	1	**19**	**40**
9:00	17	1	**18**	15	0	**15**	**33**
9:15	15	0	**15**	12	0	**12**	**27**
9:30	16	0	**16**	18	2	**20**	**36**
9:45	14	2	**16**	15	1	**16**	**32**
10:00	22	0	**22**	17	2	**19**	**41**
10:15	30	1	**31**	20	0	**20**	**51**
10:30	18	1	**19**	23	1	**24**	**43**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
10:45	30	0	**30**	18	0	**18**	**48**
11:00	23	0	**23**	22	0	**22**	**45**
11:15	15	0	**15**	12	0	**12**	**27**
11:30	25	1	**26**	24	1	**25**	**51**
11:45	32	3	**35**	28	2	**30**	**65**
12:00	32	1	**33**	27	1	**28**	**61**
12:15	25	0	**25**	26	2	**28**	**53**
12:30	26	0	**26**	30	1	**31**	**57**
12:45	18	4	**22**	17	2	**19**	**41**
13:00	21	1	**22**	21	1	**22**	**44**
13:15	20	1	**21**	24	0	**24**	**45**
13:30	18	1	**19**	26	2	**28**	**47**
13:45	12	1	**13**	16	2	**18**	**31**
14:00	25	0	**25**	17	2	**19**	**44**
14:15	17	0	**17**	20	0	**20**	**37**
14:30	19	0	**19**	16	1	**17**	**36**
14:45	28	0	**28**	23	0	**23**	**51**
15:00	20	0	**20**	28	0	**28**	**48**
15:15	29	0	**29**	23	0	**23**	**52**
15:30	28	5	**33**	32	2	**34**	**67**
15:45	21	1	**22**	21	3	**24**	**46**
16:00	20	1	**21**	25	0	**25**	**46**
16:15	23	1	**24**	25	0	**25**	**49**
16:30	20	0	**20**	26	1	**27**	**47**
16:45	30	0	**30**	25	0	**25**	**55**
17:00	21	2	**23**	28	1	**29**	**52**
17:15	22	2	**24**	21	0	**21**	**45**
17:30	17	0	**17**	24	4	**28**	**45**
17:45	32	1	**33**	30	0	**30**	**63**
18:00	25	1	**26**	23	3	**26**	**52**
18:15	25	0	**25**	28	0	**28**	**53**
18:30	17	0	**17**	12	0	**12**	**29**
18:45	22	0	**22**	31	0	**31**	**53**
19:00	21	0	**21**	28	0	**28**	**49**
19:15	21	0	**21**	14	0	**14**	**35**
19:30	7	0	**7**	20	0	**20**	**27**
19:45	8	0	**8**	5	0	**5**	**13**
20:00	11	0	**11**	12	0	**12**	**23**
20:15	11	0	**11**	16	0	**16**	**27**
20:30	9	1	**10**	8	1	**9**	**19**
20:45	7	0	**7**	7	0	**7**	**14**
21:00	13	1	**14**	10	1	**11**	**25**
21:15	12	0	**12**	14	0	**14**	**26**
21:30	13	1	**14**	15	1	**16**	**30**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
21:45	19	0	**19**	16	0	**16**	**35**
22:00	11	0	**11**	16	0	**16**	**27**
22:15	7	0	**7**	17	0	**17**	**24**
22:30	5	0	**5**	4	0	**4**	**9**
22:45	11	1	**12**	8	1	**9**	**21**
23:00	10	0	**10**	8	0	**8**	**18**
23:15	5	0	**5**	12	0	**12**	**17**
23:30	7	0	**7**	6	0	**6**	**13**
23:45	10	0	**10**	8	0	**8**	**18**
TOTALS:	**1459**	**50**	**1509**	**1488**	**52**	**1540**	**3049**
PERCENTAGES:	***54%***	***2%***	***55%***	***55%***	***2%***	***57%***	***112%***

Peak Hour: 11:45 to 12:45

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
115	**4**	**119**	**111**	**6**	**117**	**236**

Location: Love's Truck Stops - Santa Nella
Driveway #: 12
Latitude: 37.1119
Longitude: -121.0178
Start Date: 11/14/2017

Tuesday, November 14, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	0	2	**2**	0	10	**10**	**12**
0:15	0	0	**0**	0	5	**5**	**5**
0:30	0	2	**2**	0	8	**8**	**10**
0:45	0	0	**0**	0	6	**6**	**6**
1:00	0	2	**2**	0	6	**6**	**8**
1:15	0	1	**1**	0	4	**4**	**5**
1:30	0	1	**1**	0	7	**7**	**8**
1:45	0	0	**0**	0	1	**1**	**1**
2:00	0	0	**0**	0	8	**8**	**8**
2:15	0	1	**1**	0	6	**6**	**7**
2:30	0	1	**1**	0	8	**8**	**9**
2:45	0	0	**0**	0	6	**6**	**6**
3:00	0	1	**1**	0	10	**10**	**11**
3:15	0	2	**2**	0	10	**10**	**12**
3:30	0	0	**0**	0	5	**5**	**5**
3:45	0	0	**0**	1	9	**10**	**10**
4:00	0	0	**0**	1	9	**10**	**10**
4:15	0	1	**1**	0	12	**12**	**13**
4:30	0	2	**2**	0	17	**17**	**19**
4:45	0	1	**1**	0	10	**10**	**11**
5:00	0	0	**0**	0	17	**17**	**17**
5:15	0	0	**0**	0	16	**16**	**16**
5:30	0	0	**0**	0	10	**10**	**10**
5:45	0	1	**1**	0	17	**17**	**18**
6:00	0	2	**2**	0	7	**7**	**9**
6:15	0	2	**2**	0	20	**20**	**22**
6:30	0	3	**3**	0	12	**12**	**15**
6:45	0	4	**4**	0	20	**20**	**24**
7:00	0	1	**1**	0	14	**14**	**15**
7:15	0	3	**3**	0	11	**11**	**14**
7:30	0	1	**1**	0	7	**7**	**8**
7:45	0	2	**2**	0	10	**10**	**12**
8:00	0	2	**2**	0	16	**16**	**18**
8:15	0	5	**5**	0	11	**11**	**16**
8:30	0	0	**0**	0	10	**10**	**10**
8:45	0	8	**8**	0	11	**11**	**19**
9:00	0	4	**4**	0	14	**14**	**18**
9:15	0	4	**4**	0	14	**14**	**18**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
9:30	0	7	**7**	0	15	**15**	**22**
9:45	0	1	**1**	0	14	**14**	**15**
10:00	0	4	**4**	0	16	**16**	**20**
10:15	0	9	**9**	0	14	**14**	**23**
10:30	0	3	**3**	0	12	**12**	**15**
10:45	2	6	**8**	0	14	**14**	**22**
11:00	1	6	**7**	0	13	**13**	**20**
11:15	1	11	**12**	2	16	**18**	**30**
11:30	0	4	**4**	1	18	**19**	**23**
11:45	0	4	**4**	1	13	**14**	**18**
12:00	0	3	**3**	0	23	**23**	**26**
12:15	0	6	**6**	1	15	**16**	**22**
12:30	0	8	**8**	0	7	**7**	**15**
12:45	1	8	**9**	0	14	**14**	**23**
13:00	1	3	**4**	1	12	**13**	**17**
13:15	0	4	**4**	1	13	**14**	**18**
13:30	0	1	**1**	0	9	**9**	**10**
13:45	0	3	**3**	0	13	**13**	**16**
14:00	0	1	**1**	0	8	**8**	**9**
14:15	0	4	**4**	0	14	**14**	**18**
14:30	0	4	**4**	1	10	**11**	**15**
14:45	0	4	**4**	0	11	**11**	**15**
15:00	1	4	**5**	1	12	**13**	**18**
15:15	0	1	**1**	0	14	**14**	**15**
15:30	0	4	**4**	0	8	**8**	**12**
15:45	1	3	**4**	0	13	**13**	**17**
16:00	0	1	**1**	1	9	**10**	**11**
16:15	0	7	**7**	0	12	**12**	**19**
16:30	0	2	**2**	0	12	**12**	**14**
16:45	0	1	**1**	1	15	**16**	**17**
17:00	0	4	**4**	0	7	**7**	**11**
17:15	0	2	**2**	0	6	**6**	**8**
17:30	1	2	**3**	0	4	**4**	**7**
17:45	0	2	**2**	0	4	**4**	**6**
18:00	0	3	**3**	0	13	**13**	**16**
18:15	0	4	**4**	0	15	**15**	**19**
18:30	1	5	**6**	0	6	**6**	**12**
18:45	0	2	**2**	0	9	**9**	**11**
19:00	0	3	**3**	0	12	**12**	**15**
19:15	0	1	**1**	0	12	**12**	**13**
19:30	0	2	**2**	0	11	**11**	**13**
19:45	0	2	**2**	0	15	**15**	**17**
20:00	0	5	**5**	0	9	**9**	**14**
20:15	0	1	**1**	0	8	**8**	**9**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
20:30	1	4	**5**	1	11	**12**	**17**
20:45	0	2	**2**	0	5	**5**	**7**
21:00	0	1	**1**	0	9	**9**	**10**
21:15	0	2	**2**	0	6	**6**	**8**
21:30	0	2	**2**	0	10	**10**	**12**
21:45	0	1	**1**	0	4	**4**	**5**
22:00	0	3	**3**	0	8	**8**	**11**
22:15	0	2	**2**	0	11	**11**	**13**
22:30	0	2	**2**	0	8	**8**	**10**
22:45	0	1	**1**	1	4	**5**	**6**
23:00	0	1	**1**	0	8	**8**	**9**
23:15	0	2	**2**	0	4	**4**	**6**
23:30	0	1	**1**	0	2	**2**	**3**
23:45	0	2	**2**	0	10	**10**	**12**
TOTALS:	**11**	**250**	**261**	**15**	**1014**	**1029**	**1290**
PERCENTAGES:	***1%***	***19%***	***20%***	***1%***	***79%***	***80%***	***100%***

Peak Hour: 11:15 to 12:15

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
1	**22**	**23**	**4**	**70**	**74**	**97**

Wednesday, November 15, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	0	1	**1**	0	7	**7**	**8**
0:15	0	0	**0**	0	9	**9**	**9**
0:30	0	1	**1**	0	7	**7**	**8**
0:45	0	0	**0**	0	4	**4**	**4**
1:00	0	1	**1**	1	11	**12**	**13**
1:15	0	1	**1**	0	9	**9**	**10**
1:30	0	0	**0**	0	6	**6**	**6**
1:45	0	0	**0**	0	4	**4**	**4**
2:00	0	0	**0**	0	7	**7**	**7**
2:15	0	2	**2**	0	4	**4**	**6**
2:30	0	0	**0**	0	6	**6**	**6**
2:45	0	0	**0**	0	11	**11**	**11**
3:00	0	0	**0**	0	8	**8**	**8**
3:15	0	1	**1**	0	8	**8**	**9**
3:30	1	4	**5**	1	6	**7**	**12**
3:45	0	2	**2**	0	13	**13**	**15**
4:00	0	0	**0**	0	12	**12**	**12**
4:15	0	3	**3**	0	13	**13**	**16**
4:30	0	0	**0**	0	11	**11**	**11**
4:45	0	2	**2**	0	13	**13**	**15**
5:00	0	1	**1**	0	11	**11**	**12**
5:15	0	0	**0**	0	13	**13**	**13**
5:30	0	1	**1**	0	9	**9**	**10**
5:45	0	1	**1**	1	12	**13**	**14**
6:00	0	3	**3**	0	12	**12**	**15**
6:15	0	3	**3**	0	15	**15**	**18**
6:30	0	4	**4**	0	10	**10**	**14**
6:45	0	2	**2**	1	12	**13**	**15**
7:00	0	2	**2**	0	19	**19**	**21**
7:15	0	3	**3**	0	13	**13**	**16**
7:30	0	1	**1**	0	16	**16**	**17**
7:45	0	5	**5**	0	17	**17**	**22**
8:00	0	5	**5**	0	15	**15**	**20**
8:15	0	6	**6**	0	16	**16**	**22**
8:30	1	3	**4**	3	13	**16**	**20**
8:45	0	4	**4**	0	11	**11**	**15**
9:00	0	6	**6**	1	11	**12**	**18**
9:15	0	5	**5**	0	17	**17**	**22**
9:30	0	3	**3**	0	13	**13**	**16**
9:45	0	3	**3**	0	14	**14**	**17**
10:00	0	5	**5**	0	6	**6**	**11**
10:15	0	2	**2**	1	13	**14**	**16**
10:30	0	6	**6**	0	12	**12**	**18**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
10:45	0	5	**5**	0	11	**11**	**16**
11:00	0	8	**8**	1	17	**18**	**26**
11:15	1	2	**3**	0	11	**11**	**14**
11:30	0	5	**5**	1	15	**16**	**21**
11:45	1	5	**6**	2	10	**12**	**18**
12:00	1	4	**5**	0	12	**12**	**17**
12:15	0	3	**3**	0	12	**12**	**15**
12:30	0	7	**7**	1	13	**14**	**21**
12:45	1	2	**3**	0	12	**12**	**15**
13:00	0	3	**3**	0	13	**13**	**16**
13:15	0	5	**5**	0	13	**13**	**18**
13:30	0	4	**4**	0	10	**10**	**14**
13:45	0	1	**1**	0	15	**15**	**16**
14:00	0	6	**6**	1	17	**18**	**24**
14:15	1	3	**4**	0	6	**6**	**10**
14:30	2	7	**9**	1	8	**9**	**18**
14:45	2	5	**7**	1	17	**18**	**25**
15:00	0	8	**8**	0	14	**14**	**22**
15:15	0	7	**7**	0	15	**15**	**22**
15:30	0	1	**1**	0	6	**6**	**7**
15:45	0	7	**7**	0	9	**9**	**16**
16:00	0	4	**4**	2	13	**15**	**19**
16:15	0	3	**3**	0	12	**12**	**15**
16:30	0	3	**3**	0	11	**11**	**14**
16:45	0	3	**3**	0	10	**10**	**13**
17:00	1	3	**4**	1	7	**8**	**12**
17:15	1	6	**7**	1	7	**8**	**15**
17:30	0	6	**6**	0	11	**11**	**17**
17:45	0	3	**3**	0	12	**12**	**15**
18:00	1	5	**6**	0	9	**9**	**15**
18:15	0	3	**3**	0	11	**11**	**14**
18:30	0	3	**3**	0	13	**13**	**16**
18:45	0	2	**2**	0	14	**14**	**16**
19:00	0	1	**1**	0	5	**5**	**6**
19:15	0	2	**2**	0	11	**11**	**13**
19:30	0	4	**4**	0	11	**11**	**15**
19:45	0	4	**4**	0	6	**6**	**10**
20:00	0	4	**4**	0	7	**7**	**11**
20:15	0	1	**1**	0	15	**15**	**16**
20:30	0	4	**4**	0	6	**6**	**10**
20:45	0	2	**2**	0	9	**9**	**11**
21:00	0	0	**0**	0	6	**6**	**6**
21:15	1	0	**1**	1	6	**7**	**8**
21:30	0	0	**0**	0	7	**7**	**7**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
21:45	0	0	**0**	0	5	**5**	**5**
22:00	0	1	**1**	0	2	**2**	**3**
22:15	1	0	**1**	0	4	**4**	**5**
22:30	0	2	**2**	0	2	**2**	**4**
22:45	0	1	**1**	0	8	**8**	**9**
23:00	0	0	**0**	0	6	**6**	**6**
23:15	0	1	**1**	1	10	**11**	**12**
23:30	0	0	**0**	0	4	**4**	**4**
23:45	0	1	**1**	0	3	**3**	**4**
TOTALS:	**16**	**262**	**278**	**23**	**988**	**1011**	**1289**
PERCENTAGES:	***1%***	***20%***	***22%***	***2%***	***77%***	***78%***	***100%***

Peak Hour: 8:45 to 9:45

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0	**18**	**18**	**1**	**52**	**53**	**71**

Thursday, November 16, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	0	2	**2**	0	5	**5**	**7**
0:15	0	2	**2**	0	7	**7**	**9**
0:30	0	2	**2**	0	7	**7**	**9**
0:45	0	0	**0**	0	10	**10**	**10**
1:00	0	0	**0**	0	6	**6**	**6**
1:15	0	0	**0**	0	8	**8**	**8**
1:30	0	2	**2**	0	7	**7**	**9**
1:45	0	0	**0**	0	5	**5**	**5**
2:00	0	1	**1**	0	7	**7**	**8**
2:15	0	0	**0**	0	4	**4**	**4**
2:30	0	0	**0**	0	3	**3**	**3**
2:45	0	0	**0**	0	4	**4**	**4**
3:00	0	0	**0**	0	5	**5**	**5**
3:15	0	1	**1**	0	8	**8**	**9**
3:30	0	0	**0**	0	8	**8**	**8**
3:45	0	2	**2**	0	8	**8**	**10**
4:00	0	2	**2**	0	12	**12**	**14**
4:15	1	0	**1**	0	10	**10**	**11**
4:30	0	1	**1**	0	11	**11**	**12**
4:45	0	0	**0**	0	9	**9**	**9**
5:00	0	0	**0**	0	8	**8**	**8**
5:15	0	1	**1**	0	9	**9**	**10**
5:30	1	1	**2**	0	11	**11**	**13**
5:45	0	3	**3**	1	13	**14**	**17**
6:00	0	1	**1**	0	20	**20**	**21**
6:15	0	2	**2**	0	11	**11**	**13**
6:30	0	3	**3**	0	10	**10**	**13**
6:45	0	1	**1**	0	13	**13**	**14**
7:00	0	2	**2**	0	18	**18**	**20**
7:15	0	3	**3**	0	16	**16**	**19**
7:30	0	4	**4**	0	12	**12**	**16**
7:45	0	3	**3**	0	8	**8**	**11**
8:00	0	4	**4**	1	13	**14**	**18**
8:15	1	5	**6**	0	16	**16**	**22**
8:30	0	2	**2**	0	15	**15**	**17**
8:45	1	3	**4**	1	16	**17**	**21**
9:00	0	4	**4**	0	13	**13**	**17**
9:15	0	3	**3**	0	16	**16**	**19**
9:30	0	6	**6**	0	12	**12**	**18**
9:45	0	3	**3**	0	12	**12**	**15**
10:00	0	4	**4**	0	16	**16**	**20**
10:15	0	4	**4**	0	10	**10**	**14**
10:30	0	6	**6**	0	13	**13**	**19**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
10:45	1	3	**4**	1	14	**15**	**19**
11:00	0	3	**3**	0	15	**15**	**18**
11:15	0	3	**3**	0	12	**12**	**15**
11:30	0	1	**1**	1	14	**15**	**16**
11:45	0	3	**3**	0	12	**12**	**15**
12:00	0	6	**6**	0	11	**11**	**17**
12:15	0	2	**2**	0	16	**16**	**18**
12:30	1	3	**4**	0	14	**14**	**18**
12:45	1	5	**6**	2	10	**12**	**18**
13:00	0	3	**3**	1	9	**10**	**13**
13:15	0	4	**4**	1	11	**12**	**16**
13:30	0	6	**6**	2	11	**13**	**19**
13:45	0	2	**2**	0	12	**12**	**14**
14:00	0	4	**4**	0	12	**12**	**16**
14:15	0	6	**6**	0	9	**9**	**15**
14:30	0	3	**3**	0	13	**13**	**16**
14:45	1	2	**3**	2	12	**14**	**17**
15:00	0	6	**6**	0	9	**9**	**15**
15:15	0	3	**3**	0	14	**14**	**17**
15:30	0	3	**3**	0	10	**10**	**13**
15:45	0	5	**5**	0	9	**9**	**14**
16:00	1	6	**7**	1	7	**8**	**15**
16:15	1	8	**9**	1	6	**7**	**16**
16:30	0	6	**6**	0	6	**6**	**12**
16:45	0	4	**4**	0	18	**18**	**22**
17:00	0	6	**6**	0	18	**18**	**24**
17:15	0	5	**5**	0	8	**8**	**13**
17:30	0	3	**3**	0	16	**16**	**19**
17:45	0	5	**5**	0	6	**6**	**11**
18:00	0	1	**1**	0	9	**9**	**10**
18:15	1	2	**3**	0	7	**7**	**10**
18:30	0	3	**3**	0	12	**12**	**15**
18:45	0	1	**1**	1	10	**11**	**12**
19:00	0	3	**3**	0	8	**8**	**11**
19:15	0	3	**3**	0	8	**8**	**11**
19:30	0	1	**1**	0	5	**5**	**6**
19:45	0	1	**1**	0	10	**10**	**11**
20:00	0	4	**4**	0	8	**8**	**12**
20:15	0	2	**2**	0	11	**11**	**13**
20:30	1	4	**5**	1	6	**7**	**12**
20:45	1	2	**3**	1	9	**10**	**13**
21:00	0	4	**4**	0	11	**11**	**15**
21:15	0	4	**4**	0	1	**1**	**5**
21:30	0	2	**2**	0	3	**3**	**5**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
21:45	0	4	**4**	0	10	**10**	**14**
22:00	0	1	**1**	0	11	**11**	**12**
22:15	0	1	**1**	0	5	**5**	**6**
22:30	0	1	**1**	0	6	**6**	**7**
22:45	1	1	**2**	0	10	**10**	**12**
23:00	0	0	**0**	0	4	**4**	**4**
23:15	0	2	**2**	0	10	**10**	**12**
23:30	0	1	**1**	1	5	**6**	**7**
23:45	0	1	**1**	0	5	**5**	**6**
TOTALS:	**14**	**251**	**265**	**19**	**963**	**982**	**1247**
PERCENTAGES:	***1%***	***19%***	***21%***	***1%***	***75%***	***76%***	***97%***

Peak Hour: 8:00 to 9:00

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
2	**14**	**16**	**2**	**60**	**62**	**78**

Location: Love's Truck Stops - Santa Nella
Driveway #: 13
Latitude: 37.1118
Longitude: -121.0171
Start Date: 11/14/2017

Tuesday, November 14, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	0	7	**7**	0	0	**0**	**7**
0:15	0	4	**4**	0	0	**0**	**4**
0:30	0	8	**8**	0	1	**1**	**9**
0:45	0	3	**3**	0	0	**0**	**3**
1:00	0	5	**5**	0	0	**0**	**5**
1:15	0	4	**4**	0	1	**1**	**5**
1:30	0	6	**6**	0	0	**0**	**6**
1:45	0	5	**5**	0	0	**0**	**5**
2:00	0	7	**7**	0	1	**1**	**8**
2:15	0	3	**3**	0	0	**0**	**3**
2:30	0	5	**5**	0	1	**1**	**6**
2:45	0	8	**8**	0	0	**0**	**8**
3:00	0	7	**7**	0	0	**0**	**7**
3:15	0	6	**6**	0	0	**0**	**6**
3:30	0	9	**9**	0	0	**0**	**9**
3:45	0	5	**5**	0	0	**0**	**5**
4:00	0	9	**9**	0	0	**0**	**9**
4:15	0	7	**7**	0	0	**0**	**7**
4:30	0	11	**11**	0	1	**1**	**12**
4:45	0	8	**8**	0	0	**0**	**8**
5:00	0	13	**13**	0	0	**0**	**13**
5:15	0	11	**11**	0	0	**0**	**11**
5:30	0	5	**5**	0	0	**0**	**5**
5:45	0	6	**6**	0	0	**0**	**6**
6:00	0	10	**10**	0	0	**0**	**10**
6:15	0	8	**8**	0	0	**0**	**8**
6:30	0	12	**12**	0	0	**0**	**12**
6:45	0	8	**8**	0	0	**0**	**8**
7:00	0	6	**6**	0	0	**0**	**6**
7:15	0	5	**5**	0	0	**0**	**5**
7:30	0	9	**9**	0	0	**0**	**9**
7:45	0	7	**7**	0	0	**0**	**7**
8:00	0	12	**12**	0	0	**0**	**12**
8:15	0	9	**9**	0	0	**0**	**9**
8:30	0	7	**7**	0	0	**0**	**7**
8:45	0	6	**6**	0	0	**0**	**6**
9:00	0	13	**13**	0	0	**0**	**13**
9:15	0	6	**6**	0	0	**0**	**6**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
9:30	0	11	**11**	0	0	**0**	**11**
9:45	1	7	**8**	0	0	**0**	**8**
10:00	1	8	**9**	1	0	**1**	**10**
10:15	0	6	**6**	0	0	**0**	**6**
10:30	2	9	**11**	2	0	**2**	**13**
10:45	0	13	**13**	0	0	**0**	**13**
11:00	0	8	**8**	0	0	**0**	**8**
11:15	0	12	**12**	0	0	**0**	**12**
11:30	0	9	**9**	0	0	**0**	**9**
11:45	0	10	**10**	0	0	**0**	**10**
12:00	0	10	**10**	0	0	**0**	**10**
12:15	1	8	**9**	0	0	**0**	**9**
12:30	0	11	**11**	0	1	**1**	**12**
12:45	0	8	**8**	1	1	**2**	**10**
13:00	0	5	**5**	0	1	**1**	**6**
13:15	0	6	**6**	1	0	**1**	**7**
13:30	0	11	**11**	0	0	**0**	**11**
13:45	0	8	**8**	0	0	**0**	**8**
14:00	1	13	**14**	0	0	**0**	**14**
14:15	0	5	**5**	0	0	**0**	**5**
14:30	0	8	**8**	0	0	**0**	**8**
14:45	0	12	**12**	0	0	**0**	**12**
15:00	0	8	**8**	0	1	**1**	**9**
15:15	0	8	**8**	0	0	**0**	**8**
15:30	0	10	**10**	0	0	**0**	**10**
15:45	0	11	**11**	0	1	**1**	**12**
16:00	0	8	**8**	0	0	**0**	**8**
16:15	0	10	**10**	0	0	**0**	**10**
16:30	0	11	**11**	1	0	**1**	**12**
16:45	0	5	**5**	0	0	**0**	**5**
17:00	0	9	**9**	0	0	**0**	**9**
17:15	0	7	**7**	0	0	**0**	**7**
17:30	0	13	**13**	0	0	**0**	**13**
17:45	0	10	**10**	0	1	**1**	**11**
18:00	0	9	**9**	0	0	**0**	**9**
18:15	0	6	**6**	0	0	**0**	**6**
18:30	0	13	**13**	0	0	**0**	**13**
18:45	0	7	**7**	0	0	**0**	**7**
19:00	0	13	**13**	0	0	**0**	**13**
19:15	0	5	**5**	0	0	**0**	**5**
19:30	0	12	**12**	0	1	**1**	**13**
19:45	0	9	**9**	0	0	**0**	**9**
20:00	0	11	**11**	0	0	**0**	**11**
20:15	0	10	**10**	0	0	**0**	**10**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
20:30	1	5	**6**	0	0	**0**	**6**
20:45	0	8	**8**	0	1	**1**	**9**
21:00	0	7	**7**	0	0	**0**	**7**
21:15	1	3	**4**	0	1	**1**	**5**
21:30	0	4	**4**	0	0	**0**	**4**
21:45	1	8	**9**	0	0	**0**	**9**
22:00	0	9	**9**	1	1	**2**	**11**
22:15	0	9	**9**	0	0	**0**	**9**
22:30	1	5	**6**	0	0	**0**	**6**
22:45	0	2	**2**	0	0	**0**	**2**
23:00	0	5	**5**	0	0	**0**	**5**
23:15	0	4	**4**	0	0	**0**	**4**
23:30	0	9	**9**	0	0	**0**	**9**
23:45	0	7	**7**	0	0	**0**	**7**
TOTALS:	**10**	**768**	**778**	**7**	**15**	**22**	**800**
PERCENTAGES:	***1%***	***96%***	***97%***	***1%***	***2%***	***3%***	***100%***

Peak Hour: 10:30 to 11:30

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
2	**42**	**44**	**2**	**0**	**2**	**46**

Wednesday, November 15, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	0	7	**7**	0	0	**0**	**7**
0:15	0	6	**6**	0	0	**0**	**6**
0:30	0	11	**11**	0	1	**1**	**12**
0:45	0	5	**5**	0	0	**0**	**5**
1:00	0	7	**7**	0	1	**1**	**8**
1:15	0	7	**7**	0	1	**1**	**8**
1:30	0	6	**6**	0	1	**1**	**7**
1:45	0	5	**5**	0	0	**0**	**5**
2:00	0	5	**5**	0	1	**1**	**6**
2:15	1	3	**4**	1	1	**2**	**6**
2:30	0	9	**9**	0	0	**0**	**9**
2:45	0	7	**7**	0	1	**1**	**8**
3:00	0	4	**4**	0	0	**0**	**4**
3:15	0	8	**8**	0	0	**0**	**8**
3:30	0	10	**10**	0	0	**0**	**10**
3:45	0	8	**8**	0	0	**0**	**8**
4:00	0	9	**9**	0	0	**0**	**9**
4:15	0	9	**9**	0	0	**0**	**9**
4:30	0	6	**6**	0	0	**0**	**6**
4:45	0	11	**11**	0	0	**0**	**11**
5:00	0	8	**8**	0	0	**0**	**8**
5:15	0	7	**7**	0	0	**0**	**7**
5:30	1	9	**10**	0	0	**0**	**10**
5:45	0	10	**10**	0	0	**0**	**10**
6:00	0	9	**9**	0	0	**0**	**9**
6:15	0	8	**8**	0	0	**0**	**8**
6:30	0	10	**10**	0	0	**0**	**10**
6:45	0	8	**8**	0	0	**0**	**8**
7:00	0	11	**11**	0	0	**0**	**11**
7:15	0	9	**9**	0	0	**0**	**9**
7:30	0	11	**11**	0	0	**0**	**11**
7:45	0	6	**6**	0	0	**0**	**6**
8:00	1	7	**8**	1	0	**1**	**9**
8:15	0	13	**13**	0	0	**0**	**13**
8:30	0	5	**5**	0	1	**1**	**6**
8:45	0	10	**10**	0	0	**0**	**10**
9:00	0	12	**12**	0	0	**0**	**12**
9:15	0	8	**8**	0	0	**0**	**8**
9:30	0	4	**4**	0	0	**0**	**4**
9:45	0	10	**10**	0	1	**1**	**11**
10:00	0	7	**7**	0	0	**0**	**7**
10:15	0	6	**6**	0	0	**0**	**6**
10:30	1	13	**14**	0	0	**0**	**14**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
10:45	0	7	**7**	0	0	**0**	**7**
11:00	1	7	**8**	1	0	**1**	**9**
11:15	0	8	**8**	0	0	**0**	**8**
11:30	0	5	**5**	0	1	**1**	**6**
11:45	0	8	**8**	0	0	**0**	**8**
12:00	0	6	**6**	0	0	**0**	**6**
12:15	0	8	**8**	0	0	**0**	**8**
12:30	1	14	**15**	1	0	**1**	**16**
12:45	0	9	**9**	0	0	**0**	**9**
13:00	0	6	**6**	0	0	**0**	**6**
13:15	0	8	**8**	0	0	**0**	**8**
13:30	0	9	**9**	0	0	**0**	**9**
13:45	0	7	**7**	0	1	**1**	**8**
14:00	0	8	**8**	0	0	**0**	**8**
14:15	0	8	**8**	0	0	**0**	**8**
14:30	0	9	**9**	0	1	**1**	**10**
14:45	0	11	**11**	0	0	**0**	**11**
15:00	0	6	**6**	0	0	**0**	**6**
15:15	0	9	**9**	0	1	**1**	**10**
15:30	3	6	**9**	1	0	**1**	**10**
15:45	1	7	**8**	0	0	**0**	**8**
16:00	0	7	**7**	1	1	**2**	**9**
16:15	0	9	**9**	0	0	**0**	**9**
16:30	0	11	**11**	0	0	**0**	**11**
16:45	0	10	**10**	0	0	**0**	**10**
17:00	1	11	**12**	0	0	**0**	**12**
17:15	0	10	**10**	0	0	**0**	**10**
17:30	0	4	**4**	0	1	**1**	**5**
17:45	0	7	**7**	0	0	**0**	**7**
18:00	0	10	**10**	0	0	**0**	**10**
18:15	0	11	**11**	0	0	**0**	**11**
18:30	0	4	**4**	0	0	**0**	**4**
18:45	0	10	**10**	0	0	**0**	**10**
19:00	0	9	**9**	0	0	**0**	**9**
19:15	0	8	**8**	0	0	**0**	**8**
19:30	0	8	**8**	0	1	**1**	**9**
19:45	0	7	**7**	0	0	**0**	**7**
20:00	0	8	**8**	0	0	**0**	**8**
20:15	0	7	**7**	0	0	**0**	**7**
20:30	0	9	**9**	0	0	**0**	**9**
20:45	0	5	**5**	0	0	**0**	**5**
21:00	0	4	**4**	0	0	**0**	**4**
21:15	0	4	**4**	0	0	**0**	**4**
21:30	1	10	**11**	1	0	**1**	**12**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
21:45	0	4	**4**	0	1	**1**	**5**
22:00	0	3	**3**	0	1	**1**	**4**
22:15	0	5	**5**	1	0	**1**	**6**
22:30	0	4	**4**	0	0	**0**	**4**
22:45	0	8	**8**	0	0	**0**	**8**
23:00	0	3	**3**	0	0	**0**	**3**
23:15	0	7	**7**	0	0	**0**	**7**
23:30	0	6	**6**	0	0	**0**	**6**
23:45	0	2	**2**	0	1	**1**	**3**
TOTALS:	**12**	**735**	**747**	**8**	**19**	**27**	**774**
PERCENTAGES:	***2%***	***92%***	***93%***	***1%***	***2%***	***3%***	***97%***

Peak Hour: 8:45 to 9:45

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0	**34**	**34**	**0**	**0**	**0**	**34**

Thursday, November 16, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	0	7	**7**	0	0	**0**	**7**
0:15	0	4	**4**	0	0	**0**	**4**
0:30	0	9	**9**	0	0	**0**	**9**
0:45	0	9	**9**	1	0	**1**	**10**
1:00	0	6	**6**	0	0	**0**	**6**
1:15	0	5	**5**	0	0	**0**	**5**
1:30	0	5	**5**	0	0	**0**	**5**
1:45	0	3	**3**	0	0	**0**	**3**
2:00	0	5	**5**	0	0	**0**	**5**
2:15	0	5	**5**	0	0	**0**	**5**
2:30	0	2	**2**	0	0	**0**	**2**
2:45	1	4	**5**	1	0	**1**	**6**
3:00	0	4	**4**	0	1	**1**	**5**
3:15	0	7	**7**	0	0	**0**	**7**
3:30	0	5	**5**	0	0	**0**	**5**
3:45	0	6	**6**	0	0	**0**	**6**
4:00	0	11	**11**	0	0	**0**	**11**
4:15	0	9	**9**	0	0	**0**	**9**
4:30	0	9	**9**	0	2	**2**	**11**
4:45	1	5	**6**	1	0	**1**	**7**
5:00	0	5	**5**	0	0	**0**	**5**
5:15	0	10	**10**	0	0	**0**	**10**
5:30	0	8	**8**	0	0	**0**	**8**
5:45	0	9	**9**	0	0	**0**	**9**
6:00	0	6	**6**	0	0	**0**	**6**
6:15	1	11	**12**	0	0	**0**	**12**
6:30	1	10	**11**	1	1	**2**	**13**
6:45	0	11	**11**	0	0	**0**	**11**
7:00	0	6	**6**	0	0	**0**	**6**
7:15	0	7	**7**	0	0	**0**	**7**
7:30	0	10	**10**	0	0	**0**	**10**
7:45	0	12	**12**	0	0	**0**	**12**
8:00	0	10	**10**	0	0	**0**	**10**
8:15	0	7	**7**	0	0	**0**	**7**
8:30	0	11	**11**	0	0	**0**	**11**
8:45	0	8	**8**	1	0	**1**	**9**
9:00	0	8	**8**	0	0	**0**	**8**
9:15	0	12	**12**	0	0	**0**	**12**
9:30	0	8	**8**	0	0	**0**	**8**
9:45	0	10	**10**	0	1	**1**	**11**
10:00	0	9	**9**	0	0	**0**	**9**
10:15	0	9	**9**	0	2	**2**	**11**
10:30	0	9	**9**	0	0	**0**	**9**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
10:45	0	13	**13**	0	1	**1**	**14**
11:00	0	3	**3**	0	0	**0**	**3**
11:15	1	7	**8**	0	0	**0**	**8**
11:30	0	8	**8**	0	0	**0**	**8**
11:45	0	12	**12**	0	0	**0**	**12**
12:00	0	12	**12**	0	0	**0**	**12**
12:15	0	13	**13**	0	0	**0**	**13**
12:30	0	5	**5**	1	0	**1**	**6**
12:45	2	7	**9**	1	0	**1**	**10**
13:00	1	10	**11**	1	0	**1**	**12**
13:15	1	10	**11**	0	0	**0**	**11**
13:30	1	4	**5**	0	0	**0**	**5**
13:45	0	11	**11**	0	1	**1**	**12**
14:00	1	7	**8**	0	0	**0**	**8**
14:15	0	5	**5**	0	0	**0**	**5**
14:30	0	4	**4**	0	0	**0**	**4**
14:45	1	4	**5**	0	0	**0**	**5**
15:00	1	13	**14**	0	0	**0**	**14**
15:15	0	6	**6**	0	0	**0**	**6**
15:30	0	6	**6**	0	1	**1**	**7**
15:45	0	6	**6**	0	0	**0**	**6**
16:00	1	5	**6**	0	0	**0**	**6**
16:15	0	15	**15**	0	0	**0**	**15**
16:30	0	7	**7**	0	0	**0**	**7**
16:45	0	13	**13**	0	0	**0**	**13**
17:00	0	9	**9**	0	0	**0**	**9**
17:15	0	6	**6**	0	0	**0**	**6**
17:30	0	7	**7**	0	0	**0**	**7**
17:45	0	9	**9**	0	0	**0**	**9**
18:00	0	8	**8**	0	1	**1**	**9**
18:15	0	10	**10**	0	0	**0**	**10**
18:30	0	6	**6**	0	0	**0**	**6**
18:45	0	7	**7**	0	0	**0**	**7**
19:00	0	8	**8**	0	1	**1**	**9**
19:15	0	9	**9**	0	1	**1**	**10**
19:30	0	7	**7**	0	0	**0**	**7**
19:45	0	7	**7**	0	0	**0**	**7**
20:00	0	10	**10**	0	0	**0**	**10**
20:15	0	8	**8**	0	0	**0**	**8**
20:30	0	6	**6**	0	0	**0**	**6**
20:45	0	6	**6**	0	0	**0**	**6**
21:00	0	4	**4**	0	0	**0**	**4**
21:15	0	4	**4**	0	2	**2**	**6**
21:30	0	8	**8**	0	0	**0**	**8**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
21:45	0	9	**9**	0	0	**0**	**9**
22:00	0	2	**2**	0	0	**0**	**2**
22:15	0	12	**12**	0	0	**0**	**12**
22:30	0	8	**8**	0	0	**0**	**8**
22:45	0	2	**2**	0	0	**0**	**2**
23:00	0	7	**7**	1	1	**2**	**9**
23:15	0	5	**5**	0	0	**0**	**5**
23:30	0	7	**7**	0	0	**0**	**7**
23:45	0	6	**6**	0	1	**1**	**7**
TOTALS:	**14**	**729**	**743**	**9**	**17**	**26**	**769**
PERCENTAGES:	***2%***	***91%***	***93%***	***1%***	***2%***	***3%***	***96%***

Peak Hour: 11:30 to 12:30

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0	**45**	**45**	**0**	**0**	**0**	**45**

Location: Love's Truck Stops - Santa Nella
Driveway #: 14
Latitude: 37.1118
Longitude: -121.0162
Start Date: 11/14/2017

Tuesday, November 14, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	3	0	**3**	0	0	**0**	**3**
0:15	2	0	**2**	0	0	**0**	**2**
0:30	1	0	**1**	1	0	**1**	**2**
0:45	2	0	**2**	0	0	**0**	**2**
1:00	2	0	**2**	1	0	**1**	**3**
1:15	2	0	**2**	1	0	**1**	**3**
1:30	0	0	**0**	0	0	**0**	**0**
1:45	3	0	**3**	0	0	**0**	**3**
2:00	3	1	**4**	0	0	**0**	**4**
2:15	1	0	**1**	0	1	**1**	**2**
2:30	2	0	**2**	1	0	**1**	**3**
2:45	1	0	**1**	1	0	**1**	**2**
3:00	0	0	**0**	0	0	**0**	**0**
3:15	3	0	**3**	1	0	**1**	**4**
3:30	1	0	**1**	1	0	**1**	**2**
3:45	3	0	**3**	0	0	**0**	**3**
4:00	0	0	**0**	1	0	**1**	**1**
4:15	1	0	**1**	0	0	**0**	**1**
4:30	2	0	**2**	1	0	**1**	**3**
4:45	4	0	**4**	2	0	**2**	**6**
5:00	2	0	**2**	1	0	**1**	**3**
5:15	2	0	**2**	0	0	**0**	**2**
5:30	2	0	**2**	0	0	**0**	**2**
5:45	4	0	**4**	1	0	**1**	**5**
6:00	3	0	**3**	2	0	**2**	**5**
6:15	8	1	**9**	1	0	**1**	**10**
6:30	2	0	**2**	0	0	**0**	**2**
6:45	6	0	**6**	1	0	**1**	**7**
7:00	7	1	**8**	1	0	**1**	**9**
7:15	4	0	**4**	3	0	**3**	**7**
7:30	10	1	**11**	0	0	**0**	**11**
7:45	2	1	**3**	1	0	**1**	**4**
8:00	7	1	**8**	1	0	**1**	**9**
8:15	3	0	**3**	1	0	**1**	**4**
8:30	3	1	**4**	1	0	**1**	**5**
8:45	6	0	**6**	4	0	**4**	**10**
9:00	3	0	**3**	2	0	**2**	**5**
9:15	3	0	**3**	1	0	**1**	**4**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
9:30	3	0	**3**	0	0	**0**	**3**
9:45	4	0	**4**	0	0	**0**	**4**
10:00	9	1	**10**	0	0	**0**	**10**
10:15	3	0	**3**	4	0	**4**	**7**
10:30	5	0	**5**	3	0	**3**	**8**
10:45	4	0	**4**	3	0	**3**	**7**
11:00	8	0	**8**	2	0	**2**	**10**
11:15	7	0	**7**	4	0	**4**	**11**
11:30	4	0	**4**	2	0	**2**	**6**
11:45	5	0	**5**	2	0	**2**	**7**
12:00	3	0	**3**	0	0	**0**	**3**
12:15	5	1	**6**	1	0	**1**	**7**
12:30	4	0	**4**	2	1	**3**	**7**
12:45	2	0	**2**	2	1	**3**	**5**
13:00	4	0	**4**	1	0	**1**	**5**
13:15	1	0	**1**	1	0	**1**	**2**
13:30	4	1	**5**	2	0	**2**	**7**
13:45	7	1	**8**	2	0	**2**	**10**
14:00	6	0	**6**	3	0	**3**	**9**
14:15	13	0	**13**	4	2	**6**	**19**
14:30	5	0	**5**	5	1	**6**	**11**
14:45	8	0	**8**	3	1	**4**	**12**
15:00	4	0	**4**	0	0	**0**	**4**
15:15	1	0	**1**	1	0	**1**	**2**
15:30	8	1	**9**	3	0	**3**	**12**
15:45	10	0	**10**	3	0	**3**	**13**
16:00	8	0	**8**	2	0	**2**	**10**
16:15	6	0	**6**	2	0	**2**	**8**
16:30	9	1	**10**	2	0	**2**	**12**
16:45	6	0	**6**	1	0	**1**	**7**
17:00	4	0	**4**	2	0	**2**	**6**
17:15	4	0	**4**	3	0	**3**	**7**
17:30	5	0	**5**	1	0	**1**	**6**
17:45	7	0	**7**	2	0	**2**	**9**
18:00	4	0	**4**	1	0	**1**	**5**
18:15	2	1	**3**	1	0	**1**	**4**
18:30	3	0	**3**	3	0	**3**	**6**
18:45	4	0	**4**	1	0	**1**	**5**
19:00	4	0	**4**	0	0	**0**	**4**
19:15	3	1	**4**	0	0	**0**	**4**
19:30	2	0	**2**	2	0	**2**	**4**
19:45	5	0	**5**	3	0	**3**	**8**
20:00	2	0	**2**	1	1	**2**	**4**
20:15	3	0	**3**	0	0	**0**	**3**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
20:30	6	0	**6**	4	0	**4**	**10**
20:45	5	0	**5**	1	0	**1**	**6**
21:00	1	0	**1**	2	0	**2**	**3**
21:15	6	0	**6**	1	0	**1**	**7**
21:30	5	0	**5**	0	0	**0**	**5**
21:45	3	0	**3**	0	0	**0**	**3**
22:00	3	0	**3**	1	0	**1**	**4**
22:15	3	0	**3**	1	1	**2**	**5**
22:30	5	1	**6**	2	0	**2**	**8**
22:45	3	0	**3**	3	0	**3**	**6**
23:00	2	0	**2**	1	0	**1**	**3**
23:15	3	0	**3**	0	0	**0**	**3**
23:30	1	0	**1**	0	0	**0**	**1**
23:45	1	1	**2**	0	0	**0**	**2**
TOTALS:	**378**	**17**	**395**	**128**	**9**	**137**	**532**
PERCENTAGES:	***71%***	***3%***	***74%***	***24%***	***2%***	***26%***	***100%***

Peak Hour: 14:00 to 15:00

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
32	**0**	**32**	**15**	**4**	**19**	**51**

Wednesday, November 15, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	1	0	**1**	0	1	**1**	**2**
0:15	3	0	**3**	1	0	**1**	**4**
0:30	1	1	**2**	0	1	**1**	**3**
0:45	1	0	**1**	1	0	**1**	**2**
1:00	1	0	**1**	0	0	**0**	**1**
1:15	2	0	**2**	1	0	**1**	**3**
1:30	2	0	**2**	3	0	**3**	**5**
1:45	3	2	**5**	1	0	**1**	**6**
2:00	1	0	**1**	0	0	**0**	**1**
2:15	3	0	**3**	1	0	**1**	**4**
2:30	1	1	**2**	1	0	**1**	**3**
2:45	1	0	**1**	0	0	**0**	**1**
3:00	1	0	**1**	0	0	**0**	**1**
3:15	1	1	**2**	0	0	**0**	**2**
3:30	5	0	**5**	2	0	**2**	**7**
3:45	1	0	**1**	0	0	**0**	**1**
4:00	2	0	**2**	1	0	**1**	**3**
4:15	2	0	**2**	1	0	**1**	**3**
4:30	3	1	**4**	0	0	**0**	**4**
4:45	3	0	**3**	1	0	**1**	**4**
5:00	1	0	**1**	0	1	**1**	**2**
5:15	1	0	**1**	0	0	**0**	**1**
5:30	3	0	**3**	2	0	**2**	**5**
5:45	1	0	**1**	1	0	**1**	**2**
6:00	2	0	**2**	2	0	**2**	**4**
6:15	1	0	**1**	0	0	**0**	**1**
6:30	5	0	**5**	1	0	**1**	**6**
6:45	4	0	**4**	0	0	**0**	**4**
7:00	4	1	**5**	0	1	**1**	**6**
7:15	0	0	**0**	0	0	**0**	**0**
7:30	5	0	**5**	1	0	**1**	**6**
7:45	4	1	**5**	2	1	**3**	**8**
8:00	3	0	**3**	1	0	**1**	**4**
8:15	6	1	**7**	1	0	**1**	**8**
8:30	3	1	**4**	0	0	**0**	**4**
8:45	7	0	**7**	2	0	**2**	**9**
9:00	4	1	**5**	1	1	**2**	**7**
9:15	4	0	**4**	3	0	**3**	**7**
9:30	5	0	**5**	2	0	**2**	**7**
9:45	9	0	**9**	2	0	**2**	**11**
10:00	2	0	**2**	0	0	**0**	**2**
10:15	6	0	**6**	1	0	**1**	**7**
10:30	3	3	**6**	4	0	**4**	**10**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
10:45	3	0	**3**	1	0	**1**	**4**
11:00	6	0	**6**	1	0	**1**	**7**
11:15	1	2	**3**	0	0	**0**	**3**
11:30	10	0	**10**	5	0	**5**	**15**
11:45	6	1	**7**	3	0	**3**	**10**
12:00	6	0	**6**	2	1	**3**	**9**
12:15	8	2	**10**	3	0	**3**	**13**
12:30	4	0	**4**	2	0	**2**	**6**
12:45	11	0	**11**	3	1	**4**	**15**
13:00	6	0	**6**	6	0	**6**	**12**
13:15	11	1	**12**	1	0	**1**	**13**
13:30	5	1	**6**	4	0	**4**	**10**
13:45	7	0	**7**	4	0	**4**	**11**
14:00	10	0	**10**	6	0	**6**	**16**
14:15	6	1	**7**	2	0	**2**	**9**
14:30	8	1	**9**	5	1	**6**	**15**
14:45	8	1	**9**	1	1	**2**	**11**
15:00	10	0	**10**	3	0	**3**	**13**
15:15	8	0	**8**	5	0	**5**	**13**
15:30	3	0	**3**	3	0	**3**	**6**
15:45	5	0	**5**	1	0	**1**	**6**
16:00	3	0	**3**	3	0	**3**	**6**
16:15	3	0	**3**	4	0	**4**	**7**
16:30	4	1	**5**	4	0	**4**	**9**
16:45	8	0	**8**	1	0	**1**	**9**
17:00	6	0	**6**	4	0	**4**	**10**
17:15	3	2	**5**	2	1	**3**	**8**
17:30	5	1	**6**	1	0	**1**	**7**
17:45	9	0	**9**	0	0	**0**	**9**
18:00	5	0	**5**	0	0	**0**	**5**
18:15	3	0	**3**	1	0	**1**	**4**
18:30	5	1	**6**	3	0	**3**	**9**
18:45	11	0	**11**	2	1	**3**	**14**
19:00	3	1	**4**	0	0	**0**	**4**
19:15	4	1	**5**	2	0	**2**	**7**
19:30	1	0	**1**	2	0	**2**	**3**
19:45	1	0	**1**	0	0	**0**	**1**
20:00	2	1	**3**	1	0	**1**	**4**
20:15	4	1	**5**	0	0	**0**	**5**
20:30	0	0	**0**	1	0	**1**	**1**
20:45	2	0	**2**	2	0	**2**	**4**
21:00	2	0	**2**	1	0	**1**	**3**
21:15	3	0	**3**	3	0	**3**	**6**
21:30	3	0	**3**	1	0	**1**	**4**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
21:45	1	0	**1**	1	0	**1**	**2**
22:00	3	0	**3**	1	0	**1**	**4**
22:15	2	0	**2**	0	0	**0**	**2**
22:30	0	0	**0**	2	0	**2**	**2**
22:45	2	0	**2**	0	0	**0**	**2**
23:00	2	0	**2**	1	0	**1**	**3**
23:15	3	0	**3**	2	0	**2**	**5**
23:30	1	0	**1**	0	0	**0**	**1**
23:45	1	0	**1**	0	0	**0**	**1**
TOTALS:	**368**	**33**	**401**	**146**	**12**	**158**	**559**
PERCENTAGES:	***69%***	***6%***	***75%***	***27%***	***2%***	***30%***	***105%***

Peak Hour: 14:30 to 15:30

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
34	**2**	**36**	**14**	**2**	**16**	**52**

Thursday, November 16, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	1	2	**3**	1	0	**1**	**4**
0:15	3	0	**3**	0	1	**1**	**4**
0:30	2	0	**2**	3	0	**3**	**5**
0:45	3	0	**3**	0	0	**0**	**3**
1:00	3	0	**3**	1	0	**1**	**4**
1:15	1	0	**1**	3	1	**4**	**5**
1:30	1	0	**1**	0	0	**0**	**1**
1:45	2	0	**2**	0	0	**0**	**2**
2:00	3	0	**3**	0	0	**0**	**3**
2:15	3	0	**3**	1	0	**1**	**4**
2:30	4	0	**4**	0	0	**0**	**4**
2:45	0	0	**0**	2	0	**2**	**2**
3:00	1	0	**1**	1	0	**1**	**2**
3:15	3	0	**3**	1	0	**1**	**4**
3:30	1	0	**1**	0	0	**0**	**1**
3:45	3	0	**3**	1	0	**1**	**4**
4:00	3	0	**3**	0	0	**0**	**3**
4:15	2	0	**2**	1	0	**1**	**3**
4:30	3	0	**3**	1	0	**1**	**4**
4:45	1	1	**2**	0	0	**0**	**2**
5:00	2	0	**2**	0	0	**0**	**2**
5:15	1	0	**1**	1	0	**1**	**2**
5:30	3	0	**3**	0	0	**0**	**3**
5:45	1	0	**1**	0	0	**0**	**1**
6:00	5	0	**5**	3	0	**3**	**8**
6:15	4	1	**5**	1	0	**1**	**6**
6:30	2	1	**3**	1	0	**1**	**4**
6:45	5	1	**6**	2	0	**2**	**8**
7:00	4	0	**4**	1	0	**1**	**5**
7:15	4	0	**4**	3	0	**3**	**7**
7:30	5	0	**5**	1	0	**1**	**6**
7:45	3	2	**5**	4	0	**4**	**9**
8:00	3	1	**4**	0	0	**0**	**4**
8:15	5	0	**5**	2	0	**2**	**7**
8:30	2	0	**2**	3	1	**4**	**6**
8:45	10	0	**10**	2	1	**3**	**13**
9:00	6	0	**6**	1	0	**1**	**7**
9:15	0	0	**0**	2	0	**2**	**2**
9:30	6	2	**8**	0	1	**1**	**9**
9:45	0	1	**1**	1	0	**1**	**2**
10:00	6	0	**6**	0	0	**0**	**6**
10:15	4	0	**4**	1	0	**1**	**5**
10:30	4	0	**4**	2	0	**2**	**6**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
10:45	4	0	**4**	2	0	**2**	**6**
11:00	7	1	**8**	4	0	**4**	**12**
11:15	6	0	**6**	3	0	**3**	**9**
11:30	7	0	**7**	3	0	**3**	**10**
11:45	7	1	**8**	1	0	**1**	**9**
12:00	7	0	**7**	3	0	**3**	**10**
12:15	5	0	**5**	2	1	**3**	**8**
12:30	5	1	**6**	1	0	**1**	**7**
12:45	7	0	**7**	9	0	**9**	**16**
13:00	5	0	**5**	2	0	**2**	**7**
13:15	8	1	**9**	2	0	**2**	**11**
13:30	6	0	**6**	3	0	**3**	**9**
13:45	10	0	**10**	4	1	**5**	**15**
14:00	10	0	**10**	3	0	**3**	**13**
14:15	7	2	**9**	6	1	**7**	**16**
14:30	7	0	**7**	3	1	**4**	**11**
14:45	9	1	**10**	5	0	**5**	**15**
15:00	8	0	**8**	0	0	**0**	**8**
15:15	7	0	**7**	0	0	**0**	**7**
15:30	7	1	**8**	1	0	**1**	**9**
15:45	7	0	**7**	3	0	**3**	**10**
16:00	11	2	**13**	4	0	**4**	**17**
16:15	9	0	**9**	4	2	**6**	**15**
16:30	9	0	**9**	4	0	**4**	**13**
16:45	9	1	**10**	1	1	**2**	**12**
17:00	9	0	**9**	2	0	**2**	**11**
17:15	4	0	**4**	1	0	**1**	**5**
17:30	7	1	**8**	3	0	**3**	**11**
17:45	5	0	**5**	4	0	**4**	**9**
18:00	5	0	**5**	0	0	**0**	**5**
18:15	8	0	**8**	4	0	**4**	**12**
18:30	8	1	**9**	2	1	**3**	**12**
18:45	3	1	**4**	1	0	**1**	**5**
19:00	5	0	**5**	0	0	**0**	**5**
19:15	5	1	**6**	2	0	**2**	**8**
19:30	5	0	**5**	1	0	**1**	**6**
19:45	4	0	**4**	0	0	**0**	**4**
20:00	6	0	**6**	0	0	**0**	**6**
20:15	4	1	**5**	0	0	**0**	**5**
20:30	5	0	**5**	3	0	**3**	**8**
20:45	5	0	**5**	1	0	**1**	**6**
21:00	5	0	**5**	0	0	**0**	**5**
21:15	3	0	**3**	1	0	**1**	**4**
21:30	2	0	**2**	0	0	**0**	**2**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
21:45	8	0	**8**	2	0	**2**	**10**
22:00	3	0	**3**	2	0	**2**	**5**
22:15	6	0	**6**	1	0	**1**	**7**
22:30	6	0	**6**	2	0	**2**	**8**
22:45	2	0	**2**	1	0	**1**	**3**
23:00	5	0	**5**	4	0	**4**	**9**
23:15	1	0	**1**	1	0	**1**	**2**
23:30	3	0	**3**	1	0	**1**	**4**
23:45	2	0	**2**	3	0	**3**	**5**
TOTALS:	**446**	**28**	**474**	**162**	**13**	**175**	**649**
PERCENTAGES:	***84%***	***5%***	***89%***	***30%***	***2%***	***33%***	***122%***

Peak Hour: 16:00 to 17:00

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
38	**3**	**41**	**13**	**3**	**16**	**57**

Location: Love's Truck Stops - Santa Nella
Driveway #: 15
Latitude: 37.1114
Longitude: -121.0159
Start Date: 11/14/2017

Tuesday, November 14, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	1	0	**1**	5	0	**5**	**6**
0:15	2	0	**2**	4	0	**4**	**6**
0:30	1	1	**2**	4	0	**4**	**6**
0:45	1	0	**1**	0	1	**1**	**2**
1:00	1	0	**1**	0	0	**0**	**1**
1:15	0	0	**0**	3	0	**3**	**3**
1:30	0	0	**0**	1	0	**1**	**1**
1:45	2	0	**2**	2	0	**2**	**4**
2:00	0	0	**0**	4	0	**4**	**4**
2:15	0	0	**0**	1	0	**1**	**1**
2:30	0	0	**0**	1	0	**1**	**1**
2:45	0	0	**0**	1	0	**1**	**1**
3:00	1	0	**1**	1	0	**1**	**2**
3:15	3	0	**3**	5	0	**5**	**8**
3:30	1	0	**1**	2	0	**2**	**3**
3:45	2	0	**2**	6	0	**6**	**8**
4:00	3	0	**3**	1	0	**1**	**4**
4:15	1	0	**1**	3	0	**3**	**4**
4:30	2	0	**2**	1	0	**1**	**3**
4:45	2	0	**2**	1	0	**1**	**3**
5:00	2	0	**2**	5	1	**6**	**8**
5:15	0	0	**0**	5	0	**5**	**5**
5:30	1	0	**1**	1	0	**1**	**2**
5:45	2	0	**2**	5	0	**5**	**7**
6:00	4	0	**4**	5	0	**5**	**9**
6:15	3	0	**3**	8	1	**9**	**12**
6:30	0	0	**0**	3	0	**3**	**3**
6:45	4	0	**4**	7	0	**7**	**11**
7:00	2	0	**2**	6	0	**6**	**8**
7:15	1	0	**1**	3	1	**4**	**5**
7:30	1	0	**1**	6	0	**6**	**7**
7:45	1	0	**1**	5	1	**6**	**7**
8:00	0	0	**0**	4	2	**6**	**6**
8:15	2	0	**2**	7	0	**7**	**9**
8:30	2	0	**2**	2	0	**2**	**4**
8:45	2	0	**2**	4	1	**5**	**7**
9:00	0	0	**0**	2	0	**2**	**2**
9:15	0	0	**0**	2	1	**3**	**3**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
9:30	0	0	**0**	4	1	**5**	**5**
9:45	0	0	**0**	1	1	**2**	**2**
10:00	0	0	**0**	4	0	**4**	**4**
10:15	2	0	**2**	6	1	**7**	**9**
10:30	1	0	**1**	2	0	**2**	**3**
10:45	3	0	**3**	3	0	**3**	**6**
11:00	0	0	**0**	4	0	**4**	**4**
11:15	1	0	**1**	5	0	**5**	**6**
11:30	2	0	**2**	6	1	**7**	**9**
11:45	1	0	**1**	5	1	**6**	**7**
12:00	0	0	**0**	2	0	**2**	**2**
12:15	2	0	**2**	4	0	**4**	**6**
12:30	0	0	**0**	8	1	**9**	**9**
12:45	2	0	**2**	3	0	**3**	**5**
13:00	2	0	**2**	2	0	**2**	**4**
13:15	2	0	**2**	3	0	**3**	**5**
13:30	3	0	**3**	4	0	**4**	**7**
13:45	0	0	**0**	2	0	**2**	**2**
14:00	3	0	**3**	6	0	**6**	**9**
14:15	4	1	**5**	7	1	**8**	**13**
14:30	0	0	**0**	8	0	**8**	**8**
14:45	2	0	**2**	5	1	**6**	**8**
15:00	2	0	**2**	10	0	**10**	**12**
15:15	1	0	**1**	4	0	**4**	**5**
15:30	1	0	**1**	6	0	**6**	**7**
15:45	2	0	**2**	8	1	**9**	**11**
16:00	1	0	**1**	15	0	**15**	**16**
16:15	0	0	**0**	9	0	**9**	**9**
16:30	0	0	**0**	6	0	**6**	**6**
16:45	0	0	**0**	6	0	**6**	**6**
17:00	0	0	**0**	6	0	**6**	**6**
17:15	4	0	**4**	5	0	**5**	**9**
17:30	0	0	**0**	5	0	**5**	**5**
17:45	1	0	**1**	6	0	**6**	**7**
18:00	0	0	**0**	6	0	**6**	**6**
18:15	3	0	**3**	4	0	**4**	**7**
18:30	0	0	**0**	2	1	**3**	**3**
18:45	1	0	**1**	4	1	**5**	**6**
19:00	0	0	**0**	1	0	**1**	**1**
19:15	0	0	**0**	4	0	**4**	**4**
19:30	0	0	**0**	3	0	**3**	**3**
19:45	1	0	**1**	3	0	**3**	**4**
20:00	0	0	**0**	5	0	**5**	**5**
20:15	1	0	**1**	3	0	**3**	**4**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
20:30	1	0	**1**	1	0	**1**	**2**
20:45	1	0	**1**	8	0	**8**	**9**
21:00	0	0	**0**	4	0	**4**	**4**
21:15	0	0	**0**	2	0	**2**	**2**
21:30	0	0	**0**	6	0	**6**	**6**
21:45	3	0	**3**	2	0	**2**	**5**
22:00	0	0	**0**	1	0	**1**	**1**
22:15	1	0	**1**	1	0	**1**	**2**
22:30	1	0	**1**	3	0	**3**	**4**
22:45	1	0	**1**	3	2	**5**	**6**
23:00	2	0	**2**	5	0	**5**	**7**
23:15	0	0	**0**	1	0	**1**	**1**
23:30	0	0	**0**	1	0	**1**	**1**
23:45	1	0	**1**	0	0	**0**	**1**
TOTALS:	**109**	**2**	**111**	**379**	**22**	**401**	**512**
PERCENTAGES:	***21%***	***0%***	***22%***	***74%***	***4%***	***78%***	***100%***

Peak Hour: 15:30 to 16:30

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
4	**0**	**4**	**38**	**1**	**39**	**43**

Wednesday, November 15, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	0	0	**0**	3	0	**3**	**3**
0:15	0	0	**0**	2	0	**2**	**2**
0:30	2	0	**2**	2	0	**2**	**4**
0:45	1	0	**1**	2	0	**2**	**3**
1:00	0	0	**0**	0	0	**0**	**0**
1:15	1	0	**1**	1	0	**1**	**2**
1:30	0	0	**0**	5	0	**5**	**5**
1:45	0	0	**0**	1	0	**1**	**1**
2:00	0	0	**0**	2	0	**2**	**2**
2:15	1	0	**1**	1	0	**1**	**2**
2:30	0	0	**0**	3	1	**4**	**4**
2:45	0	0	**0**	0	1	**1**	**1**
3:00	3	0	**3**	4	0	**4**	**7**
3:15	3	0	**3**	5	0	**5**	**8**
3:30	3	0	**3**	4	1	**5**	**8**
3:45	0	0	**0**	3	0	**3**	**3**
4:00	2	0	**2**	3	0	**3**	**5**
4:15	3	0	**3**	5	0	**5**	**8**
4:30	0	0	**0**	3	1	**4**	**4**
4:45	5	0	**5**	7	0	**7**	**12**
5:00	3	0	**3**	4	0	**4**	**7**
5:15	0	0	**0**	4	0	**4**	**4**
5:30	1	0	**1**	0	0	**0**	**1**
5:45	4	0	**4**	1	0	**1**	**5**
6:00	2	0	**2**	1	0	**1**	**3**
6:15	5	0	**5**	4	0	**4**	**9**
6:30	1	0	**1**	10	0	**10**	**11**
6:45	4	0	**4**	3	0	**3**	**7**
7:00	3	0	**3**	5	0	**5**	**8**
7:15	1	0	**1**	6	0	**6**	**7**
7:30	4	0	**4**	4	0	**4**	**8**
7:45	1	0	**1**	6	0	**6**	**7**
8:00	1	0	**1**	2	0	**2**	**3**
8:15	2	0	**2**	5	0	**5**	**7**
8:30	3	0	**3**	8	0	**8**	**11**
8:45	2	0	**2**	4	1	**5**	**7**
9:00	3	0	**3**	5	1	**6**	**9**
9:15	0	0	**0**	6	0	**6**	**6**
9:30	1	0	**1**	4	0	**4**	**5**
9:45	0	0	**0**	5	0	**5**	**5**
10:00	0	0	**0**	6	0	**6**	**6**
10:15	1	0	**1**	7	0	**7**	**8**
10:30	2	0	**2**	3	0	**3**	**5**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
10:45	2	0	**2**	3	0	**3**	**5**
11:00	0	0	**0**	5	3	**8**	**8**
11:15	1	0	**1**	4	0	**4**	**5**
11:30	1	1	**2**	8	0	**8**	**10**
11:45	0	0	**0**	5	0	**5**	**5**
12:00	2	1	**3**	4	0	**4**	**7**
12:15	0	0	**0**	3	1	**4**	**4**
12:30	1	0	**1**	3	0	**3**	**4**
12:45	3	0	**3**	6	0	**6**	**9**
13:00	1	0	**1**	7	1	**8**	**9**
13:15	1	0	**1**	5	0	**5**	**6**
13:30	0	0	**0**	7	1	**8**	**8**
13:45	2	0	**2**	2	2	**4**	**6**
14:00	1	0	**1**	5	0	**5**	**6**
14:15	0	0	**0**	6	0	**6**	**6**
14:30	4	0	**4**	5	0	**5**	**9**
14:45	1	0	**1**	8	1	**9**	**10**
15:00	1	0	**1**	11	0	**11**	**12**
15:15	0	0	**0**	8	0	**8**	**8**
15:30	2	0	**2**	4	0	**4**	**6**
15:45	1	0	**1**	9	0	**9**	**10**
16:00	0	0	**0**	5	1	**6**	**6**
16:15	2	0	**2**	4	1	**5**	**7**
16:30	3	0	**3**	5	1	**6**	**9**
16:45	3	0	**3**	5	0	**5**	**8**
17:00	0	1	**1**	7	0	**7**	**8**
17:15	2	0	**2**	3	1	**4**	**6**
17:30	1	1	**2**	5	1	**6**	**8**
17:45	1	0	**1**	5	2	**7**	**8**
18:00	0	0	**0**	5	0	**5**	**5**
18:15	3	0	**3**	5	0	**5**	**8**
18:30	1	0	**1**	3	0	**3**	**4**
18:45	0	0	**0**	5	0	**5**	**5**
19:00	0	0	**0**	5	0	**5**	**5**
19:15	2	0	**2**	6	0	**6**	**8**
19:30	0	0	**0**	1	1	**2**	**2**
19:45	0	0	**0**	1	0	**1**	**1**
20:00	1	0	**1**	1	0	**1**	**2**
20:15	0	0	**0**	2	1	**3**	**3**
20:30	1	0	**1**	1	1	**2**	**3**
20:45	0	0	**0**	2	0	**2**	**2**
21:00	0	0	**0**	2	0	**2**	**2**
21:15	0	0	**0**	2	0	**2**	**2**
21:30	2	0	**2**	2	0	**2**	**4**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
21:45	0	0	**0**	3	0	**3**	**3**
22:00	0	0	**0**	3	0	**3**	**3**
22:15	0	0	**0**	1	0	**1**	**1**
22:30	1	0	**1**	1	0	**1**	**2**
22:45	2	0	**2**	1	0	**1**	**3**
23:00	1	0	**1**	1	0	**1**	**2**
23:15	0	0	**0**	1	0	**1**	**1**
23:30	1	0	**1**	3	0	**3**	**4**
23:45	0	0	**0**	2	0	**2**	**2**
TOTALS:	**119**	**4**	**123**	**375**	**25**	**400**	**523**
PERCENTAGES:	***23%***	***1%***	***24%***	***73%***	***5%***	***78%***	***102%***

Peak Hour: 14:30 to 15:30

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
6	**0**	**6**	**32**	**1**	**33**	**39**

Thursday, November 16, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	0	0	**0**	1	0	**1**	**1**
0:15	0	0	**0**	0	0	**0**	**0**
0:30	0	1	**1**	1	1	**2**	**3**
0:45	0	0	**0**	1	0	**1**	**1**
1:00	0	0	**0**	1	0	**1**	**1**
1:15	0	0	**0**	3	0	**3**	**3**
1:30	2	0	**2**	1	0	**1**	**3**
1:45	0	0	**0**	3	0	**3**	**3**
2:00	2	0	**2**	2	0	**2**	**4**
2:15	0	0	**0**	4	0	**4**	**4**
2:30	0	0	**0**	1	0	**1**	**1**
2:45	2	0	**2**	6	0	**6**	**8**
3:00	2	0	**2**	0	0	**0**	**2**
3:15	1	0	**1**	3	0	**3**	**4**
3:30	5	0	**5**	5	0	**5**	**10**
3:45	0	0	**0**	4	0	**4**	**4**
4:00	1	0	**1**	2	1	**3**	**4**
4:15	1	0	**1**	3	0	**3**	**4**
4:30	1	0	**1**	3	0	**3**	**4**
4:45	2	1	**3**	4	0	**4**	**7**
5:00	3	0	**3**	4	1	**5**	**8**
5:15	2	1	**3**	5	1	**6**	**9**
5:30	1	0	**1**	2	0	**2**	**3**
5:45	3	0	**3**	2	0	**2**	**5**
6:00	2	0	**2**	3	0	**3**	**5**
6:15	3	0	**3**	6	0	**6**	**9**
6:30	5	1	**6**	6	1	**7**	**13**
6:45	3	0	**3**	4	2	**6**	**9**
7:00	3	0	**3**	4	0	**4**	**7**
7:15	4	0	**4**	7	1	**8**	**12**
7:30	2	0	**2**	3	1	**4**	**6**
7:45	2	1	**3**	3	0	**3**	**6**
8:00	1	0	**1**	5	1	**6**	**7**
8:15	1	0	**1**	4	0	**4**	**5**
8:30	1	0	**1**	1	0	**1**	**2**
8:45	0	0	**0**	4	0	**4**	**4**
9:00	1	0	**1**	6	0	**6**	**7**
9:15	1	0	**1**	3	0	**3**	**4**
9:30	1	0	**1**	3	0	**3**	**4**
9:45	0	0	**0**	7	1	**8**	**8**
10:00	0	0	**0**	7	1	**8**	**8**
10:15	0	0	**0**	4	0	**4**	**4**
10:30	1	0	**1**	2	0	**2**	**3**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
10:45	1	0	**1**	3	2	**5**	**6**
11:00	0	0	**0**	2	1	**3**	**3**
11:15	1	0	**1**	5	1	**6**	**7**
11:30	2	0	**2**	2	0	**2**	**4**
11:45	0	0	**0**	3	0	**3**	**3**
12:00	2	0	**2**	6	0	**6**	**8**
12:15	4	0	**4**	9	0	**9**	**13**
12:30	1	0	**1**	8	0	**8**	**9**
12:45	2	0	**2**	4	0	**4**	**6**
13:00	0	0	**0**	6	1	**7**	**7**
13:15	2	0	**2**	6	0	**6**	**8**
13:30	2	0	**2**	7	0	**7**	**9**
13:45	1	0	**1**	5	0	**5**	**6**
14:00	0	0	**0**	6	0	**6**	**6**
14:15	1	0	**1**	6	0	**6**	**7**
14:30	4	0	**4**	7	0	**7**	**11**
14:45	0	0	**0**	7	2	**9**	**9**
15:00	0	0	**0**	6	0	**6**	**6**
15:15	1	0	**1**	7	0	**7**	**8**
15:30	2	0	**2**	6	1	**7**	**9**
15:45	1	0	**1**	11	0	**11**	**12**
16:00	0	0	**0**	7	0	**7**	**7**
16:15	0	0	**0**	6	0	**6**	**6**
16:30	1	0	**1**	4	0	**4**	**5**
16:45	1	0	**1**	9	0	**9**	**10**
17:00	0	1	**1**	8	1	**9**	**10**
17:15	0	0	**0**	6	0	**6**	**6**
17:30	1	0	**1**	5	0	**5**	**6**
17:45	1	0	**1**	5	0	**5**	**6**
18:00	0	0	**0**	5	1	**6**	**6**
18:15	1	0	**1**	4	0	**4**	**5**
18:30	2	0	**2**	10	0	**10**	**12**
18:45	0	0	**0**	6	0	**6**	**6**
19:00	1	0	**1**	2	1	**3**	**4**
19:15	0	0	**0**	6	0	**6**	**6**
19:30	0	0	**0**	3	0	**3**	**3**
19:45	1	0	**1**	6	1	**7**	**8**
20:00	0	0	**0**	4	0	**4**	**4**
20:15	1	0	**1**	3	0	**3**	**4**
20:30	1	0	**1**	4	1	**5**	**6**
20:45	0	0	**0**	4	0	**4**	**4**
21:00	1	0	**1**	7	0	**7**	**8**
21:15	0	0	**0**	3	0	**3**	**3**
21:30	1	0	**1**	4	0	**4**	**5**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
21:45	4	0	**4**	3	0	**3**	**7**
22:00	0	0	**0**	5	0	**5**	**5**
22:15	1	0	**1**	5	0	**5**	**6**
22:30	1	0	**1**	5	0	**5**	**6**
22:45	0	0	**0**	2	0	**2**	**2**
23:00	0	0	**0**	3	0	**3**	**3**
23:15	0	0	**0**	2	0	**2**	**2**
23:30	0	0	**0**	0	0	**0**	**0**
23:45	1	0	**1**	4	0	**4**	**5**
TOTALS:	**106**	**6**	**112**	**415**	**25**	**440**	**552**
PERCENTAGES:	***21%***	***1%***	***22%***	***81%***	***5%***	***86%***	***108%***

Peak Hour: 6:30 to 7:30

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
15	**1**	**16**	**21**	**4**	**25**	**41**

Location: Love's Truck Stops - Coachella
Driveway #: 16
Latitude: 33.7167
Longitude: -116.1724
Start Date: 11/28/2017

Tuesday, November 28, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	0	3	**3**	0	2	**2**	**5**
0:15	0	1	**1**	0	2	**2**	**3**
0:30	0	0	**0**	0	1	**1**	**1**
0:45	0	2	**2**	0	2	**2**	**4**
1:00	0	0	**0**	0	7	**7**	**7**
1:15	0	1	**1**	0	1	**1**	**2**
1:30	0	1	**1**	0	3	**3**	**4**
1:45	0	4	**4**	0	4	**4**	**8**
2:00	0	1	**1**	1	1	**2**	**3**
2:15	0	0	**0**	0	3	**3**	**3**
2:30	0	0	**0**	0	2	**2**	**2**
2:45	0	4	**4**	0	3	**3**	**7**
3:00	0	1	**1**	0	6	**6**	**7**
3:15	0	2	**2**	0	2	**2**	**4**
3:30	0	1	**1**	0	4	**4**	**5**
3:45	0	1	**1**	0	7	**7**	**8**
4:00	1	0	**1**	2	4	**6**	**7**
4:15	1	1	**2**	0	3	**3**	**5**
4:30	0	2	**2**	0	4	**4**	**6**
4:45	0	2	**2**	0	5	**5**	**7**
5:00	0	0	**0**	0	2	**2**	**2**
5:15	0	1	**1**	0	5	**5**	**6**
5:30	0	0	**0**	0	4	**4**	**4**
5:45	0	2	**2**	0	1	**1**	**3**
6:00	0	1	**1**	0	3	**3**	**4**
6:15	0	1	**1**	0	3	**3**	**4**
6:30	0	4	**4**	0	1	**1**	**5**
6:45	0	2	**2**	0	5	**5**	**7**
7:00	0	2	**2**	0	3	**3**	**5**
7:15	0	5	**5**	0	9	**9**	**14**
7:30	0	3	**3**	0	12	**12**	**15**
7:45	0	2	**2**	1	9	**10**	**12**
8:00	0	2	**2**	0	6	**6**	**8**
8:15	0	3	**3**	0	4	**4**	**7**
8:30	0	0	**0**	0	2	**2**	**2**
8:45	0	0	**0**	0	3	**3**	**3**
9:00	0	3	**3**	0	6	**6**	**9**
9:15	0	4	**4**	0	10	**10**	**14**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
9:30	0	0	**0**	0	8	**8**	**8**
9:45	0	6	**6**	0	5	**5**	**11**
10:00	0	4	**4**	0	11	**11**	**15**
10:15	0	3	**3**	0	6	**6**	**9**
10:30	0	2	**2**	1	2	**3**	**5**
10:45	0	1	**1**	0	3	**3**	**4**
11:00	3	3	**6**	2	5	**7**	**13**
11:15	1	5	**6**	1	2	**3**	**9**
11:30	0	2	**2**	0	4	**4**	**6**
11:45	0	0	**0**	0	4	**4**	**4**
12:00	0	6	**6**	0	2	**2**	**8**
12:15	2	0	**2**	0	5	**5**	**7**
12:30	0	3	**3**	1	9	**10**	**13**
12:45	0	4	**4**	0	5	**5**	**9**
13:00	0	2	**2**	0	9	**9**	**11**
13:15	0	6	**6**	0	4	**4**	**10**
13:30	1	2	**3**	0	6	**6**	**9**
13:45	0	4	**4**	1	6	**7**	**11**
14:00	0	0	**0**	0	6	**6**	**6**
14:15	0	1	**1**	0	9	**9**	**10**
14:30	0	1	**1**	0	5	**5**	**6**
14:45	1	1	**2**	1	2	**3**	**5**
15:00	0	5	**5**	0	9	**9**	**14**
15:15	0	3	**3**	1	2	**3**	**6**
15:30	0	4	**4**	0	4	**4**	**8**
15:45	0	3	**3**	0	4	**4**	**7**
16:00	1	2	**3**	0	6	**6**	**9**
16:15	0	5	**5**	0	3	**3**	**8**
16:30	0	0	**0**	0	7	**7**	**7**
16:45	0	1	**1**	0	2	**2**	**3**
17:00	0	0	**0**	0	4	**4**	**4**
17:15	1	3	**4**	0	1	**1**	**5**
17:30	0	1	**1**	0	5	**5**	**6**
17:45	0	1	**1**	0	6	**6**	**7**
18:00	0	1	**1**	0	3	**3**	**4**
18:15	0	1	**1**	0	2	**2**	**3**
18:30	0	2	**2**	0	7	**7**	**9**
18:45	0	2	**2**	0	4	**4**	**6**
19:00	1	1	**2**	0	4	**4**	**6**
19:15	1	2	**3**	0	2	**2**	**5**
19:30	0	3	**3**	0	2	**2**	**5**
19:45	0	3	**3**	0	2	**2**	**5**
20:00	0	5	**5**	0	1	**1**	**6**
20:15	0	3	**3**	0	3	**3**	**6**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
20:30	0	3	**3**	0	5	**5**	**8**
20:45	0	2	**2**	0	10	**10**	**12**
21:00	0	4	**4**	0	5	**5**	**9**
21:15	0	0	**0**	0	6	**6**	**6**
21:30	1	4	**5**	0	7	**7**	**12**
21:45	0	1	**1**	0	6	**6**	**7**
22:00	0	4	**4**	0	4	**4**	**8**
22:15	1	3	**4**	0	4	**4**	**8**
22:30	1	2	**3**	0	3	**3**	**6**
22:45	1	0	**1**	0	1	**1**	**2**
23:00	0	0	**0**	0	2	**2**	**2**
23:15	0	0	**0**	0	8	**8**	**8**
23:30	0	4	**4**	0	2	**2**	**6**
23:45	0	1	**1**	0	3	**3**	**4**
TOTALS:	**18**	**197**	**215**	**12**	**421**	**433**	**648**
PERCENTAGES:	***3%***	***30%***	***33%***	***2%***	***65%***	***67%***	***100%***

Peak Hour: 7:15 to 8:15

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0	**12**	**12**	**1**	**36**	**37**	**49**

Wednesday, November 29, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	0	1	**1**	0	3	**3**	**4**
0:15	0	2	**2**	0	1	**1**	**3**
0:30	1	2	**3**	1	1	**2**	**5**
0:45	0	3	**3**	0	2	**2**	**5**
1:00	0	1	**1**	0	4	**4**	**5**
1:15	0	2	**2**	1	2	**3**	**5**
1:30	0	2	**2**	0	0	**0**	**2**
1:45	0	2	**2**	0	1	**1**	**3**
2:00	0	2	**2**	0	0	**0**	**2**
2:15	0	0	**0**	0	1	**1**	**1**
2:30	0	0	**0**	0	1	**1**	**1**
2:45	0	1	**1**	0	0	**0**	**1**
3:00	0	1	**1**	0	0	**0**	**1**
3:15	0	0	**0**	0	4	**4**	**4**
3:30	1	1	**2**	0	3	**3**	**5**
3:45	1	3	**4**	0	3	**3**	**7**
4:00	0	4	**4**	0	3	**3**	**7**
4:15	0	0	**0**	0	2	**2**	**2**
4:30	0	1	**1**	0	4	**4**	**5**
4:45	0	1	**1**	0	1	**1**	**2**
5:00	0	1	**1**	0	2	**2**	**3**
5:15	0	3	**3**	0	7	**7**	**10**
5:30	0	4	**4**	0	4	**4**	**8**
5:45	0	1	**1**	0	3	**3**	**4**
6:00	0	1	**1**	0	6	**6**	**7**
6:15	0	0	**0**	0	3	**3**	**3**
6:30	0	2	**2**	0	3	**3**	**5**
6:45	0	2	**2**	0	6	**6**	**8**
7:00	0	6	**6**	0	5	**5**	**11**
7:15	1	3	**4**	0	8	**8**	**12**
7:30	0	0	**0**	0	8	**8**	**8**
7:45	0	1	**1**	1	13	**14**	**15**
8:00	0	3	**3**	0	9	**9**	**12**
8:15	0	1	**1**	0	13	**13**	**14**
8:30	0	3	**3**	0	6	**6**	**9**
8:45	0	0	**0**	0	9	**9**	**9**
9:00	0	3	**3**	1	5	**6**	**9**
9:15	0	3	**3**	0	8	**8**	**11**
9:30	2	1	**3**	1	6	**7**	**10**
9:45	0	2	**2**	0	5	**5**	**7**
10:00	0	1	**1**	0	11	**11**	**12**
10:15	0	2	**2**	1	7	**8**	**10**
10:30	0	4	**4**	0	4	**4**	**8**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
10:45	0	6	**6**	0	4	**4**	**10**
11:00	1	2	**3**	0	3	**3**	**6**
11:15	0	4	**4**	2	9	**11**	**15**
11:30	0	3	**3**	0	4	**4**	**7**
11:45	0	3	**3**	0	8	**8**	**11**
12:00	0	2	**2**	0	6	**6**	**8**
12:15	0	6	**6**	0	4	**4**	**10**
12:30	0	2	**2**	0	10	**10**	**12**
12:45	0	1	**1**	0	1	**1**	**2**
13:00	0	6	**6**	0	4	**4**	**10**
13:15	0	4	**4**	1	7	**8**	**12**
13:30	0	3	**3**	0	7	**7**	**10**
13:45	0	4	**4**	0	8	**8**	**12**
14:00	1	2	**3**	1	13	**14**	**17**
14:15	0	2	**2**	1	6	**7**	**9**
14:30	0	3	**3**	0	6	**6**	**9**
14:45	0	5	**5**	0	11	**11**	**16**
15:00	1	6	**7**	0	4	**4**	**11**
15:15	0	3	**3**	0	5	**5**	**8**
15:30	0	6	**6**	1	4	**5**	**11**
15:45	0	6	**6**	0	3	**3**	**9**
16:00	0	3	**3**	0	6	**6**	**9**
16:15	0	4	**4**	0	6	**6**	**10**
16:30	0	4	**4**	0	5	**5**	**9**
16:45	0	5	**5**	0	7	**7**	**12**
17:00	0	2	**2**	0	12	**12**	**14**
17:15	0	2	**2**	1	7	**8**	**10**
17:30	0	2	**2**	0	3	**3**	**5**
17:45	0	2	**2**	0	2	**2**	**4**
18:00	0	3	**3**	0	2	**2**	**5**
18:15	0	1	**1**	0	6	**6**	**7**
18:30	0	2	**2**	0	3	**3**	**5**
18:45	0	1	**1**	0	2	**2**	**3**
19:00	2	4	**6**	1	2	**3**	**9**
19:15	1	0	**1**	0	1	**1**	**2**
19:30	0	2	**2**	0	3	**3**	**5**
19:45	0	3	**3**	0	1	**1**	**4**
20:00	0	1	**1**	0	4	**4**	**5**
20:15	0	1	**1**	0	3	**3**	**4**
20:30	0	1	**1**	0	4	**4**	**5**
20:45	0	5	**5**	0	4	**4**	**9**
21:00	1	4	**5**	2	5	**7**	**12**
21:15	0	4	**4**	0	4	**4**	**8**
21:30	1	1	**2**	1	6	**7**	**9**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
21:45	0	0	**0**	0	4	**4**	**4**
22:00	0	1	**1**	0	4	**4**	**5**
22:15	1	1	**2**	1	2	**3**	**5**
22:30	0	0	**0**	1	1	**2**	**2**
22:45	2	1	**3**	0	4	**4**	**7**
23:00	1	3	**4**	0	2	**2**	**6**
23:15	0	0	**0**	0	2	**2**	**2**
23:30	1	0	**1**	1	1	**2**	**3**
23:45	0	4	**4**	0	4	**4**	**8**
TOTALS:	**19**	**222**	**241**	**20**	**436**	**456**	**697**
PERCENTAGES:	***3%***	***34%***	***37%***	***3%***	***67%***	***70%***	***108%***

Peak Hour: 13:15 to 14:15

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
1	**13**	**14**	**2**	**35**	**37**	**51**

Thursday, November 30, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	0	2	**2**	0	8	**8**	**10**
0:15	1	2	**3**	1	3	**4**	**7**
0:30	0	1	**1**	1	2	**3**	**4**
0:45	0	2	**2**	0	8	**8**	**10**
1:00	0	2	**2**	0	4	**4**	**6**
1:15	1	1	**2**	0	6	**6**	**8**
1:30	1	0	**1**	1	9	**10**	**11**
1:45	0	0	**0**	0	2	**2**	**2**
2:00	0	2	**2**	0	0	**0**	**2**
2:15	0	3	**3**	0	0	**0**	**3**
2:30	0	0	**0**	0	6	**6**	**6**
2:45	0	0	**0**	0	3	**3**	**3**
3:00	0	1	**1**	0	1	**1**	**2**
3:15	0	1	**1**	0	5	**5**	**6**
3:30	0	1	**1**	0	2	**2**	**3**
3:45	0	0	**0**	0	2	**2**	**2**
4:00	0	1	**1**	0	9	**9**	**10**
4:15	0	0	**0**	2	4	**6**	**6**
4:30	0	0	**0**	1	7	**8**	**8**
4:45	0	0	**0**	0	1	**1**	**1**
5:00	0	4	**4**	0	1	**1**	**5**
5:15	0	2	**2**	0	8	**8**	**10**
5:30	0	2	**2**	0	2	**2**	**4**
5:45	0	0	**0**	0	4	**4**	**4**
6:00	0	1	**1**	0	3	**3**	**4**
6:15	0	1	**1**	0	3	**3**	**4**
6:30	0	3	**3**	0	3	**3**	**6**
6:45	1	2	**3**	0	6	**6**	**9**
7:00	0	4	**4**	0	7	**7**	**11**
7:15	0	2	**2**	1	6	**7**	**9**
7:30	0	2	**2**	0	6	**6**	**8**
7:45	0	2	**2**	1	6	**7**	**9**
8:00	0	1	**1**	0	7	**7**	**8**
8:15	0	3	**3**	0	11	**11**	**14**
8:30	0	0	**0**	0	5	**5**	**5**
8:45	0	4	**4**	0	6	**6**	**10**
9:00	0	5	**5**	0	9	**9**	**14**
9:15	0	1	**1**	0	3	**3**	**4**
9:30	1	3	**4**	0	7	**7**	**11**
9:45	0	4	**4**	0	6	**6**	**10**
10:00	0	5	**5**	0	9	**9**	**14**
10:15	0	1	**1**	1	7	**8**	**9**
10:30	0	0	**0**	0	5	**5**	**5**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
10:45	0	5	**5**	1	3	**4**	**9**
11:00	0	0	**0**	1	3	**4**	**4**
11:15	0	2	**2**	0	6	**6**	**8**
11:30	0	2	**2**	0	5	**5**	**7**
11:45	0	4	**4**	0	9	**9**	**13**
12:00	0	8	**8**	0	8	**8**	**16**
12:15	0	4	**4**	0	4	**4**	**8**
12:30	0	2	**2**	0	9	**9**	**11**
12:45	0	3	**3**	0	4	**4**	**7**
13:00	0	2	**2**	0	3	**3**	**5**
13:15	0	4	**4**	0	5	**5**	**9**
13:30	1	3	**4**	0	5	**5**	**9**
13:45	1	1	**2**	0	6	**6**	**8**
14:00	0	3	**3**	0	4	**4**	**7**
14:15	0	4	**4**	1	6	**7**	**11**
14:30	0	3	**3**	0	6	**6**	**9**
14:45	0	8	**8**	1	6	**7**	**15**
15:00	0	2	**2**	0	17	**17**	**19**
15:15	2	1	**3**	0	6	**6**	**9**
15:30	0	2	**2**	0	6	**6**	**8**
15:45	0	4	**4**	0	3	**3**	**7**
16:00	0	1	**1**	1	7	**8**	**9**
16:15	1	2	**3**	0	3	**3**	**6**
16:30	0	1	**1**	0	8	**8**	**9**
16:45	0	4	**4**	0	4	**4**	**8**
17:00	0	3	**3**	0	5	**5**	**8**
17:15	0	1	**1**	0	4	**4**	**5**
17:30	1	5	**6**	0	5	**5**	**11**
17:45	0	5	**5**	0	2	**2**	**7**
18:00	0	2	**2**	0	6	**6**	**8**
18:15	0	2	**2**	0	3	**3**	**5**
18:30	0	1	**1**	0	4	**4**	**5**
18:45	0	3	**3**	0	3	**3**	**6**
19:00	0	1	**1**	0	3	**3**	**4**
19:15	0	3	**3**	0	3	**3**	**6**
19:30	0	2	**2**	0	5	**5**	**7**
19:45	0	2	**2**	0	0	**0**	**2**
20:00	1	1	**2**	0	4	**4**	**6**
20:15	0	0	**0**	0	4	**4**	**4**
20:30	0	4	**4**	0	0	**0**	**4**
20:45	0	0	**0**	0	2	**2**	**2**
21:00	0	1	**1**	0	1	**1**	**2**
21:15	2	4	**6**	0	3	**3**	**9**
21:30	0	4	**4**	0	6	**6**	**10**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
21:45	0	2	**2**	0	3	**3**	**5**
22:00	0	2	**2**	1	3	**4**	**6**
22:15	0	1	**1**	0	3	**3**	**4**
22:30	0	2	**2**	0	8	**8**	**10**
22:45	1	1	**2**	0	6	**6**	**8**
23:00	0	5	**5**	0	2	**2**	**7**
23:15	0	0	**0**	0	1	**1**	**1**
23:30	1	2	**3**	1	13	**14**	**17**
23:45	0	2	**2**	0	4	**4**	**6**
TOTALS:	**16**	**207**	**223**	**16**	**464**	**480**	**703**
PERCENTAGES:	***2%***	***32%***	***34%***	***2%***	***72%***	***74%***	***108%***

Peak Hour: 14:15 to 15:15

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0	**17**	**17**	**2**	**35**	**37**	**54**

Location: Love's Truck Stops - Coachella
Driveway #: 17
Latitude: 33.7169
Longitude: -116.1717
Start Date: 11/28/2017

Tuesday, November 28, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	3	0	**3**	1	9	**10**	**13**
0:15	2	1	**3**	3	3	**6**	**9**
0:30	4	0	**4**	4	5	**9**	**13**
0:45	6	0	**6**	5	10	**15**	**21**
1:00	1	0	**1**	6	8	**14**	**15**
1:15	5	0	**5**	1	9	**10**	**15**
1:30	8	0	**8**	6	7	**13**	**21**
1:45	6	1	**7**	7	6	**13**	**20**
2:00	3	2	**5**	5	7	**12**	**17**
2:15	1	0	**1**	0	5	**5**	**6**
2:30	4	1	**5**	2	12	**14**	**19**
2:45	1	0	**1**	3	7	**10**	**11**
3:00	3	0	**3**	4	15	**19**	**22**
3:15	2	0	**2**	1	10	**11**	**13**
3:30	3	0	**3**	4	8	**12**	**15**
3:45	6	0	**6**	4	8	**12**	**18**
4:00	6	1	**7**	4	10	**14**	**21**
4:15	7	0	**7**	6	9	**15**	**22**
4:30	5	0	**5**	6	9	**15**	**20**
4:45	10	0	**10**	8	9	**17**	**27**
5:00	8	1	**9**	6	9	**15**	**24**
5:15	4	0	**4**	5	12	**17**	**21**
5:30	10	0	**10**	9	2	**11**	**21**
5:45	9	0	**9**	8	6	**14**	**23**
6:00	9	1	**10**	5	5	**10**	**20**
6:15	7	1	**8**	9	7	**16**	**24**
6:30	10	0	**10**	7	9	**16**	**26**
6:45	9	1	**10**	8	12	**20**	**30**
7:00	8	0	**8**	6	10	**16**	**24**
7:15	9	1	**10**	8	11	**19**	**29**
7:30	9	0	**9**	9	8	**17**	**26**
7:45	19	0	**19**	10	10	**20**	**39**
8:00	10	2	**12**	14	10	**24**	**36**
8:15	9	2	**11**	13	12	**25**	**36**
8:30	10	0	**10**	7	8	**15**	**25**
8:45	10	0	**10**	9	6	**15**	**25**
9:00	11	0	**11**	19	14	**33**	**44**
9:15	18	0	**18**	14	10	**24**	**42**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
9:30	9	2	**11**	10	4	**14**	**25**
9:45	12	0	**12**	8	8	**16**	**28**
10:00	13	2	**15**	17	10	**27**	**42**
10:15	3	2	**5**	10	15	**25**	**30**
10:30	20	1	**21**	6	11	**17**	**38**
10:45	14	0	**14**	18	8	**26**	**40**
11:00	26	2	**28**	22	11	**33**	**61**
11:15	17	1	**18**	24	6	**30**	**48**
11:30	12	0	**12**	15	14	**29**	**41**
11:45	14	0	**14**	11	10	**21**	**35**
12:00	15	1	**16**	11	6	**17**	**33**
12:15	23	0	**23**	25	10	**35**	**58**
12:30	11	0	**11**	14	9	**23**	**34**
12:45	16	0	**16**	14	10	**24**	**40**
13:00	9	0	**9**	12	5	**17**	**26**
13:15	14	1	**15**	11	11	**22**	**37**
13:30	10	0	**10**	11	5	**16**	**26**
13:45	8	2	**10**	14	13	**27**	**37**
14:00	12	0	**12**	9	11	**20**	**32**
14:15	13	1	**14**	12	8	**20**	**34**
14:30	13	0	**13**	12	12	**24**	**37**
14:45	14	4	**18**	19	7	**26**	**44**
15:00	19	1	**20**	11	15	**26**	**46**
15:15	17	0	**17**	13	11	**24**	**41**
15:30	14	1	**15**	17	10	**27**	**42**
15:45	13	0	**13**	16	13	**29**	**42**
16:00	15	0	**15**	13	7	**20**	**35**
16:15	16	1	**17**	17	9	**26**	**43**
16:30	16	1	**17**	18	10	**28**	**45**
16:45	6	1	**7**	14	5	**19**	**26**
17:00	9	1	**10**	11	14	**25**	**35**
17:15	16	0	**16**	17	5	**22**	**38**
17:30	12	1	**13**	13	9	**22**	**35**
17:45	11	1	**12**	12	8	**20**	**32**
18:00	7	1	**8**	9	13	**22**	**30**
18:15	5	0	**5**	7	9	**16**	**21**
18:30	4	2	**6**	6	13	**19**	**25**
18:45	11	0	**11**	10	11	**21**	**32**
19:00	3	0	**3**	9	9	**18**	**21**
19:15	9	3	**12**	5	8	**13**	**25**
19:30	10	0	**10**	5	8	**13**	**23**
19:45	6	0	**6**	7	13	**20**	**26**
20:00	14	0	**14**	12	5	**17**	**31**
20:15	9	2	**11**	11	9	**20**	**31**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
20:30	2	1	**3**	9	11	**20**	**23**
20:45	10	0	**10**	3	9	**12**	**22**
21:00	5	1	**6**	9	12	**21**	**27**
21:15	11	1	**12**	8	11	**19**	**31**
21:30	8	0	**8**	11	10	**21**	**29**
21:45	4	0	**4**	8	10	**18**	**22**
22:00	6	0	**6**	3	12	**15**	**21**
22:15	5	0	**5**	11	5	**16**	**21**
22:30	7	2	**9**	7	11	**18**	**27**
22:45	6	0	**6**	3	11	**14**	**20**
23:00	4	0	**4**	7	10	**17**	**21**
23:15	6	2	**8**	2	13	**15**	**23**
23:30	2	0	**2**	5	9	**14**	**16**
23:45	4	1	**5**	6	10	**16**	**21**
TOTALS:	**885**	**58**	**943**	**896**	**889**	**1785**	**2728**
PERCENTAGES:	***32%***	***2%***	***35%***	***33%***	***33%***	***65%***	***100%***

Peak Hour: 10:45 to 11:45

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
69	**3**	**72**	**79**	**39**	**118**	**190**

Wednesday, November 29, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	1	0	**1**	3	10	**13**	**14**
0:15	3	0	**3**	4	7	**11**	**14**
0:30	3	1	**4**	4	10	**14**	**18**
0:45	1	0	**1**	0	8	**8**	**9**
1:00	1	0	**1**	2	9	**11**	**12**
1:15	3	0	**3**	3	6	**9**	**12**
1:30	2	0	**2**	3	11	**14**	**16**
1:45	8	1	**9**	5	10	**15**	**24**
2:00	2	0	**2**	3	8	**11**	**13**
2:15	1	1	**2**	4	8	**12**	**14**
2:30	0	1	**1**	1	8	**9**	**10**
2:45	3	0	**3**	2	4	**6**	**9**
3:00	2	0	**2**	3	15	**18**	**20**
3:15	2	0	**2**	2	5	**7**	**9**
3:30	1	0	**1**	0	7	**7**	**8**
3:45	3	1	**4**	3	10	**13**	**17**
4:00	5	0	**5**	4	10	**14**	**19**
4:15	10	1	**11**	5	10	**15**	**26**
4:30	7	0	**7**	7	7	**14**	**21**
4:45	6	2	**8**	5	9	**14**	**22**
5:00	8	0	**8**	8	9	**17**	**25**
5:15	8	0	**8**	3	9	**12**	**20**
5:30	4	4	**8**	8	10	**18**	**26**
5:45	15	0	**15**	9	10	**19**	**34**
6:00	10	1	**11**	6	12	**18**	**29**
6:15	7	1	**8**	13	14	**27**	**35**
6:30	9	1	**10**	12	2	**14**	**24**
6:45	7	0	**7**	4	13	**17**	**24**
7:00	7	5	**12**	8	7	**15**	**27**
7:15	12	0	**12**	10	16	**26**	**38**
7:30	12	2	**14**	10	8	**18**	**32**
7:45	11	0	**11**	11	10	**21**	**32**
8:00	9	2	**11**	12	5	**17**	**28**
8:15	13	1	**14**	12	12	**24**	**38**
8:30	8	0	**8**	8	7	**15**	**23**
8:45	9	0	**9**	9	7	**16**	**25**
9:00	10	1	**11**	12	5	**17**	**28**
9:15	15	0	**15**	13	8	**21**	**36**
9:30	11	3	**14**	16	6	**22**	**36**
9:45	13	2	**15**	12	10	**22**	**37**
10:00	11	5	**16**	12	9	**21**	**37**
10:15	6	1	**7**	10	9	**19**	**26**
10:30	11	0	**11**	12	11	**23**	**34**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
10:45	12	0	**12**	6	10	**16**	**28**
11:00	9	1	**10**	13	10	**23**	**33**
11:15	13	10	**23**	12	13	**25**	**48**
11:30	10	0	**10**	18	12	**30**	**40**
11:45	12	2	**14**	8	12	**20**	**34**
12:00	22	0	**22**	17	7	**24**	**46**
12:15	15	4	**19**	19	11	**30**	**49**
12:30	14	2	**16**	19	12	**31**	**47**
12:45	14	3	**17**	13	11	**24**	**41**
13:00	14	1	**15**	22	11	**33**	**48**
13:15	18	1	**19**	8	11	**19**	**38**
13:30	21	4	**25**	22	6	**28**	**53**
13:45	15	1	**16**	11	7	**18**	**34**
14:00	11	1	**12**	17	13	**30**	**42**
14:15	7	1	**8**	7	6	**13**	**21**
14:30	19	0	**19**	18	12	**30**	**49**
14:45	16	4	**20**	14	16	**30**	**50**
15:00	13	0	**13**	15	9	**24**	**37**
15:15	13	0	**13**	17	11	**28**	**41**
15:30	6	2	**8**	10	6	**16**	**24**
15:45	12	0	**12**	11	18	**29**	**41**
16:00	14	0	**14**	14	8	**22**	**36**
16:15	12	1	**13**	16	14	**30**	**43**
16:30	12	2	**14**	12	10	**22**	**36**
16:45	13	0	**13**	14	11	**25**	**38**
17:00	15	1	**16**	17	7	**24**	**40**
17:15	13	1	**14**	11	12	**23**	**37**
17:30	7	1	**8**	9	10	**19**	**27**
17:45	8	1	**9**	9	8	**17**	**26**
18:00	7	0	**7**	9	11	**20**	**27**
18:15	8	0	**8**	10	4	**14**	**22**
18:30	5	0	**5**	6	13	**19**	**24**
18:45	9	0	**9**	8	8	**16**	**25**
19:00	8	0	**8**	10	11	**21**	**29**
19:15	10	0	**10**	6	8	**14**	**24**
19:30	10	0	**10**	11	9	**20**	**30**
19:45	7	0	**7**	8	5	**13**	**20**
20:00	5	1	**6**	8	12	**20**	**26**
20:15	8	1	**9**	7	11	**18**	**27**
20:30	12	0	**12**	8	13	**21**	**33**
20:45	7	1	**8**	10	9	**19**	**27**
21:00	11	0	**11**	12	12	**24**	**35**
21:15	5	2	**7**	5	12	**17**	**24**
21:30	8	0	**8**	5	14	**19**	**27**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
21:45	2	1	**3**	6	5	**11**	**14**
22:00	9	1	**10**	7	6	**13**	**23**
22:15	5	0	**5**	5	5	**10**	**15**
22:30	9	0	**9**	8	7	**15**	**24**
22:45	4	1	**5**	4	10	**14**	**19**
23:00	4	1	**5**	3	7	**10**	**15**
23:15	9	0	**9**	8	4	**12**	**21**
23:30	2	0	**2**	7	9	**16**	**18**
23:45	4	0	**4**	5	5	**10**	**14**
TOTALS:	**838**	**90**	**928**	**868**	**895**	**1763**	**2691**
PERCENTAGES:	***31%***	***3%***	***34%***	***32%***	***33%***	***65%***	***99%***

Peak Hour: 12:15 to 13:15

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
57	**10**	**67**	**73**	**45**	**118**	**185**

Thursday, November 30, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	2	1	**3**	1	9	**10**	**13**
0:15	6	0	**6**	8	8	**16**	**22**
0:30	6	0	**6**	8	7	**15**	**21**
0:45	2	0	**2**	4	14	**18**	**20**
1:00	4	1	**5**	3	7	**10**	**15**
1:15	4	1	**5**	4	6	**10**	**15**
1:30	3	1	**4**	3	10	**13**	**17**
1:45	1	1	**2**	1	8	**9**	**11**
2:00	5	0	**5**	1	10	**11**	**16**
2:15	0	0	**0**	4	9	**13**	**13**
2:30	1	0	**1**	3	7	**10**	**11**
2:45	5	1	**6**	4	13	**17**	**23**
3:00	0	0	**0**	0	7	**7**	**7**
3:15	4	1	**5**	4	11	**15**	**20**
3:30	1	1	**2**	3	10	**13**	**15**
3:45	4	0	**4**	1	6	**7**	**11**
4:00	6	0	**6**	2	9	**11**	**17**
4:15	4	1	**5**	4	11	**15**	**20**
4:30	11	0	**11**	6	6	**12**	**23**
4:45	15	0	**15**	8	9	**17**	**32**
5:00	5	1	**6**	13	9	**22**	**28**
5:15	6	1	**7**	6	8	**14**	**21**
5:30	6	0	**6**	5	12	**17**	**23**
5:45	6	1	**7**	9	8	**17**	**24**
6:00	8	1	**9**	5	7	**12**	**21**
6:15	8	0	**8**	8	7	**15**	**23**
6:30	7	0	**7**	8	8	**16**	**23**
6:45	9	0	**9**	2	8	**10**	**19**
7:00	8	0	**8**	15	8	**23**	**31**
7:15	17	1	**18**	12	11	**23**	**41**
7:30	10	0	**10**	12	6	**18**	**28**
7:45	10	2	**12**	7	10	**17**	**29**
8:00	13	3	**16**	16	9	**25**	**41**
8:15	5	0	**5**	10	11	**21**	**26**
8:30	12	1	**13**	5	9	**14**	**27**
8:45	9	0	**9**	14	12	**26**	**35**
9:00	9	0	**9**	7	10	**17**	**26**
9:15	12	0	**12**	8	6	**14**	**26**
9:30	9	3	**12**	14	10	**24**	**36**
9:45	10	0	**10**	12	16	**28**	**38**
10:00	15	1	**16**	8	12	**20**	**36**
10:15	10	1	**11**	14	8	**22**	**33**
10:30	14	1	**15**	12	8	**20**	**35**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
10:45	14	0	**14**	12	13	**25**	**39**
11:00	20	1	**21**	19	8	**27**	**48**
11:15	23	1	**24**	20	9	**29**	**53**
11:30	13	0	**13**	17	11	**28**	**41**
11:45	19	3	**22**	16	15	**31**	**53**
12:00	25	0	**25**	21	8	**29**	**54**
12:15	18	0	**18**	17	10	**27**	**45**
12:30	19	0	**19**	20	7	**27**	**46**
12:45	14	2	**16**	21	13	**34**	**50**
13:00	11	0	**11**	13	10	**23**	**34**
13:15	10	0	**10**	10	10	**20**	**30**
13:30	16	1	**17**	20	8	**28**	**45**
13:45	15	1	**16**	12	11	**23**	**39**
14:00	15	1	**16**	16	14	**30**	**46**
14:15	16	0	**16**	11	12	**23**	**39**
14:30	17	0	**17**	15	14	**29**	**46**
14:45	14	0	**14**	22	6	**28**	**42**
15:00	15	2	**17**	14	8	**22**	**39**
15:15	24	0	**24**	13	10	**23**	**47**
15:30	12	0	**12**	17	8	**25**	**37**
15:45	19	0	**19**	14	6	**20**	**39**
16:00	17	1	**18**	21	8	**29**	**47**
16:15	17	0	**17**	18	8	**26**	**43**
16:30	11	2	**13**	22	10	**32**	**45**
16:45	20	2	**22**	12	6	**18**	**40**
17:00	17	1	**18**	22	11	**33**	**51**
17:15	17	0	**17**	12	12	**24**	**41**
17:30	12	0	**12**	19	16	**35**	**47**
17:45	19	0	**19**	14	8	**22**	**41**
18:00	5	1	**6**	14	11	**25**	**31**
18:15	13	0	**13**	10	8	**18**	**31**
18:30	15	0	**15**	10	6	**16**	**31**
18:45	10	0	**10**	11	13	**24**	**34**
19:00	13	0	**13**	13	5	**18**	**31**
19:15	14	0	**14**	19	12	**31**	**45**
19:30	11	0	**11**	7	13	**20**	**31**
19:45	10	1	**11**	15	11	**26**	**37**
20:00	13	0	**13**	12	14	**26**	**39**
20:15	10	1	**11**	13	5	**18**	**29**
20:30	8	2	**10**	10	13	**23**	**33**
20:45	9	0	**9**	5	10	**15**	**24**
21:00	7	0	**7**	10	11	**21**	**28**
21:15	6	2	**8**	7	11	**18**	**26**
21:30	6	1	**7**	6	13	**19**	**26**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
21:45	6	0	**6**	6	12	**18**	**24**
22:00	7	1	**8**	5	9	**14**	**22**
22:15	6	4	**10**	6	15	**21**	**31**
22:30	3	1	**4**	8	9	**17**	**21**
22:45	8	1	**9**	5	18	**23**	**32**
23:00	6	2	**8**	8	6	**14**	**22**
23:15	5	0	**5**	8	7	**15**	**20**
23:30	3	0	**3**	5	7	**12**	**15**
23:45	3	0	**3**	5	7	**12**	**15**
TOTALS:	**978**	**61**	**1039**	**992**	**926**	**1918**	**2957**
PERCENTAGES:	***36%***	***2%***	***38%***	***36%***	***34%***	***70%***	***108%***

Peak Hour: 11:15 to 12:15

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
80	**4**	**84**	**74**	**43**	**117**	**201**

Location: Love's Truck Stops - Coachella
Driveway #: 18
Latitude: 33.7173
Longitude: -116.1703
Start Date: 11/28/2017

Tuesday, November 28, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	0	8	**8**	0	0	**0**	**8**
0:15	0	11	**11**	0	0	**0**	**11**
0:30	0	8	**8**	0	0	**0**	**8**
0:45	1	9	**10**	0	1	**1**	**11**
1:00	0	13	**13**	0	0	**0**	**13**
1:15	0	8	**8**	0	0	**0**	**8**
1:30	0	7	**7**	0	0	**0**	**7**
1:45	0	3	**3**	0	0	**0**	**3**
2:00	0	6	**6**	0	1	**1**	**7**
2:15	0	11	**11**	0	0	**0**	**11**
2:30	0	5	**5**	0	0	**0**	**5**
2:45	0	9	**9**	0	0	**0**	**9**
3:00	0	17	**17**	0	1	**1**	**18**
3:15	0	15	**15**	0	1	**1**	**16**
3:30	0	10	**10**	0	1	**1**	**11**
3:45	0	6	**6**	0	2	**2**	**8**
4:00	0	10	**10**	0	0	**0**	**10**
4:15	0	14	**14**	0	0	**0**	**14**
4:30	0	10	**10**	0	3	**3**	**13**
4:45	0	10	**10**	0	1	**1**	**11**
5:00	0	10	**10**	0	0	**0**	**10**
5:15	0	8	**8**	0	1	**1**	**9**
5:30	0	8	**8**	0	1	**1**	**9**
5:45	0	6	**6**	0	1	**1**	**7**
6:00	0	10	**10**	0	0	**0**	**10**
6:15	0	10	**10**	0	0	**0**	**10**
6:30	0	6	**6**	0	0	**0**	**6**
6:45	0	8	**8**	0	0	**0**	**8**
7:00	0	18	**18**	0	0	**0**	**18**
7:15	0	9	**9**	0	1	**1**	**10**
7:30	0	5	**5**	0	1	**1**	**6**
7:45	0	9	**9**	0	0	**0**	**9**
8:00	2	9	**11**	2	0	**2**	**13**
8:15	0	8	**8**	0	0	**0**	**8**
8:30	0	9	**9**	0	1	**1**	**10**
8:45	0	14	**14**	0	1	**1**	**15**
9:00	0	15	**15**	0	0	**0**	**15**
9:15	0	14	**14**	0	0	**0**	**14**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
9:30	0	12	**12**	0	2	**2**	**14**
9:45	0	12	**12**	0	1	**1**	**13**
10:00	1	9	**10**	0	1	**1**	**11**
10:15	0	12	**12**	0	1	**1**	**13**
10:30	0	6	**6**	0	1	**1**	**7**
10:45	0	16	**16**	0	0	**0**	**16**
11:00	0	12	**12**	1	0	**1**	**13**
11:15	1	13	**14**	1	1	**2**	**16**
11:30	1	10	**11**	0	0	**0**	**11**
11:45	0	11	**11**	0	0	**0**	**11**
12:00	3	11	**14**	1	1	**2**	**16**
12:15	0	19	**19**	0	1	**1**	**20**
12:30	0	10	**10**	0	0	**0**	**10**
12:45	0	14	**14**	0	1	**1**	**15**
13:00	0	15	**15**	0	0	**0**	**15**
13:15	0	9	**9**	0	1	**1**	**10**
13:30	0	14	**14**	0	1	**1**	**15**
13:45	0	10	**10**	0	0	**0**	**10**
14:00	1	11	**12**	0	0	**0**	**12**
14:15	1	13	**14**	1	1	**2**	**16**
14:30	0	8	**8**	0	0	**0**	**8**
14:45	0	18	**18**	0	0	**0**	**18**
15:00	0	18	**18**	0	0	**0**	**18**
15:15	0	16	**16**	0	1	**1**	**17**
15:30	0	9	**9**	0	0	**0**	**9**
15:45	2	12	**14**	0	1	**1**	**15**
16:00	0	18	**18**	1	0	**1**	**19**
16:15	1	5	**6**	0	2	**2**	**8**
16:30	0	6	**6**	0	1	**1**	**7**
16:45	0	16	**16**	0	0	**0**	**16**
17:00	0	10	**10**	0	1	**1**	**11**
17:15	0	15	**15**	1	1	**2**	**17**
17:30	0	12	**12**	0	1	**1**	**13**
17:45	1	22	**23**	0	0	**0**	**23**
18:00	0	11	**11**	0	0	**0**	**11**
18:15	0	12	**12**	0	0	**0**	**12**
18:30	1	12	**13**	0	1	**1**	**14**
18:45	1	13	**14**	0	0	**0**	**14**
19:00	1	13	**14**	1	0	**1**	**15**
19:15	1	10	**11**	0	1	**1**	**12**
19:30	0	10	**10**	0	0	**0**	**10**
19:45	0	11	**11**	0	0	**0**	**11**
20:00	0	8	**8**	0	2	**2**	**10**
20:15	1	14	**15**	0	0	**0**	**15**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
20:30	0	18	**18**	0	1	**1**	**19**
20:45	0	21	**21**	0	0	**0**	**21**
21:00	1	11	**12**	0	0	**0**	**12**
21:15	2	6	**8**	0	0	**0**	**8**
21:30	0	16	**16**	0	0	**0**	**16**
21:45	0	15	**15**	1	0	**1**	**16**
22:00	0	15	**15**	0	0	**0**	**15**
22:15	0	12	**12**	0	0	**0**	**12**
22:30	0	15	**15**	0	1	**1**	**16**
22:45	0	11	**11**	0	0	**0**	**11**
23:00	0	11	**11**	0	1	**1**	**12**
23:15	0	18	**18**	0	0	**0**	**18**
23:30	0	9	**9**	0	0	**0**	**9**
23:45	0	8	**8**	0	0	**0**	**8**
TOTALS:	**23**	**1090**	**1113**	**10**	**46**	**56**	**1169**
PERCENTAGES:	***2%***	***93%***	***95%***	***1%***	***4%***	***5%***	***100%***

Peak Hour: 20:15 to 21:15

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
1	**32**	**33**	**0**	**1**	**1**	**34**

Wednesday, November 29, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	0	7	**7**	0	0	**0**	**7**
0:15	0	8	**8**	0	1	**1**	**9**
0:30	0	7	**7**	0	0	**0**	**7**
0:45	0	10	**10**	0	0	**0**	**10**
1:00	0	5	**5**	0	0	**0**	**5**
1:15	0	8	**8**	0	0	**0**	**8**
1:30	0	9	**9**	0	1	**1**	**10**
1:45	0	10	**10**	0	0	**0**	**10**
2:00	0	7	**7**	0	0	**0**	**7**
2:15	0	5	**5**	0	0	**0**	**5**
2:30	0	5	**5**	0	0	**0**	**5**
2:45	0	7	**7**	0	0	**0**	**7**
3:00	0	14	**14**	0	0	**0**	**14**
3:15	0	10	**10**	0	0	**0**	**10**
3:30	0	7	**7**	1	0	**1**	**8**
3:45	0	11	**11**	0	0	**0**	**11**
4:00	0	7	**7**	0	2	**2**	**9**
4:15	0	7	**7**	0	1	**1**	**8**
4:30	0	7	**7**	0	1	**1**	**8**
4:45	0	6	**6**	0	1	**1**	**7**
5:00	0	14	**14**	0	1	**1**	**15**
5:15	0	9	**9**	0	0	**0**	**9**
5:30	0	13	**13**	0	0	**0**	**13**
5:45	0	12	**12**	0	1	**1**	**13**
6:00	0	10	**10**	0	1	**1**	**11**
6:15	0	4	**4**	0	0	**0**	**4**
6:30	0	24	**24**	0	1	**1**	**25**
6:45	0	13	**13**	0	1	**1**	**14**
7:00	0	11	**11**	0	1	**1**	**12**
7:15	0	13	**13**	0	0	**0**	**13**
7:30	1	18	**19**	0	0	**0**	**19**
7:45	1	14	**15**	0	1	**1**	**16**
8:00	1	14	**15**	0	0	**0**	**15**
8:15	0	14	**14**	0	0	**0**	**14**
8:30	0	16	**16**	0	1	**1**	**17**
8:45	0	9	**9**	0	0	**0**	**9**
9:00	1	11	**12**	0	3	**3**	**15**
9:15	0	9	**9**	0	0	**0**	**9**
9:30	0	18	**18**	0	1	**1**	**19**
9:45	2	17	**19**	0	0	**0**	**19**
10:00	2	12	**14**	2	3	**5**	**19**
10:15	1	8	**9**	0	0	**0**	**9**
10:30	0	3	**3**	0	0	**0**	**3**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
10:45	0	12	**12**	0	1	**1**	**13**
11:00	2	20	**22**	1	0	**1**	**23**
11:15	0	16	**16**	0	2	**2**	**18**
11:30	0	15	**15**	0	0	**0**	**15**
11:45	0	11	**11**	0	2	**2**	**13**
12:00	0	11	**11**	0	3	**3**	**14**
12:15	1	15	**16**	0	1	**1**	**17**
12:30	1	11	**12**	0	2	**2**	**14**
12:45	1	13	**14**	0	0	**0**	**14**
13:00	1	19	**20**	0	1	**1**	**21**
13:15	1	13	**14**	0	0	**0**	**14**
13:30	0	8	**8**	1	1	**2**	**10**
13:45	2	11	**13**	0	1	**1**	**14**
14:00	0	20	**20**	0	1	**1**	**21**
14:15	0	17	**17**	0	0	**0**	**17**
14:30	0	17	**17**	0	0	**0**	**17**
14:45	1	16	**17**	1	1	**2**	**19**
15:00	1	8	**9**	0	1	**1**	**10**
15:15	0	14	**14**	1	0	**1**	**15**
15:30	0	15	**15**	0	2	**2**	**17**
15:45	1	12	**13**	1	2	**3**	**16**
16:00	0	12	**12**	0	0	**0**	**12**
16:15	0	15	**15**	0	1	**1**	**16**
16:30	0	14	**14**	0	2	**2**	**16**
16:45	1	18	**19**	0	0	**0**	**19**
17:00	0	13	**13**	0	1	**1**	**14**
17:15	0	9	**9**	0	2	**2**	**11**
17:30	0	13	**13**	0	0	**0**	**13**
17:45	1	9	**10**	0	2	**2**	**12**
18:00	0	15	**15**	0	0	**0**	**15**
18:15	0	10	**10**	0	2	**2**	**12**
18:30	1	13	**14**	0	0	**0**	**14**
18:45	0	5	**5**	0	0	**0**	**5**
19:00	0	12	**12**	0	0	**0**	**12**
19:15	0	5	**5**	0	0	**0**	**5**
19:30	0	10	**10**	0	0	**0**	**10**
19:45	1	11	**12**	0	0	**0**	**12**
20:00	0	18	**18**	0	1	**1**	**19**
20:15	0	14	**14**	0	1	**1**	**15**
20:30	0	17	**17**	0	0	**0**	**17**
20:45	0	11	**11**	0	0	**0**	**11**
21:00	0	14	**14**	1	1	**2**	**16**
21:15	0	8	**8**	0	2	**2**	**10**
21:30	0	13	**13**	1	0	**1**	**14**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
21:45	0	12	**12**	0	1	**1**	**13**
22:00	0	11	**11**	0	1	**1**	**12**
22:15	0	8	**8**	0	0	**0**	**8**
22:30	0	13	**13**	0	1	**1**	**14**
22:45	0	7	**7**	0	3	**3**	**10**
23:00	0	7	**7**	1	1	**2**	**9**
23:15	0	9	**9**	0	1	**1**	**10**
23:30	0	13	**13**	0	0	**0**	**13**
23:45	0	14	**14**	0	0	**0**	**14**
TOTALS:	**25**	**1110**	**1135**	**11**	**66**	**77**	**1212**
PERCENTAGES:	***2%***	***95%***	***97%***	***1%***	***6%***	***7%***	***104%***

Peak Hour: 9:00 to 10:00

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
3	**55**	**58**	**0**	**4**	**4**	**62**

Thursday, November 30, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	0	9	**9**	0	1	**1**	**10**
0:15	0	14	**14**	0	1	**1**	**15**
0:30	0	15	**15**	0	1	**1**	**16**
0:45	0	12	**12**	0	0	**0**	**12**
1:00	0	12	**12**	0	1	**1**	**13**
1:15	0	10	**10**	1	1	**2**	**12**
1:30	0	12	**12**	0	0	**0**	**12**
1:45	0	13	**13**	0	0	**0**	**13**
2:00	0	8	**8**	1	1	**2**	**10**
2:15	0	9	**9**	0	1	**1**	**10**
2:30	0	7	**7**	0	0	**0**	**7**
2:45	0	14	**14**	0	0	**0**	**14**
3:00	0	8	**8**	0	0	**0**	**8**
3:15	0	12	**12**	0	0	**0**	**12**
3:30	0	11	**11**	0	0	**0**	**11**
3:45	0	10	**10**	0	1	**1**	**11**
4:00	0	11	**11**	0	0	**0**	**11**
4:15	0	8	**8**	0	0	**0**	**8**
4:30	0	5	**5**	0	0	**0**	**5**
4:45	0	14	**14**	0	0	**0**	**14**
5:00	0	11	**11**	0	0	**0**	**11**
5:15	0	6	**6**	0	0	**0**	**6**
5:30	0	9	**9**	0	1	**1**	**10**
5:45	0	9	**9**	0	1	**1**	**10**
6:00	0	9	**9**	0	0	**0**	**9**
6:15	0	12	**12**	0	0	**0**	**12**
6:30	1	11	**12**	0	0	**0**	**12**
6:45	0	14	**14**	0	3	**3**	**17**
7:00	2	13	**15**	0	0	**0**	**15**
7:15	0	14	**14**	0	2	**2**	**16**
7:30	0	13	**13**	0	0	**0**	**13**
7:45	0	16	**16**	0	0	**0**	**16**
8:00	0	14	**14**	0	0	**0**	**14**
8:15	0	16	**16**	0	0	**0**	**16**
8:30	0	16	**16**	0	1	**1**	**17**
8:45	0	6	**6**	0	1	**1**	**7**
9:00	0	10	**10**	0	0	**0**	**10**
9:15	0	11	**11**	0	0	**0**	**11**
9:30	0	11	**11**	0	2	**2**	**13**
9:45	1	19	**20**	0	0	**0**	**20**
10:00	0	14	**14**	0	2	**2**	**16**
10:15	0	11	**11**	0	0	**0**	**11**
10:30	0	11	**11**	0	1	**1**	**12**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
10:45	0	13	**13**	0	0	**0**	**13**
11:00	0	13	**13**	0	1	**1**	**14**
11:15	0	10	**10**	0	0	**0**	**10**
11:30	0	17	**17**	0	0	**0**	**17**
11:45	0	20	**20**	0	0	**0**	**20**
12:00	0	8	**8**	0	3	**3**	**11**
12:15	0	15	**15**	0	2	**2**	**17**
12:30	0	6	**6**	0	1	**1**	**7**
12:45	0	20	**20**	1	0	**1**	**21**
13:00	0	12	**12**	0	2	**2**	**14**
13:15	2	10	**12**	0	0	**0**	**12**
13:30	0	10	**10**	2	0	**2**	**12**
13:45	0	21	**21**	0	0	**0**	**21**
14:00	0	15	**15**	0	0	**0**	**15**
14:15	1	15	**16**	1	0	**1**	**17**
14:30	1	13	**14**	1	3	**4**	**18**
14:45	0	19	**19**	1	1	**2**	**21**
15:00	0	16	**16**	1	0	**1**	**17**
15:15	0	14	**14**	1	1	**2**	**16**
15:30	1	13	**14**	0	1	**1**	**15**
15:45	0	11	**11**	1	0	**1**	**12**
16:00	1	12	**13**	0	1	**1**	**14**
16:15	1	15	**16**	2	0	**2**	**18**
16:30	0	18	**18**	0	2	**2**	**20**
16:45	0	6	**6**	0	6	**6**	**12**
17:00	0	14	**14**	0	1	**1**	**15**
17:15	1	12	**13**	0	0	**0**	**13**
17:30	0	14	**14**	0	0	**0**	**14**
17:45	0	14	**14**	1	2	**3**	**17**
18:00	1	13	**14**	0	0	**0**	**14**
18:15	0	8	**8**	0	1	**1**	**9**
18:30	0	12	**12**	0	1	**1**	**13**
18:45	0	13	**13**	0	0	**0**	**13**
19:00	0	15	**15**	0	0	**0**	**15**
19:15	0	13	**13**	0	1	**1**	**14**
19:30	0	13	**13**	0	0	**0**	**13**
19:45	2	15	**17**	0	0	**0**	**17**
20:00	0	9	**9**	0	0	**0**	**9**
20:15	0	10	**10**	0	0	**0**	**10**
20:30	0	19	**19**	0	0	**0**	**19**
20:45	0	16	**16**	0	2	**2**	**18**
21:00	0	8	**8**	0	0	**0**	**8**
21:15	0	17	**17**	0	0	**0**	**17**
21:30	0	8	**8**	0	0	**0**	**8**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
21:45	0	14	**14**	0	0	**0**	**14**
22:00	0	8	**8**	0	0	**0**	**8**
22:15	0	13	**13**	0	0	**0**	**13**
22:30	0	19	**19**	0	0	**0**	**19**
22:45	0	12	**12**	0	0	**0**	**12**
23:00	0	15	**15**	0	3	**3**	**18**
23:15	0	10	**10**	0	1	**1**	**11**
23:30	0	11	**11**	0	2	**2**	**13**
23:45	0	6	**6**	0	0	**0**	**6**
TOTALS:	**15**	**1183**	**1198**	**14**	**60**	**74**	**1272**
PERCENTAGES:	***1%***	***101%***	***102%***	***1%***	***5%***	***6%***	***109%***

Peak Hour: 14:15 to 15:15

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
2	**63**	**65**	**4**	**4**	**8**	**73**

Location: Love's Truck Stops - Barstow
Driveway #: 19
Latitude: 34.8562
Longitude: -117.0933
Start Date: 11/28/2017

Tuesday, November 28, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	0	0	**0**	0	6	**6**	**6**
0:15	0	0	**0**	0	10	**10**	**10**
0:30	0	0	**0**	0	5	**5**	**5**
0:45	0	0	**0**	0	10	**10**	**10**
1:00	0	0	**0**	0	5	**5**	**5**
1:15	0	0	**0**	0	5	**5**	**5**
1:30	0	0	**0**	0	10	**10**	**10**
1:45	0	0	**0**	0	5	**5**	**5**
2:00	0	0	**0**	0	9	**9**	**9**
2:15	0	0	**0**	0	7	**7**	**7**
2:30	0	0	**0**	0	9	**9**	**9**
2:45	0	0	**0**	0	5	**5**	**5**
3:00	0	0	**0**	0	6	**6**	**6**
3:15	0	0	**0**	0	11	**11**	**11**
3:30	0	0	**0**	0	6	**6**	**6**
3:45	0	0	**0**	0	11	**11**	**11**
4:00	0	0	**0**	0	13	**13**	**13**
4:15	0	0	**0**	0	3	**3**	**3**
4:30	0	0	**0**	0	7	**7**	**7**
4:45	0	0	**0**	0	14	**14**	**14**
5:00	0	0	**0**	0	13	**13**	**13**
5:15	0	1	**1**	1	7	**8**	**9**
5:30	0	0	**0**	0	10	**10**	**10**
5:45	0	0	**0**	0	16	**16**	**16**
6:00	1	1	**2**	1	12	**13**	**15**
6:15	0	0	**0**	0	9	**9**	**9**
6:30	0	0	**0**	0	14	**14**	**14**
6:45	0	0	**0**	0	12	**12**	**12**
7:00	0	0	**0**	0	7	**7**	**7**
7:15	0	0	**0**	0	12	**12**	**12**
7:30	0	2	**2**	0	17	**17**	**19**
7:45	0	0	**0**	0	14	**14**	**14**
8:00	0	1	**1**	0	9	**9**	**10**
8:15	0	1	**1**	0	11	**11**	**12**
8:30	0	0	**0**	0	13	**13**	**13**
8:45	0	1	**1**	0	14	**14**	**15**
9:00	0	0	**0**	0	12	**12**	**12**
9:15	0	0	**0**	0	8	**8**	**8**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
9:30	0	0	**0**	0	11	**11**	**11**
9:45	0	1	**1**	1	12	**13**	**14**
10:00	0	0	**0**	1	12	**13**	**13**
10:15	0	0	**0**	0	17	**17**	**17**
10:30	0	0	**0**	1	19	**20**	**20**
10:45	0	0	**0**	0	12	**12**	**12**
11:00	0	1	**1**	0	12	**12**	**13**
11:15	0	0	**0**	0	17	**17**	**17**
11:30	0	3	**3**	0	13	**13**	**16**
11:45	1	0	**1**	0	16	**16**	**17**
12:00	0	0	**0**	1	10	**11**	**11**
12:15	0	1	**1**	0	8	**8**	**9**
12:30	0	0	**0**	0	14	**14**	**14**
12:45	0	1	**1**	0	7	**7**	**8**
13:00	1	0	**1**	0	14	**14**	**15**
13:15	0	2	**2**	0	11	**11**	**13**
13:30	1	2	**3**	1	12	**13**	**16**
13:45	0	0	**0**	0	19	**19**	**19**
14:00	0	0	**0**	0	18	**18**	**18**
14:15	0	0	**0**	0	11	**11**	**11**
14:30	0	3	**3**	2	11	**13**	**16**
14:45	2	0	**2**	2	22	**24**	**26**
15:00	0	0	**0**	1	6	**7**	**7**
15:15	0	0	**0**	0	7	**7**	**7**
15:30	0	0	**0**	1	21	**22**	**22**
15:45	0	1	**1**	0	9	**9**	**10**
16:00	0	1	**1**	1	12	**13**	**14**
16:15	0	1	**1**	1	9	**10**	**11**
16:30	1	1	**2**	0	6	**6**	**8**
16:45	0	1	**1**	1	10	**11**	**12**
17:00	0	0	**0**	2	12	**14**	**14**
17:15	0	1	**1**	0	17	**17**	**18**
17:30	0	0	**0**	0	14	**14**	**14**
17:45	0	0	**0**	1	11	**12**	**12**
18:00	0	0	**0**	2	18	**20**	**20**
18:15	1	0	**1**	0	8	**8**	**9**
18:30	0	0	**0**	1	10	**11**	**11**
18:45	0	0	**0**	0	9	**9**	**9**
19:00	0	0	**0**	0	15	**15**	**15**
19:15	0	0	**0**	0	13	**13**	**13**
19:30	0	1	**1**	0	12	**12**	**13**
19:45	0	0	**0**	0	9	**9**	**9**
20:00	0	0	**0**	0	10	**10**	**10**
20:15	0	2	**2**	0	12	**12**	**14**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
20:30	0	0	**0**	0	15	**15**	**15**
20:45	0	0	**0**	0	13	**13**	**13**
21:00	0	0	**0**	0	7	**7**	**7**
21:15	0	0	**0**	0	10	**10**	**10**
21:30	0	0	**0**	0	10	**10**	**10**
21:45	0	0	**0**	0	13	**13**	**13**
22:00	0	0	**0**	0	16	**16**	**16**
22:15	0	0	**0**	0	6	**6**	**6**
22:30	0	0	**0**	0	12	**12**	**12**
22:45	0	0	**0**	0	4	**4**	**4**
23:00	0	0	**0**	0	13	**13**	**13**
23:15	0	0	**0**	0	5	**5**	**5**
23:30	0	0	**0**	0	12	**12**	**12**
23:45	0	0	**0**	0	11	**11**	**11**
TOTALS:	**8**	**30**	**38**	**22**	**1062**	**1084**	**1122**
PERCENTAGES:	***1%***	***3%***	***3%***	***2%***	***95%***	***97%***	***100%***

Peak Hour: 14:00 to 15:00

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
2	**3**	**5**	**4**	**62**	**66**	**71**

Wednesday, November 29, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	0	0	**0**	0	11	**11**	**11**
0:15	0	0	**0**	0	4	**4**	**4**
0:30	0	0	**0**	0	6	**6**	**6**
0:45	0	0	**0**	0	12	**12**	**12**
1:00	0	0	**0**	0	7	**7**	**7**
1:15	0	0	**0**	0	8	**8**	**8**
1:30	0	0	**0**	0	6	**6**	**6**
1:45	0	1	**1**	0	11	**11**	**12**
2:00	0	0	**0**	0	14	**14**	**14**
2:15	0	0	**0**	0	9	**9**	**9**
2:30	0	0	**0**	0	8	**8**	**8**
2:45	0	0	**0**	0	8	**8**	**8**
3:00	0	0	**0**	0	14	**14**	**14**
3:15	0	0	**0**	0	9	**9**	**9**
3:30	0	0	**0**	0	7	**7**	**7**
3:45	0	0	**0**	0	12	**12**	**12**
4:00	0	0	**0**	0	8	**8**	**8**
4:15	0	0	**0**	0	9	**9**	**9**
4:30	0	0	**0**	0	11	**11**	**11**
4:45	0	0	**0**	0	8	**8**	**8**
5:00	0	0	**0**	0	8	**8**	**8**
5:15	0	0	**0**	0	10	**10**	**10**
5:30	0	0	**0**	0	9	**9**	**9**
5:45	0	0	**0**	0	11	**11**	**11**
6:00	0	0	**0**	0	10	**10**	**10**
6:15	0	0	**0**	0	10	**10**	**10**
6:30	0	0	**0**	0	12	**12**	**12**
6:45	0	0	**0**	1	11	**12**	**12**
7:00	0	0	**0**	1	5	**6**	**6**
7:15	0	0	**0**	0	7	**7**	**7**
7:30	0	0	**0**	0	6	**6**	**6**
7:45	0	0	**0**	0	10	**10**	**10**
8:00	0	0	**0**	0	14	**14**	**14**
8:15	0	0	**0**	0	13	**13**	**13**
8:30	1	0	**1**	1	10	**11**	**12**
8:45	0	0	**0**	0	13	**13**	**13**
9:00	1	0	**1**	0	10	**10**	**11**
9:15	0	1	**1**	1	13	**14**	**15**
9:30	0	1	**1**	1	15	**16**	**17**
9:45	1	0	**1**	0	16	**16**	**17**
10:00	0	0	**0**	2	10	**12**	**12**
10:15	0	2	**2**	0	9	**9**	**11**
10:30	0	0	**0**	1	9	**10**	**10**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
10:45	0	1	**1**	0	10	**10**	**11**
11:00	0	0	**0**	0	15	**15**	**15**
11:15	0	0	**0**	1	19	**20**	**20**
11:30	0	0	**0**	0	7	**7**	**7**
11:45	0	2	**2**	0	10	**10**	**12**
12:00	0	0	**0**	0	15	**15**	**15**
12:15	0	1	**1**	0	9	**9**	**10**
12:30	0	1	**1**	0	15	**15**	**16**
12:45	0	0	**0**	0	12	**12**	**12**
13:00	0	0	**0**	1	14	**15**	**15**
13:15	1	1	**2**	2	18	**20**	**22**
13:30	0	1	**1**	0	18	**18**	**19**
13:45	1	1	**2**	3	17	**20**	**22**
14:00	0	1	**1**	0	16	**16**	**17**
14:15	0	1	**1**	0	12	**12**	**13**
14:30	0	1	**1**	1	11	**12**	**13**
14:45	0	1	**1**	0	15	**15**	**16**
15:00	0	0	**0**	0	13	**13**	**13**
15:15	0	1	**1**	0	8	**8**	**9**
15:30	0	1	**1**	1	10	**11**	**12**
15:45	0	2	**2**	0	19	**19**	**21**
16:00	1	1	**2**	1	15	**16**	**18**
16:15	0	0	**0**	0	16	**16**	**16**
16:30	0	1	**1**	2	13	**15**	**16**
16:45	1	1	**2**	2	15	**17**	**19**
17:00	0	0	**0**	0	12	**12**	**12**
17:15	1	0	**1**	1	11	**12**	**13**
17:30	0	2	**2**	0	13	**13**	**15**
17:45	0	0	**0**	0	9	**9**	**9**
18:00	0	0	**0**	0	9	**9**	**9**
18:15	0	0	**0**	0	13	**13**	**13**
18:30	0	0	**0**	1	14	**15**	**15**
18:45	0	0	**0**	0	15	**15**	**15**
19:00	0	0	**0**	0	11	**11**	**11**
19:15	0	0	**0**	0	9	**9**	**9**
19:30	0	0	**0**	0	8	**8**	**8**
19:45	0	0	**0**	0	8	**8**	**8**
20:00	0	1	**1**	1	10	**11**	**12**
20:15	0	0	**0**	1	13	**14**	**14**
20:30	0	0	**0**	1	12	**13**	**13**
20:45	0	0	**0**	0	2	**2**	**2**
21:00	1	0	**1**	0	10	**10**	**11**
21:15	0	0	**0**	0	6	**6**	**6**
21:30	0	0	**0**	1	12	**13**	**13**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
21:45	0	0	**0**	0	7	**7**	**7**
22:00	0	0	**0**	0	10	**10**	**10**
22:15	0	0	**0**	1	15	**16**	**16**
22:30	0	0	**0**	0	8	**8**	**8**
22:45	0	0	**0**	0	5	**5**	**5**
23:00	0	0	**0**	1	8	**9**	**9**
23:15	0	0	**0**	0	10	**10**	**10**
23:30	0	0	**0**	0	9	**9**	**9**
23:45	0	0	**0**	0	6	**6**	**6**
TOTALS:	**9**	**27**	**36**	**30**	**1040**	**1070**	**1106**
PERCENTAGES:	***1%***	***2%***	***3%***	***3%***	***93%***	***95%***	***99%***

Peak Hour: 13:15 to 14:15

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
2	**4**	**6**	**5**	**69**	**74**	**80**

Thursday, November 30, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	0	0	**0**	0	11	**11**	**11**
0:15	0	0	**0**	0	9	**9**	**9**
0:30	0	0	**0**	0	12	**12**	**12**
0:45	0	0	**0**	0	9	**9**	**9**
1:00	0	1	**1**	0	4	**4**	**5**
1:15	0	0	**0**	0	7	**7**	**7**
1:30	0	0	**0**	0	5	**5**	**5**
1:45	0	0	**0**	0	10	**10**	**10**
2:00	0	0	**0**	0	10	**10**	**10**
2:15	0	0	**0**	0	3	**3**	**3**
2:30	0	0	**0**	0	6	**6**	**6**
2:45	0	0	**0**	0	2	**2**	**2**
3:00	0	0	**0**	0	5	**5**	**5**
3:15	0	1	**1**	0	6	**6**	**7**
3:30	0	0	**0**	0	7	**7**	**7**
3:45	0	0	**0**	0	8	**8**	**8**
4:00	0	1	**1**	0	17	**17**	**18**
4:15	0	0	**0**	0	10	**10**	**10**
4:30	0	0	**0**	0	5	**5**	**5**
4:45	0	0	**0**	0	8	**8**	**8**
5:00	0	0	**0**	0	20	**20**	**20**
5:15	0	0	**0**	0	12	**12**	**12**
5:30	0	0	**0**	0	6	**6**	**6**
5:45	0	0	**0**	0	9	**9**	**9**
6:00	0	0	**0**	2	6	**8**	**8**
6:15	0	0	**0**	0	9	**9**	**9**
6:30	1	0	**1**	0	11	**11**	**12**
6:45	0	0	**0**	0	8	**8**	**8**
7:00	0	0	**0**	0	11	**11**	**11**
7:15	0	0	**0**	1	10	**11**	**11**
7:30	0	0	**0**	0	18	**18**	**18**
7:45	0	0	**0**	0	8	**8**	**8**
8:00	0	1	**1**	1	15	**16**	**17**
8:15	0	0	**0**	0	15	**15**	**15**
8:30	0	0	**0**	0	14	**14**	**14**
8:45	0	0	**0**	0	15	**15**	**15**
9:00	0	0	**0**	0	17	**17**	**17**
9:15	0	0	**0**	0	17	**17**	**17**
9:30	0	0	**0**	1	17	**18**	**18**
9:45	0	1	**1**	0	15	**15**	**16**
10:00	0	0	**0**	1	6	**7**	**7**
10:15	0	0	**0**	1	13	**14**	**14**
10:30	0	0	**0**	0	10	**10**	**10**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
10:45	0	1	**1**	0	11	**11**	**12**
11:00	0	0	**0**	0	9	**9**	**9**
11:15	0	1	**1**	1	13	**14**	**15**
11:30	0	1	**1**	0	11	**11**	**12**
11:45	0	0	**0**	0	6	**6**	**6**
12:00	0	0	**0**	2	14	**16**	**16**
12:15	0	0	**0**	1	9	**10**	**10**
12:30	0	0	**0**	0	12	**12**	**12**
12:45	0	0	**0**	1	13	**14**	**14**
13:00	1	0	**1**	1	10	**11**	**12**
13:15	0	1	**1**	0	13	**13**	**14**
13:30	0	0	**0**	0	16	**16**	**16**
13:45	0	0	**0**	0	12	**12**	**12**
14:00	0	1	**1**	0	10	**10**	**11**
14:15	0	1	**1**	1	16	**17**	**18**
14:30	1	1	**2**	0	13	**13**	**15**
14:45	0	0	**0**	1	18	**19**	**19**
15:00	0	1	**1**	0	10	**10**	**11**
15:15	0	0	**0**	1	12	**13**	**13**
15:30	0	1	**1**	0	10	**10**	**11**
15:45	0	0	**0**	1	13	**14**	**14**
16:00	0	1	**1**	0	14	**14**	**15**
16:15	0	1	**1**	0	18	**18**	**19**
16:30	0	0	**0**	0	15	**15**	**15**
16:45	0	0	**0**	0	14	**14**	**14**
17:00	1	0	**1**	1	9	**10**	**11**
17:15	0	1	**1**	0	8	**8**	**9**
17:30	0	0	**0**	0	6	**6**	**6**
17:45	0	2	**2**	0	16	**16**	**18**
18:00	0	0	**0**	0	5	**5**	**5**
18:15	0	0	**0**	0	11	**11**	**11**
18:30	0	0	**0**	0	13	**13**	**13**
18:45	0	1	**1**	0	6	**6**	**7**
19:00	0	0	**0**	0	9	**9**	**9**
19:15	0	0	**0**	1	7	**8**	**8**
19:30	0	0	**0**	1	7	**8**	**8**
19:45	0	0	**0**	0	14	**14**	**14**
20:00	0	0	**0**	1	12	**13**	**13**
20:15	1	3	**4**	0	9	**9**	**13**
20:30	0	0	**0**	0	9	**9**	**9**
20:45	0	1	**1**	0	11	**11**	**12**
21:00	0	1	**1**	0	9	**9**	**10**
21:15	0	0	**0**	0	8	**8**	**8**
21:30	0	0	**0**	0	11	**11**	**11**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
21:45	0	0	**0**	0	7	**7**	**7**
22:00	0	0	**0**	0	9	**9**	**9**
22:15	0	0	**0**	0	12	**12**	**12**
22:30	0	0	**0**	0	12	**12**	**12**
22:45	0	0	**0**	0	11	**11**	**11**
23:00	0	0	**0**	0	8	**8**	**8**
23:15	0	0	**0**	0	9	**9**	**9**
23:30	0	0	**0**	1	5	**6**	**6**
23:45	0	0	**0**	1	6	**7**	**7**
TOTALS:	**5**	**25**	**30**	**23**	**1007**	**1030**	**1060**
PERCENTAGES:	***0%***	***2%***	***3%***	***2%***	***90%***	***92%***	***94%***

Peak Hour: 9:00 to 10:00

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0	**1**	**1**	**1**	**66**	**67**	**68**

Location: Love's Truck Stops - Barstow
Driveway #: 20
Latitude: 34.8562
Longitude: -117.0923
Start Date: 11/28/2017

Tuesday, November 28, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	0	4	**4**	0	0	**0**	**4**
0:15	0	10	**10**	0	1	**1**	**11**
0:30	0	5	**5**	0	1	**1**	**6**
0:45	0	6	**6**	0	1	**1**	**7**
1:00	0	10	**10**	0	1	**1**	**11**
1:15	1	7	**8**	0	0	**0**	**8**
1:30	0	7	**7**	0	0	**0**	**7**
1:45	0	7	**7**	0	0	**0**	**7**
2:00	0	5	**5**	0	0	**0**	**5**
2:15	0	3	**3**	0	0	**0**	**3**
2:30	0	7	**7**	0	0	**0**	**7**
2:45	0	3	**3**	0	0	**0**	**3**
3:00	0	11	**11**	0	0	**0**	**11**
3:15	0	4	**4**	0	1	**1**	**5**
3:30	0	11	**11**	0	0	**0**	**11**
3:45	0	5	**5**	0	0	**0**	**5**
4:00	0	5	**5**	0	0	**0**	**5**
4:15	0	14	**14**	0	0	**0**	**14**
4:30	0	12	**12**	0	0	**0**	**12**
4:45	0	7	**7**	0	0	**0**	**7**
5:00	0	4	**4**	0	0	**0**	**4**
5:15	0	12	**12**	0	0	**0**	**12**
5:30	0	12	**12**	1	0	**1**	**13**
5:45	0	8	**8**	0	0	**0**	**8**
6:00	1	9	**10**	1	0	**1**	**11**
6:15	0	8	**8**	0	0	**0**	**8**
6:30	0	13	**13**	0	0	**0**	**13**
6:45	0	14	**14**	0	0	**0**	**14**
7:00	0	7	**7**	0	1	**1**	**8**
7:15	0	9	**9**	0	0	**0**	**9**
7:30	0	11	**11**	0	0	**0**	**11**
7:45	0	11	**11**	1	0	**1**	**12**
8:00	0	12	**12**	0	0	**0**	**12**
8:15	0	16	**16**	1	0	**1**	**17**
8:30	0	5	**5**	0	0	**0**	**5**
8:45	0	4	**4**	0	0	**0**	**4**
9:00	0	14	**14**	0	1	**1**	**15**
9:15	0	14	**14**	0	2	**2**	**16**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
9:30	0	12	**12**	0	0	**0**	**12**
9:45	1	12	**13**	2	1	**3**	**16**
10:00	2	15	**17**	1	1	**2**	**19**
10:15	0	16	**16**	0	0	**0**	**16**
10:30	2	9	**11**	0	1	**1**	**12**
10:45	0	11	**11**	0	0	**0**	**11**
11:00	1	14	**15**	0	1	**1**	**16**
11:15	0	14	**14**	0	1	**1**	**15**
11:30	0	12	**12**	0	1	**1**	**13**
11:45	0	10	**10**	0	1	**1**	**11**
12:00	0	15	**15**	0	0	**0**	**15**
12:15	0	8	**8**	0	0	**0**	**8**
12:30	0	5	**5**	0	0	**0**	**5**
12:45	0	14	**14**	0	0	**0**	**14**
13:00	0	26	**26**	0	1	**1**	**27**
13:15	0	15	**15**	0	2	**2**	**17**
13:30	0	18	**18**	0	0	**0**	**18**
13:45	0	9	**9**	0	0	**0**	**9**
14:00	0	12	**12**	0	0	**0**	**12**
14:15	0	12	**12**	0	0	**0**	**12**
14:30	1	19	**20**	0	1	**1**	**21**
14:45	1	9	**10**	0	0	**0**	**10**
15:00	0	9	**9**	0	0	**0**	**9**
15:15	0	16	**16**	0	0	**0**	**16**
15:30	1	18	**19**	0	1	**1**	**20**
15:45	0	11	**11**	0	0	**0**	**11**
16:00	1	10	**11**	0	0	**0**	**11**
16:15	0	9	**9**	0	0	**0**	**9**
16:30	0	18	**18**	0	0	**0**	**18**
16:45	0	16	**16**	0	0	**0**	**16**
17:00	0	14	**14**	1	1	**2**	**16**
17:15	0	18	**18**	0	0	**0**	**18**
17:30	1	13	**14**	0	0	**0**	**14**
17:45	0	12	**12**	0	0	**0**	**12**
18:00	2	17	**19**	0	0	**0**	**19**
18:15	0	10	**10**	0	1	**1**	**11**
18:30	0	18	**18**	0	2	**2**	**20**
18:45	0	11	**11**	0	0	**0**	**11**
19:00	0	14	**14**	0	0	**0**	**14**
19:15	0	10	**10**	0	0	**0**	**10**
19:30	0	14	**14**	0	1	**1**	**15**
19:45	0	11	**11**	0	0	**0**	**11**
20:00	0	15	**15**	0	0	**0**	**15**
20:15	0	12	**12**	0	1	**1**	**13**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
20:30	0	10	**10**	0	0	**0**	**10**
20:45	0	10	**10**	0	0	**0**	**10**
21:00	0	9	**9**	0	1	**1**	**10**
21:15	0	12	**12**	0	1	**1**	**13**
21:30	0	16	**16**	0	0	**0**	**16**
21:45	0	4	**4**	0	0	**0**	**4**
22:00	0	10	**10**	0	0	**0**	**10**
22:15	0	11	**11**	0	0	**0**	**11**
22:30	0	7	**7**	0	0	**0**	**7**
22:45	0	12	**12**	0	0	**0**	**12**
23:00	0	11	**11**	0	1	**1**	**12**
23:15	0	5	**5**	0	0	**0**	**5**
23:30	0	11	**11**	0	1	**1**	**12**
23:45	0	9	**9**	0	0	**0**	**9**
TOTALS:	**15**	**1046**	**1061**	**8**	**31**	**39**	**1100**
PERCENTAGES:	***1%***	***95%***	***96%***	***1%***	***3%***	***4%***	***100%***

Peak Hour: 12:45 to 13:45

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0	**73**	**73**	**0**	**3**	**3**	**76**

Wednesday, November 29, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	0	9	**9**	0	0	**0**	**9**
0:15	0	5	**5**	0	1	**1**	**6**
0:30	0	10	**10**	0	0	**0**	**10**
0:45	0	6	**6**	0	1	**1**	**7**
1:00	0	7	**7**	0	0	**0**	**7**
1:15	0	6	**6**	0	0	**0**	**6**
1:30	0	15	**15**	0	1	**1**	**16**
1:45	0	9	**9**	0	1	**1**	**10**
2:00	0	9	**9**	0	0	**0**	**9**
2:15	0	3	**3**	0	0	**0**	**3**
2:30	0	8	**8**	0	0	**0**	**8**
2:45	0	7	**7**	0	0	**0**	**7**
3:00	0	11	**11**	0	0	**0**	**11**
3:15	0	8	**8**	0	0	**0**	**8**
3:30	0	6	**6**	0	0	**0**	**6**
3:45	1	7	**8**	1	0	**1**	**9**
4:00	0	12	**12**	0	0	**0**	**12**
4:15	0	7	**7**	0	0	**0**	**7**
4:30	0	6	**6**	0	0	**0**	**6**
4:45	0	7	**7**	0	0	**0**	**7**
5:00	0	2	**2**	0	1	**1**	**3**
5:15	0	5	**5**	0	0	**0**	**5**
5:30	0	9	**9**	0	1	**1**	**10**
5:45	0	9	**9**	0	0	**0**	**9**
6:00	0	6	**6**	0	0	**0**	**6**
6:15	0	8	**8**	0	0	**0**	**8**
6:30	2	10	**12**	0	0	**0**	**12**
6:45	1	7	**8**	2	0	**2**	**10**
7:00	0	5	**5**	0	0	**0**	**5**
7:15	1	10	**11**	0	0	**0**	**11**
7:30	0	16	**16**	0	0	**0**	**16**
7:45	0	9	**9**	0	0	**0**	**9**
8:00	0	11	**11**	0	0	**0**	**11**
8:15	1	10	**11**	0	0	**0**	**11**
8:30	0	11	**11**	1	2	**3**	**14**
8:45	0	14	**14**	1	0	**1**	**15**
9:00	1	18	**19**	0	0	**0**	**19**
9:15	0	10	**10**	0	1	**1**	**11**
9:30	1	11	**12**	0	0	**0**	**12**
9:45	1	7	**8**	0	0	**0**	**8**
10:00	0	8	**8**	1	0	**1**	**9**
10:15	0	12	**12**	0	0	**0**	**12**
10:30	1	15	**16**	0	0	**0**	**16**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
10:45	0	20	**20**	0	0	**0**	**20**
11:00	2	6	**8**	0	1	**1**	**9**
11:15	0	6	**6**	0	0	**0**	**6**
11:30	0	20	**20**	0	0	**0**	**20**
11:45	0	11	**11**	0	1	**1**	**12**
12:00	2	16	**18**	1	0	**1**	**19**
12:15	0	15	**15**	0	0	**0**	**15**
12:30	1	16	**17**	0	0	**0**	**17**
12:45	0	14	**14**	0	0	**0**	**14**
13:00	0	13	**13**	0	2	**2**	**15**
13:15	2	17	**19**	0	0	**0**	**19**
13:30	1	14	**15**	0	0	**0**	**15**
13:45	0	17	**17**	0	0	**0**	**17**
14:00	0	17	**17**	0	0	**0**	**17**
14:15	0	15	**15**	0	0	**0**	**15**
14:30	1	10	**11**	0	0	**0**	**11**
14:45	0	13	**13**	0	2	**2**	**15**
15:00	0	14	**14**	0	0	**0**	**14**
15:15	1	9	**10**	0	0	**0**	**10**
15:30	0	17	**17**	0	0	**0**	**17**
15:45	0	19	**19**	0	0	**0**	**19**
16:00	0	18	**18**	0	0	**0**	**18**
16:15	1	12	**13**	0	0	**0**	**13**
16:30	0	18	**18**	0	0	**0**	**18**
16:45	0	12	**12**	0	0	**0**	**12**
17:00	0	13	**13**	0	0	**0**	**13**
17:15	0	12	**12**	0	0	**0**	**12**
17:30	0	8	**8**	0	0	**0**	**8**
17:45	0	10	**10**	1	0	**1**	**11**
18:00	0	18	**18**	0	0	**0**	**18**
18:15	0	15	**15**	0	0	**0**	**15**
18:30	1	17	**18**	0	0	**0**	**18**
18:45	0	17	**17**	0	1	**1**	**18**
19:00	0	10	**10**	0	1	**1**	**11**
19:15	1	8	**9**	0	0	**0**	**9**
19:30	0	10	**10**	0	0	**0**	**10**
19:45	1	9	**10**	0	0	**0**	**10**
20:00	0	8	**8**	0	0	**0**	**8**
20:15	1	13	**14**	1	0	**1**	**15**
20:30	0	8	**8**	0	1	**1**	**9**
20:45	0	8	**8**	0	0	**0**	**8**
21:00	0	8	**8**	0	3	**3**	**11**
21:15	0	9	**9**	0	0	**0**	**9**
21:30	0	10	**10**	0	0	**0**	**10**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
21:45	0	11	**11**	0	0	**0**	**11**
22:00	0	11	**11**	0	2	**2**	**13**
22:15	1	9	**10**	0	0	**0**	**10**
22:30	0	6	**6**	0	0	**0**	**6**
22:45	0	7	**7**	0	0	**0**	**7**
23:00	1	9	**10**	0	0	**0**	**10**
23:15	0	10	**10**	0	0	**0**	**10**
23:30	0	10	**10**	0	0	**0**	**10**
23:45	0	10	**10**	0	0	**0**	**10**
TOTALS:	**27**	**1034**	**1061**	**9**	**23**	**32**	**1093**
PERCENTAGES:	***2%***	***94%***	***96%***	***1%***	***2%***	***3%***	***99%***

Peak Hour: 18:00 to 19:00

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
1	**67**	**68**	**0**	**1**	**1**	**69**

Thursday, November 30, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	0	5	**5**	0	0	**0**	**5**
0:15	0	6	**6**	0	0	**0**	**6**
0:30	0	5	**5**	1	0	**1**	**6**
0:45	0	12	**12**	0	0	**0**	**12**
1:00	0	6	**6**	0	0	**0**	**6**
1:15	0	8	**8**	0	0	**0**	**8**
1:30	0	8	**8**	0	1	**1**	**9**
1:45	0	8	**8**	0	0	**0**	**8**
2:00	0	5	**5**	0	2	**2**	**7**
2:15	0	9	**9**	0	1	**1**	**10**
2:30	0	4	**4**	0	2	**2**	**6**
2:45	0	8	**8**	0	2	**2**	**10**
3:00	0	5	**5**	0	0	**0**	**5**
3:15	0	9	**9**	0	2	**2**	**11**
3:30	0	7	**7**	0	3	**3**	**10**
3:45	0	8	**8**	0	1	**1**	**9**
4:00	0	6	**6**	0	0	**0**	**6**
4:15	0	7	**7**	0	0	**0**	**7**
4:30	0	10	**10**	0	0	**0**	**10**
4:45	0	16	**16**	0	0	**0**	**16**
5:00	0	10	**10**	0	2	**2**	**12**
5:15	0	4	**4**	0	0	**0**	**4**
5:30	0	9	**9**	0	1	**1**	**10**
5:45	0	5	**5**	0	3	**3**	**8**
6:00	1	10	**11**	0	0	**0**	**11**
6:15	0	12	**12**	0	1	**1**	**13**
6:30	1	10	**11**	0	0	**0**	**11**
6:45	0	7	**7**	0	0	**0**	**7**
7:00	1	14	**15**	0	0	**0**	**15**
7:15	1	17	**18**	0	1	**1**	**19**
7:30	0	11	**11**	0	1	**1**	**12**
7:45	0	12	**12**	0	0	**0**	**12**
8:00	0	16	**16**	0	2	**2**	**18**
8:15	0	17	**17**	0	0	**0**	**17**
8:30	0	16	**16**	0	2	**2**	**18**
8:45	2	19	**21**	0	0	**0**	**21**
9:00	0	17	**17**	0	1	**1**	**18**
9:15	1	7	**8**	0	0	**0**	**8**
9:30	1	10	**11**	0	1	**1**	**12**
9:45	2	10	**12**	0	0	**0**	**12**
10:00	0	13	**13**	0	1	**1**	**14**
10:15	0	7	**7**	0	0	**0**	**7**
10:30	0	8	**8**	0	0	**0**	**8**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
10:45	1	13	**14**	0	0	**0**	**14**
11:00	1	13	**14**	0	0	**0**	**14**
11:15	0	10	**10**	0	0	**0**	**10**
11:30	0	11	**11**	0	1	**1**	**12**
11:45	1	8	**9**	0	0	**0**	**9**
12:00	1	7	**8**	0	0	**0**	**8**
12:15	1	14	**15**	0	0	**0**	**15**
12:30	1	10	**11**	0	0	**0**	**11**
12:45	0	14	**14**	0	1	**1**	**15**
13:00	1	19	**20**	2	1	**3**	**23**
13:15	0	17	**17**	0	0	**0**	**17**
13:30	0	19	**19**	0	1	**1**	**20**
13:45	0	9	**9**	0	0	**0**	**9**
14:00	0	17	**17**	0	0	**0**	**17**
14:15	1	10	**11**	0	0	**0**	**11**
14:30	1	16	**17**	0	0	**0**	**17**
14:45	1	18	**19**	1	0	**1**	**20**
15:00	2	14	**16**	2	0	**2**	**18**
15:15	1	14	**15**	0	0	**0**	**15**
15:30	0	10	**10**	0	0	**0**	**10**
15:45	0	15	**15**	0	0	**0**	**15**
16:00	0	16	**16**	0	1	**1**	**17**
16:15	1	17	**18**	1	0	**1**	**19**
16:30	1	10	**11**	0	1	**1**	**12**
16:45	0	13	**13**	0	2	**2**	**15**
17:00	0	9	**9**	0	1	**1**	**10**
17:15	0	17	**17**	1	1	**2**	**19**
17:30	1	11	**12**	1	0	**1**	**13**
17:45	0	10	**10**	0	1	**1**	**11**
18:00	0	18	**18**	0	0	**0**	**18**
18:15	0	13	**13**	0	0	**0**	**13**
18:30	0	1	**1**	0	7	**7**	**8**
18:45	0	0	**0**	0	9	**9**	**9**
19:00	0	1	**1**	0	13	**13**	**14**
19:15	0	0	**0**	1	9	**10**	**10**
19:30	0	0	**0**	1	14	**15**	**15**
19:45	0	0	**0**	0	10	**10**	**10**
20:00	0	8	**8**	0	0	**0**	**8**
20:15	0	5	**5**	0	0	**0**	**5**
20:30	0	11	**11**	0	1	**1**	**12**
20:45	1	16	**17**	0	0	**0**	**17**
21:00	1	11	**12**	0	1	**1**	**13**
21:15	0	8	**8**	1	0	**1**	**9**
21:30	0	6	**6**	0	3	**3**	**9**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
21:45	0	12	**12**	0	0	**0**	**12**
22:00	0	7	**7**	0	0	**0**	**7**
22:15	0	17	**17**	0	1	**1**	**18**
22:30	0	9	**9**	0	0	**0**	**9**
22:45	0	7	**7**	0	0	**0**	**7**
23:00	0	1	**1**	0	8	**8**	**9**
23:15	0	0	**0**	0	7	**7**	**7**
23:30	0	0	**0**	0	6	**6**	**6**
23:45	1	4	**5**	0	0	**0**	**5**
TOTALS:	**29**	**949**	**978**	**12**	**130**	**142**	**1120**
PERCENTAGES:	***3%***	***86%***	***89%***	***1%***	***12%***	***13%***	***102%***

Peak Hour: 12:45 to 13:45

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
1	**69**	**70**	**2**	**3**	**5**	**75**

Location: Love's Truck Stops - Barstow
Driveway #: 21
Latitude: 34.8562
Longitude: -117.0917
Start Date: 11/28/2017

Tuesday, November 28, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	0	0	**0**	0	0	**0**	**0**
0:15	0	0	**0**	0	0	**0**	**0**
0:30	0	0	**0**	0	0	**0**	**0**
0:45	1	0	**1**	0	1	**1**	**2**
1:00	0	0	**0**	0	0	**0**	**0**
1:15	0	0	**0**	0	0	**0**	**0**
1:30	0	0	**0**	1	0	**1**	**1**
1:45	2	0	**2**	2	0	**2**	**4**
2:00	0	0	**0**	0	0	**0**	**0**
2:15	0	0	**0**	2	0	**2**	**2**
2:30	0	0	**0**	0	0	**0**	**0**
2:45	0	0	**0**	1	0	**1**	**1**
3:00	0	0	**0**	0	0	**0**	**0**
3:15	1	0	**1**	0	0	**0**	**1**
3:30	0	0	**0**	3	0	**3**	**3**
3:45	0	0	**0**	0	2	**2**	**2**
4:00	0	0	**0**	1	1	**2**	**2**
4:15	0	0	**0**	0	0	**0**	**0**
4:30	0	0	**0**	0	0	**0**	**0**
4:45	1	0	**1**	2	0	**2**	**3**
5:00	0	0	**0**	0	1	**1**	**1**
5:15	0	0	**0**	0	0	**0**	**0**
5:30	0	0	**0**	0	0	**0**	**0**
5:45	2	0	**2**	2	0	**2**	**4**
6:00	2	0	**2**	3	0	**3**	**5**
6:15	1	0	**1**	3	0	**3**	**4**
6:30	0	0	**0**	1	0	**1**	**1**
6:45	3	0	**3**	4	0	**4**	**7**
7:00	0	0	**0**	2	0	**2**	**2**
7:15	0	1	**1**	2	0	**2**	**3**
7:30	0	0	**0**	1	0	**1**	**1**
7:45	2	0	**2**	2	0	**2**	**4**
8:00	0	1	**1**	5	0	**5**	**6**
8:15	2	0	**2**	4	0	**4**	**6**
8:30	0	1	**1**	2	1	**3**	**4**
8:45	0	2	**2**	2	0	**2**	**4**
9:00	1	0	**1**	0	0	**0**	**1**
9:15	1	0	**1**	0	0	**0**	**1**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
9:30	1	0	**1**	1	0	**1**	**2**
9:45	1	0	**1**	3	1	**4**	**5**
10:00	0	0	**0**	1	0	**1**	**1**
10:15	1	1	**2**	4	0	**4**	**6**
10:30	0	0	**0**	0	1	**1**	**1**
10:45	1	1	**2**	2	1	**3**	**5**
11:00	2	1	**3**	0	0	**0**	**3**
11:15	0	0	**0**	3	1	**4**	**4**
11:30	2	0	**2**	4	0	**4**	**6**
11:45	1	0	**1**	2	0	**2**	**3**
12:00	1	1	**2**	4	0	**4**	**6**
12:15	2	0	**2**	1	1	**2**	**4**
12:30	3	0	**3**	4	0	**4**	**7**
12:45	1	0	**1**	4	0	**4**	**5**
13:00	2	0	**2**	4	0	**4**	**6**
13:15	1	0	**1**	9	0	**9**	**10**
13:30	0	0	**0**	1	0	**1**	**1**
13:45	2	0	**2**	1	0	**1**	**3**
14:00	1	0	**1**	4	0	**4**	**5**
14:15	0	0	**0**	1	0	**1**	**1**
14:30	3	0	**3**	2	1	**3**	**6**
14:45	1	0	**1**	4	0	**4**	**5**
15:00	3	0	**3**	3	0	**3**	**6**
15:15	1	0	**1**	6	0	**6**	**7**
15:30	0	1	**1**	2	0	**2**	**3**
15:45	0	0	**0**	5	0	**5**	**5**
16:00	3	0	**3**	4	0	**4**	**7**
16:15	1	0	**1**	4	1	**5**	**6**
16:30	0	0	**0**	3	0	**3**	**3**
16:45	4	1	**5**	1	0	**1**	**6**
17:00	2	0	**2**	3	1	**4**	**6**
17:15	2	0	**2**	2	0	**2**	**4**
17:30	1	0	**1**	3	0	**3**	**4**
17:45	3	0	**3**	1	0	**1**	**4**
18:00	1	0	**1**	3	0	**3**	**4**
18:15	1	0	**1**	2	0	**2**	**3**
18:30	1	0	**1**	0	0	**0**	**1**
18:45	0	0	**0**	2	0	**2**	**2**
19:00	1	0	**1**	5	0	**5**	**6**
19:15	1	0	**1**	0	0	**0**	**1**
19:30	0	0	**0**	0	0	**0**	**0**
19:45	0	0	**0**	2	0	**2**	**2**
20:00	2	0	**2**	0	0	**0**	**2**
20:15	1	0	**1**	0	1	**1**	**2**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
20:30	0	0	**0**	0	0	**0**	**0**
20:45	0	0	**0**	0	0	**0**	**0**
21:00	1	0	**1**	3	0	**3**	**4**
21:15	0	0	**0**	0	0	**0**	**0**
21:30	0	0	**0**	0	0	**0**	**0**
21:45	1	0	**1**	1	0	**1**	**2**
22:00	3	0	**3**	3	0	**3**	**6**
22:15	2	0	**2**	1	0	**1**	**3**
22:30	2	0	**2**	0	0	**0**	**2**
22:45	2	0	**2**	0	0	**0**	**2**
23:00	0	0	**0**	0	0	**0**	**0**
23:15	0	0	**0**	0	0	**0**	**0**
23:30	0	0	**0**	0	0	**0**	**0**
23:45	2	0	**2**	3	0	**3**	**5**
TOTALS:	**86**	**11**	**97**	**166**	**15**	**181**	**278**
PERCENTAGES:	***31%***	***4%***	***35%***	***60%***	***5%***	***65%***	***100%***

Peak Hour: 12:30 to 13:30

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
7	**0**	**7**	**21**	**0**	**21**	**28**

Wednesday, November 29, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	1	0	**1**	1	0	**1**	**2**
0:15	0	0	**0**	1	0	**1**	**1**
0:30	1	0	**1**	3	0	**3**	**4**
0:45	0	0	**0**	0	0	**0**	**0**
1:00	0	0	**0**	2	0	**2**	**2**
1:15	0	0	**0**	0	0	**0**	**0**
1:30	0	0	**0**	0	0	**0**	**0**
1:45	0	0	**0**	0	0	**0**	**0**
2:00	0	0	**0**	0	1	**1**	**1**
2:15	0	0	**0**	0	0	**0**	**0**
2:30	1	0	**1**	0	0	**0**	**1**
2:45	0	0	**0**	3	0	**3**	**3**
3:00	0	0	**0**	0	0	**0**	**0**
3:15	0	0	**0**	0	0	**0**	**0**
3:30	2	0	**2**	0	0	**0**	**2**
3:45	0	0	**0**	2	0	**2**	**2**
4:00	0	0	**0**	1	0	**1**	**1**
4:15	0	0	**0**	0	1	**1**	**1**
4:30	1	0	**1**	0	0	**0**	**1**
4:45	1	0	**1**	3	0	**3**	**4**
5:00	0	0	**0**	0	1	**1**	**1**
5:15	0	0	**0**	0	0	**0**	**0**
5:30	3	0	**3**	0	0	**0**	**3**
5:45	0	0	**0**	1	0	**1**	**1**
6:00	1	0	**1**	1	2	**3**	**4**
6:15	1	0	**1**	2	0	**2**	**3**
6:30	1	0	**1**	0	0	**0**	**1**
6:45	1	0	**1**	1	0	**1**	**2**
7:00	0	0	**0**	2	0	**2**	**2**
7:15	0	0	**0**	0	0	**0**	**0**
7:30	2	0	**2**	1	0	**1**	**3**
7:45	1	0	**1**	1	0	**1**	**2**
8:00	1	0	**1**	1	0	**1**	**2**
8:15	2	0	**2**	3	0	**3**	**5**
8:30	0	0	**0**	0	0	**0**	**0**
8:45	0	0	**0**	0	0	**0**	**0**
9:00	0	0	**0**	1	1	**2**	**2**
9:15	4	0	**4**	0	2	**2**	**6**
9:30	0	0	**0**	1	1	**2**	**2**
9:45	3	0	**3**	0	5	**5**	**8**
10:00	0	0	**0**	1	0	**1**	**1**
10:15	0	0	**0**	3	0	**3**	**3**
10:30	2	0	**2**	2	1	**3**	**5**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
10:45	2	0	**2**	3	0	**3**	**5**
11:00	2	0	**2**	3	0	**3**	**5**
11:15	1	0	**1**	4	0	**4**	**5**
11:30	1	1	**2**	2	0	**2**	**4**
11:45	0	0	**0**	0	1	**1**	**1**
12:00	1	0	**1**	2	0	**2**	**3**
12:15	2	1	**3**	2	0	**2**	**5**
12:30	0	0	**0**	3	0	**3**	**3**
12:45	2	0	**2**	4	0	**4**	**6**
13:00	2	1	**3**	2	1	**3**	**6**
13:15	1	1	**2**	3	0	**3**	**5**
13:30	1	0	**1**	1	0	**1**	**2**
13:45	2	0	**2**	2	0	**2**	**4**
14:00	3	0	**3**	2	0	**2**	**5**
14:15	2	0	**2**	3	0	**3**	**5**
14:30	1	0	**1**	8	0	**8**	**9**
14:45	2	0	**2**	3	0	**3**	**5**
15:00	2	0	**2**	3	0	**3**	**5**
15:15	1	0	**1**	1	0	**1**	**2**
15:30	1	0	**1**	5	0	**5**	**6**
15:45	0	0	**0**	0	0	**0**	**0**
16:00	0	0	**0**	4	0	**4**	**4**
16:15	3	0	**3**	5	0	**5**	**8**
16:30	0	0	**0**	4	0	**4**	**4**
16:45	1	0	**1**	4	0	**4**	**5**
17:00	0	1	**1**	3	0	**3**	**4**
17:15	2	0	**2**	4	0	**4**	**6**
17:30	0	0	**0**	1	1	**2**	**2**
17:45	1	0	**1**	2	0	**2**	**3**
18:00	1	0	**1**	1	0	**1**	**2**
18:15	2	0	**2**	3	0	**3**	**5**
18:30	0	0	**0**	2	0	**2**	**2**
18:45	0	0	**0**	2	0	**2**	**2**
19:00	1	0	**1**	0	0	**0**	**1**
19:15	0	0	**0**	2	0	**2**	**2**
19:30	0	0	**0**	2	0	**2**	**2**
19:45	2	0	**2**	1	0	**1**	**3**
20:00	1	0	**1**	1	0	**1**	**2**
20:15	0	0	**0**	3	0	**3**	**3**
20:30	1	0	**1**	2	0	**2**	**3**
20:45	0	0	**0**	1	1	**2**	**2**
21:00	1	0	**1**	2	0	**2**	**3**
21:15	0	0	**0**	1	0	**1**	**1**
21:30	2	0	**2**	1	1	**2**	**4**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
21:45	0	1	**1**	2	0	**2**	**3**
22:00	2	0	**2**	1	0	**1**	**3**
22:15	0	0	**0**	1	0	**1**	**1**
22:30	1	0	**1**	1	0	**1**	**2**
22:45	1	0	**1**	1	0	**1**	**2**
23:00	1	0	**1**	3	0	**3**	**4**
23:15	0	2	**2**	1	1	**2**	**4**
23:30	1	1	**2**	0	1	**1**	**3**
23:45	0	0	**0**	0	1	**1**	**1**
TOTALS:	**82**	**9**	**91**	**154**	**23**	**177**	**268**
PERCENTAGES:	***29%***	***3%***	***33%***	***55%***	***8%***	***64%***	***96%***

Peak Hour: 14:00 to 15:00

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
8	**0**	**8**	**16**	**0**	**16**	**24**

Thursday, November 30, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	0	0	**0**	1	1	**2**	**2**
0:15	0	0	**0**	0	0	**0**	**0**
0:30	0	0	**0**	0	0	**0**	**0**
0:45	3	0	**3**	0	0	**0**	**3**
1:00	0	0	**0**	4	0	**4**	**4**
1:15	0	2	**2**	0	2	**2**	**4**
1:30	1	0	**1**	0	1	**1**	**2**
1:45	0	0	**0**	1	0	**1**	**1**
2:00	0	0	**0**	0	0	**0**	**0**
2:15	1	0	**1**	0	0	**0**	**1**
2:30	0	1	**1**	0	1	**1**	**2**
2:45	0	0	**0**	0	0	**0**	**0**
3:00	0	0	**0**	1	0	**1**	**1**
3:15	0	0	**0**	0	0	**0**	**0**
3:30	2	0	**2**	0	0	**0**	**2**
3:45	0	0	**0**	2	1	**3**	**3**
4:00	0	0	**0**	2	0	**2**	**2**
4:15	1	0	**1**	2	0	**2**	**3**
4:30	1	0	**1**	1	0	**1**	**2**
4:45	1	0	**1**	1	0	**1**	**2**
5:00	0	0	**0**	0	0	**0**	**0**
5:15	0	0	**0**	3	0	**3**	**3**
5:30	2	1	**3**	0	0	**0**	**3**
5:45	0	1	**1**	3	0	**3**	**4**
6:00	0	0	**0**	2	1	**3**	**3**
6:15	1	0	**1**	0	0	**0**	**1**
6:30	0	0	**0**	1	0	**1**	**1**
6:45	2	0	**2**	4	0	**4**	**6**
7:00	2	2	**4**	1	0	**1**	**5**
7:15	0	0	**0**	3	0	**3**	**3**
7:30	1	0	**1**	2	0	**2**	**3**
7:45	0	0	**0**	2	0	**2**	**2**
8:00	3	0	**3**	2	0	**2**	**5**
8:15	0	0	**0**	1	1	**2**	**2**
8:30	0	2	**2**	3	1	**4**	**6**
8:45	1	0	**1**	1	0	**1**	**2**
9:00	0	0	**0**	2	0	**2**	**2**
9:15	1	1	**2**	0	0	**0**	**2**
9:30	4	1	**5**	4	1	**5**	**10**
9:45	1	0	**1**	4	0	**4**	**5**
10:00	4	0	**4**	5	0	**5**	**9**
10:15	1	1	**2**	3	1	**4**	**6**
10:30	0	0	**0**	0	1	**1**	**1**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
10:45	1	0	**1**	4	0	**4**	**5**
11:00	1	0	**1**	4	0	**4**	**5**
11:15	0	0	**0**	1	1	**2**	**2**
11:30	2	1	**3**	3	0	**3**	**6**
11:45	1	0	**1**	3	0	**3**	**4**
12:00	0	0	**0**	5	0	**5**	**5**
12:15	2	0	**2**	3	1	**4**	**6**
12:30	1	0	**1**	0	0	**0**	**1**
12:45	0	0	**0**	0	0	**0**	**0**
13:00	2	0	**2**	2	0	**2**	**4**
13:15	4	0	**4**	0	0	**0**	**4**
13:30	1	1	**2**	3	1	**4**	**6**
13:45	0	1	**1**	3	0	**3**	**4**
14:00	2	0	**2**	2	0	**2**	**4**
14:15	0	0	**0**	8	1	**9**	**9**
14:30	1	0	**1**	3	1	**4**	**5**
14:45	3	0	**3**	3	0	**3**	**6**
15:00	2	0	**2**	5	0	**5**	**7**
15:15	1	0	**1**	1	0	**1**	**2**
15:30	2	1	**3**	9	0	**9**	**12**
15:45	1	0	**1**	1	1	**2**	**3**
16:00	0	1	**1**	2	1	**3**	**4**
16:15	1	1	**2**	3	2	**5**	**7**
16:30	1	3	**4**	4	1	**5**	**9**
16:45	4	1	**5**	1	1	**2**	**7**
17:00	2	0	**2**	2	2	**4**	**6**
17:15	2	0	**2**	4	0	**4**	**6**
17:30	1	0	**1**	4	0	**4**	**5**
17:45	2	0	**2**	2	0	**2**	**4**
18:00	2	0	**2**	4	0	**4**	**6**
18:15	0	0	**0**	1	0	**1**	**1**
18:30	1	0	**1**	1	0	**1**	**2**
18:45	0	0	**0**	2	0	**2**	**2**
19:00	2	0	**2**	2	0	**2**	**4**
19:15	2	0	**2**	1	0	**1**	**3**
19:30	1	0	**1**	2	0	**2**	**3**
19:45	0	0	**0**	4	0	**4**	**4**
20:00	1	0	**1**	1	0	**1**	**2**
20:15	1	0	**1**	2	0	**2**	**3**
20:30	1	0	**1**	0	0	**0**	**1**
20:45	2	0	**2**	1	0	**1**	**3**
21:00	0	0	**0**	0	0	**0**	**0**
21:15	1	0	**1**	2	0	**2**	**3**
21:30	0	1	**1**	1	0	**1**	**2**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
21:45	0	0	**0**	1	0	**1**	**1**
22:00	3	0	**3**	2	0	**2**	**5**
22:15	0	0	**0**	2	0	**2**	**2**
22:30	0	0	**0**	0	0	**0**	**0**
22:45	0	0	**0**	1	0	**1**	**1**
23:00	3	0	**3**	2	0	**2**	**5**
23:15	0	0	**0**	3	0	**3**	**3**
23:30	2	0	**2**	2	0	**2**	**4**
23:45	1	0	**1**	2	0	**2**	**3**
TOTALS:	**96**	**23**	**119**	**185**	**25**	**210**	**329**
PERCENTAGES:	***35%***	***8%***	***43%***	***67%***	***9%***	***76%***	***118%***

Peak Hour: 9:30 to 10:30

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
5	**1**	**6**	**8**	**2**	**10**	**16**

Location: Love's Truck Stops - Barstow
Driveway #: 22
Latitude: 34.8573
Longitude: -117.0915
Start Date: 11/28/2017

Tuesday, November 28, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	5	0	**5**	4	0	**4**	**9**
0:15	5	0	**5**	4	0	**4**	**9**
0:30	0	0	**0**	0	2	**2**	**2**
0:45	3	1	**4**	3	0	**3**	**7**
1:00	0	0	**0**	0	0	**0**	**0**
1:15	1	0	**1**	1	0	**1**	**2**
1:30	1	0	**1**	2	0	**2**	**3**
1:45	1	1	**2**	0	1	**1**	**3**
2:00	2	0	**2**	2	1	**3**	**5**
2:15	1	0	**1**	1	0	**1**	**2**
2:30	1	0	**1**	0	0	**0**	**1**
2:45	2	0	**2**	2	0	**2**	**4**
3:00	1	0	**1**	0	0	**0**	**1**
3:15	2	0	**2**	4	0	**4**	**6**
3:30	4	1	**5**	3	0	**3**	**8**
3:45	3	0	**3**	1	0	**1**	**4**
4:00	3	0	**3**	2	0	**2**	**5**
4:15	1	1	**2**	2	0	**2**	**4**
4:30	1	0	**1**	2	0	**2**	**3**
4:45	1	0	**1**	1	0	**1**	**2**
5:00	1	1	**2**	1	0	**1**	**3**
5:15	4	0	**4**	1	0	**1**	**5**
5:30	9	1	**10**	6	0	**6**	**16**
5:45	8	0	**8**	10	1	**11**	**19**
6:00	6	0	**6**	4	0	**4**	**10**
6:15	8	0	**8**	9	0	**9**	**17**
6:30	12	0	**12**	6	0	**6**	**18**
6:45	13	0	**13**	8	0	**8**	**21**
7:00	6	1	**7**	9	0	**9**	**16**
7:15	13	0	**13**	9	0	**9**	**22**
7:30	9	0	**9**	5	2	**7**	**16**
7:45	15	1	**16**	8	0	**8**	**24**
8:00	5	1	**6**	6	0	**6**	**12**
8:15	8	2	**10**	6	0	**6**	**16**
8:30	5	1	**6**	5	0	**5**	**11**
8:45	9	0	**9**	5	1	**6**	**15**
9:00	8	0	**8**	8	0	**8**	**16**
9:15	7	0	**7**	4	0	**4**	**11**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
9:30	2	0	**2**	6	0	**6**	**8**
9:45	10	3	**13**	7	0	**7**	**20**
10:00	3	1	**4**	4	0	**4**	**8**
10:15	6	1	**7**	2	0	**2**	**9**
10:30	8	0	**8**	6	0	**6**	**14**
10:45	7	1	**8**	5	0	**5**	**13**
11:00	13	0	**13**	5	0	**5**	**18**
11:15	14	1	**15**	14	1	**15**	**30**
11:30	9	1	**10**	13	1	**14**	**24**
11:45	12	0	**12**	5	1	**6**	**18**
12:00	14	0	**14**	13	0	**13**	**27**
12:15	10	0	**10**	13	0	**13**	**23**
12:30	7	1	**8**	8	0	**8**	**16**
12:45	16	0	**16**	8	0	**8**	**24**
13:00	14	1	**15**	11	0	**11**	**26**
13:15	11	0	**11**	9	0	**9**	**20**
13:30	7	0	**7**	7	0	**7**	**14**
13:45	12	0	**12**	12	0	**12**	**24**
14:00	13	0	**13**	9	0	**9**	**22**
14:15	11	0	**11**	12	0	**12**	**23**
14:30	7	1	**8**	6	0	**6**	**14**
14:45	11	0	**11**	5	1	**6**	**17**
15:00	12	0	**12**	16	0	**16**	**28**
15:15	7	0	**7**	6	0	**6**	**13**
15:30	9	0	**9**	7	1	**8**	**17**
15:45	15	0	**15**	8	0	**8**	**23**
16:00	10	0	**10**	17	0	**17**	**27**
16:15	9	1	**10**	9	0	**9**	**19**
16:30	10	0	**10**	9	0	**9**	**19**
16:45	14	0	**14**	12	1	**13**	**27**
17:00	8	0	**8**	9	0	**9**	**17**
17:15	11	0	**11**	9	0	**9**	**20**
17:30	10	1	**11**	9	0	**9**	**20**
17:45	13	0	**13**	13	0	**13**	**26**
18:00	8	3	**11**	8	1	**9**	**20**
18:15	5	0	**5**	8	0	**8**	**13**
18:30	4	0	**4**	5	0	**5**	**9**
18:45	8	0	**8**	4	1	**5**	**13**
19:00	7	0	**7**	5	0	**5**	**12**
19:15	7	0	**7**	6	0	**6**	**13**
19:30	8	0	**8**	9	0	**9**	**17**
19:45	6	1	**7**	4	0	**4**	**11**
20:00	8	1	**9**	4	0	**4**	**13**
20:15	2	1	**3**	9	1	**10**	**13**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
20:30	1	0	**1**	0	0	**0**	**1**
20:45	4	0	**4**	4	0	**4**	**8**
21:00	7	0	**7**	5	1	**6**	**13**
21:15	4	0	**4**	4	0	**4**	**8**
21:30	3	0	**3**	4	0	**4**	**7**
21:45	5	0	**5**	3	0	**3**	**8**
22:00	2	0	**2**	4	0	**4**	**6**
22:15	4	0	**4**	3	0	**3**	**7**
22:30	1	0	**1**	4	0	**4**	**5**
22:45	1	0	**1**	3	0	**3**	**4**
23:00	3	0	**3**	3	0	**3**	**6**
23:15	3	0	**3**	3	0	**3**	**6**
23:30	3	0	**3**	2	0	**2**	**5**
23:45	5	0	**5**	3	0	**3**	**8**
TOTALS:	**638**	**31**	**669**	**555**	**18**	**573**	**1242**
PERCENTAGES:	***51%***	***2%***	***54%***	***45%***	***1%***	***46%***	***100%***

Peak Hour: 11:15 to 12:15

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
49	**2**	**51**	**45**	**3**	**48**	**99**

Wednesday, November 29, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	3	0	**3**	5	0	**5**	**8**
0:15	0	0	**0**	1	0	**1**	**1**
0:30	3	0	**3**	1	0	**1**	**4**
0:45	2	1	**3**	1	0	**1**	**4**
1:00	4	0	**4**	2	0	**2**	**6**
1:15	1	0	**1**	0	0	**0**	**1**
1:30	0	0	**0**	1	0	**1**	**1**
1:45	3	1	**4**	1	0	**1**	**5**
2:00	2	2	**4**	1	0	**1**	**5**
2:15	1	0	**1**	3	1	**4**	**5**
2:30	3	0	**3**	0	2	**2**	**5**
2:45	0	0	**0**	1	0	**1**	**1**
3:00	1	0	**1**	0	0	**0**	**1**
3:15	3	0	**3**	4	0	**4**	**7**
3:30	2	0	**2**	1	0	**1**	**3**
3:45	1	0	**1**	1	0	**1**	**2**
4:00	1	1	**2**	1	0	**1**	**3**
4:15	1	1	**2**	1	0	**1**	**3**
4:30	4	0	**4**	2	0	**2**	**6**
4:45	3	0	**3**	2	0	**2**	**5**
5:00	6	0	**6**	3	0	**3**	**9**
5:15	4	1	**5**	4	1	**5**	**10**
5:30	6	0	**6**	9	0	**9**	**15**
5:45	5	1	**6**	4	0	**4**	**10**
6:00	4	0	**4**	4	0	**4**	**8**
6:15	6	0	**6**	4	0	**4**	**10**
6:30	7	0	**7**	6	0	**6**	**13**
6:45	11	0	**11**	6	0	**6**	**17**
7:00	6	0	**6**	9	0	**9**	**15**
7:15	10	1	**11**	3	0	**3**	**14**
7:30	6	0	**6**	8	0	**8**	**14**
7:45	8	0	**8**	6	0	**6**	**14**
8:00	7	1	**8**	8	1	**9**	**17**
8:15	3	0	**3**	3	0	**3**	**6**
8:30	5	1	**6**	3	0	**3**	**9**
8:45	10	0	**10**	8	0	**8**	**18**
9:00	9	1	**10**	5	1	**6**	**16**
9:15	6	0	**6**	8	0	**8**	**14**
9:30	6	2	**8**	11	0	**11**	**19**
9:45	5	0	**5**	7	0	**7**	**12**
10:00	7	0	**7**	2	0	**2**	**9**
10:15	8	0	**8**	8	0	**8**	**16**
10:30	13	1	**14**	9	0	**9**	**23**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
10:45	7	0	**7**	8	0	**8**	**15**
11:00	6	1	**7**	2	0	**2**	**9**
11:15	12	1	**13**	9	0	**9**	**22**
11:30	5	0	**5**	9	0	**9**	**14**
11:45	6	1	**7**	4	1	**5**	**12**
12:00	11	1	**12**	6	2	**8**	**20**
12:15	11	0	**11**	11	1	**12**	**23**
12:30	8	0	**8**	9	1	**10**	**18**
12:45	12	1	**13**	6	0	**6**	**19**
13:00	10	2	**12**	9	2	**11**	**23**
13:15	12	0	**12**	12	0	**12**	**24**
13:30	6	0	**6**	8	1	**9**	**15**
13:45	3	0	**3**	6	0	**6**	**9**
14:00	7	0	**7**	5	0	**5**	**12**
14:15	16	1	**17**	10	1	**11**	**28**
14:30	8	0	**8**	7	1	**8**	**16**
14:45	13	1	**14**	7	0	**7**	**21**
15:00	9	0	**9**	16	1	**17**	**26**
15:15	11	0	**11**	12	0	**12**	**23**
15:30	5	0	**5**	4	0	**4**	**9**
15:45	10	0	**10**	9	1	**10**	**20**
16:00	17	0	**17**	11	0	**11**	**28**
16:15	14	0	**14**	18	0	**18**	**32**
16:30	5	0	**5**	4	0	**4**	**9**
16:45	8	0	**8**	6	1	**7**	**15**
17:00	16	0	**16**	9	0	**9**	**25**
17:15	14	1	**15**	19	0	**19**	**34**
17:30	5	1	**6**	3	1	**4**	**10**
17:45	8	0	**8**	4	0	**4**	**12**
18:00	9	2	**11**	12	1	**13**	**24**
18:15	11	0	**11**	9	0	**9**	**20**
18:30	4	0	**4**	5	0	**5**	**9**
18:45	6	0	**6**	7	0	**7**	**13**
19:00	5	0	**5**	5	1	**6**	**11**
19:15	7	0	**7**	5	0	**5**	**12**
19:30	6	0	**6**	4	0	**4**	**10**
19:45	6	0	**6**	6	0	**6**	**12**
20:00	4	0	**4**	4	0	**4**	**8**
20:15	7	1	**8**	2	0	**2**	**10**
20:30	1	0	**1**	4	0	**4**	**5**
20:45	1	0	**1**	1	0	**1**	**2**
21:00	4	0	**4**	2	0	**2**	**6**
21:15	4	0	**4**	1	0	**1**	**5**
21:30	4	1	**5**	2	0	**2**	**7**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
21:45	4	0	**4**	3	0	**3**	**7**
22:00	1	1	**2**	4	1	**5**	**7**
22:15	4	0	**4**	2	0	**2**	**6**
22:30	4	0	**4**	4	0	**4**	**8**
22:45	5	0	**5**	6	0	**6**	**11**
23:00	4	0	**4**	2	1	**3**	**7**
23:15	3	0	**3**	3	0	**3**	**6**
23:30	2	1	**3**	2	0	**2**	**5**
23:45	2	0	**2**	2	0	**2**	**4**
TOTALS:	**579**	**32**	**611**	**507**	**24**	**531**	**1142**
PERCENTAGES:	***47%***	***3%***	***49%***	***41%***	***2%***	***43%***	***92%***

Peak Hour: 14:15 to 15:15

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
46	**2**	**48**	**40**	**3**	**43**	**91**

Thursday, November 30, 2017

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
0:00	1	0	**1**	4	0	**4**	**5**
0:15	1	0	**1**	2	0	**2**	**3**
0:30	1	0	**1**	2	0	**2**	**3**
0:45	6	0	**6**	2	0	**2**	**8**
1:00	2	0	**2**	5	0	**5**	**7**
1:15	1	1	**2**	1	0	**1**	**3**
1:30	0	0	**0**	1	0	**1**	**1**
1:45	5	0	**5**	3	0	**3**	**8**
2:00	1	0	**1**	1	1	**2**	**3**
2:15	2	1	**3**	2	0	**2**	**5**
2:30	1	0	**1**	1	0	**1**	**2**
2:45	3	0	**3**	1	0	**1**	**4**
3:00	1	1	**2**	0	0	**0**	**2**
3:15	1	0	**1**	2	0	**2**	**3**
3:30	0	0	**0**	4	0	**4**	**4**
3:45	0	0	**0**	0	0	**0**	**0**
4:00	0	0	**0**	0	0	**0**	**0**
4:15	4	0	**4**	4	0	**4**	**8**
4:30	5	0	**5**	1	0	**1**	**6**
4:45	2	0	**2**	4	1	**5**	**7**
5:00	4	0	**4**	3	0	**3**	**7**
5:15	7	0	**7**	3	0	**3**	**10**
5:30	8	0	**8**	7	0	**7**	**15**
5:45	8	1	**9**	10	0	**10**	**19**
6:00	3	0	**3**	3	0	**3**	**6**
6:15	12	0	**12**	7	1	**8**	**20**
6:30	5	0	**5**	6	0	**6**	**11**
6:45	13	0	**13**	8	0	**8**	**21**
7:00	6	0	**6**	2	0	**2**	**8**
7:15	13	0	**13**	10	1	**11**	**24**
7:30	7	0	**7**	7	0	**7**	**14**
7:45	11	1	**12**	5	0	**5**	**17**
8:00	7	0	**7**	8	1	**9**	**16**
8:15	9	1	**10**	6	1	**7**	**17**
8:30	7	0	**7**	6	0	**6**	**13**
8:45	12	0	**12**	7	1	**8**	**20**
9:00	7	0	**7**	10	0	**10**	**17**
9:15	8	2	**10**	6	0	**6**	**16**
9:30	14	0	**14**	7	0	**7**	**21**
9:45	9	0	**9**	10	2	**12**	**21**
10:00	14	0	**14**	9	1	**10**	**24**
10:15	8	1	**9**	13	0	**13**	**22**
10:30	14	1	**15**	7	0	**7**	**22**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
10:45	13	1	**14**	14	0	**14**	**28**
11:00	15	1	**16**	14	1	**15**	**31**
11:15	11	3	**14**	8	0	**8**	**22**
11:30	12	0	**12**	11	2	**13**	**25**
11:45	12	1	**13**	11	1	**12**	**25**
12:00	11	0	**11**	6	1	**7**	**18**
12:15	8	0	**8**	13	0	**13**	**21**
12:30	10	0	**10**	11	0	**11**	**21**
12:45	12	0	**12**	11	0	**11**	**23**
13:00	12	0	**12**	13	0	**13**	**25**
13:15	8	1	**9**	15	0	**15**	**24**
13:30	12	0	**12**	5	0	**5**	**17**
13:45	15	0	**15**	11	0	**11**	**26**
14:00	9	0	**9**	11	0	**11**	**20**
14:15	13	1	**14**	9	1	**10**	**24**
14:30	16	1	**17**	8	1	**9**	**26**
14:45	15	0	**15**	11	0	**11**	**26**
15:00	8	1	**9**	11	0	**11**	**20**
15:15	17	0	**17**	13	1	**14**	**31**
15:30	13	1	**14**	13	0	**13**	**27**
15:45	10	0	**10**	14	0	**14**	**24**
16:00	9	0	**9**	10	1	**11**	**20**
16:15	9	1	**10**	10	1	**11**	**21**
16:30	12	0	**12**	10	0	**10**	**22**
16:45	21	1	**22**	15	1	**16**	**38**
17:00	12	0	**12**	16	1	**17**	**29**
17:15	7	1	**8**	10	0	**10**	**18**
17:30	11	0	**11**	7	0	**7**	**18**
17:45	9	0	**9**	10	0	**10**	**19**
18:00	12	0	**12**	8	0	**8**	**20**
18:15	8	0	**8**	12	0	**12**	**20**
18:30	10	1	**11**	6	0	**6**	**17**
18:45	4	0	**4**	5	0	**5**	**9**
19:00	3	0	**3**	2	0	**2**	**5**
19:15	4	0	**4**	2	0	**2**	**6**
19:30	3	0	**3**	5	0	**5**	**8**
19:45	5	0	**5**	7	0	**7**	**12**
20:00	12	0	**12**	9	2	**11**	**23**
20:15	5	1	**6**	5	0	**5**	**11**
20:30	7	0	**7**	6	0	**6**	**13**
20:45	4	0	**4**	7	0	**7**	**11**
21:00	1	0	**1**	3	0	**3**	**4**
21:15	6	0	**6**	5	0	**5**	**11**
21:30	4	0	**4**	6	0	**6**	**10**

	INBOUND VEHICLES			OUTBOUND VEHICLES			
Time	**Passenger**	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
21:45	3	0	**3**	2	0	**2**	**5**
22:00	6	0	**6**	3	0	**3**	**9**
22:15	3	0	**3**	6	0	**6**	**9**
22:30	6	0	**6**	4	0	**4**	**10**
22:45	5	0	**5**	5	0	**5**	**10**
23:00	4	0	**4**	4	0	**4**	**8**
23:15	5	1	**6**	2	0	**2**	**8**
23:30	8	0	**8**	5	0	**5**	**13**
23:45	6	0	**6**	5	0	**5**	**11**
TOTALS:	**719**	**27**	**746**	**645**	**24**	**669**	**1415**
PERCENTAGES:	***58%***	***2%***	***60%***	***52%***	***2%***	***54%***	***114%***

Peak Hour: 16:15 to 17:15

INBOUND VEHICLES			OUTBOUND VEHICLES			
Passenger	**Trucks**	**In-Total**	**Passenger**	**Trucks**	**Out-Total**	**TOTAL**
54	**2**	**56**	**51**	**3**	**54**	**110**

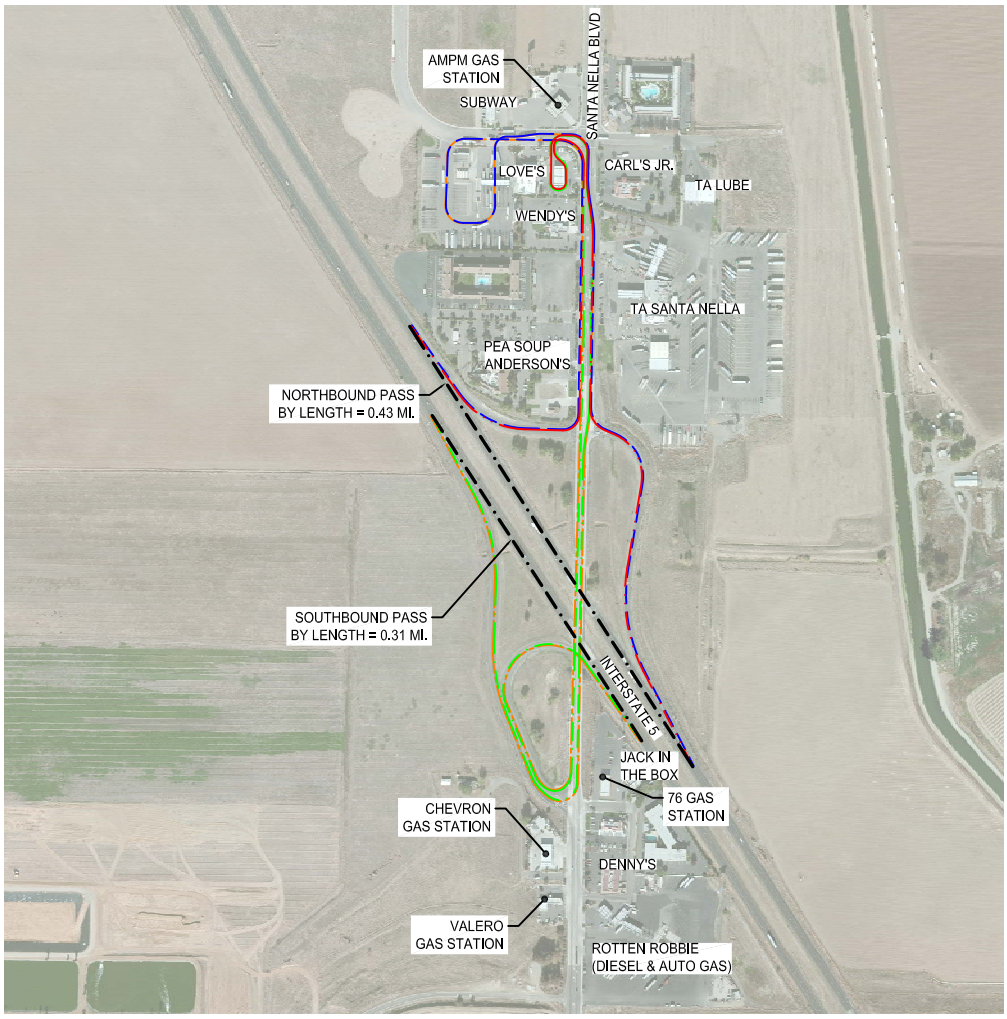
Diverted Link Trip Lengths
(Lane Engineers, Inc.)

LANE ENGINEERS, INC.
CIVIL • STRUCTURAL • SURVEYING
979 N. Blackstone Street
Tulare, California 93274
559.688.5263
www.laneengineers.com

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Lane Project No. 15255

NORTH



NOTES:

1. SUBTRACT THE PASS BY LENGTH FROM THE GROSS DIVERTED LINK ROUNDTRIP LENGTH TO OBTAIN THE NET DIVERTED LINK ROUNDTRIP LENGTH.
2. DIVIDE THE DIVERTED LINK ROUNDTRIP LENGTH BY 2 TO OBTAIN THE DIVERTED LINK TRIP LENGTH.

LEGEND:

NORTHBOUND AUTO GROSS DIVERTED LINK ROUNDTRIP LENGTH = 1.08 MI. (NET = 0.65 MI.)
NORTHBOUND AUTO GROSS DIVERTED LINK TRIP LENGTH = 0.54 MI. (NET = 0.33 MI.)

NORTHBOUND TRUCK GROSS DIVERTED LINK ROUNDTRIP LENGTH = 1.28 MI. (NET = 0.85 MI.)
NORTHBOUND TRUCK GROSS DIVERTED LINK TRIP LENGTH = 0.64 MI. (NET = 0.43 MI.)

SOUTHBOUND AUTO GROSS DIVERTED LINK ROUNDTRIP LENGTH = 1.83 MI. (NET = 1.52 MI.)
SOUTHBOUND AUTO GROSS DIVERTED LINK TRIP LENGTH = 0.92 MI. (NET = 0.76 MI.)

SOUTHBOUND TRUCK GROSS DIVERTED LINK ROUNDTRIP LENGTH = 2.02 MI. (NET = 1.71 MI.)
SOUTHBOUND TRUCK GROSS DIVERTED LINK TRIP LENGTH = 1.01 MI. (NET = 0.86 MI.)

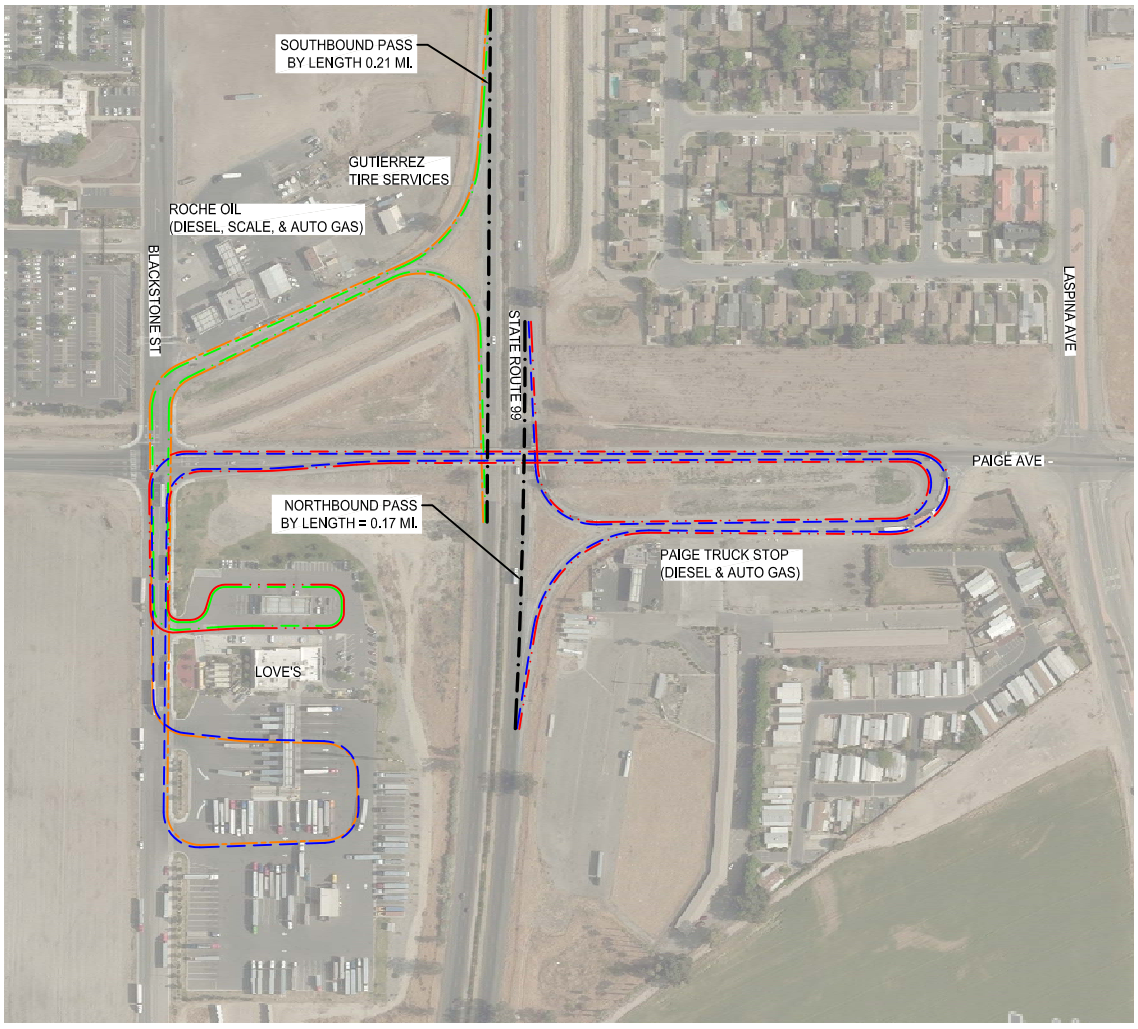
SANTA NELLA TRAVEL STOP DIVERTED LINK TRIP LENGTHS

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Tulare, California 93274
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NOTES:

1. SUBTRACT THE PASS BY LENGTH FROM THE GROSS DIVERTED LINK ROUNDTRIP LENGTH TO OBTAIN THE NET DIVERTED LINK ROUNDTRIP LENGTH.
2. DIVIDE THE DIVERTED LINK ROUNDTRIP LENGTH BY 2 TO OBTAIN THE DIVERTED LINK TRIP LENGTH.

LEGEND:

NORTHBOUND AUTO GROSS DIVERTED LINK ROUNDTRIP LENGTH = 1.41 MI. (NET = 1.24 MI.)
NORTHBOUND AUTO GROSS DIVERTED LINK TRIP LENGTH = 0.71 MI. (NET = 0.62 MI.)

NORTHBOUND TRUCK GROSS DIVERTED LINK ROUNDTRIP LENGTH = 1.56 MI. (NET = 1.39 MI.)
NORTHBOUND TRUCK GROSS DIVERTED LINK TRIP LENGTH = 0.78 MI. (NET = 0.70 MI.)

SOUTHBOUND AUTO GROSS DIVERTED LINK ROUNDTRIP LENGTH = 0.81 MI. (NET = 0.60 MI.)
SOUTHBOUND AUTO GROSS DIVERTED LINK TRIP LENGTH = 0.41 MI. (NET = 0.30 MI.)

SOUTHBOUND TRUCK GROSS DIVERTED LINK ROUNDTRIP LENGTH = 0.96 MI. (NET = 0.75 MI.)
SOUTHBOUND TRUCK GROSS DIVERTED LINK TRIP LENGTH = 0.48 MI. (NET = 0.38 MI.)

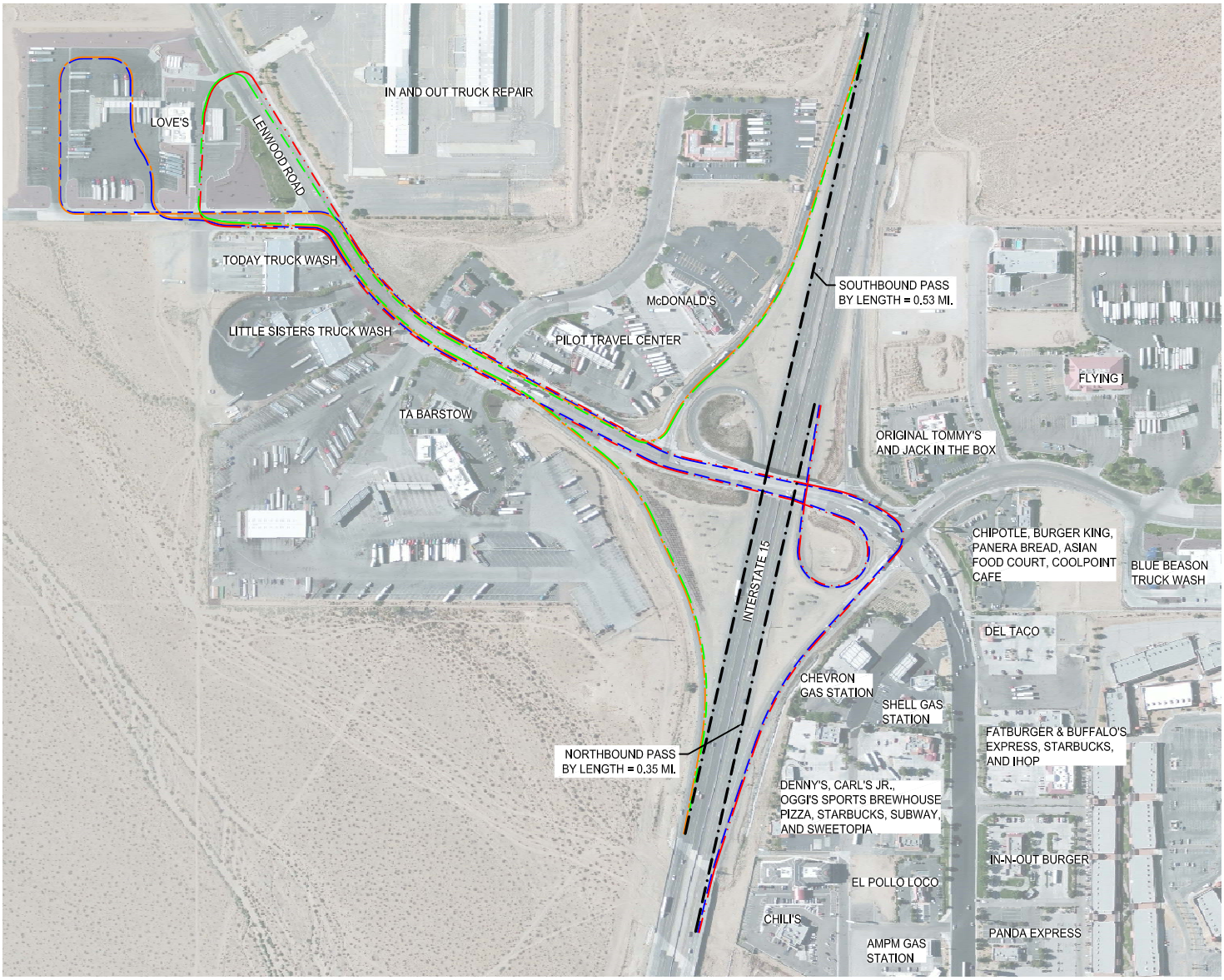
TULARE TRAVEL STOP DIVERTED LINK TRIP LENGTHS

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NORTH



NOTES:

1. SUBTRACT THE PASS BY LENGTH FROM THE GROSS DIVERTED LINK ROUNDTRIP LENGTH TO OBTAIN THE NET DIVERTED LINK ROUNDTRIP LENGTH.
2. DIVIDE THE DIVERTED LINK ROUNDTRIP LENGTH BY 2 TO OBTAIN THE DIVERTED LINK TRIP LENGTH.

LEGEND:

NORTHBOUND AUTO GROSS DIVERTED LINK ROUNDTRIP LENGTH = 1.63 MI. (NET = 1.28 MI.)
NORTHBOUND AUTO GROSS DIVERTED LINK TRIP LENGTH = 0.82 MI. (NET = 0.64 MI.)

NORTHBOUND TRUCK GROSS DIVERTED LINK ROUNDTRIP LENGTH = 1.85 MI. (NET = 1.50 MI.)
NORTHBOUND TRUCK GROSS DIVERTED LINK TRIP LENGTH = 0.93 MI. (NET = 0.75 MI.)

SOUTHBOUND AUTO GROSS DIVERTED LINK ROUNDTRIP LENGTH = 1.37 MI. (NET = 0.84 MI.)
SOUTHBOUND AUTO GROSS DIVERTED LINK TRIP LENGTH = 0.69 MI. (NET = 0.42 MI.)

SOUTHBOUND TRUCK GROSS DIVERTED LINK ROUNDTRIP LENGTH = 1.59 MI. (NET = 1.07 MI.)
SOUTHBOUND TRUCK GROSS DIVERTED LINK TRIP LENGTH = 0.80 MI. (NET = 0.54 MI.)

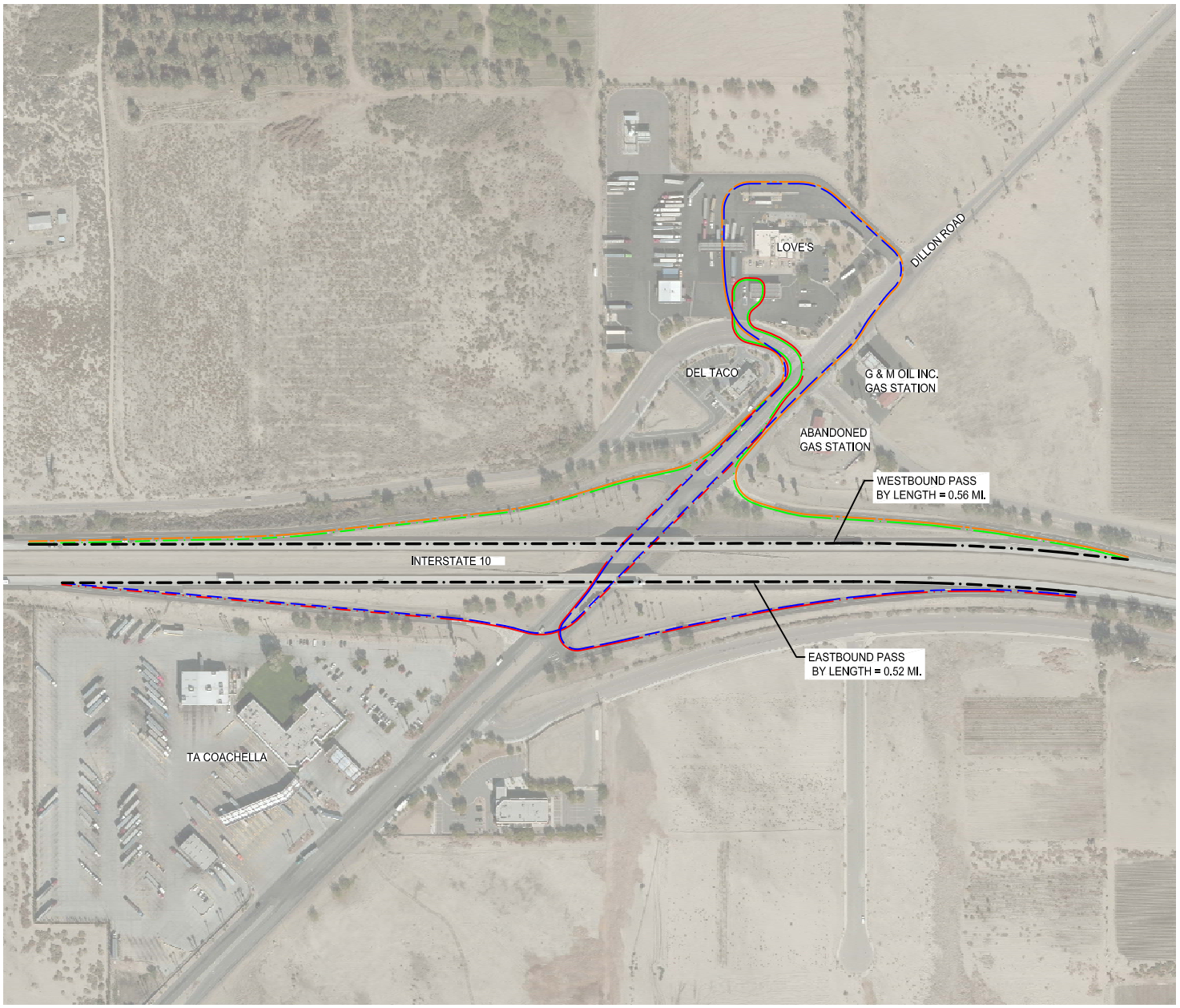
BARSTOW TRAVEL STOP DIVERTED LINK TRIP LENGTHS

LANE ENGINEERS, INC.
CIVIL • STRUCTURAL • SURVEYING
979 N. Blackstone Street
Tulare, California 93274
559.688.5263
www.laneengineers.com

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Lane Project No. 15255

NORTH



NOTES:

1. SUBTRACT THE PASS BY LENGTH FROM THE GROSS DIVERTED LINK ROUNDTRIP LENGTH TO OBTAIN THE NET DIVERTED LINK ROUNDTRIP LENGTH.
2. DIVIDE THE DIVERTED LINK ROUNDTRIP LENGTH BY 2 TO OBTAIN THE DIVERTED LINK TRIP LENGTH.

LEGEND:

EASTBOUND AUTO GROSS DIVERTED LINK ROUNDTRIP LENGTH = 1.03 MI. (NET = 0.51 MI.)
EASTBOUND AUTO GROSS DIVERTED LINK TRIP LENGTH = 0.52 MI. (NET = 0.26 MI.)

EASTBOUND TRUCK GROSS DIVERTED LINK ROUNDTRIP LENGTH = 1.17 MI. (NET = 0.75 MI.)
EASTBOUND TRUCK GROSS DIVERTED LINK TRIP LENGTH = 0.59 MI. (NET = 0.38 MI.)

WESTBOUND AUTO GROSS DIVERTED LINK ROUNDTRIP LENGTH = 0.82 MI. (NET = 0.26 MI.)
WESTBOUND AUTO GROSS DIVERTED LINK TRIP LENGTH = 0.41 MI. (NET = 0.13 MI.)

WESTBOUND TRUCK GROSS DIVERTED LINK ROUNDTRIP LENGTH = 0.97 MI. (NET = 0.41 MI.)
WESTBOUND TRUCK GROSS DIVERTED LINK TRIP LENGTH = 0.49 MI. (NET = 0.21 MI.)

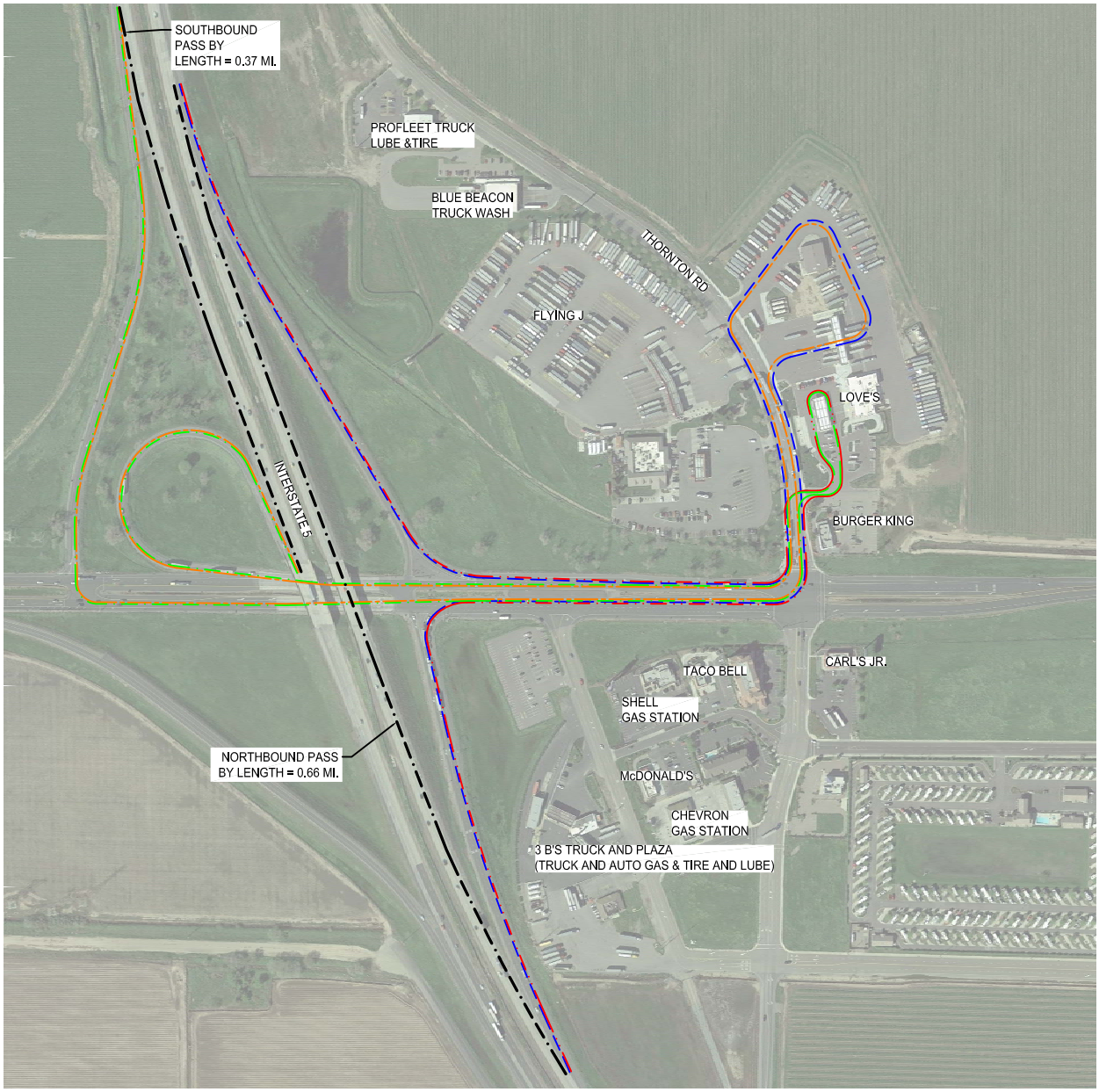
COACHELLA TRAVEL STOP DIVERTED LINK TRIP LENGTHS

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NORTH



NOTES:

1. SUBTRACT THE PASS BY LENGTH FROM THE GROSS DIVERTED LINK ROUNDTRIP LENGTH TO OBTAIN THE NET DIVERTED LINK ROUNDTRIP LENGTH.
2. DIVIDE THE DIVERTED LINK ROUNDTRIP LENGTH BY 2 TO OBTAIN THE DIVERTED LINK TRIP LENGTH.

LEGEND:

NORTHBOUND AUTO GROSS DIVERTED LINK ROUNDTRIP LENGTH = 1.37 MI. (NET = 0.71 MI.)
NORTHBOUND AUTO GROSS DIVERTED LINK TRIP LENGTH = 0.69 MI. (NET = 0.36 MI.)

NORTHBOUND TRUCK GROSS DIVERTED LINK ROUNDTRIP LENGTH = 1.62 MI. (NET = 0.96 MI.)
NORTHBOUND TRUCK GROSS DIVERTED LINK TRIP LENGTH = 0.81 MI. (NET = 0.48 MI.)

SOUTHBOUND AUTO GROSS DIVERTED LINK ROUNDTRIP LENGTH = 1.34 MI. (NET = 0.97 MI.)
SOUTHBOUND AUTO GROSS DIVERTED LINK TRIP LENGTH = 0.67 MI. (NET = 0.49 MI.)

SOUTHBOUND TRUCK GROSS DIVERTED LINK ROUNDTRIP LENGTH = 1.96 MI. (NET = 1.59 MI.)
SOUTHBOUND TRUCK GROSS DIVERTED LINK TRIP LENGTH = 0.98 MI. (NET = 0.80 MI.)

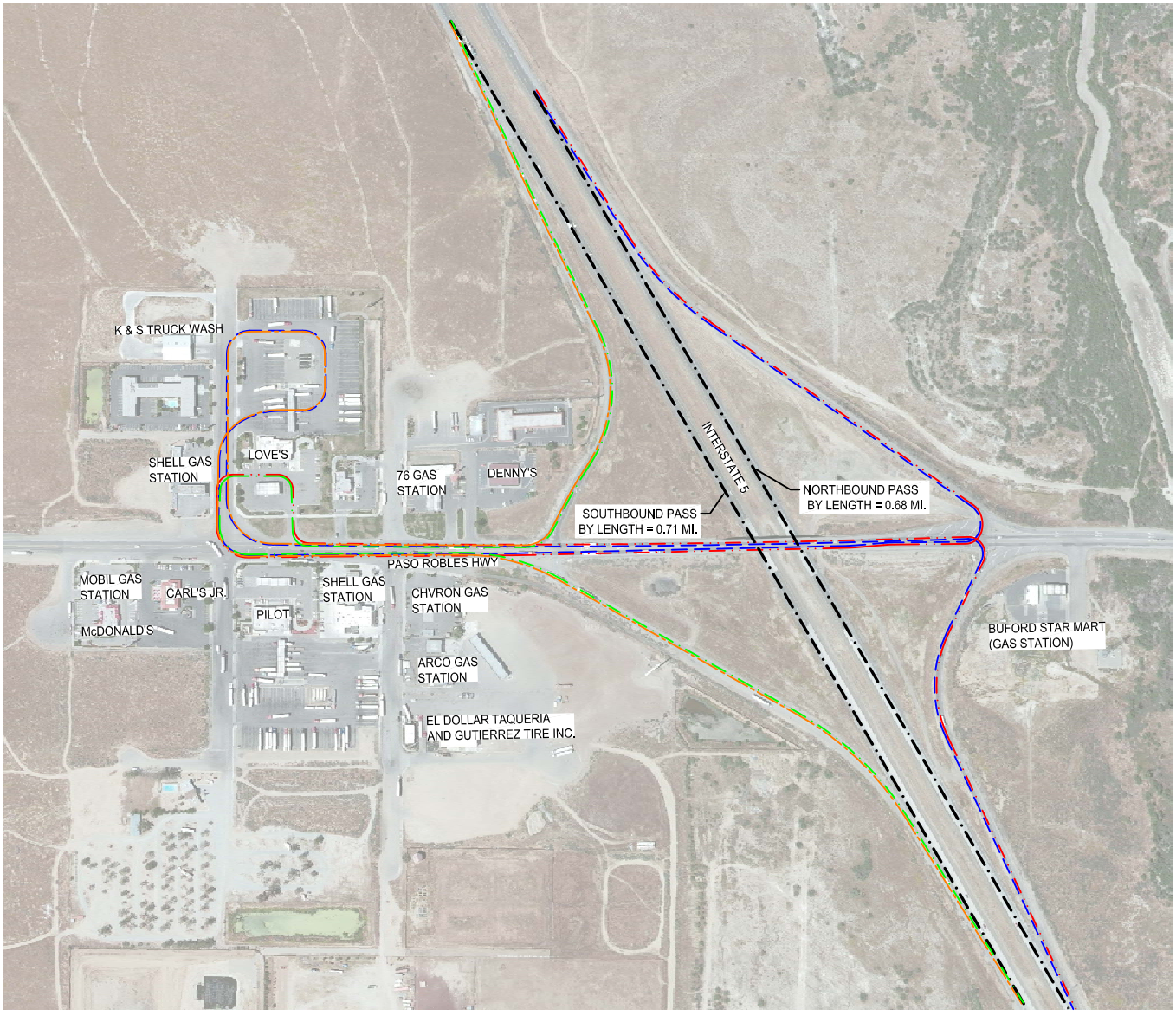
LODI TRAVEL STOP DIVERTED LINK TRIP LENGTHS

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NOTES:

1. SUBTRACT THE PASS BY LENGTH FROM THE GROSS DIVERTED LINK ROUNDTRIP LENGTH TO OBTAIN THE NET DIVERTED LINK ROUNDTRIP LENGTH.
2. DIVIDE THE DIVERTED LINK ROUNDTRIP LENGTH BY 2 TO OBTAIN THE DIVERTED LINK TRIP LENGTH.

LEGEND:

NORTHBOUND AUTO GROSS DIVERTED LINK ROUNDTRIP LENGTH = 1.77 MI. (NET = 1.19 MI.)
NORTHBOUND AUTO GROSS DIVERTED LINK TRIP LENGTH = 0.89 MI. (NET = 0.60 MI.)

NORTHBOUND TRUCK GROSS DIVERTED LINK ROUNDTRIP LENGTH = 2.04 MI. (NET = 1.36 MI.)
NORTHBOUND TRUCK GROSS DIVERTED LINK TRIP LENGTH = 1.02 MI. (NET = 0.68 MI.)

SOUTHBOUND AUTO GROSS DIVERTED LINK ROUNDTRIP LENGTH = 1.26 MI. (NET = 0.55 MI.)
SOUTHBOUND AUTO GROSS DIVERTED LINK TRIP LENGTH = 0.63 MI. (NET = 0.28 MI.)

SOUTHBOUND TRUCK GROSS DIVERTED LINK ROUNDTRIP LENGTH = 1.52 MI. (NET = 0.81 MI.)
SOUTHBOUND TRUCK GROSS DIVERTED LINK TRIP LENGTH = 0.76 MI. (NET = 0.41 MI.)

LOST HILLS TRAVEL STOP DIVERTED LINK TRIP LENGTHS

Appendix C - Existing Counts

Counts Unlimited, Inc.

PO Box 1178
Corona, CA 92878
Phone: (951) 268-6268
email: counts@countsunlimited.com

Town of Apple Valley
Quarry Road
B/ I-15 Southbound Ramps - Stoddard Wells Road
24 Hour Directional Volume Count

APV001
Site Code: 999-21190

Start Time	5/6/2021 Thu	Northbound Morning	Northbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Southbound Morning	Southbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		10	33			0	4				
12:15		14	38			0	10				
12:30		12	22			1	9				
12:45		18	26	54	119	3	4	4	27	58	146
01:00		14	32			0	8				
01:15		18	26			3	14				
01:30		19	38			0	2				
01:45		6	28	57	124	0	11	3	35	60	159
02:00		14	34			1	12				
02:15		4	28			2	10				
02:30		12	37			2	6				
02:45		7	40	37	139	0	11	5	39	42	178
03:00		48	23			0	8				
03:15		29	31			2	8				
03:30		12	**68**			1	12				
03:45		16	**30**	105	152	1	**12**	4	40	109	192
04:00		13	**72**			1	**7**				
04:15		12	**71**			4	**14**				
04:30		10	54			3	**19**				
04:45		10	38	45	235	1	10	9	50	54	285
05:00		10	36			0	8				
05:15		16	36			2	11				
05:30		20	17			0	14				
05:45		12	8	58	97	2	8	4	41	62	138
06:00		9	12			1	6				
06:15		13	25			2	8				
06:30		16	22			2	6				
06:45		14	8	52	67	3	1	8	21	60	88
07:00		14	12			6	4				
07:15		16	14			5	6				
07:30		16	2			4	3				
07:45		20	12	66	40	4	4	19	17	85	57
08:00		12	6			4	7				
08:15		23	2			8	0				
08:30		26	11			6	2				
08:45		22	6	83	25	7	2	25	11	108	36
09:00		18	4			11	3				
09:15		24	6			5	3				
09:30		24	0			4	1				
09:45		20	0	86	10	4	1	24	8	110	18
10:00		**30**	0			4	1				
10:15		**20**	1			**9**	2				
10:30		**28**	0			**12**	2				
10:45		**31**	1	109	2	**4**	2	29	7	138	9
11:00		16	1			**8**	3				
11:15		31	0			6	3				
11:30		22	0			6	2				
11:45		22	0	91	1	10	0	30	8	121	9
Total		843	1011	843	1011	164	304	164	304	1007	1315
Combined Total		1854		1854		468		468		2322	
AM Peak	-	10:00	-	-	-	10:15	-	-	-	-	-
Vol.	-	109	-	-	-	33	-	-	-	-	-
P.H.F.		0.879				0.688					
PM Peak	-	-	03:30	-	-	-	03:45	-	-	-	-
Vol.	-	-	241	-	-	-	52	-	-	-	-
P.H.F.			0.837				0.684				
Percentage		45.5%	54.5%			35.0%	65.0%				
ADT/AADT		ADT 2,322		AADT 2,322							

Counts Unlimited, Inc.

PO Box 1178
Corona, CA 92878
Phone: (951) 268-6268
email: counts@countsunlimited.com

Town of Apple Valley
Stoddard Wells Road
B/ Quarry Road - I-15 Northbound Ramps
24 Hour Directional Volume Count

APV002
Site Code: 999-21190

Start	5/6/2021	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
Time	Thu	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		0	10			10	32				
12:15		0	13			13	42				
12:30		2	18			12	26				
12:45		6	12	8	53	17	36	52	136	60	189
01:00		0	14			16	39				
01:15		4	16			17	38				
01:30		2	11			20	52				
01:45		0	12	6	53	6	35	59	164	65	217
02:00		2	11			15	38				
02:15		2	16			4	30				
02:30		0	12			12	40				
02:45		0	14	4	53	7	46	38	154	42	207
03:00		2	12			50	28				
03:15		3	10			29	40				
03:30		2	15			10	**74**				
03:45		2	**16**	9	53	14	**37**	103	179	112	232
04:00		2	**10**			15	**78**				
04:15		4	**22**			11	**80**				
04:30		4	**26**			10	60				
04:45		0	16	10	74	10	48	46	266	56	340
05:00		2	10			10	35				
05:15		2	14			16	34				
05:30		2	14			19	18				
05:45		2	10	8	48	10	10	55	97	63	145
06:00		2	6			9	10				
06:15		4	9			13	30				
06:30		4	8			16	24				
06:45		3	4	13	27	18	14	56	78	69	105
07:00		8	3			18	10				
07:15		6	5			17	16				
07:30		3	3			20	4				
07:45		4	5	21	16	34	17	89	47	110	63
08:00		2	7			23	6				
08:15		**10**	2			24	5				
08:30		**12**	6			37	12				
08:45		**11**	4	35	19	25	5	109	28	144	47
09:00		**16**	3			23	8				
09:15		8	6			28	14				
09:30		8	2			28	8				
09:45		6	13	38	24	26	36	105	66	143	90
10:00		6	6			31	6				
10:15		12	6			24	6				
10:30		14	7			**32**	13				
10:45		8	4	40	23	**42**	4	129	29	169	52
11:00		11	4			**34**	7				
11:15		7	6			**32**	8				
11:30		10	8			29	17				
11:45		14	0	42	18	26	8	121	40	163	58
Total		234	461	234	461	962	1284	962	1284	1196	1745
Combined Total		695		695		2246		2246		2941	
AM Peak	-	08:15	-	-	-	10:30	-	-	-	-	-
Vol.	-	49	-	-	-	140	-	-	-	-	-
P.H.F.		0.766				0.833					
PM Peak	-	-	03:45	-	-	-	03:30	-	-	-	-
Vol.	-	-	74	-	-	-	269	-	-	-	-
P.H.F.			0.712				0.841				
Percentage		33.7%	66.3%			42.8%	57.2%				
ADT/AADT		ADT 2,941		AADT 2,941							

Counts Unlimited, Inc.

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Town of Apple Valley
Stoddard Wells Road
E/ Interstate 15 Northbound Ramps
24 Hour Directional Volume Count

APV003
Site Code: 999-21190

Start	5/6/2021	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
Time	Thu	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		1	23			10	31				
12:15		8	25			10	40				
12:30		8	30			12	22				
12:45		6	38	23	116	17	33	49	126	72	242
01:00		6	20			17	33				
01:15		1	18			17	30				
01:30		0	26			19	44				
01:45		0	27	7	91	6	31	59	138	66	229
02:00		2	46			10	39				
02:15		1	32			4	29				
02:30		6	24			10	40				
02:45		6	47	15	149	7	42	31	150	46	299
03:00		1	38			46	25				
03:15		10	44			30	40				
03:30		16	**49**			10	**70**				
03:45		16	**64**	43	195	12	**36**	98	171	141	366
04:00		20	**98**			14	**79**				
04:15		41	**105**			10	**80**				
04:30		**48**	31			8	55				
04:45		**73**	36	182	270	7	43	39	257	221	527
05:00		**48**	36			12	36				
05:15		**68**	30			18	32				
05:30		43	31			20	19				
05:45		48	34	207	131	11	11	61	98	268	229
06:00		28	32			8	10				
06:15		44	18			14	30				
06:30		30	18			15	20				
06:45		26	14	128	82	16	12	53	72	181	154
07:00		24	10			16	8				
07:15		32	8			18	16				
07:30		32	5			18	4				
07:45		45	4	133	27	26	11	78	39	211	66
08:00		23	6			16	6				
08:15		32	12			20	5				
08:30		27	6			27	8				
08:45		30	10	112	34	22	4	85	23	197	57
09:00		37	11			16	7				
09:15		37	9			20	10				
09:30		28	6			25	8				
09:45		31	12	133	38	22	35	83	60	216	98
10:00		26	10			25	5				
10:15		36	10			22	6				
10:30		24	5			**24**	10				
10:45		34	8	120	33	**32**	5	103	26	223	59
11:00		23	2			**23**	6				
11:15		22	2			**26**	4				
11:30		38	2			17	12				
11:45		33	12	116	18	20	9	86	31	202	49
Total		1219	1184	1219	1184	825	1191	825	1191	2044	2375
Combined Total		2403		2403		2016		2016		4419	
AM Peak	-	04:30	-	-	-	10:30	-	-	-	-	-
Vol.	-	237	-	-	-	105	-	-	-	-	-
P.H.F.		0.812				0.820					
PM Peak	-	-	03:30	-	-	-	03:30	-	-	-	-
Vol.	-	-	316	-	-	-	265	-	-	-	-
P.H.F.			0.752				0.828				
Percentage		50.7%	49.3%			40.9%	59.1%				
ADT/AADT		ADT 4,419		AADT 4,419							

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Town of Apple Valley
Stoddard Wells Road
E/ Interstate 15 Northbound Ramps
24 Hour Directional Classification Count

APV003C
Site Code: 999-21190

Eastbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/06/21	0	7	1	0	1	0	0	0	6	0	0	0	0	15
01:00	0	2	0	0	1	1	0	0	1	0	0	0	0	5
02:00	0	9	2	0	0	1	0	0	1	0	0	0	0	13
03:00	1	20	9	0	3	1	0	0	3	0	0	0	0	37
04:00	1	117	**32**	2	13	1	0	0	6	0	0	0	0	172
05:00	0	**123**	26	**5**	**23**	0	0	0	8	0	0	0	0	**185**
06:00	0	63	16	1	21	**3**	0	1	7	0	0	0	0	112
07:00	1	46	16	1	19	2	0	2	16	0	0	0	**1**	104
08:00	**2**	28	19	0	18	2	0	2	17	0	0	0	0	88
09:00	1	28	7	2	17	1	0	3	**28**	0	0	0	0	87
10:00	0	24	7	4	11	0	0	4	27	0	0	0	0	77
11:00	0	28	11	1	10	2	0	**6**	20	0	0	0	0	78
12 PM	0	21	13	2	14	0	0	**7**	**19**	0	**1**	0	0	77
13:00	**1**	28	12	**3**	12	0	0	2	14	0	0	0	0	72
14:00	0	45	16	2	23	2	0	6	18	0	0	0	0	112
15:00	1	99	29	1	**26**	1	0	4	10	0	0	0	**1**	172
16:00	1	**162**	**39**	3	20	**6**	0	2	7	0	0	0	0	**240**
17:00	0	62	24	0	14	2	0	1	10	0	0	0	0	113
18:00	0	37	12	0	7	4	0	1	7	0	0	0	0	68
19:00	0	12	9	0	3	0	0	0	1	0	0	0	0	25
20:00	0	5	6	0	1	0	0	4	5	0	0	0	0	21
21:00	0	15	3	0	4	0	0	2	5	0	0	0	0	29
22:00	0	5	4	1	0	1	0	3	5	0	1	0	0	20
23:00	0	6	2	0	1	0	0	4	1	0	0	0	0	14
Total	9	992	315	28	262	30	0	54	242	0	2	0	2	1936
Percent	0.5%	51.2%	16.3%	1.4%	13.5%	1.5%	0.0%	2.8%	12.5%	0.0%	0.1%	0.0%	0.1%	
AM Peak	08:00	05:00	04:00	05:00	05:00	06:00		11:00	09:00				07:00	05:00
Vol.	2	123	32	5	23	3		6	28				1	185
PM Peak	13:00	16:00	16:00	13:00	15:00	16:00		12:00	12:00		12:00		15:00	16:00
Vol.	1	162	39	3	26	6		7	19		1		1	240
Grand Total	9	992	315	28	262	30	0	54	242	0	2	0	2	1936
Percent	0.5%	51.2%	16.3%	1.4%	13.5%	1.5%	0.0%	2.8%	12.5%	0.0%	0.1%	0.0%	0.1%	

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Town of Apple Valley
Stoddard Wells Road
E/ Interstate 15 Northbound Ramps
24 Hour Directional Classification Count

APV003C
Site Code: 999-21190

Westbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/06/21	0	37	2	0	4	0	0	3	1	0	0	0	0	47
01:00	1	39	8	0	5	2	0	3	0	0	0	0	0	58
02:00	1	17	2	0	3	1	0	3	0	0	0	0	0	27
03:00	0	**76**	**15**	0	5	0	0	2	0	0	0	0	0	**98**
04:00	0	19	4	0	10	0	0	5	0	0	0	0	0	38
05:00	0	22	5	0	6	0	0	12	1	0	0	0	0	46
06:00	1	26	9	1	6	0	0	6	0	0	0	0	0	49
07:00	0	31	4	1	10	1	0	14	0	0	0	0	0	61
08:00	0	24	11	0	**14**	1	0	21	0	0	0	0	0	71
09:00	**2**	23	8	0	8	**3**	0	20	**2**	0	0	0	0	66
10:00	0	28	11	0	10	0	0	**31**	2	0	0	0	0	82
11:00	1	30	8	**2**	12	2	0	17	0	0	0	0	0	72
12 PM	**2**	36	19	**1**	**14**	2	0	**25**	**3**	0	0	0	0	102
13:00	1	74	17	0	13	1	0	18	0	0	0	0	0	124
14:00	1	77	13	1	12	**3**	0	18	0	0	2	0	0	127
15:00	0	106	22	0	8	0	0	13	0	0	1	0	0	150
16:00	1	**176**	**41**	0	9	2	0	7	0	0	0	0	0	**236**
17:00	0	48	17	0	4	0	0	7	0	0	**5**	0	0	81
18:00	2	27	13	0	7	3	0	8	0	0	2	0	0	62
19:00	1	17	3	0	6	1	0	5	0	0	1	0	0	34
20:00	0	14	2	0	3	0	0	2	0	0	0	0	0	21
21:00	1	28	12	0	6	2	0	6	0	0	0	0	0	55
22:00	1	15	2	0	1	1	0	3	0	0	0	0	0	23
23:00	0	16	5	0	4	0	0	4	0	0	0	0	0	29
Total	16	1006	253	6	180	25	0	253	9	0	11	0	0	1759
Percent	0.9%	57.2%	14.4%	0.3%	10.2%	1.4%	0.0%	14.4%	0.5%	0.0%	0.6%	0.0%	0.0%	
AM Peak	09:00	03:00	03:00	11:00	08:00	09:00		10:00	09:00					03:00
Vol.	2	76	15	2	14	3		31	2					98
PM Peak	12:00	16:00	16:00	12:00	12:00	14:00		12:00	12:00		17:00			16:00
Vol.	2	176	41	1	14	3		25	3		5			236
Grand Total	16	1006	253	6	180	25	0	253	9	0	11	0	0	1759
Percent	0.9%	57.2%	14.4%	0.3%	10.2%	1.4%	0.0%	14.4%	0.5%	0.0%	0.6%	0.0%	0.0%	

Counts Unlimited, Inc.

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Town of Apple Valley
Stoddard Wells Road
E/ Interstate 15 Northbound Ramps
24 Hour Directional Classification Count

APV003C
Site Code: 999-21190

Eastbound, Westbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/06/21	0	44	3	0	5	0	0	3	7	0	0	0	0	62
01:00	1	41	8	0	6	3	0	3	1	0	0	0	0	63
02:00	1	26	4	0	3	2	0	3	1	0	0	0	0	40
03:00	1	96	24	0	8	1	0	2	3	0	0	0	0	135
04:00	1	136	**36**	2	23	1	0	5	6	0	0	0	0	210
05:00	0	**145**	31	**5**	29	0	0	12	9	0	0	0	0	**231**
06:00	1	89	25	2	27	3	0	7	7	0	0	0	0	161
07:00	1	77	20	2	29	3	0	16	16	0	0	0	**1**	165
08:00	2	52	30	0	**32**	3	0	23	17	0	0	0	0	159
09:00	**3**	51	15	2	25	**4**	0	23	**30**	0	0	0	0	153
10:00	0	52	18	4	21	0	0	**35**	29	0	0	0	0	159
11:00	1	58	19	3	22	4	0	23	20	0	0	0	0	150
12 PM	**2**	57	32	**3**	28	2	0	**32**	**22**	0	1	0	0	179
13:00	2	102	29	3	25	1	0	20	14	0	0	0	0	196
14:00	1	122	29	3	**35**	5	0	24	18	0	2	0	0	239
15:00	1	205	51	1	34	1	0	17	10	0	1	0	**1**	322
16:00	2	**338**	**80**	3	29	**8**	0	9	7	0	0	0	0	**476**
17:00	0	110	41	0	18	2	0	8	10	0	**5**	0	0	194
18:00	2	64	25	0	14	7	0	9	7	0	2	0	0	130
19:00	1	29	12	0	9	1	0	5	1	0	1	0	0	59
20:00	0	19	8	0	4	0	0	6	5	0	0	0	0	42
21:00	1	43	15	0	10	2	0	8	5	0	0	0	0	84
22:00	1	20	6	1	1	2	0	6	5	0	1	0	0	43
23:00	0	22	7	0	5	0	0	8	1	0	0	0	0	43
Total	25	1998	568	34	442	55	0	307	251	0	13	0	2	3695
Percent	0.7%	54.1%	15.4%	0.9%	12.0%	1.5%	0.0%	8.3%	6.8%	0.0%	0.4%	0.0%	0.1%	
AM Peak	09:00	05:00	04:00	05:00	08:00	09:00		10:00	09:00				07:00	05:00
Vol.	3	145	36	5	32	4		35	30				1	231
PM Peak	12:00	16:00	16:00	12:00	14:00	16:00		12:00	12:00		17:00		15:00	16:00
Vol.	2	338	80	3	35	8		32	22		5		1	476
Grand Total	25	1998	568	34	442	55	0	307	251	0	13	0	2	3695
Percent	0.7%	54.1%	15.4%	0.9%	12.0%	1.5%	0.0%	8.3%	6.8%	0.0%	0.4%	0.0%	0.1%	

Counts Unlimited, Inc.
PO Box 1178
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(951)268-6268

City of Apple Valley
N/S: Quarry Road
E/W: I-15 Southbound Ramps
Weather: Clear

File Name : 01_APV_Quarry_15S AM
Site Code : 99921190
Start Date : 5/6/2021
Page No : 1

Groups Printed- Total Volume

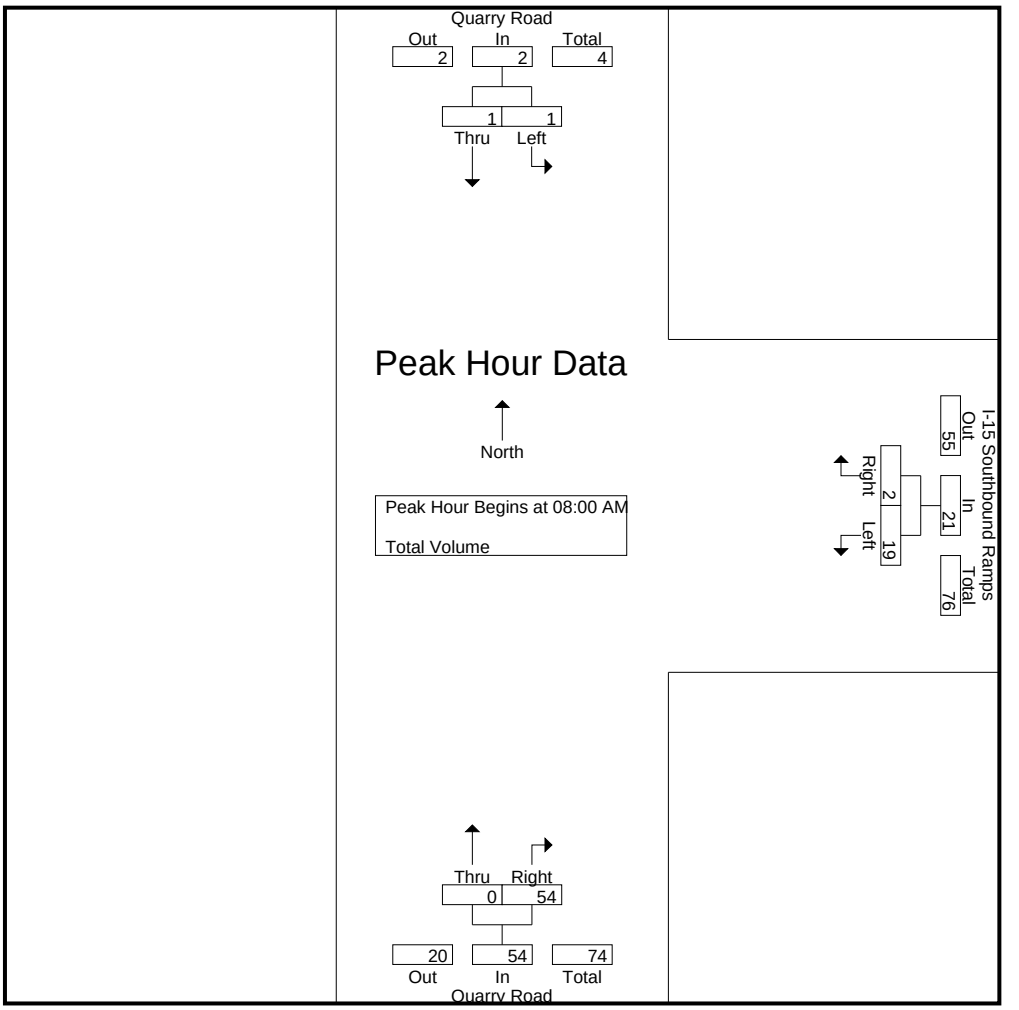
	Quarry Road Southbound			I-15 Southbound Ramps Westbound			Quarry Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	4	0	4	0	10	10	14
07:15 AM	0	0	0	6	0	6	0	10	10	16
07:30 AM	0	0	0	1	0	1	0	10	10	11
07:45 AM	0	0	0	4	0	4	0	17	17	21
Total	0	0	0	15	0	15	0	47	47	62
08:00 AM	0	0	0	3	0	3	0	9	9	12
08:15 AM	1	0	1	7	1	8	0	15	15	24
08:30 AM	0	1	1	3	0	3	0	13	13	17
08:45 AM	0	0	0	6	1	7	0	17	17	24
Total	1	1	2	19	2	21	0	54	54	77
Grand Total	1	1	2	34	2	36	0	101	101	139
Apprch %	50	50		94.4	5.6		0	100		
Total %	0.7	0.7	1.4	24.5	1.4	25.9	0	72.7	72.7	

	Quarry Road Southbound			I-15 Southbound Ramps Westbound			Quarry Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	0	0	0	3	0	3	0	9	9	12
08:15 AM	**1**	0	**1**	**7**	**1**	**8**	0	15	15	**24**
08:30 AM	0	**1**	1	3	0	3	0	13	13	17
08:45 AM	0	0	0	6	1	7	0	**17**	**17**	24
Total Volume	1	1	2	19	2	21	0	54	54	77
% App. Total	50	50		90.5	9.5		0	100		
PHF	.250	.250	.500	.679	.500	.656	.000	.794	.794	.802

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City of Apple Valley
N/S: Quarry Road
E/W: I-15 Southbound Ramps
Weather: Clear

File Name : 01_APV_Quarry_15S AM
Site Code : 99921190
Start Date : 5/6/2021
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM			08:00 AM			07:45 AM		
+0 mins.	0	0	0	3	0	3	0	**17**	**17**
+15 mins.	0	0	0	**7**	**1**	**8**	0	9	9
+30 mins.	**1**	0	**1**	3	0	3	0	15	15
+45 mins.	0	**1**	1	6	1	7	0	13	13
Total Volume	1	1	2	19	2	21	0	54	54
% App. Total	50	50		90.5	9.5		0	100	
PHF	.250	.250	.500	.679	.500	.656	.000	.794	.794

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City of Apple Valley
N/S: Quarry Road
E/W: I-15 Southbound Ramps
Weather: Clear

File Name : 01_APV_Quarry_15S PM
Site Code : 99921190
Start Date : 5/6/2021
Page No : 1

Groups Printed- Total Volume

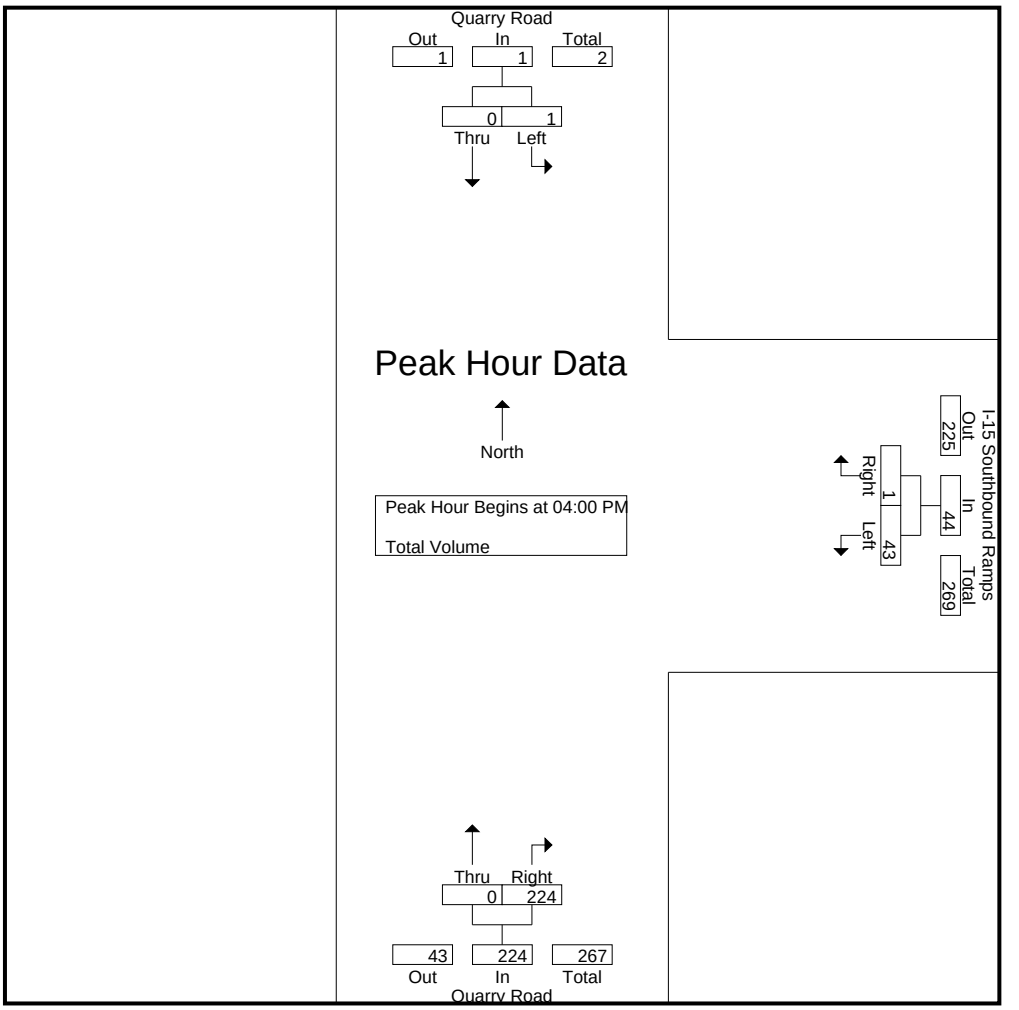
	Quarry Road Southbound			I-15 Southbound Ramps Westbound			Quarry Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	4	0	4	0	70	70	74
04:15 PM	0	0	0	13	1	14	0	66	66	80
04:30 PM	0	0	0	17	0	17	0	48	48	65
04:45 PM	1	0	1	9	0	9	0	40	40	50
Total	1	0	1	43	1	44	0	224	224	269
05:00 PM	0	0	0	7	1	8	0	32	32	40
05:15 PM	0	0	0	10	1	11	0	31	31	42
05:30 PM	2	0	2	13	1	14	0	14	14	30
05:45 PM	0	0	0	9	0	9	0	8	8	17
Total	2	0	2	39	3	42	0	85	85	129
Grand Total	3	0	3	82	4	86	0	309	309	398
Apprch %	100	0		95.3	4.7		0	100		
Total %	0.8	0	0.8	20.6	1	21.6	0	77.6	77.6	

	Quarry Road Southbound			I-15 Southbound Ramps Westbound			Quarry Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	4	0	4	0	**70**	**70**	74
04:15 PM	0	0	0	13	**1**	14	0	66	66	**80**
04:30 PM	0	0	0	**17**	0	**17**	0	48	48	65
04:45 PM	**1**	0	**1**	9	0	9	0	40	40	50
Total Volume	1	0	1	43	1	44	0	224	224	269
% App. Total	100	0		97.7	2.3		0	100		
PHF	.250	.000	.250	.632	.250	.647	.000	.800	.800	.841

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City of Apple Valley
N/S: Quarry Road
E/W: I-15 Southbound Ramps
Weather: Clear

File Name : 01_APV_Quarry_15S PM
Site Code : 99921190
Start Date : 5/6/2021
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM			04:15 PM			04:00 PM		
+0 mins.	1	0	1	13	**1**	14	0	**70**	**70**
+15 mins.	0	0	0	**17**	0	**17**	0	66	66
+30 mins.	0	0	0	9	0	9	0	48	48
+45 mins.	**2**	0	**2**	7	1	8	0	40	40
Total Volume	3	0	3	46	2	48	0	224	224
% App. Total	100	0		95.8	4.2		0	100	
PHF	.375	.000	.375	.676	.500	.706	.000	.800	.800

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City of Apple Valley
N/S: Quarry Road
E/W: Stoddard Wells Road
Weather: Clear

File Name : 02_APV_Quarry_Stoddard AM
Site Code : 99921190
Start Date : 5/6/2021
Page No : 1

Groups Printed- Total Volume

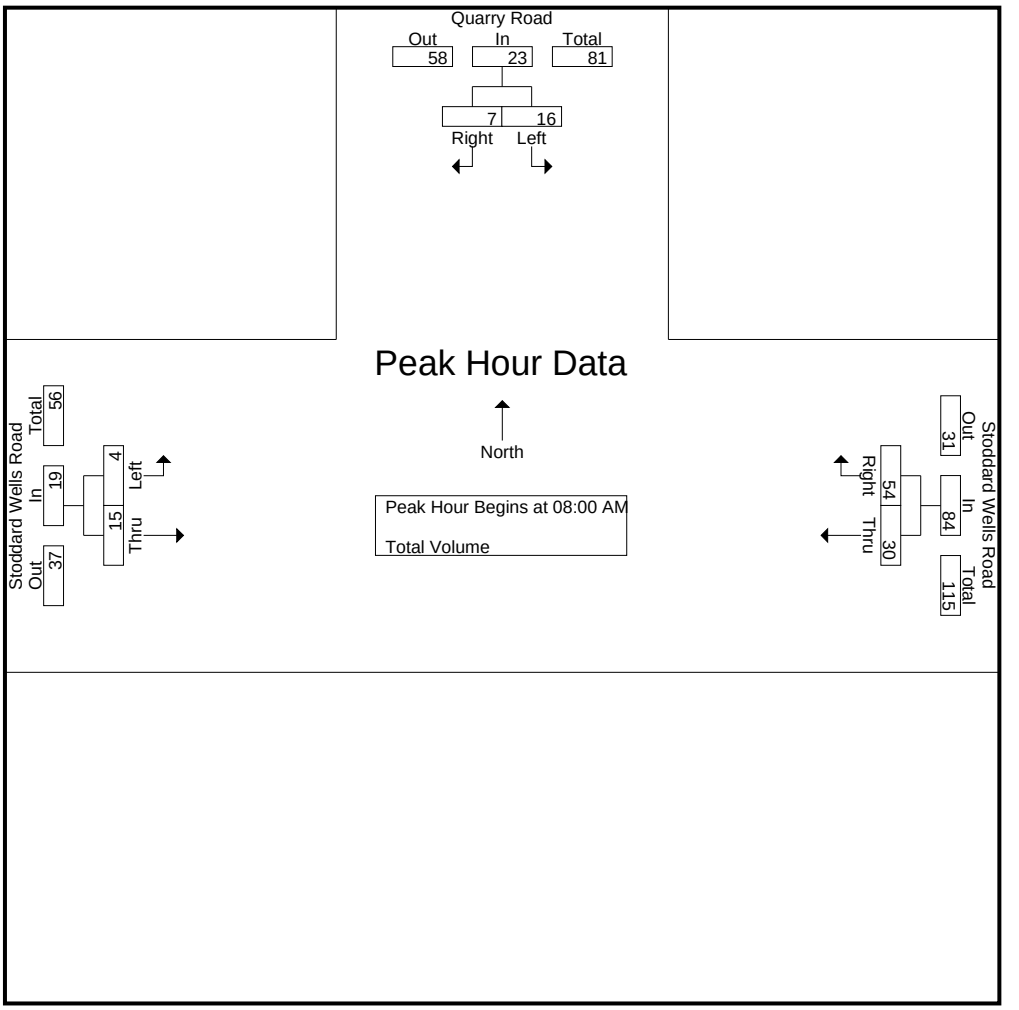
	Quarry Road Southbound			Stoddard Wells Road Westbound			Stoddard Wells Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
07:00 AM	5	0	5	4	11	15	0	2	2	22
07:15 AM	4	1	5	2	12	14	0	1	1	20
07:30 AM	3	0	3	5	12	17	0	0	0	20
07:45 AM	3	2	5	12	15	27	0	0	0	32
Total	15	3	18	23	50	73	0	3	3	94
08:00 AM	2	3	5	10	10	20	0	1	1	26
08:15 AM	6	2	8	6	17	23	1	3	4	35
08:30 AM	3	1	4	8	12	20	0	7	7	31
08:45 AM	5	1	6	6	15	21	3	4	7	34
Total	16	7	23	30	54	84	4	15	19	126
Grand Total	31	10	41	53	104	157	4	18	22	220
Apprch %	75.6	24.4		33.8	66.2		18.2	81.8		
Total %	14.1	4.5	18.6	24.1	47.3	71.4	1.8	8.2	10	

	Quarry Road Southbound			Stoddard Wells Road Westbound			Stoddard Wells Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	2	**3**	5	**10**	10	20	0	1	1	26
08:15 AM	**6**	2	**8**	6	**17**	**23**	1	3	4	**35**
08:30 AM	3	1	4	8	12	20	0	**7**	**7**	31
08:45 AM	5	1	6	6	15	21	**3**	4	7	34
Total Volume	16	7	23	30	54	84	4	15	19	126
% App. Total	69.6	30.4		35.7	64.3		21.1	78.9		
PHF	.667	.583	.719	.750	.794	.913	.333	.536	.679	.900

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City of Apple Valley
N/S: Quarry Road
E/W: Stoddard Wells Road
Weather: Clear

File Name : 02_APV_Quarry_Stoddard AM
Site Code : 99921190
Start Date : 5/6/2021



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	08:00 AM			07:45 AM			08:00 AM		
+0 mins.	2	**3**	5	**12**	15	**27**	0	1	1
+15 mins.	**6**	2	**8**	10	10	20	1	3	4
+30 mins.	3	1	4	6	**17**	23	0	**7**	**7**
+45 mins.	5	1	6	8	12	20	**3**	4	7
Total Volume	16	7	23	36	54	90	4	15	19
% App. Total	69.6	30.4		40	60		21.1	78.9	
PHF	.667	.583	.719	.750	.794	.833	.333	.536	.679

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City of Apple Valley
N/S: Quarry Road
E/W: Stoddard Wells Road
Weather: Clear

File Name : 02_APV_Quarry_Stoddard PM
Site Code : 99921190
Start Date : 5/6/2021
Page No : 1

Groups Printed- Total Volume

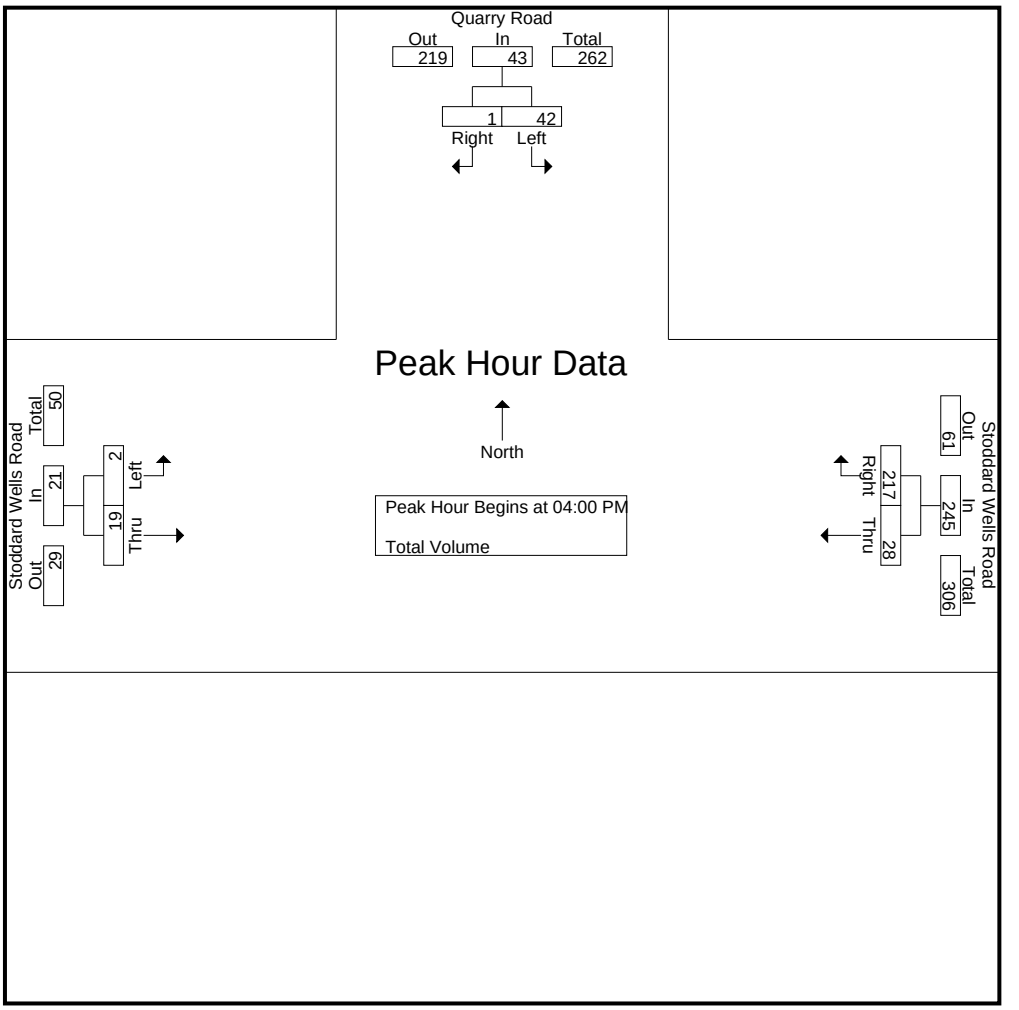
	Quarry Road Southbound			Stoddard Wells Road Westbound			Stoddard Wells Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
04:00 PM	3	1	4	5	67	72	0	2	2	78
04:15 PM	12	0	12	9	65	74	0	8	8	94
04:30 PM	19	0	19	7	47	54	1	4	5	78
04:45 PM	8	0	8	7	38	45	1	5	6	59
Total	42	1	43	28	217	245	2	19	21	309
05:00 PM	5	2	7	1	33	34	3	5	8	49
05:15 PM	9	1	10	0	30	30	0	3	3	43
05:30 PM	12	0	12	1	12	13	1	1	2	27
05:45 PM	9	0	9	0	7	7	0	0	0	16
Total	35	3	38	2	82	84	4	9	13	135
Grand Total	77	4	81	30	299	329	6	28	34	444
Apprch %	95.1	4.9		9.1	90.9		17.6	82.4		
Total %	17.3	0.9	18.2	6.8	67.3	74.1	1.4	6.3	7.7	

	Quarry Road Southbound			Stoddard Wells Road Westbound			Stoddard Wells Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	3	**1**	4	5	**67**	72	0	2	2	78
04:15 PM	12	0	12	**9**	65	**74**	0	**8**	**8**	**94**
04:30 PM	**19**	0	**19**	7	47	54	**1**	4	5	78
04:45 PM	8	0	8	7	38	45	1	5	6	59
Total Volume	42	1	43	28	217	245	2	19	21	309
% App. Total	97.7	2.3		11.4	88.6		9.5	90.5		
PHF	.553	.250	.566	.778	.810	.828	.500	.594	.656	.822

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City of Apple Valley
N/S: Quarry Road
E/W: Stoddard Wells Road
Weather: Clear

File Name : 02_APV_Quarry_Stoddard PM
Site Code : 99921190
Start Date : 5/6/2021
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:15 PM			04:00 PM			04:15 PM		
+0 mins.	12	0	12	5	**67**	72	0	**8**	**8**
+15 mins.	**19**	0	**19**	**9**	65	**74**	1	4	5
+30 mins.	8	0	8	7	47	54	1	5	6
+45 mins.	5	**2**	7	7	38	45	**3**	5	8
Total Volume	44	2	46	28	217	245	5	22	27
% App. Total	95.7	4.3		11.4	88.6		18.5	81.5	
PHF	.579	.250	.605	.778	.810	.828	.417	.688	.844

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City of Apple Valley
N/S: I-15 NB Ramps/Outer Hwy 15 N
E/W: Stoddard Wells Road
Weather: Clear

File Name : 03_APV_15N_Stoddard AM
Site Code : 99921190
Start Date : 5/6/2021
Page No : 1

Groups Printed- Total Volume

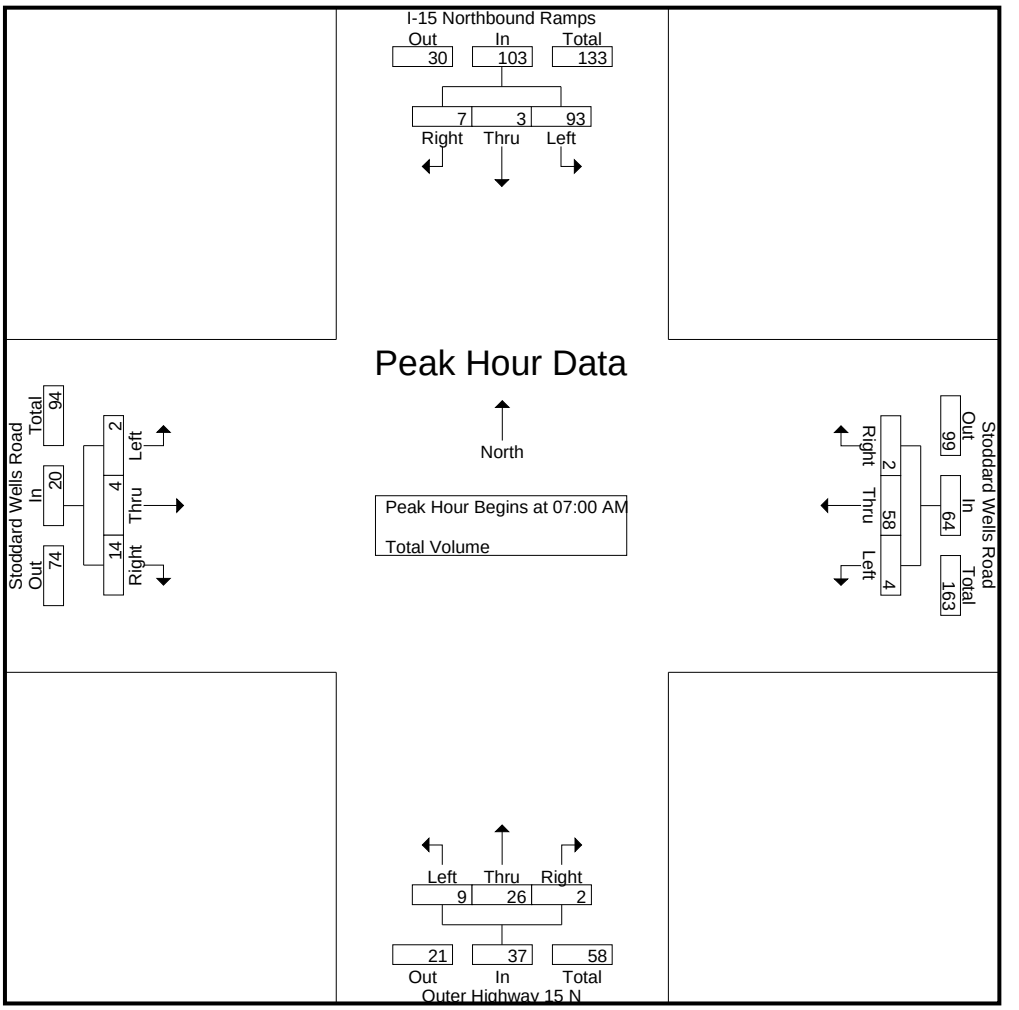
	I-15 Northbound Ramps Southbound				Stoddard Wells Road Westbound				Outer Highway 15 N Northbound				Stoddard Wells Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	19	0	1	20	0	12	2	14	1	4	0	5	1	3	4	8	47
07:15 AM	22	0	0	22	2	15	0	17	0	5	0	5	1	0	4	5	49
07:30 AM	23	1	0	24	1	12	0	13	1	11	1	13	0	0	3	3	53
07:45 AM	29	2	6	37	1	19	0	20	7	6	1	14	0	1	3	4	75
Total	93	3	7	103	4	58	2	64	9	26	2	37	2	4	14	20	224
08:00 AM	14	1	7	22	0	13	0	13	1	3	1	5	1	0	2	3	43
08:15 AM	17	1	1	19	1	18	1	20	1	1	1	3	1	1	6	8	50
08:30 AM	20	1	6	27	1	13	1	15	0	1	0	1	2	3	6	11	54
08:45 AM	18	0	3	21	2	17	3	22	2	6	0	8	0	3	5	8	59
Total	69	3	17	89	4	61	5	70	4	11	2	17	4	7	19	30	206
Grand Total	162	6	24	192	8	119	7	134	13	37	4	54	6	11	33	50	430
Apprch %	84.4	3.1	12.5		6	88.8	5.2		24.1	68.5	7.4		12	22	66		
Total %	37.7	1.4	5.6	44.7	1.9	27.7	1.6	31.2	3	8.6	0.9	12.6	1.4	2.6	7.7	11.6	

	I-15 Northbound Ramps Southbound				Stoddard Wells Road Westbound				Outer Highway 15 N Northbound				Stoddard Wells Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	19	0	1	20	0	12	**2**	14	1	4	0	5	**1**	**3**	**4**	**8**	47
07:15 AM	22	0	0	22	**2**	15	0	17	0	5	0	5	1	0	4	5	49
07:30 AM	23	1	0	24	1	12	0	13	1	**11**	**1**	13	0	0	3	3	53
07:45 AM	**29**	**2**	**6**	**37**	1	**19**	0	**20**	**7**	6	1	**14**	0	1	3	4	**75**
Total Volume	93	3	7	103	4	58	2	64	9	26	2	37	2	4	14	20	224
% App. Total	90.3	2.9	6.8		6.2	90.6	3.1		24.3	70.3	5.4		10	20	70		
PHF	.802	.375	.292	.696	.500	.763	.250	.800	.321	.591	.500	.661	.500	.333	.875	.625	.747

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Apple Valley
N/S: I-15 NB Ramps/Outer Hwy 15 N
E/W: Stoddard Wells Road
Weather: Clear

File Name : 03_APV_15N_Stoddard AM
Site Code : 99921190
Start Date : 5/6/2021
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				08:00 AM				07:00 AM				08:00 AM			
+0 mins.	22	0	0	22	0	13	0	13	1	4	0	5	1	0	2	3
+15 mins.	23	1	0	24	1	**18**	1	20	0	5	0	5	1	1	**6**	8
+30 mins.	**29**	**2**	6	**37**	1	13	1	15	1	**11**	**1**	13	**2**	**3**	6	**11**
+45 mins.	14	1	**7**	22	**2**	17	**3**	**22**	**7**	6	1	**14**	0	3	5	8
Total Volume	88	4	13	105	4	61	5	70	9	26	2	37	4	7	19	30
% App. Total	83.8	3.8	12.4		5.7	87.1	7.1		24.3	70.3	5.4		13.3	23.3	63.3	
PHF	.759	.500	.464	.709	.500	.847	.417	.795	.321	.591	.500	.661	.500	.583	.792	.682

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City of Apple Valley
N/S: I-15 NB Ramps/Outer Hwy 15 N
E/W: Stoddard Wells Road
Weather: Clear

File Name : 03_APV_15N_Stoddard PM
Site Code : 99921190
Start Date : 5/6/2021
Page No : 1

Groups Printed- Total Volume

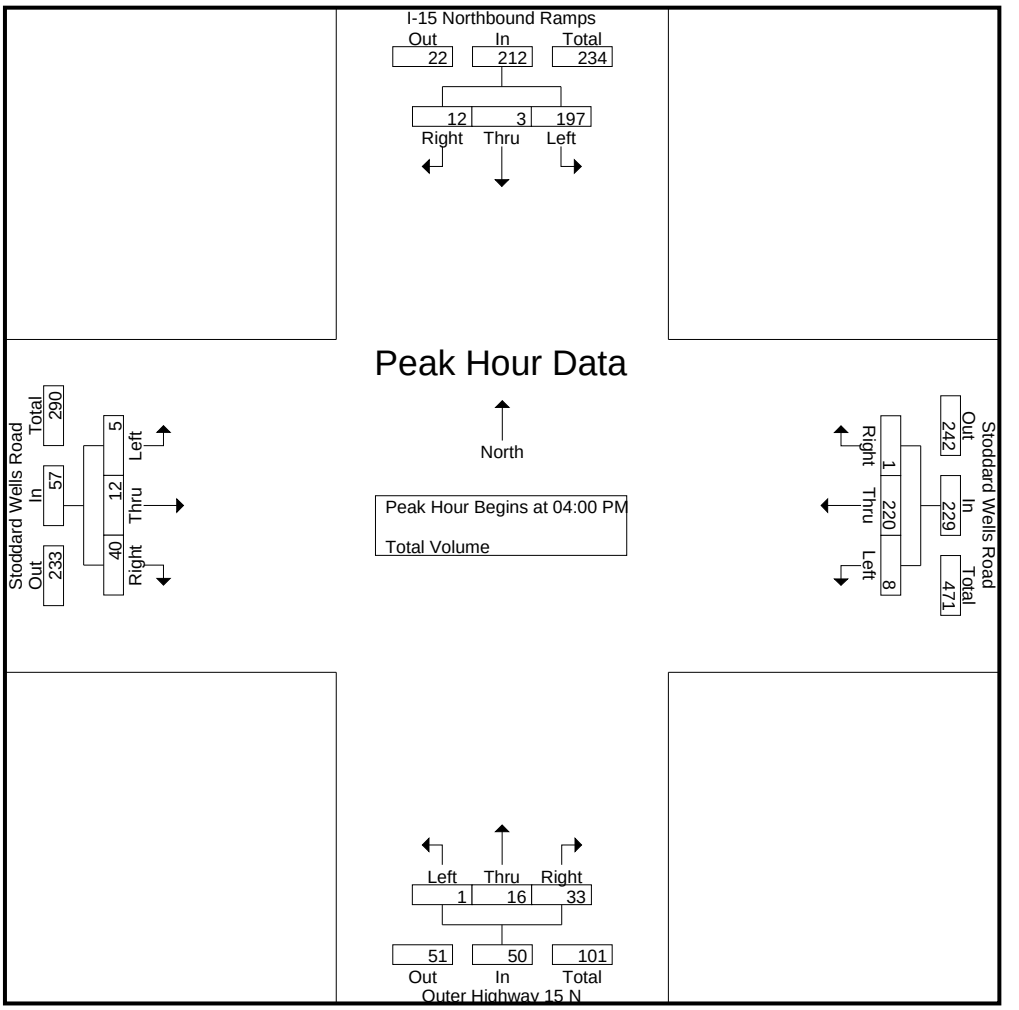
	I-15 Northbound Ramps Southbound				Stoddard Wells Road Westbound				Outer Highway 15 N Northbound				Stoddard Wells Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	90	1	2	93	3	68	0	71	0	3	16	19	0	2	2	4	187
04:15 PM	62	0	6	68	1	64	0	65	0	3	10	13	3	3	13	19	165
04:30 PM	20	0	2	22	2	52	1	55	1	6	4	11	0	4	17	21	109
04:45 PM	25	2	2	29	2	36	0	38	0	4	3	7	2	3	8	13	87
Total	197	3	12	212	8	220	1	229	1	16	33	50	5	12	40	57	548
05:00 PM	30	1	0	31	0	31	2	33	0	6	1	7	1	5	4	10	81
05:15 PM	17	1	2	20	0	22	1	23	0	8	1	9	1	1	11	13	65
05:30 PM	24	1	2	27	0	12	2	14	0	6	5	11	0	4	13	17	69
05:45 PM	19	1	0	20	0	10	0	10	0	5	5	10	0	1	7	8	48
Total	90	4	4	98	0	75	5	80	0	25	12	37	2	11	35	48	263
Grand Total	287	7	16	310	8	295	6	309	1	41	45	87	7	23	75	105	811
Apprch %	92.6	2.3	5.2		2.6	95.5	1.9		1.1	47.1	51.7		6.7	21.9	71.4		
Total %	35.4	0.9	2	38.2	1	36.4	0.7	38.1	0.1	5.1	5.5	10.7	0.9	2.8	9.2	12.9	

	I-15 Northbound Ramps Southbound				Stoddard Wells Road Westbound				Outer Highway 15 N Northbound				Stoddard Wells Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	**90**	1	2	**93**	**3**	**68**	0	**71**	0	3	**16**	**19**	0	2	2	4	**187**
04:15 PM	62	0	**6**	68	1	64	0	65	0	3	10	13	**3**	3	13	19	165
04:30 PM	20	0	2	22	2	52	**1**	55	**1**	**6**	4	11	0	**4**	**17**	**21**	109
04:45 PM	25	**2**	2	29	2	36	0	38	0	4	3	7	2	3	8	13	87
Total Volume	197	3	12	212	8	220	1	229	1	16	33	50	5	12	40	57	548
% App. Total	92.9	1.4	5.7		3.5	96.1	0.4		2	32	66		8.8	21.1	70.2		
PHF	.547	.375	.500	.570	.667	.809	.250	.806	.250	.667	.516	.658	.417	.750	.588	.679	.733

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City of Apple Valley
N/S: I-15 NB Ramps/Outer Hwy 15 N
E/W: Stoddard Wells Road
Weather: Clear

File Name : 03_APV_15N_Stoddard PM
Site Code : 99921190
Start Date : 5/6/2021
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:15 PM			
+0 mins.	**90**	1	2	**93**	**3**	**68**	0	**71**	0	3	**16**	**19**	**3**	3	13	19
+15 mins.	62	0	**6**	68	1	64	0	65	0	3	10	13	0	4	**17**	**21**
+30 mins.	20	0	2	22	2	52	**1**	55	**1**	**6**	4	11	2	3	8	13
+45 mins.	25	**2**	2	29	2	36	0	38	0	4	3	7	1	**5**	4	10
Total Volume	197	3	12	212	8	220	1	229	1	16	33	50	6	15	42	63
% App. Total	92.9	1.4	5.7		3.5	96.1	0.4		2	32	66		9.5	23.8	66.7	
PHF	.547	.375	.500	.570	.667	.809	.250	.806	.250	.667	.516	.658	.500	.750	.618	.750

Appendix D - LOS Calculation Worksheets – Existing Conditions

Intersection	
Int Delay, s/veh	2.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	19	2	0	54	1	1
Future Vol, veh/h	19	2	0	54	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	18	2	2	18	2	2
Mvmt Flow	24	3	0	68	1	1

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	37	34	0	0	68	0
Stage 1	34	-	-	-	-	-
Stage 2	3	-	-	-	-	-
Critical Hdwy	6.58	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.58	-	-	-	-	-
Critical Hdwy Stg 2	5.58	-	-	-	-	-
Follow-up Hdwy	3.662	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	936	1039	-	-	1533	-
Stage 1	949	-	-	-	-	-
Stage 2	980	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	935	1039	-	-	1533	-
Mov Cap-2 Maneuver	935	-	-	-	-	-
Stage 1	949	-	-	-	-	-
Stage 2	979	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	3.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	944	1533	-
HCM Lane V/C Ratio	-	-	0.028	0.001	-
HCM Control Delay (s)	-	-	8.9	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	15	30	54	16	7
Future Vol, veh/h	4	15	30	54	16	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	18	2	18	18	2
Mvmt Flow	4	17	33	60	18	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	93	0	-	0	88	63
Stage 1	-	-	-	-	63	-
Stage 2	-	-	-	-	25	-
Critical Hdwy	4.12	-	-	-	6.58	6.22
Critical Hdwy Stg 1	-	-	-	-	5.58	-
Critical Hdwy Stg 2	-	-	-	-	5.58	-
Follow-up Hdwy	2.218	-	-	-	3.662	3.318
Pot Cap-1 Maneuver	1501	-	-	-	875	1002
Stage 1	-	-	-	-	920	-
Stage 2	-	-	-	-	958	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1501	-	-	-	872	1002
Mov Cap-2 Maneuver	-	-	-	-	872	-
Stage 1	-	-	-	-	917	-
Stage 2	-	-	-	-	958	-

Approach	EB	WB	SB
HCM Control Delay, s	1.6	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1501	-	-	-	908
HCM Lane V/C Ratio	0.003	-	-	-	0.028
HCM Control Delay (s)	7.4	0	-	-	9.1
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	6.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	2	4	14	4	58	2	9	26	2	93	3	7
Future Vol, veh/h	2	4	14	4	58	2	9	26	2	93	3	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	18	18	2	2	18	18	2	18	18	18	18	18
Mvmt Flow	3	5	19	5	77	3	12	35	3	124	4	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	80	0	0	24	0	0	116	111	15	129	119	79
Stage 1	-	-	-	-	-	-	21	21	-	89	89	-
Stage 2	-	-	-	-	-	-	95	90	-	40	30	-
Critical Hdwy	4.28	-	-	4.12	-	-	7.12	6.68	6.38	7.28	6.68	6.38
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.68	-	6.28	5.68	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.68	-	6.28	5.68	-
Follow-up Hdwy	2.362	-	-	2.218	-	-	3.518	4.162	3.462	3.662	4.162	3.462
Pot Cap-1 Maneuver	1423	-	-	1591	-	-	861	750	1020	808	742	939
Stage 1	-	-	-	-	-	-	998	847	-	880	791	-
Stage 2	-	-	-	-	-	-	912	790	-	936	839	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1423	-	-	1591	-	-	846	746	1020	774	738	939
Mov Cap-2 Maneuver	-	-	-	-	-	-	846	746	-	774	738	-
Stage 1	-	-	-	-	-	-	996	845	-	878	789	-
Stage 2	-	-	-	-	-	-	896	788	-	893	837	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.5	9.9	10.6
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	780	1423	-	-	1591	-	-	782
HCM Lane V/C Ratio	0.063	0.002	-	-	0.003	-	-	0.176
HCM Control Delay (s)	9.9	7.5	0	-	7.3	0	-	10.6
HCM Lane LOS	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.6

Intersection	
Int Delay, s/veh	1.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	43	1	0	224	1	0
Future Vol, veh/h	43	1	0	224	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	18	2	2	18	2	2
Mvmt Flow	51	1	0	267	1	0

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	136	134	0	0	267	0
Stage 1	134	-	-	-	-	-
Stage 2	2	-	-	-	-	-
Critical Hdwy	6.58	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.58	-	-	-	-	-
Critical Hdwy Stg 2	5.58	-	-	-	-	-
Follow-up Hdwy	3.662	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	821	915	-	-	1297	-
Stage 1	854	-	-	-	-	-
Stage 2	981	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	820	915	-	-	1297	-
Mov Cap-2 Maneuver	820	-	-	-	-	-
Stage 1	854	-	-	-	-	-
Stage 2	980	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.7	0	7.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	822	1297	-
HCM Lane V/C Ratio	-	-	0.064	0.001	-
HCM Control Delay (s)	-	-	9.7	7.8	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	19	28	217	42	1
Future Vol, veh/h	2	19	28	217	42	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	2	18	2	18	18	2
Mvmt Flow	2	23	34	265	51	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	299	0	-	0	194	167
Stage 1	-	-	-	-	167	-
Stage 2	-	-	-	-	27	-
Critical Hdwy	4.12	-	-	-	6.58	6.22
Critical Hdwy Stg 1	-	-	-	-	5.58	-
Critical Hdwy Stg 2	-	-	-	-	5.58	-
Follow-up Hdwy	2.218	-	-	-	3.662	3.318
Pot Cap-1 Maneuver	1262	-	-	-	760	877
Stage 1	-	-	-	-	825	-
Stage 2	-	-	-	-	956	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1262	-	-	-	758	877
Mov Cap-2 Maneuver	-	-	-	-	758	-
Stage 1	-	-	-	-	823	-
Stage 2	-	-	-	-	956	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	10.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1262	-	-	-	760
HCM Lane V/C Ratio	0.002	-	-	-	0.069
HCM Control Delay (s)	7.9	0	-	-	10.1
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	10

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	12	40	8	220	1	1	16	33	197	3	12
Future Vol, veh/h	5	12	40	8	220	1	1	16	33	197	3	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	73	73	73	73	73	73	73	73	73	73	73	73
Heavy Vehicles, %	18	18	2	2	18	18	2	18	18	18	18	18
Mvmt Flow	7	16	55	11	301	1	1	22	45	270	4	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	302	0	0	71	0	0	392	382	44	415	409	302
Stage 1	-	-	-	-	-	-	58	58	-	324	324	-
Stage 2	-	-	-	-	-	-	334	324	-	91	85	-
Critical Hdwy	4.28	-	-	4.12	-	-	7.12	6.68	6.38	7.28	6.68	6.38
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.68	-	6.28	5.68	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.68	-	6.28	5.68	-
Follow-up Hdwy	2.362	-	-	2.218	-	-	3.518	4.162	3.462	3.662	4.162	3.462
Pot Cap-1 Maneuver	1173	-	-	1529	-	-	567	527	982	521	508	702
Stage 1	-	-	-	-	-	-	954	816	-	656	622	-
Stage 2	-	-	-	-	-	-	680	622	-	878	794	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1173	-	-	1529	-	-	544	519	982	476	500	702
Mov Cap-2 Maneuver	-	-	-	-	-	-	544	519	-	476	500	-
Stage 1	-	-	-	-	-	-	948	811	-	652	616	-
Stage 2	-	-	-	-	-	-	654	616	-	810	789	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.3	10.3	22.9
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	754	1173	-	-	1529	-	-	485
HCM Lane V/C Ratio	0.091	0.006	-	-	0.007	-	-	0.599
HCM Control Delay (s)	10.3	8.1	0	-	7.4	0	-	22.9
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	3.9

Appendix E - LOS Calculation Worksheets – Near-Term Year 2023 Base Conditions

Intersection	
Int Delay, s/veh	2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	10	10	60	10	10
Future Vol, veh/h	20	10	10	60	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	18	2	2	18	2	2
Mvmt Flow	25	13	13	75	13	13

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	90	51	0	0	88	0
Stage 1	51	-	-	-	-	-
Stage 2	39	-	-	-	-	-
Critical Hdwy	6.58	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.58	-	-	-	-	-
Critical Hdwy Stg 2	5.58	-	-	-	-	-
Follow-up Hdwy	3.662	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	873	1017	-	-	1508	-
Stage 1	932	-	-	-	-	-
Stage 2	944	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	865	1017	-	-	1508	-
Mov Cap-2 Maneuver	865	-	-	-	-	-
Stage 1	932	-	-	-	-	-
Stage 2	936	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.1	0	3.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	910	1508	-
HCM Lane V/C Ratio	-	-	0.041	0.008	-
HCM Control Delay (s)	-	-	9.1	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	20	40	60	20	10
Future Vol, veh/h	10	20	40	60	20	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	18	2	18	18	2
Mvmt Flow	11	22	44	67	22	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	111	0	-	0	122	78
Stage 1	-	-	-	-	78	-
Stage 2	-	-	-	-	44	-
Critical Hdwy	4.12	-	-	-	6.58	6.22
Critical Hdwy Stg 1	-	-	-	-	5.58	-
Critical Hdwy Stg 2	-	-	-	-	5.58	-
Follow-up Hdwy	2.218	-	-	-	3.662	3.318
Pot Cap-1 Maneuver	1479	-	-	-	836	983
Stage 1	-	-	-	-	906	-
Stage 2	-	-	-	-	939	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1479	-	-	-	829	983
Mov Cap-2 Maneuver	-	-	-	-	829	-
Stage 1	-	-	-	-	899	-
Stage 2	-	-	-	-	939	-

Approach	EB	WB	SB
HCM Control Delay, s	2.5	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1479	-	-	-	875
HCM Lane V/C Ratio	0.008	-	-	-	0.038
HCM Control Delay (s)	7.5	0	-	-	9.3
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	7.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	10	10	20	10	60	10	10	30	10	100	10	10
Future Vol, veh/h	10	10	20	10	60	10	10	30	10	100	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	18	18	2	2	18	18	2	18	18	18	18	18
Mvmt Flow	13	13	27	13	80	13	13	40	13	133	13	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	93	0	0	40	0	0	179	172	27	192	179	87
Stage 1	-	-	-	-	-	-	53	53	-	113	113	-
Stage 2	-	-	-	-	-	-	126	119	-	79	66	-
Critical Hdwy	4.28	-	-	4.12	-	-	7.12	6.68	6.38	7.28	6.68	6.38
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.68	-	6.28	5.68	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.68	-	6.28	5.68	-
Follow-up Hdwy	2.362	-	-	2.218	-	-	3.518	4.162	3.462	3.662	4.162	3.462
Pot Cap-1 Maneuver	1407	-	-	1570	-	-	783	693	1004	734	687	929
Stage 1	-	-	-	-	-	-	960	820	-	854	772	-
Stage 2	-	-	-	-	-	-	878	767	-	891	810	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1407	-	-	1570	-	-	750	681	1004	683	675	929
Mov Cap-2 Maneuver	-	-	-	-	-	-	750	681	-	683	675	-
Stage 1	-	-	-	-	-	-	951	813	-	846	765	-
Stage 2	-	-	-	-	-	-	843	760	-	828	803	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.9	0.9	10.3	11.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	742	1407	-	-	1570	-	-	698
HCM Lane V/C Ratio	0.09	0.009	-	-	0.008	-	-	0.229
HCM Control Delay (s)	10.3	7.6	0	-	7.3	0	-	11.7
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.9

Intersection	
Int Delay, s/veh	2.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	50	10	10	230	10	10
Future Vol, veh/h	50	10	10	230	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	18	2	2	18	2	2
Mvmt Flow	60	12	12	274	12	12

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	185	149	0	0	286	0
Stage 1	149	-	-	-	-	-
Stage 2	36	-	-	-	-	-
Critical Hdwy	6.58	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.58	-	-	-	-	-
Critical Hdwy Stg 2	5.58	-	-	-	-	-
Follow-up Hdwy	3.662	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	769	898	-	-	1276	-
Stage 1	841	-	-	-	-	-
Stage 2	947	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	762	898	-	-	1276	-
Mov Cap-2 Maneuver	762	-	-	-	-	-
Stage 1	841	-	-	-	-	-
Stage 2	938	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.1	0	3.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	782	1276	-
HCM Lane V/C Ratio	-	-	0.091	0.009	-
HCM Control Delay (s)	-	-	10.1	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	20	30	220	50	10
Future Vol, veh/h	10	20	30	220	50	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	2	18	2	18	18	2
Mvmt Flow	12	24	37	268	61	12

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	305	0	-	0	219	171
Stage 1	-	-	-	-	171	-
Stage 2	-	-	-	-	48	-
Critical Hdwy	4.12	-	-	-	6.58	6.22
Critical Hdwy Stg 1	-	-	-	-	5.58	-
Critical Hdwy Stg 2	-	-	-	-	5.58	-
Follow-up Hdwy	2.218	-	-	-	3.662	3.318
Pot Cap-1 Maneuver	1256	-	-	-	735	873
Stage 1	-	-	-	-	822	-
Stage 2	-	-	-	-	935	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1256	-	-	-	728	873
Mov Cap-2 Maneuver	-	-	-	-	728	-
Stage 1	-	-	-	-	814	-
Stage 2	-	-	-	-	935	-

Approach	EB	WB	SB
HCM Control Delay, s	2.6	0	10.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1256	-	-	-	749
HCM Lane V/C Ratio	0.01	-	-	-	0.098
HCM Control Delay (s)	7.9	0	-	-	10.3
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Intersection	
Int Delay, s/veh	13.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	20	50	10	230	10	10	20	40	200	10	20
Future Vol, veh/h	10	20	50	10	230	10	10	20	40	200	10	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	73	73	73	73	73	73	73	73	73	73	73	73
Heavy Vehicles, %	18	18	2	2	18	18	2	18	18	18	18	18
Mvmt Flow	14	27	68	14	315	14	14	27	55	274	14	27

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	329	0	0	95	0	0	460	446	61	480	473	322
Stage 1	-	-	-	-	-	-	89	89	-	350	350	-
Stage 2	-	-	-	-	-	-	371	357	-	130	123	-
Critical Hdwy	4.28	-	-	4.12	-	-	7.12	6.68	6.38	7.28	6.68	6.38
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.68	-	6.28	5.68	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.68	-	6.28	5.68	-
Follow-up Hdwy	2.362	-	-	2.218	-	-	3.518	4.162	3.462	3.662	4.162	3.462
Pot Cap-1 Maneuver	1146	-	-	1499	-	-	512	484	961	471	467	683
Stage 1	-	-	-	-	-	-	918	791	-	635	605	-
Stage 2	-	-	-	-	-	-	649	601	-	837	764	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1146	-	-	1499	-	-	472	472	961	417	456	683
Mov Cap-2 Maneuver	-	-	-	-	-	-	472	472	-	417	456	-
Stage 1	-	-	-	-	-	-	906	781	-	627	598	-
Stage 2	-	-	-	-	-	-	602	594	-	752	754	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0.3	11.3	32.5
HCM LOS			B	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	666	1146	-	-	1499	-	-	433
HCM Lane V/C Ratio	0.144	0.012	-	-	0.009	-	-	0.728
HCM Control Delay (s)	11.3	8.2	0	-	7.4	0	-	32.5
HCM Lane LOS	B	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	0.5	0	-	-	0	-	-	5.8

Appendix F - LOS Calculation Worksheets – Near-Term Year 2023 Base with Project Conditions

Intersection	
Int Delay, s/veh	3.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	73	10	10	144	10	10
Future Vol, veh/h	73	10	10	144	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	23	2	2	23	2	2
Mvmt Flow	77	11	11	152	11	11

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	120	87	0	0	163	0
Stage 1	87	-	-	-	-	-
Stage 2	33	-	-	-	-	-
Critical Hdwy	6.63	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.63	-	-	-	-	-
Critical Hdwy Stg 2	5.63	-	-	-	-	-
Follow-up Hdwy	3.707	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	828	971	-	-	1416	-
Stage 1	886	-	-	-	-	-
Stage 2	938	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	821	971	-	-	1416	-
Mov Cap-2 Maneuver	821	-	-	-	-	-
Stage 1	886	-	-	-	-	-
Stage 2	930	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.8	0	3.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	837	1416	-
HCM Lane V/C Ratio	-	-	0.104	0.007	-
HCM Control Delay (s)	-	-	9.8	7.6	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0	-

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	23	43	144	73	10
Future Vol, veh/h	10	23	43	144	73	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	23	2	23	23	2
Mvmt Flow	11	24	45	152	77	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	197	0	-	0	167	121
Stage 1	-	-	-	-	121	-
Stage 2	-	-	-	-	46	-
Critical Hdwy	4.12	-	-	-	6.63	6.22
Critical Hdwy Stg 1	-	-	-	-	5.63	-
Critical Hdwy Stg 2	-	-	-	-	5.63	-
Follow-up Hdwy	2.218	-	-	-	3.707	3.318
Pot Cap-1 Maneuver	1376	-	-	-	777	930
Stage 1	-	-	-	-	855	-
Stage 2	-	-	-	-	925	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1376	-	-	-	771	930
Mov Cap-2 Maneuver	-	-	-	-	771	-
Stage 1	-	-	-	-	848	-
Stage 2	-	-	-	-	925	-

Approach	EB	WB	SB
HCM Control Delay, s	2.3	0	10.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1376	-	-	-	787
HCM Lane V/C Ratio	0.008	-	-	-	0.111
HCM Control Delay (s)	7.6	0	-	-	10.1
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.4

Intersection	
Int Delay, s/veh	6.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	10	66	20	11	147	65	10	30	11	181	10	10
Future Vol, veh/h	10	66	20	11	147	65	10	30	11	181	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	23	23	2	2	23	23	2	23	23	23	23	23
Mvmt Flow	11	69	21	12	155	68	11	32	12	191	11	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	223	0	0	90	0	0	326	349	80	337	325	189
Stage 1	-	-	-	-	-	-	102	102	-	213	213	-
Stage 2	-	-	-	-	-	-	224	247	-	124	112	-
Critical Hdwy	4.33	-	-	4.12	-	-	7.12	6.73	6.43	7.33	6.73	6.43
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.73	-	6.33	5.73	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.73	-	6.33	5.73	-
Follow-up Hdwy	2.407	-	-	2.218	-	-	3.518	4.207	3.507	3.707	4.207	3.507
Pot Cap-1 Maneuver	1231	-	-	1505	-	-	627	543	925	579	560	802
Stage 1	-	-	-	-	-	-	904	772	-	744	689	-
Stage 2	-	-	-	-	-	-	779	665	-	832	764	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1231	-	-	1505	-	-	601	533	925	538	550	802
Mov Cap-2 Maneuver	-	-	-	-	-	-	601	533	-	538	550	-
Stage 1	-	-	-	-	-	-	896	765	-	737	683	-
Stage 2	-	-	-	-	-	-	750	659	-	781	757	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.4	11.6	15.6
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	601	1231	-	-	1505	-	-	548
HCM Lane V/C Ratio	0.089	0.009	-	-	0.008	-	-	0.386
HCM Control Delay (s)	11.6	8	0	-	7.4	0	-	15.6
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	1.8

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	139	119	79	1	1	144
Future Vol, veh/h	139	119	79	1	1	144
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	23	23	23	23	23	23
Mvmt Flow	146	125	83	1	1	152

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	84	0	-	0	501	84
Stage 1	-	-	-	-	84	-
Stage 2	-	-	-	-	417	-
Critical Hdwy	4.33	-	-	-	6.63	6.43
Critical Hdwy Stg 1	-	-	-	-	5.63	-
Critical Hdwy Stg 2	-	-	-	-	5.63	-
Follow-up Hdwy	2.407	-	-	-	3.707	3.507
Pot Cap-1 Maneuver	1390	-	-	-	494	920
Stage 1	-	-	-	-	889	-
Stage 2	-	-	-	-	622	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1390	-	-	-	438	920
Mov Cap-2 Maneuver	-	-	-	-	438	-
Stage 1	-	-	-	-	789	-
Stage 2	-	-	-	-	622	-

Approach	EB	WB	SB
HCM Control Delay, s	4.3	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1390	-	-	-	913
HCM Lane V/C Ratio	0.105	-	-	-	0.167
HCM Control Delay (s)	7.9	0	-	-	9.7
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.4	-	-	-	0.6

Intersection	
Int Delay, s/veh	3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	113	10	10	322	10	10
Future Vol, veh/h	113	10	10	322	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	23	2	2	23	2	2
Mvmt Flow	119	11	11	339	11	11

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	214	181	0	0	350	0
Stage 1	181	-	-	-	-	-
Stage 2	33	-	-	-	-	-
Critical Hdwy	6.63	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.63	-	-	-	-	-
Critical Hdwy Stg 2	5.63	-	-	-	-	-
Follow-up Hdwy	3.707	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	730	862	-	-	1209	-
Stage 1	802	-	-	-	-	-
Stage 2	938	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	723	862	-	-	1209	-
Mov Cap-2 Maneuver	723	-	-	-	-	-
Stage 1	802	-	-	-	-	-
Stage 2	930	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11	0	4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	733	1209	-
HCM Lane V/C Ratio	-	-	0.177	0.009	-
HCM Control Delay (s)	-	-	11	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.6	0	-

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	23	33	312	113	10
Future Vol, veh/h	10	23	33	312	113	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	23	2	23	23	2
Mvmt Flow	11	24	35	328	119	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	363	0	-	0	245	199
Stage 1	-	-	-	-	199	-
Stage 2	-	-	-	-	46	-
Critical Hdwy	4.12	-	-	-	6.63	6.22
Critical Hdwy Stg 1	-	-	-	-	5.63	-
Critical Hdwy Stg 2	-	-	-	-	5.63	-
Follow-up Hdwy	2.218	-	-	-	3.707	3.318
Pot Cap-1 Maneuver	1196	-	-	-	700	842
Stage 1	-	-	-	-	787	-
Stage 2	-	-	-	-	925	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1196	-	-	-	694	842
Mov Cap-2 Maneuver	-	-	-	-	694	-
Stage 1	-	-	-	-	780	-
Stage 2	-	-	-	-	925	-

Approach	EB	WB	SB
HCM Control Delay, s	2.4	0	11.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1196	-	-	-	704
HCM Lane V/C Ratio	0.009	-	-	-	0.184
HCM Control Delay (s)	8	0	-	-	11.3
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.7

Intersection	
Int Delay, s/veh	23.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	10	86	50	12	325	70	10	20	42	296	10	20
Future Vol, veh/h	10	86	50	12	325	70	10	20	42	296	10	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	23	23	2	2	23	23	2	23	23	23	23	23
Mvmt Flow	11	91	53	13	342	74	11	21	44	312	11	21

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	416	0	0	144	0	0	561	582	118	577	571	379
Stage 1	-	-	-	-	-	-	140	140	-	405	405	-
Stage 2	-	-	-	-	-	-	421	442	-	172	166	-
Critical Hdwy	4.33	-	-	4.12	-	-	7.12	6.73	6.43	7.33	6.73	6.43
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.73	-	6.33	5.73	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.73	-	6.33	5.73	-
Follow-up Hdwy	2.407	-	-	2.218	-	-	3.518	4.207	3.507	3.707	4.207	3.507
Pot Cap-1 Maneuver	1039	-	-	1438	-	-	438	397	880	398	403	624
Stage 1	-	-	-	-	-	-	863	742	-	583	564	-
Stage 2	-	-	-	-	-	-	610	542	-	783	723	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1039	-	-	1438	-	-	407	387	880	356	393	624
Mov Cap-2 Maneuver	-	-	-	-	-	-	407	387	-	356	393	-
Stage 1	-	-	-	-	-	-	853	733	-	576	557	-
Stage 2	-	-	-	-	-	-	571	535	-	714	714	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.2	12.1	66.1
HCM LOS			B	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	581	1039	-	-	1438	-	-	367
HCM Lane V/C Ratio	0.13	0.01	-	-	0.009	-	-	0.935
HCM Control Delay (s)	12.1	8.5	0	-	7.5	0	-	66.1
HCM Lane LOS	B	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	10

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	164	260	250	2	2	157
Future Vol, veh/h	164	260	250	2	2	157
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	23	23	23	23	23	23
Mvmt Flow	173	274	263	2	2	165

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	265	0	-	0	884	264
Stage 1	-	-	-	-	264	-
Stage 2	-	-	-	-	620	-
Critical Hdwy	4.33	-	-	-	6.63	6.43
Critical Hdwy Stg 1	-	-	-	-	5.63	-
Critical Hdwy Stg 2	-	-	-	-	5.63	-
Follow-up Hdwy	2.407	-	-	-	3.707	3.507
Pot Cap-1 Maneuver	1187	-	-	-	290	726
Stage 1	-	-	-	-	734	-
Stage 2	-	-	-	-	498	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1187	-	-	-	240	726
Mov Cap-2 Maneuver	-	-	-	-	240	-
Stage 1	-	-	-	-	608	-
Stage 2	-	-	-	-	498	-

Approach	EB	WB	SB
HCM Control Delay, s	3.3	0	11.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1187	-	-	-	708
HCM Lane V/C Ratio	0.145	-	-	-	0.236
HCM Control Delay (s)	8.5	0	-	-	11.7
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.5	-	-	-	0.9

Appendix G - LOS Calculation Worksheets – Near-Term Year 2023 Base with Project Conditions – Recommended Improvements

Intersection	
Intersection Delay, s/veh	9.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	66	20	11	147	65	10	30	11	181	10	10
Future Vol, veh/h	10	66	20	11	147	65	10	30	11	181	10	10
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	23	23	2	2	23	23	2	23	23	23	23	23
Mvmt Flow	11	69	21	12	155	68	11	32	12	191	11	11
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.1	9.6	8.4	10.8
HCM LOS	A	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	20%	10%	5%	90%
Vol Thru, %	59%	69%	66%	5%
Vol Right, %	22%	21%	29%	5%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	51	96	223	201
LT Vol	10	10	11	181
Through Vol	30	66	147	10
RT Vol	11	20	65	10
Lane Flow Rate	54	101	235	212
Geometry Grp	1	1	1	1
Degree of Util (X)	0.074	0.145	0.301	0.312
Departure Headway (Hd)	4.947	5.179	4.611	5.309
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	718	689	777	673
Service Time	3.021	3.238	2.657	3.369
HCM Lane V/C Ratio	0.075	0.147	0.302	0.315
HCM Control Delay	8.4	9.1	9.6	10.8
HCM Lane LOS	A	A	A	B
HCM 95th-tile Q	0.2	0.5	1.3	1.3

Intersection	
Intersection Delay, s/veh	16.5
Intersection LOS	C

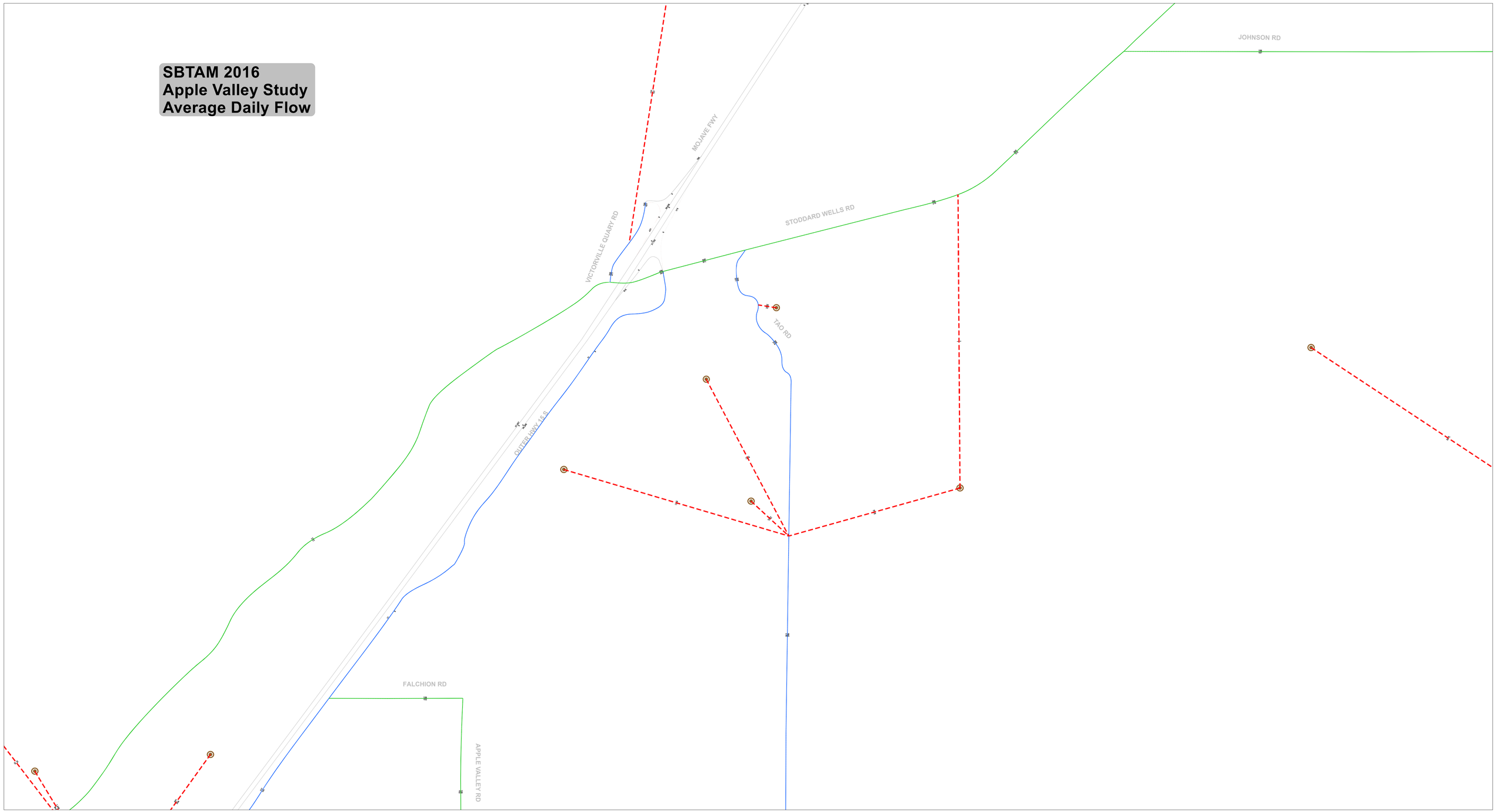
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	86	50	12	325	70	10	20	42	296	10	20
Future Vol, veh/h	10	86	50	12	325	70	10	20	42	296	10	20
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	23	23	2	2	23	23	2	23	23	23	23	23
Mvmt Flow	11	91	53	13	342	74	11	21	44	312	11	21
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11.5	18.1	10	18.1
HCM LOS	B	C	A	C

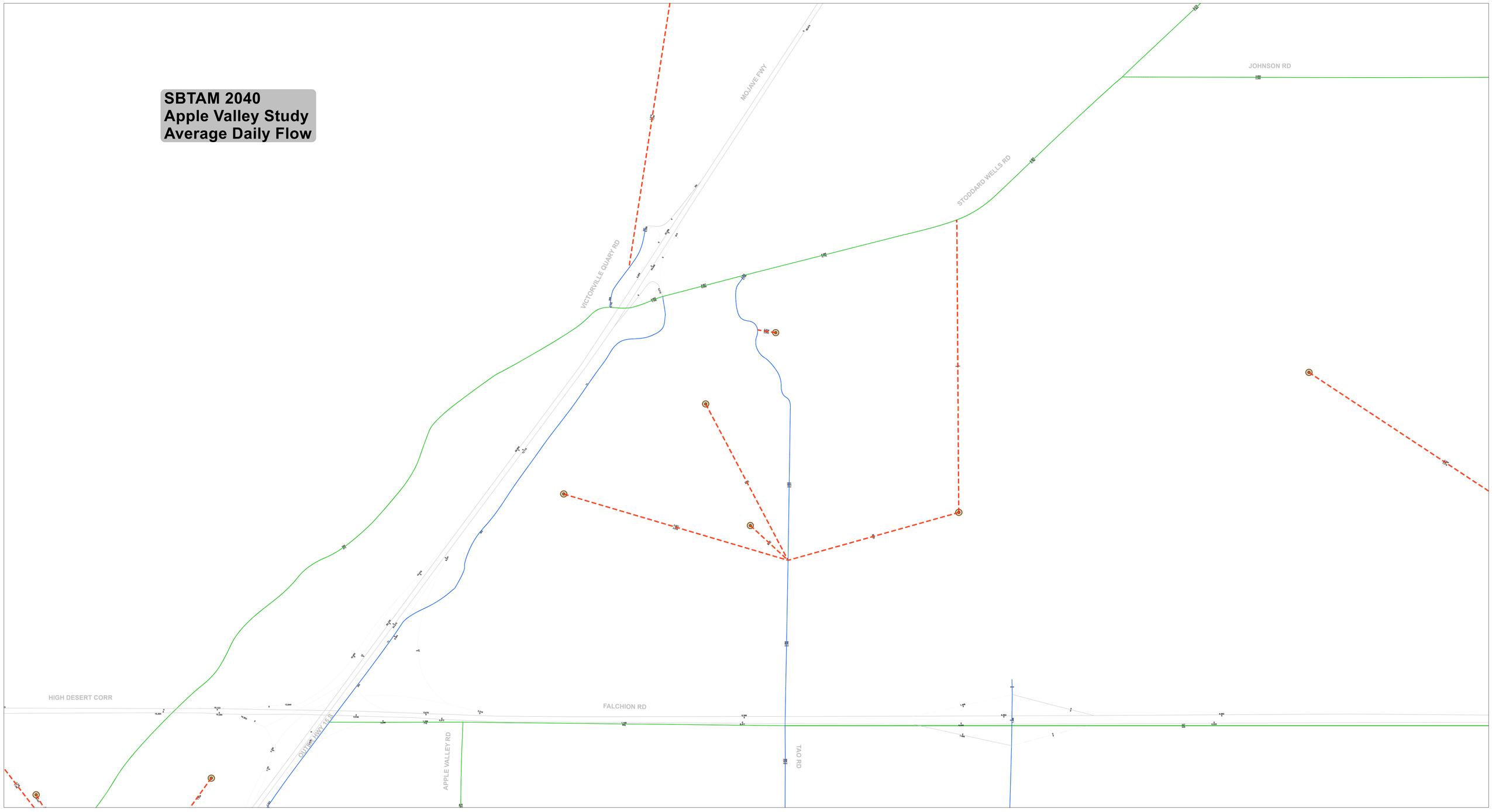
Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	14%	7%	3%	91%
Vol Thru, %	28%	59%	80%	3%
Vol Right, %	58%	34%	17%	6%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	72	146	407	326
LT Vol	10	10	12	296
Through Vol	20	86	325	10
RT Vol	42	50	70	20
Lane Flow Rate	76	154	428	343
Geometry Grp	1	1	1	1
Degree of Util (X)	0.127	0.264	0.649	0.594
Departure Headway (Hd)	6.013	6.174	5.455	6.231
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	591	578	660	577
Service Time	4.105	4.256	3.519	4.293
HCM Lane V/C Ratio	0.129	0.266	0.648	0.594
HCM Control Delay	10	11.5	18.1	18.1
HCM Lane LOS	A	B	C	C
HCM 95th-tile Q	0.4	1.1	4.8	3.9

Appendix H - SBTAM Model Plots – Base Year 2016 and Horizon Year 2040

SBTAM 2016
Apple Valley Study
Average Daily Flow



SBTAM 2040
Apple Valley Study
Average Daily Flow



Appendix I - LOS Calculation Worksheets – Horizon Year 2040 Conditions

Intersection	
Int Delay, s/veh	3.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	50	10	10	120	10	10
Future Vol, veh/h	50	10	10	120	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	18	2	2	18	2	2
Mvmt Flow	53	11	11	126	11	11

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	107	74	0	0	137	0
Stage 1	74	-	-	-	-	-
Stage 2	33	-	-	-	-	-
Critical Hdwy	6.58	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.58	-	-	-	-	-
Critical Hdwy Stg 2	5.58	-	-	-	-	-
Follow-up Hdwy	3.662	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	853	988	-	-	1447	-
Stage 1	910	-	-	-	-	-
Stage 2	950	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	846	988	-	-	1447	-
Mov Cap-2 Maneuver	846	-	-	-	-	-
Stage 1	910	-	-	-	-	-
Stage 2	942	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.5	0	3.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	867	1447	-
HCM Lane V/C Ratio	-	-	0.073	0.007	-
HCM Control Delay (s)	-	-	9.5	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	20	50	90	40	20
Future Vol, veh/h	10	20	50	90	40	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	18	2	18	18	2
Mvmt Flow	11	21	53	95	42	21

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	148	0	-	0	144	101
Stage 1	-	-	-	-	101	-
Stage 2	-	-	-	-	43	-
Critical Hdwy	4.12	-	-	-	6.58	6.22
Critical Hdwy Stg 1	-	-	-	-	5.58	-
Critical Hdwy Stg 2	-	-	-	-	5.58	-
Follow-up Hdwy	2.218	-	-	-	3.662	3.318
Pot Cap-1 Maneuver	1434	-	-	-	812	954
Stage 1	-	-	-	-	885	-
Stage 2	-	-	-	-	940	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1434	-	-	-	806	954
Mov Cap-2 Maneuver	-	-	-	-	806	-
Stage 1	-	-	-	-	878	-
Stage 2	-	-	-	-	940	-

Approach	EB	WB	SB
HCM Control Delay, s	2.5	0	9.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1434	-	-	-	850
HCM Lane V/C Ratio	0.007	-	-	-	0.074
HCM Control Delay (s)	7.5	0	-	-	9.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	7.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	20	20	10	100	40	10	30	10	180	10	20
Future Vol, veh/h	20	20	20	10	100	40	10	30	10	180	10	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	18	18	2	2	18	18	2	18	18	18	18	18
Mvmt Flow	21	21	21	11	105	42	11	32	11	189	11	21

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	147	0	0	42	0	0	238	243	32	222	211	105
Stage 1	-	-	-	-	-	-	74	74	-	127	127	-
Stage 2	-	-	-	-	-	-	164	169	-	95	84	-
Critical Hdwy	4.28	-	-	4.12	-	-	7.12	6.68	6.38	7.28	6.68	6.38
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.68	-	6.28	5.68	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.68	-	6.28	5.68	-
Follow-up Hdwy	2.362	-	-	2.218	-	-	3.518	4.162	3.462	3.662	4.162	3.462
Pot Cap-1 Maneuver	1342	-	-	1567	-	-	716	632	998	701	659	908
Stage 1	-	-	-	-	-	-	935	803	-	840	761	-
Stage 2	-	-	-	-	-	-	838	729	-	874	795	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1342	-	-	1567	-	-	679	617	998	655	644	908
Mov Cap-2 Maneuver	-	-	-	-	-	-	679	617	-	655	644	-
Stage 1	-	-	-	-	-	-	920	790	-	827	756	-
Stage 2	-	-	-	-	-	-	802	724	-	817	782	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.6	0.5	10.7	13
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	681	1342	-	-	1567	-	-	672
HCM Lane V/C Ratio	0.077	0.016	-	-	0.007	-	-	0.329
HCM Control Delay (s)	10.7	7.7	0	-	7.3	-	-	13
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	1.4

Intersection	
Int Delay, s/veh	2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	60	10	10	310	10	10
Future Vol, veh/h	60	10	10	310	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	18	2	2	18	2	2
Mvmt Flow	63	11	11	326	11	11

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	207	174	0	0	337	0
Stage 1	174	-	-	-	-	-
Stage 2	33	-	-	-	-	-
Critical Hdwy	6.58	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.58	-	-	-	-	-
Critical Hdwy Stg 2	5.58	-	-	-	-	-
Follow-up Hdwy	3.662	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	747	869	-	-	1222	-
Stage 1	819	-	-	-	-	-
Stage 2	950	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	740	869	-	-	1222	-
Mov Cap-2 Maneuver	740	-	-	-	-	-
Stage 1	819	-	-	-	-	-
Stage 2	941	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.3	0	4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	756	1222	-
HCM Lane V/C Ratio	-	-	0.097	0.009	-
HCM Control Delay (s)	-	-	10.3	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0	-

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	30	50	310	60	10
Future Vol, veh/h	10	30	50	310	60	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	18	2	18	18	2
Mvmt Flow	11	32	53	326	63	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	379	0	-	0	270	216
Stage 1	-	-	-	-	216	-
Stage 2	-	-	-	-	54	-
Critical Hdwy	4.12	-	-	-	6.58	6.22
Critical Hdwy Stg 1	-	-	-	-	5.58	-
Critical Hdwy Stg 2	-	-	-	-	5.58	-
Follow-up Hdwy	2.218	-	-	-	3.662	3.318
Pot Cap-1 Maneuver	1179	-	-	-	686	824
Stage 1	-	-	-	-	783	-
Stage 2	-	-	-	-	929	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1179	-	-	-	680	824
Mov Cap-2 Maneuver	-	-	-	-	680	-
Stage 1	-	-	-	-	776	-
Stage 2	-	-	-	-	929	-

Approach	EB	WB	SB
HCM Control Delay, s	2	0	10.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1179	-	-	-	697
HCM Lane V/C Ratio	0.009	-	-	-	0.106
HCM Control Delay (s)	8.1	0	-	-	10.8
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.4

Intersection	
Int Delay, s/veh	14.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	30	50	20	320	10	10	20	40	270	10	30
Future Vol, veh/h	10	30	50	20	320	10	10	20	40	270	10	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	18	18	2	2	18	18	2	18	18	18	18	18
Mvmt Flow	11	32	53	21	337	11	11	21	42	284	11	32

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	348	0	0	85	0	0	487	471	59	491	486	337
Stage 1	-	-	-	-	-	-	81	81	-	379	379	-
Stage 2	-	-	-	-	-	-	406	390	-	112	107	-
Critical Hdwy	4.28	-	-	4.12	-	-	7.12	6.68	6.38	7.28	6.68	6.38
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.68	-	6.28	5.68	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.68	-	6.28	5.68	-
Follow-up Hdwy	2.362	-	-	2.218	-	-	3.518	4.162	3.462	3.662	4.162	3.462
Pot Cap-1 Maneuver	1127	-	-	1512	-	-	491	468	963	463	459	670
Stage 1	-	-	-	-	-	-	927	797	-	612	587	-
Stage 2	-	-	-	-	-	-	622	581	-	856	777	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1127	-	-	1512	-	-	451	457	963	419	448	670
Mov Cap-2 Maneuver	-	-	-	-	-	-	451	457	-	419	448	-
Stage 1	-	-	-	-	-	-	918	789	-	606	579	-
Stage 2	-	-	-	-	-	-	574	573	-	789	769	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0.4	11.2	34
HCM LOS			B	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	651	1127	-	-	1512	-	-	436
HCM Lane V/C Ratio	0.113	0.009	-	-	0.014	-	-	0.748
HCM Control Delay (s)	11.2	8.2	0	-	7.4	-	-	34
HCM Lane LOS	B	A	A	-	A	-	-	D
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	6.2

Appendix J - LOS Calculation Worksheets – Horizon Year 2040 with Project Conditions

Intersection	
Int Delay, s/veh	3.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	103	10	10	204	10	10
Future Vol, veh/h	103	10	10	204	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	23	2	2	23	2	2
Mvmt Flow	108	11	11	215	11	11

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	152	119	0	0	226	0
Stage 1	119	-	-	-	-	-
Stage 2	33	-	-	-	-	-
Critical Hdwy	6.63	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.63	-	-	-	-	-
Critical Hdwy Stg 2	5.63	-	-	-	-	-
Follow-up Hdwy	3.707	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	793	933	-	-	1342	-
Stage 1	857	-	-	-	-	-
Stage 2	938	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	787	933	-	-	1342	-
Mov Cap-2 Maneuver	787	-	-	-	-	-
Stage 1	857	-	-	-	-	-
Stage 2	930	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.3	0	3.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	798	1342	-
HCM Lane V/C Ratio	-	-	0.149	0.008	-
HCM Control Delay (s)	-	-	10.3	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0	-

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	23	53	174	93	20
Future Vol, veh/h	10	23	53	174	93	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	23	2	23	23	2
Mvmt Flow	11	24	56	183	98	21

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	239	0	-	0	194	148
Stage 1	-	-	-	-	148	-
Stage 2	-	-	-	-	46	-
Critical Hdwy	4.12	-	-	-	6.63	6.22
Critical Hdwy Stg 1	-	-	-	-	5.63	-
Critical Hdwy Stg 2	-	-	-	-	5.63	-
Follow-up Hdwy	2.218	-	-	-	3.707	3.318
Pot Cap-1 Maneuver	1328	-	-	-	749	899
Stage 1	-	-	-	-	831	-
Stage 2	-	-	-	-	925	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1328	-	-	-	743	899
Mov Cap-2 Maneuver	-	-	-	-	743	-
Stage 1	-	-	-	-	824	-
Stage 2	-	-	-	-	925	-

Approach	EB	WB	SB
HCM Control Delay, s	2.3	0	10.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1328	-	-	-	767
HCM Lane V/C Ratio	0.008	-	-	-	0.155
HCM Control Delay (s)	7.7	0	-	-	10.6
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.5

Intersection	
Int Delay, s/veh	9.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	76	20	11	187	95	10	30	11	261	10	20
Future Vol, veh/h	20	76	20	11	187	95	10	30	11	261	10	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	23	23	2	2	23	23	2	23	23	23	23	23
Mvmt Flow	21	80	21	12	197	100	11	32	12	275	11	21

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	297	0	0	101	0	0	420	454	91	376	364	197
Stage 1	-	-	-	-	-	-	133	133	-	221	221	-
Stage 2	-	-	-	-	-	-	287	321	-	155	143	-
Critical Hdwy	4.33	-	-	4.12	-	-	7.12	6.73	6.43	7.33	6.73	6.43
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.73	-	6.33	5.73	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.73	-	6.33	5.73	-
Follow-up Hdwy	2.407	-	-	2.218	-	-	3.518	4.207	3.507	3.707	4.207	3.507
Pot Cap-1 Maneuver	1154	-	-	1491	-	-	544	472	912	545	532	794
Stage 1	-	-	-	-	-	-	870	748	-	736	683	-
Stage 2	-	-	-	-	-	-	720	616	-	800	740	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1154	-	-	1491	-	-	511	459	912	499	518	794
Mov Cap-2 Maneuver	-	-	-	-	-	-	511	459	-	499	518	-
Stage 1	-	-	-	-	-	-	853	734	-	722	678	-
Stage 2	-	-	-	-	-	-	684	611	-	742	726	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.4	0.3	12.6	21.9
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	526	1154	-	-	1491	-	-	513
HCM Lane V/C Ratio	0.102	0.018	-	-	0.008	-	-	0.597
HCM Control Delay (s)	12.6	8.2	0	-	7.4	-	-	21.9
HCM Lane LOS	B	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0	-	-	3.9

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	139	209	149	1	1	144
Future Vol, veh/h	139	209	149	1	1	144
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	23	23	23	23	23	23
Mvmt Flow	146	220	157	1	1	152

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	158	0	-	0	538	79
Stage 1	-	-	-	-	158	-
Stage 2	-	-	-	-	380	-
Critical Hdwy	5.76	-	-	-	6.16	7.56
Critical Hdwy Stg 1	-	-	-	-	7.06	-
Critical Hdwy Stg 2	-	-	-	-	6.46	-
Follow-up Hdwy	3.33	-	-	-	4.03	4.13
Pot Cap-1 Maneuver	902	-	-	-	474	772
Stage 1	-	-	-	-	715	-
Stage 2	-	-	-	-	555	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	902	-	-	-	387	772
Mov Cap-2 Maneuver	-	-	-	-	387	-
Stage 1	-	-	-	-	583	-
Stage 2	-	-	-	-	555	-

Approach	EB	WB	SB
HCM Control Delay, s	4	0	10.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	902	-	-	-	767
HCM Lane V/C Ratio	0.162	-	-	-	0.199
HCM Control Delay (s)	9.8	0.2	-	-	10.9
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.6	-	-	-	0.7

Intersection	
Int Delay, s/veh	2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	123	10	10	402	10	10
Future Vol, veh/h	123	10	10	402	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	23	2	2	23	2	2
Mvmt Flow	129	11	11	423	11	11

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	256	223	0	0	434	0
Stage 1	223	-	-	-	-	-
Stage 2	33	-	-	-	-	-
Critical Hdwy	6.63	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.63	-	-	-	-	-
Critical Hdwy Stg 2	5.63	-	-	-	-	-
Follow-up Hdwy	3.707	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	689	817	-	-	1126	-
Stage 1	767	-	-	-	-	-
Stage 2	938	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	682	817	-	-	1126	-
Mov Cap-2 Maneuver	682	-	-	-	-	-
Stage 1	767	-	-	-	-	-
Stage 2	929	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.5	0	4.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	691	1126	-
HCM Lane V/C Ratio	-	-	0.203	0.009	-
HCM Control Delay (s)	-	-	11.5	8.2	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.8	0	-

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	33	53	402	123	10
Future Vol, veh/h	10	33	53	402	123	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	23	2	23	23	2
Mvmt Flow	11	35	56	423	129	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	479	0	-	0	325	268
Stage 1	-	-	-	-	268	-
Stage 2	-	-	-	-	57	-
Critical Hdwy	4.12	-	-	-	6.63	6.22
Critical Hdwy Stg 1	-	-	-	-	5.63	-
Critical Hdwy Stg 2	-	-	-	-	5.63	-
Follow-up Hdwy	2.218	-	-	-	3.707	3.318
Pot Cap-1 Maneuver	1083	-	-	-	628	771
Stage 1	-	-	-	-	731	-
Stage 2	-	-	-	-	915	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1083	-	-	-	622	771
Mov Cap-2 Maneuver	-	-	-	-	622	-
Stage 1	-	-	-	-	724	-
Stage 2	-	-	-	-	915	-

Approach	EB	WB	SB
HCM Control Delay, s	1.9	0	12.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1083	-	-	-	631
HCM Lane V/C Ratio	0.01	-	-	-	0.222
HCM Control Delay (s)	8.4	0	-	-	12.3
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.8

Intersection	
Int Delay, s/veh	75.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	96	50	22	415	70	10	20	42	366	10	30
Future Vol, veh/h	10	96	50	22	415	70	10	20	42	366	10	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	23	23	2	2	23	23	2	23	23	23	23	23
Mvmt Flow	11	101	53	23	437	74	11	21	44	385	11	32

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	511	0	0	154	0	0	692	707	128	665	659	437
Stage 1	-	-	-	-	-	-	150	150	-	483	483	-
Stage 2	-	-	-	-	-	-	542	557	-	182	176	-
Critical Hdwy	4.33	-	-	4.12	-	-	7.12	6.73	6.43	7.33	6.73	6.43
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.73	-	6.33	5.73	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.73	-	6.33	5.73	-
Follow-up Hdwy	2.407	-	-	2.218	-	-	3.518	4.207	3.507	3.707	4.207	3.507
Pot Cap-1 Maneuver	955	-	-	1426	-	-	358	335	869	~ 346	358	578
Stage 1	-	-	-	-	-	-	853	735	-	527	519	-
Stage 2	-	-	-	-	-	-	525	480	-	773	715	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	955	-	-	1426	-	-	323	325	869	~ 305	348	578
Mov Cap-2 Maneuver	-	-	-	-	-	-	323	325	-	~ 305	348	-
Stage 1	-	-	-	-	-	-	842	725	-	520	511	-
Stage 2	-	-	-	-	-	-	478	472	-	703	706	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.3	13.3	208.8
HCM LOS			B	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	511	955	-	-	1426	-	-	317
HCM Lane V/C Ratio	0.148	0.011	-	-	0.016	-	-	1.348
HCM Control Delay (s)	13.3	8.8	0	-	7.6	-	-	208.8
HCM Lane LOS	B	A	A	-	A	-	-	F
HCM 95th %tile Q(veh)	0.5	0	-	-	0.1	-	-	21.3

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	164	340	350	2	2	157
Future Vol, veh/h	164	340	350	2	2	157
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	23	23	23	23	23	23
Mvmt Flow	173	358	368	2	2	165

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	370	0	-	0	858	185
Stage 1	-	-	-	-	369	-
Stage 2	-	-	-	-	489	-
Critical Hdwy	5.76	-	-	-	6.16	7.56
Critical Hdwy Stg 1	-	-	-	-	7.06	-
Critical Hdwy Stg 2	-	-	-	-	6.46	-
Follow-up Hdwy	3.33	-	-	-	4.03	4.13
Pot Cap-1 Maneuver	706	-	-	-	320	656
Stage 1	-	-	-	-	529	-
Stage 2	-	-	-	-	482	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	706	-	-	-	222	656
Mov Cap-2 Maneuver	-	-	-	-	222	-
Stage 1	-	-	-	-	367	-
Stage 2	-	-	-	-	482	-

Approach	EB	WB	SB
HCM Control Delay, s	4.2	0	12.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	706	-	-	-	640
HCM Lane V/C Ratio	0.245	-	-	-	0.262
HCM Control Delay (s)	11.7	0.5	-	-	12.6
HCM Lane LOS	B	A	-	-	B
HCM 95th %tile Q(veh)	1	-	-	-	1

Appendix K - LOS Calculation Worksheets – Horizon Year 2040 with Project Conditions – Recommended Improvements

Intersection	
Intersection Delay, s/veh	11.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	76	20	11	187	95	10	30	11	261	10	20
Future Vol, veh/h	20	76	20	11	187	95	10	30	11	261	10	20
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	23	23	2	2	23	23	2	23	23	23	23	23
Mvmt Flow	21	80	21	12	197	100	11	32	12	275	11	21
Number of Lanes	0	1	0	1	1	1	0	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	3	1
HCM Control Delay	11.8	11.2	10.3	12.4
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	20%	17%	100%	0%	0%	100%	79%
Vol Thru, %	59%	66%	0%	100%	0%	0%	7%
Vol Right, %	22%	17%	0%	0%	100%	0%	14%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	51	116	11	187	95	146	145
LT Vol	10	20	11	0	0	146	115
Through Vol	30	76	0	187	0	0	10
RT Vol	11	20	0	0	95	0	20
Lane Flow Rate	54	122	12	197	100	154	152
Geometry Grp	8	8	7	7	7	8	8
Degree of Util (X)	0.101	0.235	0.021	0.343	0.155	0.297	0.286
Departure Headway (Hd)	6.745	6.917	6.425	6.28	5.572	6.959	6.757
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	530	519	558	573	644	517	532
Service Time	4.496	4.663	4.158	4.014	3.306	4.699	4.497
HCM Lane V/C Ratio	0.102	0.235	0.022	0.344	0.155	0.298	0.286
HCM Control Delay	10.3	11.8	9.3	12.3	9.3	12.6	12.2
HCM Lane LOS	B	B	A	B	A	B	B
HCM 95th-tile Q	0.3	0.9	0.1	1.5	0.5	1.2	1.2

Intersection	
Intersection Delay, s/veh	25
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	96	50	22	415	70	10	20	42	366	10	30
Future Vol, veh/h	10	96	50	22	415	70	10	20	42	366	10	30
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	23	23	2	2	23	23	2	23	23	23	23	23
Mvmt Flow	11	101	53	23	437	74	11	21	44	385	11	32
Number of Lanes	0	1	0	1	1	1	0	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	3	1
HCM Control Delay	16	34.9	12.7	18.4
HCM LOS	C	D	B	C

Lane	NBLn1	EBLn1	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	14%	6%	100%	0%	0%	100%	80%
Vol Thru, %	28%	62%	0%	100%	0%	0%	5%
Vol Right, %	58%	32%	0%	0%	100%	0%	15%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	72	156	22	415	70	205	201
LT Vol	10	10	22	0	0	205	161
Through Vol	20	96	0	415	0	0	10
RT Vol	42	50	0	0	70	0	30
Lane Flow Rate	76	164	23	437	74	216	212
Geometry Grp	8	8	7	7	7	8	8
Degree of Util (X)	0.173	0.378	0.047	0.865	0.131	0.495	0.474
Departure Headway (Hd)	8.216	8.285	7.278	7.132	6.419	8.268	8.061
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	437	434	493	507	559	436	447
Service Time	5.975	6.037	5.013	4.867	4.154	6.012	5.804
HCM Lane V/C Ratio	0.174	0.378	0.047	0.862	0.132	0.495	0.474
HCM Control Delay	12.7	16	10.4	40.4	10.1	18.9	17.9
HCM Lane LOS	B	C	B	E	B	C	C
HCM 95th-tile Q	0.6	1.7	0.1	9.2	0.4	2.7	2.5

Appendix L - Synchro Queue Results

Intersection	
Int Delay, s/veh	2.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	19	2	0	54	1	1
Future Vol, veh/h	19	2	0	54	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	18	2	2	18	2	2
Mvmt Flow	24	3	0	68	1	1

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	37	34	0	0	68	0
Stage 1	34	-	-	-	-	-
Stage 2	3	-	-	-	-	-
Critical Hdwy	6.58	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.58	-	-	-	-	-
Critical Hdwy Stg 2	5.58	-	-	-	-	-
Follow-up Hdwy	3.662	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	936	1039	-	-	1533	-
Stage 1	949	-	-	-	-	-
Stage 2	980	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	935	1039	-	-	1533	-
Mov Cap-2 Maneuver	935	-	-	-	-	-
Stage 1	949	-	-	-	-	-
Stage 2	979	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	3.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	944	1533	-
HCM Lane V/C Ratio	-	-	0.028	0.001	-
HCM Control Delay (s)	-	-	8.9	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	6.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	4	14	4	58	2	9	26	2	93	3	7
Future Vol, veh/h	2	4	14	4	58	2	9	26	2	93	3	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	18	18	2	2	18	18	2	18	18	18	18	18
Mvmt Flow	3	5	19	5	77	3	12	35	3	124	4	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	80	0	0	24	0	0	116	111	15	129	119	79
Stage 1	-	-	-	-	-	-	21	21	-	89	89	-
Stage 2	-	-	-	-	-	-	95	90	-	40	30	-
Critical Hdwy	4.28	-	-	4.12	-	-	7.12	6.68	6.38	7.28	6.68	6.38
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.68	-	6.28	5.68	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.68	-	6.28	5.68	-
Follow-up Hdwy	2.362	-	-	2.218	-	-	3.518	4.162	3.462	3.662	4.162	3.462
Pot Cap-1 Maneuver	1423	-	-	1591	-	-	861	750	1020	808	742	939
Stage 1	-	-	-	-	-	-	998	847	-	880	791	-
Stage 2	-	-	-	-	-	-	912	790	-	936	839	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1423	-	-	1591	-	-	846	746	1020	774	738	939
Mov Cap-2 Maneuver	-	-	-	-	-	-	846	746	-	774	738	-
Stage 1	-	-	-	-	-	-	996	845	-	878	789	-
Stage 2	-	-	-	-	-	-	896	788	-	893	837	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.5	9.9	10.6
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	780	1423	-	-	1591	-	-	782
HCM Lane V/C Ratio	0.063	0.002	-	-	0.003	-	-	0.176
HCM Control Delay (s)	9.9	7.5	0	-	7.3	0	-	10.6
HCM Lane LOS	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.6

Intersection	
Int Delay, s/veh	1.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	43	1	0	224	1	0
Future Vol, veh/h	43	1	0	224	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	18	2	2	18	2	2
Mvmt Flow	51	1	0	267	1	0

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	136	134	0	0	267	0
Stage 1	134	-	-	-	-	-
Stage 2	2	-	-	-	-	-
Critical Hdwy	6.58	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.58	-	-	-	-	-
Critical Hdwy Stg 2	5.58	-	-	-	-	-
Follow-up Hdwy	3.662	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	821	915	-	-	1297	-
Stage 1	854	-	-	-	-	-
Stage 2	981	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	820	915	-	-	1297	-
Mov Cap-2 Maneuver	820	-	-	-	-	-
Stage 1	854	-	-	-	-	-
Stage 2	980	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.7	0	7.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	822	1297	-
HCM Lane V/C Ratio	-	-	0.064	0.001	-
HCM Control Delay (s)	-	-	9.7	7.8	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	10

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	12	40	8	220	1	1	16	33	197	3	12
Future Vol, veh/h	5	12	40	8	220	1	1	16	33	197	3	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	73	73	73	73	73	73	73	73	73	73	73	73
Heavy Vehicles, %	18	18	2	2	18	18	2	18	18	18	18	18
Mvmt Flow	7	16	55	11	301	1	1	22	45	270	4	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	302	0	0	71	0	0	392	382	44	415	409	302
Stage 1	-	-	-	-	-	-	58	58	-	324	324	-
Stage 2	-	-	-	-	-	-	334	324	-	91	85	-
Critical Hdwy	4.28	-	-	4.12	-	-	7.12	6.68	6.38	7.28	6.68	6.38
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.68	-	6.28	5.68	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.68	-	6.28	5.68	-
Follow-up Hdwy	2.362	-	-	2.218	-	-	3.518	4.162	3.462	3.662	4.162	3.462
Pot Cap-1 Maneuver	1173	-	-	1529	-	-	567	527	982	521	508	702
Stage 1	-	-	-	-	-	-	954	816	-	656	622	-
Stage 2	-	-	-	-	-	-	680	622	-	878	794	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1173	-	-	1529	-	-	544	519	982	476	500	702
Mov Cap-2 Maneuver	-	-	-	-	-	-	544	519	-	476	500	-
Stage 1	-	-	-	-	-	-	948	811	-	652	616	-
Stage 2	-	-	-	-	-	-	654	616	-	810	789	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.3	10.3	22.9
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	754	1173	-	-	1529	-	-	485
HCM Lane V/C Ratio	0.091	0.006	-	-	0.007	-	-	0.599
HCM Control Delay (s)	10.3	8.1	0	-	7.4	0	-	22.9
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	3.9

Intersection	
Int Delay, s/veh	2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	10	10	60	10	10
Future Vol, veh/h	20	10	10	60	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	18	2	2	18	2	2
Mvmt Flow	25	13	13	75	13	13

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	90	51	0	0	88	0
Stage 1	51	-	-	-	-	-
Stage 2	39	-	-	-	-	-
Critical Hdwy	6.58	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.58	-	-	-	-	-
Critical Hdwy Stg 2	5.58	-	-	-	-	-
Follow-up Hdwy	3.662	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	873	1017	-	-	1508	-
Stage 1	932	-	-	-	-	-
Stage 2	944	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	865	1017	-	-	1508	-
Mov Cap-2 Maneuver	865	-	-	-	-	-
Stage 1	932	-	-	-	-	-
Stage 2	936	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.1	0	3.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	910	1508	-
HCM Lane V/C Ratio	-	-	0.041	0.008	-
HCM Control Delay (s)	-	-	9.1	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	7.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	10	10	20	10	60	10	10	30	10	100	10	10
Future Vol, veh/h	10	10	20	10	60	10	10	30	10	100	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	18	18	2	2	18	18	2	18	18	18	18	18
Mvmt Flow	13	13	27	13	80	13	13	40	13	133	13	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	93	0	0	40	0	0	179	172	27	192	179	87
Stage 1	-	-	-	-	-	-	53	53	-	113	113	-
Stage 2	-	-	-	-	-	-	126	119	-	79	66	-
Critical Hdwy	4.28	-	-	4.12	-	-	7.12	6.68	6.38	7.28	6.68	6.38
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.68	-	6.28	5.68	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.68	-	6.28	5.68	-
Follow-up Hdwy	2.362	-	-	2.218	-	-	3.518	4.162	3.462	3.662	4.162	3.462
Pot Cap-1 Maneuver	1407	-	-	1570	-	-	783	693	1004	734	687	929
Stage 1	-	-	-	-	-	-	960	820	-	854	772	-
Stage 2	-	-	-	-	-	-	878	767	-	891	810	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1407	-	-	1570	-	-	750	681	1004	683	675	929
Mov Cap-2 Maneuver	-	-	-	-	-	-	750	681	-	683	675	-
Stage 1	-	-	-	-	-	-	951	813	-	846	765	-
Stage 2	-	-	-	-	-	-	843	760	-	828	803	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.9	0.9	10.3	11.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	742	1407	-	-	1570	-	-	698
HCM Lane V/C Ratio	0.09	0.009	-	-	0.008	-	-	0.229
HCM Control Delay (s)	10.3	7.6	0	-	7.3	0	-	11.7
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.9

Intersection	
Int Delay, s/veh	2.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	50	10	10	230	10	10
Future Vol, veh/h	50	10	10	230	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	18	2	2	18	2	2
Mvmt Flow	60	12	12	274	12	12

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	185	149	0	0	286	0
Stage 1	149	-	-	-	-	-
Stage 2	36	-	-	-	-	-
Critical Hdwy	6.58	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.58	-	-	-	-	-
Critical Hdwy Stg 2	5.58	-	-	-	-	-
Follow-up Hdwy	3.662	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	769	898	-	-	1276	-
Stage 1	841	-	-	-	-	-
Stage 2	947	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	762	898	-	-	1276	-
Mov Cap-2 Maneuver	762	-	-	-	-	-
Stage 1	841	-	-	-	-	-
Stage 2	938	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.1	0	3.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	782	1276	-
HCM Lane V/C Ratio	-	-	0.091	0.009	-
HCM Control Delay (s)	-	-	10.1	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0	-

Intersection	
Int Delay, s/veh	13.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	20	50	10	230	10	10	20	40	200	10	20
Future Vol, veh/h	10	20	50	10	230	10	10	20	40	200	10	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	73	73	73	73	73	73	73	73	73	73	73	73
Heavy Vehicles, %	18	18	2	2	18	18	2	18	18	18	18	18
Mvmt Flow	14	27	68	14	315	14	14	27	55	274	14	27

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	329	0	0	95	0	0	460	446	61	480	473	322
Stage 1	-	-	-	-	-	-	89	89	-	350	350	-
Stage 2	-	-	-	-	-	-	371	357	-	130	123	-
Critical Hdwy	4.28	-	-	4.12	-	-	7.12	6.68	6.38	7.28	6.68	6.38
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.68	-	6.28	5.68	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.68	-	6.28	5.68	-
Follow-up Hdwy	2.362	-	-	2.218	-	-	3.518	4.162	3.462	3.662	4.162	3.462
Pot Cap-1 Maneuver	1146	-	-	1499	-	-	512	484	961	471	467	683
Stage 1	-	-	-	-	-	-	918	791	-	635	605	-
Stage 2	-	-	-	-	-	-	649	601	-	837	764	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1146	-	-	1499	-	-	472	472	961	417	456	683
Mov Cap-2 Maneuver	-	-	-	-	-	-	472	472	-	417	456	-
Stage 1	-	-	-	-	-	-	906	781	-	627	598	-
Stage 2	-	-	-	-	-	-	602	594	-	752	754	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0.3	11.3	32.5
HCM LOS			B	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	666	1146	-	-	1499	-	-	433
HCM Lane V/C Ratio	0.144	0.012	-	-	0.009	-	-	0.728
HCM Control Delay (s)	11.3	8.2	0	-	7.4	0	-	32.5
HCM Lane LOS	B	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	0.5	0	-	-	0	-	-	5.8

Intersection	
Int Delay, s/veh	3.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	73	10	10	144	10	10
Future Vol, veh/h	73	10	10	144	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	23	2	2	23	2	2
Mvmt Flow	77	11	11	152	11	11

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	120	87	0	0	163	0
Stage 1	87	-	-	-	-	-
Stage 2	33	-	-	-	-	-
Critical Hdwy	6.63	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.63	-	-	-	-	-
Critical Hdwy Stg 2	5.63	-	-	-	-	-
Follow-up Hdwy	3.707	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	828	971	-	-	1416	-
Stage 1	886	-	-	-	-	-
Stage 2	938	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	821	971	-	-	1416	-
Mov Cap-2 Maneuver	821	-	-	-	-	-
Stage 1	886	-	-	-	-	-
Stage 2	930	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.8	0	3.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	837	1416	-
HCM Lane V/C Ratio	-	-	0.104	0.007	-
HCM Control Delay (s)	-	-	9.8	7.6	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0	-

Intersection	
Int Delay, s/veh	6.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	10	66	20	11	147	65	10	30	11	181	10	10
Future Vol, veh/h	10	66	20	11	147	65	10	30	11	181	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	23	23	2	2	23	23	2	23	23	23	23	23
Mvmt Flow	11	69	21	12	155	68	11	32	12	191	11	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	223	0	0	90	0	0	326	349	80	337	325	189
Stage 1	-	-	-	-	-	-	102	102	-	213	213	-
Stage 2	-	-	-	-	-	-	224	247	-	124	112	-
Critical Hdwy	4.33	-	-	4.12	-	-	7.12	6.73	6.43	7.33	6.73	6.43
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.73	-	6.33	5.73	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.73	-	6.33	5.73	-
Follow-up Hdwy	2.407	-	-	2.218	-	-	3.518	4.207	3.507	3.707	4.207	3.507
Pot Cap-1 Maneuver	1231	-	-	1505	-	-	627	543	925	579	560	802
Stage 1	-	-	-	-	-	-	904	772	-	744	689	-
Stage 2	-	-	-	-	-	-	779	665	-	832	764	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1231	-	-	1505	-	-	601	533	925	538	550	802
Mov Cap-2 Maneuver	-	-	-	-	-	-	601	533	-	538	550	-
Stage 1	-	-	-	-	-	-	896	765	-	737	683	-
Stage 2	-	-	-	-	-	-	750	659	-	781	757	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.4	11.6	15.6
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	601	1231	-	-	1505	-	-	548
HCM Lane V/C Ratio	0.089	0.009	-	-	0.008	-	-	0.386
HCM Control Delay (s)	11.6	8	0	-	7.4	0	-	15.6
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	1.8

Intersection	
Int Delay, s/veh	3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	113	10	10	322	10	10
Future Vol, veh/h	113	10	10	322	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	23	2	2	23	2	2
Mvmt Flow	119	11	11	339	11	11

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	214	181	0	0	350	0
Stage 1	181	-	-	-	-	-
Stage 2	33	-	-	-	-	-
Critical Hdwy	6.63	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.63	-	-	-	-	-
Critical Hdwy Stg 2	5.63	-	-	-	-	-
Follow-up Hdwy	3.707	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	730	862	-	-	1209	-
Stage 1	802	-	-	-	-	-
Stage 2	938	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	723	862	-	-	1209	-
Mov Cap-2 Maneuver	723	-	-	-	-	-
Stage 1	802	-	-	-	-	-
Stage 2	930	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11	0	4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	733	1209	-
HCM Lane V/C Ratio	-	-	0.177	0.009	-
HCM Control Delay (s)	-	-	11	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.6	0	-

Intersection	
Int Delay, s/veh	23.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	10	86	50	12	325	70	10	20	42	296	10	20
Future Vol, veh/h	10	86	50	12	325	70	10	20	42	296	10	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	23	23	2	2	23	23	2	23	23	23	23	23
Mvmt Flow	11	91	53	13	342	74	11	21	44	312	11	21

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	416	0	0	144	0	0	561	582	118	577	571	379
Stage 1	-	-	-	-	-	-	140	140	-	405	405	-
Stage 2	-	-	-	-	-	-	421	442	-	172	166	-
Critical Hdwy	4.33	-	-	4.12	-	-	7.12	6.73	6.43	7.33	6.73	6.43
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.73	-	6.33	5.73	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.73	-	6.33	5.73	-
Follow-up Hdwy	2.407	-	-	2.218	-	-	3.518	4.207	3.507	3.707	4.207	3.507
Pot Cap-1 Maneuver	1039	-	-	1438	-	-	438	397	880	398	403	624
Stage 1	-	-	-	-	-	-	863	742	-	583	564	-
Stage 2	-	-	-	-	-	-	610	542	-	783	723	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1039	-	-	1438	-	-	407	387	880	356	393	624
Mov Cap-2 Maneuver	-	-	-	-	-	-	407	387	-	356	393	-
Stage 1	-	-	-	-	-	-	853	733	-	576	557	-
Stage 2	-	-	-	-	-	-	571	535	-	714	714	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.2	12.1	66.1
HCM LOS			B	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	581	1039	-	-	1438	-	-	367
HCM Lane V/C Ratio	0.13	0.01	-	-	0.009	-	-	0.935
HCM Control Delay (s)	12.1	8.5	0	-	7.5	0	-	66.1
HCM Lane LOS	B	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	10

Intersection	
Int Delay, s/veh	3.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	50	10	10	120	10	10
Future Vol, veh/h	50	10	10	120	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	18	2	2	18	2	2
Mvmt Flow	53	11	11	126	11	11

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	107	74	0	0	137	0
Stage 1	74	-	-	-	-	-
Stage 2	33	-	-	-	-	-
Critical Hdwy	6.58	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.58	-	-	-	-	-
Critical Hdwy Stg 2	5.58	-	-	-	-	-
Follow-up Hdwy	3.662	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	853	988	-	-	1447	-
Stage 1	910	-	-	-	-	-
Stage 2	950	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	846	988	-	-	1447	-
Mov Cap-2 Maneuver	846	-	-	-	-	-
Stage 1	910	-	-	-	-	-
Stage 2	942	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.5	0	3.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	867	1447	-
HCM Lane V/C Ratio	-	-	0.073	0.007	-
HCM Control Delay (s)	-	-	9.5	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	7.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	20	20	10	100	40	10	30	10	180	10	20
Future Vol, veh/h	20	20	20	10	100	40	10	30	10	180	10	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	18	18	2	2	18	18	2	18	18	18	18	18
Mvmt Flow	21	21	21	11	105	42	11	32	11	189	11	21

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	147	0	0	42	0	0	238	243	32	222	211	105
Stage 1	-	-	-	-	-	-	74	74	-	127	127	-
Stage 2	-	-	-	-	-	-	164	169	-	95	84	-
Critical Hdwy	4.28	-	-	4.12	-	-	7.12	6.68	6.38	7.28	6.68	6.38
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.68	-	6.28	5.68	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.68	-	6.28	5.68	-
Follow-up Hdwy	2.362	-	-	2.218	-	-	3.518	4.162	3.462	3.662	4.162	3.462
Pot Cap-1 Maneuver	1342	-	-	1567	-	-	716	632	998	701	659	908
Stage 1	-	-	-	-	-	-	935	803	-	840	761	-
Stage 2	-	-	-	-	-	-	838	729	-	874	795	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1342	-	-	1567	-	-	679	617	998	655	644	908
Mov Cap-2 Maneuver	-	-	-	-	-	-	679	617	-	655	644	-
Stage 1	-	-	-	-	-	-	920	790	-	827	756	-
Stage 2	-	-	-	-	-	-	802	724	-	817	782	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.6	0.5	10.7	13
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	681	1342	-	-	1567	-	-	672
HCM Lane V/C Ratio	0.077	0.016	-	-	0.007	-	-	0.329
HCM Control Delay (s)	10.7	7.7	0	-	7.3	-	-	13
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	1.4

Intersection	
Int Delay, s/veh	2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	60	10	10	310	10	10
Future Vol, veh/h	60	10	10	310	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	18	2	2	18	2	2
Mvmt Flow	63	11	11	326	11	11

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	207	174	0	0	337	0
Stage 1	174	-	-	-	-	-
Stage 2	33	-	-	-	-	-
Critical Hdwy	6.58	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.58	-	-	-	-	-
Critical Hdwy Stg 2	5.58	-	-	-	-	-
Follow-up Hdwy	3.662	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	747	869	-	-	1222	-
Stage 1	819	-	-	-	-	-
Stage 2	950	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	740	869	-	-	1222	-
Mov Cap-2 Maneuver	740	-	-	-	-	-
Stage 1	819	-	-	-	-	-
Stage 2	941	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.3	0	4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	756	1222	-
HCM Lane V/C Ratio	-	-	0.097	0.009	-
HCM Control Delay (s)	-	-	10.3	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0	-

Intersection	
Int Delay, s/veh	14.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	30	50	20	320	10	10	20	40	270	10	30
Future Vol, veh/h	10	30	50	20	320	10	10	20	40	270	10	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	18	18	2	2	18	18	2	18	18	18	18	18
Mvmt Flow	11	32	53	21	337	11	11	21	42	284	11	32

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	348	0	0	85	0	0	487	471	59	491	486	337
Stage 1	-	-	-	-	-	-	81	81	-	379	379	-
Stage 2	-	-	-	-	-	-	406	390	-	112	107	-
Critical Hdwy	4.28	-	-	4.12	-	-	7.12	6.68	6.38	7.28	6.68	6.38
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.68	-	6.28	5.68	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.68	-	6.28	5.68	-
Follow-up Hdwy	2.362	-	-	2.218	-	-	3.518	4.162	3.462	3.662	4.162	3.462
Pot Cap-1 Maneuver	1127	-	-	1512	-	-	491	468	963	463	459	670
Stage 1	-	-	-	-	-	-	927	797	-	612	587	-
Stage 2	-	-	-	-	-	-	622	581	-	856	777	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1127	-	-	1512	-	-	451	457	963	419	448	670
Mov Cap-2 Maneuver	-	-	-	-	-	-	451	457	-	419	448	-
Stage 1	-	-	-	-	-	-	918	789	-	606	579	-
Stage 2	-	-	-	-	-	-	574	573	-	789	769	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0.4	11.2	34
HCM LOS			B	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	651	1127	-	-	1512	-	-	436
HCM Lane V/C Ratio	0.113	0.009	-	-	0.014	-	-	0.748
HCM Control Delay (s)	11.2	8.2	0	-	7.4	-	-	34
HCM Lane LOS	B	A	A	-	A	-	-	D
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	6.2

Intersection	
Int Delay, s/veh	3.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	103	10	10	204	10	10
Future Vol, veh/h	103	10	10	204	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	23	2	2	23	2	2
Mvmt Flow	108	11	11	215	11	11

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	152	119	0	0	226	0
Stage 1	119	-	-	-	-	-
Stage 2	33	-	-	-	-	-
Critical Hdwy	6.63	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.63	-	-	-	-	-
Critical Hdwy Stg 2	5.63	-	-	-	-	-
Follow-up Hdwy	3.707	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	793	933	-	-	1342	-
Stage 1	857	-	-	-	-	-
Stage 2	938	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	787	933	-	-	1342	-
Mov Cap-2 Maneuver	787	-	-	-	-	-
Stage 1	857	-	-	-	-	-
Stage 2	930	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.3	0	3.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	798	1342	-
HCM Lane V/C Ratio	-	-	0.149	0.008	-
HCM Control Delay (s)	-	-	10.3	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0	-

Intersection	
Int Delay, s/veh	9.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	76	20	11	187	95	10	30	11	261	10	20
Future Vol, veh/h	20	76	20	11	187	95	10	30	11	261	10	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	23	23	2	2	23	23	2	23	23	23	23	23
Mvmt Flow	21	80	21	12	197	100	11	32	12	275	11	21

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	297	0	0	101	0	0	420	454	91	376	364	197
Stage 1	-	-	-	-	-	-	133	133	-	221	221	-
Stage 2	-	-	-	-	-	-	287	321	-	155	143	-
Critical Hdwy	4.33	-	-	4.12	-	-	7.12	6.73	6.43	7.33	6.73	6.43
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.73	-	6.33	5.73	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.73	-	6.33	5.73	-
Follow-up Hdwy	2.407	-	-	2.218	-	-	3.518	4.207	3.507	3.707	4.207	3.507
Pot Cap-1 Maneuver	1154	-	-	1491	-	-	544	472	912	545	532	794
Stage 1	-	-	-	-	-	-	870	748	-	736	683	-
Stage 2	-	-	-	-	-	-	720	616	-	800	740	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1154	-	-	1491	-	-	511	459	912	499	518	794
Mov Cap-2 Maneuver	-	-	-	-	-	-	511	459	-	499	518	-
Stage 1	-	-	-	-	-	-	853	734	-	722	678	-
Stage 2	-	-	-	-	-	-	684	611	-	742	726	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.4	0.3	12.6	21.9
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	526	1154	-	-	1491	-	-	513
HCM Lane V/C Ratio	0.102	0.018	-	-	0.008	-	-	0.597
HCM Control Delay (s)	12.6	8.2	0	-	7.4	-	-	21.9
HCM Lane LOS	B	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0	-	-	3.9

Intersection	
Int Delay, s/veh	2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	123	10	10	402	10	10
Future Vol, veh/h	123	10	10	402	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	23	2	2	23	2	2
Mvmt Flow	129	11	11	423	11	11

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	256	223	0	0	434	0
Stage 1	223	-	-	-	-	-
Stage 2	33	-	-	-	-	-
Critical Hdwy	6.63	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.63	-	-	-	-	-
Critical Hdwy Stg 2	5.63	-	-	-	-	-
Follow-up Hdwy	3.707	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	689	817	-	-	1126	-
Stage 1	767	-	-	-	-	-
Stage 2	938	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	682	817	-	-	1126	-
Mov Cap-2 Maneuver	682	-	-	-	-	-
Stage 1	767	-	-	-	-	-
Stage 2	929	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.5	0	4.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	691	1126	-
HCM Lane V/C Ratio	-	-	0.203	0.009	-
HCM Control Delay (s)	-	-	11.5	8.2	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.8	0	-

Intersection	
Int Delay, s/veh	75.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	96	50	22	415	70	10	20	42	366	10	30
Future Vol, veh/h	10	96	50	22	415	70	10	20	42	366	10	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	23	23	2	2	23	23	2	23	23	23	23	23
Mvmt Flow	11	101	53	23	437	74	11	21	44	385	11	32

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	511	0	0	154	0	0	692	707	128	665	659	437
Stage 1	-	-	-	-	-	-	150	150	-	483	483	-
Stage 2	-	-	-	-	-	-	542	557	-	182	176	-
Critical Hdwy	4.33	-	-	4.12	-	-	7.12	6.73	6.43	7.33	6.73	6.43
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.73	-	6.33	5.73	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.73	-	6.33	5.73	-
Follow-up Hdwy	2.407	-	-	2.218	-	-	3.518	4.207	3.507	3.707	4.207	3.507
Pot Cap-1 Maneuver	955	-	-	1426	-	-	358	335	869	~ 346	358	578
Stage 1	-	-	-	-	-	-	853	735	-	527	519	-
Stage 2	-	-	-	-	-	-	525	480	-	773	715	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	955	-	-	1426	-	-	323	325	869	~ 305	348	578
Mov Cap-2 Maneuver	-	-	-	-	-	-	323	325	-	~ 305	348	-
Stage 1	-	-	-	-	-	-	842	725	-	520	511	-
Stage 2	-	-	-	-	-	-	478	472	-	703	706	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.3	13.3	208.8
HCM LOS			B	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	511	955	-	-	1426	-	-	317
HCM Lane V/C Ratio	0.148	0.011	-	-	0.016	-	-	1.348
HCM Control Delay (s)	13.3	8.8	0	-	7.6	-	-	208.8
HCM Lane LOS	B	A	A	-	A	-	-	F
HCM 95th %tile Q(veh)	0.5	0	-	-	0.1	-	-	21.3

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	3.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	73	10	10	144	10	10
Future Vol, veh/h	73	10	10	144	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	23	2	2	23	2	2
Mvmt Flow	77	11	11	152	11	11

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	120	87	0	0	163	0
Stage 1	87	-	-	-	-	-
Stage 2	33	-	-	-	-	-
Critical Hdwy	6.63	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.63	-	-	-	-	-
Critical Hdwy Stg 2	5.63	-	-	-	-	-
Follow-up Hdwy	3.707	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	828	971	-	-	1416	-
Stage 1	886	-	-	-	-	-
Stage 2	938	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	821	971	-	-	1416	-
Mov Cap-2 Maneuver	821	-	-	-	-	-
Stage 1	886	-	-	-	-	-
Stage 2	930	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.8	0	3.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	837	1416	-
HCM Lane V/C Ratio	-	-	0.104	0.007	-
HCM Control Delay (s)	-	-	9.8	7.6	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0	-

Intersection	
Intersection Delay, s/veh	9.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	66	20	11	147	65	10	30	11	181	10	10
Future Vol, veh/h	10	66	20	11	147	65	10	30	11	181	10	10
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	23	23	2	2	23	23	2	23	23	23	23	23
Mvmt Flow	11	69	21	12	155	68	11	32	12	191	11	11
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.1	9.6	8.4	10.8
HCM LOS	A	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	20%	10%	5%	90%
Vol Thru, %	59%	69%	66%	5%
Vol Right, %	22%	21%	29%	5%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	51	96	223	201
LT Vol	10	10	11	181
Through Vol	30	66	147	10
RT Vol	11	20	65	10
Lane Flow Rate	54	101	235	212
Geometry Grp	1	1	1	1
Degree of Util (X)	0.074	0.145	0.301	0.312
Departure Headway (Hd)	4.947	5.179	4.611	5.309
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	718	689	777	673
Service Time	3.021	3.238	2.657	3.369
HCM Lane V/C Ratio	0.075	0.147	0.302	0.315
HCM Control Delay	8.4	9.1	9.6	10.8
HCM Lane LOS	A	A	A	B
HCM 95th-tile Q	0.2	0.5	1.3	1.3

Intersection	
Int Delay, s/veh	3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	113	10	10	322	10	10
Future Vol, veh/h	113	10	10	322	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	23	2	2	23	2	2
Mvmt Flow	119	11	11	339	11	11

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	214	181	0	0	350	0
Stage 1	181	-	-	-	-	-
Stage 2	33	-	-	-	-	-
Critical Hdwy	6.63	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.63	-	-	-	-	-
Critical Hdwy Stg 2	5.63	-	-	-	-	-
Follow-up Hdwy	3.707	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	730	862	-	-	1209	-
Stage 1	802	-	-	-	-	-
Stage 2	938	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	723	862	-	-	1209	-
Mov Cap-2 Maneuver	723	-	-	-	-	-
Stage 1	802	-	-	-	-	-
Stage 2	930	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11	0	4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	733	1209	-
HCM Lane V/C Ratio	-	-	0.177	0.009	-
HCM Control Delay (s)	-	-	11	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.6	0	-

Intersection	
Intersection Delay, s/veh	16.5
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	86	50	12	325	70	10	20	42	296	10	20
Future Vol, veh/h	10	86	50	12	325	70	10	20	42	296	10	20
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	23	23	2	2	23	23	2	23	23	23	23	23
Mvmt Flow	11	91	53	13	342	74	11	21	44	312	11	21
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11.5	18.1	10	18.1
HCM LOS	B	C	A	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	14%	7%	3%	91%
Vol Thru, %	28%	59%	80%	3%
Vol Right, %	58%	34%	17%	6%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	72	146	407	326
LT Vol	10	10	12	296
Through Vol	20	86	325	10
RT Vol	42	50	70	20
Lane Flow Rate	76	154	428	343
Geometry Grp	1	1	1	1
Degree of Util (X)	0.127	0.264	0.649	0.594
Departure Headway (Hd)	6.013	6.174	5.455	6.231
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	591	578	660	577
Service Time	4.105	4.256	3.519	4.293
HCM Lane V/C Ratio	0.129	0.266	0.648	0.594
HCM Control Delay	10	11.5	18.1	18.1
HCM Lane LOS	A	B	C	C
HCM 95th-tile Q	0.4	1.1	4.8	3.9

Intersection	
Int Delay, s/veh	3.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	103	10	10	204	10	10
Future Vol, veh/h	103	10	10	204	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	23	2	2	23	2	2
Mvmt Flow	108	11	11	215	11	11

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	152	119	0	0	226	0
Stage 1	119	-	-	-	-	-
Stage 2	33	-	-	-	-	-
Critical Hdwy	6.63	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.63	-	-	-	-	-
Critical Hdwy Stg 2	5.63	-	-	-	-	-
Follow-up Hdwy	3.707	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	793	933	-	-	1342	-
Stage 1	857	-	-	-	-	-
Stage 2	938	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	787	933	-	-	1342	-
Mov Cap-2 Maneuver	787	-	-	-	-	-
Stage 1	857	-	-	-	-	-
Stage 2	930	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.3	0	3.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	798	1342	-
HCM Lane V/C Ratio	-	-	0.149	0.008	-
HCM Control Delay (s)	-	-	10.3	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0	-

Intersection	
Intersection Delay, s/veh	11.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	76	20	11	187	95	10	30	11	261	10	20
Future Vol, veh/h	20	76	20	11	187	95	10	30	11	261	10	20
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	23	23	2	2	23	23	2	23	23	23	23	23
Mvmt Flow	21	80	21	12	197	100	11	32	12	275	11	21
Number of Lanes	0	1	0	1	1	1	0	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	3	1
HCM Control Delay	11.8	11.2	10.3	12.4
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	20%	17%	100%	0%	0%	100%	79%
Vol Thru, %	59%	66%	0%	100%	0%	0%	7%
Vol Right, %	22%	17%	0%	0%	100%	0%	14%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	51	116	11	187	95	146	145
LT Vol	10	20	11	0	0	146	115
Through Vol	30	76	0	187	0	0	10
RT Vol	11	20	0	0	95	0	20
Lane Flow Rate	54	122	12	197	100	154	152
Geometry Grp	8	8	7	7	7	8	8
Degree of Util (X)	0.101	0.235	0.021	0.343	0.155	0.297	0.286
Departure Headway (Hd)	6.745	6.917	6.425	6.28	5.572	6.959	6.757
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	530	519	558	573	644	517	532
Service Time	4.496	4.663	4.158	4.014	3.306	4.699	4.497
HCM Lane V/C Ratio	0.102	0.235	0.022	0.344	0.155	0.298	0.286
HCM Control Delay	10.3	11.8	9.3	12.3	9.3	12.6	12.2
HCM Lane LOS	B	B	A	B	A	B	B
HCM 95th-tile Q	0.3	0.9	0.1	1.5	0.5	1.2	1.2

Intersection	
Int Delay, s/veh	2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	123	10	10	402	10	10
Future Vol, veh/h	123	10	10	402	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	23	2	2	23	2	2
Mvmt Flow	129	11	11	423	11	11

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	256	223	0	0	434	0
Stage 1	223	-	-	-	-	-
Stage 2	33	-	-	-	-	-
Critical Hdwy	6.63	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.63	-	-	-	-	-
Critical Hdwy Stg 2	5.63	-	-	-	-	-
Follow-up Hdwy	3.707	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	689	817	-	-	1126	-
Stage 1	767	-	-	-	-	-
Stage 2	938	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	682	817	-	-	1126	-
Mov Cap-2 Maneuver	682	-	-	-	-	-
Stage 1	767	-	-	-	-	-
Stage 2	929	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.5	0	4.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	691	1126	-
HCM Lane V/C Ratio	-	-	0.203	0.009	-
HCM Control Delay (s)	-	-	11.5	8.2	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.8	0	-

Intersection	
Intersection Delay, s/veh	25
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	96	50	22	415	70	10	20	42	366	10	30
Future Vol, veh/h	10	96	50	22	415	70	10	20	42	366	10	30
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	23	23	2	2	23	23	2	23	23	23	23	23
Mvmt Flow	11	101	53	23	437	74	11	21	44	385	11	32
Number of Lanes	0	1	0	1	1	1	0	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	3	1
HCM Control Delay	16	34.9	12.7	18.4
HCM LOS	C	D	B	C

Lane	NBLn1	EBLn1	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	14%	6%	100%	0%	0%	100%	80%
Vol Thru, %	28%	62%	0%	100%	0%	0%	5%
Vol Right, %	58%	32%	0%	0%	100%	0%	15%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	72	156	22	415	70	205	201
LT Vol	10	10	22	0	0	205	161
Through Vol	20	96	0	415	0	0	10
RT Vol	42	50	0	0	70	0	30
Lane Flow Rate	76	164	23	437	74	216	212
Geometry Grp	8	8	7	7	7	8	8
Degree of Util (X)	0.173	0.378	0.047	0.865	0.131	0.495	0.474
Departure Headway (Hd)	8.216	8.285	7.278	7.132	6.419	8.268	8.061
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	437	434	493	507	559	436	447
Service Time	5.975	6.037	5.013	4.867	4.154	6.012	5.804
HCM Lane V/C Ratio	0.174	0.378	0.047	0.862	0.132	0.495	0.474
HCM Control Delay	12.7	16	10.4	40.4	10.1	18.9	17.9
HCM Lane LOS	B	C	B	E	B	C	C
HCM 95th-tile Q	0.6	1.7	0.1	9.2	0.4	2.7	2.5

Appendix I

Liberty Utilities Conditions of Approval Letter

Liberty Utilities

March 10, 2021

Attn: Daniel Alcayaga
Town of Apple Valley
Planning Division
14955 Dale Evans Parkway
Apple Valley, CA 92307

Subject: Conditions of Approval

Project: CUP 2021-001 / DP 2021-002
Love's Travel Stops and Country Store
N/E Corner of Stoddard Wells Rd. and I-15
APN 0472-222-10

Dear Daniel:

Per your request for review, Liberty Utilities (Apple Valley Ranchos Water) Corp.'s ("Liberty Apple Valley") has the following requirements for the above mentioned project.

- Offsite water mains do not exist on Stoddard Wells Road fronting this development.
- A water main must be extended to provide fire protection for this development in accordance with Apple Valley Fire Protection District's conditions.
- A water main extension contract between the developer and Liberty Apple Valley is required and must comply with Rule 15 of the California Public Utilities Commission. Subject to the terms of the contract, the cost of facilities installed as advances will be reimbursed to the developer at 2.5 percent per year for 40 years with no interest. Extend a 16" diameter pipeline approximately 3.5 miles to the northeast and connect to main on Johnson Road near Walmart Distribution Center.
- Fire hydrants are required to be located in accordance with Apple Valley Fire Protection District's requirements, and installed per Liberty Apple Valley standard drawings.
- If fire hydrants are required onsite, they will be installed in accordance with Apple Valley Fire Protection District's requirements.
- A fire service line is required for this development and will be installed in accordance with Apple Valley Fire Protection District's conditions and must comply with Rule 16 of the California Public Utilities Commission. Approved and tested customer owned backflow protection device is required.
- The water lines and appurtenances required are to be installed in accordance with Liberty Apple Valley standards and specifications.

21760 Ottawa Road, Apple Valley, CA 92308
www.libertyutilities.com

Liberty Utilities

- Water facilities need to be installed in dedicated public Rights-of-Ways and/or public utility easements and need to be identified and shown on the water improvement plans. These dedications and/or easements are needed to install, maintain, repair, connect, operate and inspect the proposed water facilities with unobstructed vehicular access.

- Domestic service lines will be installed from the existing water main to the street right-of-way line that fronts this development. Approved and tested customer owned backflow protection device is required.

- A Supply Facility Fee is required, which will fund development of new wells. This fee will be collected on a per meter basis, which is presently at a rate of $1,030 per 5/8" equivalent meter.

- A Supplemental Water Acquisition Fee is also required in order for Liberty to have the water rights to provide water to this project. This is a one-time charge that is subject to change, to be determined at the time of construction. Presently, this fee is $5,665 per residential lot or equivalent average residential water use.

These conditions are for domestic water and offsite fire flow requirements, and do not include onsite private water lines or fire hydrants.

To proceed further, we recommend the owner or developer set up a meeting with our Engineering Department so we can review and provide any additional design parameters and requirements for this project. Feel free to contact us if you have any questions or need any further information. Thank you.

Sincerely,

Gregory J. Miles, P.E.
Manager, Engineering
Liberty Utilities (Apple Valley Ranchos Water) Corp.