Town of Apple Valley California	**TOWN OF APPLE VALLEY** **FINAL** **INITIAL STUDY/MITIGATED NEGATIVE DECLARATION**

Project Title:	Dakota Warehouse
Case No.	Site Plan Review SPR 2024-007
Assessor's Parcel No.	0463-372-21-0000
Lead Agency Name and Address:	Town of Apple Valley 14955 Dale Evans Parkway Apple Valley, CA 92307
Project Location:	Southeast corner of Dakota Road and Gustine Street, Apple Valley, California.
Project Sponsor's Name and Address:	Lori Wu Lecangs, LLC 728 Rider Street Perris, CA 92571
General Plan Designation(s):	North Apple Valley Industrial Specific Plan – Industrial (I-SP)
Zoning:	Specific Plan (SP)
Contact Person:	Nicole Montano, Assistant Planner
Phone Number:	760-240-7000, ext. 7201
Date Prepared:	October, 2025

Table of Contents

CHAPTER 1: INTRODUCTION 4
CHAPTER 2: ENVIRONMENTAL ANALYSIS AND DETERMINATION 15
I. AESTHETICS 18
II. AGRICULTURAL AND FORESTRY RESOURCES 22
III. AIR QUALITY 25
IV. BIOLOGICAL RESOURCES 37
V. CULTURAL RESOURCES 49
VI. ENERGY 54
VII. GEOLOGY AND SOILS 59
VIII. GREENHOUSE GAS EMISSIONS 68
IX. HAZARDS AND HAZARDOUS MATERIALS 79
X. HYDROLOGY AND WATER QUALITY 85
XI. LAND USE AND PLANNING 96
XII. MINERAL RESOURCES 99
XIII. NOISE 101
XIV. POPULATION AND HOUSING 108
XV. PUBLIC SERVICES 110
XVI. RECREATION 116
XVII. TRANSPORTATION 118
XVIII. TRIBAL CULTURAL RESOURCES 134
XIX. UTILITIES AND SERVICE SYSTEMS 137
XX. WILDFIRE 148
XXI. MANDATORY FINDINGS OF SIGNIFICANCE 150

LIST OF EXHIBITS

Exhibit 1 Regional Location Map 8
Exhibit 2 Vicinity Map 9
Exhibit 3 Project Location Map 10
Exhibit 4 Project Site Plan 11
Exhibit 5 Elevations 12
Exhibit 6 Apple Valley Airport Overlay Districts 13

LIST OF TABLES

Table 1 Project Data 5
Table 2 MDAQMD Emissions Thresholds 26
Table 3 Maximum Daily Construction-Related Emissions Summary (pounds per day) 32
Table 4 Maximum Daily Operational-Related Emissions Summary (pounds per day) 33
Table 5 Species Observed 43
Table 6 Project Operational Electricity Consumption 56
Table 7 Project Operational Natural Gas Consumption 58
Table 8 Projected GHG Emissions Summary 74
Table 9 Project emissions and CAP reduction target 76
Table 10 Project consistency with CAP reduction measures 77

Table 11 Project Indoor Industrial Water Demand 93
Table 12 Project Outdoor Irrigation Water Demand 93
Table 13 Project Trip Generation - Rates[1] 123
Table 14 Project Trip Generation – (Passenger Cars + PCE) Rates[1] 124
Table 15 Intersection Analysis for Existing 2024 Conditions 125
Table 16 Intersection Analysis for 2027 Conditions Without and With Project 127
Table 17 Opening Year Cumulative (2027) 128
Table 18 Project Fair Share Contributions to Impacted Intersections 133
Table 19 Project Electricity Consumption 143
Table 20 Project Operational Natural Gas Consumption 143
Table 21 Project Operational Water Demand 144
Table 22 Project Wastewater Generation 146
Table 23 Project Estimated Solid Waste Generation 147

APPENDICES

Appendix A Air Quality and Greenhouse Gas Report ..... A
Appendix B Biological Resources Assessment Report ..... B
Appendix C Jurisdictional Assessment of Wetlands and Waters C
Appendix D Historical/Archaeological Resources Study ..... D
Appendix E Geotechnical Investigation Report ..... E
Appendix F Phase 1 Environmental Site Assessment ..... F
Appendix G Preliminary Hydrology Study ..... G
Appendix H Traffic Analysis ..... H

CHAPTER 1: INTRODUCTION

Project Location

The proposed Lecangs Dakota Warehouse Project (herein referred to as "Project") encompasses 40.1 acres of vacant, undeveloped land located on the east side of Dakota Road, bounded by Gustine Street to the north, Fresno Road to the south, and vacant lands to the east, in the Town of Apple Valley, San Bernardino County, California. The site is located approximately 700 feet west of the Apple Valley Airport and is within the boundaries of the North Apple Valley Industrial Specific Plan (NAVISP) with a land use designation of Specific Plan Industrial (I-SP). The Assessor's parcel number is 0463-372-21-0000 in Section 28 of Township 6 North and Range 3 West on the San Bernardino Meridian. Exhibits 1, 2 and 3 provide views of the Project site location.

Existing Conditions

The Project parcel is undeveloped and has retained a natural state with non-native groundcover growing throughout the parcel. although signs of disturbance are present such as tire tracks from off-road vehicle use and scattered debris. The site is surrounded by vacant lands designated for Specific Plan Industrial (I-SP) uses in the NAVISP. Parcels to the north, west and southwest of the Project site are undeveloped, with the exception of recently constructed roadways to the south. Parcels to the south are also vacant but have been graded, and land to the east is partially developed with Apple Valley Airport facilities. The site is bounded by Gustine Street (unimproved) on the north side, Fresno Road (unimproved) along the south side, and Dakota Road on the west side. Currently, no road occurs along the eastern boundary of the site as Ramona Road stops at Fresno Road. Ramona Road would be extended as part of the project, and the other roadways improved to Town standards.

The Apple Valley Airport extends at a northeast to southwest angle east of the Project site. The Project site sits within the Town's Airport Overlay District (A-2) and is subject to zoning restrictions set by this designation. Exhibit 6 shows the location of the Project site in proximity to the Apple Valley Airport Overlay Districts.

Project Description

The applicant proposes to construct a 627,200 square-foot distribution warehouse on a 40.1-acre vacant parcel located on the southeast corner of Gustine Street and Dakota Road (Exhibit 4). The building footprint measures 613,760 square feet, the mezzanine is 13,440 square feet, and maximum building height is 50 feet (Exhibit 5). The parking lot includes a total of 714 car parking spaces, including 14 accessible spaces, and 260 truck trailer stalls. The car parking spaces are located along the east and west sides of the building and at the four corners of the parking lot. The truck trailer stalls are located along the north and south sides of the property, 130 stalls on each side. There are a total of 92 loading docks on the north and south sides of the building, 46 docks on each side.

Table 1
Project Data

Parcel Acreage	40.1 ac
Total Building Area	627,200 sf
• *Building footprint*	*613,760 sf*
• *Mezzanine*	*13,440 sf*
Landscaping	201,664 sf(4.63 ac)
Retention Basin	60,867 sf (1.4 ac)
Max. Height	50 ft
Parking Stalls	733
Docks	92
Trailer Stalls	260

The Project site provides four 40-foot-wide truck driveway entrances, two driveways on Dakota Road and two driveways on Ramona Road; and two automobile driveways, one on Dakota Road and one on Ramona Road, which directly access employee parking. The applicant proposes to construct the following half-width road improvements:

- Dakota Road is the only paved road bordering the Project site. Between Gustine Street and Fresno Road, 19-foot-wide new pavement with curb and gutter, and 12-foot-wide sidewalk for an approximate distance of 1,500 linear feet.
- Fresno Road is currently unimproved. Between Dakota Road and Ramona Road, 26-foot-wide pavement with curb and gutter, and additional five feet of graded shoulder for an approximate distance of 975 linear feet.
- Ramona Road currently ends at Fresno Road. Between Fresno Road and Gustine Street, 26-foot-wide pavement with curb and gutter, and additional five feet of graded shoulder for an approximate distance of 975 linear feet.
- Gustine Street is currently unimproved. Between Dakota Road and Ramona Road, 32-foot-wide pavement with curb and gutter and an additional five feet of graded shoulder.

The Project is required to provide on-site stormwater retention for a 100-year storm event. A retention basin of approximately 60,867 square feet (1.40 acres) would be constructed at the south side of the Project site between Fresno Road and the parking area. The retention basin would accommodate 50,000 cubic feet of stormwater. Off-site stormwater conveyance would begin with the Gustine Street improvements and direct water into the catch basins within the proposed street rights-of-way along Dakota Road and Ramona Road, then into the catch basin along Fresno Road. Two storm drains would meet on the north side of Fresno Road and direct runoff to the south side into a drainage swale south of Fresno Road.

Additional Project site improvements include utility service connections. West of the Project site, under Dakota Road, lies an existing 15-inch sewer service line which the Project will connect to. The Project will connect to an existing 12-inch water line under Fresno Road via a proposed 12-inch PVC water line routed north along the west side of the Project site. Two additional 8-inch PVC water lines are proposed along the north and east sides of the Project site. Sewer and water service lines connect to the warehouse on the west side.

EIR Tiering

This Initial Study tiers off the Apple Valley General Plan and Annexations 2008-001 & 2008-002 Environmental Impact Report (GP EIR), SCH #2008091077, which is available for review at Town Hall (14955 Dale Evans Parkway) and also can be found at the following link: https://www.applevalley.org/services/planning-division/climate-action-plan/general-plan-eir. The GP EIR was prepared to review the environmental constraints and opportunities associated with the adoption of the Apple Valley Comprehensive General Plan and two planned annexations. In addition to assessing the impacts associated with the General Plan, annexation areas, and instituting mitigation measures, the EIR was designed to be used as an information database to facilitate the streamlining, or tiering of the environmental review process for subsequent projects proposed within the General Plan boundary. The EIR determined that all environmental impacts resulting from the construction and implementation of the General Plan and annexations would be less than significant with the imposition of appropriate mitigation measures, with the exception of Air Quality, Land Use, and Traffic and Circulation impacts, which were identified as significant and unavoidable.

The proposed Project is located within the boundaries of the North Apple Valley Industrial Specific Plan (NAVISP) with a land use designation of Specific Plan Industrial (I-SP). The Project is consistent in size, land use, intensity and design with the development anticipated, analyzed, and approved as part of the approved General Plan and EIR. Specifically, the General Plan projected, and the EIR analyzed that over 36,938,445 square feet of industrial development would be constructed and operated within the NAVISP (EIR, Table I-2). Specific Plan Table III-1, Allowable Uses, specifically permits warehousing and distribution uses, like those proposed by the Project, within the I-SP designation (Specific Plan page III-3 through III-9).

Because the proposed Project is within the scope of the previously certified EIR, and consistent with the requirements of CEQA Guidelines Section 15162, this Initial Study/Mitigated Negative Declaration has been prepared to examine the proposed Project in the light of the General Plan EIR in order to determine if the proposed project would result in any impacts greater than those previously analyzed and disclosed.

The General Plan EIR is referenced as the "GP EIR" throughout. In accordance with CEQA Guidelines §15162, the following analysis addresses each of the environmental issues analyzed in the approved GP EIR as compared to the potential changes in environmental impacts due to the proposed Project. Where analysis of General Plan buildout is critical and quantifiable, a comparison of the GP EIR and current (2024) land use calculations has been provided.

The analysis is divided into two parts. First, the analysis, findings and mitigation measures provided in the GP EIR are summarized. Then an analysis of the proposed Project is conducted to establish its Project-specific impacts, its consistency with the GP EIR, and provide any Project-specific mitigation measures necessary to reduce impacts to less than significant levels.

In the following resource areas, the EIR identified mitigation measures that would be applicable to all subsequent developments: Aesthetics, Agricultural Resources, Air Quality, Biological Resources, Cultural Resources, Geology and Soils, Hazards and Hazardous Materials, Hydrology, Water Resources/Quality, Land Use/Population/Housing, Mineral Resources, Noise, Public Services and Facilities, Recreational Resources, and Transportation and Traffic. Those mitigation

measures were imposed by the Town through a Mitigation Monitoring and Reporting Program, and will be applied to this Project, if approved.

Finally, as depicted in the Initial Study's significance checkboxes for each resource only those resources for which site-specific mitigation (beyond that already imposed through the EIR) are imposed are identified as "less than significant with mitigation." Impacts to all other resources are either "less than significant" or "no impact" with the imposition of the mitigation measures imposed through the certified GP EIR.

Surrounding Land Uses:

Parcels surrounding the Project site lie within the NAVISP and are designated as Industrial (I-SP). The Project site and surrounding parcels are also within the Town's Airport Overlay District (A-2).

North: Gustine Street (unimproved), vacant, undeveloped land
South: Fresno Road (unimproved), vacant, graded land
East: Vacant, undeveloped parcel, and the Apple Valley Airport property and runway
West: Dakota Road (paved), vacant, undeveloped land

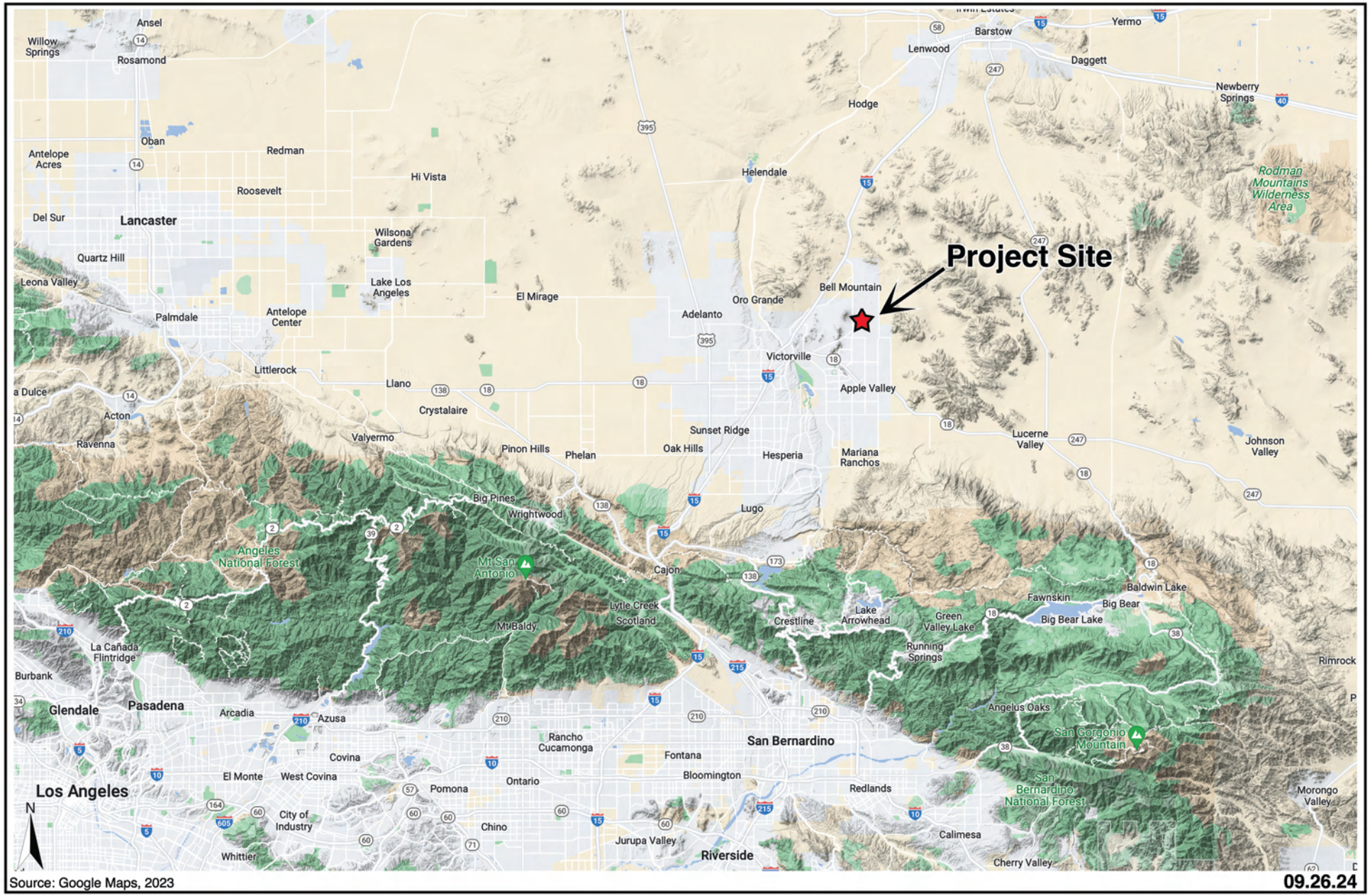
Utilities and Service Providers

The following agencies and companies will provide service to the project site:

1. Sanitary Sewer: Town of Apple Valley (collection) and Victor Valley Wastewater Reclamation Authority (treatment)
2. Water: Liberty Utilities – Apple Valley
3. Electricity: Southern California Edison
4. Gas: Southwest Gas Corporation
5. Trash disposal: AVCO Disposal, Inc., Burrtec Waste Industries, Inc.
6. Police: San Bernardino County Sheriff
7. Fire: Apple Valley Fire Protection District

Other public agencies whose approval is required:

Mojave Desert Air Quality Management District
Regional Water Quality Control Board



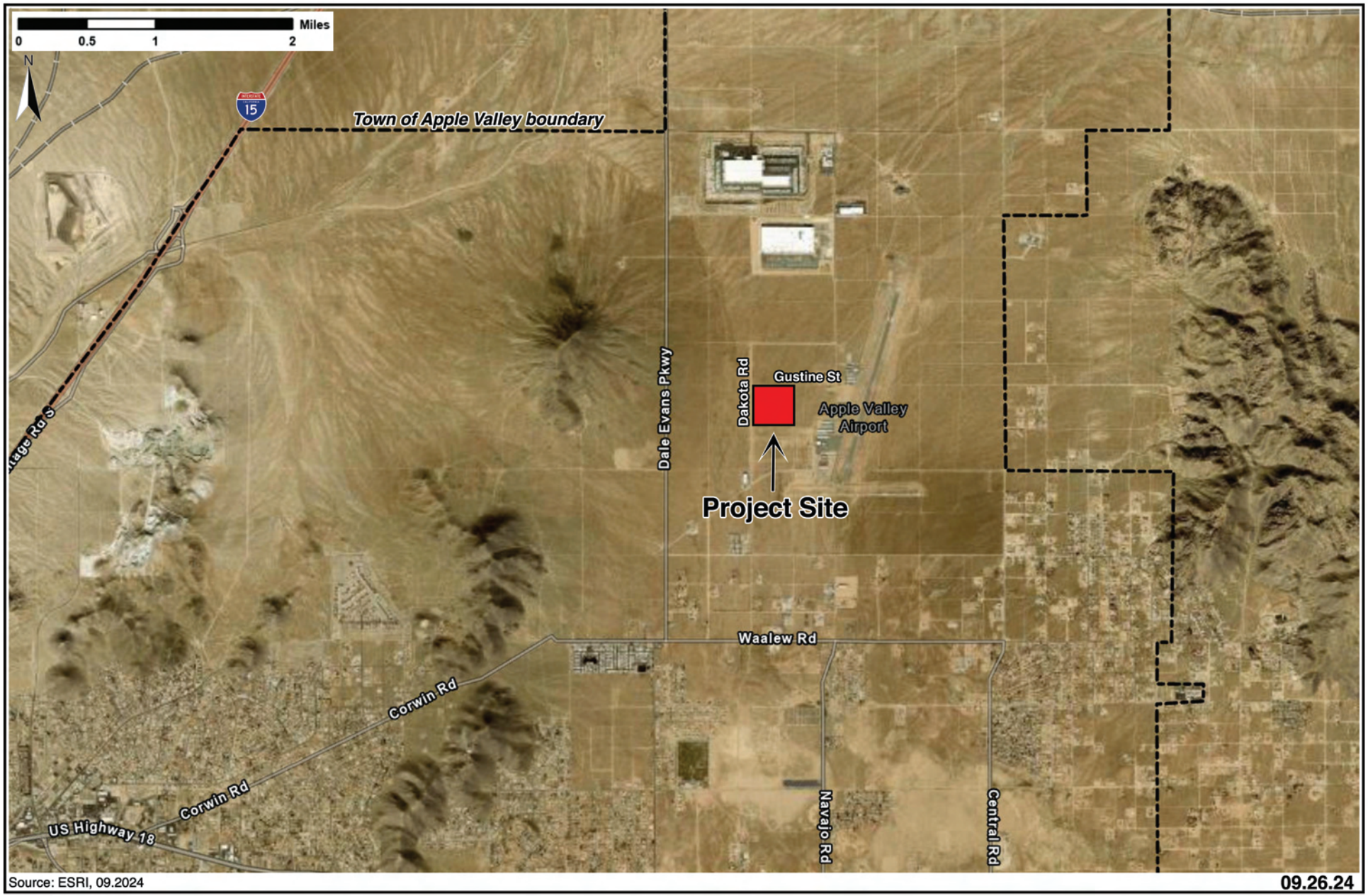
Source: Google Maps, 2023

09.26.24

Exhibit 1

TERRA NOVA®
PLANNING & RESEARCH, INC.

Regional Location Map
Lecangs Dakota Warehouse
Apple Valley, California

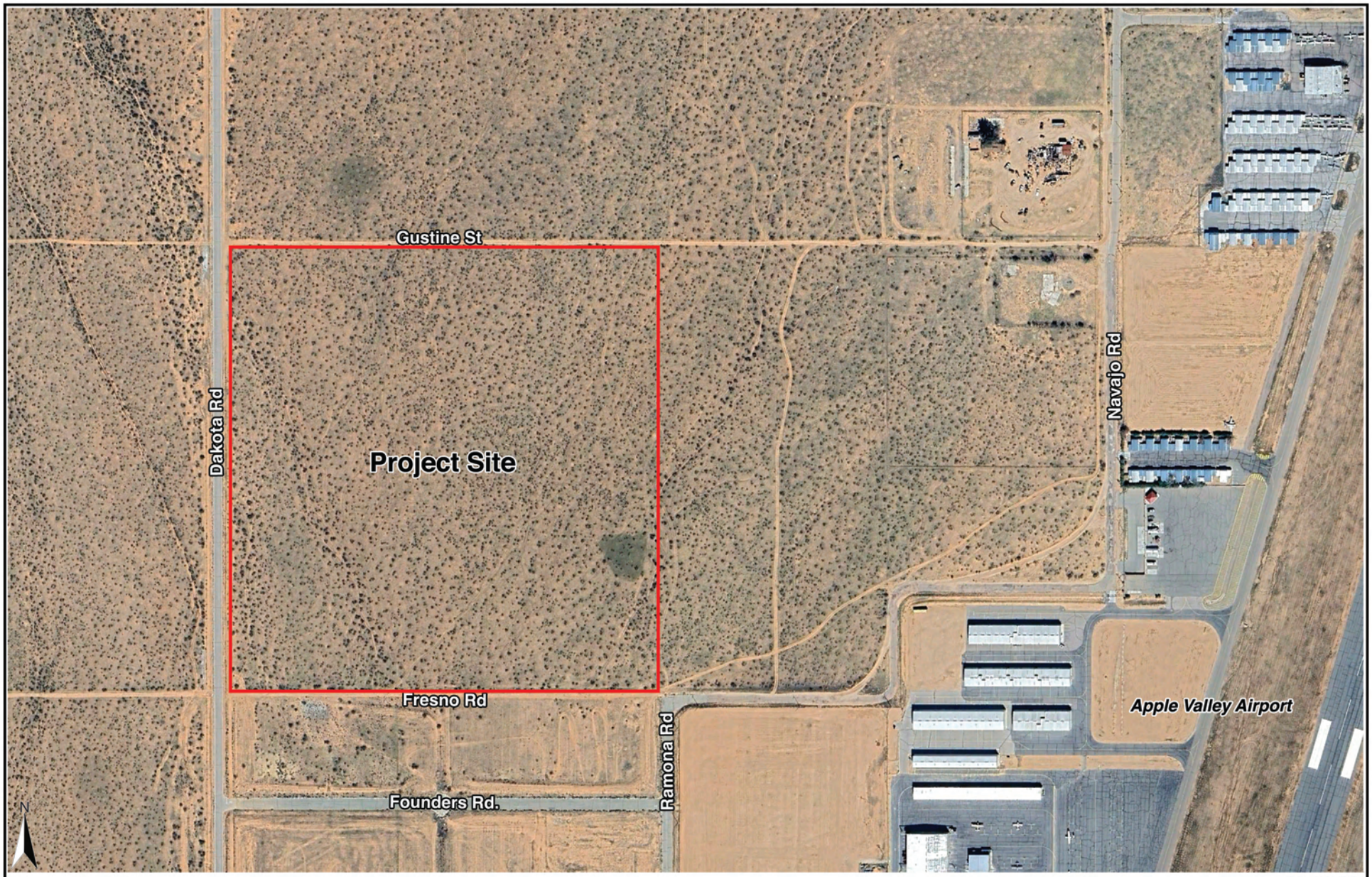


09.26.24

TERRA NOVA®
PLANNING & RESEARCH, INC.

Vicinity Map
Lecangs Dakota Warehouse
Apple Valley, California

Exhibit
2



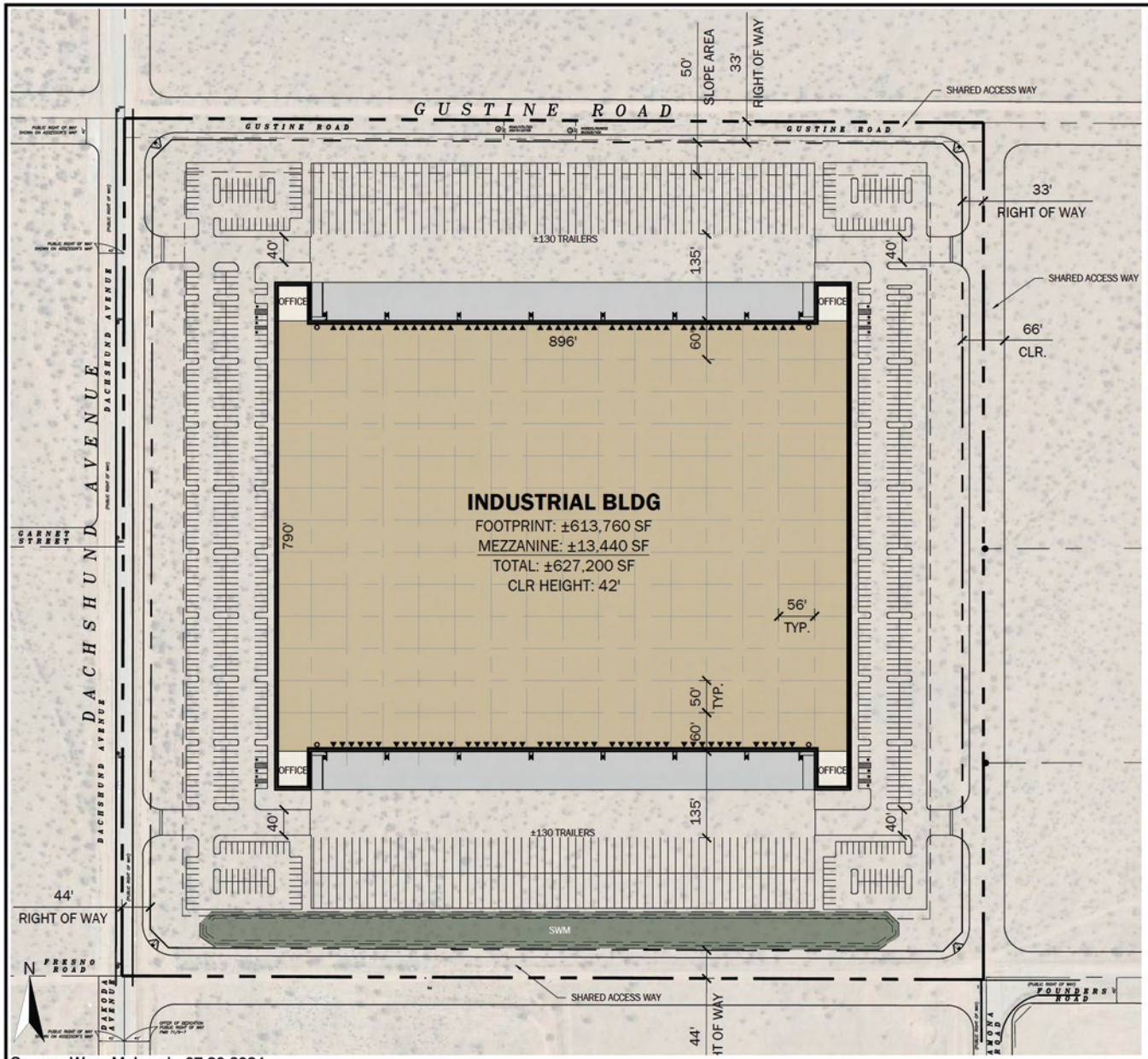
Source: ESRI, 09.2024

09.26.24

TERRA NOVA®
PLANNING & RESEARCH, INC.

Project Location
Lecangs Dakota Warehouse
Apple Valley, California

Exhibit
3



Site Summary		APN(s): 0463-372-21-0-000
Gross Site Area	1,787,210 SF	41.03 AC
Stormwater Management	60,865 SF	@ 3%
Net Site Area	1,726,344 SF	39.63 AC
Total Building Area(s)	Gross Floor Area	627,200 SF
	Footprint	613,760 SF
Coverage	Gross	34%
	Net	36%
FAR	Gross	0.35
	Net	0.36
Building 1		
Building Area(s)	Footprint	613,760 SF
	Mezzanine	13,440 SF
	Gross Floor Area	627,200 SF
Cars Required	@9% Office	647 Stalls
Cars Provided	*@1.17/1,000 SF*	733 Stalls
	Req. Accessible	15 Stalls
Drive-in Doors		4
Docks	*@1.47/10,000 SF*	92
Trailers		260 Stalls
Zoning		
Jurisdiction		Apple Valley
Zoning Designation		I-SP
Max Building Coverage		45%
Max Height		50 FT
Building Setbacks		
	Front	25 FT
	Side	25 FT
	Rear	15 FT
Landscape Setbacks		
	Front	15 FT
	Side	15 FT
Parking Standards		
	Min Stall Size	9x19
	Drive Aisle	24 FT
	Fire Lane	26 FT
Required Parking		
	Office	1/250 SF
	Manufacturing	1/500 SF
	Warehouse	1/500 SF
	≤10,000 SF	1/1000 SF
	≥10,000 SF	1/1000 SF

0 50 100 250 500

Source: Ware Malcomb, 07.30.2024

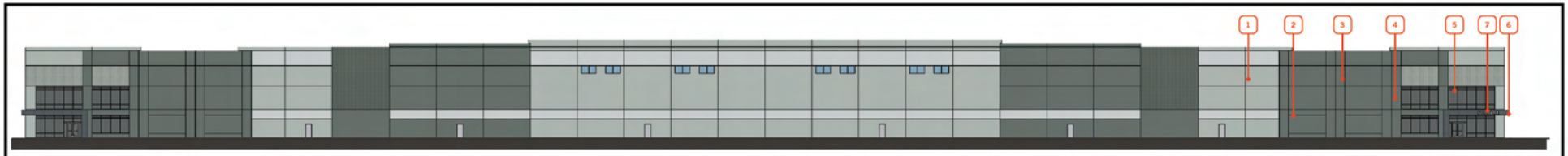
10.17.24

Exhibit

4

TERRA NOVA®
PLANNING & RESEARCH, INC.

Conceptual Site Plan
Lecangs Dakota Warehouse
Apple Valley, California



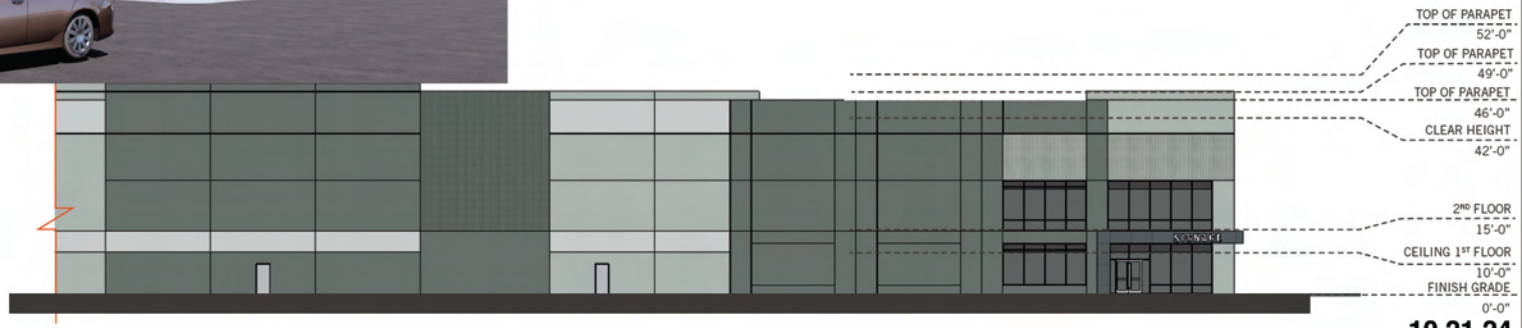
EAST ELEVATIONS



SOUTH ELEVATIONS



1. CONCRETE TILT UP PANEL WITH REVEALS AS SHOWN, PAINTED SHERWIN WILLIAMS: SW 7652 - MINERAL DEPOSIT
2. CONCRETE TILT UP PANEL WITH REVEALS AS SHOWN, PAINTED SHERWIN WILLIAMS: SW 7071 - GRAY SCREEN
3. CONCRETE TILT UP PANEL WITH REVEALS AS SHOWN, PAINTED SHERWIN WILLIAMS: SW 7622 - HOMBURG GRAY
4. ANODIZED ALUMINUM STOREFRONT SYSTEM WITH HIGH PERFORMANCE INSULATED GLAZING
5. SPANDREL GLASS
6. METAL CANOPY
7. TENANT SIGNAGE



Source: Ware Malcomb, 07.25.2024

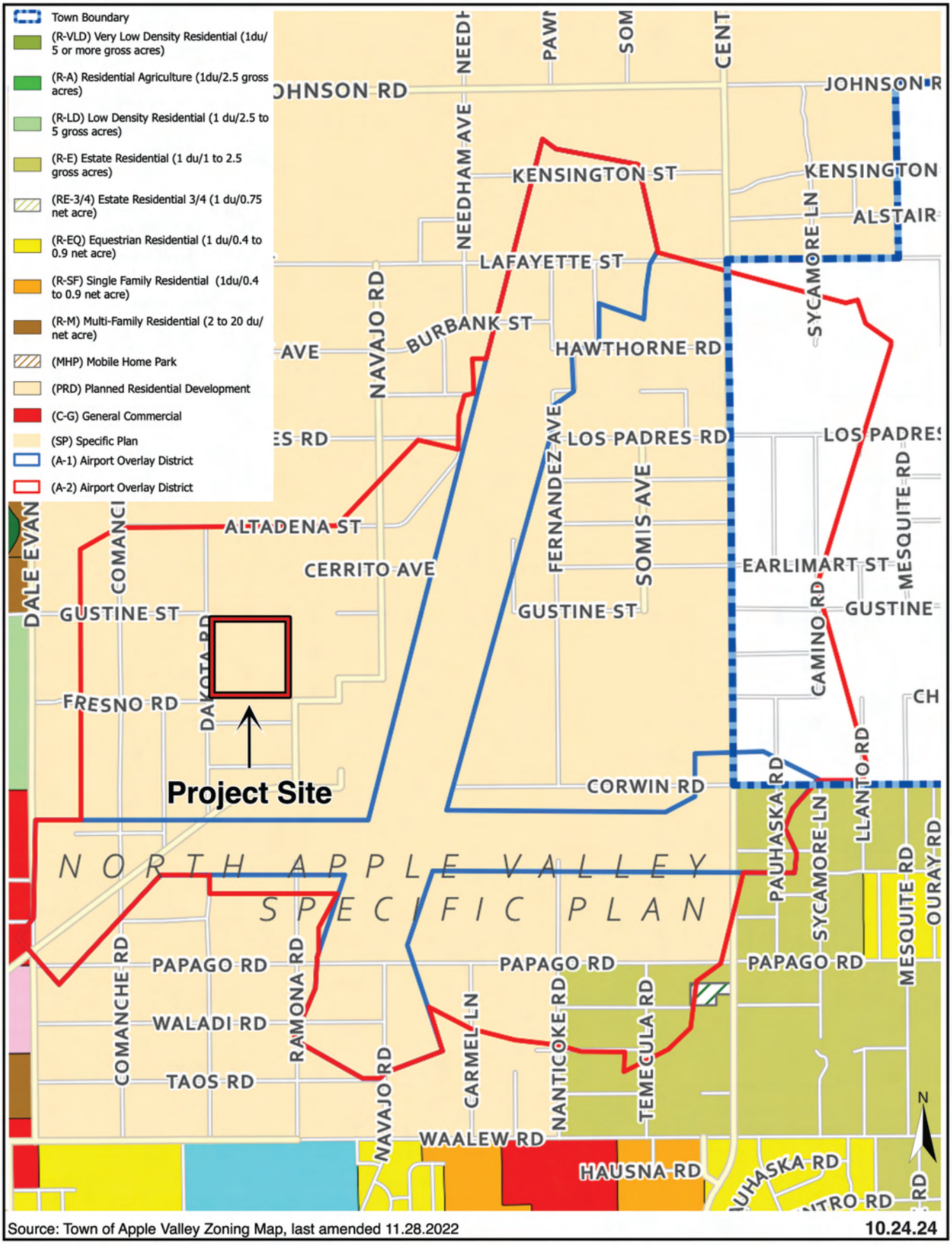
10.21.24

TERRA NOVA®
PLANNING & RESEARCH, INC.

Elevations
Lecangs Dakota Warehouse
Apple Valley, California

Exhibit

5



Source: Town of Apple Valley Zoning Map, last amended 11.28.2022

10.24.24

TERRA NOVA®
PLANNING & RESEARCH, INC.

Apple Valley Airport Overlay Districts
Lecangs Dakota Warehouse
Apple Valley, California

Exhibit

6

Environmental Factors Potentially Affected:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agricultural and Forestry Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Energy
☐ Geology/ Soils	☐ Greenhouse Gas Emissions	☐ Hazards and Hazardous Materials
☐ Hydrology/ Water Quality	☐ Land Use/ Planning	☐ Mineral Resources
☐ Noise	☐ Population/ Housing	☐ Public Services
☐ Recreation	☐ Transportation	☐ Tribal Cultural Resources
☐ Utilities/ Service Systems	☐ Wildfire	☐ Mandatory Findings of Significance

CHAPTER 2: ENVIRONMENTAL ANALYSIS AND DETERMINATION

DETERMINATION: The Town of Apple Valley Planning Department finds

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

■ I find that although the proposed project could have a significant effect on the environment there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Nicole Montano
Assistant Planner
Town of Apple Valley

Date

PURPOSE OF THIS INITIAL STUDY

This Initial Study has been prepared consistent with CEQA Guidelines Section 15063, to determine if the project, as proposed, may have a significant effect upon the environment. Based upon the findings contained within this report, the Initial Study will be used in support of the preparation of a Mitigated Negative Declaration.

EVALUATION OF ENVIRONMENTAL IMPACTS

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross referenced).

5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

    a) Earlier Analysis Used. Identify and state where they are available for review.
    b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
    c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures, which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The explanation of each issue should identify:
    a) The significance criteria or threshold, if any, used to evaluate each question; and
    b) The mitigation measure identified, if any, to reduce the impacts to less than significance.

I. AESTHETICS Except as provided in Public Resources Code Section 21099, would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?			✓	
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				✓
c) 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). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?			✓	
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?			✓	

Sources: Town of Apple Valley General Plan Environmental Impact Report (2009); Town of Apple Valley General Plan (2009); Town of Apple Valley Development Code; North Apple Valley Industrial Specific Plan; Caltrans California State Scenic Highway System Map.

Environmental Setting

The Project site is vacant, undeveloped and has retained a natural state although signs of disturbance are present such as tire tracks from off-road vehicle use, debris, and an excessive amount of non-native groundcover grows throughout the parcel. There is no lighting onsite. The site is surrounded by predominantly vacant, desert lands except for the Apple Valley Airport approximately 700 feet to the east and scattered industrial development approximately 0.25 miles to the southwest and 0.65 miles to the north. From the Project site there are distant views of the upper Turtle and Black Mountains to the north, Fairview Mountain to the northeast, the Granite Mountains to the southeast, San Bernardino mountains to the south, and Bell Mountain approximately 0.7 miles to the west.

GP EIR

The GP EIR found that the conversion of vacant rural land uses to industrial, commercial and more intense residential uses would increase the levels of illumination and glare, and change the open, semi-rural visual character of much of the planning area. The GP EIR found that although the build out of the General Plan within Town limits and within both Annexation areas would result in aesthetic impacts, implementation of the Town's General Plan policies and design performance standards, together with mitigation measures, would reduce potentially detrimental impacts to visual resources to less than significant levels.

In order to ensure that impacts to visual resources were reduced to less than significant levels, the GP EIR provided the following mitigation measures. (GP EIR Section III.A, page III-1 et.seq., Mitigation Measures ages III-4 through -5 of the GP EIR)

1. Signage shall be in compliance with the Town's sign ordinance and shall be limited to the minimum size, scale and number needed to provide functional information, thereby minimizing impacts on traffic safety, streetscape, scenic viewsheds and the aesthetic character of the area.
2. Compliance with the Town's performance and design standards for landscaping, building coverage and setbacks, building design and height, architectural finishes, walls, fences and utility structures will be required of all development and redevelopment projects.
3. The Town shall maintain and implement design standards which protect scenic viewsheds and enhance community cohesion. Development standards shall address signage, landscaping, setbacks, building facades, vehicular and pedestrian access and related issues.
4. The Town's performance and design standards for lighting shall be maintained and implemented.
5. In addition to being in compliance with the Town's lighting ordinance, supplementary lighting recommendations include:
    - External lighting shall be limited to the minimum height, fewest number and lowest intensity required to provide effective levels of illumination.
    - Every reasonable effort shall be made to reduce spillage, both to protect residential use areas from excessive levels of illumination and to preserve dark skies at nighttime.
    - Elevated lighting, including but not limited to parking lot lighting, shall be full-cutoff fixtures.
    - Lighting fixtures in the vicinity of the airport shall be compatible with airport operations.
6. Overhead utility lines shall be undergrounded to the greatest extent possible through the maintenance of an undergrounding program.
7. The Town shall coordinate with utility providers to assure that utility infrastructure, including water wells, substations and switching/control facilities, are effectively screened to preserve scenic viewsheds and limit visual clutter.
8. Planning and design of residential neighborhoods and street corridors shall provide distinctive and characteristic design elements, such as entry monuments and landscaping, which preserve and enhance viewsheds enjoyed from these areas
9. All development proposed within scenic viewsheds shall be regulated to minimize adverse impacts to views and vistas.

Proposed Project Impacts

a) Less Than Significant Impact. A significant impact may occur if the Project introduces incompatible visual elements within a field of view containing a scenic vista or substantially blocks views of a scenic vista. Scenic vistas are generally described in two ways: panoramic views (visual access to a large geographic area, for which the field of view can be wide and extend into the distance) and focal views (visual access to a particular object, scene, or feature of interest).

Lands immediately adjacent to the site are currently vacant. All lands within a mile of the site are designated for industrial or commercial uses in the NAVISP. The nearest occupied structures are the Apple Valley Airport, located approximately 700 feet to the east, and scattered industrial development approximately 0.25 miles to the southwest and 0.65 miles to the north.

Construction of the proposed warehouse would require the use of heavy equipment for grading, paving and excavation. Construction activities would be visible from the surrounding streets and industrial developments; however, impacts from construction are temporary, would involve equipment and building materials up to 50 feet in height erected over time, and would be limited by distance.

From the Project site there are distant views of the upper Turtle and Black Mountains to the north, Fairview Mountain to the northeast, the Granite mountains to the southeast, and San Bernardino mountains to the south. Views to the north, east and south are either diminished by distance or obstructed by intervening development. Lower and upper views of Bell Mountain are unobstructed to the west. Construction of the proposed Project would not obstruct western or northerly views from public vantage points. Travelers on Gustine would experience blockage of the distant views of Granite and San Bernardino mountains to the south and southeast, for a short time, but the views are limited by intervening development and distance under current conditions. Views to the east would be unaffected for travelers on Gustine and Fresno.

Views from the Apple Valley Airport, east of the site, looking west towards the Project site may have views of the lower elevations of Bell Mountain partially obstructed by the Project, but upper views would remain. In addition, the nearest airport structures are located 750 feet east of the Project property line, a distance which would lessen these impacts. Future viewers from the north, west and south looking towards the Project site may experience partially blocked views of the mountains; however, views are already diminished by distance and obstructed by intervening development. Impacts associated with scenic resources will be less than significant, consistent with the conclusions of the GP EIR.

b) **No Impact.** A significant impact would occur only if scenic resources would be damaged and/or removed by development of a project. There are no scenic resources such as trees, rock outcroppings, or historical buildings onsite. There are no existing or proposed state scenic highways within Apple Valley. No impact will occur as result of the Project. There will be no impact to scenic resources, and site-specific impacts will be less than those of the GP EIR, which were identified as less than significant.

c) **Less Than Significant Impact**. The Project is in a largely undeveloped area experiencing scattered industrial urbanization. A significant impact would occur if the Project would substantially degrade the existing visual character or quality of public views of the site and its surroundings. As previously discussed in response to I.a, above, the proposed Project would allow for similar land uses, patterns of development, and range of building heights as currently occur in the Project area, with comparable landscaping, architectural features, and other amenities.

The Project proposes one industrial warehouse building with a maximum building height of 50 feet, with heights ranging from 46 to 49 feet to the top of parapet (Exhibit 5). The proposed Project would allow for similar land uses, patterns of development, and range of building heights as currently occur in the Project area and NAVISP, with comparable landscaping, architectural features, and other amenities. The Project has been designed consistent with the development standards set forth in the NAVISP for Industrial land uses (I-SP) located within Airport Influence Area (A-2), including a maximum building height of 50 feet, 25-foot building setbacks from roadways, 45 percent maximum building coverage, and minimum 10 percent required landscaping.

Therefore, the Project will not degrade the existing visual character or quality of public views, consistent with the conclusions of the GP EIR. Impacts will be less than significant.

d) **Less Than Significant Impact.** A significant impact may occur if the Project introduces new sources of light or glare on or from the project site which would be incompatible with the areas surrounding the Project, or which pose a safety hazard to motorists utilizing adjacent streets or freeways.

The Project site is currently vacant and there is no lighting onsite. No substantial amount of lighting would be expected during construction, because the Town limits construction hours to 7 AM to 7 PM on weekdays and Saturdays.

Build out of the site can be expected to generate increased levels of light and glare from interior and exterior building lighting, safety and security lighting, landscape lighting, and vehicles accessing the area. The types and sources of lighting under the proposed land use designations would be the same as those anticipated in the GP EIR and NAVISP and would be required to comply with the development standards contained in the NAVISP, as is the case with all projects within its boundaries. The Project is located within the Apple Valley Airport Overlay Zone (A-2) and shall also comply with the exterior lighting requirements set forth in the Town's Municipal Code § 9.65080(C), that states all exterior lighting needs to have sharp cut-off reflectors in which virtually no light leaves the fixture above an angle of about 70 degrees.

Lighting and glare levels are not expected to exceed typical levels for an urban environmental and will be regulated by the Town's night sky policies and Municipal Code and NAVISP lighting standards. Impacts associated with light and glare will be less than significant, consistent with the conclusions of the GP EIR.

Mitigation Measures: None Required.

Monitoring: None Required.

II. AGRICULTURAL AND FORESTRY RESOURCES				
In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				✓
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				✓
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				✓
d) Result in the loss of forest land or conversion of forest land to non-forest use?				✓
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?				✓

Sources: Town of Apple Valley General Plan (2009); California Department of Conservation Important Farmland Finder.

Environmental Setting

Although ranching and crop farming formed much of the Town's history, the lack of reliable irrigation water led to a sharp decline in agricultural production followed by increased urbanization. Equestrian activities and animal keeping have largely replaced much of the agricultural activities since the 1960s. The 2009 General Plan Land Use element permits agriculture and ranching in the land use areas of Very Low Density Residential, Low Density Residential, Estate Residential and Estate Residential ¾. The farmlands identified by the California Department of Conservation occur in Single Family Residential, Specific Plan, Public Facilities and Low Density Residential areas. The Project site is designated for industrial uses in the NAVISP, which does not permit agricultural uses.

GP EIR

The 2009 General Plan was anticipated to result in the loss of approximately 100 acres of Farmland of Statewide Importance, as designated by the California Department of Conservation. The acreage occurred in Single Family Residential, Specific Plan, Public Facilities and Low Density Residential land uses and was considered to be marginally, at best, productive agricultural lands. Thus, the impacts of the 2009 General Plan were deemed to be less than significant. Mitigation measures were established by the GP EIR to protect remaining agricultural lands and activities.

2009 Mitigation Measures

In order to protect lands in agricultural and equestrian activities in Town, the GP EIR included the following Mitigation Measures. (GP EIR Section III.B, page III-7 et.seq., Mitigation Measures page III-9 of the GP EIR)

1. The Town's Development Code shall include buffers between Very Low Density, Low Density and Estate Residential land use designations and more intense lands, in order to provide for the preservation or creation of ranching or animal raising activities in the Deep Creek area.
2. The Town shall coordinate with the Department of Conservation, Farmland Mapping and Monitoring Program, to accurately reflect farmed and farmable lands within the Town limits.

Proposed Project Impacts

a-b) No Impacts.

Conversion of farmland: The 40.1-acre Project site occurs in the NAVISP which is designated for industrial land use. Agriculture and forestry uses are not permitted in this area. Furthermore, there are no agriculture or forestry resources in the NAVISP or in the lands surrounding the NAVISP area, and likewise, there are no prime farmlands, unique farmlands, or farmlands of statewide importance within the Project site or vicinity. The California Department of Conservation DLRP Important Farmland Finder labels the Project site and surrounding land as Grazing Land, and the Project site contains sparse creosote scrub vegetation consistent with conditions of the high desert.

Williamson Act: The Project site does not have a Williamson Act contract, nor is the site located adjacent to a parcel having a Williamson Act contract. One Williamson Act contract exists in the Town and is held by the Apple Valley Ranchos Water Company (AVR).

The Project would not convert farmland to non-agricultural use and would not conflict with an existing Williamson Act contract. There would be no impacts.

c-e) No Impacts.

Forest Land: The Town of Apple Valley does not contain any forests or any timberland production zones. The Project site is a vacant, undeveloped parcel that contains creosote scrub vegetation and there are no forest lands or agricultural lands on or around the parcel. Therefore, the Project would not result in the loss of forest land, timberland production, and would not convert agricultural land to non-agricultural uses. There will be no impacts.

Mitigation Measures: None required.

Monitoring: None required.

III. AIR QUALITY				
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. Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?			✓	
b) 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?			✓	
c) Expose sensitive receptors to substantial pollutant concentrations?			✓	
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?			✓	

Sources: MDAQMD California Environmental Quality Act (CEQA) and Federal Conformity Guidelines (February 2020); Air Quality and Greenhouse Gas Report, Lecangs Dakota Warehouse, Terra Nova Planning & Research, October 2024; California Department of Finance Table E-5 Population and Housing Estimates for Cities, Counties, and the State, 2021-2024; Connect SoCal 2024, Demographics and Growth Forecast Technical Report, Adopted April 4, 2024, Southern California Association of Governments.

Environmental Setting

The Project is located in the Western Mojave Desert region within the Mojave Desert Air Basin (MDAB). The MDAB is under the jurisdiction of the Mojave Desert Air Quality Management District (MDAQMD). MDAQMD is responsible for monitoring criteria air pollutant concentrations and establishing management policies for the MDAB. All development within the MDAB, including the proposed Project, is subject to all applicable air quality management plans that establish control strategies and guidance on regional emission reductions for air pollutants, including but not limited to ozone attainment plans and PM_{10} reduction plans.

Criteria air pollutants are contaminants for which state and federal air quality standards have been established. Depending on whether or not air quality standards are met or exceeded, the Basin is classified as being in "attainment" or "nonattainment." The West Mojave Desert is designated as being in nonattainment for regional levels of particulate matter (PM_{10}) and ozone (O_3). Under the federal Clean Air Act, the MDAB is designated as being in "moderate" ozone non-attainment.

The MDAQMD has also established construction and operation thresholds for criteria air pollutants, as shown in the table below. If exceeded, these thresholds indicate that a project has significant impacts to air quality.

Table 2
MDAQMD Emissions Thresholds

Criteria Pollutant	Annual Threshold (short tons)	Daily Threshold (pounds)
Carbon Monoxide (CO)	100	548
Oxides of Nitrogen (NO_x)	25	137
Volatile Organic Compounds (VOC)	25	137
Oxides of Sulfur (SO_x)	25	137
Particulate Matter (PM_{10})	15	82
Fine Particulate Matter ($PM_{2.5}$)	12	65
Hydrogen Sulfide (H_2S)	10	54
Lead (Pb)	0.6	3
Source: MDAQMD CEQA Guidelines (February 2020).		

GP EIR

The following tables summarizes pollutant emissions generated at build out of the General Plan and Annexation areas, including emissions from the use of consumer products, electricity, and natural gas, and emissions from vehicle exhaust for residential, commercial, office, and industrial land use designations as set forth in the General Plan Land Use Tables.

For buildout of the General Plan, all criteria pollutant thresholds were projected to be exceeded without the application of mitigation measures, as shown in the table below. Although emissions could be mitigated to a certain degree, the GP EIR (GP EIR Section III.C, page III-10 et.seq.) determined that significant and unavoidable impacts to air quality would occur as a result of development of the General Plan. Therefore, as required under CEQA, Findings and a Statement of Overriding Considerations were adopted. Regardless of mitigation measures, development of the General Plan was found to contribute to cumulative air quality impacts locally and regionally.

EIR Table III-16
Projected Daily Emissions: 2009 General Plan Build Out
(lbs./day)

Criteria Pollutant	Stationary Source Emissions			Moving Source Emissions	Total Project Emissions	Threshold Criteria*
	Consumer Products	Power Plant	Natural Gas	All Vehicles	Lbs./Day	Lbs./Day
CO	-	991	1,641	42,503	**45,135**	**548**
NOx	-	5,696	2,492	4,960	**13,148**	**137**
SOx	-	594	0.026	135	**729**	**137**
PM10	-	198	4.61	1,229	**1,431**	**82**
PM2.5	-	-	4.61	820	**824**	**55**
ROGs	3,333	50	186	5,440	**5,676**	**137**
CO2	-	-	3,073,667	14,007,469	**17,081,136**	**N/A**

Source: Table III-16 of 2009 GP EIR.
*Threshold criteria offered by the Mojave Desert Air Quality Management District for determining the significance of air quality impacts. Source: "CEQA and Federal Conformity Guidelines," MDAQMD, June 2007 and URBEMIS 2007 Version 9.2.4 default emissions.

According to the GP EIR, a wide range of mitigation measures could be applied to new development and redevelopment projects to reduce project-related criteria pollutant and greenhouse gas emissions at General Plan build out, and build out of the Annexation areas. The following Mitigation Measures are from pages III-34 through -39 of the GP EIR. As previously stated, the reductions which these mitigation measures offered could not be effectively quantified. The GP EIR determined that impacts associated with GHG emissions would be significant and unavoidable.

1. Grading and development permits shall be reviewed and conditioned to require the provision of all available methods and technologies to assure minimal air quality emissions from development. See EIR Table III-21 below.

EIR Table III-21
Available Emission Reduction Technologies

	Daily Emission Reduction Factors				
Diesel Equipment	CO	NOx	SOx	PM_{10}	ROG
Aqueous Fuel	0%	14%	0%	63%	0%
Diesel Particle Filter	0%	0%	0%	80%	0%
Cooled Exhaust Gas Recirculation	90%	40%	0%	85%	90%
Lean NOx Catalyst	0%	20%	0%	0%	0%
Diesel Oxidation Catalyst	0%	20%	0%	0%	0%
Worker Trips	CO	NOx	SOx	PM_{10}	ROG
Use of Shuttle or Ride Sharing	1.3%	1.3%	1.3%	1.3%	1%

Source: Urban Emissions Model (URBEMIS2002) version 8.7.0 April 2005; developed by the California Air Resources Board (CARB) as a modeling tool to assist local public agencies with estimating air quality impacts from land use projects when preparing a CEQA environmental analysis.

2. As part of the grading permit process, developers shall concurrently submit a dust control plan as required by MDAQMD in compliance with Rule 403 (see EIR Table III-22 below).

EIR Table III-22
Fugitive Dust Control Methods

Daily PM_{10} Reduction	
Apply Soil Stabilizers to Inactive Areas	30%
Replace Ground Cover in Disturbed Areas Quickly	15%
Water Exposed Surfaces 2 Times Daily	34%
Water Exposed Surfaces 3 Times Daily	50%

Source: Urban Emissions Model (URBEMIS2002) version 8.7.0, April 2005.

3. Prior to grading activities, a wind erosion control plan that among other things addresses soil stabilization techniques shall be submitted to the Apple Valley Building Division to assure that dust control is realized for all projects.
4. The Town shall conduct an initial study for all projects that are expected to exceed any of the MDAQMD pollutant emission threshold criteria, and shall require detailed air quality analyses for all development applications that have the potential to adversely affect air

quality including quantification of greenhouse gas emissions. Until new factors are developed the use of the CEQA Handbook prepared by SCAQMD or other appropriate modelling tools such as URBAMIS shall be utilized.

5. All construction activities within the Town of Apple Valley shall be subject to Rule 401 Visible Emissions, Rule 402 Nuisance, and Rule 403 Fugitive Dust in accordance with the Mojave Desert Planning Area PM10 Attainment Plan.[1]
6. Setbacks and buffer zones shall be provided between sensitive receptors (residences, schools, daycare centers, playgrounds and medical facilities) and point source emitters, such as highways, hazardous materials sites, and industrial development. Projects proposed for sites located within the specified distance to an existing or planned (zoned) sensitive receptor land use shall be evaluated to determine impacts to sensitive receptors including a health risk assessment for the following projects:

   Any industrial project within 1000 feet;
   A distribution center (40 or more trucks per day) within 1000 feet;
   A transportation project with 50,000 or more vehicles per day within 1000 feet;
   A dry cleaner using perchloroethylene within 500 feet;
   A gasoline dispensing facility within 300 feet.

7. The General Plan Land Use Plan shall be routinely updated to assure that air pollution point sources, such as those described above, are located a sufficient distance residential areas and other sensitive receptors, to the greatest extent practical.
8. The Town shall encourage the phasing of development projects and the staging of construction equipment to assure the lowest construction-related pollutant emission levels practical.
9. The Town shall strive to maintain a balance between housing, commercial, and industrial development, and shall encourage mixed-use development to reduce the length of vehicle trips and associated moving vehicle emissions.
10. The Town shall promote the development of pedestrian-oriented retail centers, community-wide trails, and dedicated bike lanes to encourage alternatives to vehicle travel. These components shall be integrated and periodically updated in the General Plan Circulation Element.
11. The Town shall pursue programs that create a diversified transportation system that minimizes vehicle miles traveled and associated air quality emissions.
12. The Town shall encourage the incorporation of energy-efficient design measures in site plans, including appropriate site orientation to assure solar access, and the use of shade and windbreak trees to enhance the use of alternative energy systems and reduce the need for excessive heating and cooling.
13. The Town shall encourage the use of clean burning energy sources for transportation, heating and cooling. Pilot studies and/or demonstration programs shall be initiated by the Town and/or local agencies to promote these uses. The following programs shall be pursued:

    - Replace Town and County vehicle fleet with alternative vehicles
    - Initiate ride sharing programs for employees and of telecommuter options
    - Utilize Town building rooftops for placement of Solar equipment

[1] "Final Mojave Desert Planning Area Federal Particulate Matter (PM10) Attainment Plan," prepared by the Mojave Desert Air Quality Management District, July 31, 1995.

14. The Town shall continue to develop and coordinate mass transit services that link residential, commercial, shopping and industrial centers, and shall coordinate with regional transportation authorities to facilitate public transport outside Town limits.
15. As requested, the Town shall participate, through the San Bernardino Associated Governments and MDAQMD, in the routine monitoring of all pollutants of regional concern, and shall maintain records of regional air quality trends.
16. The Town shall create staff positions that emphasis the Town's commitment towards building a green and sustainable community including LEED certified personnel and interagency liaisons that work directly with the Town and utility providers to increase efficiency, initiate programs, and develop incentives for water and energy conservation and reducing air quality emissions.
17. The Town shall coordinate with MDAQMD and the nearby SCAQMD in providing air quality management training to staff and volunteers.
18. The Town shall review individual projects under CEQA using the control efficiencies provided on pages 11-13 through 11-32 of the 1993 SCAQMD "CEQA Air Quality Handbook" to determine the effectiveness of proposed air quality mitigation measures for specific projects.
19. A PM_{10} Management Plan for construction operations shall be submitted with all development proposal applications. Plans shall include dust management controls, which can reduce PM emission as shown in the table below:

EIR Table III-23
Particulate Matter Emission Reduction Techniques

Mitigation Measure	Daily Reduction Factor for PM_{10}
Apply non-toxic soil stabilizers to graded construction areas that are inactive for 10 days or more	30-65%
Replace ground cover immediately through seeding and watering	15-49%
Enclose, cover, water twice daily or apply soil binders to exposed piles with more than 5% silt content	30-74%
Water active site at least twice a day	34-68%
Water active site at least three times daily	45-85%
Cover soil haul trucks or maintain at least two feet of freeboard	7-14%
Conduct street sweeps at the end of each day	25-60%
Install wheel washers where vehicles enter and exist unpaved roads or wash off equipment leaving the site	40-70%
Enforce maximum speeds of less than 15 mph on all unpaved roads	40-70%
Pave construction roads that have more than 50 daily construction equipment trips or 150 total daily trips	92.5%
Pave construction site access roads at least 100 feet on to the site from the main road	92.5%
Pave construction roads that have less than 50 daily trips	92.5%

Source: "CEQA Air Quality Handbook," prepared by SCAQMD, 1993.

20. To reduce construction-related traffic congestion, developers and contractors shall implement the following mitigation measures:
    - configure construction equipment parking to minimize traffic disturbance
    - minimize obstruction of through-traffic lanes
    - provide a flag person to ensure safety at construction sites, as necessary
    - schedule operations affecting roadways for off-peak traffic hours
    - provide rideshare incentives to construction personnel
21. To minimize construction equipment emissions, developers shall implement the following measures:
    - wash off trucks leaving the site
    - require trucks to maintain two feet of freeboard
    - properly tune and maintain construction equipment
    - use low sulfur fuel for construction equipment
22. To minimize indirect-source emissions, developers may:
    - implement energy conservation measures beyond state and local requirements
    - install low-polluting, high-efficiency appliances
    - install solar pool and water heaters, where feasible
    - landscape with appropriate drought-tolerant species to reduce water consumption and provide passive solar benefits
    - install energy-efficient street lighting
23. To minimize building energy consumption, developers shall be encouraged to implement the following:
    - improve the thermal integrity of buildings
    - utilize window glazing, wall insulation, and efficient ventilation methods
    - introduce efficient heating and appliances, such as water heaters, cooking equipment, refrigerators, furnaces, and boiler units
    - incorporate appropriate passive solar design and solar heaters
    - use devices that minimize the combustion of fossil fuels

Proposed Project Impacts

A Project-specific air quality report was prepared for the proposed Project, and is provided in Appendix A[2]. The following summarizes the findings of this report.

a) Less Than Significant Impact. According to the MDAQMD CEQA Guidelines, a project is considered non-conforming if it conflicts with or may delay the implementation of any applicable attainment or maintenance plan. According to the guidelines, a project is considered conforming if it "complies with all proposed control measures that are not yet adopted from the applicable plan(s) and is consistent with the growth forecasts in the applicable plan(s)."

The MDAQMD works directly with the Southern California Association of Governments (SCAG), county transportation commissions, and local governments, and cooperates actively with all state and federal government agencies. SCAG adopted the 2024-2050 Regional Transportation Plan/Sustainable Communities Strategy (2024 RTP/SCS) to comply with metropolitan planning organization (MPO) requirements under the

[2] "Air Quality and Greenhouse Gas Report, Lecangs Dakota Warehouse," prepared by Terra Nova Planning & Research, October 2024.

Sustainable Communities and Climate Protection Act. The Growth Management chapter of the RTP/SCS forms the basis of land use and transportation controls of air quality plans. The 2024 SCAG RTP/SCS forecasts that by 2050, the Town of Apple Valley will have 38,700 households. According to the California Department of Finance, the Town has an average household size of 2.83 persons.[3] Therefore, the Town is projected to have a 2050 population of 109,521 persons. According to the Town's General Plan, Apple Valley has the potential to accommodate 31,716 additional dwelling units and 96,829 additional residents in the Town boundaries through buildout of the General Plan.

MDAQMD states that conformity with growth forecasts can be established by demonstrating that the project is consistent with the land use plan that was used to generate the growth forecast. The Project site located in the NAVISP planning area and is designated as Industrial – Specific Plan, which allows for "a broad range of clean manufacturing and warehousing uses… [including] warehouse distribution facilities." The Project, which proposes the development of a warehouse distribution facility, is consistent with the land use and zoning designation established in the NAVISP and will comply with the policies and regulations applicable to this designation. According to the MDAQMD CEQA Guidelines, given that the Project is consistent with the land use plan used to generate the growth forecast, it can be assumed that the Project is conforms with the growth forecast itself.

The MDAQMD CEQA Guidelines also state that a project is considered conforming if it complies with all proposed control measures. According to the Apple Valley General Plan, the Town is subject to the provisions of the MDAQMD Rule Book, which establishes policies and other measures designed to help the District reach federal and state attainment standards. In accordance with the Town's policies, the proposed Project shall comply with the provisions of the MDAQMD Rule Book. These actions include the implementation of fugitive dust control measures (Rule 403) and the use of low VOC content architectural coatings (Rule 1113). Furthermore, the Project will be subject to Rule 201, which requires a permit from the Air Pollution Control Office prior to any construction activities, and Rule XIII, which requires preconstruction review of all new facilities to ensure they don't interfere with the attainment and maintenance of ambient air quality standards. Compliance with the MDAQMD's requirements will ensure that the Project does not conflict with applicable air quality plans. Impacts would be less than significant.

It should be noted that the GP EIR quantified maximum daily emissions for buildout of the General Plan and found impacts from criteria pollutants to be significant and unavoidable, and mitigation measures were provided requiring project-level air quality analysis to determine if future development project impacts would be managed and mitigated accordingly on a case-by-case basis. A project-level air quality and greenhouse gas analysis was prepared for the Project that found impacts to be less than significant. Therefore, implementation of the proposed Project would not result in any new adverse impacts or increase the severity of previously identified significant impacts in the certified EIR.

[3] State of California, Department of Finance, E-5 Population and Housing Estimates for Cities, Counties, and the State-January 1, 2021-2024. Sacramento, California

b) **Less Than Significant Impact.** A project is considered to have significant impacts if there is a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard. The West Mojave Desert is designated as being in nonattainment for regional levels of particulate matter (PM_{10}) and ozone (O_3). Therefore, if the Project's construction and/or operational emissions exceed MDAQMD thresholds for PM_{10} and ozone precursors, which include carbon monoxide (CO), nitrous oxides (NO_x), and volatile/reactive organic compounds/gases (VOC or ROG), then impacts would be cumulatively considerable and significant.

The California Emissions Estimator Model (CalEEMod) Version 2022.1) was used to project air quality emissions that will be generated by the proposed Project (Appendix A). Criteria air pollutants will be released during both the construction and operational phases of the Project, as shown in Tables 3 and 4. Table 3 summarizes short-term construction-related emissions, and Table 4 summarizes ongoing emissions generated during operation.

Construction Emissions

Project buildout is anticipated to take 18 months with a 2026/2027 buildout. The construction period includes all aspects of Project development, including site preparation, grading, paving, building construction, and application of architectural coatings.

As shown in Table 3, emissions generated by construction activities will not exceed MDAQMD thresholds for any criteria pollutant. It is anticipated that materials will balance on site during grading, however for analysis purposes it is assumed that up to 10,000 cubic yards (CY) of dirt/soil material may be exported per the Project engineers. Applicable standard requirements and best management practices include, but are not limited to, the implementation of fugitive dust control measures (Rule 403) and the use of low VOC content architectural coatings (Rule 1113).

Table 3
Maximum Daily Construction-Related Emissions Summary
(pounds per day)

Construction Emissions[1]	**CO**	**NO_x**	**ROG**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Daily Maximum	45.7	31.9	50.2	0.07	9.26	5.25
SCAQMD Thresholds	**548**	**137**	**137**	**137**	**82**	**65**
Exceeds?	**No**	**No**	**No**	**No**	**No**	**No**

Source: CalEEMod Version 2022.1.1.28 (output tables provided in Appendix A).

Given that criteria pollutant thresholds will not be exceeded, and standard best management practices, including Rule 403 relating to fugitive dust management and Rule 1113 relating to the use of low VOC paints, will be applied during construction, impacts will be less than significant.

Operational Emissions

Operational emissions are ongoing emissions that will occur over the life of the Project. They include area source emissions, emissions from energy demand (electricity), and mobile source (vehicle) emissions.

According to the Project traffic impact analysis (Appendix H), the Project will generate approximately 401 daily long haul truck trips and 934 daily passenger vehicle trips (see Section XVII, Transportation). Assuming that warehouse developments generate longer truck trips associated with product delivery/distribution, trip lengths for long-haul truck trips assumed a 40-mile trip length derived from the Southern California Association of Government's (SCAG) estimation of average truck trip length in its 2016 Regional Transportation Plan.[4]

Table 4 summarizes projected emissions during operation of the Project at build out. As shown, operational emissions will not exceed SCAQMD thresholds of significance for any criteria pollutants for operations. Impacts will be less than significant.

Table 4
Maximum Daily Operational-Related Emissions Summary
(pounds per day)

Operational Emissions[1]	**CO**	**NO_x**	**ROG**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Daily Maximum	79.2	47.9	22.6	0.57	25.8	7.57
SCAQMD Thresholds	**548**	**137**	**137**	**137**	**82**	**65**
Exceeds?	**No**	**No**	**No**	**No**	**No**	**No**

Source: CalEEMod Version 2022.1.1.28 (output tables provided in Appendix A).

Cumulative Contribution

A significant impact could occur if the Project would make a considerable cumulative contribution to federal or state non-attainment pollutants. As previously described, the West Mojave Desert portion of the Mojave Desert Air Basin is a designated non-attainment region for PM_{10} and ozone. Any development resulting in emissions of PM_{10}, ozone, or ozone precursors will, to some extent, contribute to the existing regional non-attainment.

The MDAQMD does not currently provide thresholds of significance for the cumulative emissions of multiple projects. A project's potential cumulative contributions can instead be analyzed using the criteria for project-specific impacts, assuming that if an individual development generates less than significant construction and operational emissions, then it would not generate a cumulatively considerable increase in non-attainment criteria pollutants.

The Project is located in a non-attainment area for PM_{10} as well as ozone, for which precursors include CO, NO_x, and ROG. As shown in Tables 3 and 4, Project emissions will fall below threshold of what MDAQMD considers to be cumulatively considerable.

[4] South Coast Air Quality Management District, Preliminary Draft Staff Report: Proposed Rule 2305 – Warehouse Indirect Source Rule – Warehouse Actions and Investments to Reduce.

Emissions of PM_{10}, CO, NO_x and ROG related to the Project are also projected to be below the MDAQMD thresholds.

Standard best practices will be applied during construction, including dust control measures in accordance with MDAQMD Rule 403, as well as the use of low VOC content architectural coatings per MDAQMD Rule 1113. Therefore, while the Project will contribute to incremental increases in emissions, the impacts on regional PM_{10} and ozone levels are not anticipated to be cumulatively considerable.

Summary

As shown above, both construction and operation of the Project will result in criteria emissions below the MDAQMD significance thresholds, and neither would violate any air quality standard or contribute substantially to an existing or projected air quality violation. Impacts related to construction and operation will be less than significant and are not cumulatively considerable from a non-attainment standpoint.

The GP EIR quantified maximum daily emissions for buildout of the General Plan and found impacts from criteria pollutants and greenhouse gas emissions to be significant and unavoidable, and mitigation measures were provided requiring project-level air quality analysis to determine if future development project impacts would be managed and mitigated accordingly on a case-by-case basis. A project-level air quality and greenhouse gas analysis was prepared for the Project that found impacts to be less than significant. Therefore, implementation of the proposed Project would not result in any new adverse impacts or increase the severity of previously identified significant impacts in the certified EIR.

c) Less Than Significant Impact. The MDAQMD considers residences, schools, daycare centers, playground, and medical facilities as sensitive receptor land uses. According to the MDAQMD CEQA Guidelines, certain project types on sites within a specified distance of a sensitive receptor must be evaluated using significance threshold criteria number 4:

> (4) [A project is significant if it] *Exposes sensitive receptors to substantial pollutant concentrations, including those resulting in a cancer risk greater than or equal to 10 in a million and/or a Hazard Index (HI) (non-cancerous) greater than or equal to 1*.

The threshold distances that specific project types must be from sensitive receptors, as specified by the MDAQMA, are as follows:

- Any industrial project within 1000 feet;
- A distribution center (40 or more trucks per day) within 1000 feet;
- A major transportation project (50,000 or more vehicle per day) within 1000 feet;
- A dry cleaner using perchloroethylene within 500 feet;
- A gasoline dispensing facility within 300 feet.[5]

The proposed Project is considered an industrial land use and proposes a warehouse distribution center with more than 40 truck trips projected per day. The Project is located

[5] MDAQMD California Environmental Quality Act (CEQA) and Federal Conformity Guidelines (February 2020).

within the North Apple Valley Industrial Specific Plan area and is not within 1,000 feet of any sensitive receptor land uses. The nearest sensitive receptor land uses are scattered residences located approximately 0.87 miles (4,614 feet) south of the Project site.

Given that the Project is well beyond the specified distance from any sensitive receptor land uses, it does not need to be evaluated using significance criteria number 4, stated above.

Health Impacts

According to the MDAQMD CEQA Guidelines, the District does not currently have a methodology to correlate the expected air quality emissions of a project to the likely health consequences of those emissions consistently and meaningfully.[6] With the technology available today, there are several factors that make it scientifically impossible to calculate the degree to which an individual's health would be impacted by exposure to various levels of criteria pollutant emissions:

- Differing medical histories mean that not all individuals would be affected equally. Some individuals may have medical pre-dispositions, and diet and exercise levels vary across a population.
- Due to the dispersing nature of pollutants, it is difficult to locate and identify which individuals will be impacted, either directly or indirectly.
- There are currently no agreed upon methodologies or studies upon which to base assumptions, such as baseline health levels or emissions level-to-health risk ratios.

While the District, and the field of study in general, do not have methodologies available to analyze the specific health consequences of a project's emissions, MDAQMD does recommend using of tools such as CalEEMod for the purposes of project evaluation.

Given these limitations, the extent to which the proposed Project poses a health risk is uncertain, but unavoidable. However, the results of the CalEEMod projections indicate that the Project's emissions are below the MDAQMD thresholds, and the application of the MDAQMD sensitive receptor guidelines also indicate that the Project is not within the threshold distance. Based on these findings, it is therefore anticipated that the Project's impacts and associated health effects resulting from criteria pollutants will overall be less than significant.

d) **Less Than Significant Impact.** Land uses which are likely to generate odors, other than agricultural operations which are exempted, include chemical plants, composting operations, dairies, fiberglass molding, landfills, refineries, rail yards, and wastewater treatment plants.

The Project proposes the development of a distribution warehouse facility, which will not include any industrial production or processing activity onsite. While the proposed warehouse may produce some odors, it is not anticipated to produce any objectionable odors long term. While some odors may be generated on site during the construction process, their production will be short term. Any odors generated on site during

[6] Ibid.

construction or operations are expected to disperse quickly with distances. In addition, there are no sensitive receptors in the immediate vicinity of the proposed Project that would be impacted by any nuisance related to odors. As such, impacts from objectionable odors are expected to be less than significant.

Mitigation Measures: Although no mitigation measures are required based on the analysis provided above, the applicant has voluntarily agreed to implement the following:

AQ-1 Contractual language in tenant lease agreements shall require that any heavy-duty trucks owned and operated by the tenant shall, to the extent possible be model year 2018 or later. Any heavy-duty haul trucks owned and operated by tenants shall, to the extent possible, meet the California Air Resources Board's ("CARB's") lowest optional low-oxides of nitrogen (NOx) standard.

AQ-2 Idling of diesel trucks and diesel heavy equipment during construction and operation shall be limited to three minutes. Anti-idling signs indicating a three minute diesel truck engine idling restriction shall be posted along entrances to the Project site and in the dock areas.

AQ-3 To the extent possible, all generators (including portable, standby, or emergency generators) used for construction and operation of the Project will be equipped with Tier 4 Final compliant engines to reduce criteria pollutants and air emissions.

AQ-4 Applicant shall require that the Project general contractor include the below requirements in all subcontracts entered into for construction of the Project:

- The contractor shall provide half-face respirators equipped with a minimum N-95 protection factor or greater for voluntary use during surface disturbance activities, which shall be available upon request.
- Provide closed-cab earth-moving vehicles equipped with HEPA- filtered air systems.
- Ensure that earth-moving activities are conducted downwind of workers when possible.

Monitoring:

AQ-A The applicant shall provide the Town Engineer with a copy of the construction contract/document demonstrating compliance with the obligations listed in Mitigation Measures AQ-1 through AQ-4 prior to the issuance of grading permits.
Responsible Parties: Project contractor, Town Engineer.

IV. BIOLOGICAL RESOURCES **Would the project:**	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) 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 the California Department of Fish and Game or U.S. Fish and Wildlife Service?		✓		
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?				✓
c) 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?				✓
d) 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?				✓
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				✓
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?		✓		

Sources: "Biological Resources Assessment; Dakota and Fresno Road Project," WSP USA Environment and Infrastructure, Inc., September 6, 2024; "Jurisdictional Assessment of Wetlands and Waters Dakota Road Project," WSP, August 2, 2024; Notice of Preparation of an Environmental Impact Report for the Apple Valley Multispecies Habitat Conservation Plan/Natural Community Conservation Plan (MSHCP/NCCP), April 2, 2021; Town of Apple Valley General Plan Environmental Impact Report, August 11, 2009. Bird Nests, US Fish and Wildlife Service, accessed July 2024.

Environmental Setting

The Town of Apple Valley is one of four cities clustered within the Victor Valley region which is located just north of the San Bernardino National Forest. The Victor Valley lies within a high desert region known as the Mojave Desert Basin and Range Ecoregion. The ecoregion is characterized

by climate extremes, which can be witnessed most fully in Death Valley National Park, where summer temperatures exceed 120 degrees Fahrenheit and annual rainfall can be less than two inches. The Town sits within the southern edge of the Mojave Desert Basin at an elevation of 2,917 feet and experiences a milder desert climate with an average rainfall between six and seven inches, and average temperatures ranging from a low of 30 degrees Fahrenheit in the winter to a high of 98 degrees Fahrenheit in the summer. Creosote scrub is the dominate plant community of the lower elevations of the Mojave Desert Basin and Range Ecoregion which includes the Town of Apple Valley.

The Project site consists of 40.1 acres of vacant undeveloped land in the north section of the Town that is designated as the North Apple Valley Industrial Specific Plan (NAVISP), and has a land use designation of Industrial (I-SP). Aside from two larger distribution centers north of the proposed Project and the Apple Valley Airport, the NAVISP encompasses a combination of rural and urbanizing land, and the Project site is immediately surrounded by vacant and undeveloped parcels. To the east approximately 0.4 miles lies the Apple Valley Airport runway, which puts the Project site within the Town's Airport Overlay Zone (A-2).

Throughout the Project site, the dominant vegetation community is the creosote scrub community, but extensive groundcover consists of non-native grasses. During the Project site survey, the biologists noted signs of disturbance such as tire tracks from off-road vehicle use and debris that had been dumped on the site. No endangered or special status species were observed on the Project site during the site survey.

Multispecies Habitat Conservation Plan/Natural Community Conservation Plan (MSHCP/NCCP)
The Town of Apple Valley and the County of San Bernardino are collaborating with the California Department of Fish and Wildlife (CDFW) and the Bureau of Land Management (BLM) on the development of a Multiple Species Habitat Conservation Plan (MSHCP) and a Natural Community Conservation Plan (NCCP) which will guide landscape-level conservation efforts for the Town and adjacent County lands. The MSHCP is authorized by the federal Endangered Species Act while the NCCP is authorized by the California Endangered Species Act. For a period of 30 years, this multi-agency document would provide incidental take permits of covered species for authorized development in addition to requiring mitigation measures to minimize and offset potential impacts from development activities.[7]

Town of Apple Valley Plant Protection and Management Ordinance
Per the Town's Plant Protection and Management ordinance (§9.76.010-040) a removal permit is required for the removal of native trees and plants that are listed in the code: smoketree (*Dalea spinosa*), Mojave yucca (*Yucca schidigera*), Lords candle (*Yucca whipplei*), barrel cactus (*Ferocactus acanthodes*), all species of mesquites (*Prosopis*), creosote (*Larrea tridentata*) rings ten feet or wider in diameter, and Joshua tree species (*Yucca brevifolia* and *Yucca brevifolia jaegeriana*).

West Mojave Habitat Conservation Plan and Conservation Banking Program (West Mojave Plan)
In 2004 the Bureau of Land Management developed the West Mojave Plan as an amendment to the prior Desert Conservation Area Plan. The purpose was to establish conservation strategies for the desert tortoise, the Mojave ground squirrel, and 100+ other sensitive plant and animal

[7] Notice of Preparation of an Environmental Impact Report for the Apple Valley Multispecies Habitat Conservation Plan/Natural Community Conservation Plan (MSHCP/NCCP), April 2, 2021.

species throughout the 9,359,070-acre planning area that extends across much of San Bernardino County and into eastern parts of Los Angeles County and Kern Country, southern Inyo County and a small portion of northern Riverside County.

GP EIR

Analysis of potential impacts to biological resources in the General Plan included literature reviews of various records and databases, a review of the Town's draft Multiple Species Habitat Conservation Plan, a review of the West Mojave Habitat Conservation Plan and Conservation Banking Program, and a field survey of the Town conducted by a qualified biologist. The research affirmed that the Town hosts nine natural communities within which a variety of both common and sensitive plants, invertebrates, amphibians, reptiles, birds and mammals occur. The NAVISP area, where the proposed Project is sited, is dominated by the creosote bush scrub natural community and the saltbush scrub community is found in the southern portion.

General Plan Impacts to Sensitive Species
Several sensitive species would be significantly impacted by the General Plan buildout without the implementation of recommended mitigation measures.

Three plant species:
- Desert Cymopterus
- Southern Skullcap
- Booth's Evening Primrose

Two invertebrates:
- San Emigdio Butterfly
- Victorville Shoulderband snail

Four amphibians and reptiles:
- California Red-legged Frog
- Common Chuckwalla
- Western Pond Turtle
- Desert Tortoise (associated with creosote scrub habitat)

Fourteen birds
- Swainson's Hawk
- Golden Eagle
- Cooper's Hawk
- Burrowing Owl
- Prairie Falcon
- California Condor
- Loggerhead Shrike
- Bendire's Thrasher
- Least Bell's Vireo
- LeConte's Thrasher
- California Thrasher
- Southwestern Willow Flycatcher
- Lawrence's Goldfinch
- Costa's Hummingbird

Four mammals:

- Mojave River Mole
- Pallid San Diego Pocket Mouse
- Hoary Bat
- Mojave Ground Squirrel

General Plan Impacts to Riparian Habitats, Wetlands, and Sensitive Natural Communities

Several riparian areas and sensitive native communities were identified throughout the Town and were anticipated to potentially be significantly impacted without the implementation of protective mitigation measures. The General Plan designation of Open Space land use of certain sensitive areas would help ensure the long-term preservation of such areas. Protection of the Mojave River area would also reduce impacts to wildlife movement and nursery sites as the river is a critical biological resource area for many species traveling through the high desert region.

Riparian Areas:

- Mojave River (includes associated wetlands)
- Knolls Wash
- Bell Mountain Wash

Sensitive Native Communities:

- Mojave Riparian Forest
- Joshua Tree Woodland
- Native communities associated with dry washes and streambeds

GP EIR Mitigation Measures

The following Mitigation Measures are from pages III-68 - 71 of the GP EIR. Continued participation in local and regional plans and policies relating to the protection of biological resources would help to reduce General Plan build out impacts. The mitigation measures below outline a variety of such tactics and additional tactics to reduce impacts to less than significant.

1. (a) The Town shall aid the County of San Bernardino and other participating federal, state, and local agencies in the preparation of a private lands counterpart to the West Mojave Habitat Conservation Plan.
   (b) The Town shall participate in the provision of biological resources data and/or surveys relevant to open space areas within its jurisdiction and sphere of influence that may have biological resources value and shall participate in the preparation of a Habitat Conservation Plan that addresses the needs of the Town with regard to regional biological resources.
   (c) If a Habitat Conservation Plan is formulated by the participating federal, state, and local agencies that allows for the conservation of biological resources, the Town shall implement it.
2. The Town shall complete the preparation of the Apple Valley MSHCP, in conjunction with the California Department of Fish & Game ("CDFG") and the U.S. Fish and Wildlife Service ("USFWS"). Upon the completion of the MSHCP to the satisfaction of all three parties, the Town shall proceed to implement it according to its terms and the authorization for take of special status species granted by CDFG and USFWS.

3. (a) The Town shall require that biological resources evaluations be performed prior to development actions, including site-specific surveys utilizing specified survey parameters as required for all special status species in identified habitat areas, and especially within or adjacent to linkage corridors or special survey areas and potential jurisdictional areas.
   (b) As required by CEQA, if biological resources are present that would be significantly impacted by a project, mitigation shall be imposed on the project to reduce the impact to a level of less than significant, to the extent feasible.
   (c) At the General Plan-level, it is not practical to formulate or list the entire range of specific mitigation measures that can be required for individual projects. Therefore, this identification can only be done at the project-level, based on the Town's judgment of the individual circumstances of the project before it as a lead agency under CEQA. However, it can be generally stated that the Town shall require mitigation pursuant to species- or resource-specific protocols established by CDFG, USFWS, and/or the U.S. Army Corps of Engineers. The Town can also require, as appropriate, transplantation or seed collection programs, trapping and removal of wildlife, preservation of offsite habitat, recreation of habitat, or participation in a mitigation bank.
4. The Town shall ensure that land actions require site-specific nest surveys for the presence of migratory birds in accordance with established protocols and requirements of the Migratory Bird Treaty Act, prior to site disturbance. If protected migratory birds and/or raptors are found to be nesting onsite, construction activities will not be allowed within a radius of the nest determined by a qualified biologist, until the young have fledged and left the nest.
5. Biological surveys for Burrowing Owls and Prairie Falcons shall be performed for any site proposed for development wherever sufficient open space and suitable habitat is present. Coordination with California Department of Fish and Game is required when survey results are positive.
6. Biological surveys for bats shall be performed prior to disturbance on projects involving reconstruction of bridges, demolition of abandoned buildings, and/or have the potential to contain old mines, in order to determine if significant roosts are present. If roosts are present, projects shall comply with applicable protocols of the Department of Fish and Game or US Wildlife Service, and the recommendations of qualified biologists.
7. The Town shall utilize land use designations that provide for Open Space in order to protect viable habitat within the Town. On lands not already designated as Open Space where viable habitat occurs, such lands shall be considered for an open space land use designation as appropriate. Open Space lands shall be managed as warranted for the preservation and protection of their biological and natural resources.
8. The Town shall retain the Open Space designation along the Mojave River to ensure that important riparian habitat and linkages are conserved.
9. To conserve the natural state of existing hillsides and slopes, land greater than 15% slope shall not be built upon and shall be used as open space.
10. Open space land shall be protected in perpetuity.
11. Development proposals adjacent to open space lands shall provide buffers and linkages to maintain natural resource values.
12. Groundwater shall be conserved to reduce overdraft and retain or increase the depth of the water table along the Mojave River, which will help to preserve and restore plant communities within and adjacent to the waterway.
13. Development projects proposing to alter or impact major drainages (blueline streams) including ephemeral streams, shall consult with the appropriate state and/or federal

regulatory agency. Such alteration may require permits from the U.S. Army Corps of Engineers, Lahonton Regional Water Quality Control Board, and/or the California Department of Fish and Game. Compliance with such permits will ensure that impacts to riparian habitat are mitigated by either restoration or replacement, and that impacts to water quality are avoided by compliance with Section 401 of the Clean Water Act requirements.

14. The Town shall promote the use of native vegetation for landscaping to enhance and create viable habitat for local species. The Town shall periodically update a comprehensive list of plant materials that are complementary with the local environment. This list shall include native and non-native, drought tolerant trees, shrubs and groundcover. The Town shall also maintain a list of prohibited plant materials. Both lists shall be made available to developers and residents. The use of native vegetation in project submissions shall be given preference over water-intensive landscaping during project design review.
15. The Town shall require developers to recover, preserve, or utilize native vegetation within their project or shall require that viable vegetation is transplanted to other appropriate sites in conformance with its Native Plant Ordinance. The Town shall make information on salvaging and transplanting native species available to developers.
16. The Town shall provide and maintain a comprehensive interconnected recreational trail system suitable for bicycles, equestrians and/or pedestrians. This will encourage the reduction of vehicle miles traveled and also provide corridors for animal migration between habitat areas. The Town shall encourage multiple use corridors through the drainage channels and utility easements, thereby encouraging the connectivity of natural communities.
17. The Town shall continue to promote biodiversity by protecting natural communities with high habitat value, protecting habitat linkages to prevent further fragmentation, and encouraging an appreciation for the natural environment and bio resources.

Proposed Project Impacts

The following analysis is based on the Biological Resources Assessment for the Project site prepared by WSP USA Environment and Infrastructure, Inc. (Appendix B). The Assessment includes an exhaustive literature review and records search to ascertain whether any special status species occur on the Project site and within the Project vicinity, a five-mile radius of the Project site. The Biological Resources Assessment also includes a pedestrian site survey, and an evaluation of jurisdictional waters and wetlands conducted on July 3, 2024. Finally, the Assessment provides analysis of the ability of the Project site to act as a wildlife corridor. A copy of the Biological Resources Assessment is attached as Appendix B, and a copy of the Jurisdictional Assessment of Wetlands and Waters is attached as Appendix C.

a) Less Than Significant with Mitigation Incorporated. The Project site does not contain any critical habitat designated for listed species. The nearest official critical habitat designation, targeted for the desert tortoise, occurs 15 miles northeast.

The site survey found that the dominant shrub present is creosote bush (*Larrea tridentata*). Other native shrub species include Nevada ephedra (*Ephedra nevadensis*), rubber rabbit bush (*Ericameria nauseosa*), and Anderson thornbush (*Lycium andersonii*). Non-native annual species observed include red brome (*Bromus rubens*), red stemmed filaree

(*Erodium cicutarium*), old han schismus (*Schismus barbatus*), and cheatgrass (*Bromus tectorum*). Wildlife identified during the field survey included species common to southern California deserts, including Brewer's sparrow (*Spizella breweri)*, Great Basin whiptail (*Aspidoscelis tigris tigris*), and black-tailed jackrabbit (*Lepus californicus*).

The site survey yielded a list of native and non-native plant and animal species that were observed on the site (see Table 5 below for the full list). However, because a one-time site survey is limited in its ability to take a full account of a location's biological resources, the literature review revealed a more extensive list of native species that are known to have occurred within in the Project vicinity, a five-mile radius around the Project site. Altogether, the research generated a list of 30 special status species that are known from the Project vicinity.

Table 5
Species Observed

Plant Species Observed	Vertebrate Species Observed
Sunflower Family (*Asteraceae*) • Annual bur-sage (*Ambrosia acanthicarpa*) • Cobweb thistle (*Cirsium occidentale*) • Rubber rabbitbush (*Ericameria nauseosa*)	Reptiles (Squamata) • Great Basin whiptail (Aspidoscelis tigris tigris)
Mustard Family (*Brassicaceae*) • Shortpod mustard (*Hirschfeldia incana*) • Perennial pepperweed (*Lepidium latifolium*)	Birds (Passerines) • Brewer's sparrow (Spizella breweri)
Cactus Family (*Cactaceae*) • Branched pencil cholla (*Cylindropuntia ramosissima*)	Mammals (Lagomorphs) • Black-tailed jackrabbit (Lepus californicus)
Spurge Family (Commelinaceae) • Croton setiger	
Ephedra Family (Ephedraceae) • Nevada ephedra (*Ephedra nevadensis*)	
Spurge Family (Euphorbiaceae) • Euphorbia maculatum*	
Geraniaceae Legume Family • Red stemmed stork bill (Erodium cicutarium)*	
Malvaceae Mallow Family • Desert globemallow	
Onagracaeae Primrose Family Brown-eyed primrose (Camissonia claviformis)	
Polemoniaceae Phlox Family	

Table 5
Species Observed

Plant Species Observed	Vertebrate Species Observed
• Sapphire woollystar (Eriastrum sapphirinum)	
Solanaceae Nightshade Family Anderson boxthorn (Lycium andersonii)	
Zygophyllaceae Caltrop Family • Creosote bush (Larrea tridentata)	
Poaceae Grass Family • Red brome (Bromus rubens)* • Cheatgrass (Bromus tectorum)* • Old han schusmus (Schismus barbatus)*	
Key: * = non-native species	

Plants

Of the thirteen special status plant species known to occur in the Project vicinity, only eight have the potential to occur on the Project site due to habitat suitability, although none were observed during the July 2024 site survey. These species include: white pygmy poppy, desert cymopterus, Mojave monkeyflower, Barstow woolly sunflower, solitary blazing star, beaver dam breadroot, and Mojave fish-hook cactus. Absence from the Project site during the site survey does not preclude the species from occurring there as most of these plants do not bloom in July. However, the site is extensively covered in non-native grasses and has been disturbed by off-road vehicles, which reduces their potential to occur. None of these species are listed as endangered federally or by the state. Impacts of the Project would not significantly impact the populations of these plants.

Wildlife

Research for the Project site and vicinity determined that sixteen special status wildlife species are known to occur or have occurred in the area. Although none were observed during the Project site survey, several of these species could potentially move through, forage, or nest in the Project site.

Insects

Two special status insects include the Crotch bumblebee and the monarch butterfly. Crotch bumblebee was recently listed by CDFW as a candidate species for listing. The species tends to be very active in the spring and relies on a variety of flowering plants, which are not as available during the summer months. While there is low probability that Crotch bumblebee would nest on the Project site, it could move through and forage on the Project site, and to avoid impacts to the species should construction occur during the spring months, a preconstruction survey for bumblebees conducted by a qualified biologist is provided to reduce potential impacts to the species (see Mitigation Measure BIO-1). The monarch butterfly is a candidate for federal listing, and the main threat is the lack of native milkweed plants. Since there were no milkweeds observed on the Project site, there is low probability that monarch butterflies would occur on the Project site, the Project would have a less than significant impact on monarch butterfly populations.

Desert Tortoise

The desert tortoise is found throughout the Mojave Desert in a variety of habitats such as desert scrub (particularly creosote scrub), desert wash, alluvial fans, rocky hillsides, and Joshua tree forests. The species is a federal and state listed threatened species and is also protected by the MSHCP/NCCP. Incidental take permits are not issued for desert tortoises. Neither any desert tortoises nor signs of tortoises inhabiting the Project site such as burrows, scat, rainwater catchment depressions, or mating circles were detected during the site survey. However, two past recorded observations of desert tortoises from 1990 occurred within three miles of the Project site. A pre-construction survey will assure that the species does not move onto the site prior to the initiation of construction. Should a desert tortoise move onto the Project stie, the US Fish and Wildlife Service and the CDFW will be consulted, as provided in Mitigation Measure BIO-4.

Birds

Seven special status bird species may occur or forage on the Project site including golden eagle, burrowing owl, Swainson's hawk, Costa's hummingbird, prairie falcon, loggerhead shrike and Le Conte's thrasher. All species but the Costa's hummingbird are covered by the MSHCP/NCCP. The golden eagle, Swainson's hawk, and prairie falcon are not known to nest on the Project site due to the lack of suitable nesting sites, but if they are present during construction, they should be avoided. Costa's hummingbird, loggerhead shrike, and Le Conte's thrasher could potentially nest on the Project site, therefore, per the Migratory Bird Treaty Act and State Fish and Game Code, mitigation measure BIO-2, which requires a pre-construction survey for nesting birds, must be applied to ensure there are no impacts to nesting birds.

Burrowing Owl

The burrowing owl requires additional actions for protection from impacts due to its ground nesting and roosting behavior which increases its vulnerability to development and therefore receives protection under the federal Migratory Bird Treaty Act (MBTA) and the state Fish and Game Commission (FGC). The Project site survey found that there were no suitable burrows on the site, no signs of burrowing owl on the parcel, and the nearest observation was made in 2007 about one mile away. Although no further surveys are required, BIO-2, which requires pre-construction surveys for nesting birds, would also identify burrowing owl, should they move onto the site. Implementation of this mitigation measure will assure that impacts to the species are reduced to less than significant levels.

Mammals

Two mammal species are known to have occurred in the Project vicinity but were not detected on the Project site during the site survey: desert kit fox and Mojave ground squirrel. According to the Biological Resources Assessment (Appendix B), the Mojave ground squirrel is presumed to be extirpated from the Project vicinity, and the Project site is not located in or near the current known range of the species, therefore no further actions are required to reduce potential impacts to the Mojave ground squirrel. The desert kit fox is covered by the MSHCP/NCCP although it is not a state-designated special status species. Although there were not kit foxes observed on the Project site, if a den is noted prior to construction, the CDFW and/or the Town must be notified as described in Mitigation Measure BIO-3. Implementation of the measure will reduce impacts to the species to less than significant levels.

Summary

The plant and animal species that were observed on the Project site are commonly found within California deserts and are not designated as candidate, sensitive, or special status species in local or regional policies and regulations, or by the CDFW or USFWS. Implementation of the recommended mitigation measures described below would reduce Project impacts to potentially occurring special status species to less than significant levels.

The proposed Project will result in impacts to biological resources which are equivalent to those identified in the GP EIR. Mitigation measures proposed for the Project are consistent with the findings of the GP EIR and would have been imposed on the Project as they were recommended in the GP EIR. No changes to the environment that result in any new or more significant impacts would result from development of the proposed Project.

b, c) **No Impact.** The Project site does not contain any sensitive natural community. Throughout the Project parcel, creosote scrub vegetation is dominant, and is not considered to be a sensitive community. Moreover, the creosote vegetation on the site has been disturbed and is invaded by non-native grasses. There would be no impacts on sensitive natural communities.

A jurisdictional delineation was conducted for the Project site, and is provided in Appendix C. Although the National Wetland Inventory indicates that remnant riverine features may occur on the Project site and aerial photos show possible signs of washes, the site survey and jurisdictional delineation revealed that wetland features such as riparian vegetation, hydric plants and soils, and defined bed and bank features from episodic flooding do not occur on the Project site.

The soils on the site consist of the Helendale series with very deep, well drained soils that formed in alluvium from granitoid rocks. The two riverine features mapped within the project site in the National Wetland Inventory are areas of bare soil and appeared to be washes from an aerial view. After field investigation, no OHWM or evidence of any recent flows were observed. Soil pits were dug at several locations and indicated that there were no observable differences in soil profile or texture from the upland slopes and the bottom of the hill contour and no indicators of hydric soils. There was no difference in surface soil texture or sorting. No wetland indicator or hydric plants were observed associated with the features. In several locations, annual grasses were growing in the bottom of the features which also indicates a lack of flow. It was determined that the stream-like features had resulted from upland erosion and do not meet the requirements to be considered jurisdictional waters. No wetlands, marshes, vernal pools, or other riparian habitats occur on the Project site. Therefore, the Project will not impact any such natural community.

d) **No Impact.** The site occurs adjacent to the Apple Valley Airport, which provides an effective barrier for wildlife corridors, and this Project site is not considered to be a wildlife corridor. The proposed Project would not impede the movement of native wildlife species or interfere with wildlife nursery sites. The Project would not result in any impacts to resident or migratory wildlife corridors or wildlife movement through the area.

e) **No Impact.** The Project is subject to the Town's Plant Protection and Management ordinance (§9.76.010-040) and would be required to obtain a permit for the removal of the following native trees and plants that are listed in the code: smoketree, Mojave yucca, Lords candle, barrel cactus, all species of mesquites, creosote rings ten feet or wider in diameter, and Joshua tree species. With the exception of creosote bush, none of these species occur on the Project site. The creosote bushes on the Project site do not meet the description of ancient creosote rings of ten feet or wider. Therefore, due to the absence of these plants, the Project would not impact plant species protected by the Town's ordinance.

f) **Less Than Significant with Mitigation Incorporated.** The Town of Apple Valley is working with the County of San Bernardino and the Bureau of Land Management to draft new MSHCP/NCCP which is still under review and not yet adopted. The site survey conducted for the Biological Resources Assessment Report inspected the Project site for habitat suitability for species covered by MSHCP/NCCP.

Per the Town's GP EIR, the Project will include the use of native plants in the landscaping plan and will implement biological resource mitigation measures as necessary and as described in the following section. Given the Town's participation in the regional MSHCP/NCCP and the conservation measures prescribed in the GP EIR, the Project would not conflict with adopted Habitat Conservation Plan, Natural Community Conservation Plan, or with other approved local, regional, or state habitat conservation plans, and there would be no impact.

Mitigation Measures

BIO-1 A pre-construction survey by qualified biologists survey shall be completed for Crotch bumblebee nests (if any) for avoidance. The surveys shall be conducted in accordance with CDFW's Survey Considerations for CESA Candidate Bumble Bee Species (CDFW 2023) prior to the initiation of ground-disturbing activities. Any bumblebee nest shall be avoided. If unavoidable, and determined to be occupied by Crotch bumblebees, the CDFW shall be consulted for guidance and potential incidental take permits, if impacts cannot be avoided.

BIO-2 Bird nesting season for resident birds in the Project area occurs between February 1 and September 15, and between March 15 and August 31 for migrating bird species. To avoid impacts to resident and migratory nesting birds, all vegetation clearing, ground disturbance, and construction activity should be scheduled between September 16 and January 31 if possible. If ground disturbance occurs during the nesting season, a certified avian biologist must conduct a pre-construction nesting bird survey (NBS) immediately prior to scheduled construction activity. If active nests are identified, the biologist will demarcate a no-work buffer zone(s) around the active nest(s) and check the nest site(s) weekly until the young birds fledge and the nest(s) become inactive. The buffer zone size would be based on the nesting species, its sensitivity to disturbance, nesting stage and the expected intensity and duration of disturbance. No ground or vegetation disturbance shall occur within the nest site buffer zone(s) until the qualified biologist determines that the young have successfully fledged, and the nest is inactive. Per CDFW

recommendations, a buffer of 500 feet shall be set for listed species and birds of prey, and a buffer of 100 to 300 feet shall be set for unlisted songbirds.

BIO-3 Desert kit fox could potentially use the Project site as a foraging ground even if no dens have been recorded on the site. To avoid impacts to desert kit foxes that may potentially move onto the site between the time of the site survey and Project construction, if active burrows are observed during the pre-construction surveys required in BIO-1, BIO-2 and BIO-4, they will not be disturbed and the biologist will make recommendations on their protection based on standard protocols.

BIO-4 A pre-construction survey shall be conducted for desert tortoise prior to the commencement of any ground disturbance on the Project site. A biologist approved by CDFW shall conduct a protocol level presence or absence survey within the project area, access route(s), staging area(s), stockpile(s), and 50-foot buffer zone. The surveys shall be conducted no more than 48 hours prior to all project activities in accordance with the U.S. Fish and Wildlife Service 2010 desert tortoise survey methodology. A Workers' Education Program shall be conducted by the biologist prior to the initiation of construction to educate personnel on the species, including covering open trenches at the end of the workday, checking under vehicles prior to moving them, and other protocols as needed to protect the species. The biologist shall periodically monitor site grading to assure that the species has not moved onto the site. If the survey or monitoring confirm presence, the applicant may not commence or continue project activities. If the Project, including project construction results in take of CESA-listed or ESA-listed species, an incidental take permit (ITP) or other appropriate authorization shall be required.

Monitoring

BIO-A The Project applicant shall complete preconstruction surveys and provide the survey reports to the Town prior to the issuance of any permit allowing ground disturbance on the Project site. Results of the preconstruction surveys are to be kept on file at Town Hall.

Responsible Parties: Project applicant, project biologist, Planning Department, Town Engineer.

V. CULTURAL RESOURCES **Would the project:**	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?			✓	
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?		✓		
c) Disturb any human remains, including those interred outside of formal cemeteries?			✓	

Sources: "Historical/Archaeological Resources Survey Report for Assessor's Parcel Number 0463-372-21" prepared by CRM Tech, September 7 ,2024.

Environmental Setting

The Victor Valley region is part of the homeland of the Serrano people, which is centered in the San Bernardino Mountains but also includes part of the San Gabriel Mountains, much of the San Bernardino Valley, and the southern portion of the Mojave Desert. Prior to European contact, Serrano subsistence was defined by the surrounding landscape and primarily based on the gathering of wild and cultivated foods and hunting, exploiting nearly all the resources available. Their long-term settlements were located mostly on elevated terraces, hills, and finger ridges near reliable sources of water, especially in foothills and along major rivers.

Although contact with Europeans may have occurred as early as 1771 or 1772, Spanish influence on Serrano lifeways was minimal until the 1810s. Between then and the end of the mission era in 1834, most of the Serrano in the western portion of their traditional territory were removed to the nearby missions. In the eastern portion, a series of punitive expeditions in 1866-1870 resulted in the death or displacement of almost all remaining Serrano population in the San Bernardino Mountains. Today, most Serrano descendants are affiliated with the Yuhaaviatam of San Manuel Nation (formerly known as the San Manuel Band of Mission Indians), the Morongo Band of Mission Indians, or the Serrano Nation of Indians.

Apple Valley was first settled by Europeans in the 1860s, and a land boom occurred in the 1880s. Consistent with its name, apple orchards were established in the area in the 1890s, after the Appleton Land and Water Company built an irrigation system to support them. Agriculture and ranching remained the primary economic activities through the 1940s. Following World War Two, the Apple Valley Ranchos company began development of modern-day Apple Valley by developing a western-themed town.

GP EIR

The GP EIR (Section III.E, page III-72 et.seq) determined that build out of the General Plan had the potential to impact historic resources, prehistoric resources, tribal resources, buried remains, and paleontological resources as development occurs and lands are disturbed. The GP EIR concluded that with implementation of mitigation measures, impacts to historic resources would be reduced to less than significant levels.

The following Mitigation Measures are from page III-80 of the GP EIR.

1. 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 Exhibit III-4 (in the GP EIR). 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.
2. Paleontological resource studies shall be required prior to development for all lands identified as having high potential for paleontological resources, as identified in Exhibit III-5 (in the GP EIR). 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.
3. The Town shall establish and maintain a confidential inventory of archaeological and historical resources within the Planning area, including those identified in focused cultural resources studies.
4. The Town shall protect sensitive archaeological and historic resources from vandalism and illegal collection, to the greatest extent possible.

Proposed Project Impacts

Section 15064.5 of the CEQA Guidelines defines a historic resource as a resource that is: (1) listed in, or determined to be eligible for listing in the California Register of Historical Resources (California Register); (2) included in a local register of historical resources (pursuant to Section 5020.1(k) of the Public Resources Code); or (3) identified as significant in an historical resources survey (meeting the criteria in Section 5024.1(g) of the Public Resources Code). Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register. The California Register automatically includes all properties listed in the National Register of Historic Places (National Register) and those formally determined to be eligible for listing in the National Register.

Section 15064.5(a)(3)(D) of the CEQA Guidelines defines archaeological resources as any resource that "has yielded, or may be likely to yield, information important in prehistory or history." Archaeological resources are features, such as tools, utensils, carvings, fabric, building foundations, etc., that document evidence of past human endeavors and that may be historically or culturally important to a significant earlier community.

A Historical/Archaeological Resources Survey Report was prepared for the proposed Project in September of 2024 (Appendix D), consistent with GP EIR Mitigation Measure 1, because the Project site is located in an area identified as having the potential to harbor prehistoric resources. The study included several records searches, general research and a field inspection.

The study included a records search of the South Central Coastal Information Center (SCCIC), the designated records depository for San Bernardino County. SCCIC records indicate that there have been nine (9) other studies conducted within a one-mile radius of the site, but the site itself had not been studies, except as part of the overall analysis conducted for the NAVISP, which did not include site specific field investigations. As a result of these studies, 18 cultural resources have been identified and recorded in the Project area. Five (5) were prehistoric in nature, and the remaining 13 dated to the historic period and consisted mostly of refuse items

and possible structural remains. Closest to the project area among these 13 were a wood-lined pit and a wood-lined depression recorded near the Apple Valley Airport, about a quarter mile east of the project area.

In addition, a sacred lands file search was requested of the State's Native American Heritage Commission (NAHC), and historic research of published literature and maps was conducted. The NAHC reports in a letter dated July 8, 2024, that the Sacred Lands File identified no Native American cultural resources in the Project vicinity. Noting that the absence of specific information does not necessarily indicate the absence of such resources, however, the NAHC recommended that local Native American groups be consulted for further information and provided a referral list of potential tribal contacts. (See Section XVIII Tribal Resources).

CRM TECH archaeologists also conducted a field inspection on July 17, 2024. The survey was conducted on foot by walking a series of parallel north-south transects at 15-meter (approximately 50-foot) intervals.

a) **Less Than Significant Impact.** CRM TECH reviewed archival sources that indicated the Project area was part of an 80-acre homestead claim patented to Minnie B. Connell, widow of John A. Connell, on June 11, 1918. Prior to that, however, the Project area was included in another claim filed by an African American member of the Bell Mountain community between 1908 and 1910. There were four land claim contests filed by Connell against his African American neighbors, all of which ruled in Connell's favor. CRM TECH found it is likely that the homestead claim including the project area was one of those involved in John Connell's contests, but sources offer no definitive proof to establish that connection. It is also unconfirmed if the Connells resided in the Project area or on the adjacent 40 acres to the east prior to John Connell's death. If there was an occupancy in the Project area, the occupancy was short-lived since historical maps from the 1920s-1930s and the 1950s show no building or other human-made features anywhere on the 80-acre homestead. By the 1950s-1960s, the desert landscape in the Project area retained no signs of any settlement or development activities in the past.

During the field survey, a group of historic-period refuse deposits and an isolated prehistoric lithic artifact were discovered in the Project area and recorded under the temporary designations, pending assignment of permanent identification numbers in the California Historical Resources Inventory by the SCCIC. Artifacts observed at the site include porcelain fragments, shards of glass bottles and jars of various colors, lumber fragments, metal cans (including hole-in-top and bi-metal cans), and other metal fragments consistent with the timeframe of John and Minnie Connell's homestead claim and the prior claim by the unnamed member of the Bell Mountain African American settlement. However, according to the Historical/Archaeological Resources Survey Report (Appendix D), neither of these connections could be positively established on the basis of available sources, nor would Connell qualify as a person of recognized historic significance. The refuse deposits found at the site do not show a distinct, significant, or especially strong connection to the history of the Bell Mountain settlement, nor do they offer potential for valuable historical or archaeological insights, particularly given their looted and disturbed state today.

The isolate was of a single, large lithic tool made of basalt, which was evidently used as either a hammerstone or a chopper. Per the California Office of Historic Preservation guidelines, isolates with fewer than three artifacts per location do not meet the criteria for archaeological sites, as they lack sufficient depositional and contextual integrity. As such, the isolate found at the site does not constitute a potential "historical resource."

In summary, CRM TECH determined the group of historic-era refuse deposits and the prehistoric lithic artifact identified during the field inspection do not meet the criteria for listing in California Register of Historical Resources and thus do not qualify as a "historical resource" or archaeological site for CEQA purposes.

b) **Less Than Significant with Mitigation Incorporated.** As described above, an isolate, likely a large lithic tool made of basalt, was identified on the site, but was determined to not qualify as a historic resource as defined by CEQA. The archaeologist did conclude that buried cultural materials may be discovered inadvertently during earth-moving operations associated with the project, in which case all work within 60 feet of the discovery should be halted or diverted until a qualified archaeologist and/or Tribal monitor can evaluate the nature and significance of the finds. This is reflected in Mitigation Measure CUL-1 and CUL-2, which will reduce these impacts to less than significant levels.

In summary, only two cultural resources were identified within or adjacent to the Project area, and neither of them constitutes a "historical resource" per CEQA guidelines. No further cultural resources investigation will be necessary for the Project unless construction plans undergo such changes as to include areas not covered by the study. With implementation of CUL-1 and CUL-2**,** potential impacts associated with archaeological resources will be reduced to less than significant levels.

The proposed Project will result in impacts to cultural resources which are equivalent to those identified in the GP EIR. No resources are known to occur on the Project site, nor were any identified in the GP EIR. Mitigation measures proposed for the Project are consistent with the findings of the GP EIR and would have been imposed on the Project as they were recommended in the GP EIR. No changes to the environment that result in any new or more significant impacts would result from development of the proposed Project.

c) **Less Than Significant**. There is no evidence to suggest the site has been previous used as human burial site. It is unlikely that human remains will be uncovered during the Project's development. However, should human remains be uncovered, California law requires that all activity cease immediately, and local law enforcement and the coroner be notified to determine the nature of the remains and whether Native American consultation is needed. This requirement of law assures that there will be no impact to cemeteries or human remains.

There have been no changes to the environment since drafting of the GP EIR that result in any new or more significant impacts from development of the proposed Project. In accordance with California law, no adverse or significant impact will occur to any human remain found onsite and therefore, no substantial change from the previous analysis will occur.

Mitigation Measures:

CUL-1 In the event that cultural resources are discovered during project activities, all work in the immediate vicinity of the find (within a 60-foot buffer) shall cease and a qualified archaeologist meeting Secretary of Interior standards shall be hired to assess the find. Work on the other portions of the project outside of the buffered area may continue during this assessment period. Additionally, the Yuhaaviatam of San Manuel Nation Cultural Resources Department (YSMN) shall be contacted, as detailed within TCR-1, regarding any pre-contact finds and be provided information after the archaeologist makes his/her initial assessment of the nature of the find, so as to provide Tribal input with regards to significance and treatment.

CUL-2 If significant pre-contact cultural resources, as defined by CEQA, are discovered and avoidance cannot be ensured, the archaeologist shall develop a Cultural Resources Monitoring and Treatment Plan, the drafts of which shall be provided to YSMN for review and comment, as detailed within TCR-1. The archaeologist shall monitor the remainder of the project and implement the Plan accordingly.

Monitoring:

CUL-A The archaeological and/or tribal monitor shall provide the Town and the Tribe with a report of findings within 30 days of completion of earth moving activities.
Responsible Parties: Project applicant, Project archaeologist, Tribal monitor, Planning Department.

CUL-B The archaeologist shall provide the cultural resource Monitoring and Treatment Plan to YSMN and the Town for review and approval prior to the restart of construction.
Responsible Parties: Project applicant, Project archaeologist, YSMN, Planning Department.

VI. ENERGY **Would the project:**	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?			✓	
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?			✓	

Sources: California Energy Emissions Model 2022.1; California Energy Commission Total System Electric Generation; Southwest Gas Holdings 2023 Sustainability Report.

Environmental Setting

Electricity

In California, 58% of the total power generated in-state and imported from out of state includes a mix of renewable sources such as solar, wind, hydroelectricity, geothermal, biomass and nuclear. The remaining 42% is generated by natural gas, coal, and oil.[8] According to the Town of Apple Valley Climate Action Plan 2019 Update, total electricity demand in Apple Valley in 2019 was 329,848,695 kilowatt-hours (kWh). Industrial/Agricultural sector alone consumed 38,785,029 kWh annually.

In Apple Valley, consumers receive electricity via two options. First, Southern California Edison (SCE) delivers all electricity, manages and maintains the electrical grid, and provides billing and customer service. Southern California Edison (SCE) is among the state's largest energy utility providers, covering eastern and southern California, including San Bernardino County. SCE's service area is approximately 50,000 square-miles, encompassing a population of more than 15 million people. In addition, all Apple Valley consumers are automatically enrolled in a separate program called the Apple Valley Choice Energy program (AVCE). AVCE is an electrical municipal provider, managed by the Town, who procures electricity from producers with higher renewable energy content and contracts with SCE to deliver that electricity. Consumers may remain opted-in to the AVCE program and receive electricity from SCE with a higher portion being produced from renewable sources, or consumers may opt out of the program and receive electricity only from SCE contracted producers.

Natural Gas

Southwest Gas Corporation (Southwest Gas) purchases, distributes and transports natural gas to more than 2 million customers in Arizona, California and Nevada. Southwest Gas is the largest distributor of natural gas in Arizona and Nevada, and also serves customers in portions of California, including the high desert and mountain areas in San Bernardino County. Southwest gas maintains 1,416 miles of transmission lines to residential, commercial, and industrial customers.

[8] 2023 Total System Electric Generation, California Energy Commission, https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2023-total-system-electric-generation.

According to the Town of Apple Valley Climate Action Plan 2019 Update, Town-wide natural gas demand in Apple Valley in 2019 was 15,526,732 therms.

GP EIR

Electricity Impacts
As discussed in the GP EIR (Section III.M, page III-243 et.seq), Southern California Edison (SCE) provides electrical service to the General Plan and annexation areas and had four major electric transmission corridors in the region, each with 115kV lines, at the time the GP EIR.

The GP EIR found that build out of the proposed General Plan and Annexation areas was estimated to result in electrical consumption of 1,807,978,891 kilowatt-hours per year (kwh/year). Of this amount, 353,683,749 kwh/year would be for residential uses, 924,262,572 kwh/year would be for commercial uses, and 525,032,571 kwh/year would be used by industrial establishments.

The GP EIR determined the expansion of electricity services was expected to occur over time, and SCE's rate structures include expansion of facilities, therefore no significant impact would occur and no mitigation measures were required.

Section III.M, page III-243 et.seq

Natural Gas Impacts
Southwest Gas Company provides natural gas service to the Town and its planning area through a series of pipelines of differing sizes and pressure capabilities. In 2009, natural gas was not provided in some areas within the planning area; these include those without existing facility extensions, undeveloped areas, or extreme rural areas. Southwest Gas Company had indicated that it would accommodate new development in the planning area by working closely with developers to build extensions for build out areas. Where natural gas services and facilities were not available, propane was utilized as an alternative source of fuel.

The GP EIR found that total development at General Plan build out is projected to consume about 779,089,325 cubic feet per month, including residential, commercial and industrial uses. This figure represented both existing and future development in the General Plan and annexation areas in 2009.

The GP EIR determined the expansion of natural gas services was expected to occur over time, and Southwest Gas Company's rate structures include expansion of facilities, therefore no significant impact would occur and no mitigation measures were required.

Section III.M, page III-244 et.seq

Discussion of Impacts

a, b) Less Than Significant Impact.

Electricity
Southern California Edison (SCE) will deliver electricity to the Project site. The Project will require off-site improvements and involve the installation of electrical connections to serve the

proposed development. Construction of these off-site improvements will be required to comply with SCE's guidelines and requirements to ensure that the Project takes the appropriate steps in installing the infrastructure and limiting any environmental impacts associated with grading, construction and development within SCE easements.

Construction Electricity Demand

Construction of the Project would consume electricity for activities such as powering outdoor security or worksite lighting, hand tools and other equipment, operation and charging of electronic equipment, and powering temporary worksite office/trailers. The levels of electricity consumed during construction would fluctuate throughout the process depending on the activities being performed. Electricity is not the primary energy source used during construction – equipment fuels such as diesel and gasoline will be the primary sources during this phase. Overall, electricity demand during the construction of the Project would be temporary, nominal, and would cease upon Project buildout. Compliance with guidelines and requirements from SCE as well as the Town's General Plan and CAP will ensure that the use of electricity during Project construction would not be wasteful, inefficient, or unnecessary. Impacts related to the Project's electricity use during construction would therefore be less than significant.

Operational Electricity Demand

CalEEMod default energy demand factors for parking lot lighting, industrial park uses, and unrefrigerated warehouse uses were used to calculate electricity usage at buildout.

Table 6 below provides details regarding the estimated annual electricity consumption by the Project during the operation phase. The Project's estimated annual use of 4,341,692 kilowatts per year of electricity represents an increase of approximately 1.31 percent increase over the total 329,848,695 kilowatt-hours used by the Town in 2019.[9]

Table 6
Project Operational Electricity Consumption

Land Use	Electricity Use (kWh/yr)
Industrial Park	985,124
Unrefrigerated Warehouse	2,636,134
Parking Lot Lighting	720,434
Total	**4,341,692**

Source: CalEEMod 2022.1 (see Appendix A for full detailed output reports).

Per the Town's CAP, the Project will be required to comply with applicable standards in the California Building Code and Energy Code Title 24 Energy Efficiency Standards. This includes meeting or exceeding the state performance standards for water heating and space heating and cooling. Furthermore, in accordance with §140.10 of Part 6 of Title 24, the Project will be required to install a photovoltaic system on the building's roof, and will also be required to have a battery storage system. Given that the Project will be generating and storing electricity on-site, it can be assumed that its electricity consumption from external sources will be significantly

[9] Town of Apple Valley 2019 Climate Action Plan Update.

lower than estimated above. Furthermore, the Renewables Portfolio Standard requires that electricity providers procure 60 percent of electricity from renewable sources by 2030 and 100 percent by 2045.[10] As a result, any operational electricity needs not met by the Project's on-site photovoltaic system will be sourced from an increasing share of renewable sources. Overall, compliance with state requirements will ensure that the Project's electricity consumption is not wasteful, inefficient, or unnecessary.

The proposed Project would be designed, built, and operated in accordance with all applicable state and local regulations that would reduce the energy demand of the Project. Compliance with these regulations would ensure that the Project does not conflict with any applicable energy standards efficiency and conservation standards. Such standards and regulations include the Part 6 and Part 11 of Title 24 of the California Code of Regulations. As stated above, the Project will be required to comply with §140.10 of the Energy Code, which requires the installation of photovoltaic systems and batteries. The Project would also be subject to all applicable policies in the Town of Apple Valley General Plan Energy and Mineral Resources Element, as well as the Town's 2019 Climate Action Plan. Adherence to the applicable state standards and compliance with Town policies would ensure that the Project does not conflict with or obstruct any applicable plans for renewable energy or energy efficiency. Impacts would be less than significant.

Natural Gas

The Project will require off-site improvements and involve the installation of new natural gas connections to serve the proposed development. Construction impacts associated with the installation of natural gas line and connections are expected to be limited to the trenching required to lay the lines underground. Prior to ground disturbance, the Project contractors will notify and coordinate with Southwest Gas to identify the location and depth of any existing gas lines to avoid impacts to these and other underground infrastructure.

Construction Natural Gas Demand

Construction of the Project would not involve the consumption of natural gas. It will therefore not be wasteful, inefficient, or unnecessary in its use of natural gas during the construction phase, and no impact would result.

Operational Natural Gas Demand

CalEEMod default energy demand factors for parking lot lighting, industrial park uses and unrefrigerated warehouse uses were used to calculate natural gas usage at buildout. As shown in Table 7, the Project is estimated to consume a total of 12,399,317 kBTU (124,022 therms) per year of natural gas.

[10] Senate Bill 100 Joint Agency Report, Achieving 100 Percent Clean Electricity in California (2021).

Table 7
Project Operational Natural Gas Consumption

Land Use	Natural Gas Use (kBTU/yr)
Industrial Park	1,548,934
Unrefrigerated Warehouse	10,850,383
Parking Lot Lighting	0
Total	**12,399,317**

Source: CalEEMod 2022.1 (see Appendix A for full detailed output reports).

Operation of the proposed Project is estimated to use approximately 12,399,317 kBTU, or 124,022 therms per year of natural gas. This represents an increase of approximately 0.79 percent over the Town's total 2019 natural gas usage of 15,526,732 therms.[11] As previously stated, compliance with the Title 24 Energy Efficiency Standard will ensure that the Project is not wasteful, inefficient, or unnecessary in its consumption of natural gas during operations. Impacts would therefore be less than significant.

The proposed Project would be designed, built, and operated in accordance with all applicable state and local regulations that would reduce the energy demand of the Project. Compliance with these regulations would ensure that the Project does not conflict with any applicable energy standards efficiency and conservation standards. Such standards and regulations include the Part 6 and Part 11 of Title 24 of the California Code of Regulations. As stated above, the Project will be required to comply with §120.6 of the Energy Code, which imposes performance requirements for warehouses. The Project would also be subject to all applicable policies in the Town of Apple Valley General Plan Energy and Mineral Resources Element, as well as the Town's 2019 Climate Action Plan. Adherence to the applicable state standards and compliance with Town policies would ensure that the Project does not conflict with or obstruct any applicable plans for renewable energy or energy efficiency. Impacts would be less than significant.

Conclusion

The Project would not result in a significant relocation or construction of utility infrastructure as most of these services already occur along the Project site's west and south boundaries and only require a connection or on-site extension. Environmental impacts from establishing connections to services are expected to be less than significant. Buildout of the site would be subject to the same General Plan policies and programs analyzed in the GP EIR. The Project must also comply with the current Energy and Building Codes which impose more stringent energy efficiency performance standards than those imposed in 2009. Implementation of the proposed Project would not result in any new impacts or increase the severity of a previously identified significant impacts as analyzed in the EIR. Overall impacts are expected to be less than those identified in the EIR due to the increased energy efficiency resulting from current energy and building codes. Therefore, implementation of the proposed Project would not result in any new adverse impacts or increase the severity of previously identified significant impacts in the Certified EIR.

Mitigation Measures: None required.

Monitoring: None required.

[11] Town of Apple Valley 2019 Climate Action Plan Update, Table 5.

VII. GEOLOGY AND SOILS Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) 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? Refer to Division of Mines and Geology Special Publication 42.				✓
ii) Strong seismic ground shaking?			✓	
iii) Seismic related ground failure, including liquefaction?				✓
iv) Landslides?				✓
b) Result in substantial soil erosion or the loss of topsoil?			✓	
c) 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-or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?				✓
d) 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?				✓
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of waste water?				✓
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?				✓

Sources: "Geotechnical Investigation Report for Proposed Warehouse, APN 0463-372-21" prepared by Merrell Johnson Geotechnical, Inc., July 26, 2024; Environmental Hazards Element and Environmental Resources Element, Town of Apple Valley General Plan (2009); California Earthquake Hazards Zone Application; Apple Valley Geologic Hazards Overly, San Bernardino County Land Use Plan, 2007.

Environmental Setting

Geologic Setting

In California there are eleven distinct geomorphic provinces and each one displays unique topographic features and corresponding climatic features. Faults, relief and geologic layers

comprise the defining characteristics of each province. The Town and the Project site are located within the Mojave Desert geomorphic province, a broad wedge-shaped interior province containing mountain ranges that are isolated by vast expanses of desert plains. The Mojave Desert geomorphic province boundaries are formed by the northwest-southeast trending San Andreas fault zone and the east-west Transverse Ranges along the west-southwest boundary, the east-west trending Garlock Fault forming the northern boundary, the Colorado River and the state of Nevada form the eastern boundary. [12] Interior hydrologic drainage is a key feature of this province, and the Mojave River, which flows above and below ground from the San Bernardino Mountains northeast to Soda Lake is a prominent drainage corridor.

The region consists of three main geologic rock divisions: Crystalline rocks of pre-Tertiary age; sediments and volcanic rocks of Tertiary age; sediments and basalt flows of Quaternary age. The Project site is located on a large alluvial plain and underlain by Quaternary-age and older alluvium that eroded out from highlands approximately 2.5 miles to the northeast along Sidewinder Valley. Underlying the Project site is alluvium of late Pleistocene-age and comprised of fine- to medium-grained sand and fine- to medium gravel of inactive alluvial fans.

Seismicity and Faulting

Most earthquakes that occur in southern California result from the strike-slip motion between the North American and Pacific tectonic plates. At a rate of about one inch per year, the North American plate is sliding southwest while the Pacific plate is sliding northwest at a rate of three to four inches per year. The San Andreas Fault, an 800-mile fault extending from Bombay Beach on the east shore of the Salton Sea to Cape Mendocino on the northern California coast, facilitates about 70% of this tectonic movement.

In the Town of Apple Valley, there are no mapped faults, but there are two faults within the Town's Sphere of Influence: The North Frontal Fault southeast of the Town's border and the Helendale Fault which crosses the northeast portion of the Sphere of Influence and is the closest to the Project site. The North Frontal Fault is an active fault based on evidence that it has moved within the last 10,000 years and is thought to uplift the San Bernardino Mountains at a rate of about one millimeter per year. The West segment could potentially produce a 7.2 magnitude earthquake, which converts to XI on the Modified Mercalli intensity scale, and the East segment could generate a 6.7 magnitude earthquake which converts to Modified Mercalli intensities between VIII and XI.

None of these active faults crosses the Project site. Furthermore, the Project site is not located within an Alquist-Priolo Earthquake Fault Zone.

Landslide and Slope Instability

The Town contains approximately 1,792.4 acres of mountainous and hillside terrain. Since the Town has some residential and commercial development at the bases of steep slopes, there are risks of slope failure, landslides, and rockfalls. The Project site is not located in proximity to any slopes or hillsides.

[12] California Geomorphic Provinces, California Geological Survey, California Department of Conservation, revised 2002.

Soils

The Project site is undeveloped and covered in desert vegetation and non-native grasses. The Project site has an inclination rate of 1.0% toward the northwest, and past erosion from rain events has created a shallow wash from the northwest toward the south boundary. To a depth of 40 feet, the soil present across the Project site is composed of medium- to very dense silty sand (SM) and traces of caliche are present. Beneath the silty sand to a 50-foot depth is dense poorly graded sand mixed with silt[13].

Compressible soils are those geologic units that condense under the heavy weight of embankments. Compressible soils in the Town are those associated with the Holocene deposits and active stream channels.

Collapsible soils are those geologic units that settle under relatively light loads and when inundated with water. Very young Holocene-age alluvial sediments in the Town are susceptible to collapse.

Expansive soils contain clay and are susceptible to either shrinking when they give up water or swelling when they absorb water. In the Town, expansive soils are associated with older deposits.

Soil erosion is a condition that commonly occurs where soil particles easily wash away due to topographic relief, wind, and human ground disturbance activity. The Town is susceptible to high amounts of soil erosion due to strong winds, and dry, finely grained topsoil.

Ground Subsidence

The gradual settling or sinking of the ground surface can occur as smaller local collapses or broader regional lowering of the ground occurs. A diverse range of causes commonly stem from both natural phenomenon such as earthquakes, and human activities such as construction, water and mineral extraction, as is common in southern California.

Underneath the Town of Apple Valley and extending for approximately 1,400 miles throughout the surrounding vicinity is the Mojave River Groundwater Basin. The estimated storage capactiy is nearly 5,000,000 acre feet, and the annual extraction of water has exceeded the natural replenishment capacity, resulting in a state of overdraft and dropping the groundwater level by 130 feet. According to the Town's GP EIR, subsidence has not been detected in the Town's limits although subsidence has been detected seven miles northwest of the Town. As groundwater extraction would be the main source of potential subsidence for the Town, active water conservation measures and engineered replenishment efforts have been able to prevent more serious overdraft of the groundwater basin.

Ground Failure and Liquefaction

Liquefaction occurs when seismic ground shaking causes groundwater pressure to increase and fully saturate the the upper layers of soil causing the soil to become a fluid-like mass which loses stability or bearing strength. This occurs within the upper 50 feet of the ground surface in loose fine-grained to medium-grained sandy/silty soils. Ramifications can include damage to buildings and structures and subsurface infrastructure. Liquefaction leads to other ground failure conditions such as lateral spreading, flow failure, ground oscillation, and ground lurching.

[13] "Geotechnical Investigation Report for Proposed Warehouse, APN 0463-372-21" prepared by Merrell Johnson Geotechnical, Inc., July 26, 2024

Three geologic conditions need to be present for liquefaction to occur: long duration of ground shaking; the presence of young, loose, unconsolidated sediments; and the presence of groundwater within 50 feet of the surface. These conditions are present within the the Mojave River floodplain that extends along the southwest boundary of the Town but are not present at the Project site or surrounding vicinity.

Paleontological Resources

Paleontological resources are fossilized remains or signs such as imprints and traces of prehistoric organisms found in the Earth's crust. Potential for existing paleontological resources is typically measured by discoveries in nearby rock and sediment formations of the same age. While surface deposits are the easiest way to detect the presence of fossils, most often fossils are discovered beneath the surface and are unknown until the ground is disturbed. Throughout the Town and the Sphere of Influence, soil deposits are mostly comprised of younger Quaternary alluvium in which no paleontological resources have been discovered. Therefore, the potential for significant paleontological resources to occur at the Project site is low due to the young alluvium present and the lack of previously identified resources within the Town.

GP EIR

The GP EIR (Section III.F, page III-81 et.seq.) reviewed the above-described seismicity, faulting and geologic hazards that affect the Town and the development plans described in the General Plan. To avoid significant impacts, development in the Town is required to comply with the Uniform Building Code (UBC), which would prevent structures from succumbing to major earthquakes, although structural damage could occur. Also, site-specific geotechnical and soils studies would be required to evaluate geologic conditions for each prospective development project.

GP EIR Mitigation Measures

Mitigation Measures prescribed by the GP EIR would ensure that potentially significant impacts from geologic conditions and hazards would be reduced to less than significant. The following Mitigation Measures are from pages III-105 through -108 of the GP EIR.

1. The Town shall establish and maintain an information database containing maps and other information that describes seismic and other geotechnical hazards occurring within the General Plan Area. Consult and coordinate with surrounding communities, the California Division of Mines and Geology, San Bernardino County, other applicable state and federal agencies, and professional engineering geologists to establish, improve, and routinely update the database.
2. Future development proposals shall require the preparation of a site-specific soils and/or geotechnical analysis that include an evaluation of seismic and soil conditions and provide recommendations that mitigate soils and geotechnical hazards or constraints.
3. Proper structural engineering, which takes into account the forces that will be applied to structures by anticipated ground motions, shall provide mitigation for ground shaking hazards. Seismic design shall be in accordance with the most recently adopted editions of the Uniform Building Code and the seismic design parameters of the Structural Engineers' Association of California.

4. Establish a cooperative agreement with the County Geologist, State Geologist, contract state-certified geologist, or contract geological engineer, to review and determine the adequacy of geotechnical and fault hazard studies prepared within the Town.
5. Design elements, such as baffles, shall be required to reduce the potential for seiches in tanks, open reservoirs, and ponds where overflow or structural failure may cause damage to nearby properties. Criteria for seismic design of water tanks shall be in accordance with the American Water Works Association (AWWA) Standards for Design of Steel Water Tanks.
6. New development shall not be placed within natural flow paths or result in substantial changes to drainage patterns offsite. (Also see Hydrology Section III-D)
7. Development on wind or stream-deposited sediment or young alluvium on the valley floor should include site-specific subsurface geotechnical investigations that address the potential for seismic settlement, collapsible and expansive soils, and liquefaction. These hazards can be mitigated by proper excavation, compaction, backfilling, and foundation design.
8. Site-specific geotechnical analyses shall be conducted where new development is proposed adjacent to or in close proximity to steep slopes. Analyses shall evaluate the potential for landslides, rock falls, and/or slope failure, and set forth mitigation measures to minimize these hazards such as the use of setbacks, retaining walls, and vegetation buffers.
9. Retaining walls shall be constructed to adopted building code standards, include an adequate sub-drain system at the base to prevent excessive hydrostatic pressure, and be evaluated by the Building Inspector.
10. All existing vegetation and debris shall be removed from areas that are to receive compacted fill. Removal of trees shall include a minimum of 95% of the root systems. Excavation to depths ranging from 2 to 4 feet or more below the existing site grade may be required.
11. Encourage consultation and coordination between the Town of Apple Valley Public Works Division, Apple Valley Ranchos Water Company, Mojave Water Agency, U.S. Geological Survey, and other appropriate agencies in order to routinely monitor groundwater levels and surface elevations in the Town.
12. The Town shall actively support and participate in local and regional efforts to conserve water in an effort to mitigate potential ground subsidence resulting from over extraction of groundwater. Preventive measures include the use of water efficient appliances and faucets indoors, desert tolerant landscaping, and increased use of reclaimed water, storm water, or imported water. (Also see Water Resources in Section III-I)
13. Maintain working relationships and strategies between the Public Works Division, Apple Valley Fire Protection District, and other appropriate agencies to strengthen or relocate utility or service facilities including the expedient retrofitting of weak or damaged service structures, enforce fire and building codes, and take other appropriate measures to safeguard major utility distribution systems in preparation of a seismic event.
14. The Town shall coordinate and cooperate with public and quasi-public agencies to encourage education and earthquake preparedness so that residents can be self-sufficient after a seismic event.
15. All grading permit requests shall include a soil erosion prevention plan. Blowing dust and sand during grading operation shall be mitigated by maintaining moist surface soils, limiting the area of dry exposed soils, planting stabilizing vegetation, establishing windbreaks with non-invasive vegetation or perimeter block walls, applying chemical soil

stabilizers, and adequately watering construction sites prior to and during grading and site disturbance. (Also see Air Quality in Section III-C)

16. Proposed development within a designated Alquist-Priolo Earthquake Fault Zone shall require site-specific geotechnical investigation including fault trenching and other Alquist-Priolo Fault Zoning Act guidelines.
17. The Town shall require that development applications include plans indicating the location of leach fields, seepage pits, drainage facilities, and water-dependent landscaping so that staff may evaluate the potential for ground saturation and assure that structural foundation are located an appropriate distance away to minimize the potential for localized soil collapse.
18. Imported and onsite fill soils for future development shall be approved by the project's soils engineer. Prior to placement as compaction fill the soils engineer shall assure that all fill materials are free of vegetation, organic material, cobbles and boulders greater than 6 inches in diameter, and other debris. Approved soil shall be placed in horizontal lifts or appropriate thickness as prescribed by the soils engineer and watered or aerated as necessary to obtain near-optimum moisture-content.
19. Fill materials shall be uniformly compacted to no less than 90% of the laboratory maximum density, by either over-filling and cutting back to expose a compacted core or by approved mechanical methods, as determined by American Society for Testing and Materials (ASTM) test method D-1557-78. The project soils engineer shall observe the placement of fill and take sufficient tests to verify the moisture content, uniformity, and degree of compaction obtained. In-place soil density measurements should be determined by the sand-cone method, in accordance with ASTM Test Method D-1556-64 (74), or equivalent test method acceptable to the Town's Building and Safety Department.
20. In general, finish cut slopes shall not be inclined steeper than 2:1 (horizontal to vertical). Attempts to excavate near-vertical temporary cuts for retaining walls or utility installations in excess of 5 feet may result in failure of the slope, which has the potential to damage equipment and injure workers. All cut slopes must be inspected by the project engineer during grading to provide additional recommendations for safe construction.
21. Foundation systems that utilize continuous and spread footings are recommended for the support of one and two-story structures. Foundations for higher structures must be evaluated based on structure design and on-site soil conditions.
22. Positive site drainage shall be established during finish grading. Finish lot grading shall include a minimum positive gradient of 2% away from structures for a minimum distance of three (3) feet and a minimum gradient of 1% to the street or other approved drainage course.
23. Utility trench excavations in slope areas or within the zone of influence of structures should be properly backfilled in accordance with the following recommendations:
    (a) Pipes shall be bedded with a minimum of 6 inches of pea gravel or approved granular soil. Similar material shall be used to provide a cover of at least 1 foot over the pipe. This backfill shall then be uniformly compacted by mechanical means or jetted to a firm and unyielding condition.
    (b) Remaining backfill may be fine-grained soils. It shall be placed in lifts not exceeding 6 inches in thickness or as determined appropriate, watered or aerated to near optimum moisture content, and mechanically compacted to a minimum of 90% of the laboratory maximum density.

(c) Pipes in trenches within 5 feet of the top of slopes or on the face of slopes shall be bedded and backfilled with pea gravel or approved granular soils as described above. The remainder of the trench backfill shall comprise typical on-site fill soil mechanically compacted as described in the previous paragraph.

Proposed Project Impacts

The following analysis is primarily based on the Geotechnical Investigation Report (referred to as "Geotechnical Report") prepared for the Project by Merrell Johnson Geotechnical, Inc. (Appendix E). The Report was generated with results from the field exploration of the Project site, laboratory tests of test borings, and research on the local area's geologic conditions.

a, i) **No Impact.** Fault rupture occurs when movement along a fault zone deep within the Earth breaks through to the surface. There are two nearby faults that occur within the Town's Sphere of Influence, and there are a total of 35 potentially active and active faults within a 62-mile radius of the Project site, which indicate that the Victor Valley region is seismically active. However, the Town and the Project site are not located within an Alquist-Priolo Earthquake Fault Zone, and, according to the San Bernardino County Geologic Hazards Overlay Map, the Project site is not located within a seismic hazard area. Because there are no faults running through the Project site or surrounding parcels, and the Project site and Town are not within an Alquist-Priolo earthquake fault zone, fault rupture is not expected to occur on the Project site and there would be no impacts.

a, ii) **Less Than Significant Impact**. The Helendale-South Lockhart fault is located between three and five miles northeast of the Project site and has the potential to generate a 7.3 magnitude event which could result in Modified Mercalli intensities of IX to XI. Approximately 10 miles southeast of the Project site lies the North Frontal Fault. Less data has been recorded about this fault zone, but research indicates that it could potentially generate an earthquake with significant ground shaking.

While a fault rupture on the Project site is not anticipated, severe ground shaking could potentially occur, and for this reason the Project would be required to implement seismic design measures in accordance with the most recent California Building Code standards. Because the upper 100 feet of the subsurface is underlain with "stiff soil," and the average shear-wave velocities would be 600-1,200 feet per second, the Geotechnical Report classifies the Project site as a Seismic Design Class "D." The Project will be designed to meet these standards.

The Project will implement proper structural engineering which accommodates forces encountered by structures due to seismically induced ground shaking. Seismic design measures include specifications for earthwork, grading, foundation design, site drainage, utility excavation and installation. In addition, appropriate seismic design coefficients will be determined by the Project's structural engineer and based on the most recent design parameters of the Structural Engineers Association of California.

Mitigation measures are not required as the Project's compliance with the most current state and local design standards ensures that potential impacts to the Project associated with ground shaking would be less than significant.

a, iii) **No Impact**. Liquefaction occurs when seismic ground shaking causes groundwater pressure to increase and fully saturate the the upper layers of soil causing the soil to become a fluid-like mass and lose stability or bearing strength. This occurs within the upper 50 feet of the ground surface in loose fine-grained to medium-grained sandy/silty soils.

The Geotechnical Report determined that the soils on the Project site are medium dense to dense and would adequately support the proposed facilities. The groundwater level is deeper than 50 feet, which suggests that the potential for liquefaction to occur is very low. No impacts are anticipated.

a, iv) **No Impact.** The generally flat terrain across the Project site ascends at an inclination rate of 1.0% toward the northwest corner. The site is surrounded by similarly flat terrain. Exhibit IV-2 of the Town's General Plan shows that the Project site is not located in an area that is susceptible to landslides or other slope instability hazards. For these reasons, no impacts from landslide events or lateral spreading are expected to occur.

b) **Less Than Significant Impact.** The Town's General Plan explains that the Town is susceptible to erosional processes such as runoff, sedimentation and wind erosion due to the topography, climate, soil, and types of rock throughout the area. Natural erosion processes are exacerbated by land development activities. Soil compaction, cut and fill, and the increase of impermeable surfaces can alter natural drainage pathways and potentially increase flooding and sedimentation downstream or downslope. Likewise, land development, as previously described, can increase the amount of sediment carried by the wind and create particulate pollution for downwind areas.

The Project would be required to comply with standard measures required by the Town and the MDAQMD to reduce the potential impacts of soil erosion from the Project site. The Town's General Plan stipulates that wind erosion can be reduced with the use of wind barriers, watering of construction sites and vegetative ground cover. Program 2.A.1 of the Open Space and Conservation Element of the General Plan requires projects to include erosion control measures and Best Management Practices in the grading plans. Finally, MDAQMD Rule 403 requires projects to implement a dust control plan. Application of these standard measures would reduce potential impacts of soil erosion or loss of topsoil to less than significant levels.

c) **No Impact.** The Project site is not susceptible to geologic hazards including landslides, lateral spreading, subsidence, liquefaction, and collapse. The Geotechnical Report for the Project describes the soil deposits at the Project site as being medium dense to dense from the surface down to about three feet, and below three feet the soil is generally dense and is sufficiently able to support the proposed warehouse. As discussed above, due to the flatness of the terrain, landslides are not a risk. The groundwater depth is greater than 50 feet, and the soil deposits are compact such that conditions for liquefaction are not present on the Project site. Subsidence has not been detected in the Town and on-going efforts, guided by the Town's General Plan, to conserve and replenish groundwater have been effective in reducing this potential risk.

The Geotechnical Report provides extensive details for earthwork, reinforcement of the foundation, resistance to lateral loading, construction of the building floor slabs, surface drainage design, and subgrade preparation for concrete and asphalt application. Implementation of these geotechnical design parameters, and application of the Town's, County's and State's standard requirements for grading and earthwork ensure that site soils would remain stable and potential impacts would be less than significant.

d) **No Impact.** Expansion occurs in soils with water-absorbing potential, particularly those with high clay content. Clay can expand in size as the amount of moisture increases in the soil. Expansion can cause the ground to swell which can result in damage to buildings, structures, roadways, and other surface features.

The soil found on the Project site surface and subsurface is composed of silty sand and sand with silt, respectively. The results of an expansion index test conducted by the geotechnical investigation yielded a soil expansion index of zero. The soil composition of the Project site is not prone to expansion therefore, impacts are not expected to occur.

e) **No Impact**. The Project will connect to the Town's wastewater treatment system via an existing sewer line under Dakota Road along the west boundary of the Project site. Septic tanks or other alternative wastewater disposal system will not be constructed. There will be no impacts.

f) **No Impact.** Throughout the Town, the soil deposits primarily date from the Quaternary age (1.8 million year ago to current) and the potential to discover fossilized remains is low due to the recent age of the deposits. To date, there are no records of paleontological resources being discovered within the Town. Presence of fossils in the Project site is not anticipated, and the Project is not expected to destroy or damage any paleontological resources. There will be no impacts.

Mitigation Measures: None required.

Monitoring: None required

VIII. GREENHOUSE GAS EMISSIONS Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?		✓		
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?		✓		

Sources: CalEEMod Version 2022.1; MDAQMD California Environmental Quality Act (CEQA) and Federal Conformity Guidelines (February 2020); Town of Apple Valley 2019 Climate Action Plan Update; Town of Apple Valley General Plan (2009).

Environmental Setting

Certain gases, known as greenhouse gases (GHGs), allow solar radiation into the earth's atmosphere but prevent heat from escaping. The principle GHGs are carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), and fluorinated compounds (hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride). These gases are produced from natural processes and human activities, but their production increased significantly in the last century, resulting in climate change.

The California Global Warming Solutions Act of 2006 (AB 32) required California to adopt regulations in order to reduce their GHG emissions to 1990 levels by 2020. This represents reductions of approximately 15 percent below the emissions projected in a "business as usual" scenario. The California Air Resources Board (CARB) prepared a Scoping Plan (2008) and Update (2014) to establish the state's strategy to meet the targets set forth by AB 32. CARB reported that 1990 GHG emissions totaled 431 million metric tons (MMT) for the state of California. In 2020, statewide GHG emissions totaled 369.2 MMT of CO_2e, which is 61.8 $MMTCO_2e$ below the 2020 GHG limit pursuant to AB 32.[14] Moving forward, AB 32 requires California to maintain and continue reductions beyond 2020 and continues to require CARB to update the Scoping Plan every 5 years.

The 2022 Scoping Plan provides CARB's update to the 2017 Plan. Pursuant to SB 32, the plan sets forth the state's plan to stay on track towards reducing GHG emission by at least 40% below 1990 levels by 2030. The 2022 Plan Update expands on earlier targets, establishing a new goal of reducing GHG emissions to 85% below 1990 levels by 2045. Additionally, the 2022 Plan Update establishes a path for the state to achieve carbon neutrality by 2045 through technologically feasible, cost-effective means.[15]

The Town of Apple Valley approved its Climate Action Plan (CAP) update in 2019, establishing its strategies to meet state GHG reduction targets. The CAP found that Town-wide CO2e emissions in 2019 were approximately 597,681 MTCO2e. In order to achieve its 2030 target of 40%

[14] California Air Resources Board, California Greenhouse Gas Emissions for 2000 to 2020 (October 2022).

[15] California Air Resources Board, 2022 Scoping Plan for Achieving Carbon Neutrality (November 2022).

below 2005 emissions levels, Town-wide emissions would need to be reduced by an additional 299,565 MTCO2e.

Apple Valley is under the jurisdiction of the Mojave Desert Air Quality Management District (MDAQMD). The District's threshold to evaluate the significance of project-related GHG emissions is 100,000 tons per year or 548,00 pounds per day.

GP EIR

The discussion and analysis of greenhouse gas emissions was provided in Section III-C Air Quality of the GP EIR (Section III.C, page III-10 et.seq). CEQA had not established significance thresholds for greenhouse gas emissions when the GP EIR was drafted, thus there is not a standalone Section.

The GP EIR assumed that development activities and operations that interfered with the objectives of AB 32 would be considered to have a significant impact. AB 32 requires a coordinated effort to curb greenhouse gas emissions within the state of California. Specifically, the Bill requires the state board to adopt a statewide greenhouse gas emissions limit, so that by the year 2020 GHG emissions are at or below 1990 emission levels.

Build out of the General Plan was estimated to generate 3.2227 million metric tons of carbon dioxide equivalent per year, or 19.49 million pounds per day, as shown in Table 6. The GP EIR compared the total carbon dioxide equivalent emissions in California for the year 1990 to buildout of the General Plan. According to the EIR, 1990 CO2e emissions in California were estimated to be 427 million metric tons. The EIR found that build out the Town of Apple Valley would contribute approximately 0.756 percent of the total California emissions limit for 2020 as established by CARB. In 2005 the total carbon dioxide equivalent emissions for the United States was estimated at 7,260.4 million metric tons. The General Plan represents 0.044 percent of the total emissions for the U.S. as estimated in year 2005.

GP EIR Table III-15
Annual GHG Summary: 2009 General Plan Buildout

Emission Source	CO2 Equivalent Metric Tons	CO2 Equivalent Million Metric Tons	Million Pounds Per Day
Electricity	660,712.98	0.661	3,990,747.31
Natural Gas	511,838.54	0.512	3,091,536.47
Moving Source	2,054,443.56	2.054	12,408,966.31
Total	**3,226,995.08**	**3.227**	**19,491,250.10**

Source: Table III-15 of 2009 GP EIR

The GP EIR determined that build out of the General Plan and Annexation areas would increase emissions over 1990 levels, resulting in a significant impact. Mitigation measures were provided in the EIR. However, the reductions which these mitigation measures offered could not be effectively quantified. Therefore, the GP EIR determined that impacts associated with GHG emissions would be significant and unavoidable.

The following greenhouse gas mitigation measures are from GP EIR Section III.C, page III-39 et.seq.

1. Design and implement land uses that encourage job/housing proximity or easy access to transit opportunities including high density development along transit corridors, compact mixed-use projects, and urban villages that maximize affordable housing and encourage biking, walking, and the use of public transit. This can be accomplished through the implementation of the goals, policies and programs of the Medium Density Residential and Mixed-Use land use designations and as appropriate, implementation of specific plans in targeted areas where the opportunities for such development can be created through advance planning. Transit corridors to be focused on high density development are along Bear Valley Road, Highway 18, Dale Evans Parkway, Apple Valley Road, Navajo Road, Central Road, and Kiowa Road. Furthermore, high density development will be targeted for the future High Desert Corridor.
2. Encourage infill, redevelopment, mixed use, and higher density development in appropriate areas of the Town where existing development can serve as the foundation for the creation of new urban villages. Such development would be focused around the southern portion of the Town near the major intersections of Bear Valley Road, such as its intersections with Apple Valley Road, Kiowa Road and Navajo Road. Other areas targeted for development include those along Highway 18 and Dale Evans Parkway.
3. In order to reduce vehicle miles traveled and greenhouse gas emissions, mixed use projects with a maximum density of 30 dwelling units per acre shall be developed in the core of Apple Valley on infill lots and/or adjacent to transportation corridors (such as Bear Valley Road, Highway 18, and Dale Evans Parkway) and existing and future job centers.
4. Incentive programs shall be offered for affordable Medium Density Residential infill projects (maximum 20 dwelling units per acre) within the core of Apple Valley and/or adjacent to transportation corridors and existing and proposed job centers. This will help to reduce the vehicle miles traveled and greenhouse gas emissions.
5. Infill in the Mountain Vista Neighborhood is encouraged, and incentives shall be offered by the Town for projects greater than 20 units in size. Infill and higher densities in this existing neighborhood will reduce the amount of vehicle miles traveled.
6. Mobile Home Park development shall be encouraged through the creation of the Mobile Home Park Land Use Designation. This will encourage higher density residential development along transportation corridors and adjacent to existing and future job centers. As a result, this should help reduce vehicle miles traveled and greenhouse gas emissions.
7. The Town shall encourage and promote the development of the North Apple Valley Industrial Specific Plan to create a job center with productive industries, which will reduce the vehicle miles traveled of high desert residents that typically have to drive to employment centers in the San Bernardino Valley, as well as the Riverside City and County portions of the Inland Empire for work. The Town shall reduce the approval time for entitlements and permit process for industrial projects within this area. The industrial development also supports a broad-based economy and encourages a jobs housing balance.
8. The Town shall permit childcare facilities in single-family and multi-family residential zones, as well as, in the commercial and industrial areas where employment is concentrated. This will encourage the reduction of vehicle miles traveled.

9. New developments shall be encouraged to include housing, recreational, and retail amenities, so as to limit the number of vehicle miles traveled by providing accessible and desirable amenities onsite.
10. All new development shall be required to install infrastructure prior to occupancy, which will encourage a well-planned, orderly development pattern.
11. Advanced technology systems and effective management strategies shall be employed 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. New development that requires roadway and/or intersection improvements will be required to install such improvements such that these advanced traffic management systems may be easily implemented by the Town.
12. New projects shall incorporate design parameters that allow for frequent, reliable, and convenient public transit.
13. The Town shall expand and develop an integrated and comprehensive bikeway, walking path and trail system. The expansion of a regional trail system shall be in consultation with neighboring communities to improve the overall Victor Valley system.
14. Street and travel corridors shall be monitored and maintained to assure that congested areas and intersections are rectified.
15. Idling time for commercial, delivery, and construction vehicles shall be regulated and limited.
16. Landscaping designs shall use trees and other vegetation to maximize the shading of buildings in order to reduce energy requirements for heating and cooling.
17. Planting and preserving existing trees shall be utilized as means of providing carbon storage. Preserving existing trees shall be encouraged during the development review of new projects. The Town shall formulate minimum tree planting standards to be applied during the development review of a project.
18. Tree planting in parks and open spaces will be encouraged. Tree planting programs shall be implemented by the Town. These programs shall include an educational component that emphasizes the importance of trees as means of providing carbon storage.
19. The Town shall promote the use of LEED (Leadership in Energy and Environmental Design) building practices for public and private development by considering the utilization of such building practices as a factor favoring project approval during the entitlement process. Sustainable or "green" building standards similar to LEED shall also be considered favorably. Alternative energy systems such as solar, thermal, photovoltaics and other clean energy systems shall be integrated in building design. Building design shall take advantage of shade, prevailing winds and sun screen to promote energy efficiency.
20. The Town shall encourage the use of energy saving measures beyond the requirements of Title 24 for residential and commercial projects. The incorporation of such measures shall be considered as a factor in favor of project approval during the entitlement process. An incentive program shall be developed for projects that exceed Title 24 requirements by 15% and/or achieve LEED certification or similar performance standards for building design. Incentives such as fee reductions or waivers of certain development standards shall be considered.
21. Promote the use of facilities for low/zero carbon fueled vehicles in new developments, such as the charging of electric vehicles from green electricity sources.

22. 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.
23. Promote educational programs directed at the public, schools, professional associations, businesses, and industries that offer strategies for reducing GHG emissions.
24. Initiate a program to replace existing traffic lights, street lights, and other electrical uses to energy efficient bulbs and appliances. Encourage new lighting to be energy efficient. The Town shall require that lighting in all Town facilities be replaced with energy efficient fixtures as existing fixtures fail and require replacement.
25. Utilize Energy Star equipment and appliances for new development and encourage replacement appliances to be energy efficient. The voluntary commitment to such a requirement by project applicants shall be considered a factor in favor of project approval.
26. Promote the use of on-site renewable energy production including installation of photovoltaic cells or other solar options. The Town shall encourage the use of solar cells in private development and consider such project features favorably during project review. The Town shall investigate the cost effectiveness of installing such solar cells on Town buildings for the purposes of powering Town facilities and possibly selling excess "clean" energy back to the SCE power grid, pursuant to state law.
27. 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.
28. Utilize the Collaborative for High Performance Schools (CHPS) best practices for school design, building, and operation.
29. Replace or retrofit municipal water and wastewater systems with energy efficient motors, pumps, and other equipment, and recover wastewater treatment methane for energy production.
30. Capture and utilize landfill gas for use as an energy source including fuel for vehicles, operating equipment, and heating buildings.
31. Promote the use of vehicles and buses that use alternative fuels or technologies such as hybrids, biodiesel, and ethanol. The Town's vehicle fleet shall be transitioned to alternative fuels to the extent economically feasible.
32. The Town shall promote the use of mass transit services, coordinating with all agencies to link residential and commercial businesses and employment centers within the Town's residential neighborhoods and nearby communities. Mass transit services shall be expanded as needed within the context of economic feasibility.
33. Ride sharing, carpooling, flexible work scheduling, telecommuting and Park & Ride programs shall be encouraged for public and private employers.
34. The Town shall assess the local transportation system annually with a view to gaining greater efficiency in the movement of people and goods through the community. Opportunities to expand the public transit system, using buses equipped with bicycle racks and fueled by compressed natural gas or hydrogen will be maximized. Widespread use of pedestrian pathways and alternative means of transportation, such as bicycles and electric hybrid vehicles will be facilitated and encouraged.
35. Offer incentives to private businesses for developing energy and water efficient features and building materials, such as expedited plan checks and reduced permit fees.
36. Offer rebates and low interest loans to residents that make energy saving improvements on their homes, including but not limited to the installation of solar cells and panels.

37. Incentives shall be provided for rehabilitation and remodeling of existing development. Assistance from the Town shall be provided through the Residential Rehabilitation Loan Program to improve energy efficiency of existing residences. Educational materials shall be provided to the public advising them of energy efficiency through available appliance programs and other energy conservation improvements that are eligible for the Residential Rehabilitation Loan Program.
38. The Town shall consider incentive programs, rebates and refunds for the use of energy efficient appliances, windows and building designs for new and remodeled structures. The incentive program could also include incentives for the use of recycled materials.
39. Encourage bicycle lanes and walking paths directed to the location of schools, parks, and other destination points. The provision of such facilities will be considered favorably during project review pursuant to the General Plan's Circulation Element.
40. The Town will implement a program to install photo voltaic 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. This will improve the energy efficiency of these facilities
41. Prior to July 15, 2010, the Town shall develop and adopt a Climate Action Plan ("CAP") that enhances the General Plan's goals, policies and programs relating to meeting the greenhouse gas emission targets established in the California Global Warming Solutions Act, including reducing emissions to 1990 levels by including an emissions inventory; emission targets that apply at reasonable intervals through the life of the plan; enforceable GHG control measures; monitoring and reporting; and mechanisms to allow for the revision of the plan, if necessary, to stay on target. The goal of the CAP shall be to reduce greenhouse gas emissions within the Town's control the achieve the emission reduction goals required by AB 32, as further developed and quantified by the California Air Resources Board. The CAP shall quantify the approximate greenhouse gas emissions reductions of each measure developed with the CAP, and shall consider the mechanisms, strategies and techniques included above.

Proposed Project Impacts

a,b) Less Than Significant with Mitigation. The Project will generate GHG emissions during both construction and operation. As previously discussed in Section III (Air Quality), an air quality report was prepared using the California Emission Estimator Model (CalEEMod) Version 2022.1 to quantify air quality projections, including greenhouse gas emissions (Appendix A).

Construction:

Development of the Project is estimated to require a buildout period of 18 months, during which onsite construction activities will include those typically associated with site preparation, grading, building construction, paving, and architectural coating. Sources of emissions during construction are likely to including operation of construction equipment, worker commute, material hauling, and other ground disturbance activities. Emissions will occur temporarily and cease once the construction period has finished. At buildout, the Project construction would emit a total of 1,651 $MTCO_2e$. There is no set GHG emission threshold for the construction of industrial warehouses. Construction emissions are amortized over a 30-year period to address GHG emissions as part of the operational GHG reduction strategies (See Table 8).

Operation:
Sources of operational emissions for the proposed warehouse are likely to include mobile and stationary sources such as vehicle mile (VMT) generation, energy (electricity) consumption, water usage, solid waste disposal, and area emissions (pavement and architectural coating off-gassing). Table 8 provides a summary of the projected short-term construction and annual operational GHG generation associated with buildout of the proposed Project.

Table 8
Projected GHG Emissions Summary
(Metric Tons)

Phase	CO_2e (MT/YR)
Construction	
2025	601
2026	1,050
Construction Total	1,651
Operation	
Area	9.19
Energy	1,345
Mobile	9,067
Waste	189
Water	8.46
Refrigerants	2.46
Construction: 30-year amortized [1]	50.03
Total Operational	10,671.14
MDAQMD Annual Threshold	100,000
Exceeds?	No

1. Buildout construction GHG emissions were amortized over 30-years then added to buildout operational GHG emissions. 1,651/30 = 50.03

Source: CalEEMod Version 2022.1

According to the MDAQMD CEQA Guidelines, a project is considered significant if it generates total emissions (direct or indirect) that exceed the applicable threshold. As shown in Table 8, the Project's annual CO_2e emissions will not exceed the MDAQMD's significance threshold of 100,000 metric tons of CO_2e per year. However, because the MDAQMD threshold has not been formally adopted, the Project's GHG emissions were also analyzed using the SCAQMD significance thresholds.

The SCAQMD provides a series of "tiered" tests, based on staff recommendations, to determine whether a project's greenhouse gas emissions would be considered significant. In order to be considered less than significant, a project should comply with one of the following tiers:

- Tier 1: Is there an applicable exemption?

- Tier 2: Is the project compliant with a greenhouse gas reduction plan that is, at a minimum, consistent with the goals of AB 32?
- Tier 3: Is the project below an absolute threshold (10,000 MTCO2e/yr for industrial projects; 3,000 MTCO2e/yr for residential and commercial projects)?
- Tier 4: Is the project below a (yet to be set) performance threshold?
- Tier 5: Would the project achieve a screening level with off-site mitigation?

On the basis of this tiered system, the proposed Project was analyzed to determine its level of impact:

Tier 1: The Project is not eligible for an exemption. This tier does not apply.

Tier 2: Tier 2 is applicable. The Project is subject to the Town of Apple Valley's 2019 Climate Action Plan (CAP) Update, *a comprehensive GHG emissions reduction plan. Pursuant* to SB 32 and AB 32, the CAP aims to ensure that the Town continues to meet its GHG emissions reductions targets of 15% below 2005 levels by 2020 and 40% below 2005 levels by 2030.[16] The Town has regularly updated its CAP every three years, which was last updated in 2021. The 2019 CAP is the third update to the original document, which underwent CEQA review and was adopted in 2010. Given that the Town's CAP is regularly updated, formally adopted, and consistent with the goals of AB 32, under SCAQMD's Tier 2 it provides suitable targets against which to evaluate the Project's GHG emissions.

Tier 3: This tier does not apply to the Project. Tier 3 provides the following quantitative thresholds for analyzing of CO2e emissions for projects under SCAQMD's permitting jurisdiction:

- 10,000 MTCO2e per year for industrial projects (stationary sources only)
- 3,000 MTCO2e per year for residential and commercial

While the proposed development is an industrial project, it will be used as a warehouse, not as a manufacturing plant or other heavy industrial uses. As a result, most of its GHG emissions are expected to be produced by mobile sources, particularly from heavy duty trucks making regional distribution trips. It would therefore not be appropriate to analyze the Project's annual emissions of 10,671.14 MTCO2e against the SCAQMD threshold of 10,000 MTCO2e per year for industrial projects because this tier applies to stationary sources only.

The 3,000 MTCO2e threshold is also not suitable for the Project because it is intended for residential and commercial uses, neither of which are proposed for the Project. The Project proposes a ±627,000 square feet of warehouse space.

Tier 4: There are no applicable performance thresholds against which to evaluate the Project. This tier does not apply.

Tier 5: There are no applicable off-site mitigation measures. This tier does not apply.

[16] Town of Apple Valley 2019 Climate Action Plan Update (May 2021).

Based on the tiered tests provided by SCAQMD and given that only Tier 2 applies to the Project, the following analysis will consider whether the Project is compliant with the Apple Valley 2019 Climate Action Plan. According to Tier 2, if the Project is determined to be compliant with the applicable greenhouse gas reduction plan, then impacts related to the greenhouse gas emissions resulting from that Project should be considered less than significant.

According to the CAP, the Town aims to meet the GHG emissions reduction target of 40% below 2005 levels by 2030. Based on growth forecasts in the SCAG 2020-2045 Regional Transportation Plan/SCS, the CAP forecasts that the Town will have a population of 84,535 in 2030. To meet the 40% below baseline target, the Town-wide GHG emissions in 2030 would need to be 449,347 MTCO2e, or 5.32 MTCO2e per capita.

As demonstrated in Table 8, above, based on projections made using CalEEMod Version 2022.1, the Project is expected to generate 10,671.14 metric tons of CO_2e per year. Given the existing demand for jobs in the Town, it is likely that all of the jobs created by the Project would be filled by existing residents of Apple Valley. It is therefore assumed that the Town's 2030 population, including buildout of the Project, would be 84,535 as analyzed in the CAP.

Based on a population of 84,535, Table 9 shows that in order for the Town to meet the 2030 emissions reduction target, it would have to meet 5.32 tons per capita. The table also shows that with implementation of the CAP reduction measures, the Town expects to go beyond the established emissions target, reducing forecasted emissions to 410,922 $MTCO_2e$ per year or 4.86 tons per capita. The 2030 emissions forecast with CAP measures accounts for community emissions, including industrial projects. The Project's estimated annual emissions of 10,671.14 MTCO2e would already be covered by the 2030 emissions forecast. However, assuming an industrial development like the proposed Project was not accounted for in the CAP 2030 forecast, and to ensure a conservative analysis, the Project's emissions were added to the existing forecast. As shown in Table 9, the total annual emissions from the Project and existing 2030 forecast would be 421,593.1 MTCO2e, or 4.99 tons per capita. Both the total and per capita emissions meet the CAP target for 2030 of 40% below the 2005 baseline. The Town-wide emissions in 2030, including the Project, would therefore meet the CAP greenhouse gas emissions reduction target.

Table 9
Project emissions and CAP reduction target

Target/Scenario	Forecast ($MTCO_2e$)	Population	Per Capita
CAP 2030 forecast w/CAP measures	410,922.00	84,535	4.86
Project emissions (per year)	10,671.14	84,535	--
Total	421,593.10	**84,535**	**4.99**
CAP 2030 target (40% below baseline)	449,347.00[1]	84,535	5.32
		Exceeds?	**No**

[1] Forecasted town-wide emissions for 2030.

In order to ensure that the Project's GHG emissions are reduced to the greatest extent possible, the Project will be subject to applicable reduction measures from the CAP. The Project's consistency with applicable reduction measures is shown in the following table. Where necessary to ensure compliance, the applicable CAP reduction measure has been included as a mitigation measure below.

Table 10
Project consistency with CAP reduction measures

Reduction Measure	Consistency
CO-4: Establish an employee carpooling program, including incentives (preferred parking, flex time incentives, etc.) for participating employees.	**Consistent**: Per mitigation measure **GHG-1**, the Project will establish an employee carpooling program, including incentives for participating employees.
CO-5: Provide employees with free or discounted public transit passes.	**Consistent**: Per mitigation measure **GHG-2**, the Project will provide employees with free or discounted public transit passes.
ND-6: For projects within the North Apple Valley Industrial Specific Plan, develop employee housing within one mile of the industrial project.	**Consistent**: The area 0.5 miles west of the Project site, on the west side of Dale Evans, is designated for Low Density Housing and Multi-Family Residential. Development of these sites would provide housing within one mile of the Project site.
ND-12: Building and site plan designs shall ensure that the project energy efficiencies meet applicable California Title 24 Energy Efficiency Standards.	**Consistent**: The Project design will comply with all requirements in the California Building Code, including the Title 24 Energy Efficiency Standards.

Source: Town of Apple Valley 2019 Climate Action Plan Update

In addition to measures provided in the CAP, future emissions reductions are expected to result from regulations passed since the 2019 CAP Update, as well as forthcoming regulatory or technological improvements. For example, the 2022 California Building Code, including the California Energy Code and California Green Building Standards Code (CALGreen), was made effective as of January 1, 2023, and has been adopted by the Town. The California Energy Commission estimates that increases in energy efficiency and on-site generation in the 2022 Energy Code could result in the reduction of 10 million metric tons of CO2e over the next 30 years.[17]

Furthermore, given that a large portion of the Project's GHG emissions are expected to be from mobile sources, regulations from the California Air Resources Board pertaining to truck fleets would be expected to further reduce emissions. Such regulations include the 2021 Advanced Clean Truck regulation, which stipulates that manufacturers must sell an increasing proportion of zero emission vehicles from 2024 to 2035, and the Advanced Clean Fleet (ACF) regulation, which required that medium and heavy-duty fleets be 100% zero-emission vehicles by 2045.[18] CARB projects that implementation of ACF would result in cumulative CO_2 emissions reductions of 307 million metric tons from 2024 to 2050.

[17] 2022 Energy Code Title 24, Part 6 Fact Sheet, Ace Resources.

[18] The proposed Advanced Clean Fleet Regulation would also require last mile delivery fleets must be fully converted to zero emission vehicles by 2035 and would ban manufacturers from selling any new fossil-fueled medium-duty and heavy-duty trucks by 2040.

Finally, the GHG emissions associated with the utilities provided to the Project would also be reduced. Under Senate Bill 350 (SB 350), the Renewable Portfolio Standard will require utilities and electric service providers to purchase 50% renewable energy resources by 2030.

Overall, given that the Project is both below the absolute CO_2e emissions threshold provided by MDAQMD and compliant with the SCAQMD Tier 2 test, it can be concluded that impacts would be less than significant.

It should be noted that the GP EIR quantified maximum daily emissions for buildout of the General Plan and found impacts from greenhouse gases to be significant and unavoidable, and mitigation measures were provided requiring project-level analysis to determine if future development project impacts would be managed and mitigated accordingly on a case-by-case basis. A project-level air quality and greenhouse gas analysis was prepared for the Project that found impacts to be less than significant with the implementation of the mitigation measures below. Therefore, implementation of the proposed Project would not result in any new adverse impacts or increase the severity of previously identified significant impacts in the Certified EIR.

Mitigation Measures: Consistent with and to assure compliance with existing Climate Action Plan reduction measures, the following mitigation measures shall be included as conditions of approval to the Project:

GHG-1 Establish an employee carpooling program, including incentives (preferred parking, flex time incentives, etc.) for participating employees.

GHG-2 Provide employees with free or discounted public transit passes.

In addition, the applicant has voluntarily agreed to implement the following:

GHG-3 Applicant shall include contractual language in tenant lease agreements that requires tenants to do the following:

- Include a minimum of 50% zero-emission light- and medium- duty delivery trucks and vans for use at the Project site, to the extent feasible and commercially available.'
- Tenants shall enroll in the United States Environmental Protection Agency SmartWay program.
- Tenants shall use zero-emission on-site motorized operational equipment, such as forklifts and yard trucks, to the extent feasible and commercially available, with Applicant to provide the necessary charging or fueling stations.

Monitoring:

GHG-A Prior to the issuance of a building certificate of occupancy, the building tenant shall provide proof of the implementation of Mitigation Measures GHG-1 through GHG-3 to the Planning Department.
Responsible Parties: Project proponent/tenant, Planning Department.

IX. HAZARDS AND HAZARDOUS MATERIALS **Would the project:**	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			✓	
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			✓	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				✓
d) 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, would it create a significant hazard to the public or the environment?				✓
e) For a project 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, would the project result in a safety hazard or excessive noise for people residing or working in the project area?			✓	
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			✓	
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?				✓

Sources: Phase I Environmental Site Assessment Report, APN: 0463-372-21-0000, prepared by Partner Engineering and Science, Inc. December 26, 2023; California Department of Forestry and Fire Protection's Fire and Resources Assessment Program (FRAP) FHSZ Viewer, https://egis.fire.ca.gov/FHSZ/, (accessed December 2022); California Department of Toxic Substances Control EnviroStor Database (accessed October 2024); California State Waterboard GeoTracker Database (accessed October 2024).

Environmental Setting

Hazardous materials are items with the ability to cause harm to humans, animals, and/or the environment because of their physical (biological, chemical, radiological, or physical) state or interaction with other materials. Common daily-used items include household cleaners, bleach, spray paint, and rubbing alcohol. Industry-used examples include gasoline, solvents, and radioactive material. The EPA, along with the State and local agencies regulate the waste management system to prevent a public health and environmental crisis.

Hazardous materials are under the jurisdiction of various federal and state regulations and programs which regulate the use, storage, and transportation of hazardous materials. Regulations can be used to reduce or mitigate the danger that hazardous substances may pose to Apple Valley residents, businesses, and visitors, both in normal day-to-day conditions and as a result of a regional disaster, such as an earthquake or major flood.

The Medical Waste Management Program (California Health and Safety Code, Section 117600) protects the public and the environment from potentially hazardous medical waste by regulating the generation, handling, storage, and disposal of medical hazardous waste through the implementation of the Medical Waste Management Act (MWMA). The County of San Bernardino is the local enforcement agency for Apple Valley's medical hazardous waste generators.

The County Fire Department coordinates and facilitates household hazardous waste disposal. Under the authority of the County Fire Department's Household Hazardous Waste program, the Town operates a collection center located at the Town's Public Works Yard at 22411 South Outer Highway 18. Materials accepted for disposal at this location include pesticides, wood preservatives and solvents, automobile batteries, and small electronic items such as television sets and computer monitors, as well as other materials.

The Town of Apple Valley's Development Code includes standards and regulations to ensure that the use, handling, storage, and transportation of hazardous materials comply with all applicable requirements of the State Government Code Section 65850.2 and Health and Safety Code Section 25505, and Article 80 of the Uniform Fire Code.

The Town's Multi Hazard Functional Planning Guidance Document (Multi Hazard Plan) establishes contingency plans when an incident involving hazardous materials occurs. The Town works with the Hazardous Materials Division (HMD) of the San Bernardino County Fire Department, which has been designated by the State as the Certified Unified Program Agency for handling hazardous waste and materials in the High Desert. HMD performs compliance inspections of facilities that handle hazardous materials, which are defined by the California Code of Regulations (Title 22). The Apple Valley Fire District Duty Chief acts as the liaison with HMD in the event of a hazardous materials spill or leak.

There are three hazardous materials transportation corridors in the Town of Apple Valley: the Atchison Topeka & Santa Fe Railroad, U.S. Interstate 15, and State Route 18. These routes have the potential to be involved in the transport of hazardous materials and could thus be subject to the associated risks.

A Phase 1 Environmental Site Assessment was prepared for the Project by Partner Engineering and Science, Inc. in December 2023 (Appendix F). The Phase I reviewed historical aerial photographs of the subject property that found the property has remained vacant, unimproved land since at least 1948. The Phase I also reviewed regulatory records and found no records regarding hazardous substances use storage or releases, or the presence of underground storage tanks (USTs) and activity and use limitations (AULs) on the subject property with the Cal/EPA or the San Bernardino County Fire Protection District Hazardous Materials Divisions.

GP EIR

The GP EIR (Section III.G, page III-110 et.seq) found that uses and activities proposed or undertaken within the Town of Apple Valley as a result of the General Plan update could result in the use of hazardous materials or create a hazardous condition within the Town or annexation areas. Hazardous materials transport, storage and handling are highly regulated at the federal, state, regional and local level. The long-term build out of the General Plan and annexation areas was expected to continue to be regulated by multiple agencies.

While businesses are required by federal, state, and local regulations to properly transport, use, and dispose of hazardous materials in the Town and its Sphere of Influence, it is possible that upset or accidental conditions may arise which result in the release of hazardous materials into the environment. However, compliance with the Town's Multi Hazard Plan and the implementation of the uniform regulations to manage the risk associated with transportation of hazardous materials will function to minimize the hazard risks that may occur.

The EIR set forth the following mitigation measures to reduce the number and severity of hazardous materials incidents within the Town of Apple Valley and its Sphere of Influence, and to ensure the protection of future residents, visitors and lands from exposure to such materials. Impacts will be less than significant.

Mitigation Measures

The following Mitigation Measures are from pages III-121 through -122 of the GP EIR.

1. The Town will 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.
2. The Town shall maintain appropriately managed access routes to facilitate the transport of hazardous and toxic materials.
3. The Town will work with the County Sheriff's Department, Caltrans, and CHP, to regulate the transport of hazardous materials along local roadways, state highways and routes, and interstates in the Town or the vicinity.
4. The Town will coordinate with the Apple Valley Fire Protection District and the San Bernardino County Environmental Health Department to assure improved response to, and capability for, handling hazardous materials incidents.
5. Future development within the General Plan area shall be required to comply with all applicable federal, state, and regional permitting requirements for hazardous and toxic materials generation and handling, including but not limited to the following:

a. If it is determined that hazardous wastes are, or will be, generated by any proposed operations, the wastes must be managed in accordance with the California Hazardous Waste Control Law (California Health and Safety Code, Division 20, chapter 6.5) and the Hazardous Waste Control Regulations (California Code of Regulations, Title 22, Division 4.5). If so, the proposed facility shall obtain a United States Environmental Protection Agency Identification Number by contacting (800) 618-6942.

b. If hazardous wastes are (a) stored in tanks or containers for more than ninety days, (b) treated onsite, or (c) disposed of onsite, then a permit from the Department of Toxic Substances Control (DTSC) may be required. If so, the proposed facility shall contact DTSC at (818) 551-2171 to initiate pre-application discussions and determine the permitting process applicable to the facility.

6. Developers shall submit for approval a detailed description of any hazardous materials use, as well as detailed plans for location of any hazardous materials storage and management facilities to the Apple Valley Fire Protection District.
7. 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.
8. During project construction and implementation, the handling, storage, transport, and disposal of all chemicals, including herbicides and pesticides, runoff, hazardous materials and waste used on, or at, the project site, shall be in accordance with a project's BMP/Integrated Pest Management Plan, other relevant regulatory plans, and applicable County, state, and federal regulations.
9. The Town shall require all business that use, store, or produce hazardous material to comply with the County's Business Plan in addition to all Town regulations.
10. The Town shall annually update the SEMS Multihazard Functional Plan to ensure that emergency shelters and emergency evacuation routes are responsive to changing community needs.
11. The Town shall maintain documentation of known hazards to public health and safety and shall make this information available to government officials and organizations, emergency response personnel, and the general public.

Proposed Project Impacts

a, b) Less Than Significant Impact. Construction of the Project could involve the use of some hazardous and flammable substances, such as vehicle fuels and oils for the operation of heavy equipment. Other materials required for the potential emergency maintenance of heavy equipment may also be required on-site during construction, however such materials would not be in quantities or stored in a manner that would pose a significant hazard to the public because they would be subject to local, County and state regulations. All potentially hazardous materials used during construction of the proposed development must be stored, used, and disposed of in accordance with manufacturers' instructions and handled in compliance with applicable federal, State, and local regulations.

Once operational, the Project will likely use cleaners and solvents as part of daily cleaning and maintenance operations, but is not expected to transport, use or dispose of large quantities of hazardous materials. The Project may also require the use, storage, and potential transport of refrigerants. According to the U.S. EPA, while most refrigerants are toxic, flammable, and/or highly reactive, system design, engineering controls, and other strategies mitigate the risks associated with these substances, which are governed by County, State and federal law and regulations. In order to ensure the safe use and handling of refrigerants, the Project will be required to comply with Title 24 §605 Mechanical Refrigeration of the California Fire Code, in addition to applicable federal, State and local regulations, including the Hazardous Materials Transport Act, the Resource Conservation and Recovery Act (RCRA), California Occupational Safety and Health Administration, California Fire Code and Division 20, Chapter 6.5, of the Health and Safety Code, described above. Compliance with standard requirements and requirements of law will assure that impacts remain less than significant. No new or increased severity of impacts would occur compared to those identified in the GP EIR.

c) **No Impact.** The Project is located on the northeast corner of Dakota Road and Fresno Road, approximately 2.75 miles northwest of Sycamore Rocks Elementary School, located at 23450 S Road. The site is at a distance greater than a quarter mile to an existing school, reducing the probability of negatively impacting a sensitive public area. As discussed above, the Project will not handle or store hazardous material in significant quantities to inflict public or environmental harm. Therefore, the development will not emit hazardous emissions or handle hazardous or acutely hazardous materials, substance, or waste within one-quarter miles of an existing or proposed school. There will be no impacts, and no new or increased severity of impacts would occur compared to those identified in the GP EIR.

d) **No Impact.** A Phase 1 Environmental Site Assessment was prepared for the Project by Partner Engineering and Science, Inc. in December 2023 (Appendix F). The purpose of the Phase I was to identify existing or potential Recognized Environmental Conditions, as defined by ASTM Standards E1527-21, that may affect the Project site that: 1) constitute or result in a material violation or a potential material violation of any applicable environmental law; 2) impose any material constraints on the operation of the subject property or require a material change in the use thereof; 3) require clean-up, remedial action or other response with respect to Hazardous Substances or Petroleum Products on or affecting the subject property under any applicable environmental law; 4) may affect the value of the subject property; and 5) may require specific actions to be performed with regard to such conditions and circumstance.

The Phase I found no evidence of Recognized Environmental Conditions (RECs), Controlled Recognized Environmental Conditions (CRECs), Historical Recognized Environmental Conditions (HRECs) or Business Environmental Risks (BERs) in connection with the Project site.

The Project site is not listed in the California Department of Toxic Substance Control Hazardous Waste and Substance database, as required by CEQA and the Government Code §65962.5. In addition, the Project's site is not listed within a LUST Cleanup Site, Cleanup Program Site, or Military Cleanup Site, according to the State Water Resources

Board GeoTracker database. The Project will not contribute to existing or create new hazardous site. No impacts are anticipated, and no new or increased severity of impacts would occur compared to those identified in the GP EIR.

e) **Less Than Significant Impact.** The Apple Valley Airport extends at a northeast to southwest angle east of the Project site. The Project site occurs within the Town's Airport Overlay District (A-2) and is subject to zoning restrictions set by this designation. Based upon the Apple Valley Comprehensive Airport Land Use Plan (AVCALUP), the subject property is located outside the airport's 65 CNEL noise compatibility contour (AVCALUP Figure 5-2). According to the General Plan, the 65 dBA noise contour for the airport has been identified as occurring within the Airport's property, and noise levels on surrounding lands are not significantly affected (AVGP Noise Element, pg. IV-49). No land use incompatibilities with the current or long-term operations of the airport are expected. Impacts will be less than significant. No new or increased severity of impacts would occur compared to those identified in the GP EIR.

f) **Less Than Significant Impacts.** According to the Town's Local Hazard Mitigation Plan, interstates serve as major emergency response and evacuation routes.[19] Dakota Road would connect the Project to Corwin Road and Dale Evans Parkway which connects to Interstate 15 and Interstate 18. The Project proposes the improvement of adjacent streets, but will not modify the Town's existing street grid. The proposed development would not impede access to major evacuation routes and impacts would be less than significant.

Apple Valley's Emergency Operations Plan integrates with the Town's General Plan, zoning regulations, and other plans. Given that the Project's proposed industrial land uses align with the policies established in the NAVISP, it can be assumed that the Project will not interfere with the Emergency Operations Plan and impacts would be less than significant. No new or increased severity of impacts would occur compared to those identified in the GP EIR.

g) **No Impacts.** The California Department of Forestry and Fire Protection (CalFire) has mapped areas of significant fire hazards in the state through its Fire and Resources Assessment Program (FRAP). There are no state responsibility areas or very high fire hazard severity zones in the Project vicinity. The nearest fire hazard severity zones are located miles away to the south, near Bear Valley Road and Central Road. Buildout of the site is subject to the same General Plan policies and fire department requirements on fire safety and emergency access. There would be no impact as a result of the proposed Project relating to wildfires. No new or increased severity of impacts would occur compared to those identified in the GP EIR.

Mitigation Measures: None required.

Monitoring: None required.

[19] Town of Apple Valley Local Hazard Mitigation Plan 2017 Update, p.4-76.

X. HYDROLOGY AND WATER QUALITY Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?			✓	
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?			✓	
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:			✓	
i) result in substantial erosion or siltation on- or off-site;			✓	
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;			✓	
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or			✓	
iv) impede or redirect flood flows?			✓	
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?			✓	
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?			✓	

Sources: American Water Works Association Research Foundation Commercial and Institutional End Uses of Water; Apple Valley General Plan EIR; Hydrology Study, Dakota & Gustine Warehouse, prepared by Merrell-Johnson Companies, September 3, 2024; Preliminary WQMP for Dakota Warehouse, prepared by Merrell-Johnson Companies, 2024; Liberty Utilities – Apple Valley Final 2020 Urban Water Management Plan, June 2020; Jurisdictional Assessment of Wetlands and Waters Dakota Road Project, prepared by WSP, August 2, 2024.

Environmental Setting

Apple Valley is located in the southern portion of the Mojave Desert with a climate characteristic of a high desert ecosystem, which experiences extreme fluctuations of daily temperature, strong seasonal winds, and receives less than 5 inches of annual precipitation. The region and the Town

are impacted by winter storms, local thunderstorms, and summer tropical storms, all of which have the potential to produce substantial precipitation. The Town has historically been subject to flooding and associated hazards, such as mudflows, during severe summer storm events.

The Project area is located within the South Lahontan Hydrologic Region and Upper Mojave River Valley Groundwater Basin. Recharge of the Upper Mojave River Valley Groundwater Basin occurs from direct percolation of precipitation, ephemeral stream flow, infrequent surface flow of the Mojave River, and underflow of the Mojave River into the basin from the southwest.

The Mojave Basin Area encompasses a total of 1,400 square miles and has an estimated total water storage capacity of nearly 5 million acre-feet. Pursuant to the Sustainable Groundwater Management Act of 2014 (SGMA), the Upper Mojave River Valley Groundwater Basin was named as an adjudicated groundwater basin and is exempt from the SGMA requirement of developing a Groundwater Sustainability Plan (GSP). As part of the adjudication, the Mojave Water Agency (MWA) was appointed Watermaster of the Mojave Basin. For management purposes, the MWA splits the Mojave River watershed (and associated groundwater resources) into five distinct subareas, including: 1) Oeste, 2) Este, 3) Alto, 4) Centro, and 5) Baja. The Project area is in the Alto Subarea which is generally bounded on the south by the non-water-bearing rocks of the San Bernardino Mountains, by the non-water bearing rocks of the San Gabriel Mountains to the west, and by the Helendale Fault on the north-northeast.

Domestic Water

Liberty Utilities provides domestic water service to the majority of Apple Valley, including the Project site. The Liberty – Apple Valley system has 20,957 service connections and a total supply of 14,979 acre-feet (AF) as of 2020, with a projected water supply and demand of 18,538 AF in 2045.[20] The system currently sources 100% of its water from the Mojave groundwater basin from 18 deep wells located throughout the community.

Liberty Utilities does not use surface water or purchased imported water supplies to meet its water demands. However, the MWA imports water from the California State Water Project to spread in the Mojave River to help recharge the ground water. There are potential water supply projects and programs that may allow Liberty Utilities to enhance and augment existing water supplies, including water transfer opportunities and recycled water beneficial uses.

Water Quality

Water quality is generally good to excellent in the Town of Apple Valley. Exceptions are generally limited to zones of high mineral concentrations, particularly areas with older alluvium where the groundwater receives very little recharge and limited groundwater movement.

The US EPA sets drinking water standards to control the level of contamination in the nation's drinking water. The USEPA and the State Water Resources Control Board (SWRCB) are the agencies responsible for establishing drinking water quality standards in California. According to the annual Liberty Utilities Water Quality Report, there have been no contaminants detected that exceed any federal or state drinking water standards.[21] Currently, water quality does not affect water supply reliability in the Liberty Utilities service area.

[20] Liberty Utilities – Apple Valley Final 2020 Urban Water Management Plan, June 2021.

[21] Annual Water Quality Report: 2024 Consumer Confidence Report on Water Quality for 2023, prepared by Liberty Utilities.

Floodplain Management

The San Bernardino Flood Control District ("Flood Control District") implements broad management functions, including flood control planning, construction of drainage improvements for regional flood control facilities, and watershed and watercourse protection related to those facilities. The Town is responsible for local drainage management and requires development projects integrate on-site stormwater management and detention facilities to reduce the needed size of downstream facilities, create opportunities for groundwater recharge, and provide for enhanced open space and/or recreation areas.

GP EIR

Drainage and Stormwater

The GP EIR (Section III.H page III-123 et.seq.) found that future development under the General Plan update had the potential to alter existing drainage patterns and, in some areas, to result in the accumulation of a significant amount of debris during large storms. The General Plan update included goals, policies and programs designed to limit flood hazards and protect natural watersheds as well as lives and properties in areas subject to flooding. General provisions for flood hazard reduction are also provided in the Apple Valley Development Code, Grading Ordinance, and Subdivision Ordinance and apply to all lands in Areas of Special Flood Hazard.

The EIR set forth mitigation measures that requires site-specific analyses be conducted prior to development that identify potential hazards, and set forth effective mitigation measures and development standards that minimize impacts from structural failure and promote the health and safety of residents. With implementation of these mitigation measures, impacts would be reduced to less than significant levels.

Water Resources

Section III-I, Water Resources/Quality, of GP EIR determined that the General Plan Update would directly increase water consumption with the addition of 64,749 dwelling units. This represented an increase of approximately 13,696 units, or 27.4% over the previous General Plan, which planned for 50,053 units. Residential development in the General Plan area is expected to generate a population of approximately 194,931. The proposed Plan will also result in a proportional increase in commercial, industrial, public and other types of development.

All land uses within the Town limits and Annexation areas were expected to result in total water demand of 95,999.8 acre-feet per year at build out. Residential development associated with implementation of the proposed General Plan and the Annexations was estimated to result in water demand of 45,396.2 acre-feet per year at build out. Commercial, industrial and other land uses were expected to result in water demand of 50,603.6 acre-feet per year at build out. It was concluded that the 2005 AVRWC UWMP demonstrated that AVRWC had sufficient water supplies for its service area through year 2025 under normal and drought conditions. Nonetheless, the GP EIR determined that build out of the General Plan area, including the Annexations areas, would result in significant impacts to water resources without mitigation.

The GP EIR provided domestic water mitigation measures in Section I, Water Resources/Quality and Section M, Public Services. These mitigation measures are listed, below, and reduce impacts to less than significant levels.

Water Quality

The GP EIR determined that as the proposed General Plan and Annexation areas build out, the potential for groundwater contamination would increase. The GP EIR determined the General Plan goals, policies and programs would reduce impacts to water resources to less than significant levels, as well as to ensure that federal, state, local and all other applicable pollution control standards continue to be implemented.

The following Hydrology Mitigations Measures are from Section H, Hydrology, pages III-142 through -144 of the GP EIR.

1. The Town shall monitor its Master Plans of Drainage every five years to ensure that it reflects changes to local and regional drainage and flood conditions.
2. The Town shall upgrade its local and regional drainage system through proactive planning and coordination with other responsible agencies to ensure the provision of a comprehensive system of flood control facilities throughout the Town.
3. The Town shall continue to implement flood-warning systems, and shall maintain its public outreach and information programs to educate and inform the public of potential flood hazards and provide potential solutions made available to them.
4. The Town shall develop evacuation plans in the 100-year and 500-year flood zones where critical facilities, including but not limited to schools, hospitals and nursing homes are located.
5. To ensure that water storage tanks retain their structural integrity during an earthquake, and so that water demands after the earthquake can be met, the Town shall coordinate with all water purveyors in the planning area to evaluate and retrofit all above-ground water tanks in the Town as necessary, based on their vulnerability to seismic hazards, to ensure compliance with the most current water tank design criteria.
6. Major drainage facilities, including debris basins and flood control channels, shall be designed to maximize their use as multi-purpose recreational or open space sites, consistent with the functional requirements of these facilities.
7. The Town shall assure that adequate, safe all-weather crossings over drainage facilities and flood control channels are provided where necessary, and are maintained for passage during major storm events.
8. The Town shall continue to restrict development in those areas that are FEMA-mapped as being subject to flooding, and shall require site-specific hydrologic studies for future development to determine flooding potential for other areas.
9. Future development proposals shall be required to submit a hydrology study and mitigation plan which conforms to the Apple Valley Master Plan of Drainage or the Apple Valley West/Desert Knolls Master Plan of Drainage and other regional and local requirements, policies, and programs.
10. All new development shall be required to incorporate, at the developer's expense, adequate flood control mitigation, such as grading that prevents adverse drainage impacts to adjacent properties, on-site retention of runoff, and the adequate siting of structures located within flood plains and to, as part of project development.
11. Future flood control plans required of developers shall include specific recommendations and/or designs regarding pollution control techniques to be applied to keep pollutants, including herbicides, pesticides, and other hydrocarbons out of surface and groundwaters. Mitigation measures may include specifically designed open space areas

such as artificial wetlands where nuisance and otherwise contaminated on-site runoff shall be retained separate from channels conveying off-site flows.

12. Bridging of General Plan roadways within new development projects shall be the responsibility of the developer on whose project the bridge occurs, and shall be included as a condition of approval.
13. Stormwater retention shall be enforced through the development review process and routine site inspection.
14. The Town shall pursue all credible sources of funding and continue to explore County funding, Cobey-Alquist Flood Plain Management Act, other State programs, and Federal funding options for local and regional drainage improvements needed for adequate flood control protection.
15. Capital Improvement Plans for drainage management and control shall be developed, updated and maintained and shall be based upon the Apple Valley Master Plan of Drainage and the Apple Valley West/Desert Knolls Master Plan of Drainage.
16. The Town shall consider the establishment of Fair Share Cost Allocations or Assessment Districts for purposes of funding necessary drainage improvements in particular geographic areas throughout Apple Valley.
17. In conjunction with SBFCD the Town shall coordinate and cooperate in the filing of appropriate FEMA application materials to incrementally secure amendments to the Flood Insurance Rate Maps of the Town, consistent with existing and proposed improvements.

The following Mitigations Measures are from Section I, Water Resources/Quality, pages III-166 through -168 of the GP EIR.

Water Conservation

Water conservation is an essential short and long-term resource management strategy, given increasing demands on water supplies in the General Plan area, including the Annexation lands. Efforts to reduce per capita consumption are a priority. The implementation of water-efficient landscaping design and management is among the best conservation opportunities. The Town's Water Conservation Plan ordinance includes water regulations that prohibit wasteful water practices, including washing driveways and walkways with water and excessive runoff of landscape irrigation water and washing driveways, and establishes penalties for violation of these regulations. MWA has established a goal of 10% municipal conservation by 2020. The proposed General Plan recommends that the Town follow the recently adopted MWA UWMP.

The Town will continue its involvement in the Alliance for Water Awareness and Conservation (AWAC). As noted previously, the AWAC has set goals to reduce regional water use by 10% gross per capita by 2010 and by 15% gross per capita by 2015.

General Mitigation Measures

Groundwater depletion and contamination are regional and local issues that affect groundwater subareas, which are not defined by jurisdictional boundaries. Conservation and efficient use of water will continue to be foundational to community planning and development in Southern California. Further, to help assure and optimize long-term natural recharge of the Mojave River Basin and the respective subareas, the region's major mountain watersheds must be protected. Effective stormwater management can also preserve and protect groundwater quality. The Town has an integral role in the protection and management of this finite, essential resource.

The General Plan update includes a variety of goals, policies, and programs that are intended to provide and maintain a dependable supply of safe, high-quality domestic water to meet the needs of all segments of the community. To reduce potential impacts to water resources associated with implementation of the General Plan and subject Annexations to less than significant levels, the following mitigation measures shall be implemented:

1. The Town shall coordinate and cooperate with the Mojave Water District, the Apple Valley Ranchos Water Company, Golden State Water Company and other water purveyors within the Town to strengthen and expand educational and public relations programs that convey the importance of water conservation and water-efficient landscaping.
2. The Town shall promote, encourage and participate in the development of water management and conservation strategies through the Alliance for Water Awareness and Conservation, the San Bernardino Association of Governments (SANBAG) and its member jurisdictions, as well as the Mojave Water Agency, Apple Valley Ranchos Water Company, Golden State Water Company, and other water purveyors in the Town, on water supply and conservation programs.
3. The Town shall continue to implement its Water Conservation Plan ordinance and comply with State Assembly Bill 325 (AB 325) by limiting turfed areas in new projects, and requiring the use of native and other drought-tolerant planting materials, installing efficient irrigation systems and monitoring existing systems to ensure maximum efficiency and conservation.
4. The Town shall require that all new developments use water conserving appliances and fixtures, including low-flush toilets and low-flow showerheads and faucets. The Town shall require the application of water-conserving technologies in conformance with Section 17921.3 of the Health and Safety Code, Title 20, California Administrative Code Section 1601(b), and applicable sections of Title 24 of the State Code.
5. The Town shall encourage the use of faucets, showerheads and appliances in new development that exceed Title 20 and Title 24 water efficiency requirements.
6. The Town shall require that future development in the General Plan area has an adopted Water Supply Assessment in compliance with AB 610 and 221 prior to approval of development plans.
7. The Town shall actively support and encourage the continuation and expansion of groundwater recharge efforts, and shall confer and coordinate with MWA and AVRWC regarding the possible future use of tertiary treated wastewater as a means of reducing demand for groundwater resources. 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.
8. The Town shall consider approaches and mechanisms that facilitate financing and construction of expanded wastewater collection facilities.
9. 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.
10. 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.

11. The Town shall require that the development and maintenance of project-specific on-site stormwater retention/detention basins that implement the NPDES program, enhance groundwater recharge, complement regional flood control facilities, and address applicable community design policies subject to all applicable regulations, standards and guidelines.
12. The Town shall evaluate the potential of all proposed land use and development plans to create groundwater contamination hazards from point and non-point sources. The Town shall confer and coordinate as necessary with appropriate water agencies and water purveyors to ensure adequate review.
13. The Town shall coordinate with Apple Valley Ranchos Water Company, Golden State Water Company, and other water purveyors that serve the Town and its Sphere of Influence to establish/continue incentive programs to encourage that existing development be retrofitted to utilize water conserving fixtures, and landscaping and irrigation materials and controllers.
14. The Town shall restrict the amount of turf planted on all new commercial, industrial, public facilities, multi-family and front yards of single-family residential projects to reduce the amount of water used for irrigation.
15. Irrigation design that reduces overspray and uses conservation techniques shall be required for all new commercial, industrial, public facilities and multi-family projects which will reduce the amount of water used and wasted on irrigation.
16. The Town shall confer and coordinate with the Victor Valley Wastewater Reclamation Authority to explore the possible future provision of recycled/reclaimed wastewater that can serve new and existing development.
17. The Town shall consider incentive programs for the removal of existing turf and replacing the turf with drought tolerant desert landscaping that requires less water.
18. The Town shall proceed with the agreement entered into with the City of Hesperia to design two (2) wastewater reclamation plants that will enable reclaimed water to be used to irrigate Town parks and the Apple Valley Country Club Golf Course.

The following Mitigation Measures are from Section M Public Services, page III-250 of the GP EIR.

1. All future development projects shall be subject to review by the Town and the applicable water purveyor to assess their potential impact on local groundwater supplies.
2. The Town and applicable water purveyor shall coordinate for the extension of infrastructure to serve future development in Annexations 2008-001 and 2008-002.
3. The use of drought tolerant landscaping shall be encouraged in public and private development.
4. Future development shall required to conform to standards set forth in Section 17921.3 of the Health and Safety Code, Title 20, California Administrative Code Section 1601(b), and applicable sections of Title 24 of the State Code. These measures include the installation of low-flush toilets, low-flow showerheads and faucets in all new construction.

Proposed Project Impacts

a) **Less Than Significant Impact.** A project would have a significant impact on surface water quality if discharges associated with its development would create pollution, contamination, or nuisance as defined in Section 13050 of the California Water Code (CWC) or would cause regulatory standards to be violated, as defined in the applicable National Pollution Discharge Elimination System (NPDES) stormwater permit.

The Project will be required to connect to the sanitary sewer and domestic water systems. Liberty Utilities will provide water service, and the Victor Valley Wastewater Reclamation Authority will provide sanitary sewage treatment for the Project. Both these agencies are required to comply with the requirements of the State Regional Water Quality Control Board relating to water quality standards and wastewater discharge requirements that minimize impacts to regional groundwater quality.

Town and Regional Water Quality Control Board reviews and permitting will ensure that construction and operational best management practices (BMPs) satisfy local, state, and federal standards. BMPs typically include minimizing impervious areas, maximizing permeability, minimizing directly connected impervious areas, incorporating trees and landscaping, and conserving natural areas. In addition, the Town will require preparation of a Storm Water Pollution Prevention Plan (SWPPP) in conformance with the National Pollutant Discharge Elimination System (NPDES) prior to the issuance of grading permits.

Furthermore, the SWRCB has designated the Town of Apple Valley as a Traditional Small MS4. As part of Phase II regulations promulgated by the U.S. EPA, the SWRCB adopted the Small MS4 Permit, which requires MS4s serving populations of 100,000 people or less to develop and implement a stormwater management plan with the goal of reducing the discharge of pollutants to the maximum extent possible. A preliminary Water Quality Management Plan (WQMP) was prepared for the project to comply with Town requirements and the Phase II Small MS4 General Permit for the Mojave River Watershed that integrates source control BMPs and low impact development (LID) designs into the proposed Project to the maximum extent feasible to reduce the potential for pollutants to enter stormwater runoff. A final WQMP will be prepared for the proposed Project prior to the issuance of grading permits.

In summary, the implementation of existing regulations and standards will ensure that development in the Project will not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality. Impacts are expected to be less than significant.

b) **Less Than Significant Impact.** The Project proposes 570,752 square feet of warehouse area, and 56,448 square feet of supporting office space for a total of 627,200 square feet. During construction, water use will be temporary and limited to site watering as required by the Project dust control plan (MDAQMD Rule 403), and the water would return to the aquifer via infiltration.

Water demand for the Project when operational was also calculated. The projected indoor commercial (office) operational water usage factor is based on the American

Water Works Associated Research Foundations (AWWARF's) Commercial and Industrial End Uses of Water. The operational water demand factor for the proposed warehouse area is based on the factor of 3.4 gallons per square foot per year provided in the U.S. Energy Information Administration 2012 Commercial Buildings Energy Survey. As shown in Table 11, the total projected indoor commercial and industrial water demand for the Project is projected to be 8.35 AFY.

Table 11
Project Indoor Industrial Water Demand

Use	Indoor Area (ft^2)	Water Demand Factor(gal/SF/year)[1]	Water Demand (gpd)	Water Demand (AFY)
Office[2]	56,448	15	2,319.78	2.40
Warehouse	570,752	3.4	5,316.59	5.95
TOTAL	**627,200**	**--**	**10,729.41**	**8.35**

[1] Office water demand factor from AWWA Commercial and Industrial End Uses of Water; Warehouse water demand factor from U.S. Energy Information Administration 2012 Commercial Buildings Energy Consumption Survey, Water Consumption in Large Buildings Summary.
[2] Assumes 9% of gross floor space is office use, per site plan parking calculations.

The projected outdoor irrigation water usage is based on the Maximum Applied Water Allowance (MAWA) equation from the Town of Apple Valley Ordinance No. 479, which is compliant with the Department of Water Resources Code of Regulations Title 23, Division 2, Chapter 2.7 "Model Water Efficient Landscape Ordinance". The projected outdoor irrigation water allowance for the Project is 11.43 AFY as shown in Table 12 below.

Table 12
Project Outdoor Irrigation Water Demand

Use	Landscaped Area (ft^2)	ETo (in/yr)[1]	ETAF[2]	Conversion Factor (gal/ft^2)[3]	Water Demand (gpd)	Water Demand (AFY)
Landscaping	201,664	66.2	0.45	0.62	10,204.64	11.43

Water demand = Area (SF) x ETo x ETAF x 0.62
[1] Reference Evapotranspiration (ETo) from Town of Apple Valley Ordinance No. 479.
[2] Evapotranspiration Adjustment Factor (ETAF) from Town of Apple Valley Ordinance No. 479.
[3] Conversation Factor from Town of Apple Valley Ordinance No. 479.

As shown in the tables above, the total projected water demand for the Project is 19.78 AFY. Liberty Utilities' actual domestic water demand for 2020 was 10,067 acre-feet (AF), and the projected water demand in 2045 is 18,538 AF.[22] The Project's water demand of 19.78 AFY therefore accounts for approximately 0.1% percent of the expected total planned increase in demand by 2045.

According to Liberty Utilities' Urban Water Management Plan, the water provider has adequate water supplies to meet demand during normal, single-dry, and multiple dry years for at least the next 25 years. The Project is also consistent with the General Plan

[22] Liberty Utilities Urban Water Management Plan (2020), Table 6-9.

land use designation for the property, on which Liberty Utilities based its water demand projections. Given that the Project's water demand would represent a small fraction of the provider's total supply, and that the land uses proposed were planned for in the Urban Water Management Plan, it can be assumed that adequate supply would be available for the Project without causing substantial decreases in groundwater supplies or interfering substantially with groundwater recharge. Impacts would be less than significant.

c i-iv) Less Than Significant Impact. There are no streams or rivers located onsite. A project-specific Jurisdictional Assessment of Wetlands and Waters was prepared by WSP in August 2024 (Appendix C). The field study was conducted on July 3, 2024, which found no ordinary high-water marks (OHWM) or evidence of any recent flows on site.

The Project will result in grading, excavation, and other modifications to the ground surface, and has the potential to result in erosion and/or siltation on- and off-site. In compliance with the National Pollutant Discharge Elimination System (NPDES) the Project will mitigate silt runoff from erosion and construction by implementing BMPs, which would include silt fencing, track out prevention, and other measures approved by the Town via the Project SWPPP and WQMP. These measures will prevent the Project from depositing silt on- and off-site. These regulations required by the NPDES permit, WQMP, and SWPPP will reduce the Project's impact on surface and groundwater quality to less than significant levels.

A project-specific Preliminary Hydrology Study was prepared by Merrell Johnson Companies in September 2024 (Appendix G). According to the Hydrology Study, stormwater currently flows from the north and from the east. Stormwater runoff from the north will be intercepted within the proposed street improvements of Gustine Street and conveyed around the proposed warehouse with a storm drain system in the proposed street right-of-way. The storm drain system will convey runoff flows to their historical flow location along the southern project boundary on Fresno Road. Stormwater runoff from the east will be intercepted within the street improvements of Ramona Road, and will also be conveyed around the warehouse facility within a storm drain system in the proposed street right-of-way to their historical flow location within Fresno Road. The two storm drains connect on the north side of Fresno Road and convey the storm runoff south of Fresno Road to an existing drainage swale where the runoff will bubble out into the swale following its historical flow path.

The proposed Project will be required to comply with the Town's storm water retention requirements, including the approval of a project-specific final hydrology study and water quality management plan prior to the issuance of grading permits. In addition, implementation of Town required BMPs will reduce pollutants of concern that may enter nearby receiving waters and help reduce short and long-term water quality impacts caused by the construction and operation of the proposed Project. Approval of the WQMP, SWPPP, and the required BMPs will reduce impacts to surface waters by reducing erosion, siltation, and eliminating pollutants in storm flows. With the implementation of this standard requirement, the impacts to downstream water bodies associated with surface water pollution will be less than significant.

Implementation of the proposed Project would not result in any new impacts or increase the severity of a previously identified significant impact as previously analyzed in the GP EIR. Development of the site would increase the amount of impervious surfaces in the Town at buildout, but would not substantially change the amount or location of impervious surfaces, since the Project site is designated for industrial land uses. The Project will be required to comply with all Town regulations under the MS4 permit, including the implementation of BMPs and erosion control to prevent surface and ground water pollution, as described above. Buildout of the site is required to comply with applicable regulations, and policies set forth in the General Plan on protection of local hydrology and water quality. Implementation of the same regulatory framework and policies as analyzed in the GP EIR will ensure that overall impacts are similar to those previously identified in the GP EIR. Therefore, implementation of the proposed Project would not result in any new adverse impacts or increase the severity of previously identified significant impacts identified in the EIR.

d) **Less Than Significant Impact**. The Project site is designated Zone D on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) (Map No. 06071C5830H). Zone D identifies areas of potential but undetermined flood hazards, as no analysis of flood hazards has been conducted. Therefore, the extent to which the Project area is at risk of flooding is unknown. The Project hydrology study, however, quantified on- and off-site flows to assure that the site's hydrology design could meet the Town's requirement to contain the 100 year storm, and demonstrates that the site will not flood under these conditions.

There is no risk of inundation resulting from dam failure as the Project site is outside of any dam inundation areas. The Cedar Springs and Mojave Dams in the San Bernardino National Forest southwest of Apple Valley have performed well during seismic events, neither has experienced failure, and neither is in the vicinity of the Project site. Any potential release of floodwaters from the dams is expected to be confined to the Mojave Riverbed (4± miles west of the Planning Area). The site is not near an ocean or river, in which tsunami and seiche zones would be a significant inundation hazard.

e) **Less Than Significant Impact**. Liberty Utilities will provide water service, and the Victor Valley Wastewater Reclamation Authority will provide sanitary sewage treatment for the Project. Both these agencies are required to comply with the requirements of the State Regional Water Quality Control Board relating to water quality standards and wastewater discharge requirements that minimize impacts to regional groundwater quality. As described above, the Town is not subject to SGMA, but the Liberty Utilities UWMP demonstrates the sufficiency of its water supplies, and the Project is consistent with the land use assumptions made in the UWMP. The Project will have less than significant impacts on water management plans.

Mitigation Measures: None required.

Monitoring: None required.

XI. LAND USE AND PLANNING Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Physically divide an established community?				✓
b) 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?			✓	

Sources: North Apple Valley Industrial Specific Plan (2006); Town of Apple Valley General Plan (2009); Town of Apple Valley Comprehensive, Airport Land Use Compatibility Plan (1995); Town of Apple Valley Development Code (as amended).

Environmental Setting

The Project site is located within the NAVISP and has a Specific Plan (SP) land use designation. The Specific Plan prescribes certain land use, zoning policies and development standards for projects within the NAVISP. Zoning for the Project site and adjacent parcels is Industrial – Specific Plan (I-SP), which permits a range of clean manufacturing and warehousing uses that must be conducted indoors and include perimeter landscaping that is complementary to surrounding streetscapes.

The Apple Valley Airport runway occurs 2,000± feet east of the Project site. As such, the Project site is situated within the Town's Airport Overlay District A-2 (see Exhibit 6). The perimeter of the A-2 zone is based on a 1,000-foot-wide flight path extended from the center line of the runway ends.[23] The Project is subject to the Land Use Compatibility Guidelines for the Airport Overlay District A-2 and is also subject to an airport compatibility review. Projects within an Airport Overlay District must comply with the zoning requirements of the underlying zone and the Airport Overlay District. When zoning guidelines conflict, the more restrictive guidelines take precedence.

Airport Overlay District restrictions and permitted uses are described in detail in the Town's Development Code Chapter 9.65. Uses that are considered to be hazardous and thus are prohibited are those that would generate smoke, water vapor or light interference which could impeded aircraft pilot's vision. Other prohibited uses include, but are not limited to, those that would attract a large number of birds such as a landfill, those that would reflect sunlight toward aircraft during takeoff, those that involve the manufacturing and/or storage of explosives, flammable and/or hazardous materials, and uses that generate electrical interference that could be detrimental to the operation of aircraft and aircraft instruments. The maximum permitted building height in the Airport Overlay District A-2 is 50 feet unless a lower maximum height is dictated by the underlying zone.

[23] "Comprehensive Airport Land Use Compatibility Plan," Town of Apple Valley, March 1995.

GP EIR

The Land Use Planning section was analyzed with the Population and Housing section (Section III.J, page III-169 et.seq.) in the GP EIR. Land Use Planning is analyzed here separately from Population and Housing (see section XIV below).

The GP EIR found that the General Plan Update, which included two annexations at the north end of Town, would increase the amount of residential, commercial, industrial, and public facility areas. Residential acreage would see an increase of 4,213.6 acres and would be able to accommodate an additional 11,230 units. Commercial space would increase by 23,198,699 square feet, and industrial space would increase by 17,101,238 square feet. Public Facilities areas would expand by 147.8 acres, and 40.3 acres would be added to Open Space land use areas.

Potential impacts to land uses within the existing Town limits were considered to be less than significant and would not affect or alter the Town's established pattern of development. However, the designation of Industrial land uses for Annexation 2008-001, located on the northwest region, would lead to significant and unavoidable impacts. The General Plan called for an increase in residential densities, an additional 773 acres of commercial lands, and 812.1 acres of industrial lands. These changes would significantly impact the character of the existing rural residential development despite the policies and programs that required buffers and other protections to separate non-residential uses from residential uses. The impacts of the land use changes in the Annexation area could not be mitigated to less than significant levels, and thus were declared significant and unavoidable. The Project site is located within Town limits, and not within Annexation 2008-001.

Annexation 2008-002, located in the northeast region, was a vacant mix of rural residential and industrial land uses, and would be changed to industrial use only. The GP EIR declared the General Plan land use changes would be less than significant since the land was vacant.

Land Use Planning Mitigation Measure

The General Plan includes policies and programs to address and mitigate land use incompatibilities. Even with these policies and programs, however, the impacts associated with land use in Annexation 2008-001 would remain significant and unavoidable. The GP EIR required the following mitigation measure to reduce impacts to the extent possible (page III-184 of GP EIR).

1. Individual project proposals, especially those involving a mix of residential and other uses, as well as those located near sensitive lands or uses, shall be fully evaluated during the project review process to assure that all land use compatibility issues are addressed and mitigated.

Proposed Project Impacts

a) No Impact. Aside from the Apple Valley Airport to the east, two distribution centers north of Los Padres Road, and scattered businesses south of Papago Road, this area of the NAVISP is mostly undeveloped land. The nearest residences in the NAVISP area include

several rural single-family units 1 mile south near the intersection of Dale Evans Parkway and Taos Road. Residential General Plan land uses occur outside of the NAVISP boundary east of Dale Evans Parkway, south of Waalew Road, and east of Central Road. The Project aligns with the designated General Plan land use for the Project parcel and surrounding vicinity and would not divide an existing community. There will be no impacts.

b) **Less than Significant Impact**. Upon completion, the intended use of the Project would include the storage commercial goods for distribution. The proposed warehouse Project complies with the standards and restrictions defined by the Town's General Plan Specific Plan land use designation and by the Town's Specific Plan – Industrial zoning designation. Furthermore, the Project's design would comply with the Town's site development standards for I-SP land use. Due to the Project's location within the Airport Overlay District A-2, the Project would be subject to an airport compatibility review and would be required to meet all development standards for the Airport Overlay District A-2 prior to construction. Therefore, the Project would not cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation. Less than significant impacts are anticipated.

Mitigation Measures: None required.

Monitoring: None required.

XII. MINERAL RESOURCES Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) 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?				✓
b) 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?				✓

Sources: Apple Valley General Plan (2009).

Environmental Setting

Within the Town, mineral resources are found primarily along or near the Mojave River or in the surrounding mountains, and include sand, gravel and stone deposits that are suitable as sources of concrete aggregate. There are no active mines on the Project site or in the vicinity. The nearest active mines are the Balanced Rock Mine and BGM Mine located approximately 17.2 miles and 13 miles south of the Project site, respectively. According to the GP EIR (Figure III-16), the Project site is located in an area designated Mineral Resource Zone 3a (MRZ-3a), which is an area containing known mineral occurrences of undetermined mineral resource significance.

GP EIR

According to the GP EIR (Section III.K, page III-185 et.seq.), the Town of Apple Valley designated 452.5 acres as mineral resource land use. Of this, approximately 111.56 acres were developed for mining and processing of aggregate materials, and an additional 340.95 acres were designated for the use and production of mineral resources. The EIR found mining activities may be incompatible with surrounding land uses, as for example, dust, noise, and heavy truck traffic may create conflicts with residential and commercial uses. The designation of mineral resources land use therefore had impacts on the potential uses of adjacent lands and development proposals could be submitted to the Town that may generate land use conflicts with aggregate and limestone quarries. However, the GP EIR determined that thoughtful application of the Town's land use policies, and adherence to the following mitigation measures, would reduce potential impacts from adjacent conflicting land uses to less than significant levels.

The following mitigation measures shall be implemented to reduce the impacts resulting from mineral resource extraction to acceptable levels (page III-190 to -191 of GP EIR).

1. The Town will allow aggregate, limestone and other mineral resource extractions only in cases where all residual hazards to public health and safety are effectively mitigated.
2. Development proposals adjacent to lands designated for Mineral Resources shall be reviewed to assure the inclusion of adequate buffering.
3. The Town shall cooperate with the Mojave Desert Air Quality Management District to ensure mineral extraction operations' compliance with air quality standards.

4. The Town shall coordinate closely with San Bernardino County and the State Department of Mines and Geology to assure that reclamation plans are current and adequately implemented at existing mining operations.

Proposed Project Impacts

a, b) No Impact. The Project does not propose mining activities and there are no mining land uses or activities in the vicinity. The Project site is in MRZ-3a where the significance of any mineral resource is considered speculative because no mining has historically occurred in the area. The Project site is not designated, used, or planned for mineral resource extraction or development. The proposed distribution warehouse is a permitted use under the industrial land use designation for the site in the General Plan and NAVISP. The development of the site will be in accordance with the requirements of the General Plan, NAVISP, Town Development Code, and other applicable regulations. Therefore, the Project would have no impact on mineral resources.

Mitigation Measures: None required.

Monitoring: None required.

XIII. NOISE Would the project result in:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generation of 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?			✓	
b) Generation of excessive groundborne vibration or groundborne noise levels?			✓	
c) For 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 or public use airport, would the project expose people residing or working in the project area to excessive noise levels?			✓	

Sources: Town of Apple Valley General Plan (2009); Town of Apple Valley Development Code Chapter 9.73 Noise Control.

Environmental Setting

Major noise sources in Apple Valley include vehicular traffic on highways and arterials, as well as aircraft, trains, and industrial operations. The primary noise source in the Specific Plan Planning Area is traffic, which includes trucks and buses. Warehouse and light industrial sites, can also generate noise from mechanical equipment, truck deliveries, loading and unloading operations, and trash compactors. The Project site is approximately 700 feet west of the Apple Valley Airport; therefore, aircraft noise is also considered a major noise source in the Project area. The Project site is 2.5± miles from the nearest rail line; therefore, rail is not a noise source in the Project area.

The Project site is currently vacant and undeveloped, and there are no noise sources on-site.

Apple Valley Noise Ordinance

Section 9.73 of the Town of Apple Valley Development Code establishes community-wide noise standards and emphasizes the value of an acceptable noise environment. It sets forth regulations for noise measurement and monitoring, special provisions and exemptions to the ordinance. It is intended to regulate excessive noise from existing uses and their activities. Violations are defined as a nuisance, and procedures, remedies and penalties to which violators are subject are included.

Section 9.73 also establishes standards for construction activities, which represent a temporary, but often disruptive, noise source. From 7 a.m. to 7 p.m. weekdays and on Saturdays, the maximum noise levels allowed for mobile and stationary equipment near single-family

residential development are 75 dBA Leq and 60 dBA Leq, respectively. These levels are reduced to 60 dBA Leq for mobile equipment, and 50 dBA Leq for stationary equipment during weekday nighttime hours between 7 p.m. to 7 a.m. and all day Sundays and holidays. These levels are increased by about 5 dBA Leq, across the board, for multi-family residential development, and by another 5 dBA Leq for areas characterized as "semi-residential/commercial."

Section 9.73 prohibits 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.

GP EIR

Permanent Noise Increases
The GP EIR considered noise levels at General Plan build out and found that noise levels would increase substantially over the ambient noise levels at the time, particularly along major Town roadways. Overall increases were determined to be significant and required mitigation. Mitigation Measures 6, 7 and 8, duplicated below, required the preparation of site-specific noise analyses for projects proposed adjacent to residential land uses, the siting of sensitive receptors away from noise generators, and the routing of traffic to major roadways to preserve residential neighborhoods' quiet environment, respectively.

The GP EIR also analyzed the location of truck routes and found that the majority of these routes were proposed in the area of the NAVISP, where land uses are proposed to be industrial and commercial, and thus less sensitive. Less than significant impacts were identified for truck routes.

Although no substantial change in rail traffic volume was anticipated as a result of General Plan build out, due to their being private rail lines for specific users, rail noise impacts were analyzed, and rail volume assumed to double by General Plan build out, to provide a conservative analysis. The results found that for the rail line adjacent to Quarry Road, noise levels of 49 dBA CNEL at 100 feet would be expected 4 to 8 times a day at build out of the General Plan. This level is below the Town's acceptable noise standards for all land uses.

Temporary Noise Increases
The GP EIR found that heavy construction equipment can generate noise levels of up to 100 dBA at 100 feet from the source, and that noise levels decrease at a rate of about 6 dBA with every doubling of distance. The GP EIR also found that noise reducing methods were available to reduce construction noise impacts, particularly noise generated adjacent to sensitive receptors. The GP EIR included Mitigation Measures 10 through 12, which required that construction equipment be equipped with mufflers, that stationary equipment be located away from sensitive receptors, and that construction hour limitations be enforced. The EIR found that with the implementation of these mitigation measures, construction impacts associated with build out of the General Plan would be reduced to less than significant levels.

Airport or Airstrip Noise Impacts
The GP EIR determined that there were no private airstrips in the General Plan area, but that the Apple Valley Airport would generate noise in the NAVISP area. The GP EIR analyzed the findings of the Airport's expansion plans and found that the 65 and 60 dBA CNEL noise levels were all

contained within the Airport property. In addition, the land uses proposed around the Airport in the NAVISP were less sensitive commercial and industrial uses. The GP EIR concluded that the Apple Valley Airport would have less than significant impacts on the Town's noise environment.

The following Mitigation Measures shall be implemented within the General Plan area to ensure the reduction of potential noise impacts to less than significant levels. Additional site-specific noise mitigation measures may also be required as appropriate for future development.

General Mitigation Measures

1. The Town shall continue to maintain and enforce its noise ordinance to ensure that noise impacts throughout the General Plan area are maintained at acceptable levels.
2. The Town shall continue to require that all project designs comply with Title 25 (California Noise Insulation Standards) by ensuring that interior noise levels for residential development do not exceed 45 dBA.
3. Final site plans for all proposed development projects in the General Plan area shall consider potential noise impacts, including residential site-orientation to shield outdoor living areas, incorporating additional setbacks from roadways, and constructing additional noise barriers where necessary.
4. All development shall be designed to include and comply with requirements of State Code for lateral and vertical unit-to-unit airborne sound isolation. For multi-family residential and hotel development, design shall include vertical impact sound isolation.
5. Project-specific development shall prepare construction drawings to determine exact specifications for window glass in buildings with unshielded first and second story windows.
6. The Town shall require an acoustical analysis for all commercial and industrial projects that are proposed adjacent to residential land uses or land use designations. The acoustical analysis shall evaluate potential noise impacts of the project and provide mitigation measures that are adequate to meet Town noise standards for residential land uses.
7. Sensitive receptors, which include schools, libraries and hospitals, shall, to the greatest extent feasible, be located always from major noise generators.

Off-Site Traffic Noise

8. The Town shall encourage a planning area-wide circulation pattern that loads primary traffic onto major arterials in order to limit local roadway traffic to the greatest extent feasible and thereby preserve local neighborhood noise environments.
9. The Town shall evaluate and monitor noise impacts associated with the addition of bus routes and bus stops near noise sensitive uses, in particular stops to be located along collector and local roads.

Construction Noise

10. All construction equipment operating in the General Plan area shall be equipped with properly operating and well-maintained mufflers to limit noise emissions.
11. To the greatest extent feasible, earth moving and hauling routes, and stockpiling and vehicle staging areas shall be situated away from existing residences.

12. Construction activities shall be conducted in compliance with the Town's Noise Ordinance to ensure that acceptable noise levels are achieved during sensitive time periods.

On-Site Stationary Noise Sources

13. Mechanical equipment for various buildings within the General Plan area shall be designed, selected and placed in consideration of the potential noise impacts on nearby residences within any development and in the surrounding community.
14. Appropriate sound barriers shall surround all public facilities generating disturbing levels of noise, such as water pumping stations.
15. Outdoor equipment such as cooling towers, air cooled condensers and refrigeration compressors and/or condenser units, as well as at air intake and discharge openings for building ventilation systems, shall be provided with silencers and/or barriers at or surrounding them, where necessary.

Proposed Project Impacts

a) Less Than Significant Impact. The Project site is currently vacant, undeveloped and there are no noise sources on-site. The proposed Project is located along Dakota Road, which is secondary roadway (ultimate 88-foot right-of-way), in an area planned for industrial land uses. Lands within the NAVISP surround the Project site on all sides.

The main noise source in the area is aircraft noise from the Apple Valley Airport and vehicular traffic on neighboring roadways. The surrounding area mainly consists of vacant land and scattered industrial and commercial development. The nearest sensitive receptor land uses are scattered residences located approximately 0.87 miles (4,614 feet) south of the Project site.

Construction Noise

Project construction will temporarily increase ambient noise levels from the operation of heavy equipment and machinery. Grading, construction, paving, and other development activities will involve the operation of graders, excavators, bulldozers, dump trucks, and similar equipment. Heavy equipment can generate noise levels ranging from 70 to 90 dBA at 50 feet from the source.[24] However, such equipment will be mobile and will not create a source of constant noise at any one location on the site.

Noise from construction activities will be temporary and will cease once the Project is operational. The Town Development Code Section 9.73.060.F restricts allowable construction hours to between 7:00 a.m. and 7:00 p.m. on weekdays (with exceptions) and establishes noise restriction guidance where construction and demolition occur near residential areas. In addition, the nearest sensitive receptors are 1 mile south, and will experience noise levels well below the Town's standards because of distance and its attenuating effects. These restrictions, muffling of construction equipment, and other measures will reduce construction noise impacts on surrounding land uses. Adherence to

[24] US Environmental Protection Agency, Noise from Construction Equipment and Operations, Building Equipment and Home Appliances (1971).

Town standards will ensure that construction-related impacts are compatible with the Municipal Code and less than significant.

Operational Noise

According to the General Plan, the noise level on Dakota Road south of Fresno Road is 67.7 dBA CNEL in the vicinity of the proposed Project (GP Table III-50). The Town's standard for exterior noise levels at industrial land uses is up to 75 dBA CNEL.

Operation of the proposed Project would occur within the enclosed building, with the exception of traffic on adjacent roadways, parking lot vehicle movements, as well as truck loading and unloading at designated loading bays. The Project building is proposed to be located 215 feet east of Dakota Road and south of Gustine Street, and 300 feet north of Fresno Road. HVAC units would be located on the roof of the proposed office portions of the building and would be screened by a 4- to 10-foot parapet. The parapet would be sufficiently tall to exceed the height of typical commercial HVAC and refrigeration units and would block these units from line of sight from adjacent properties.

According to the General Plan, the distance to the 65 and 70 dBA CNEL line on Dakota Road in proximity to the Project site is 138 feet and 70 feet, respectively. Within 140 feet of the centerline of Dakota Road, the only Project improvements will be landscaping and parking lots. Workers may be exposed to noise levels between 70 and 65 dBA in these areas, but their presence will be temporary, and the noise levels are acceptable for industrial uses. Impacts associated with noise from area traffic on the Project site are therefore expected to be less than significant.

The Project will generate traffic, and increase traffic noise as a result. However, the Project is consistent with the land uses allowed in the NAVISP, and those noise levels were therefore accounted for in the General Plan and its GP EIR. Noise from Project traffic would therefore contribute to the noise levels anticipated at General Plan build out on adjacent Project streets, and on roadways approaching the Project, including Dakota Road. However, since the land use proposed for the Project is consistent with that analyzed in the General Plan EIR and has therefore been included in the future noise projections for the area, the Project would not increase build out noise levels, and impacts would be consistent with those analyzed in the GP EIR.

Projects developed under the General Plan, including projects along surrounding roadways, will be required to comply with the Town's CNEL standards and Noise Ordinance, to assure that their on-site noise levels would not exceed Town standards. These requirements would be implemented with or without the proposed Project, based on development type and CNEL noise standard. Per Program 1.A.2 in the General Plan, the Town recommends design techniques to alleviate noise including building setbacks, sound walls, and earthen berms. Noise barriers, including walls and berms can provide noise level reductions ranging from approximately 5 dBA to 20 dBA,[25] depending on factors such as size, position, and material. The Project will conform to the Town's standards and include the required setbacks, walls and berms in the perimeter landscaping.

[25] Caltrans Technical Noise Supplement to the Traffic Noise Analysis Protocol (2013).

The Project will also generate noise from stationary equipment such as HVAC units. As described above, these units are proposed to be located on the roof of the building and will be screened by a solid parapet. Solid walls generally provide up to 20 dBA in noise attenuation, and commercial-grade HVAC units generate about 80 dBA. Therefore, the noise generated by roof-mounted HVAC units would be 60 dBA immediately outside the building envelope, 50 feet above ground. Noise levels from HVAC units at ground level would be further reduced by distance. Therefore, the primary source of stationary noise on the project site will be substantially less than the acceptable 75 dBA level for industrial uses, and impacts will be less than significant.

Town standards and requirements and Project design will assure that impacts associated with Project noise remain less than significant.

Summary

Noise generated at and from the Project will not exceed acceptable noise levels for industrial uses. Implementation of the proposed Project would not result in any new significant impacts or increase the severity of a previously identified significant impact as analyzed in the GP EIR. Overall noise impacts are expected to be similar to those previously identified in the EIR. Therefore, implementation of the proposed Project would not result in any new adverse impacts or increase the severity of previously identified significant impacts in the EIR.

b) **Less Than Significant Impact.** Ground-borne vibration and/or ground-borne noise will be produced by heavy equipment during the construction phase of the Project. Construction activities, such as excavating, earth-moving and trenching, could generate temporary and short-term ground-borne vibration and/or noise. The highest degree of ground-borne vibration is likely to be generated during paving due to the operation of a vibratory roller. Based on Federal Transit Administration (FTA) data, vibration velocities from vibratory rollers are estimated to be approximately 0.1980 inch-per-second PPV at 26 feet from the source of activity. As such, sensitive receptors greater than 26 feet from vibratory roller operations would not experience ground-borne vibration above the Caltrans significance thresholds (i.e. 0.3 inch-per-second PPV for structures and 0.2 inch-per-second PPV for human annoyance). The nearest sensitive receptor land uses are scattered residences located approximately 1 mile south of the Project site. Due to this distance, sensitive receptors would not be significantly impacted by ground-borne vibration and/or noise, and any such impacts would be temporary and would end once construction is complete.

Construction activities would be required to comply with all Noise Ordinance requirements for the control of construction vibration. The implementation of relevant General Plan policies and programs and compliance with the standard Town requirements will reduce potential vibration-related impacts to less than significant levels.

The Project does not propose land uses that would generate significant stationary sources of vibration, such as from heavy equipment operations. Operational-related vibration sources would be limited to electrical and mechanical equipment consistent with existing land uses in the area. In addition, Section 9.73 prohibits 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. Therefore, operational vibration impacts are expected to be less than significant with adherence to Town standard requirements.

c) **Less Than Significant Impact.** The Apple Valley Airport extends at a northwest to southeast angle east of the Project site. The Project site sits within the Town's Airport Overlay District (A-2) and is subject to zoning restrictions set by this designation. According to the AVCALUP Figure 5-2, the project sits outside of the airport's 65 CNEL noise compatibility contours. According to the General Plan Noise Element, the 60 and 65 dBA noise contours for the airport occur entirely within its property boundary. Therefore, the proposed Project will not be impacted by airport noise. No new or increased severity of impacts would occur compared to those identified in the GP EIR.

Mitigation Measures: None required.

Monitoring: None required.

XIV. POPULATION AND HOUSING **Would the project:**	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) 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)?			✓	
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?				✓

Sources: Town of Apple Valley General Plan (2009); 2010 and 2020 U.S. Census; California Department of Finance, E-5 Population and Housing Estimates for Cities and Counties; 2024 Demographics & Growth Forecast Technical Report for the Southern California Association of Governments (SCAG) Regional Transportation Plan/Sustainable Communities Strategy; Employment Density Study Summary Report prepared for Southern Association of Governments, 2001.

Environmental Setting

The Town of Apple Valley encompasses 78 square miles in the high desert region of the Victor Valley in San Bernardino County. Between 2010 and 2020, Apple Valley's population increased by 9.6% percent, from 69,135 residents to 75,786. By July 2023, the population experienced a slight decrease to 75,036.[26] According to the California Department of Finance, the estimated average household size is 2.83 people.[27]

The 2024 Demographics & Growth Forecast Technical Report for the Southern California Association of Governments (SCAG) Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), projects the number of households to increase to 38,700 by 2050, and if the average household size remains at 2.83, the projected population for the Town by 2050 would be 109,521. The Town's General Plan estimates a buildout population size of 185,858.

In 2019, there were an estimated 20,700 jobs in the Town. By 2035, there could be 26,500 jobs, and by 2050, jobs could number 30,100.

GP EIR

At the time of the GP EIR, Population and Housing were analyzed with Land Use Planning (Section III.J, page III-169 et.seq.). In this report, Population and Housing are discussed in a separate section. See section XI above for the Land Use Planning analysis.

[26] Population Estimates, United States Census Bureau, accessed September 2024, https://www.census.gov/quickfacts/fact/table/applevalleytowncalifornia/PST045221.

[27] Table 2: E-5 City and County Population and Housing Estimates, January 1, 2024, State California Department of Finance.

The estimated build out population of the 2009 General Plan was compared against that of the prior Town General Plan. The General Plan build out population was estimated to be 152,813 residents. The land use changes proposed by the General Plan would add residential units and thus potentially increase the Town's population to 194,931. Impacts associated with this growth were deemed less than significant.

GP EIR Population and Housing Mitigation Measure

Although the impacts resulting from the estimated population increase were expected to be less than significant, the GP EIR provided the following Mitigation Measure to ensure that there would be no impacts to supporting infrastructure (page III-184 of GP EIR).

1. Development in currently undeveloped areas shall be controlled to assure adequate infrastructure, including roadways, water and wastewater systems.

Proposed Project Impacts

a) **Less Than Significant Impact**. Based on a study conducted for SCAG, the average number square feet per employee for a warehouse land use category in San Bernardino County is 1,195.[28] Based on this, the Project could potentially provide 525 jobs, or 2% of the 2035 projected number of jobs in the Town. Many of these jobs would likely be filled by people currently living in the Town of Apple Valley, and out-of-area- commuters. The Project may attract some new residents to the Town as well.

Infrastructure for water, sewer and electricity have already been extended to the Project site along Dakota Road. Roads bordering the Project site would be improved and thus would allow for an increase in vehicle mobility in the Project vicinity. Hence, the Project would result in a growth of road infrastructure, but utilities infrastructure already exists.

The Project may increase the number of jobs and thus bring a small increase in the Town's population size. These increases are well within the projected population, housing and job growth approved by the General Plan, and forecasted by the 2024 SCAG RTP/SCS, and would have the potential to reduce residents' commute trips, since over 30% of the Town's residents commute more than 30 minutes to work. The Project would not result in unplanned population growth and the impacts would be less than significant.

b) **No Impact.** The Project parcel and the surrounding parcels are vacant and undeveloped lands within the NAVISP, an area that is zoned for industrial use. Residences nearest to the Project site consist of several rural single-family units 1 mile south. Existing residential neighborhoods are outside the NAVISP boundary west of Dale Evans Parkway, south of Waalew Road, and east of Central Road. The Project would not displace any people or housing, and would not result in the need to replace housing. There will be no impacts.

Mitigation Measures: None required.

Monitoring: None required.

[28] Employment Density Study Summary Report prepared for Southern Association of Governments (p. 21), The Natelson Company, Inc., October 21, 2001.

XV. PUBLIC SERVICES **Would the project result in:**	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, 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:				
a) Fire protection?			✓	
b) Police protection?			✓	
c) Schools?			✓	
d) Parks?			✓	
e) Other public facilities?			✓	

Sources: The Town of Apple Valley General Plan 2009; Apple Valley Fire Protection District; San Bernardino County Sheriff's Department, Apple Valley Patrol Station; Apple Valley Unified School District; Town of Apple Valley Development Impact Fees.

Environmental Setting

Fire Protection

The Apple Valley Fire Protection District (AVFPD) provides fire protection services to the Town and vicinity beyond the Town's boundary. The service area of 206 square miles extends from the Mojave River eastward to the Dry Lake region of Lucerne Valley, and includes a population of approximately 90,000 people. AVFPD maintains a mutual aid agreement with Victorville, San Bernardino County, and the Bureau of Land Management which facilitates the need for support regardless of jurisdictional boundaries. The AVFPD employs 53 full time personnel, four part time personnel, and five reserve personnel. The Department operates seven fire stations, five of which are fully staffed, one is leased to a private ambulance company, and one is leased to Cal Fire. The closest AVFPD station to the Project site is Station 332, which is 4.45 miles southwest of the Project site located at 18857 Outer Hwy 18 S.[29]

The Bureau of Land Management (BLM) operates the Apple Valley Fire Center at 18809 Central Road, approximately 1.7 miles northeast of the Project site, and as part of the mutual aid agreement, this Fire Center would also provide service to the Project.

Police Protection

The San Bernardino County Sheriff's Department is contracted to serve as the Town of Apple Valley Police Department (AVPD) to provide public safety services to the Town. The AVPD patrols a 72-squre-mile area within the Town's boundary and the County Sheriff's Department serves areas beyond the Town's boundary, including the Town's Sphere of Influence. The AVPD Patrol Station is four miles south of the Project site at 14931 Dale Evans Parkway.

[29] Apple Valley Fire Protection District, About Us, accessed September 2024, https://avfpd.org/about-us/.

The AVPD employs 64 personnel consisting of 51 sworn officers and 13 general employees.[30] The optimal ratio of police to residents would be one police officer per 1,500 residents. As of 2024, the estimated population of the Town is 74,322 which indicates that the current ratio is one officer per 1,457 residents.

Schools

The Apple Valley Unified School District (AVUSD) operates five elementary schools, five middle schools, two high schools, and five schools supporting independent study and online learning opportunities. The closest education facilities to the Project site are Sycamore Rocks Elementary School located 4.2 miles southeast, and Phoenix Academy located 3.9 miles south of the Project.

Parks

The Apple Valley Parks and Recreation Department manages nineteen different recreational facilities including parks, athletic fields, community centers, a golf course, an aquatic center, an equestrian center, specialty parks, and trails. Brewster Park, the nearest facility, is 2.2 miles south of the Project site.

Other Public Facilities

The Newton T. Bass Apple Valley Library, is a 19,142 square foot building located next to the Town Hall, is managed by the San Bernardino County library system.

St. Mary Medical Center is a 213-bed facility that provides acute, general medical-surgical and intensive care, and operates a 24-hour emergency room. The medical staff is comprised of over 300 doctors. The Town contains one urgent care center, Dr. Mike's Walk-In Clinic.

GP EIR

Public Services were analyzed as part of the Public Services and Facilities section of the Town's GP EIR (Section III.M, page III-229 et.seq). Impacts resulting from the Town's General Plan buildout as described in the GP EIR are summarized here.

Fire

The Apple Valley Fire Protection District (AVFPD) services were explained in the GP EIR, and it was determined that the build out of the General Plan and Annexation areas would lead to an increase in the need for fire protection services beyond what the then current staffing could accommodate. Without mitigation, the impacts to fire protection services would be significant.

GP EIR Fire Protection Mitigation Measures

The following mitigation measures will reduce impacts associated with provision of fire protection services to less than significant levels (GP EIR page III-241).

1. The Town shall continue to coordinate closely with the Apple Valley Fire Protection District to assure the timely expansion of facilities and services.

[30] Apple Valley Patrol Station, San Bernardino County Sheriff's Department, accessed September 2024, https://wp.sbcounty.gov/sheriff/patrol-stations/apple-valley/.

2. The Town and Apple Valley Fire Protection District shall continue to enforce fire codes and other applicable standards and regulations as part of building plan review and conducting building inspections.
3. Industrial facilities that involve the storage of hazardous, flammable or explosive materials shall be sited to ensure the highest level of safety in strict conformance with Uniform Fire Code and other applicable codes and regulations.
4. The Apple Valley Fire Protection District shall continue to review new development proposals and evaluate project plans to assure that it can provide adequate fire protection.
5. The Town and Apple Valley Fire Protection District shall coordinate with the Apple Valley Ranchos Water Company, Golden States Water Company, and all other water purveyors serving the General Plan and annexation areas, to ensure adequate water supplies and pressure for existing and proposed development.

Police

The build out of the General Plan and Annexation areas would increase the demand for police protection services and would result in significant impacts to the Town. To adequately accommodate the build out of the General Plan, the GP EIR estimated that the department would need to increase staffing by 81 deputies to reach a total of 130 deputies, or 1 per 1,500 residents. Growth would occur over time, and the department would be expanded as needed during the growth period. To reduce impacts to less than significant levels, the following mitigation measures were required by the GP EIR.

GP EIR Law Enforcement Mitigation Measures

The following mitigation measures will ensure that impacts to police are reduced to less than significant levels (GP EIR page III-238-237).

1. New development projects shall be reviewed by the Sheriff's Department to ensure the Department's ability to provide adequate police protection. New developments shall comply with established Sheriff's Department standards.
2. The Town shall continue to monitor Town population and Sheriff's Department staffing levels to ensure that sufficient levels of police protection are afforded.

Schools

Impacts to Apple Valley schools from the build out of the General Plan and Annexation areas were determined to be potentially significant. Through appropriate planning, AVUSD provides additional school sites as the population of school-aged children increases. State-mandated developer impact fees are designed to offset costs for school facilities expansion. The GP EIR established mitigation measures to reduce significant impacts to less than significant.

GP EIR School Mitigation Measures

The following mitigation measures shall be implemented to ensure that impacts to schools in the Apple Valley Unified School District are reduced to less than significant levels (GP EIR page III-235-236).

1. Statutory school mitigation fees for residential and commercial development shall continue to be assessed to developers.

2. Should developers in the General Plan study area use Mello-Roos or other types of public facilities financing districts, AVUSD shall be included in discussions to determine how the developer may cooperate with the District in its funding mechanism. The following alternatives are available to AVUSD to mitigate significant impacts to District schools:
   - Leroy F. Green State School Building Lease-Purchase Law: Under an agreement between the school district and the State of California, this Act provides for construction, reconstruction or replacement of school facilities by the State Allocation Board. Districts with 1) substantial enrollment in year-round schools, 2) the ability to raise a percentage of project costs, and 3) opening a new facility as a year-round school receive first priority for future State funding.
   - Lease-Purchase Arrangements: Lease-purchase agreements may be made between school districts and private builders of portable classrooms, as authorized under Sections 39240 and 39290 of the State Education Code. Under this method, school districts can also finance capital outlay. Lease-purchase agreements also provide the benefit of offering long-term financing without the need for voter approval of special taxes or benefit assessments.
   - Developer Fees: Assembly Bill 2926 (Chapter 887) was approved by the State Legislature in 1986, authorizing school districts to assess development fees to fund school construction or reconstruction. Currently these fees are $3.60 per square foot of residential construction and $0.47 per square foot of commercial construction. Under Government Code Section 53080, proof of compliance with the school district's resolution may be required prior to issuance of building permits.
   - Mello-Roos Community Facilities Act: Government Code Section 55311, et. seq., establishes provisions for this funding option. In order to benefit from this Act, a school district is responsible to initiate proceedings to declare itself a "Community Facilities District" (CFD), which is defined as a government entity created to perform specific activities within set boundaries. It provides for the CFD to purchase, construct or rehabilitate real or tangible property with an estimated useful life of five years or longer.

Parks

Parks were analyzed in the Recreation Resources (Section III.N, page III-258 et.seq.) of the 2009. A summary of the findings is provided in the Section XVI. Recreation, below.

Proposed Project Impacts

a) Less Than Significant Impact. The AVFPD Station 332 would provide services to the Project site along with the BLM Apple Valley Fire Center at 18809 Central Road. While the development of the Project would increase demand for fire protection services, this demand is not expected to be significant at the Project site. The Project would not directly increase the population of the Town, however, the employment opportunities offered by the new distribution warehouse could encourage some people to move to the Apple Valley, which could incrementally increase the demand for fire protection services in the Town. The Project's employment needs are expected to mostly be fulfilled by existing Town residents.

Funding for the for the AVFPD is derived mostly from property taxes (56.2%) and special taxes (35.8%). The development of the Project would benefit the property tax funding base and help offset potential demand for fire protection services. Additionally, the Project would be required to pay an Apple Valley fire development impact fee to defray the costs of fire protection services for the Project site at a rate of $0.089 per square foot, a total of $55,820.[31]

Prior to construction, the Project would be reviewed by the AVFPD to ensure that the site plans meet all applicable fire regulations, including California Fire Code regulations.

In summary, the Project could potentially increase demand for fire protection service, but this increase would be marginal as the Project would not cause the Town's population to greatly increase, and the Project would not require the construction of additional fire station facilities. As the Project meets on-going property tax obligations and fulfills the requirement to pay the development impact fee for fire protection services, increased fire protection expenses associated with the development of the Project would be offset. Project site plan review by the AVFPD prior to construction would reduce the risk of fire at the Project site. Therefore, the impacts to fire protection services would be less than significant.

b) **Less Than Significant Impact**. As discussed above, the Project is not expected to cause a significant increase of the Town's population, although the Project's employment opportunities could draw some new permanent residents to the Project. The increase of people would be marginal but would potentially result in an increased use of public safety services by the AVPD. The current ratio of full-time police officers to Town residents is 1 officer to 1,457 residents, which is under the desired ratio of 1:1,500 according to the Town's General Plan. To reach the 1:1,500 ratio, the total population would need to be 76,500, a difference of 2,178 people. The Project warehouse could be expected to have approximately 525 employees, many of whom would be current residents, and some would be new residents and out-of-town commuters.[32] The number of potential employees would not increase the ratio of police officers to residents above the desired ratio. Should the Project attract new residents to the Town, taxes generated by the new residents would contribute to public safety funding.

The AVPD is staffed by the San Bernardino County Sheriff's Department, which is funded by local, state, and federal taxes distributed by the County. Recurring property taxes paid by the Project would contribute to this funding source. Additional revenue comes from development impact fees. The Project would be required to pay a law enforcement facilities impact fee of $0.001 per square foot, a total of $627.[33]

---

31 Development Impact Fees, Town of Apple Valley, accessed September 2024, https://www.applevalley.org/services/building-and-safety/development-impact-fees.

32 Employment Density Study Summary Report prepared for Southern Association of Governments (p. 21), The Natelson Company, Inc., October 21, 2001.

33 Development Impact Fees, Town of Apple Valley, accessed September 2024, https://www.applevalley.org/services/building-and-safety/development-impact-fees.

To summarize, the potential increase in population resulting from the Project's development would not be significant and would not jeopardize the current ratio of officers to residents. The Project would contribute to tax-based funding sources via property and sales taxes. A resulting increase of the Town's population would be marginal, but also contribute to the tax-based funding of the County Sheriff's Department and offset the increase in services used. Impacts to police protection services would be less than significant.

c) **Less Than Significant Impact**. The proposed Project is located in the NAVISP, which is an industrial land use and zoning area, and development of the Project would generate no direct impacts on school enrollments or school resources. Indirectly, employees of the proposed distribution warehouse may have children who attend Apple Valley schools, and if some of these employees move to Apple Valley for the job opportunities at the Project, then there would be an indirect minor increase of students in the Town's schools.

The State provides over half of the funding used by school districts, the remaining deficit is met by local sources of funding such as property taxes, federal funds, state lottery funds, local debt service and other local funding sources. The Project would contribute to school district funding via property taxes. The Town's residents also contribute to school district funding via property and sales taxes, so any new residents working at the Project would add to the district revenue. Impacts to the Apple Valley Unified School District resources would be less than significant.

d, e) **Less Than Significant Impact.** As previously discussed, the proposed Project would not directly result in a significant increase in the Town's population and thus would not significantly impact park resources or other public facilities and resources. Most of the workforce is expected to be current Town residents and some employees may be either out-of-town commuters or may choose to become new Town residents. The Project would be required to pay a general park development impact fee of $0.0062 per square foot, totaling $1,036.64, which would help fund upkeep and new facilities for the Town's parks. Impacts to recreation resources are discussed in below Section XVI.

Due to the marginal increase in population, the Project is expected to generate a less than significant impact to parks and other public facilities.

Mitigation Measures: None required.

Monitoring: None required.

XVI. RECREATION **Would the project:**	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the Project 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?			✓	
b) Does the Project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				✓

Sources: Town of Apple Valley General Plan (2009); Town of Apple Valley Master Plan of Parks and Recreation (2013); Town of Apple Valley 2021-22 Municipal Fee Schedule, Schedule J Development Impact Fees.

Environmental Setting

According to the 2013 The Apple Valley Parks and Recreation Master Plan, the Town's parkland is comprised of 369.8 acres of both developed and undeveloped land. The Town's 2009 General Plan projected that the total build out of developed parklands would consist of 438.87 acres. The 2013 Master Plan describes the park and recreational level of service in terms of acres per thousand residents, which stands at 4.6 acres of developed park land per 1,000 residents. Over half of this acreage occurs as the golf course and equestrian center special use parks.

The Parks and Recreation Department currently manages nineteen different recreational facilities among four distinct categories of parkland: mini parks, neighborhood parks, community parks and special use parks. Both outdoor and indoor facilities include amenities such as ball fields, playgrounds, picnic shelters, a dog park, a skatepark, a swimming pool, athletic courts, an amphitheater, walking trails, a gymnasium, meeting rooms, activity rooms. Beyond the Town's park and recreational facilities, Apple Valley residents have access to regional parks such as Mojave Narrows Regional Park.

GP EIR

Recreational Resources were analyzed in the Town's GP EIR (Section III.N, page III-258 et.seq). The GP EIR found that the build out of the General Plan and Annexation areas would yield and additional 38,824 dwelling units, for a total of 63,749, and a total residential population of 194,931. The Town would need to provide an additional 536.13 acres of parkland to serve the residents for a combined total parkland acreage of 975 acres. The implementation of the Quimby Act would help to provide the land and the financial means to accommodate the parkland growth. The following two mitigation measures would apply to development and to the Town's planning in order to reduce impacts to less than significant.

GP EIR Mitigation Measures

The following mitigation measures shall be implemented within the General Plan area to ensure the reduction of potential recreation impacts to less than significant levels. (GP EIR page III-260).

1. The Town will require developers to participate in the Town's parkland fee programs/Quimby requirements.
2. The Town will actively pursue a range of supplementary funding sources to acquire additional parklands.

Proposed Project Impacts

b) Less Than Significant Impact. The proposed Project consists of a distribution warehouse on a 40.1-acre parcel in the NAVISP region in the north portion of the Town. The Project is consistent with the Town's General Plan anticipated growth and development and would not directly increase the population of the Town, nor would it directly increase the use of recreational facilities. As explained in the Population and Housing Section XIV, the Project may potentially provide 525 jobs which are expected to be mostly filled by current residents. Should the Project attract new residents to the Town, then these new residents may use the Town's recreational facilities, but the relatively marginal increase in population would not require the construction or expansion of new park facilities. To compensate for this potential population growth and potential increased use of facilities, the Project will be required to pay a general park development impact fee of $0.0062 per square foot, totaling $1,036.64, which would help fund maintenance of the Town's park facilities. Impacts to park and recreational facilities would be less than significant.

b) No Impact. The proposed Project consists of a distribution warehouse, an industrial land use in the NAVISP area. The Project does not include the construction of any park and recreational facilities, nor does it require the expansion of any such facilities, thus, there will be no impacts on the environment.

Mitigation Measures: None required.

Monitoring: None required.

XVII. TRANSPORTATION **Would the project:**	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?		✓		
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?			✓	
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				✓
d) Result in inadequate emergency access?				✓

Sources: "Lecangs Dakota Apple Valley Industrial Traffic Analysis," Urban Crossroads, prepared October 9, 2024; Town of Apple Valley General Plan (2009); Town of Apple Valley Climate Action Plan Update 2019; San Bernardino County Transportation Impact Study Guidelines (July 2019); Caltrans Interim Land Development and Intergovernmental Review Safety Review Practitioners Guidance (July 2020).

Environmental Setting

As of the Town's General Plan, Apple Valley contained 500 miles of paved roadways which are organized on a one-mile grid system, and approximately 80% of roadways serve residential neighborhoods. Seven different roadway classifications facilitate traffic through the Town: Major Divided Highways (142-foot-right-of-way); Major Divided Arterials (128-foot-right-of-way); Major Roads (104-foot-right-of-way); Secondary Roads (88-foot-right-of-way): Collector Streets (66-foot-right-of-way); Local Industrial/Commercial Streets (66-foot-right-of-way); and Local Streets (60-foot-right-of-way).

The Level of Service (LOS) metric, which assigns a qualitative measurement of roadway operating conditions, ranges from "A" (free flow, best conditions) to "F" (worst conditions, serious delays, and system failure). The Town requires that all intersections achieve at least an LOS D during morning and evening peak hours.[34] For the Project, the Traffic Analysis studied 17 intersections where the Project was expected to incur 50 or more peak hour trips per the San Bernardino County Guidelines. Currently, all intersections operated at an acceptable LOS. Project impacts to these intersections are described below in the Proposed Project Impacts discussion. Under CEQA, LOS is no longer used as a threshold for assessing traffic impacts, as current guidelines prioritize vehicle miles traveled (VMT) to evaluate transportation effects more holistically. However, this MND tiers from the GP EIR, which appropriately used LOS as the methodology for analyzing traffic impacts at the time of its adoption. Therefore, the analysis in the section utilizes LOS for assessing traffic impacts, consistent with the methodology used in the GP EIR.

[34] Circulation Element (Program 1.A.4), Town of Apple Valley General Plan 2009.

Within the NAVISP, many of the roads are unimproved and receive improvements as projects are constructed. The I-15 Freeway borders the Town along the northwest edge and connects the Town to neighboring Victor Valley cities, the Inland Empire to the south of the San Bernardino Mountains, and Barstow and Las Vegas to the north/northeast. The NAVISP area accesses I-15 via Stoddard Wells Road and Dale Evans Parkway. State Highway 18 crosses roughly through the center of Apple Valley and connects to I-15 Freeway and Corwin Road, which intersects the south end of Dakota Road. The roads serving the Project site are Fresno Road, Dakota Road (which is also called Dachshund Road to the north), Gustine Street, and Ramona Road. These roads are described here:

- Fresno Road is an unimproved Secondary Road on the south boundary of the Project site. Secondary Roads have two travels lanes in each direction, a bike or parking lane, and are required to have curbs and gutters in industrial areas. Secondary Roads connect to Major Roads. Fresno Road will receive half-width improvements and connect to Dakota Road, Ramona Road, and Navajo Road further east.
- Dakota Road (Dachshund Road) is a paved Secondary Road on the west boundary of the Project site and will provide full access to two driveway entrances/exits on the west side of the Project parcel. Dakota Road connects to Corwin Road to the south and Gustine Street and Altadena Street further north.
- Gustine Street occurs along the north boundary of the Project site and connects to Dakota Road, Ramona Road (when improved), and Navajo Road further east. Currently Gustine Street is unpaved but will receive half-width improvements as part of the Project.
- Ramona Road currently is paved only between Corwin Road and Fresno Road south of the Project site. As part of the Project, Ramona Road will be improved from Fresno Road north to Gustine Street along the west half of the street and will provide full access to the Project with two driveway entrances and exits on the east side of the Project parcel.

The regional main roads providing access to the above-described roads:

- Interstate 15 provides regional access to the NAVISP.
- North side access is served by Stoddard Wells Road from I-15 connecting to Johnson Road. Both are Major Roads. Dale Evans Parkway and Navajo Road, a Secondary Road, run south from Johnson Road.
- South side access is served by Corwin Road, a Major Road, which connects to Dakota Road south of the Project site.

The Victor Valley Transit Authority (VVTA) offers six bus routes through the Town of Apple Valley. Route 42 runs on a 10-minute schedule and passes the Project site along Dakota Road between Corwin Road to the south and Needham Avenue to the north. The nearest bus stops to the Project site are 1.74 miles south at Dale Evans Parkway and Waalew Road, and 1.42 miles north near the intersection of Navajo Road and Lafayette Street.

GP EIR

Traffic Impacts

Prior to the General Plan update, the Town had achieved a Level of Service (LOS) C during AM and PM peak hour conditions, but with the build out of the General Plan, the highest anticipated LOS would be D during peak hours. The GP EIR (Section III.O, page III-261 et. seq.) identified 46

intersections throughout the Town operating at an LOS D or worse. In response, the GP EIR provided recommendations for upgrading the classifications of 17 roadways in order to adequately service the increased traffic of the build out conditions and consistently achieve an LOS C whenever possible and maintain at least an LOS D during peak traffic hours. One intersection was deemed to be unable to meet an LOS higher than E during peak hours, Dale Evans Parkway and Corwin Road.

At the time the GP EIR was adopted, the limited number of paved roadways servicing the NAVISP area included the north-south routes of Dale Evans Parkway, Navajo Road and Central Road, and the east-west paved routes included Saugus Road, Johnson Road and Quarry Road. Stoddard Wells Road extended diagonally from the Interstate 15 northeast to Dale Evans Parkway north of Quarry Road.

Mitigation measures were required to improve traffic flow and reduce the anticipated significant impacts. Even with the implementation of the mitigation measures, the General Plan and Annexation area build out impacts would still be considered significant and unavoidable due to the LOS E at the Dale Evans Parkway/Corwin Road intersection.

Traffic Hazard and Emergency Access Impacts

Emergency access throughout the Town and the Annexation areas was determined to not be impacted by the build out of the General Plan. The General Plan's land use, policies, and programs included access requirements for roadway design, and also service provider requirements. All future projects would be reviewed for compliance with the established requirements.

Air Traffic Impacts

As described in the GP EIR, the Apple Valley Airport is a general aviation airport located in the northern portion of Town, within the NAVISP. It serves fixed wing aircraft and helicopters. Airport operations are limited to small, private aircraft and flight schools. In addition, the California Highway Patrol and the San Bernardino County Sheriff's Department share a hangar at the airport. There are two runways: runway 18/36 is approximately 6,500 feet by 150 feet, and runway 8/26 is approximately 4,100 feet by 60 feet. The airport operates approximately 103 flights daily, or 38,000 operations annually. The GP EIR found no significant impacts associated with air operations at the airport, due to its limited size and location in an industrially designated area. Because the airport is a County facility, the GP EIR included Mitigation Measure 13, which requires continued coordination between the Town and the County to assure that the Town's needs are met as the community builds out.

Alternative Transportation Impacts

The GP EIR established several mitigation measures to ensure that the Town would continue to improve its alternative transportation system which included expanded bus routes and bus stops by the Victor Valley Transit Authority (VVTA), the master planning of sidewalks, bicycle lanes, off-street trails, and coordination of the alternative transportation routes with the VVTA and the Town's circulation system.

GP EIR Transportation Mitigation Measures

With the incorporation of mitigation measures listed below, the overall traffic and circulation impacts resulting from buildout of the General Plan and annexations would be reduced to less

than significant levels and the required levels of service will be maintained at all intersections except Dale Evans Parkway and Corwin Road, which will operate at LOS E. This intersection's impacts could not be mitigated to less than significant levels, and impacts remained significant and unavoidable.

1. The Town shall establish and maintain a master plan of roadways that sets forth detailed improvement plans and priority schedules for implementation. The plan shall ensure that roadway segments and intersections generally operate at level of Service C or better, wherever feasible, and that all intersections maintain a Level of Service D or better during both morning and evening peak hours.
2. Street rights-of-way shall be provided as follows:
    - 142 feet for a Major Divided Parkway
    - 128 feet for Major Divided Arterials
    - 104 feet for Major Roadways
    - 88 feet for Secondary Roadways
    - 60 to 66 feet for Collector Streets
    - 66 feet for Industrial and Commercial Local Streets
    - 60 feet for Local Streets
    - 50 feet for Rural Streets and Cul-de-Sacs
3. All Town streets shall be designed to have a minimum lane width of 12 feet.
4. To minimize the number and length of vehicle trips travelled within the planning area, the General Plan Land Use Plan shall provide for a balance and mix of employment and housing opportunities.
5. The Town shall encourage the use of mass/public transit and collaborate with the Victor Valley Transit Authority (VVTA) to ensure the ongoing operation and expansion of fixed route bus and demand responsive systems.
6. The Town shall require that new development projects on arterial roadways incorporate bus pullouts, to allow buses to leave the flow of traffic and reduce congestion.
7. The Town shall encourage the use of multi-occupant modes of transportation, and shall encourage employers to utilize telecommuting opportunities, home-based employment, and part-time or non-peak hour work schedules.
8. The Town shall develop a program to retrofit bus pullouts on built-out streets, wherever possible, and shall implement them through the Capital Improvement Program.
9. The Town shall enhance and expand its comprehensive Master Plan of continuous, convenient multi-use trails and bicycle routes that connect residential, commercial, schools, parks and other community activity centers.
10. The Town shall consult and coordinate with the County of San Bernardino and the California Department of Transportation to ensure the provision of adequate all-weather crossings along critical roadways.
11. The Town shall ensure that sidewalks are provided on all roadways that are 88 feet wide or wider. In Rural Residential land use areas, the Town shall ensure that designated pathways are provided
12. The Town shall confer and coordinate with the Apple Valley Unified School District to develop and implement safe routes to school.
13. The Town shall proactively consult and coordinate with the County of San Bernardino to ensure that the local airport continues to meet the Town's existing and future transportation, commercial and emergency response needs.

14. The Town shall require, as necessary, project-specific and/or phase-specific traffic impact analyses for subdivision and other project approvals. Such analyses may be required to identify build out and opening year traffic impacts and service levels and may need to exact mitigation measures required on a cumulative and individual project or phase basis.
15. 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.
16. The Town shall continue to monitor roadway segments where the daily Volume to Capacity ratio analysis indicates that build out traffic volume will "potentially exceed capacity."
17. The Town shall review traffic volumes resulting from General Plan build out to coordinate, program and if necessary, revise road improvements. This review shall take place every five years.
18. All new development shall be required to pay a "fair share" of improvements to surrounding roadways, bridges and signals that are impacted by and are located within and surrounding the development project.
19. The Town shall ensure that pedestrian access is preserved and enhanced by means of the following: improved sidewalks, pedestrian walkways, lighting and landscaping designs and connections to existing sidewalks and trails.
20. New development proposals shall be required to construct bicycle lanes in conjunction with off-site improvements.
21. New development proposals shall be required to construct recreational trails in conjunction with off-site improvements.

Proposed Project Impacts

The following analysis is primarily based on the Traffic Analysis prepared for the Project by Urban Crossroads.[35] A full copy of the report is available in Appendix H. The Traffic Analysis is based on the County of San Bernardino 2019 Transportation Impact Study Guidelines in consultation with the Town. Trip generation data for the Project relies on the trip generation statistics provided by the 2019 TUMF High-Cube Warehouse Trip Generation Study[36] as the study contains the most reliable trip generation rates for industrial projects in the Inland Empire. Additionally, the vehicle mix for the Traffic Analysis was derived from the ITE's Trip Generation Manual.

a) Less Than Significant Impact with Mitigation. The Project is consistent with the NAVISP designated industrial land use and would not conflict with previously analyzed traffic conditions. The Project includes a 627,200 square-foot distribution warehouse on 40.1 acres in the NAVISP region of the Town. Truck access to the Project will be facilitated by four 40-foot-wide driveways located near the four corners of the parcel: two driveways along the west side and two driveways along the east side of the Project. Two vehicle driveways will access employee parking lots. Off-site improvements include half-width road improvements, sidewalks, and bicycle/parking lanes per the GP EIR mitigation measures and General Plan Circulation Element roadway standards.

35 "Lecangs Dakota Apple Valley Industrial Traffic Analysis," Urban Crossroads, prepared October 9, 2024.

36 TUMF High-Cube Warehouse Trip Generation Study, WSP, January 29,2019.

Project Trip Generation

Project trip generation is a forecast of the amount of traffic coming to the Project and produced by the Project and is based on the expected amount of traffic associated with the Project's land use. To calculate trip generation, the Traffic Analysis relied on the TUMF High-Cube Warehouse Trip Generation Study by WSP (January 2019), and the vehicle fleet mix (passenger cars versus trucks) was derived from the ITE's Trip Generation Manual. The additional truck and passenger car trips generated by the Project contribute to the deficiencies in LOS for the surrounding area intersections.

Table 13 provides anticipated trip generation details for passenger cars and trucks (2-axle to 4-axle) during AM and PM peak hour timeframes. The Project could potentially generate a total of 1,335 two-way vehicle trip-ends per day with 77 AM peak hour trips and 104 PM peak hour trips. 934 trips, or 70% of the trips, would be generated by passenger vehicles and 401 trips, or 30%, would be generated by large trucks.

Table 13
Project Trip Generation - Rates[1]

Land Use	ITE LU Code	Quantity[2]	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
High-Cube Warehouse[3]	154	627,200 TSF							
Passenger Cars			0.066	0.020	0.086	0.033	0.082	0.115	1.489
2 to 4-Axle+ Trucks			0.028	0.008	0.036	0.014	0.036	0.050	0.640
TOTAL			**0.094**	**0.028**	**0.122**	**0.046**	**0.119**	**0.165**	**2.129**
% Passenger Cars			70.2%	71.4%	70.5%	71.7%	69%	69.7%	70%
% 2 to 4-Axle+ Trucks			29.8%	28.6%	29.5%	30.4%	30%	30.3%	30%

Project Trip Generation - Actual Trips[4]

Land Use	ITE LU Code	Quantity [2]	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
High-Cube Warehouse[3]	154	627,200 TSF							
Passenger Cars			41	13	54	21	52	73	934
2 to 4-Axle+ Trucks			18	5	23	9	22	31	401
TOTAL			**59**	**18**	**77**	**30**	**74**	**104**	**1,335**
% Passenger Cars			69.4%	72.2%	70.1%	70%	70.3%	70.2%	70%
% 2 to 4-Axle+ Trucks			30.5%	27.7%	29.9%	30%	29.7%	29.8%	30%

[1] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, 11th Edition (2021).

[2] TSF = Thousand Square Feet

[3] Source: "TUMF High-Cube Warehouse Trip Generation Study," prepared by WSP, January 2019.
Passenger and Truck AM/PM peak hour (in/out) splits are estimated from based on ITE peak-to-daily relationship.
Truck Daily Rate Source: "Notice of Preparation of a Draft Environmental Impact Report for the Proposed Potrero Logistics Center," prepared by SCAQMD, June 2020.

[4] Total Net Trips (Actual Vehicles) = Passenger Cars + Net Truck Trips (Actual Trucks)

In order to represent the large 2-, 3- and 4-axle trucks as a single unit and accurately compare truck trips to passenger cars, the Traffic Analysis applied Passenger Car Equivalent (PCE) factors which convert trips made by the variety of large trucks to a single, standardized unit for purposes of analyzing roadway capacity and LOS. Table 14 shows the converted truck trip data as PCE trips during peak AM and PM hours. The PCE factors reveal that truck trips comprise a higher percentage of the total vehicle trips due to their higher impacts on the roadways and on LOS. With the application of PCE factors, the total number of daily vehicle trips increases to 2,138 with 123 total AM trips, and 167 total PM trips. Passenger vehicles still comprise 934 daily trips, but their percentage decreases to 43.7% of the total daily trips. Large trucks comprise 1,204 daily trips, which means that their percentage increases to 56.3% of the total daily trips.

Table 14
Project Trip Generation – (Passenger Cars + PCE) Rates[1]

Land Use	ITE LU Code	Quantity[2]	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
High-Cube Warehouse[3]	154	627,200 TSF							
Passenger Cars			0.066	0.020	0.086	0.033	0.082	0.115	1.489
2 to 4-Axle+ Trucks			0.084	0.025	0.109	0.042	0.108	0.150	1.920
TOTAL			**0.150**	**0.045**	**0.195**	**0.075**	**0.190**	**0.265**	**3.409**
% Passenger Cars			44%	44.4%	44%	44%	43.2%	43.4%	43.7%
% 2 to 4-Axle+ Trucks			56%	55.6%	56%	56%	56.8%	56.6%	56.3%

Project Trip Generation - Actual Trips (Passenger Cars + PCE)[4]

Land Use	ITE LU Code	Quantity[2]	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
High-Cube Warehouse[3]	154	627,200 TSF							
Passenger Cars			41	13	54	21	52	73	934
2 to 4-Axle+ Trucks			53	16	69	26	68	94	1,204
TOTAL			**94**	**29**	**123**	**47**	**120**	**167**	**2,138**
% Passenger Cars			43.6%	44.8%	44%	44.7%	43.3%	43.7%	43.7%
% 2 to 4-Axle+ Trucks			56.4%	55.2%	56%	55.3%	56.7%	56.3%	56.3%

[1] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, 11th Edition (2021).
[2] TSF = Thousand Square Feet
[3] Source: "TUMF High-Cube Warehouse Trip Generation Study," prepared by WSP, January 2019.
Passenger and Truck AM/PM peak hour (in/out) splits are estimated from based on ITE peak-to-daily relationship.
Truck Daily Rate Source: "Notice of Preparation of a Draft Environmental Impact Report for the Proposed Potrero Logistics Center," prepared by SCAQMD, June 2020.
[4] Total Net Trips (PCE) = Passenger Cars + Net Truck Trips (Passenger Car Equivalent)

Project Impacts

The following scenarios were analyzed for the purpose of assessing the impacts of the Project on intersection Level of Service (LOS):

- Existing (2024) Conditions
- Opening Year Cumulative (2027) Without Project Conditions
- Opening Year Cumulative (2027) With Project Conditions

Existing (2024) Traffic Conditions

Existing traffic conditions offer a baseline against which the Project's impact may be measured. The Traffic Analysis studied seventeen key intersections in the study area, ten of which currently exist and seven are future intersections. Traffic count data at the ten existing intersections was collected during weekday AM and PM peak hours in April 2024 and again in late August 2024. All ten existing intersections currently operate at acceptable levels of service per the Town's General Plan standards. Table 15 provides details for each intersection.

Table 15
Intersection Analysis for Existing 2024 Conditions

Intersection	Traffic Control[1]	Delay[2] (secs) AM	Delay[2] (secs) PM	Level of Service AM	Level of Service PM
#1 Dakota Ave/Corwin Rd	CSS	8.5	8.6	A	A
#2 Ramona Rd/Fresno Rd	CSS	8.5	8.5	A	A
#3 Navajo Rd/Altadena St	CSS	8.5	8.7	A	A
#4 Navajo Rd/Johnson Rd	CSS	9.4	10.0	A	B
#5 Dale Evans Pkwy/Johnson Rd	AWS	9.8	16.5	A	C
#6 Stoddard Wells Rd/Johnson Rd	CSS	10.0	12.5	B	B
#7 1-15 NB Ramps/Stoddard Wells Rd	CSS	11.2	21.7	B	C
#8 Quarry Rd/Stoddard Wells Rd	CSS	9.4	10.7	A	B
#9 Quarry Rd/1-15 SB Ramps	CSS	9.1	10.0	A	B
#10 Dale Evans Pkwy/Corwin Rd	CSS	7.9	8.7	A	A
#11 Dakota Rd/Gustine Rd	CSS	Future Intersection			
#12 Dakota Rd/Access 1	CSS	Future Intersection			
#13 Dakota Rd/Access 2	CSS	Future Intersection			
#14 Dakota Rd/Fresno Rd	CSS	Future Intersection			
#15 Ramona Rd/Gustine Rd	CSS	Future Intersection			
#16 Ramona Rd/Access 3	CSS	Future Intersection			
#17 Ramona Rd/Access 4	CSS	Future Intersection			

Source: "Lecangs Dakota Apple Valley Industrial Traffic Analysis," Urban Crossroads, prepared October 9, 2024.

[1] AWS = All Way Stop; CSS = Cross-Street Stop; CSS = Improvement

[2] Per the Highway Capacity Manual (7th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal, or all way stop control. For intersections with a cross street stop control, the delay and level of service for the worst individual movement (or movement sharing a single lane) are shown.

The Dale Evans Parkway and Johnson Road intersection (#5) is an unsignalized intersection operating at LOS C during the PM peak hour. Per the Traffic Analysis, the intersection warrants a traffic signal for current traffic conditions. To maintain the acceptable LOS, the installation of a traffic signal is recommended under existing 2024 conditions and under future conditions after the Project build out. (See Mitigation Measure TRA-1).

Opening Year Cumulative (2027) Without and With Project Conditions

The Project is expected to be operational by the year 2027. To conservatively account for the increase of area ambient traffic, the Traffic Analysis calculated a 2% ambient growth rate per year for three years for a total of 6.12% growth. Cumulative traffic increases stemming from other known related projects which may or may not be operational in 2027 were also considered. Traffic generated by the Project was then added to the cumulative forecasts to ascertain the Project's impacts to the area's transportation system. The Traffic Analysis provides two scenarios: opening year (2027) cumulative without the project, and opening year (2027) cumulative with the Project.

As shown in Table 16, both without and with traffic from the Project, six intersections would operate at unacceptable LOS levels; four intersections during both AM and PM peak hours, and two intersections would be unacceptable during the PM peak hours:

- #4 Navajo Rd/Johnson Rd – LOS F AM and PM peak hours
- #5 Dale Evans Pkwy/Johnson Rd – LOS F AM and PM peak hours
- #6 Stoddard Wells Rd/Johnson Rd – LOS F AM and PM peak hours
- #7 1-15 NB Ramps/Stoddard Wells Rd – LOS F AM and PM peak hours
- #8 Quarry Rd/Stoddard Wells Rd – LOS B AM peak hours, LOS F PM peak hours
- #9 Quarry Rd/1-15 SB Ramps – LOS B AM peak hours, LOS F PM peak hours

The Project would not cause additional intersections to fail, although it would contribute to deficiencies to intersections. Although the Project would not have a significant impact on these intersections, Mitigation Measure TRA-1 is recommended which requires that the Project contribute its fair share to the necessary improvements for these locations. The improvements primarily consist of signalization. Mitigation Measure TRA-1 would ensure that impacts associated with the General Plan policy requiring LOS D would be less than significant.

Table 16
Intersection Analysis for 2027 Conditions Without and With Project

Intersection	Traffic Control[1]	2027 Without Project				2027 With Project			
		Delay[2] (secs)		Level of Service		Delay[2] (secs)		Level of Service	
		AM	PM	AM	PM	AM	PM	AM	PM
#1 Dakota Ave/Corwin Rd	CSS	8.5	8.6	A	A	8.6	9.0	A	A
#2 Ramona Rd/Fresno Rd	CSS	8.5	8.5	A	A	8.9	9.0	A	A
#3 Navajo Rd/Altadena St	CSS	8.5	8.7	A	A	8.8	9.1	A	A
#4 Navajo Rd/Johnson Rd	CSS	**>100**	**>100**	**F**	**F**	**>100**	**>100**	**F**	**F**
#5 Dale Evans Pkwy/Johnson Rd	AWS	**>100**	**>100**	**F**	**F**	**>100**	**>100**	**F**	**F**
#6 Stoddard Wells Rd/Johnson Rd	CSS	**>100**	**>100**	**F**	**F**	**>100**	**>100**	**F**	**F**
#7 1-15 NB Ramps/Stoddard Wells	CSS	**>100**	**>100**	**F**	**F**	**>100**	**>100**	**F**	**F**
#8 Quarry Rd/Stoddard Wells Rd	CSS	14.3	**>100**	B	**F**	14.5	**>100**	B	**F**
#9 Quarry Rd/1-15 SB Ramps	CSS	13.1	**>100**	B	**F**	13.3	**>100**	B	**F**
#10 Dale Evans Pkwy/Corwin Rd	CSS	11.7	21.3	B	C	12.8	28.6	B	D
#11 Dakota Rd/Gustine Rd	CSS	Future Intersection				8.5	8.7	A	A
#12 Dakota Rd/Access 1	CSS	Future Intersection				8.6	8.8	A	A
#13 Dakota Rd/Access 2	CSS	Future Intersection				8.8	9.0	A	A
#14 Dakota Rd/Fresno Rd	CSS	Future Intersection				8.7	8.8	A	A
#15 Ramona Rd/Gustine Rd	CSS	Future Intersection				8.4	8.3	A	A
#16 Ramona Rd/Access 3	CSS	Future Intersection				8.6	8.6	A	A
#17 Ramona Rd/Access 4	CSS	Future Intersection				8.4	8.5	A	A

Source: "Lecangs Dakota Apple Valley Industrial Traffic Analysis," Urban Crossroads, prepared October 9, 2024.
*__Bold__ = LOS does not meet the applicable jurisdictional requirements (i.e. unacceptable LOS).
[1] AWS = All Way Stop; CSS = Cross-Street Stop; CSS = Improvement
[2] Per the Highway Capacity Manual (7th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal, or all way stop control. For intersections with a cross street stop control, the delay and level of service for the worst individual movement (or movement sharing a single lane) are shown.

Traffic Signal Warrant Analysis

A traffic signal warrant analysis was conducted to consider the need for traffic signals at study area intersections under opening year cumulative 2027 traffic conditions. If an intersection meets the traffic signal warrant criteria, a traffic signal is not necessarily required, but additional traffic conditions should be considered to make a final determination as to whether a signal must be installed.

The following intersections are anticipated to need traffic signals due to forecasted peak hour traffic volume:

- #4 Navajo Road and Johnson Road
- #6 Stoddard Wells Road and Johnson Road
- #7 1-15 Northbound Ramps and Stoddard Wells Road
- #8 Quarry Road and Stoddard Wells Road
- #9 Quarry Road and I-15 SB Ramps

- #10 Dale Evans Parkway and Corwin Road (previously discussed as needing a traffic signal under existing 2024 conditions).

Recommended Cumulative 2027 Improvements at Intersections

Table 17 describes the recommendations for improving impacted intersections per the Traffic Analysis. The improvements apply to conditions for Opening Year Cumulative (2027) Without and With the Project, and are the basis for the mitigation provided in Mitigation Measure TRA-1.

Table 17
Opening Year Cumulative (2027)

Intersection	Jurisdiction	Without Project	With Project
#4 Navajo Rd/Johnson Rd	Town of Apple Valley	Install a traffic signal Add 2nd EB through lane Add WB left turn lane Add NB left turn lane	Same Same Same Same
#5 Dale Evans Pkwy/Johnson Rd	Town of Apple Valley, County	Install a traffic signal Add 2nd NB through lane Add 2nd SB through lane Add 2nd EB though lane Add 2nd WB through lane Add EB left turn lane Add WB left turn lane	Same Same Same Same Same Same Same
#6 Stoddard Wells Rd/Johnson Rd	Town of Apple Valley, County	Install a traffic signal Add NB right turn lane Add WB left turn lane Provide NBR overlap phase	Same Same Same Same
#7 1-15 NB Ramps/Stoddard Wells	Town of Apple Valley, Caltrans	Install a traffic signal Add 2nd WB through lane Add SB left turn lane Add EB left turn lane Add WB left turn lane	Same Same Same Same
#8 Quarry Rd/Stoddard Wells Rd	County	Add WB right turn lane	Same
#9 Quarry Rd/1-15 SB Ramps	County, Caltrans	Add right turn lane	Same

Recommendations for Off-Site Improvements and Site Access Improvements

The Project will result in the expansion of the Town's circulation system in the NAVISP area, which includes one road that is currently paved, two unpaved roads, and one road that currently does not exist. With the approval of the Town, the Project will be required to construct half-width improvements per the General Plan build out standards along the four roads bordering the Project site. Additionally, the Project will need to include site access improvements to allow for safe and adequate entrance and exit points from the Project site.

The following off-site improvements are recommended based on the necessary improvements to accommodate safe site access and maintain acceptable peak hour

LOS at site access and on-site intersections. Improvements will include on-site traffic signing and striping that align with the California Manual on Uniform Traffic Control Devices and in conjunction with detailed construction plans for the Project site.

- Dakota Road – Currently paved. Ultimately Dakota Road between Fresno Road and Gustine Road will be a Secondary Road with an 88-foot right-of-way along the west boundary of the Project site. The Project will construct a half-section of Dakota Road from the site's north boundary at Gustine Road to the south boundary at Fresno Road according to the Town's standards for a Secondary road.
- Ramona Road – Currently does not exist. Ultimately Ramona Road will operate on the east boundary of the Project as a two-lane local roadway. The Project will construct Ramona Road from Gustine Road to Fresno Road as a two-lane local roadway.
- Gustine Road – Currently unpaved. Ultimately Gustine Road will be a Secondary Road with an 88-foot right-of-way along the north boundary of the Project site. The Project will construct Gustine Road to its ultimate half-section between Dakota Road and Ramona Road. The Project will also provide an additional 12 feet of pavement width to accommodate one westbound lane from the eastern boundary to the western boundary of the Project site.
- Fresno Road – Currently unpaved. Ultimately Fresno Road will operate as a Secondary Road with an 88-foot right-of-way along the south boundary of the Project site. The Traffic Analysis recommends that Fresno Road be constructed by the Project as a two-lane local road from Dakota Road to Ramona Road.

The following on-site circulation recommendations are based on the necessary improvements to accommodate safe site access and maintain acceptable peak hour LOS at site access and on-site intersections:

- Dakota Road and Site Access 1 (northwest access) – The Project will install a stop control on the westbound approach and construct a shared left-right turn lane (Project driveway).
- Dakota Road and Site Access 2 (southwest access) – The Project will install a stop control on the westbound approach and construct a shared left-right turn lane (Project driveway).
- Ramona Road and Site Access 3 (northeast access) – The Project will install a stop control on the eastbound approach and construct a shared left-right turn lane (Project driveway). The Project will construct a northbound shared through-left turn lane and a southbound shared through-right turn lane.
- Ramona Road and Site Access 4 (southeast access) – The Project will install a stop control on the eastbound approach and construct a shared left-right turn lane (Project driveway). The Project will construct a northbound shared through-left turn lane and a southbound shared through-right turn lane.
- Dakota Road and Gustine Road – The Project will install a stop control on the westbound approach and construct a shared left-right turn lane.
- Dakota Road and Fresno Road – The Project will install a stop control on the westbound approach and construct a shared left-right turn lane.
- Ramona Road and Gustine Road – The Project will construct a northbound left turn lane and an eastbound right turn lane.

- Ramona Road and Fresno Road – The Project will install a stop control on the eastbound and westbound approaches and construct a shared eastbound left-right turn lane.

The Town will condition the Project to implement the above improvements which will serve to provide adequate and safe access to the Project site and maintain acceptable traffic conditions within the surrounding road network. Future projects on adjacent parcels would also be required to provide similar improvements towards completing the roadways in the NAVISP area. Improvements will be constructed to meet Town and Fire District standards to ensure that emergency vehicles can safely access the site. These improvements will also ensure that impacts associated with safe traffic flow and emergency access remain less than significant with Project implementation.

Alternative Transportation

To promote safe access to alternative modes of transportation the General Plan proposes Class II bike lanes on Dale Evans Parkway between Corwin Road and Fresno Road, and on half of Fresno Road. Class I bike lanes are proposed for the east half of Fresno Road, Navajo Road, and Dale Evans north of Fresno Road. The off-site Project improvements would include the bike lanes as proposed by the General Plan and as required by the GP EIR mitigation measures.

Pedestrian facilities do not occur near the Project site, although sidewalks would be included in the Project's off-site improvements per the General Plan standards. At the time of completion, these sidewalks would not connect to other sidewalks as the adjacent lands are not developed, but would eventually contribute to a complete sidewalk network, as required in the General Plan.

Public Transit

As discussed above, the Victor Valley Transit Authority (VVTA) offers six bus routes through the Town of Apple Valley. Route 42 runs along Dakota Road between Corwin Road to the south and to Needham Avenue to the north. The nearest bus stops to the Project site are 1.74 miles south on Dale Evans Parkway south of Waalew Road, and 1.42 miles north near the intersection of Navajo Road and Lafayette Street.

The Town will continue to coordinate with the VVTA to enhance bus routes and add bus stops as the demand grows.

Summary

The development of the Project would contribute additional vehicle trips to the NAVISP area circulation system and thus contribute to 2027 cumulative deficiencies in LOS, although, as the Traffic Analysis concluded, LOS deficiencies are expected to occur regardless of the proposed Project's contributions. All ten of the existing intersections currently operate at an LOS of C or higher. In 2027 with cumulative impacts of nearby projects and the proposed Project, four of these 10 intersections would operate at an LOS of F during AM and PM peak hours and two would operate at an LOS of F during the PM peak hours. Future 2027 intersections would operate at an LOS of A.

All recommended off-site and on-site improvements would be consistent with the Town's Circulation Element in the General Plan and comply with the Town's code of ordinances and policies regarding circulation standards.

The Project will contribute its fair share to the impacted intersections per the recommendations listed in the Traffic Analysis and as explained in Mitigation Measure TRA-1. This would ensure that the study area intersections would continue to operate at existing LOS and would reduce the Project's potential impacts to less than significant,

b) **No Impact.** Senate Bill 743 (2013) updates the methodology for analyzing transportation impacts by projects to more accurately measure transportation-related air pollutants and greenhouse gas emissions, and to more effectively reduce emissions via the development of multimodal transportation networks and diversification of land uses. CEQA Guidelines section 15064.3 describes the use of Vehicle Miles Traveled (VMT) as the metric by which to measure project transportation impacts.

The adoption of VMT as a metric for analyzing traffic impacts went into effect July 1, 2020, eleven years after the 2009 General Plan EIR. The GP EIR relied on LOS to gauge transportation impacts of the General Plan build out.

Current environmental documents that tier from documents written prior to July 1, 2020, which had based transportation analyses on LOS rather than VMT, may apply the same prior LOS standard to the current project analysis. Per CEQA Guidelines section 15162, no new EIR or further analysis is required unless there are substantial changes in the project, circumstances, or new information of substantial importance that was not known or could not have been known at the time of the GP EIR, leading to new or more severe significant effects. This MND is not required to analyze VMT because VMT information was known or could have been known at the time the GP EIR was certified. Since no new information or changes trigger the conditions for a new EIR or further analysis under Section 15162, the MND can rely on the LOS methodology used in the GP EIR without incorporating VMT analysis.

Traffic impacts resulting from the buildout of the 2009 General Plan including the NAVISP area were analyzed in the GP EIR and described above in this analysis along with mitigation measures which would apply to this Project. The proposed warehouse Project is consistent with the Town's land use and zoning designations for the Project site and would not introduce new impacts that have not been previously analyzed.

The Traffic Analysis for the Project provides a comparative analysis of existing 2024 traffic conditions and cumulative 2027 traffic conditions, which describes how traffic impacts from the Project would contribute to the cumulative increase in vehicle trips and LOS deficiencies. The Project would be responsible for constructing the recommended on-site and off-site improvements as well as providing its fair share of fees towards intersection improvements.

Mitigation measures required in the GP EIR address multimodal transportation accommodations such as adding bike lanes and sidewalks per the General Plan Circulation Element. On-going coordination with the VVTA by the Project to improve access to mass transit for workers at the Project site would also be required by the Project.

Implementation of recommended intersection improvements via Project fair share fees and recommended on-site and off-site street improvements in addition to compliance with GP EIR mitigation measures would ensure that traffic from the Project would have a less than significant impact on the area's LOS.

c) **No Impact**. The traffic associated with the Project, consisting of passenger cars and large trucks, would be compatible with the type of traffic expected for the roadways in the NAVISP area. Traffic Analysis recommendations for site access would ensure that trucks can safely enter and exit the Project site. The Project does not propose sharp curves or dangerous intersections, and separates car and truck traffic to eliminate conflicts. All roadway improvements would be subject to the Town's standards and approval as well as the approval of the Fire District. There would be no impacts from hazardous geometric design feature or from incompatible use.

d) **Less Than Significant Impact.** Construction activities during road improvements may result in partial blockage and narrowing of the roads around the Project site. As such, the Town requires the preparation of traffic control plans along with improvement plans for the roadways. The traffic control plans would include provisions for temporary access, circulation signage, and other tools for maintaining roadway access. Given the rural setting, the surrounding vacant lots, and the Town's requirements for appropriate traffic management, impacts to emergency access from the construction phase would be less than significant.

As stated above, all on-site and off-site roadway improvements would be subject to the Town's standards and approval as well as the approval of the Fire Department. The Town's standards and approval process would ensure that the Project would not impact emergency access through the area during the operational phase.

Mitigation Measures:

TRA-1 The Project will contribute its fair share to regional roadway improvements. The Project Fair Share Contributions listed in Table 18 show the Project's percentage of the total traffic volume and deficiency. To reduce the Project's expected impacts to less than significant, the Project would be responsible for paying its share as shown in the table.

Table 18
Project Fair Share Contributions to Impacted Intersections

#	Intersection	Existing (2024) Traffic	2027 w/Project Traffic	Project-Only Traffic	Total New Traffic[1]	Project Fair Share (%)[2]
4	Navajo Rd / Johnson Rd.					
	• AM Peak Hour	130	2,891	50	2,761	1.8%
	• PM Peak Hour	227	3,046	69	2,819	**2.4%**
5	Dale Evans Pkwy. / Johnson Rd.					
	• AM Peak Hour	506	3,185	72	3,161	4.6%
	• PM Peak Hour	885	4,096	98	3,248	**5.8%**
6	Stoddard Wells Rd. / Johnson Rd.					
	• AM Peak Hour	284	2,023	62	1,739	3.6%
	• PM Peak Hour	450	2,439	84	1,989	**4.2%**
7	I-15 NB Ramps / Stoddard Wells Rd.					
	• AM Peak Hour	380	4,924	62	4,544	1.4%
	• PM Peak Hour	543	5,519	84	4,976	**1.7%**
8	Quarry Rd. / Stoddard Wells Rd.					
	• AM Peak Hour	222	2,195	15	1,973	0.8%
	• PM Peak Hour	309	3,352	60	3,043	**2.0%**
9	Quarry Rd. / I-15 SB Ramps					
	• AM Peak Hour	164	1,600	15	1,436	1.0%
	• PM Peak Hour	257	2,897	60	2,640	**2.3%**

[1] Total New Traffic = (2027 with Project - Existing Traffic)

[2] Project Fair Share % = (Project Only Traffic / Total New Traffic)

Monitoring:

TRA-A The Town Engineer shall approve project improvement plans prior to the issuance of grading permits. Approval of improvement plans will be tied to the payment of fair share contributions, as shown in Table 18.
Responsible Parties: Project applicant, project engineer, Town Engineer.

XVIII. TRIBAL CULTURAL RESOURCES a) Would the Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code 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, and that is:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or		✓		
ii) 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 Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.		✓		

Sources: "Historical/Archaeological Resources Survey Report Assessor's Parcel Number 0463-372-21" prepared by CRM Tech (September 7, 2024).

Environmental Setting

The Victor Valley region is part of the homeland of the Serrano people, which is centered in the San Bernardino Mountains but also includes part of the San Gabriel Mountains, much of the San Bernardino Valley, and the southern portion of the Mojave Desert. Prior to European contact, Serrano subsistence was defined by the surrounding landscape and primarily based on the gathering of wild and cultivated foods and hunting, exploiting nearly all the resources available. Their long-term settlements were located mostly on elevated terraces, hills, and finger ridges near reliable sources of water, especially in foothills and along major rivers. Today, most Serrano descendants are affiliated with the Yuhaaviatam of San Manuel Nation (formerly known as the San Manuel Band of Mission Indians), the Morongo Band of Mission Indians, or the Serrano Nation of Indians.

GP EIR

See Section V for summary of Cultural Resources analysis and mitigation in the GP EIR.

Proposed Project Impacts

a, i, ii) Less Than Significant With Mitigation Incorporated. On June 20, 2024, CRM TECH submitted a written request to the State of California Native American Heritage Commission (NAHC) for a records search in the commission's Sacred Lands File. The NAHC is the State of California's trustee agency for the protection of "tribal cultural resources," as defined by California Public Resources Code §21074 and is tasked with identifying and cataloging properties of Native American cultural value, including places of special religious, spiritual, or social significance and known graves and cemeteries throughout the state.

In a response letter dated July 8, 2024, the NAHC reported that the Sacred Lands File identified no Native American cultural resources in the Project vicinity. The NAHC recommended that local Native American groups be consulted for further information and provided a referral list of potential tribal contacts**.**

Assembly Bill 52 (AB 52) requires a lead agency to consult with tribes in the Project area during the CEQA process to allow tribes to be involved in the project development process and to address their concerns about potential impacts to tribal cultural resources. The consultation process requires the lead agency to provide written notification about a proposed project, as defined by CEQA, to tribes within the project's geographic area. If a tribe chooses to engage in consultation, it must respond to the lead agency within 30 days of receipt of the formal notification, and the lead agency must begin the consultation process within 30 days of receiving the request for consultation. Consultation concludes when the parties agree to measures to mitigate or avoid a significant effect (if a significant effect exists) on the tribal cultural resources, or when a party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached (Public Resources Code section 21080.3.2 (b)(1) and (2)). At the time the General Plan and its EIR were prepared, AB 52 had not yet been enacted.

The Town has initiated the tribal consultation process in conformance with AB 52 requirements. It has distributed consultation letters to the tribes who have requested consultation under AB 52. Each representative was contacted in writing regarding the proposed Project. The Town received written responses from two Tribes during the AB 52 comment period. The Twenty-Nine Palms Band of Mission Indians (BOMI) requested consultation, and the Yuhaaviatam of San Manuel Nation (YSMN) requested conditions provided herein as MM TCR-1, TCR-2, CUL-1 and CUL-2. As of June 3, 2025, the Town has concluded consultation with BOMI and no new conditions were requested or required. The mitigation measures included in Section V, Cultural Resources, requires that an archaeologist and Native American monitor be consulted should any resources be identified during grading, and that a Monitoring and Treatment plan be prepared, if necessary, to assure that impacts are reduced to less than significant levels. Should a consulting tribe request additional mitigation, it will be added to this Initial Study or to conditions of approval for the Project.

Summary of Impacts

With implementation of **CUL-1, CUL-2, TCR-1 and TCR-2,** the impacts associated with Tribal cultural resources will be reduced to less than significant levels. As required in the GP EIR,

the mitigation measures imposed on the Project address impacts from the Project and would reduce these impacts to less than significant levels, including impacts to Tribal resources.

The proposed Project will result in impacts to Tribal resources which are equivalent to those identified in the GP EIR. No resources are known to occur on the Project site, nor were any identified in the GP EIR. Mitigation measures proposed for the Project are consistent with the findings of the GP EIR and would have been imposed on the Project as they were recommended in the GP EIR. No changes to the environment that result in any new or more significant impacts would result from development of the proposed Project.

Mitigation Measures: See Section V (Cultural Resources).

TCR-1 The Yuhaaviatam of San Manuel Nation Cultural Resources Management Department (YSMN) shall be contacted, as detailed in CUL-1, of any pre-contact cultural resources discovered during project implementation, and be provided information regarding the nature of the find, so as to provide Tribal input with regards to significance and treatment. Should the find be deemed significant, as defined by CEQA, a Cultural Resources Monitoring and Treatment Plan shall be created by the archaeologist, in coordination with YSMN, and all subsequent finds shall be subject to this Plan. This Plan shall allow for a monitor to be present that represents YSMN for the remainder of the project, should YSMN elect to place a monitor on-site.

TCR-2 Any and all archaeological/cultural documents created as a part of the project (isolate records, site records, survey reports, testing reports, etc.) shall be supplied to the applicant and Town for dissemination to YSMN. The Town and/or applicant shall, in good faith, consult with YSMN throughout the life of the project.

Monitoring: See Section V (Cultural Resources).

XIX. UTILITIES AND SERVICE SYSTEMS **Would the project:**	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) 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?			✓	
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?			✓	
c) Result in a determination by the wastewater treatment provider which 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?			✓	
d) 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?			✓	
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?			✓	

Sources: Town of Apple Valley General Plan 2009; Liberty Utilities – Apple Valley Urban Water Management Plan (2021); Liberty Utilities Annual Water Quality Report (2023); Town of Apple Valley Sewer System Management Plan (2019); Town of Apple Valley Climate Action Plan 2019 (updated 2021); CalRecycle Estimated Solid Waste Generation Rates; 2020 Total System Electric Generation, California Energy Commission.

Environmental Setting

Domestic Water

Liberty Utilities Corp. is the largest water purveyor for the Town of Apple Valley and is a subcontractor of the Mojave Water Agency. Fresh water for residential, commercial, and industrial uses is sourced from the Mojave River Groundwater Basin (Mojave Basin), an aquifer system that formed over 10,000 years ago.[37] The Mojave River flows north from the San Bernardino Mountains on the south edge of the Victor Valley region, then seeps into the groundwater basin. Rain and storm events also contribute a smaller percentage of water to the basin. The Mojave Water Agency contracts with the California State Water Project to import water for recharging the basin.

[37] Lifeblood of the Desert, US Geological Survey California Water Science Center, June 2022.

The Mojave Basin Area extends across 1,400 square miles and contains approximately five million acre-feet of groundwater. Liberty Utilities jurisdiction falls within the Alto Subarea, one of the five subareas in the Mojave Basin. Across all five subareas of the Mojave Basin, groundwater has been overdrafted and water levels have declined over the past 50+ years.

As of the 2023 Annual Water Quality Report, Liberty Utilities manages a water system containing over 21,000 customers. With 475 miles of pipeline, Liberty Utilities delivers 9,398 acre-feet of water for non-agricultural uses pumped from 19 deep wells.[38]

Wastewater Treatment

The Apple Valley Department of Public Works Wastewater Division owns and operates the Town's sewer system, which collects wastewater and conveys it to the Victor Valley Wastewater Reclamation Authority (VVWRA) treatment plant. The Town's sanitary sewer system is comprised of approximately 145 miles of lines (force mains, collector lines, and trunk sewer lines) and seven lift stations.[39]

The VVWRA is a Joint Powers Authority which treats wastewater and distributes recycled water for multiple jurisdictions including the Town of Apple Valley. Wastewater is treated at the VVWRA's Westside Regional Water Reclamation Plant in Victorville, which treats 10.7 million gallons per day (mgd), and has a capacity of 18 mgd.[40] Most of the wastewater is treated to a secondary level, and some is treated to a tertiary level. Secondary effluent is sent to six different percolation ponds for groundwater recharge. Tertiary effluent is released into the Mojave River also for groundwater recharge and is used for irrigation and industrial processing.[41]

The VVWRA manages the Apple Valley Subregional Water Recycling Facility located at Brewster Park in the Town of Apple Valley. This facility produces one million gallons of recycled water per day which is used to irrigate Brewster Park and Civic Center Park.

Electricity

In California, 45% of the total power generated in-state and imported from out of state includes a mix of renewable sources such as solar, wind, hydroelectricity, geothermal, and biomass. Approximately 9% is derived from nuclear power, and the remaining 46% is generated by natural gas, coal, and oil.[42] According to the Town of Apple Valley Climate Action Plan 2019 Update, total electricity demand in Apple Valley in 2019 was 329,848,695 kilowatt-hours (kWh).

In Apple Valley, consumers receive electricity via two options. Firstly, Southern California Edison (SCE) delivers all electricity, manages and maintains the electrical grid, and provides billing and customer service. Secondly, all Apple Valley consumers are automatically enrolled in a separate program called the Apple Valley Choice Energy program (AVCE). AVCE is an electrical municipal provider, managed by the Town, who procures electricity from producers with higher

38 2023 Annual Water Quality Report, Liberty Utilities, 2024.

39 Operations and Maintenance, Town of Apple Valley Sewer System Management Plan, 2019.

40 Operations and Maintenance, Victor Valley Wastewater Reclamation Authority, accessed September 2024, https://www.vvwraca.gov/departments/human-resources/operations-and-maintenance.

41 "Wastewater Collection, Treatment, and Disposal," 2020 Urban Water Management Plan, Liberty Utilities, 2021.

42 2022 Total System Electric Generation, California Energy Commission, https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2022-total-system-electric-generation.

renewable energy content and contracts with SCE to deliver that electricity. Consumers may remain opted-in to the AVCE program and receive electricity from SCE with a higher portion being produced from renewable sources, or consumers may opt out of the program and receive electricity only from SCE contracted producers.

Electrical power poles and overhead lines occur at the southeast corner of the Project site on the corner of Fresno Road and Ramona Road. Three poles are located on the south side of Fresno Road, and five poles align the east side Ramona Road south to Corwin Road.

Natural Gas

Southwest Gas Corporation (SWG) provides natural gas to the Town of Apple Valley. Natural gas is used for space heating, cooking, water heating, industrial processes, and transportation fuel. According to the Town of Apple Valley Climate Action Plan 2019 Update, Town-wide natural gas demand in Apple Valley in 2019 was 15,526,732 therms.

An existing SWG line is located approximately 331 feet south of the Project site under Founders Road and extends from Ramona Road to Dakota Road. The applicant would need to construct a connecting line from the Project site to the south either along Dakota Road or Ramona Road.

Telecommunications

In Apple Valley, Verizon Communications provides fiber-optic services, and Spectrum Charter provides cable and fiber optic services for internet and television connectivity.

Solid Waste Management

AVCO Disposal/Burrtec Waste Industries, Inc. is contracted by the Town to collect solid waste and transport it to the nearest landfill, the Victorville Sanitary Landfill, which is operated by San Bernardino County. The Victorville Landfill has a total capacity of 93,400,000 cubic yards and has an 85% remaining capacity of 79,400,000 cubic yards. [43]

GP EIR

Utilities and Service Systems were analyzed as part of the Public Services and Facilities section of the Town's GP EIR (Section III.M, page III-229 et.seq). Impacts resulting from the Town's buildout as described in the GP EIR are summarized here.

Domestic Water

Section III-1, Water Resources/Quality, of the GP EIR found that build out of residential, commercial, industrial, and other types of development described in the General Plan would increase the Town's annual water demand to 95,999 acre-feet. Water delivery infrastructure would need to be extended to areas that had not yet been developed but were slated for future development. To ensure that water supplies would be able to meet the demand, the GP EIR prescribed the following mitigation measures which apply to all future development.

[43] Victorville Sanitary Landfill, CalRecycle, accessed September 2024, https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/1870?siteID=2652.

GP EIR Domestic Water Services Mitigation Measures

The following mitigation measures will reduce impacts associated with domestic water services to less than significant levels (GP EIR page III-250).

1. All future development projects shall be subject to review by the Town and the applicable water purveyor to assess their potential impact on local groundwater supplies.
2. The Town and applicable water purveyor shall coordinate for the extension of infrastructure to serve future development in Annexations 2008-001 and 2008-002.
3. The use of drought tolerant landscaping shall be encouraged in public and private development.
4. Future development shall be required to conform to standards set forth in Section 17921.3 of the Health and Safety Code, Title 20, California Administrative Code Section 1601(b), and applicable sections of Title 24 of the State Code. These measures include the installation of low-flush toilets, low-flow showerheads and faucets in all new construction.

Wastewater

The GP EIR estimated that the Town's population at build out would be 194,931 residents and that wastewater generation would be approximately 100 gallons per capita per day. In order to accommodate the 19,493,069 gallons per day (gpd) of wastewater, the Town would need to constantly monitor growth and invest in additional infrastructure. In 2009, only 30% of the Town's development was connected to the Victor Valley Wastewater Treatment Authority (VVWRA) sewer facilities in Victorville. To reduce the costs associated with extending the sewer collection system, sub-regional wastewater treatment plants would need to be constructed. Since growth would occur over time, the Town would be able to strategically plan and construct new facilities as the demand increased as well as implement the following mitigation measures.

GP EIR Wastewater Collection and Treatment Mitigation Measures

The following mitigation measures will reduce impacts associated with wastewater collection and treatment services to less than significant levels (GP EIR page III-252).

1. To the greatest extent feasible, all new development shall connect to the existing wastewater treatment collection system, or otherwise comply with the Town's Sewer Connection Policy.
2. The Town shall cooperate and coordinate with VVWRA to ensure that there are adequate wastewater collection and treatment facilities to serve development in the General Plan study area.
3. The Town shall continue to confer and coordinate with VVRWA to secure funding for sub-regional wastewater treatment facilities to serve development in the Town.
4. The Town shall continue to confer and coordinate with VVWRA to secure funding for tertiary treated water facilities to serve development in the Town.

Electricity

The 2009 General Plan estimated that the Town's build out electricity consumption would be approximately 1,807,978,891 kilowatt-hours per year (kWh/yr), and industrial uses would comprise 525,032,571 kWh/yr, or 29%, of the Town's annual consumption. With the implementation of energy efficiency measures, the addition of electricity generation sources, the expansion of electricity infrastructure, and the restructuring of Southern California Edison's rate structures, significant impacts were not expected to occur, and no mitigation measures were required.

Natural Gas

The Town's provider of natural gas, Southwest Gas Corporation (SWG), provided gas service through the Town, although less developed and rural areas in 2009 did not have pipeline extensions. In these areas, propane was utilized instead. SWG stated that it would work with the Town and developers to extend infrastructure as needed.

The GP EIR projected that at the Town's build out, the monthly natural gas consumption would be about 779,089,325 cubic feet, or 9,349,071,900 annually (9,536,053,338 kBTU). Again, as the Town's growth would occur gradually, the expansion of natural gas facilities would also occur in tandem, and SWG's rate structure would alter as needed to accommodate the growth. No mitigation measures were required.

Solid Waste

The GP EIR estimated that the Town's total annual solid waste generation at build out of the General Plan could equate to 950,712 tons per year, or 2,603 tons per day. Additional disposal sites would be required as would the following mitigation measures.

GP EIR Solid Waste Management Mitigation Measures

The following mitigation measures will aid in reducing the amount of waste generated, thereby mitigating the impacts to landfills and promoting the Town's compliance with AB 939. (GP EIR page III-257).

1. 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.
2. 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.
3. Recycling provisions for single-family and multi-family residential dwelling units shall continue to be included in the Town's solid waste disposal contracts.
4. Recycling provisions for commercial and business establishments should include separate recycling bins. Items to be recycled at commercial establishments may include white paper, computer legal paper, cardboard, glass, and aluminum cans.
5. As landscaping debris comprises a significant percentage of residential solid waste, developers shall contract for professional landscaping services from companies which compost green waste. Several landscaping companies in the Apple Valley/Victorville area are currently composting for waste disposal. On-site composting and grass recycling (whereby grass clippings are left on the ground) is also encouraged wherever possible.

Proposed Project Impacts

a) **Less Than Significant Impact**. The NAVISP area is largely undeveloped, as such, existing infrastructure for utility services is limited. However, the Project site is less than 1,000 feet from the Apple Valley Airport property, which has utility services, hence, establishing connectivity to the Project would not result in significant impacts.

Water

Currently a 12-inch water line runs under Fresno Road and could be connected to the proposed 12-inch water line that would extend north along Dakota Road to the Project. On-site, 8-inch water lines would wrap around the north and east perimeters. The proximity of the existing 12-inch water line would prevent the relocation or construction of the water lines.

Wastewater Treatment

Along Dakota Road an existing 15-inch trunk sewer line extends from Corwin Road and continues north to Altadena Street north of Gustine Street. The Project would connect directly to this existing line and thus there would be no need to construct a new sewer line or relocate existing sewer lines. The Town's Wastewater Division reviews plans for all projects requiring a sewer connection and bases the reviews on San Bernardino County's most recent Sewer Standards. The proximity of the existing sewer line to the Project and the Town's review process both ensure that impacts to the Town's sewer infrastructure would be less than significant.

Stormwater Drainage

As discussed in Section X, Hydrology and Water Quality, the Project would be required to manage stormwater flows on site for a 100-year event as there are no existing urban stormwater management systems in the NAVISP. The applicant proposes to construct a 1.4 acre, or 60,867 square-foot, stormwater retention basin along the south edge of the Project site between the parking area and Fresno Road. The retention basin would accommodate 50,000 cubic feet of stormwater. Off-site stormwater conveyance would begin with the Gustine Street improvements and direct water into the catch basins within the proposed street rights-of-way along Dakota Road and Ramona Road, then into the catch basin along Fresno Road. Two storm drains would meet on the north side of Fresno Road and direct runoff to the south side into a drainage swale south of Fresno Road. No additional relocation or expansion of drainage facilities would be required beyond the above-described Project drainage system. Impacts would be less than significant.

Electricity

Southern California Edison (SCE) will deliver electricity to the Project site. At the southeast corner of the Project parcel existing overhead transmission lines run along Fresno Road extending from Navajo Road to the east and turning south down Ramona Road. Other nearby overhead transmissions lines also occur at the corner of Gustine Street and Navajo Road, east of the Project site. The Project utilities site plan shows an electricity connection at the southeast corner of the Project site, near the Fresno Road/Ramona Road intersection, as well as a second connection at the northwest corner of the site at Dakota Road and Gustine Street.

The Town of Apple Valley 2019 Climate Action Plan Update states that in 2019, the total amount of electricity consumed annually by the community was 326,679,466-kilowatt hours (kWh), and approximately 12% of that was consumed by industrial and agricultural users (38,785,029 kWh). Total operational electricity demand for the proposed Project is expected to be 4,341,692 kilowatt hours per year, which equates to 1.33% of the Town's 2019 total consumption, and 11.2% of the Town's 2019 industrial/agricultural use. Table 19 below provides details regarding the estimated annual electricity consumption by the Project during the operational phase.

Table 19
Project Electricity Consumption

Land Use	Electricity Use (kWh/yr)
Warehouse	2,636,134
Office Space	985,124
Parking Lot Lighting	720,434
Total	**4,341,692**
Percent of Town's Annual Consumption	**1.33%**

Sources:
1. CalEEMod 2022.1 (Full report is available in Appendix A).
2. Town of Apple Valley 2019 Climate Action Plan Update.

Natural Gas

Southwest Gas Corporation (SWG) has an existing gas line under Founders Road, located approximately 330 feet south of the south Project boundary. A gas line extension would be constructed to the connect the Project site, if required. Generally, however, natural gas is not required for warehouse projects, and is not planned for the Project site. Given the short distance, the impacts from construction of a new line would be less than significant.

According to the Town's 2019 Climate Action Plan, Town-wide total annual natural gas consumption was 15,413,836 therms (1,541,383,600 kBTU), and the industrial sector consumed 35,330 therms, or 0.23% of the Town's total consumption. Estimated annual consumption of natural gas during the operational phase of the Project is 123,993 therms (12,399,371 kBTU), which represents 0.8% of the Town's total 2019 natural gas consumption.

Table 20 provides an estimate of the Project's natural gas consumption relative to the Town's total natural gas consumption.

Table 20
Project Operational Natural Gas Consumption

Land Use	Natural Gas Use (kBTU/yr)
Warehouse	10,850,383
Office Space	1,548,934
Parking Lot	0
Total	**12,399,371**
Percent of Town's Total Natural Gas Consumption	**0.8%**

Sources:
1. CalEEMod 2022.1 (Full report is available in Appendix A).
2. Town of Apple Valley Climate Action Plan 2019 Update.

Telecommunications

Frontier and Charter Communications provide the Town of Apple Valley with telephone, internet, cable television, and other telecommunication services. The Project will require off-site improvements and involve the installation of telecommunication connections to serve the proposed development. Construction of these off-site improvements will be

required to comply with the service providers guidelines and requirements to ensure that the Project takes the appropriate steps in installing the infrastructure and limiting any environmental impacts associated with buildout.

Summary
The Project would not result in a significant relocation or construction of utility infrastructure as most of these services already occur along the Project site's west and south boundaries and would require an on-site extension to connect to existing utilities. Environmental impacts from establishing connections to services are expected to be less than significant, and consistent with the impacts analyzed in the GP EIR.

b) **Less Than Significant Impact.** The Project conforms with the Town's General Plan land use designation for the site and the expected water consumption for a warehousing land use. Construction activities would consume water primarily during fugitive dust control site watering as required by MDAQMD Rule 403. Construction activities will be temporary lasting no longer than 18 months.

The indoor use for the Project includes of 570,752 square feet of warehouse space and 56,448 square feet of office space. Estimated annual water demand for the indoor uses are derived from two sources: the warehouse demand factor is derived from the U.S. Energy Information Administration 2012 Commercial Buildings Energy Consumption Survey, Water Consumption in Large Buildings; the office demand factor is derived from the American Water Works Associated Research Foundations (AWWARF's) Commercial and Industrial End Uses of Water. Warehouse water demand is estimated to be 3.4 gallons per square foot per year and would potentially total 5.95 acre-feet per year. The office space would use 15 gallons of water per square foot per year, which totals 2.4 acre-feet per year. The total estimated annual water demand for the warehouse and office space is 8.35 acre-feet.

The Project's water demand for outdoor irrigation based on the Maximum Applied Water Allowance (MAWA) equation from the Town of Apple Valley Ordinance No. 479, which is compliant with the Department of Water Resources Code of Regulations Title 23, Division 2, Chapter 2.7 "Model Water Efficient Landscape Ordinance." Outdoor water use is estimated to be 11.43 acre-feet per year. Table 21 below provides the estimated water demand for indoor and outdoor uses.

Table 21
Project Operational Water Demand

Indoor Use	Land Area (ft^2)	Indoor Demand Factor (gal/SF/year)	Indoor Annual Demand (acre-feet/yr)	Total Indoor Demand (acre-feet/yr)
Warehouse[1]	570,752	3.4	5.95	**8.35**
Office Space[2,3]	56,448	15	2.40	

Table 21
Project Operational Water Demand

Outdoor Use[4]	Land Area (ft^2)	Outdoor ETo (in/yr) x ETAF	Outdoor Conversion Factor (gal/ft^2)	Total Outdoor Demand (acre-feet/yr)
Landscape	201,664	66.2 x 0.45	0.62	**11.43**
			Total Project Annual Water Demand	**19.88**
			Percent of Town's Total Consumption[5]	**0.21%**

[1] Warehouse water demand factor is derived from U.S. Energy Information Administration 2012 Commercial Buildings Energy Consumption Survey, Water Consumption in Large Buildings Summary.
[2] Office water demand factor is derived from the AWWARF Commercial and Industrial End Uses of Water.
[3] Office space = 9% of gross floor space per site plan parking calculations.
[4]Outdoor water demand calculations based on Town's Evapotranspiration (ETo), Evapotranspiration Adjustment Factor (ETAF), and Conversion Factor (Ordinance No. 479).
[5]As of 2023, total water delivered to Town for non-agricultural uses is 9,398 afy.

In 2023, the Town consumed 9,398 acre-feet water for non-agricultural uses. Based on this total, the Project's water demand of 19.88 acre-feet per year would consume approximately 0.21% of the Town's total non-agricultural water demand.

While projected water demand over the next 25 years is expected to increase, Liberty Utilities has demonstrated that there will be a reliable supply of water for the Town. Under normal conditions, the Town's total water demand (including agricultural water) could reach 16,466 acre-feet per year by 2030, and 17,810 acre-feet per year by 2040. The Project's water demand would equate to 0.12% and 0.11% of these projections (respectively). Liberty Utilities Apple Valley 2020 Urban Water Management Plan provides a Water Shortage Contingency Plan for a multiple-year drought scenario with the assumption that no additional water supply to the groundwater basin would be available. The plan relies on a reduction of water that would be available to customers accompanied by a reduction of customer use. Past drought experience shows that Liberty Utilities has been able to maintain the groundwater supply during a multi-year drought.

According to the 2020 Urban Water Management Plan, Liberty Utilities has adequate water supplies to meet the Town's demand during normal, single-dry, and multiple dry years for at least the next 25 years. Given that the Project's water demand would represent a small fraction of the provider's total supply, and the fact that the Project is consistent with the land use designated for the site, the water supply would be sufficient to meet the Project's and Town's demand and new or expanded water facilities would not be required. Water use associated with construction of the Project would be short-term and can be accommodated by local water supplies. Impacts are expected to be less than significant.

c) **Less Than Significant Impact.** A portion of the Project's wastewater would be sent to the Victor Valley Wastewater Reclamation Authority (VVWRA) Sub-Regional Plant in Apple Valley, which treats up to one million gallons per day (mgd). All solids and the remaining balance of the Project's wastewater would be sent to the VVWRA main treatment plant in Victorville, which currently treats 10.7 mgd, and has a total capacity of 18 mgd. As shown in Table 22, the Project could potentially generate 60,150 gallons per day (gpd), or 0.06015 mgd. This would comprise 6% of the Apple Valley Sub-Regional Plant capacity and 0.56% of the VVWRA main treatment plant's current capacity. The Project would increase the amount of wastewater needing to be treated, but the increase would be marginal and would not significantly impact either treatment plant's capacity. The Project's impacts on local wastewater treatment capacity would be less than significant.

Table 22
Project Wastewater Generation

Land Use	Daily Wastewater Generation Factor	Proposed Development	Projected Wastewater Generated
Industrial	1,500 gpd/acre	40.1 acres	60,150 gpd
Percent of total Sub-Regional plant capacity			6%
Percent of current VVWRA main plant capacity			0.56%

Source: Chapter 8, Town of Apple Valley Sewer System Management Plan, 2019.

d, e) **Less than Significant Impact.** During the construction and operational phases, solid waste would be generated by the Project. To manage solid waste generation, a waste management plan (WMP) demonstrating how the Project will comply with state and local diversion policies must be approved by the Town. Such policies include the 2019 California Green Building Standards Code requiring a diversion rate of at least 65% for construction and demolition waste. The County of San Bernardino IWM Plan requires that construction waste be disposed of at an appropriate CDI debris processing facility. Finally, state Assembly Bill 939 requires local jurisdictions to divert 50% of waste per year.

Generation of construction waste will be short-term and with the 65% diversion rate policy, the total amount of construction waste taken to the landfill will be low.

Total on-going operational solid waste generation is estimated to be 4.45 tons per year, but after the 50% required diversion, the total solid waste discarded in the landfill would be approximately 2.23 tons annually, or 4,453.12 pounds per day.

As described above, Victorville Sanitary Landfill, which serves the Project area, has 85% remaining capacity of 79,400,000 cubic yards. The Project would contribute approximately 0.0000004% annually to the remaining capacity (see Table 23). Based on this estimate, the Project would not exceed the capacity of local infrastructure, nor would it impair the attainment of local solid waste reduction goals. Burrtec would ensure that solid waste operations comply with federal, state, and local regulations. The Project's impacts related to solid waste disposal would be less than significant.

Table 23
Project Estimated Solid Waste Generation

Land Use	Generation Rate	Proposed Development	Total (lbs per day)	Total (tons per year)
Industrial (Warehouse)	1.42 lbs / 100 sq ft / day	627,200 sq ft	8,906.24	4.45
With 50% solid waste diversion			**4,453.12**	**2.23**
Conversion to cubic yards[1]			**29.687**	
Percent of landfill remaining capacity			**0.0000004%**	

Source: Estimated Solid Waste Generation Rates for Commercial Retail (May 1997), CalRecycle, accessed September 2024, https://www2.calrecycle.ca.gov/wastecharacterization/general/rates.

1. National Recycling Coalition Measurement Standards and Reporting Guidelines, 2006. Estimates that 150 pounds of uncompacted municipal solid waste material is equal to 1 cubic yard of waste.

Mitigation Measures: None required.

Monitoring: None required.

XX. WILDFIRE If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?				✓
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?				✓
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?				✓
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?				✓

Sources: CALFire Fire and Resource Assessment Program (FRAP) maps (accessed October 2024); Town of Apple Valley General Plan (2009); Town of Apple Valley Local Hazard Mitigation Plan 2017 Update.

Environmental Setting

Most of the Town of Apple Valley is within a Local Responsibility Area (LRA) according to the CALFire Fire and Resource Assessment Program (FRAP). The most up to date FRAP maps only display the fire hazard severity in LRAs for very high fire hazard severity zones (VHFHSZ). According to FRAP maps, there are no fire hazard severity zones in the LRA encompassing most of Apple Valley.

According to the Town of Apple Valley Local Hazard Mitigation Plan, the subject property is within the Apple Valley LRA fire hazard severity zone designated as moderate (Figure 4-1 Wildfire Hazard Severity Zones. Wildfires are a particular threat for unincorporated areas in the Town's vicinity, which are more likely to be on the wildland-urban interface. During the extremely dry and hot summer months, these areas face a significant risk of wildfire.

GP EIR

At the time the GP EIR was prepared, wildfire was not a standalone topic required by the CEQA Guidelines. The EIR included brief discussions of wildland fires under Section III-G Hazards and Hazardous Materials and Section III-M Public Services. While the General Plan would facilitate new development that may increase community exposure to wildland fires, the EIR determined that careful emergency planning under the General Plan and compliance with the Apple

Valley Fire Protection District (AVFPD) requirements would reduce fire-related impacts to less than significant levels. GP EIR mitigation measures related to emergency evacuation plans are provided in Section III-G Hazards and Hazardous Materials, and mitigation measures to reduce impacts associated with provision of fire protection services are provided in Section III-M Public Services.

Proposed Project Impacts

a-d) No Impact. The California Department of Forestry and Fire Protection (CalFire) has mapped areas of significant fire hazards in the state through its Fire and Resources Assessment Program (FRAP). There are no state responsibility areas or very high fire hazard severity zones in the Project vicinity. The nearest fire hazard severity zones are located miles away to the south, near Bear Valley Road and Central Road. Buildout of the site is subject to the same General Plan policies and fire department requirements on fire safety and emergency access.

As described in Section IX Hazards and Hazardous Materials, the Project would comply with the Town's Emergency Operations Plan (2014) and Local Hazard Mitigation Plan (2017). Site plan review by the Apple Valley Fire Protection District (AVFPD) would ensure that the Project would not impact the Town's emergency evacuation plans.

The Project would not require the installation or maintenance of infrastructure that would exacerbate fire risk. While rocky hills occur to the west of the Project site, the slopes are not steep enough for landslides to occur, and vegetation is limited, so fire risk is not significant.

There would be no impact as a result of the proposed Project relating to wildfires. No new or increased severity of impacts would occur compared to those identified in the EIR.

Mitigation Measures: None required.

Monitoring: None required.

XXI. MANDATORY FINDINGS OF SIGNIFICANCE

NOTE: If there are significant environmental impacts which cannot be mitigated and no feasible project alternatives are available, then complete the mandatory findings of significance and attach to this initial study as an appendix. This is the first step for starting the environmental impact report (EIR) process. **Does the project:**	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, 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, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		✓		
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?			✓	
c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?			✓	

a) Less Than Significant with Mitigation Incorporated.

Biological Resources: The Project site is vacant, and undeveloped. No riparian habitat or other sensitive natural communities have been identified on the property, and no species of fish occur on the site.

Mitigation Measures (BIO-1 to BIO-4) provided in this document ensure that the Project would have less than significant impacts to the sensitive wildlife species known to occur in the Project area.

The proposed Project would not significantly reduce the habitat of a fish or wildlife species, cause such populations to drop below self-sustaining levels, threaten a plan or animal community, or reduce the number or range of a endangered species with the implementation of the mitigation measures contained in this document.

Cultural Resources: The Project would not eliminate important examples of the major periods of California history or prehistory. The cultural resources assessment prepared for the Project found no evidence of archaeological resources on the subject site. Mitigation measures CUL-1 ensures that any buried cultural materials or human remains discovered on the site during earth-moving operations would be handled appropriately.

Overall, there will be no significant environmental impacts which cannot be mitigated. Project-related impacts are considered less than significant with the implementation of mitigation measures contained in this document.

b) **Less Than Significant Impact**. A significant impact could occur if the proposed Project, in conjunction with related projects, would result in impacts that would be less than significant when view separately, but would be significant when viewed together. In this case, the impacts of the proposed Project are individually limited and not cumulatively considerable. The proposed development is consistent with the development envisioned for this area per the Town's General Plan and NAVISP. The Project would not significantly intensify the land use in the area beyond what is envisioned in the General Plan and NAVISP. All environmental impacts that could occur as a result of the proposed Project would be less than significant with the implementation of the mitigation measures included in this document, and when viewed in conjunction with other closely relatedly past, present, or reasonably foreseeable future projects, would be less than significant.

c) **Less Than Significant Impact**. The proposed Project would not have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly, with the implementation of the Town's Municipal Code, other standards requirements and laws, and the mitigation measures included in this document.

Appendix A
Air Quality and Greenhouse Gas Report
(Available on the Town website for review)

AIR QUALITY AND GREENHOUSE GAS REPORT

LECANGS DAKOTA WAREHOUSE

Apple Valley, San Bernardino County, California



Prepared by:
Terra Nova Planning & Research, Inc.®
42635 Melanie Place, Suite 101
Palm Desert, California 92211

October 2024

Table of Contents

ES EXECUTIVE SUMMARY 4

ES.1 Air Quality 4
ES.2 Greenhouse Gases 4

1 INTRODUCTION 5

1.1 Site Location 5
1.2 Project Description 5

2 AIR QUALITY SETTING 12

2.1 Atmospheric Setting 12
2.2 Criteria Pollutants 13
2.3 Current Conditions 15
2.4 Regulatory Background 19

3 PROJECT AIR QUALITY IMPACT 24

3.1 Introduction 24
3.2 Standards of Significance 24
3.3 Methodology 24
3.4 Construction Emissions 25
3.5 Operational Emissions 26
3.6 Localized Impacts 27
3.7 Air Quality Management Plan Consistency 28
3.8 Odors 30
3.9 Cumulative Impacts 30
3.10 CEQA Determination 30
3.11 Air Quality Mitigation Measures 32

4 CLIMATE CHANGE SETTING 33

4.1 Introduction to Greenhouse Gases and Climate Change 33
4.2 Regulatory Setting 39

5 PROJECT GREENHOUSE GAS IMPACT 45

5.1 Introduction 45
5.2 Standards of Significance 45
5.3 Methodology 45
5.4 Construction Emissions 45
5.5 Operational Emissions 46
5.6 CAP Consistency 47
5.7 Cumulative Impacts 48
5.8 CEQA Determination 49
5.9 GHG Mitigation Measures 50

6 REFERENCES 51

7 APPENDICES 53

Table List

Table 1-1 Project Dimensions 5

Table 2-1 Criteria Pollutants and Health Impacts 13

Table 2-2 Ambient Air Quality Standards 15
Table 2-3 Regional Attainment Status – West Mojave Desert 16
Table 2-4 Ozone Monitoring Data 18
Table 2-5 Particulate Matter 10 Monitoring Data 18
Table 2-6 MDAQMD Significant Emissions Thresholds 21

Table 3-1 Lecangs Dakota Warehouse Land Use Inputs 25
Table 3-2 Maximum Daily Construction-Related Emissions Summary (pounds per day) 26
Table 3-3 Fleet Mix – For Passenger Vehicle Run and Truck 26
Table 3-4 Maximum Daily Operational-Related Emissions Summary (pounds per day) 27

Table 4-1 Sources of GHGs from Human Activities 34
Table 4-2 MDAQMD Significance Thresholds 43
Table 4-3 Apple Valley CAP Emissions Reduction Targets 44

Table 5-1 Projected GHG Emissions Summary (Metric Tons) 46
Table 5-2 Project emissions and CAP reduction target 48
Table 5-3 Project consistency with CAP reduction measures 48

Exhibit List

Exhibit 1-1: Regional Location Map 7
Exhibit 1-2: Vicinity Map 8
Exhibit 1-3: Project Location 9
Exhibit 1-4: Airport Overlay Districts 10
Exhibit 1-5: Project Site Plan 11

Figure List

Figure 2-1: Boundaries of the Mojave Desert Air Basin and Regional Air Quality Management Districts 12
Figure 2-2: MDAQMD Monitoring Stations 17

Figure 4-1: Annual Statewide GHG Emissions Compared to the 2020 GHG Limit 36
Figure 4-2: 2022 GHG emissions by economic sector (% of total California emissions) 37

Appendices List

Appendix 1: Lecangs Dakota Apple Valley Industrial Traffic Analysis 55
Appendix 2: Lecangs Dakota Warehouse CalEEMod Detailed Report 54

ES EXECUTIVE SUMMARY

This Air Quality and Greenhouse Gas Report was prepared to accompany the Initial Study for the proposed Lecangs Dakota Warehouse (referred to as the Project). The purpose of this report is to assess the potential air quality and greenhouse gas (GHG) impacts associated with the construction and operation of the proposed Project in accordance with Appendix G of the California Environmental Quality Act (CEQA) Guidelines.

Section 1 of this report introduces the proposed Project. Sections 2 and 4 provide background information on air quality and climate change. Sections 3 and 5 analyze the potential impacts of the Project on air quality and greenhouse gas emissions respectively.

ES.1 Air Quality

The Project is located in the Mojave Desert Air Basin, within the jurisdictional boundary of the Mojave Desert Air Quality Management District (MDAQMD). The Project would comply with the strategies and rules established in the MDAQMD's applicable air quality plans.

The emissions of criteria air pollutants expected to result from the Project were calculated using the California Emissions Estimator Model (CalEEMod) Version 2022.1. Analysis found that criteria pollutant emissions from construction and operation of the Project would not exceed the thresholds established by the MDAQMD. This report also determined that the Project would not expose sensitive receptors to substantial pollutant concentrations, nor would it result in other emissions (such as odors) that would adversely affect sensitive receptors. Overall, the Project's impacts on air quality were determined to be less than significant, and no mitigation measures were required.

ES.2 Greenhouse Gases

The Project's GHG emissions are subject to the MDAQMD as well as the Town of Apple Valley's 2019 Climate Action Plan (CAP) Update. CalEEMod Version 2022.1 was used to project the GHG emissions expected to result from construction and operation of the proposed Project. The combined emissions were found to be within the MDAQMD's GHG emissions threshold of 100,000 $MTCO_2e$ per year. Based on the Project's compliance with the Town's CAP, the proposed development was also found the comply with the South Coast Air Quality Management District's Tier 2 significance criterion, which requires compliance with a GHG reduction plan consistent with the goals of Assembly Bill 32 (See Section 5 of this document).

Overall, this report determined that the Project's impacts on GHG emissions would be less than significant with the implementation of mitigation measures from the Town's CAP. Specifically, the Project must establish an employee carpooling program and provide employees with free or discounted public transit passes.

1 INTRODUCTION

1.1 Site Location

The proposed Lecangs Dakota Warehouse (herein referred to as "Project") encompasses a 40.1-acre vacant undeveloped parcel in the North Apple Valley Industrial Specific Plan (NAVISP) area. The site is bounded by Gustine Street to the north, Fresno Road to the south side, Dakota Road to the west, and vacant lands to the east. Currently, no road occurs along the eastern boundary of the Project site as Ramona Road stops at Fresno Road. However, the Project proposes roadway improvements and to extend Ramona Road from Fresno Road north to Gustine Street (Exhibits 1-1 through 1-3).

The site is surrounded by vacant lands with exception of a moving and storage facility located 0.25 miles south and the Apple Valley Airport, which extends at a northeast to southwest angle 0.4 miles east of the Project site. The Project site sits within the Town's Airport Overly District (A-2) and is subject to zoning restrictions set by this designation. Exhibit 1-4 shows the location of the Project site in proximity to the Apple Valley Airport Overlay Districts.

1.2 Project Description

The applicant proposes to construct a 627,200 square-foot distribution warehouse on a 40.1-acre vacant parcel located on the southeast corner of Gustine Street and Dakota Road (Exhibit 1-5). The building footprint measures 613,760 square feet, the mezzanine is 13,440 square feet, and maximum building height is 50 feet. The parking lot includes a total of 733 car parking spaces, including 15 accessible spaces, along the east and west sides of the building and at the four corners of the parking lot, and 260 trailer stalls along the north and south sides of the building, 130 stalls on each side. There are a total of 92 loading docks on the north and south sides of the building, 46 docks on each side.

Table 1-1
Project Dimensions

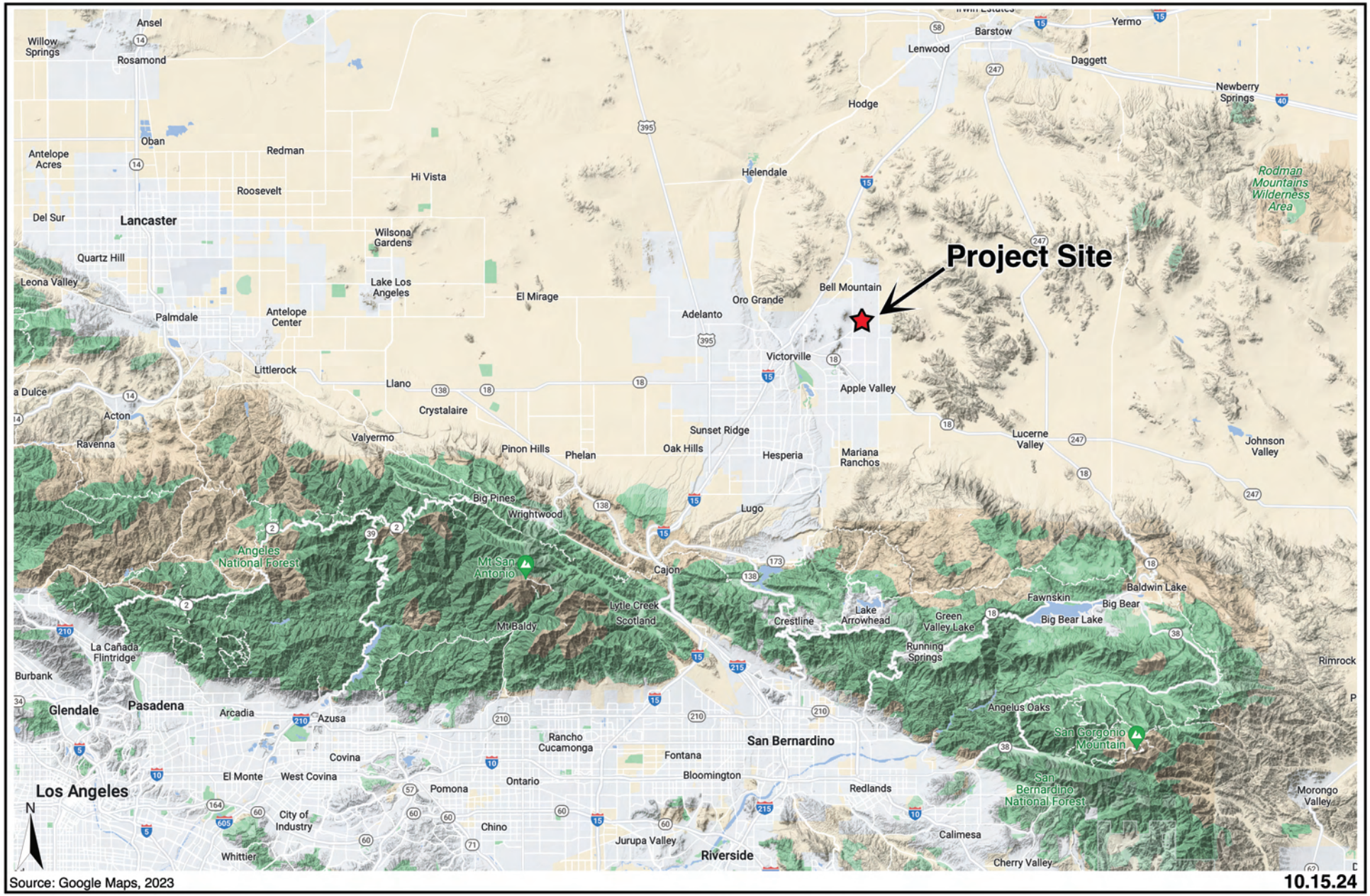
Parcel Acreage	40.1 ac
Total Building Area	627,200 sf
• *Building footprint*	*613,760 sf*
• *Mezzanine*	*13,440 sf*
Landscaping	201,664 sf. (4.63 ac)
Retention Basin (also landscaped)	60,867 sf (1.4 ac)
Max. Height	50 ft
Parking Stalls	733
Docks	92
Trailer Stalls	260

The Project site is accessed by four 40-foot-wide driveway entrances, two driveways on Dakota Road and two driveways on Ramona Road. The applicant proposes to construct the following half-width road improvements:

- Dakota Road is the only paved road bordering the Project site. Between Gustine Street and Fresno Road, 19-foot-wide new pavement with curb and gutter, and 12-foot-wide sidewalk for an approximate distance of 1,500 linear feet.
- Fresno Road is currently unimproved. Between Dakota Road and Ramona Road, 26-foot-wide pavement with curb and gutter, and additional five feet of graded shoulder for an approximate distance of 975 linear feet.
- Ramona Road currently ends at Fresno Road. Between Fresno Road and Gustine Street, 26-foot-wide pavement with curb and gutter, and additional five feet of graded shoulder for an approximate distance of 975 linear feet.
- Gustine Street is currently unimproved. Between Dakota Road and Ramona Road, 32-foot-wide pavement with curb and gutter and an additional five feet of graded shoulder.

The Project is required to provide on-site stormwater retention for a 100-year storm event. A retention basin of approximately 60,867 square feet (1.40 acres) would be constructed at the south side of the Project site between Fresno Road and the parking area. The retention basin would accommodate 50,000 cubic feet of stormwater. Off-site stormwater conveyance would begin with the Gustine Street improvements and direct water into the catch basins within the proposed street rights-of-way along Dakota Road and Ramona Road, then into the catch basin along Fresno Road. Two storm drains would meet on the north side of Fresno Road and direct runoff to the south side into a drainage swale south of Fresno Road.

Additional Project site improvements include utility service connections. Under Dakota Road to the west lies an existing 15-inch PVC trunk sewer service line which can connect to the Project site. An existing 12-inch PVC water line under Fresno Road can be connected to a proposed 12-inch PVC water line routed north along the west side of the Project site. Two additional 8-inch PVC waterlines are proposed along the north and east sides of the Project site. Sewer and water service lines enter the warehouse on the west side.



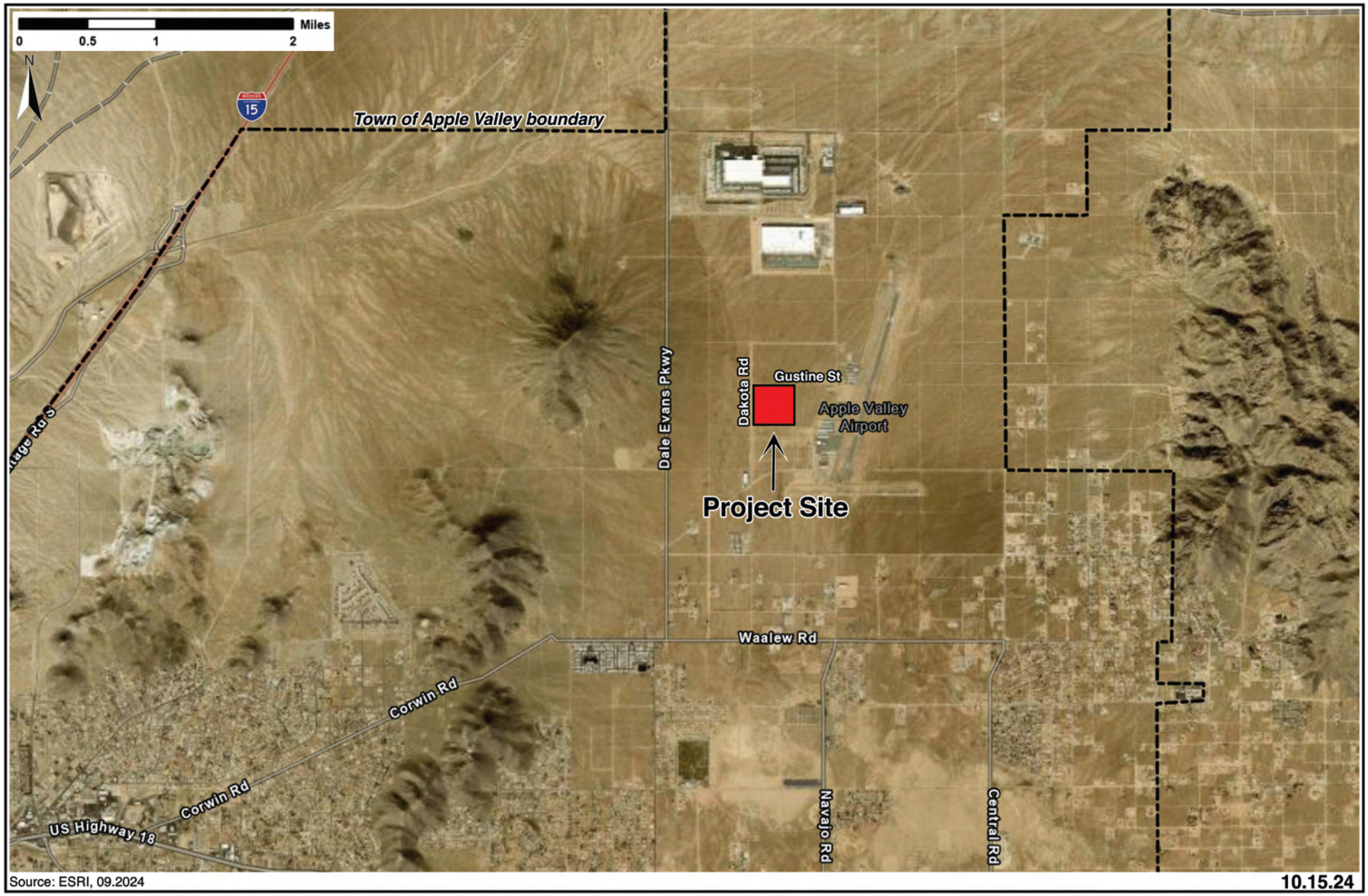
Source: Google Maps, 2023

10.15.24

Exhibit 1-1

TERRA NOVA®
PLANNING & RESEARCH, INC.

Regional Location Map
Lecangs Dakota Warehouse
Apple Valley, California



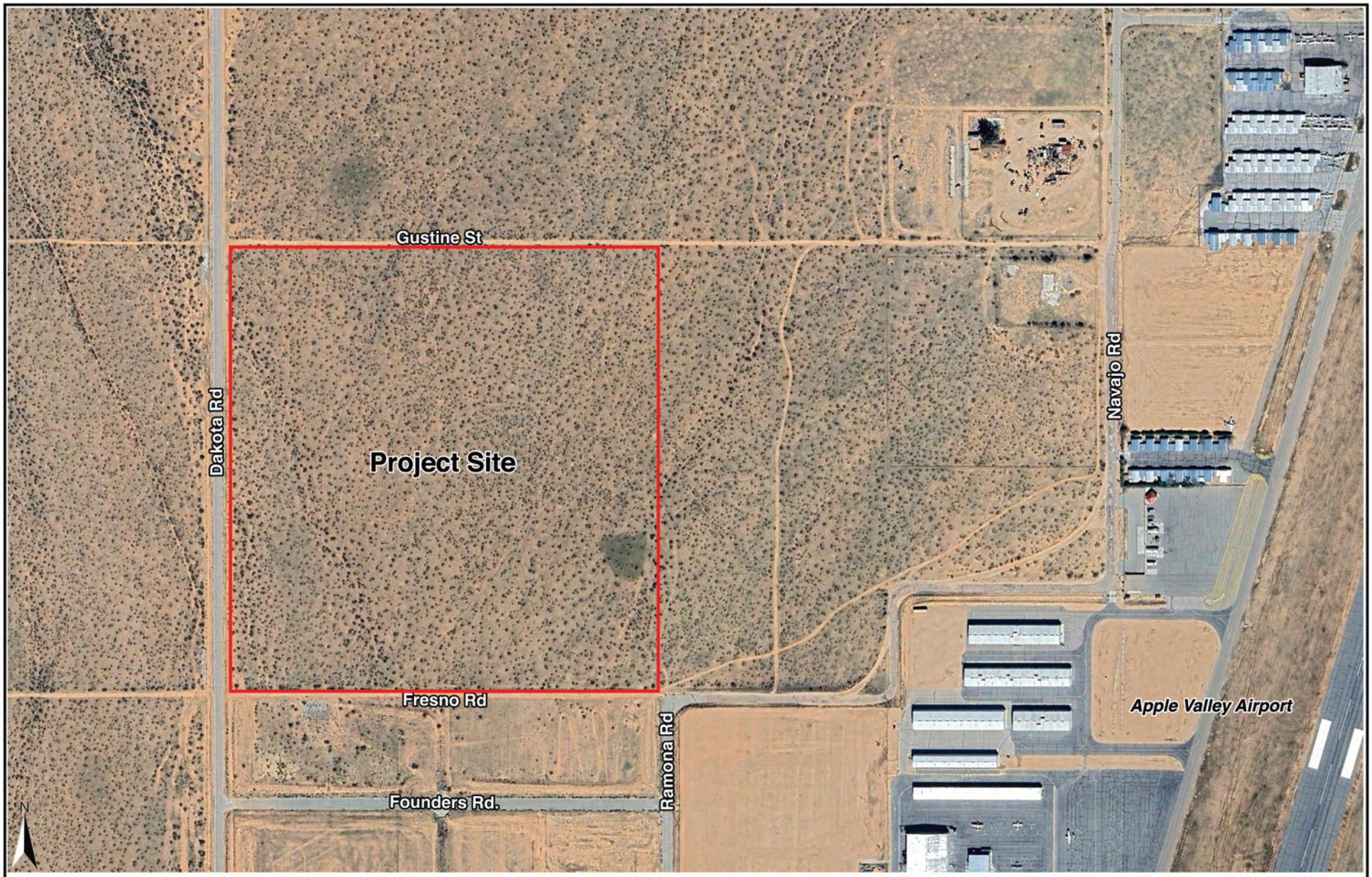
Source: ESRI, 09.2024

10.15.24

TERRA NOVA®
PLANNING & RESEARCH, INC.

Vicinity Map
Lecangs Dakota Warehouse
Apple Valley, California

Exhibit
1-2



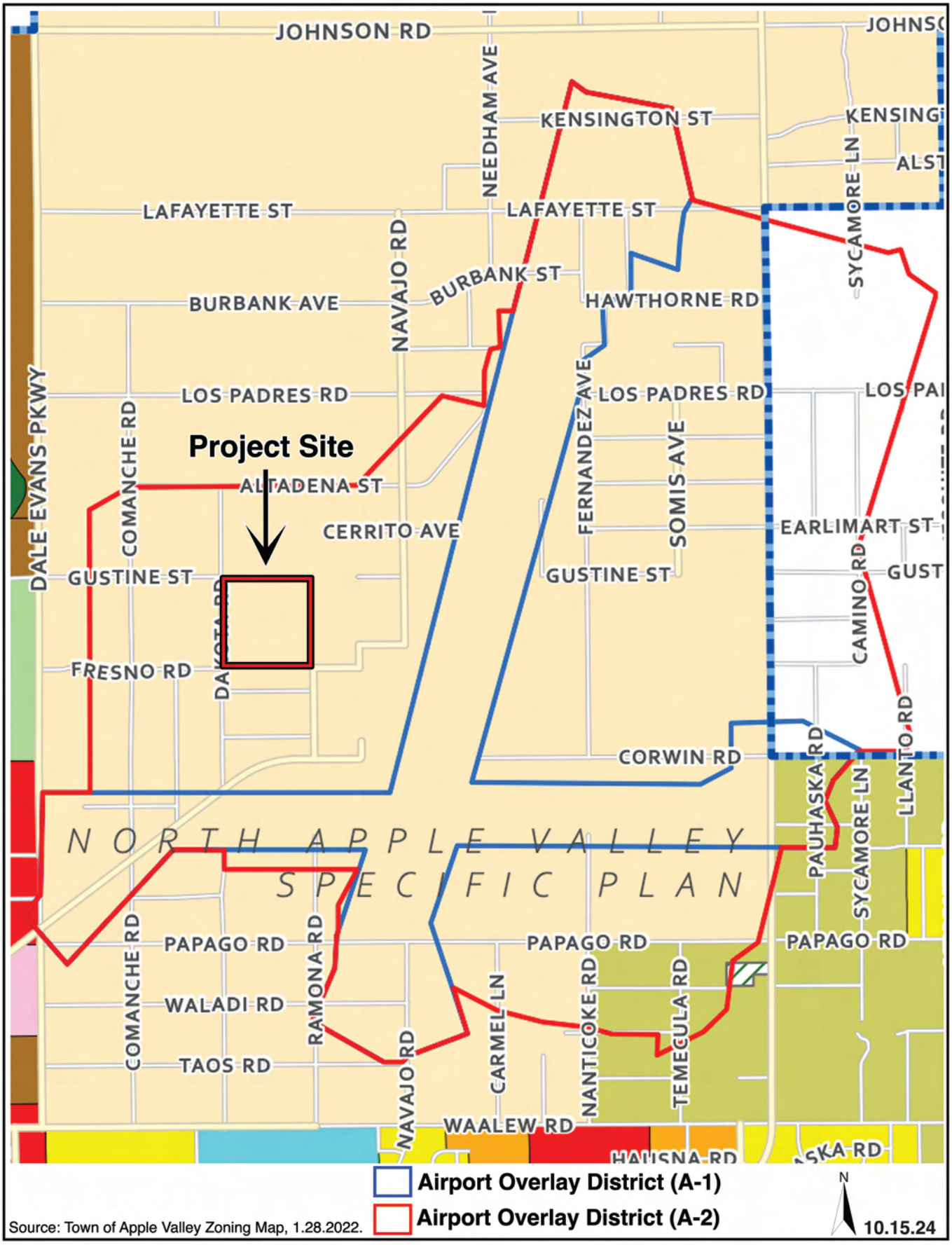
Source: ESRI, 09.2024

10.15.24

TERRA NOVA®
PLANNING & RESEARCH, INC.

Project Location
Lecangs Dakota Warehouse
Apple Valley, California

Exhibit
1-3

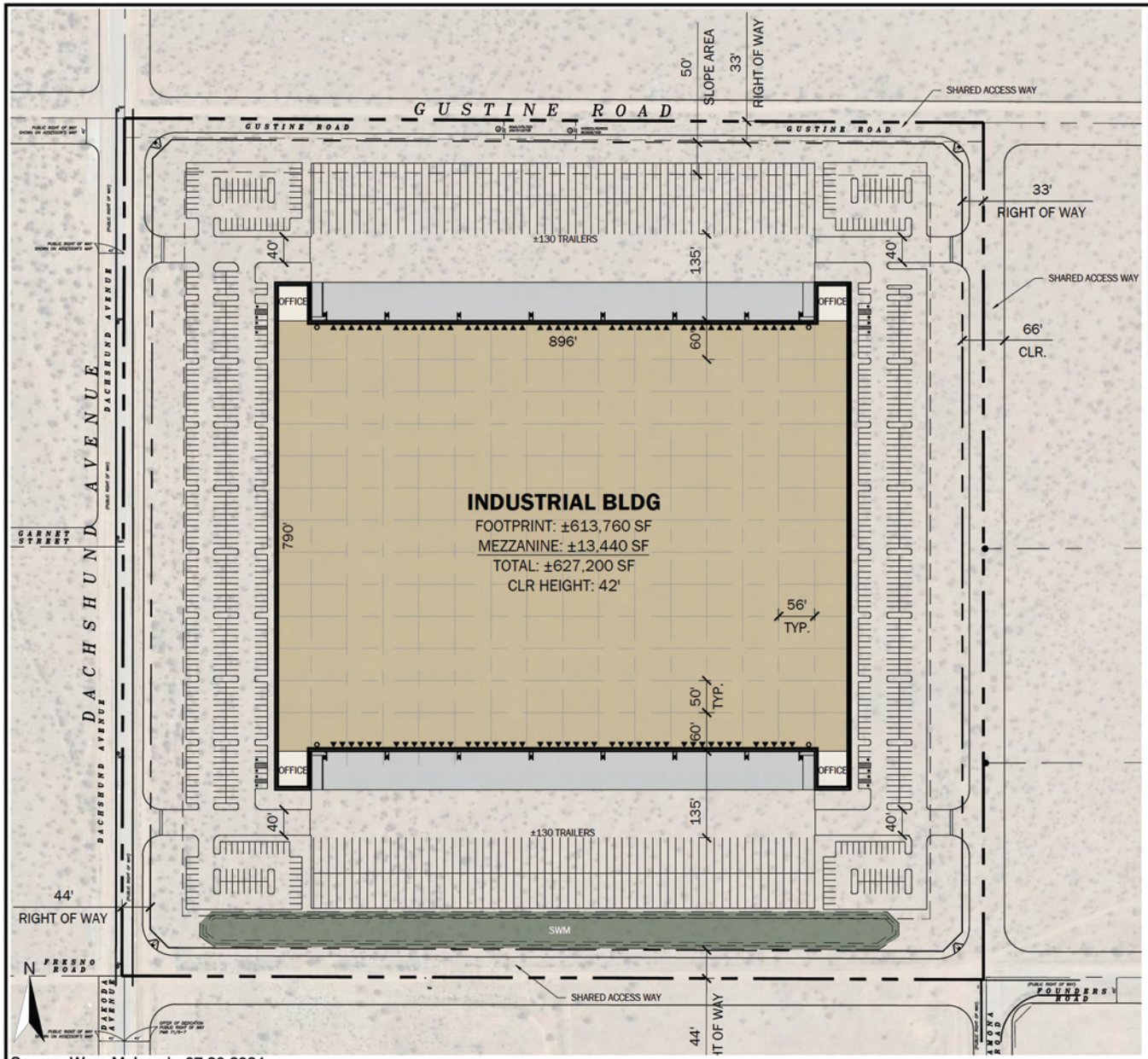


Source: Town of Apple Valley Zoning Map, 1.28.2022.

TERRA NOVA®
PLANNING & RESEARCH, INC.

Airport Overlay Districts
Lecangs Dakota Warehouse
Apple Valley, California

Exhibit
1-4



Site Summary		APN(s): 0463-372-21-0-000
Gross Site Area	1,787,210 SF	41.03 AC
Stormwater Management	60,865 SF	@ 3%
Net Site Area	1,726,344 SF	39.63 AC
Total Building Area(s)	Gross Floor Area	627,200 SF
	Footprint	613,760 SF
Coverage	Gross	34%
	Net	36%
FAR	Gross	0.35
	Net	0.36
Building 1		
Building Area(s)	Footprint	613,760 SF
	Mezzanine	13,440 SF
	Gross Floor Area	627,200 SF
Cars Required	@9% Office	647 Stalls
Cars Provided	*@1.17/1,000 SF*	733 Stalls
	Req. Accessible	15 Stalls
Drive-in Doors		4
Docks	*@1.47/10,000 SF*	92
Trailers		260 Stalls
Zoning		
Jurisdiction		Apple Valley
Zoning Designation		I-SP
Max Building Coverage		45%
Max Height		50 FT
Building Setbacks		
	Front	25 FT
	Side	25 FT
	Rear	15 FT
Landscape Setbacks		
	Front	15 FT
	Side	15 FT
Parking Standards		
	Min Stall Size	9x19
	Drive Aisle	24 FT
	Fire Lane	26 FT
Required Parking		
	Office	1/250 SF
	Manufacturing	1/500 SF
	Warehouse	1/500 SF
	≤10,000 SF	1/1000 SF
	≥10,000 SF	1/1000 SF

0 50 100 250 500

Source: Ware Malcomb, 07.30.2024

10.17.24

TERRA NOVA®
PLANNING & RESEARCH, INC.

Conceptual Site Plan
Lecangs Dakota Warehouse
Apple Valley, California

Exhibit

1-5

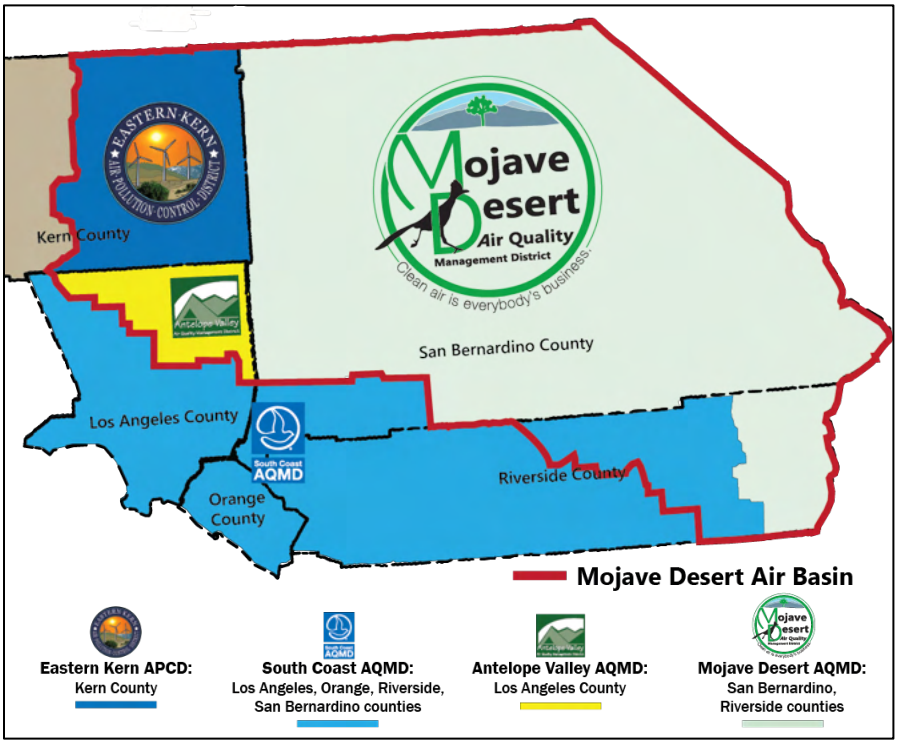
2 AIR QUALITY SETTING

2.1 Atmospheric Setting

The Project site is within the Mojave Desert Air Basin (MDAB). As shown in Figure 1, the MDAB encompasses the high desert portion of San Bernardino County, as well as portions of eastern Kern County, northeastern Los Angeles County, and eastern Riverside County. The basin reaches from the Cajon Pass and Palo Verde Valley, in the southwest and southeast, respectively, north to the unincorporated community of Trona and the state border with Nevada. The topography of the MDAB is defined by a series of mountain ranges and long broad valleys. Mountain ranges with elevations of up to 10,000 feet separate the MDAB from central California and coastal southern California.

Prevailing winds in the basin area are from the west and southwest, channeled from the coast and through the MDAB by the mountains. The high desert receives infrequent moisture from warm and moist air masses from the south. It averages between three and seven inches of precipitation per year.[1] The MDAB is mostly classified as a dry-hot desert climate, with portions classified as very-dry hot, with temperatures averaging over 100.4° F during at least three months of the year.[2]

Figure 2-1: Boundaries of the Mojave Desert Air Basin and Regional Air Quality Management Districts



Source: Mojave Desert Air Quality Management District, https://www.mdaqmd.ca.gov/about-us

[1] San Bernardino Countywide Plan Draft PEIR, Environmental Analysis, Air Quality (June 2019).
[2] Mojave Desert Air Quality Management District CEQA Guidelines (February 2020).

2.2 Criteria Pollutants

Criteria air pollutants are air pollutants for which acceptable levels of exposure have been determined and regulated by Ambient Air Quality Standards (AAQS). The AAQS were established through the federal Clean Air Act (first enacted in 1963) and the California Clean Air Act (1988). The current criteria air pollutants include ozone (O_3), carbon monoxide (CO), particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), nitrogen dioxide (NO_2), lead (Pb), sulfur dioxide (SO_2), and hydrogen sulfide (H_2S).

Air pollution contributes to a wide variety of health impacts, including heart and lung illnesses, chronic health conditions, increased cancer rates, and premature death. For example, $PM_{2.5}$ pollution is linked to hundreds of emergency room visits for respiratory and cardiovascular disease annually, as well as to compromised brain health and adverse birth outcomes. Elevated ozone levels in California are also associated with hospitalizations, lost school days, and premature death.[3] These health impacts disproportionately impact residents of low-income and disadvantaged communities.

Table 2-1 below outlines the primary human-caused emissions sources of criteria pollutants, as well as the effects of these pollutants on human health.

Table 2-1
Criteria Pollutants and Health Impacts

Criteria Pollutant	Source	Health Effects
Ozone (O_3)	A secondary pollutant resulting from hydrocarbons and oxides of nitrogen, emitted by cars, solvents, factories and pesticides, reacting in the presence of sunlight.	Difficulty breathing, chest pains, aggravate lung diseases such as asthma, emphysema, and chronic bronchitis. Shortness of breath, coughing, and lung damage with prolonged and chronic exposure.
Carbon Monoxide (CO)	Fossil fuel combustion by vehicles, as well as household sources such as some appliances, fireplaces, portable generators, charcoal grills.	Headaches, dizziness, vomiting, and nausea. Risk of loss of unconsciousness or death.
Particulate Matter (PM_{10}) and Fine Particulate Matter ($PM_{2.5}$)	Fugitive dust from construction projects and vehicles on unpaved roads. Industrial smokestacks and wildfires. Atmospheric formation from SO_2 and NO_x.	Coughs, asthma, cancer, lung damage, heart attacks, and premature death.

[3] California Air Resources Board Proposed 2022 State SIP Strategy (August 2022).

Table 2-1 Criteria Pollutants and Health Impacts		
Criteria Pollutant	**Source**	**Health Effects**
Nitrogen Dioxide (NO_2)	Fossil fuel combustion by vehicles, off road equipment, power generation, and household appliances such as furnaces, clothes dryers, ovens, fireplaces.	Lung damage and irritation.
Lead (Pb)	Lead smelters, ore and metals processing, combustion of leaded aviation fuel, waste incinerators, utilities, and lead-acid battery manufacturing facilities.	Damage to nervous system, kidney function, immune system, reproductive and developmental systems, and cardiovascular systems.
Sulfur Dioxide (SO_2)	Combustion of fossil fuels by power plants and industries, refineries, and diesel engines.	Irritates the nose, throat, and airways. Coughing, shortness of breath, tightness of chest. Individuals with asthma at high risk for developing issues.
Hydrogen Sulfide (H_2S)	Geothermal power plants, petroleum production, sewer gas.	Rotten egg smell, headache, skin complications, respiratory damage.
Sources: CARB 2022 Scoping Plan Update, Environmental and Regulatory Setting, Table 3; MDAQMD Air Quality & Health, https://www.mdaqmd.ca.gov/air-quality/air-quality-health (Accessed October 2024)		

2.2.1 Toxic Air Contaminants

According to §39655 of the California Health and Safety Code, a toxic air contaminant (TAC) is "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." The Health and Safety Code definition of TACs also covers substances listed as hazardous air pollutants pursuant to §7412 of Title 42 of the United States Code. TACs are identified and controlled by the California Air Resources Board (CARB) in conjunction with the Office of Environmental Health Hazard Assessment (OEHHA). As an exception, TACs used in pesticides are regulated by the Department of Pesticide Regulation.

Notable TACs include asbestos, benzene, chloroform, as well as inorganic lead and arsenic. The particulate matter emitted by diesel-fueled engines is also identified by CARB as a TAC.[4]

[4] California Air Resources Board, Toxic Air Contaminant Identification Reports https://ww2.arb.ca.gov/resources/documents/toxic-air-contaminant-identification-reports (Accessed October 2024).

2.3 Current Conditions

The National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) establish thresholds to determine whether the contaminant levels in the air are considered unhealthy. The current federal and state standards are shown in Table 2-2.

Table 2-2
Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	National Standards	
		Concentrations[1]	Primary	Secondary
Ozone (O_3)	1 Hour	0.09 ppm	--	
	8 Hour	0.070 ppm	0.070 ppm	
Particulate Matter (PM_{10})	24 Hour	50 µg/m^3	150 µg/m^3	
	AAM[2]	20 µg/m^3	--	
Fine Particulate Matter ($PM_{2.5}$)	24 Hour	--	35 µg/m^3	
	AAM	12 µg/m^3	12.0 µg/m^3	15 µg/m^3
Carbon Monoxide	1 Hour	20 ppm	35 ppm	--
	8 Hour	9.0 ppm	9 ppm	--
Nitrogen Dioxide (NO_2)	1 Hour	0.18 ppm	100 ppb	--
	AAM	0.030 ppm	0.053 ppm	
Sulfur Dioxide (SO_2)	1 Hour	0.25 ppm	75 ppb	--
	3 Hour	--	--	0.5 ppm
	24 Hour	0.04 ppm	0.14 ppm	--
	AAM	--	0.030 ppm	--
Lead	30 Day Average	1.5 µg/m^3	--	--
	Calendar Quarter	--	1.5 µg/m^3	
	Rolling 3-Month Average	--	0.15 µg/m^3	
Visibility Reducing Particles	8 Hour	--	No National Standards	
Sulfates	24 Hour	25 µg/m^3		
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)		
Vinyl Chloride	24 Hour	0.01 ppm (26 µg/m^3)		

[1] µg/m^3 = micrograms per cubic meter of air
[2] AAM = Annual Arithmetic Mean
Source: California Air Resources Board, https://ww2.arb.ca.gov/sites/default/files/2024-08/AAQS%20Table_ADA_FINAL_07222024.pdf (Updated July 2024).

The air quality of an area is in attainment if the measure ambient air pollutant levels, for the pollutants in the above table, are not exceeded and all other standards are not exceeded at any time in any consecutive three-year period. Attainment also assumes the national standards (other than O_3, PM_{10}, and those based on annual averages or arithmetic mean) are not exceeded more than once per year. The ozone standard is in attainment when the fourth highest 8-hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when 99% of the daily concentrations, averaged over three years, are equal to or less than the standard.

Pursuant to the Federal Clean Air Act, areas that do not meet these standards must prepare State Implementation Plans (SIPs) establishing strategies and deadlines for attainment of the NAAQS and CAAQS. Additionally, air quality districts with non-attainment areas under their jurisdiction must prepare attainment plans providing steps for the implementation, maintenance, and enforcement of the air quality standard within the required timeframe.

2.3.1 Regional Air Quality – Air Basin

The Project is located in the Western Mojave Desert region within the Mojave Desert Air Basin (MDAB). The MDAB is under the jurisdiction of the Mojave Desert Air Quality Management District (MDAQMD) and the Antelope Valley AQMD. The Project site is within the jurisdictional boundaries of the MDAQMD.

Air quality in the MDAB is impacted not just by emissions sources within the basin, but also by activity in the broader region. The primary contributor to air pollution in California is the burning of fossil fuels for transportation, power and heat generation, and industrial processes.[5] The MDQAMD encompasses major roadways, such as the Interstate 40, State Route 58 and Interstate 395, which carry a substantial amount of heavy-duty truck traffic. Likewise, the Interstate 15 carries a substantial amount of commuter traffic between the Victor Valley and the Los Angeles areas, which decreases air quality in the MBAD.[6] Fine particulate matter and ozone, two of the pollutants that have the greatest potential public health impacts, are also emitted by fuel and wood combustion, as well as indirectly by photochemical reactions in the atmosphere resulting from motor vehicle and industrial activity.[7]

Table 2-3 shows the West Mojave Desert's attainment status for the criteria air pollutants, as designated by the EPA. The West Mojave Desert is designated as being in nonattainment for regional levels of particulate matter (PM_{10}) and ozone (O_3). Under the federal Clean Air Act, the MDAB is designated as being in "moderate" ozone non-attainment.

Table 2-3
Regional Attainment Status – West Mojave Desert

Criteria Pollutant	Attainment Status
Ozone (O_3)	Nonattainment (severe)
Carbon Monoxide (CO)	Attainment
Fine Particulate Matter ($PM_{2.5}$)	Attainment
Particulate Matter (PM_{10})	Nonattainment (moderate)
Nitrogen Dioxide (NO_2)	Attainment
Lead (Pb)	Attainment
Sulfur Dioxide (SO_2)	Attainment
Source: EPA Green Book (Updated December, July, August 2024)	

[5] Town of Apple Valley 2019 Climate Action Plan Update, p. 8.
[6] MDAQMD Federal 8-hour Ozone Attainment Plan (June 2008).
[7] California Air Resources Board, Sources of Air Pollution, https://ww2.arb.ca.gov/resources/sources-air-pollution (Accessed October 2024).

Given the dispersing nature of air pollutants, the MDAB is subject to the aggregate impacts of neighboring jurisdictions. For example, fugitive dust in the MDAB results from both local sources and periodic region-wide high wind events.[8] Additionally, the MDAB receives prevailing winds which blow ozone from the Los Angeles and San Joaquin Valley basins during the summer. While activity in the MDAQMD contributes to ozone emissions, modeling conducted by the South Coast Air Quality Management District and California Air Resources Board indicate that the MDAB would be in attainment for ozone if not for the air pollution transported from upwind regions.[9]

2.3.2 Local Air Quality

Air quality is measured at monitoring stations operated by the air quality management district. The MDAQMD operates seven air monitoring stations distributed across its jurisdiction in Trona, Barstow, Phelan, Hesperia, Victorville, Lucerne Valley and Yucca Valley. The nearest monitoring station to the Project is the Victorville Monitoring Station located at 14036 Park Avenue. The station is located approximately 8.9 miles southwest of the Project site.

Figure 2-2: MDAQMD Monitoring Stations



The following tables show the maximum concentration values for ozone and particulate matter (PM_{10}) and the number of days the pollution thresholds were exceeded annually over a six-year period. Ambient air quality measurements were recorded by the Victorville Monitoring Station.

Table 2-4 shows the ozone monitoring data for the Victorville Park Avenue monitoring station from 2018 and 2023. The data for both maximum concentrations and number of days exceeding standards fluctuates over the six-year period, and there is no clear trend indicating worsening or

[8] MDAQMD Federal Particulate Matter (PM_{10}) Attainment Plan (July 1995).
[9] MDAQMD Federal 8-hour Ozone Attainment Plan (June 2008).

improving ozone concentrations. However, since 1989 when the region was first designated as non-attainment for ozone, an overall decline in 8-Hour ozone concentration has been documented at seven of the eight monitoring stations.[10]

Table 2-4
Ozone Monitoring Data

Monitoring Station	Year	Maximum Concentration		Number of Days Standard Exceeded		
				Federal	State	
		1 Hour ppm[1]	8 Hour ppm[2]	8 Hour[3]	1 Hour	8 Hour
Victorville Park Avenue	2018	0.107	0.096	55	5	56
	2019	0.104	0.081	29	3	34
	2020	0.112	0.094	35	4	38
	2021	0.112	0.098	34	8	35
	2022	0.100	0.090	44	3	49
	2023	0.097	0.088	32	2	32

Source: iAdam: Air Quality Data Statistics, California Air Resources Board; www.arb.ca.gov/adam. Accessed October 2024.
[1] 1-Hour Ozone Average State Standard Maximum is 0.10ppm. No National 1-Hour Standard available.
[2] 8-Hour Ozone Average National Standard Maximum is 0.07 ppm
[3] Days Exceeding National 8-Hour 0.070 ppm Standard.

Table 2-5 shows the PM_{10} data for the Victorville monitoring station. The data indicates fluctuations in PM_{10} concentrations over a six-year period. Insufficient data was collected for the maximum concentration and number of days exceeding the state standard. In general, exceedance values for 2023 are lower than previous years.

Table 2-5
Particulate Matter 10 Monitoring Data

Monitoring Station	Year	Maximum Concentration (µg/m³/24 hours)		Number of Days Standard Exceeded		Annual Arithmetic Mean[2]
		Federal	State[1]	Federal	State	
Victorville Park Avenue	2018	165.2	*	1.0	*	29.8
	2019	170.0	*	1.9	*	27.2
	2020	261.4	*	1.9	*	34.0
	2021	591.6	*	1.0	*	33.9
	2022	372.1	*	2.1	*	33.6
	2023	160.4	*	1.0	*	28.4

Source: iAdam: Air Quality Data Statistics, California Air Resources Board; www.arb.ca.gov/adam. Accessed October 2024.
[1] * = There was insufficient (or no) data available to determine the value.
[2] Federal Annual Average Standard AAM exceeding the 50 µg/m³

[10] "Federal 8-Hour Ozone Design Value Trend (Figure 1)," MDAQMD Federal 70ppb Ozone Attainment Plan (Western Mojave Desert Nonattainment Area), Adopted January 23, 2023.

2.4 Regulatory Background

Federal, state, and local policies aim to reduce air pollution by regulating air quality and the sources of pollution emissions. The following section describes relevant air quality policies and regulations.

2.4.1 Federal Regulations

Federal Clean Air Act (FCAA) - 42 U.S.C. §7401 et seq.
The Federal Clean Air Act, which was first enacted in 1970 and last amended in 1990, remains the federal government's primary air quality law regulating air emissions from stationary and mobile sources. There are several regulatory programs bought about by FCAA amendments, including National Ambient Air Quality Standards (NAAQS), National Emissions Standards for Hazardous Air Pollutants (NESHAPs), New Source Performance Standards (NSPS), the Acid Rain Program (APP), and the CAA ozone program consistent with the Montreal Protocol. Notably, the FCAA gives the Environmental Protection Agency (EPA) that authority to establish the National Air Quality Standards.

National Ambient Air Quality Standards (NAAQS)
The FCAA authorizes the EPA to establish National Ambient Air Quality Standards (40 CFR Part 50) for six criteria air pollutants which are potentially harmful to the public and to the environment. The NAAQS define what qualifies as clean air by identifying the maximum amount of a pollutant, averaged over a specified timeframe, that can be present without harming public health.[11] The EPA reviews the NAAQS at five-year intervals, and makes revisions as needed. The six criteria air pollutants currently covered by the NAAQS are: particulate matter (PM_{10} and $PM_{2.5}$), ozone (O_3), nitrogen oxides (NO_X), sulfur oxides (SO_X), carbon monoxide (CO), and lead. Under the FCAA, nonattainment areas (areas that exceed that maximum standard for one or more of the criteria pollutants) must prepare State Implementation Plans (SIPs) describing the actions the area will take to meet the NAAQS by the applicable attainment deadlines.

2.4.2 State Regulations

California Clean Air Act
The California Clean Air Act (CCAA) was passed into law in 1988, establishing ambient air quality standards for the State of California that exceed NAAQS, as well as accelerated attainment dates for criteria pollutants established in the FCAA. The CCAA establishes requirements for district air quality plans to ensure that the state standards for criteria pollutants are met.

[11] California Air Resources Board, National Ambient Air Quality Standards https://ww2.arb.ca.gov/resources/national-ambient-air-quality-standards (Accessed October 2024).

Title 24 Energy Efficiency Standards & California Green Building Standards
The Building Energy Efficiency Standards (Energy Code) were first adopted by the California Energy Commission in 1976 and have since been updated regularly. The Energy Code establishes indoor air quality requirements, in addition to energy and water efficiency requirements, for all newly construction buildings as well as additions and alterations to existing buildings.

2.4.3 Air Quality Management

California Air Resources Board
The California Air Resources Board (CARB) is part of the California Environmental Protection Agency and is responsible for preparation the SIP for submission to the EPA, as well as for overseeing air quality districts and approving district air quality plans. Established in 1967, the CARB regulates vehicle emissions standards and sets area designation for criteria pollutants.

Mojave Desert Air Quality Management District (MDAQMD)
The California Air Resources Board is responsible for regulating mobile emissions sources, while the air quality management districts, such as MDAQMD, are responsible for controlling stationary sources and enforcing regulations.

The MDAQMD regulates stationary source of air pollution within its jurisdiction, which covers 20,000 square miles including the High Desert in San Bernardino County and Palo Verde Valley in Riverside County. The District covers a large portion of the Mojave Desert Air Basin, which also overlaps with parts of the Eastern Kern Air Pollution Control District, the Antelope Valley AQMD, and the South Coast AQMD.

In response to designations of non-attainment of NAAQS for ozone and particulate matter within the MDAB, the MDAQMD adopted a series of attainment plans beginning in 1995. When attainment was not achieved by the targeted attainment date set by each plan, a subsequent attainment plan was adopted to continue efforts to reduce emissions by a new date. The District's attainment plans are described here.

> **MDAQMD Federal Particulate Matter (PM_{10}) Attainment Plan** (July 1995): This plan was adopted to comply with the federal requirements associated with PM_{10} attainment planning, including a strategy for the adoption and implementation of reasonably available control measures. The plan was to demonstrate PM_{10} attainment, in accordance with the NAAQS, by the end of December 2000.
>
> **MDAQMD State and Federal Ozone Attainment Plan (April 2004):** This plan provided the MDAQMD's strategy for the implementation, maintenance, and enforcement of the NAAQS for ozone by the end of 2007, as well as for progress towards meeting the State Ambient Air Quality Standards for ozone. It contains emissions limits, a monitoring program, a permit program, contingency measures, and air quality monitoring.

MDAQMD Western Mojave Desert Non-Attainment Area Ozone Attainment Plan (State and Federal) (June 2008): This plan provides the District's strategy for achieving the federal 8-hour ozone standard of 75 ppb in the West Mojave Desert non-attainment area by 2021.

MDAQMD Western Mojave Desert 75 ppb Ozone Attainment Plan (State and Federal) (February 2017): In response to previous nonattainment designations of 2008 and 2012, and continued exceedance of the NAAQS ozone 8-hour standard, the plan describes the District's strategies for achieving attainment of the 75 ppb 8-hour standard by 2027.

MDAQMD Western Mojave Desert 70 ppb Ozone Attainment Plan (State and Federal) (January 2023): The attainment plan establishes strategies and guidance for bringing the Western Mojave Desert into attainment of the lower 70 ppb ozone NAAQS standard by August 2033.

The MDAQMD has established thresholds for certain criteria pollutants and monitors daily pollutant levels and meteorological conditions throughout the District. Based on the District's emissions thresholds for criteria pollutants, any project would be considered to have significant impacts to air quality if the daily emissions exceed the values shown in the table below during construction or operation:

Table 2-6
MDAQMD Significant Emissions Thresholds

Criteria Pollutant	Annual Thresholds (short tons)	Daily Thresholds (pounds)
Reactive Organic Gases (ROG, VOC)	25	137
Oxides of Nitrogen (NO_x)	25	137
Carbon Monoxide (CO)	100	548
Oxides of Sulfur (SO_x)	25	137
Particulate Matter (PM_{10})	15	82
Particulate Matter ($PM_{2.5}$)	12	65
Hydrogen Sulfide (H_2S)	10	54
Lead (Pb)	0.6	3
Greenhouse Gases (CO_2e)	100,000	548,000
Source: MDAQMD CEQA Guidelines (February 2020)		

2.4.3.1 Air Basin Regulations

The MDAQMD has adopted rules and regulations to improve and maintain air quality in the district. The rules and regulations also implement state and federal policies, such as the Clean Air Act. The current MDAQMA rule book contains 18 regulations and associated rules. Excerpts of applicable regulations to the Project are listed below. The complete list and full text of the current rule book is available on the MDAQMD website.[12]

[12] MDAQMD Rule Book, https://www.mdaqmd.ca.gov/rules/rule-book (Accessed October 2024).

Regulation II – Permits

Rule 201: Permits to Construct: *A person shall not build, erect, install, alter, or replace any equipment, the use of which may cause the issuance of air contaminants or the use of which may eliminate, reduce or control the issuance of air contaminants without first obtaining written authorization for such construction from the Air Pollution Control Officer. A permit to construct shall remain in effect until the permit to operate the equipment for which the application was filed is granted or denied, or the application is canceled.*

Regulation IV – Prohibitions

Rule 402: Nuisance: *A person shall not discharge from any source whatsoever such quantities 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.*

Rule 403: Fugitive Dust Control: *Purpose - The purpose of this rule is to reduce the amount of PM10 entrained in the ambient air from anthropogenic Fugitive Dust sources within the District by requiring actions to prevent, reduce, or mitigate Fugitive Dust.*

Rule 404: Particulate Matter Concentration: *A person shall not discharge into the atmosphere from any source, particulate matter except liquid sulfur compounds, in excess of the concentration at standard conditions, shown in Table 404(a). Where the volume discharged is between figures listed in the table, the exact concentration permitted to be discharged shall be determined by linear interpolation.*

Regulation IX – Standards of Performance for New Stationary Sources

Rule 900: Standards of Performance for New Stationary Sources (NSPS): *This rule is enacted to adopt by reference all the applicable provisions regarding standards of performance for new stationary sources as set forth in 40 Code of Federal Regulations, Part 60 (40 CFR 60).*

Regulation XI – Source Specific Standards

Rule 1103: Cutback and Emulsified Asphalt: *To reduce emissions of volatile organic compounds (VOC) from the use of cutback and emulsified asphalts. The provisions of this rule apply to the manufacture, mixing, storage, use, and application of cutback and emulsified asphalts.*

Rule 1113: Architectural Coatings: *The purpose of this rule is to limit the quantity of Volatile Organic Compounds (VOC) in Architectural Coatings. Except as provided in subsection (A)(3), this Rule is applicable to any person who supplies, sells, offers for sale, manufactures, blends or repackages any Architectural Coating for use within the Mojave Desert Air Quality Management District as well as any person who applies or Solicits the application of any Architectural Coating within the District.*

Regulation XII – Federal Operating Permits

Rule 1200: General: *The purpose of Regulation XII is to implement the operating permit requirements of Title V of the Federal Clean Air Act (42 U.S.C. §§7661-7661f). This rule is also intended to comply with the requirements promulgated by the USEPA and set forth in 40 C.F.R. Part 70.*

Regulation XIII – New Source Review

Rule 1300: New Source Review General: *The purpose of this regulation is to set forth the requirements for the preconstruction review of all new or modified Facilities; ensure that the Construction or Modification of Facilities subject to this Regulation does not interfere with the attainment and maintenance of Ambient Air Quality Standards; and ensure that there is no net increase in the emissions of any Nonattainment Air Pollutants from new or modified Major Facilities which emit or have the Potential to Emit any Nonattainment Air Pollutant in an amount greater than or equal to the amounts set forth in District Rule 1303(B)(1).*

3 PROJECT AIR QUALITY IMPACT

3.1 Introduction

The following section analyzes the potential impacts associated with buildout of the proposed Project in conformance with the California Environmental Quality Act (CEQA).

3.2 Standards of Significance

The following thresholds are from the significance criteria listed in the CEQA Environmental Checklist included in Appendix G of the CEQA Guidelines. The Project would have a significant effect on air quality if the proposed Project were to:

a) Conflict with or obstruct implementation of the applicable air quality plan?

b) 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?

c) Expose sensitive receptors to substantial pollutant concentrations?

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

3.3 Methodology

The Project proposes the development of a 627,200 square foot warehouse distribution center on a 40.1± acre site. The Project also requires off-site improvements including the half-width paving and extension of unimproved roadways, and extension of utility connections. The Project is expected to be used as transload and short-term storage warehouse, and it will emit criteria air pollutants during both the construction and operational phases. In particular, construction emissions will include fugitive dust, exhaust from construction vehicles and workers vehicles, while operational emissions will result from energy consumption and also from both heavy-duty trucks and passenger vehicle exhaust.

The following analysis is also based on emissions forecast modeling of the Project's proposed land uses, and a project-specific Traffic Analysis conducted by Urban Crossroads, Inc. (referred to as "Traffic Analysis").[13] A copy of the Traffic Analysis is available in Appendix 1. Forecast modeling of construction and operational emissions from the Project were calculated using the California Emissions Estimator Model (CalEEMod) Version 2022.1. CalEEMod is a computer program that is used to estimate anticipated emissions associated with land development projects in California. The model calculates criteria pollutant emissions, including CO, PM_{10}, $PM_{2.5}$ and the ozone

[13] Lecangs Dakota Apple Valley Industrial Traffic Analysis, Urban Crossroads, Inc., October 9, 2024.

precursors ROG and NO_x,. CalEEMod detailed output tables are provided in Appendix 2 of this report. The following Table 3-1 provides a summary of the land use assumptions entered into the model:

Table 3-1
Lecangs Dakota Warehouse Land Use Inputs

Land Use	Acreage	Square Footage
Total Warehouse Building	14.40 AC	627,200 SF
• Warehouse alone		571,752 SF
• Office Space		55,448 SF
Total Landscaped Area	18.88 AC	262,531 SF (includes retention basin)
• Curbed Landscaping		201,664 SF
• Retention Basin		60,867 SF
Total Parking Area (Includes all hardscape on-site parking, driveways, and off-site improvements)	19.98 AC	822,600 SF
• Asphalt Paving	9.77 AC	425,600 SF
• Cement Paving	9.11 AC	397,000 SF

3.4 Construction Emissions

For analysis purposes, the assumed construction timeframe is 18 months from June 2025 and operational near the end of 2027. Although final grading plans have not been prepared, the expectation is that there will be a net balance of cut and fill materials on-site, although potentially the Project could with no import or export of materials required. The construction phase includes site preparation, grading, paving, building construction, and application of architectural coatings. It is also assumed that building construction, paving, and architectural coating will occur in staggered, but overlapping phases.

The following provides the construction phasing assumptions entered into the model:

- Construction phasing:
  - Site Preparation: 6/1/2025 – 7/1/2025 (22 days)
  - Grading: 7/2/2025 – 9/11/2025 (44 days)
  - Building Construction: 9/2/2026 – 12/1/2026 (326 days)
  - Paving: 8/1/2026 – 9/11/2026 (30 days)
  - Architectural Coating: 10/1/2026 – 12/31/2026 (66 days)

Table 3-2 shows that the emissions generated by the Project construction activities will not exceed the MDAQMD thresholds for any criteria air pollutants. The data in Table 3-2 represents maximum daily unmitigated emissions over the 18-month construction period.

Table 3-2 Maximum Daily Construction-Related Emissions Summary (pounds per day)						
Construction Emissions	CO	NO_x	ROG	SO_2	PM_{10}	$PM_{2.5}$
Daily Maximum	45.7	31.9	50.2	0.0	9.26	5.25
MDAQMD Threshold	548	137	137	137	82	65
Exceeds?	No	No	No	No	No	No
Source: CalEEMod Report, October 18, 2024.						

3.5 Operational Emissions

Operational Emissions refer to the ongoing emissions over the life of a project. They include area source emissions, emissions from energy demand (e.g. electricity) and mobile source emissions (e.g. vehicles). Mobile source emissions estimates are based on the amount of traffic which is attracted to and generated by the Project. Traffic, or trips generation, forecasts are based on the amount of traffic associated with the Project's land use.

According to the Traffic Analysis and the applied ITE Land Use Code 154 High-Cube Transload and Short-Term Storage Warehouse, the proposed Project is estimated to generate 1,335 two-way vehicle trip-ends per day.[14] The daily trips are comprised of 934 passenger car two-way trips and 401 two-way truck trips. Assuming that warehouse developments generate longer truck trips associated with product delivery/distribution, trip lengths for long-haul truck trips assumed a 40-mile average trip length derived from the Southern California Association of Government's (SCAG) estimation of average truck trip length in its 2016 Regional Transportation Plan.[15]

Table 3-3 shows the assumed fleet mix for the passenger vehicles and the trucks for warehouse operational phase.

Table 3-3 Fleet Mix – For Passenger Vehicle Run and Truck		
Vehicle Type	**Passenger Vehicles**	**Trucks**
HHD	0	60%
LDA	62%	0
LDT1	4%	0
LDT2	21%	0
LDH1	0	17%

[14] Institute of Transportation Engineers (ITE), Trip Generation Manual, 11th Edition, (2021), https://www.ite.org/ITEORG/assets/File/Trip%20Generation%20Appendices%20PUBLISHED/Truck/Land%20Uses%20with%20Truck%20Data%20Plots.pdf.

[15] South Coast Air Quality Management District, Preliminary Draft Staff Report: Proposed Rule 2305 – Warehouse Indirect Source Rule – Warehouse Actions and Investments to Reduce.

Table 3-3 Fleet Mix – For Passenger Vehicle Run and Truck		
Vehicle Type	**Passenger Vehicles**	**Trucks**
LDH2	0	0
MCY	0	0
MDV	13%	0
MH	0	0
MHD	0	23%
OBUS	0	0
SBUS	0	0
UBUS	0	0
Source: Moreno Valley Trade Center (Warehouse Scenario) Air Quality, GHG, & HRA Evaluation prepared by UXR, October 2020		

CalEEMod defaults were assumed for electricity and natural gas demand. Southern California Edison 2027 forecasted intensity factors (as provided in CalEEMod) were applied, assuming an operational year of 2027. Based on CalEEMod default factors, the Project would generate an electricity demand of 4,341,692 kWh/yr and a natural gas demand of 12,399,317 kBTU/yr.

The Project's total annual operational water demand for indoor and outdoor use estimated to be 23.44 acre-feet. Annual indoor water use of 12.01 acre-feet is based on a water demand factor of 35 gallons per square foot for the office area and 3.4 gallons per square foot for the warehouse area. To estimate annual outdoor water use for landscape irrigation, 11.43 acre-feet, the Town of Apple Valley applies a Maximum Applied Water Allowance (MAWA) equation which factors in evapotranspiration rate associated with area's climate.[16]

As shown in Table 3-4, projected emissions during the Project's operational life will not exceed the MDAQMD thresholds for any criteria air pollutants. Impacts related to operational emissions can thus be assumed to be less than significant.

Table 3-4 Maximum Daily Operational-Related Emissions Summary (pounds per day)						
Operational Emissions	CO	NO_x	ROG	SO_2	PM_{10}	$PM_{2.5}$
Daily Max. (Total)	**79.2**	**47.9**	**22.6**	**0.57**	**25.8**	**7.57**
MDAQMD Threshold	548	137	137	137	82	65
Exceeds?	No	No	No	No	No	No
Source: Appendix 2: CalEEMod Report, October 18, 2024..						

3.6 Localized Impacts

The MDAQMD considers residences, schools, daycare centers, playground, and medical facilities as sensitive receptor land uses. According to the MDAQMD CEQA Guidelines, projects within a

[16] Chapter 9.75 "Water Conservation/Landscaping Regulations," Town of Apple Valley Code of Ordinances, 2016.

specified distance of a sensitive receptor must be evaluated using significance threshold criteria number 4:

> *(4) [A project is significant if it] Exposes sensitive receptors to substantial pollutant concentrations, including those resulting in a cancer risk greater than or equal to 10 in a million and/or a Hazard Index (HI) (non-cancerous) greater than or equal to 1.*

The threshold distances from sensitive receptors, as specified by the MDAQMD are as follows:

- Any industrial project within 1000 feet;
- A distribution center (40 or more trucks per day) within 1000 feet;
- A major transportation project (50,000 or more vehicle per day) within 1000 feet;
- A dry cleaner using perchloroethylene within 500 feet;
- A gasoline dispensing facility within 300 feet.[17]

The proposed Project is considered an industrial land use and proposes a distribution center with more than 40 truck trips projected per day. The Project is located within the North Apple Valley Industrial Specific Plan area and is not within 1,000 feet of any sensitive receptor land uses. The nearest sensitive receptor land uses are scattered residences located approximately 4,600 feet south of the Project site.

Given that the Project is well beyond the specified distance from any sensitive receptor land uses, it does not need to be evaluated using significance criteria number 4, stated above.

3.7 Air Quality Management Plan Consistency

The Project is located within the MDAB, which is governed by the MDAQMD. MDAQMD is responsible for monitoring criteria air pollutant concentrations and establishing management policies for the MDAB. All development within the MDAB, including the proposed Project, is subject to all applicable air quality management plans that establish control strategies and guidance on regional emission reductions for air pollutants, including but not limited to ozone attainment plans and PM_{10} reduction plans.

According to the MDAQMD CEQA Guidelines, a project is considered non-conforming if it conflicts with or may delay the implementation of any applicable attainment or maintenance plan. According to the guidelines, a project is considered conforming if it "complies with all proposed control measures that are not yet adopted from the applicable plan(s) and is consistent with the growth forecasts in the applicable plan(s)."

The MDAQMD works directly with the Southern California Association of Governments (SCAG), county transportation commissions, and local governments, and cooperates actively with all state and federal government agencies. SCAG adopted the 2024-2050 Regional Transportation Plan/Sustainable Communities Strategy (also referred to as Connect SoCal 2024) to comply with

[17] MDAQMD California Environmental Quality Act (CEQA) and Federal Conformity Guidelines (February 2020).

metropolitan planning organization (MPO) requirements under the Sustainable Communities and Climate Protection Act. Chapter 3 of the Connect SoCal 2024 plan forms the basis of land use and transportation controls of air quality plans. The 2024 Demographics & Growth Forecast Technical Report projects the number of households to increase to 38,700 by 2050, [18] and if the average household size remains at 2.83, the projected population for the Town by 2050 is 109,521. [19] According to the Town's 2009 General Plan, Apple Valley has the potential to accommodate 22,177 additional dwelling units and 76,337 additional residents in the Town boundaries through buildout of the General Plan.[20]

MDAQMD states that conformity with growth forecasts can be established by demonstrating that the project is consistent with the land use plan that was used to generate the growth forecast.[21] The Project site is located in the planning area of the North Apple Valley Industrial Specific Plan (NAVISP). According to the NAVISP, the Project property is designated as Industrial – Specific Plan, which allows for "a broad range of clean manufacturing and warehousing uses… [including] warehouse distribution facilities." [22] The Project, which proposes the development of a warehouse distribution facility, is consistent with the land use and zoning designation established in the NAVISP and will comply with the policies and regulations applicable to this designation. According to the MDAQMD CEQA Guidelines, given that the Project is consistent with the land use plan used to generate the growth forecast, it can be assumed that the Project is conforms with the growth forecast itself.

The MDAQMD CEQA Guidelines also state that a project is considered conforming if it complies with all proposed control measures. According to the Apple Valley General Plan, the Town is subject to the provisions of the MDAQMD Rule Book, which establishes policies and other measures designed to help the District reach federal and state attainment standards. [23] In accordance with the Towns policies, the proposed Project shall comply with the provisions of the MDAQMD Rule Book. These actions include the implementation of fugitive dust control measures (Rule 403) and the use of low VOC content architectural coatings (Rule 1113). Furthermore, the Project will be subject to Rule 201, which requires a permit from the Air Pollution Control Office prior to any construction activities, and Rule XIII, which requires preconstruction review of all new facilities to ensure they don't interfere with the attainment and maintenance of ambient air quality standards. Compliance with the MDAQMD's requirements will ensure that the Project does not conflict with applicable air quality plans.

---

18 SCAG 2024-2050 Regional Transportation Plan/Sustainable Communities Strategy, Demographics and Growth Forecast Technical Report, Jurisdiction-Level Growth Forecast.

19 Table 2: E-5 City and County Population and Housing Estimates, January 1, 2024, State California Department of Finance.

20 Land Use Element, Town of Apple Valley General Plan (2009), page II-12.

21 MDAQMD California Environmental Quality Act (CEQA) and Federal Conformity Guidelines (February 2020).

22 North Apple Valley Industrial Specific Plan (2006), p. I-2.

23 Air Quality Element, Town of Apple Valley General Plan (2009), p. III-70.

3.8 Odors

Land uses which are likely to generate odors, other than agricultural operations which are exempted, include chemical plants, composting operations, dairies, fiberglass molding, landfills, refineries, rail yards, and wastewater treatment plants.[24]

The Project proposes the development of a distribution warehouse facility, which will not include any industrial production or processing activity onsite. While the proposed warehouse may produce some odors, it is not anticipated to produce any objectionable odors long term. While some odors may be generated on site during the construction process, their production will be short term. Any odors generated on site during construction or operations are expected to disperse quickly with distances.

3.9 Cumulative Impacts

Given the dispersing nature of pollutant emissions and aggregate impacts from nearby jurisdictions, cumulative air quality is evaluated on a regional scale. As previously mentioned, the West Mojave Desert portion of the Mojave Desert Air Basin is a designated non-attainment region for PM_{10} and ozone. Any development resulting in emissions of PM_{10}, ozone, or ozone precursors will, to some extent, contribute to the existing regional non-attainment.

The MDAQMD does not currently provide thresholds of significance for the cumulative emissions of multiple projects. A project's potential cumulative contributions can instead be analyzed using the criteria for project-specific impacts, assuming that if an individual development generates less than significant construction and operational emissions, then it would not generate a cumulatively considerable increase in non-attainment criteria pollutants.

The Project is located in a non-attainment area for PM_{10} as well as ozone, for which precursors include CO, NO_x, and ROG. As shown in Tables 3-3 and 3-4, Project emissions will fall below threshold of what MDAQMD considers to be cumulatively considerable. Emissions of PM_{10}, CO, NO_x and ROG related to the Project are also projected to be below the MDAQMD thresholds.

Standard best practices will be applied during construction, including dust control measures in accordance with MDAQMD Rule 403, as well as the use of low VOC content architectural coatings per MDAQMD Rule 1113. Therefore, while the Project will contribute to incremental increases in emissions, the impacts on regional PM_{10} and ozone levels are not anticipated to be cumulatively considerable.

3.10 CEQA Determination

a) Conflict with or obstruct implementation of the applicable air quality plan?

The Project conforms with the growth forecasts used in the MDAQMD's plans and will comply with all control measures proposed in the District's air quality plans. Based on this evidence, it

[24] SCAQMD Guidance Document, Chapter 2: Air Quality Issues Regarding Land Use.

can be concluded that the Project will not conflict with or obstruct implementation of the applicable air quality plan, and that impacts will therefore be less than significant.

b) 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?

Both the construction and operation of the proposed Project will result in emissions that are below the MDAQMD significance thresholds. The Project is not anticipated to make substantial contributions to an existing regional air quality violation. Overall, Project-specific impacts will be less than significant and Project-related impacts to non-attainment will not be cumulatively considerable.

c) Expose sensitive receptors to substantial pollutant concentrations?

Given that there are currently no sensitive receptors in the Project vicinity, the proposed development is not anticipated to expose sensitive receptors to substantial pollutant concentrations, and impacts can be considered less than significant.

Potential Health Impacts

According to the MDAQMD CEQA Guidelines, the District does not currently have a methodology to correlate the expected air quality emissions of a project to the likely health consequences of those emissions consistently and meaningfully. There are several factors that make it scientifically impossible with the technology available today to calculate the degree to which an individual's health would be impacted by exposure to various levels of criteria pollutant emissions:

- Differing medical histories mean that not all individuals would be affected equally. Some individuals may have medical pre-dispositions, and diet and exercise levels vary across a population.
- Due to the dispersing nature of pollutants, it is difficult to local and identify which individuals will be impacted, either directly or indirectly.
- There are currently no agreed upon methodologies or studies upon which to base assumptions, such as baseline health levels or emissions level-to-health risk ratios.

While the air district, and the field of study in general, do not have methodologies available to analyze the specific health consequences of a project's emissions, MDAQMD does recommend the use of tools such as CalEEMod for the purposes of project evaluation.

Given these limitations, the extent to which the proposed Project poses a health risk is uncertain, but unavoidable. However, the results of the CalEEMod projections indicate that the Project's emissions are below the MDAQMD thresholds, and the application of the MDAQMD sensitive receptor guidelines also indicate that the Project is not within the threshold distance. Based on these findings, it is therefore anticipated that the Project's impacts and associated health effects resulting from criteria pollutants will overall be less than significant.

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

The Project does not propose land uses likely to generate objectionable odors. While the proposed warehouse may produce some odors, it is not anticipated to produce any objectionable odors long term. There are no sensitive receptors in the immediate vicinity of the proposed Project. There are therefore no land uses nearby that are likely to be impacted by any nuisance related to odors. As such, impacts from objectionable odors are expected to be less than significant.

3.11 Air Quality Mitigation Measures

Analysis of the Project's emissions and conformance with applicable air quality attainment and maintenance plans found that impacts are expected to be less than significant. Given that impacts will be less than significant, mitigation measures will not be necessary.

4 CLIMATE CHANGE SETTING

4.1 Introduction to Greenhouse Gases and Climate Change

Greenhouse gases, or GHG, are gases that absorb infrared radiation in the atmosphere. They are named after their role in the greenhouse effect, which refers to the trapping of heat in the atmosphere, near the earth's surface. Like the function of the walls of a greenhouse, as heat flows towards space from the earth's surface, GHGs absorb it and re-radiate it back towards the earth's surface.[25] Greenhouse gases play an essential role in insulating the earth and thereby maintaining climatic conditions amenable to life as we know it.[26]

While GHGs are vital, maintaining balance in the system is also crucial. Over the last two centuries, the combustion of fossil fuels has elevated the concentration of greenhouse gases in the atmosphere far beyond the natural background rate of production. In addition, other human activities including the clearing of forests and native vegetation, and the altering of landscapes to accommodate hardscapes and built environments reduce the Earth's ability to cycle and sequester carbon, which further increases the level of greenhouse gas concentration in the atmosphere.[27] As the concentrations of these gases increase, so too does the amount of heat that they trap in the atmosphere. The warming of the earth's ambient air temperature is known as global warming, and the resulting effects on climatic conditions around the world are collectively known as climate change.

4.1.1 Greenhouse Gases

According to the Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report (AR6), atmospheric concentrations of CO_2 have increased by 50 percent since the industrial revolution and continue to increase at a rate of two parts per million each year. At this rate, the world will exceed 1.5°C above pre-industrial levels by the 2030s.[28] This level of global warming is associated with global mean sea level rise as well as regional climatic changes such as extreme temperatures, increases in the frequency and intensity of storm events and heavy precipitation in some regions, and increases in the intensity and frequency of droughts in other regions.[29]

Greenhouse gas is a broad term referring to chemicals and substances found to cause changes in the atmosphere and the changing of the earth's climate. While these are not the only greenhouse gases, the California Air Resources Board is required to monitor and regulate seven GHGs: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6), nitrogen trifluoride (NF_3), perfluorocarbons (PFCs), and hydrofluorocarbons (HFCs).[30] The latter four gases, all of

[25] United Nations Framework Convention on Climate Change – GHG Inventories.
[26] Town of Apple Valley 2019 Climate Action Plan Update.
[27] California Air Resources Board 2022 Scoping Plan, Environmental and Regulatory Setting.
[28] IPCC Climate Change 2021: The Physical Science Basis. Contribution of Working Group 1 to the Sixth Assessment Report of the IPCC (2021).
[29] IPCC Special Report: Global Warming of 1.5°C – Summary for Policymakers (2018).
[30] California Health and Safety Code § 38505 (g).

which contain fluorine, are sometimes collectively referred to as high global warming potential greenhouse gases (high-GWP gases).

When measuring the potency and lifetimes of greenhouse gases in the atmosphere, carbon dioxide, being the most prevalent GHG, is the reference point against which the other gases are compared. The global warming potential (GWP) is a measure of the effectiveness of heat-trapping ability over a 100-year timeframe, and is a metric used to convert all GHGs into carbon dioxide equivalents. Carbon dioxide equivalents (CO_2e), and specifically metric tons of carbon dioxide equivalents ($MTCO_2e$), are units of measure used to compare emissions of various greenhouse gases. Carbon equivalent refers to the mass of carbon dioxide that would produce the same estimated radiative force as that of another greenhouse gas.[31] These metrics facilitate the development of multi-gas frameworks and policies which are crucial to action addressing climate change.

Table 4-1 describes the primary GHGs, the contribution of each gas to California's total GHG emissions, and the main sources of emissions. The transportation sector is the largest emitter of GHGs in California, followed by the generation of electricity.[32]

Table 4-1
Sources of GHGs from Human Activities

GHG & % of State's Emissions[1]	Description and Sources[2]	Global Warming Potential	Atmospheric Lifetime
Carbon Dioxide (CO_2) 81%	Odorless and colorless gas that is naturally emitted by the decomposition of dead organic matter, oceans, and volcanoes, as well as the respiration of plants, animals and fungus. Next to water vapor, carbon dioxide is the most abundant GHG. Human activities emit CO_2 when burning fossil fuels and burning and removing forests and other vegetation. Looking back 800,000 years prior to the Industrial Revolution, the level of CO_2 in the atmosphere never climbed above 300 parts per million. Today we measure CO_2 at 419.81 parts per million.	1	1,000s of years
Methane (CH_4) 9.8%[3]	A natural byproduct of biological processes in low oxygen environments such as bogs or at the roots of rice crops, as well as in cattle raising. Methane is the third most abundant GHG in the atmosphere. It is released during the extraction, refining, and burning of fossil fuels, and the burning and clearing of native vegetation. Raising of livestock,	25%	About 10 years

[31] California Air Resources Board.
[32] California Air Resources Board 2022 Scoping Plan Update, Environmental and Regulatory Setting.

Table 4-1
Sources of GHGs from Human Activities

GHG & % of State's Emissions[1]	Description and Sources[2]	Global Warming Potential	Atmospheric Lifetime
	decay of organic waste, and landfills also emit methane.		
Nitrous Oxide (N_2O) 3.5%[3]	Like carbon dioxide and methane, nitrous oxide naturally occurs in the atmosphere. It is also released by agricultural activities and agricultural chemicals, fossil fuel combustion, wastewater treatment and industrial processes.	298	More than 100 years
Fluorinated Greenhouse Gases 5.8%[3]	Perfluorocarbons (PFCs): Synthetic gases stable molecular structures and very long lifetimes in the atmosphere. Chlorofluorocarbons (CFCs), Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs), Sulfur Hexafluoride (SF_6) Together these 30 different gases are referred to as fluorinated GHGs. F-GHGs are solely emitted as by-products of industrial processes such as aluminum and semi-conductor manufacturing and used as refrigerants and aerosol propellants. Hydrofluorocarbons (HFCs): Synthetic gases that have the highest GWP of all GHGs, though they represent a small proportion of emissions.	Between 140 and 14,800 depending on the gas	Between 8 and 50,000 years depending on the gas
	Sulfur Hexafluoride (SF_6): A synthetic, odorless, colorless, nontoxic and nonflammable gas. SF_6 is emitted by electricity transmission and distribution and by semiconductor manufacturing.	23,500	3,200
	Nitrogen trifluoride (NF_3): A synthetic, colorless, toxic gas with a musty odor. NF_3 is emitted by semiconductor manufacturing.	16,100	740 years

[1] Source: California Air Resources Board, Greenhouse Gas Inventory for 2000-2022.
[2] Sources: California Air Resources Board 2022 Scoping Plan Update, Environmental and Regulatory Setting; U.S. EPA, Overview of Greenhouse Gases, https://www.epa.gov/ghgemissions/overview-greenhouse-gases, (October 2024).
[3] In carbon dioxide equivalent units.

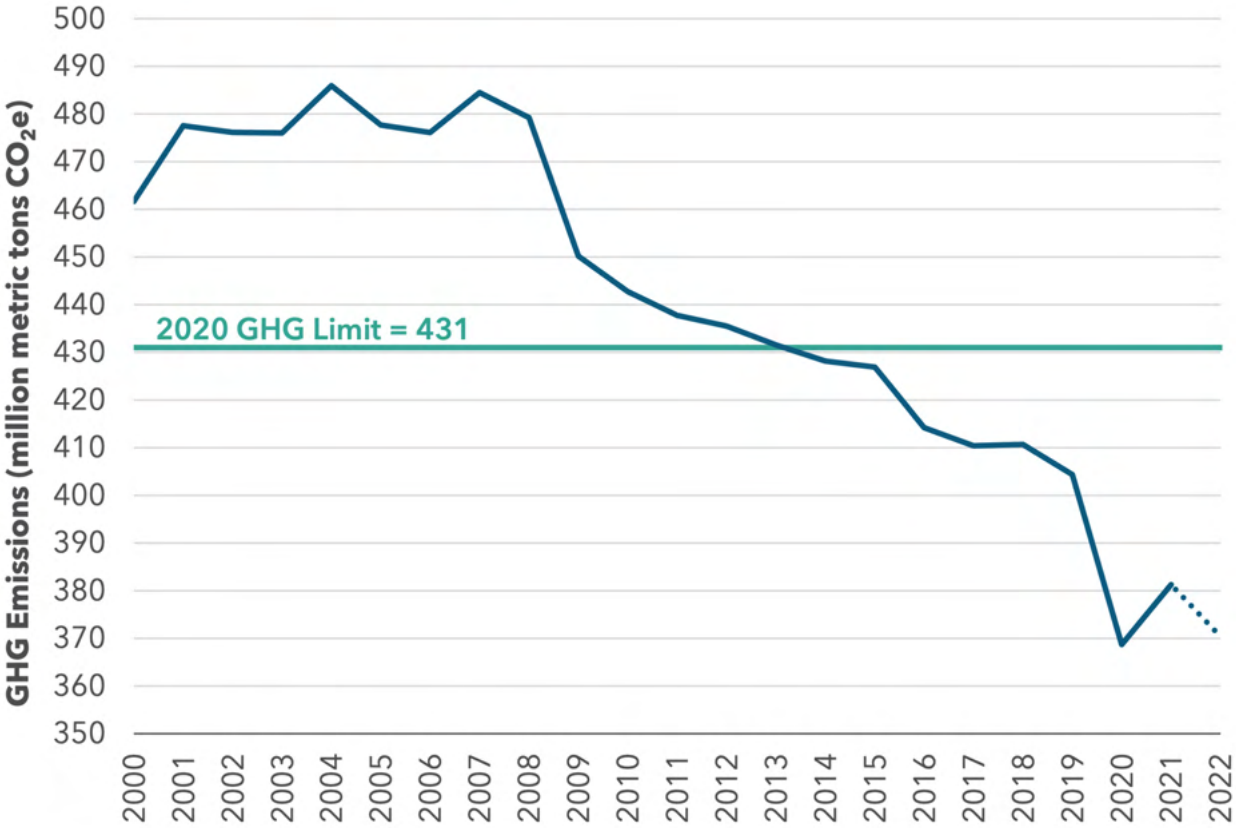
4.1.2 Climate Change in California

California is the second largest greenhouse gas producing state in the U.S., and the 16th largest contributor in the world.[33] In 2020, emissions from GHG emitting activities in California were 368.5 $MMTCO_2e$, 35.3 $MMTCO_2e$ below 2019 levels and 61.8 $MMTCO_2e$ below the 2020 GHG

[33] Town of Apple Valley 2019 Climate Action Plan.

Limit. While the 2020 COVID-19 pandemic likely led to this reduction in emissions, the data for 2022, two years after the pandemic, show that greenhouse gas emissions have not reached pre-pandemic levels of 403.7 $MMTCO_2e$. Total California greenhouse gas emissions for 2022 were 371.1 $MMTCO_2e$. Figure 3 shows that the state's success in reducing GHG emissions since 2000.

Figure 4-1: Annual Statewide GHG Emissions Compared to the 2020 GHG Limit

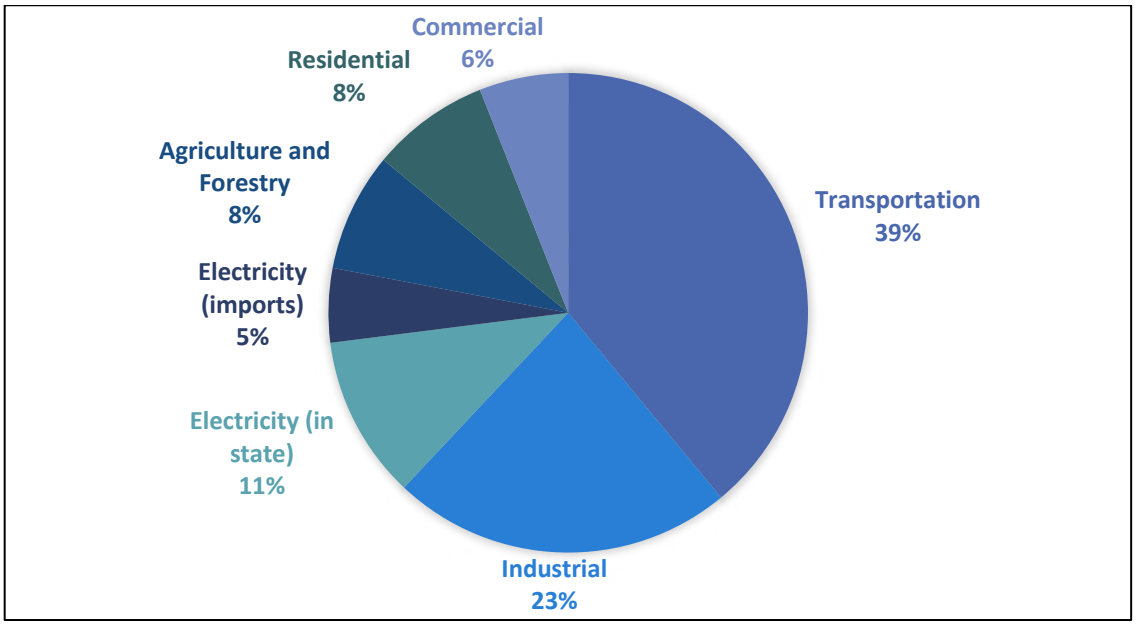


Source: California Greenhouse Gas 2000-2020 Emissions Trends and Indicators Report

Carbon dioxide is the primary greenhouse gas emitted in California. It accounted for 81% of total GHG emissions in the state in 2022.[34] Transportation, particularly on-road travel, is the predominant source of carbon dioxide emissions in California, and as shown in Figure 4, accounted for 38% of MMT CO_2e in the state in 2020.[35]

[34] CARB Greenhouse Gas Inventory for 2000-2022 (2024).
[35] California Air Resources Board, 2022 Scoping Plan for Achieving Carbon Neutrality (November 2022), p.32.

Figure 4-2: 2022 GHG emissions by economic sector (% of total California emissions)



Source: California Air Resources Board, Current California GHG Emission Inventory Data.

While research into the effects of climate change continues to evolve, such as determining the severity of impacts at specific temperature increases, current and emerging impacts are becoming increasingly evident in climatic events globally. The impacts of climate change are apparent in California in effects such as the increasing frequency and severity of wildfires, droughts, and extreme heat.

Extreme Heat: California's daily maximum average temperature, an indicator of extreme temperature trends, is expected to increase to 4.4°F - 5.8°F by 2050 and 5.6°F - 8.8°F by 2100.[36] Since 1895, annual mean temperatures across the state have increased by 2.5°F, and the past seven years have been the hottest years with 2024 being the hottest on record. Frequent heat waves are resulting in deadly public health crises, particularly in cities, across the state. Like many other effects of climate change and air pollution, the adverse impacts of heat waves are felt most acutely by vulnerable communities, including people with sensitive health conditions and low-income populations. Higher temperatures can also exacerbate natural disasters such as storms, heat waves, floods, and droughts.[37]

Drought: The recording-breaking temperatures are accompanied by increased aridity and droughts that are longer and more widespread than pre-2000.[38] According to CARB, 87% of California was in severe drought, and 100% of California was in at least moderate drought, as of March 2022. While droughts are a natural phenomenon, it is estimated that human-caused

[36] California Air Resources Board, 2022 Scoping Plan for Achieving Carbon Neutrality (November 2022), p.5.
[37] Town of Apple Valley Climate Action Plan (2019).
[38] California Office of Environmental Health Hazard Assessment, Air Temperatures, (2024).

climate change accounts for 19% of drought severity and 42% of the soil moisture deficit in the state since 2000. Severe and enduring drought is harmful to both wildlife and California's agricultural industry, which is responsible for growing more than half of the country's produce.[39] Combined, drought and extreme heat contribute to worsening wildfires in California.

Wildfires: Large wildfires (10,000 acres or more) are occurring more frequently in California: of the twenty largest wildfires recorded in the state's history, almost half of them occurred in 2020 and 2021.[40] In addition to the damage and lives lost directly from these fires, wildfire impacts compound with other impacts and causes of climate change. For example, wildfires in California result in severe air quality hazards and substantially harm wildlife populations, and the fires also result in the further emission of massive quantities of CO_2 into the atmosphere.

Beyond these three hazards, climate change is expected to have wide ranging effects to California's water and energy supply, sea level, and ecosystems. The California Energy Commission published a report on the impacts of climate change on the region encompassed by the Mojave and Sonoran Deserts.[41] It found that the region's already extreme heat will increase by up to 8 to 14 degrees Fahrenheit by the end of the century, and that low and highly variable rainfall rates will be even more variable over coming decades. Increasingly extreme weather conditions will increase both the risk of flash flooding and wildfire. High temperatures and changing water supplies will exacerbate existing public health challenges and threaten vital industries such as agriculture and tourism.

4.1.3 GHGs and Health Impacts

While some greenhouse gases are hazardous to human health if encountered in high concentrations in confined areas, the public health impacts associated with GHGs are primarily those associated with their combined influence on climate change. Climate change and its effects are responsible for a wide range of potential hazards to public health, both direct and indirect. Direct health impacts resulting from climate change include heat-related illnesses, such as heat stroke, as well as injuries and death from natural disasters and extreme weather, such as wildfires. Climate change is also associated with indirect adverse health impacts, such as:

- Exacerbation of cardiovascular and respiratory disease due to increased smog and wildfire smoke.
- Increased rates and expanding geographic ranges of vector-borne and fungal diseases.
- Nutrition consequences associated with food insecurity worsened by decreased agricultural production.

[39] California Air Resources Board, 2022 Scoping Plan for Achieving Carbon Neutrality (November 2022), p.4.
[40] Ibid.
[41] California Energy Commission, California's Fourth Climate Change Assessment (2018) Inland Deserts Region Report.

- Mental trauma related to extreme weather disasters and other mental health impacts due to climate change-related unemployment, income loss, home loss, or displacement.[42]

According to the California Air Resources Board, while climate change is one of the greatest public health threats of the twenty-first century, action to address climate change presents one of the most significant opportunities to improve public health, both globally and in California.[43]

4.2 Regulatory Setting

The following section outlines regulatory actions being taken to address climate change and reduce GHG emissions at the international, federal, state, and regional levels.

4.2.1 International

Intergovernmental Panel on Climate Change (IPCC)
The IPCC was founded in 1988 by the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP). The organization is comprised of member governments of the WMO and UN. The mission of the IPCC is to provide scientific research to governments in order to inform climate policies.

United Nation's Framework Convention on Climate Change (UNFCCC)
The UNFCCC was signed by 154 member nations in 1992, and now has 198 members. The Convention guides the global response to climate change with the objective of stabilizing greenhouse gas concentrations at a level that would mitigate the dangerous consequences of climate change. The UNFCCC defines climate change as: "a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods."[44]

The UNFCCC is the parent treaty of the Kyoto Protocol and Paris Agreement. While the UNFCCC sets targets for GHG concentrations, the 1997 Kyoto Protocol established binding targets for the 192 signatory parties. The Paris Agreement was adopted in 2015 as a legally binding international treaty signed by 196 parties. It aims to limit global warming to less than 2 degrees Celsius above pre-industrial levels by setting nationally determined contributions (NDCs) of increasingly ambitious climate action on 5-year cycles.[45]

4.2.2 Federal

GHG Endangerment Finding
Under section 202(a) of the Clean Air Act, the EPA determined that GHGs threaten public health and welfare, and that GHG emissions from motor vehicles contribute to this threat. The two distinct findings, signed by the EPA Administrator in December 2009, found that:

---

[42] California Air Resources Board, Draft 2022 Scoping Plan Update (May 2022), p.127.
[43] California Air Resources Board, Draft 2022 Scoping Plan Update Appendix G: Public Health.
[44] United Nations Framework Convention on Climate Change, Article 1 (2).
[45] United Nations Climate Change, UNFCCC Process, The Paris Agreement https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement (Accessed October 2024).

1. The Endangerment Finding: Concentrations of six greenhouse gases (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride) in atmosphere constitute air pollution and threaten the health and welfare of the public.
2. The Cause or Contribute Finding: Emissions from new motor vehicles and motor vehicle emissions contribute to GHG concentrations in the atmosphere and thus to climate change.[46]

Mandatory Reporting of GHGs (40 CFR Parts 86, 87, 89 et al.)
The Mandatory Reporting of Greenhouses Gases rule requires reporting of greenhouse gas emissions from major fossil fuel suppliers, industrial gas suppliers, direct greenhouse gas emitters and manufacturers of heavy-duty and off-road vehicles and engines. The rule requires facilities that emit 25,000 tons per year (MT/yr) of GHGs or more to submit annual reports to the EPA.[47]

New Source Review (NSR)
The New Source Review Permitting program was established by Congress in 1977 as part of the Clean Air Act Amendments. The program requires new industrial facilities, or facilities making changes that will increase emissions significantly, to obtain permits limiting air emissions prior to construction. Permits are issues by state or local air pollution control agencies, and sometimes the EPA. The program requires that new sources meet the requirements for one or more of the following permits: Prevention of Significant Deterioration (PSD) permits, Nonattainment NSR permits, and minor source permits.

4.2.3 State

Assembly Bill 32 (AB 32)
The California Global Warming Solutions Act of 2006 (AB 32) required California to adopt regulations in order to reduce their GHG emissions to 1990 levels by 2020. This represents reductions of approximately 15 percent below the emissions projected in a "business as usual" scenario. The California Air Resources Board (CARB) prepared a Scoping Plan (2008) and Update (2014) to establish the state's strategy to meet the targets set forth by AB 32. Moving forward, AB 32 requires California to maintain and continue reductions beyond 2020 and continues to require CARB to update the Scoping Plan every 5 years.

Senate Bill 32 (SB 32)
The California Global Warming Solutions Act of 2016: emissions limit (SB 32) requires California to adopt regulations to reduce GHG emissions to 40% of 1990 levels by 2030.

CARB 2022 Scoping Plan Update
The 2022 Scoping Plan provides CARB's update to the 2017 Plan. Pursuant to SB 32, the plan sets forth the state's plan to stay on track towards reducing GHG emission by at least 40% below 1990

[46] United States Environmental Protection Agency, EPA's Endangerment Finding.
[47] Federal Register, Part II Environmental Protection Agency (October 30, 2009).

levels by 2030. Additionally, the 2022 Plan Update establishes a path for the state to achieve carbon neutrality by 2045 through technologically feasible and cost-effective means.[48]

Senate Bill 375 (SB 375)
SB 375 directs CARB to set regional GHG emissions reduction targets. The intent of the bill is to ensure local and regional governments are involved in efforts to meet the reduction targets set forth by AB 32 and SB 32. Alignment between state and local emission reduction efforts is important particularly because regional transportation planning and housing needs allocation, factors that have a major impact on GHG emissions in California, are overseen by local elected officials. The bill encourages an integrated approach by requiring the inclusion of Sustainable Communities Strategies in regional transportation plans, synchronizing the General Plan Housing Elements update schedule to align with regional transportation planning cycles, and adding CEQA incentives for projects that align with regional plans and reduce GHG emissions.

Clean Energy and Pollution Reduction Act of 2015 (SB 350)
SB 350 establishes a state renewable energy procurement goal, increasing from 33% by 2020 to 50% by 2030. It is implemented by the California Energy Commission in conjunction with state agencies including the Public Utilities Commission and CARB. The bill also requires large utilities companies to prepare integrated resource plans (IRPs) establishing how the utilities will meet customer demands while reducing GHG emissions and increasing the use of clean energy sources.

4.2.3.2 California Regulations and Building Codes

Title 24 of the California Code of Regulations
The California Building Standards Code covers a broad set of regulations regarding the construction, maintenance, fire safety, and accessibility of buildings, as well as the integration of energy conservation practices and green design.

Adopted in 1978, Part 6 of Title 24 establishes energy efficiency standards for residential and non-residential buildings constructed in the state. With the aim of continuing to reduce energy demand and consumption, Part 6 is updated as needed to reflect new energy efficiency technologies and methodologies.

Part 11 of Title 24 of the CCR The California Green Building Standards Code, or CALGreen, established mandatory minimum environmental performance standards addressing energy and water efficiency, material and water conservation, and environmental quality. CALGreen took effect in January 2022 and applies to all new commercial, low-rise residential, state-owned buildings, schools, and hospitals constructed in California. CALGreen was developed to help California meet the emissions reductions targets set forth in AB 32 and SB 32.

[48] California Air Resources Board, 2022 Scoping Plan for Achieving Carbon Neutrality (November 2022).

CARB Refrigerant Management Program
Administered by the California Air Resources Board, the Refrigerant Management Program requires periodic leak inspections, prompt leak repairs, as well as reporting and maintenance of on-site service records, for all facilities with refrigeration systems containing more than 50 pounds of high-global warming potential (GWP) refrigerant. CARB adopted the program in 2009 as part of AB 32.

Senate Bill 97 (SB 97)
SB 97 recognized the need for state agencies to analyze GHG emissions as part of the California Environmental Quality Act process. The bill updated CEQA to require the Office of Planning and Research (OPR) to develop guidelines for the feasible mitigation of GHG emissions, of the effects of GHG emissions, to be transmitted to the California Air Resources Board for approval. The adopted guidelines apply to effects associated with transportation and energy consumption.

4.2.4 Local

Air Quality Management Districts
According to §15064.7(b) of the CEQA Guidelines, for a threshold of significance to be used as part of a legal agency's environmental review process, it must be adopted by ordinance, resolution, rule, or regulation. While the Project is located within the MDAQMD jurisdiction, the MDAQMD threshold for greenhouse gas emissions has not been formally adopted. For analysis purposes, Project impacts will be assessed against GHG thresholds from both MDAQMD and *South Coast Air Quality Management District (SCAQMD)*. The SCAQMD is immediately adjacent to the MDAQMD jurisdictional area and has a formally adopted absolute threshold for stationary sources of 10,000 MTCO2e for industrial projects. Furthermore, the SCAQMD quantitative thresholds for GHG emissions are more conservative than the threshold currently in use by MDAQMD. Therefore, in order ensure that analysis of the Project's impacts related to GHG is sufficient under CEQA, emissions will be evaluated against both the MDAQMD and SCAQMD thresholds.

The GHG emission significance thresholds for the MDAQMD and SCAQMD are discussed, below:

MDAQMD Significance Thresholds
According to the MDAQMD, any project is significant if it triggers or exceeds the most appropriate evaluation criteria. The District will clarify upon request which threshold is most appropriate for a given project; in general, the emissions comparison (criteria number 1) is sufficient:

1. Generates total emissions (direct and indirect) in excess of the MDAQMD thresholds
2. Generates a violation of any ambient air quality standard when added to the local background;
3. Does not conform with the applicable attainment or maintenance plan(s) 1;

4. Exposes sensitive receptors to substantial pollutant concentrations, including those resulting in a cancer risk greater than or equal to 10 in a million and/or a Hazard Index (HI) (non-cancerous) greater than or equal to 1.[49]

Table 4-2
MDAQMD Significance Thresholds

Criteria Pollutant	Annual Threshold (short tons)
Greenhouse Gases (CO_2e)	100,000

Source: MDAQMD CEQA Guidelines (February 2020).

SCAQMD GHG Significance Thresholds

On December 5, 2008, the SCAQMD formally adopted a greenhouse gas significance threshold for stationary sources of 10,000 $MTCO_2e$ per year for industrial projects and 3,000 $MTCO_2e$ per year for residential and commercial projects where SCAQMD is the lead agency (SCAQMD Resolution No. 08-31). This threshold was adopted based upon a December 2008 staff report and draft interim guidance document that also recommended a threshold for all projects using a tiered approach.[50]

It was recommended by SCAQMD staff that a project's greenhouse gas emissions would be considered significant if it could not comply with at least one of the following "tiered" tests:

- Tier 1: Is there an applicable exemption?
- Tier 2: Is the project compliant with a greenhouse gas reduction plan that is, at a minimum, consistent with the goals of AB 32?
- Tier 3: Is the project below an absolute threshold (10,000 $MTCO_2e$/yr for industrial projects; 3,000 $MTCO_2e$/yr for residential and commercial projects)?
- Tier 4: Is the project below a (yet to be set) performance threshold?
- Tier 5: Would the project achieve a screening level with off-site mitigation?

San Bernardino County Regional Greenhouse Gas Reduction Plan

The 2021 San Bernardino County Regional Greenhouse Gas Reduction Plan identifies state GHG reduction measures applicable to participating jurisdictions, as well as local measures selected by each jurisdiction that could reduce future GHG emissions within jurisdictional boundaries. The reduction plan has individual sections for each jurisdiction that detail the jurisdiction's 2016 GHG emissions inventory, 2030 GHG emissions forecast, reduction goal, jurisdiction-selected (or consultant-identified) GHG reduction measures, and related General Plan policies or other ongoing programs in the jurisdiction. The purpose of the plan is to provide participating jurisdictions with relevant information to complete and adopt their own Climate Action Plan (CAP).

[49] MDAQMD California Environmental Quality Act (CEQA) and Federal Conformity Guidelines (February 2020).
[50] SCAQMD, Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans (December 2008).

Town of Apple Valley Climate Action Plan 2019 Update

Apple Valley's Climate Action Plan (CAP) Update is a comprehensive GHG emissions reduction strategy, representing the third update to the Town's CAP. Apple Valley originally adopted the CAP in 2010, with the intent of revisions every 3 years in response to policy changes, technological advances, and to build on the Town's successes in emissions reduction.

Pursuant to Senate Bill 32 (SB 32), the CAP Update aims to ensure that the Town continues to meet its GHG emissions reductions targets of 15% below 2005 levels by 2020 and 40% below 2005 levels by 2030.[51] The CAP Update also provides guidance to meet VMT reduction targets established by the California Air Resources Board (CARB): 7% below projected VMT levels in 2030 to meet 40% below VMT levels in 1990. As shown in Table 4-3, the Town met its emissions target of 15% below the 2005 baseline in 2020. With implementation of the measures provided in the CAP, the Town expects to be on track to meet its emissions target in 2030.

Table 4-3
Apple Valley CAP Emissions Reduction Targets

Target/Scenario	Town-wide Emissions	Per Capita
2005 Baseline	**748,912**	**11.75**
2020: 15% Below Baseline Target	636,575	8.59
2020: 2019 GHG Inventory	**597,681**	**8.06**
2030: 40% Below, Forecast BAU [1]	533,103	6.31
2030: 40% Below Baseline Target	449,347	5.32
2030: 40% Below, Forecast w/CAP Measures	410,922	4.86

Source: Town of Apple Valley 2019 Climate Action Plan Update, Table 1.
[1] BAU = Business as usual.

[51] Town of Apple Valley 2019 Climate Action Plan Update (May 2021).

5 PROJECT GREENHOUSE GAS IMPACT

5.1 Introduction

The following section analyzes the greenhouse gas emission impacts associated with buildout of the proposed Project.

5.2 Standards of Significance

According to the 2022 CEQA Guidelines (*Appendix G: Environmental Checklist*), the project would have a significant effect on greenhouse gases if the Proposed Project were to:

a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

5.3 Methodology

The same methodology used in the air quality impacts discussion was used for greenhouse gas emissions impacts discussion. The proposed Project consists of a 627,200 square-foot distribution warehouse on a 40.1-acre vacant parcel located on the southeast corner of Gustine Street and Dakota Road. The building footprint measures 613,760 square feet, the mezzanine is 13,440 square feet, and maximum building height is 50 feet. The warehouse would comprise 91% of the building while office space would utilize 9% of the building. The warehouse would sit on 36% of the parcel, and the remaining 64% of the parcel would be parking area, curbed landscaping, and a retention basin. Off-site improvements to the bordering roadways as well as utility connections are included in this analysis. See Table 1-1 for additional Project specifications.

Construction and operational emissions were calculated using California Emissions Estimator Model (CalEEMod) Version 2022.1. CalEEMod is a computer program that can be used to estimate anticipated emissions associated with land development projects in California. The model calculates criteria pollutant emissions, including CO, PM_{10}, $PM_{2.5}$ and the ozone precursors ROG and NO_x. CalEEMod detailed output tables are provided in Appendix 2 of this report. Please refer to Table 3-1 for a summary of the land use assumptions entered into the model.

5.4 Construction Emissions

Construction activities will result in short-term GHG emissions associated with the operation of construction equipment, vehicle emissions from construction employee commutes, material hauling, and other ground disturbing activities. Table 5-1 shows that the Project is projected to generate 1,651 metric tons of CO_2e during the 18-month construction period beginning in 2025 and ending in 2027.

Currently MDAQMD does not provide construction-related GHG emissions thresholds for projects of this nature. As such, construction-related GHG emissions were amortized over a 30-year period, added to annual operational emissions then compared to the MDAQMD operational-related threshold in order to determine if construction emissions will result in a cumulatively considerable impact. Table 5-1 shows the combined amortized construction emissions and operational emissions.

5.5 Operational Emissions

Once the Project reaches the operational phase, five categories of emissions would contribute to its annual GHG emissions either directly or indirectly: area emissions (e.g. pavement and architectural coating off-gassing), energy use, mobile source emissions, solid waste disposal, and water use. As stated above, GHG emissions from construction of the Project were amortized over a 30-year period and added to the operational emissions total. Table 1-5 shows a summary of the total annual construction and operational GHG emissions projected for buildout of the Project.

Table 5-1
Projected GHG Emissions Summary (Metric Tons)

Phase	CO_2e (MT/YR)
Construction	
2025	601
2026	1,050
Construction Total	1,651
Operational	
Area	9.19
Energy	1,345
Mobile	9,067
Waste	189
Water	8.46
Refrigerants	2.43
Construction: 30-Year Amortized[1]	55.03
Total Project Operational Emissions	10,487.11
MDAQMD Annual Threshold	100,000.00
Exceeds?	**No**

[1] Buildout Construction GHG emissions were amortized over 30-years then added to buildout operational GHG emissions. 1,651/30=55.03

5.6 CAP Consistency

According to the CAP, the Town aims to meet the GHG emissions reduction target of 40% below 2005 levels by 2030, and 80% below 2005 levels by 2050. Based on growth forecasts in the SCAG 2024-2050 Regional Transportation Plan/SCS, the CAP forecasts that the Town will have a population of 84,535 in 2030. To meet the 40% below baseline target, the Town-wide GHG emissions in 2030 would need to be 449,347 $MTCO_2e$, or 5.32 per capita.

As demonstrated in Table 5-1, above, based on projections made using CalEEMod Version 2022.1, the Project is expected to generate 10,487.11 metric tons of CO_2e per year. A density factor of 1,195 square feet per employee for logistics land uses is applied to the proposed 627,200 square foot warehouse distribution facility, which provides an estimate of 525 jobs potentially generated by the Project.[52] Given the existing demand for jobs in the Town, it is likely that most of these jobs would be filled by existing residents of Apple Valley. It is therefore assumed that the Town's 2030 population, including buildout of the Project, would be 84,535 as analyzed in the CAP, and the Project would not create a significant growth in population.

Based on a 2030 population of 84,535, Table 5-2 shows that in order for the Town to meet the 2030 emissions reduction target, a per capita annual threshold of 5.32 tons would need to be met. The table also shows that with implementation of the CAP reduction measures, the Town expects to go beyond the established emissions target and further reduce the forecasted emissions to 410,922 $MTCO_2e$ per year or 4.86 tons per capita. The 2030 emissions forecast with CAP measures accounts for community emissions including industrial projects. Therefore, the Project's estimated annual emissions of 10,487.11 $MTCO_2e$ are likely already covered by the 2030 emissions forecast. However, assuming such emissions from an industrial development like the proposed Project were not accounted for in the CAP 2030 forecast, and to ensure a conservative analysis, the Project's emissions are added to the forecast bringing the total emissions to 421,409.11 $MTCO_2e$, or 4.99 tons per capita. Both the total and per capita emissions meet the CAP 2030 target of 40% below the 2005 baseline. The Town-wide emissions in 2030, including the Project, would therefore meet the CAP greenhouse gas emissions reduction target.

[52] Employment Density Study Summary Report prepared for Southern Association of Governments (p. 21), The Natelson Company, Inc., October 21, 2001.

Table 5-2 Project emissions and CAP reduction target			
Target/Scenario	**Forecast ($MTCO_2e$)**	**Population**	**Per Capita**
CAP 2030 forecast w/CAP measures	410,922.00	84,535	4.86
Project emissions (per year)	10,487.11	84,535	--
Total	**421,409.11**	**84,535**	**4.99**
CAP 2030 target (40% below baseline)	449,347.00[1]	84,535	5.32
		Exceeds CAP 2030 target?	**No**
[1] Forecasted town-wide emissions for 2030.			

In order to ensure that the Project's GHG emissions are reduced to the greatest extent possible, the Project will be subject to applicable reduction measures from the CAP. The Project's consistency with applicable reduction measures is shown in the following table.

Table 5-3 Project consistency with CAP reduction measures	
Reduction Measure	**Consistency**
CO-4: Establish an employee carpooling program, including incentives (preferred parking, flex time incentives, etc.) for participating employees.	**Consistent**: Per mitigation measure GHG-1, the Project will establish an employee carpooling program, including incentives for participating employees.
CO-5: Provide employees with free or discounted public transit passes.	**Consistent**: Per mitigation measure GHG-2, the Project will provide employees with free or discounted public transit passes.
ND-6: For projects within the North Apple Valley Industrial Specific Plan, develop employee housing within one mile of the industrial project.	**Consistent**: The area adjacent to the Project site, on the northern side of Quarry, is designated for Low Density Housing. Development of these sites would provide housing within one mile of the Project site.
ND-12: Building and site plan designs shall ensure that the project energy efficiencies meet applicable California Title 24 Energy Efficiency Standards.	**Consistent**: The Project design will comply with all requirements in the California Building Code, including the Title 24 Energy Efficiency Standards.
Source: Town of Apple Valley 2019 Climate Action Plan Update	

5.7 Cumulative Impacts

Due to their dispersing nature and aggregate regional impacts, greenhouse gases are analyzed in terms of their cumulative impacts. The above analysis considered the potential cumulative impacts of the Project on greenhouse gas emissions in the Mojave Desert Air Basin using significance criteria from both the Mojave Desert Air Quality Management District and the South

Coast Air Quality Management District. The analysis also considered emissions in relation to local and state greenhouse gas reduction plans and targets.

Overall, while the Project will contribute to cumulative greenhouse gas impacts, conformance with the MDAQMD significance thresholds as well as with the emissions reductions targets in the Town of Apple Valley's 2019 CAP Update indicate that impacts would be less than significant. The Project's impacts are thus not anticipated to be cumulatively considerable.

5.8 CEQA Determination

a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

According to the MDAQMD CEQA Guidelines, a project's impact is considered significant if it generates total emissions (direct or indirect) that exceed the applicable threshold. As shown in Table 5-1, the Project's annual CO_2e emissions will not exceed the MDAQMD's significance threshold of 100,000 metric tons of CO_2e per year.

b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

The California Air Resources Board (CARB) 2022 Scoping Plan puts forward the bold target of achieving carbon neutrality in state-wide emissions by 2045 or earlier. This plan builds on the efforts of the three previous scoping plans, which established goals to meet 1990 levels by 2020 and 40 percent below 1990 levels by 2030, in compliance with Senate Bill 32 (SB 32). The 2022 Scoping Plan Update aims to further reduce anthropogenic emissions in California to 85 percent below 1990 levels by 2045.[53] According to Apple Valley's General Plan (2009), at buildout the Town was estimated to contribute approximately 0.756% of the total California emissions limit for 2020, as established by the CARB.[54]

The Town's 2019 Climate Action Plan Update (CAP) provides Apple Valley's comprehensive strategy to meet the SB 32 emission targets by reducing the Town's emissions 15% below 2005 levels by 2020 and 40% below 2005 levels by 2030.[55] According to the MDAQMD CEQA Guidelines, a project is deemed to conform with an emissions plan if it is consistent with the existing land use plan. As described under the Air Quality discussion, the Project is located in the North Apple Valley Industrial Specific Plan (NAVISP) area, on a site designated and zoned as Industrial – Specific Plan. This designation permits clean industrial uses such as warehouse distribution facilities. The Project proposes a warehouse distribution facility that aligns with the permitted uses for the site, and will be developed in accordance with the development standards for the I-SP zone in the NAVISP.

[53] California Air Resources Board 2022 Scoping Plan Update.
[54] Apple Valley General Plan (2009) EIR, p. III-29.
[55] Town of Apple Valley 2019 Climate Action Plan Update.

Given that the Apple Valley Climate Action Plan (CAP) is based on the growth projected from buildout of the Town's General Plan, the Project's conformance with the NAVISP implies compliance with the CAP. Furthermore, while the provisions of the CAP are mostly directed towards regulating emissions at the Town-wide scale, some policies are applicable to individual projects. For example, policy ND-12 in the CAP states that building and site plans must ensure that the project will meet the applicable Title 24 Energy Efficiency Standards. The Title 24 standards include performance standards for space heating and cooling, water heater design improvements, integration of solar control in building designs, use of efficient lighting, and application of the Town's landscaping guidelines. The Project will be required to comply with all applicable energy efficiency standards as provided in Title 24 and as enforced by the Town. Site plan review by the Town prior to the issuance of development permits will ensure that these standards are met.

The Project, including all components of construction and operation, will also be subject to the current MDAQMD Rules as applicable to greenhouse gases. Compliance will be ensured through MDAQMD Rule 201, which requires preconstruction plan review prior to issuance of a construction permit from the Air Pollution Control Officer.

In conclusion, conformance with the land use plan and implementation of applicable policies in the CAP ensure that the Project will not conflict with applicable plans, policies or regulations adopted for the purpose of reducing the emissions of greenhouse gases. Project impacts are therefore anticipated to be less than significant.

5.9 GHG Mitigation Measures

Consistent with and to reinforce existing Climate Action Plan reduction measures, the following mitigation measures shall apply to the Project:

1. Establish an employee carpooling program, including incentives (preferred parking, flex time incentives, etc.) for participating employees.
2. Provide employees with free or discounted public transit passes.

6 REFERENCES

California Air Resources Board, 2022 Scoping Plan for Achieving Carbon Neutrality (November 2022).

California Air Resources Board 2022 Scoping Plan, Environmental and Regulatory Setting.

California Air Resources Board, National Ambient Air Quality Standards https://ww2.arb.ca.gov/resources/national-ambient-air-quality-standards (Accessed October 2024).

California Air Resources Board Proposed 2022 State SIP Strategy (August 2022).

California Air Resources Board, Table of Ambient Air Quality Standards, https://ww2.arb.ca.gov/sites/default/files/2024-08/AAQS%20Table_ADA_FINAL_07222024.pdf (Updated July 2024).

California Air Resources Board, Toxic Air Contaminant Identification Reports https://ww2.arb.ca.gov/resources/documents/toxic-air-contaminant-identification-reports (Accessed October 2024).

California Air Resources Board, Western Mojave Desert Air Quality Plans, https://ww2.arb.ca.gov/our-work/programs/california-state-implementation-plans/nonattainment-area-plans/western-mojave, (Accessed October 2024).

California Health and Safety Code § 38505 (g)

EPA Green Book (Updated December, July, August 2024).

Federal Register, Part II Environmental Protection Agency (October 30, 2009).

iAdam: Air Quality Data Statistics, California Air Resources Board; https://www.arb.ca.gov/adam, (Accessed October 2024).

IPCC Climate Change 2021: The Physical Science Basis. Contribution of Working Group 1 to the Sixth Assessment Report of the IPCC (2021).

IPCC Special Report: Global Warming of 1.5°C – Summary for Policymakers (2018).

Lecangs Dakota Apple Valley Industrial Traffic Analysis, Urban Crossroads, Inc. October 9, 2024.

MDAQMD Rule Book, https://www.mdaqmd.ca.gov/rules/rule-book (Accessed October 2024).

Mojave Desert Air Quality Management District CEQA Guidelines (February 2020).

Moreno Valley Trade Center (Warehouse Scenario) Air Quality, GHG, & HRA Evaluation prepared by UXR, October 2020.

San Bernardino Countywide Plan Draft PEIR, Environmental Analysis, Air Quality (June 2019).

South Coast Air Quality Management District, Preliminary Draft Staff Report: Proposed Rule 2305 – Warehouse Indirect Source Rule – Warehouse Actions and Investments to Reduce.

Town of Apple Valley 2019 Climate Action Plan Update.

United Nations Climate Change, UNFCCC Process, The Paris Agreement https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement (Accessed October 2024).

United Nations Framework Convention on Climate Change – GHG Inventories.

United States Environmental Protection Agency, EPA's Endangerment Finding.

7 APPENDICES

“Lecangs Dakota Apple Valley Industrial Traffic Analysis”, prepared by Urban Crossroads, October 9, 2024.

“Lecangs Dakota Warehouse,” CalEEMod, Version 2022.1, prepared by Terra Nova Planning & Research, Inc., October 14, 2024.

Appendix 1

"Lecangs Dakota Apple Valley Industrial Traffic Analysis "

prepared by

Urban Crossroads,

October 9, 2024

URBAN | CROSSROADS

LECANGS DAKOTA APPLE VALLEY INDUSTRIAL

TRAFFIC ANALYSIS

PREPARED BY: Janette Cachola | jcachola@urbanxroads.com
Marlie Whiteman, P.E. | mwhiteman@urbanxroads.com
John Kain, AICP | jkain@urbanxroads.com

Reference Number	Agency	Date
16091-02 TA Report.docx	Town of Apple Valley	October 9, 2024

TABLE OF CONTENTS

Table of Contents ii

Appendices iv

List of Exhibits v

List of Tables vi

List of Abbreviated Terms vii

1 Summary of Findings 1

1.1 Project Overview 1
1.2 Analysis Scenarios 4
1.3 Study Area 4
1.4 General Plan Consistency Requirements for Intersections 6
1.5 Recommendations 8
1.6 Queuing Analysis 13

2 Methodologies 15

2.1 Level of Service 15
2.2 Intersection Capacity Analysis 15
2.3 Traffic Signal Warrant Analysis Methodology 17
2.4 Queuing Analysis 18
2.5 Minimum Acceptable Levels of Service (LOS) 18
2.6 Deficiency Criteria 18
2.7 Project Fair Share Calculation Methodology 18

3 Area Conditions 19

3.1 Existing Circulation Network 19
3.2 Town of Apple Valley General Plan Circulation Element 19
3.3 Bicycle and Pedestrian Facilities 23
3.4 Transit Service 23
3.5 Truck Routes 23
3.6 Existing (2024) Traffic Counts 23
3.7 Intersection Operations Analysis 28
3.8 Traffic Signal Warrant Analysis 29
3.9 Queuing Analysis 29

4 Projected Future Traffic 31

4.1 Project Trip Generation 31
4.2 Project Trip Distribution 31
4.3 Modal Split 36
4.4 Project Trip Assignment 36
4.5 Background Traffic 36
4.6 Cumulative Development Traffic 38

5 Opening Year Cumulative (2027) Traffic Conditions 43

5.1 Roadway Improvements 43
5.2 Without Project Traffic Volume Forecasts 43
5.3 With Project Traffic Volume Forecasts 43
5.4 Intersection Operations Analysis 43
5.5 Traffic Signal Warrant Analysis 47
5.6 Off-Ramp Queuing Analysis 47
5.7 Intersection Deficiencies and Cumulative Improvements 48
5.8 Site Access Improvements 50

6 Local and Regional Funding Mechanisms 55

6.1 Town of Apple Valley Development Impact Fee (DIF) Program 55
6.2 Measure "I" Funds 55
6.3 Fair Share Contribution 55

7 References 57

APPENDICES

Appendix 1.1: Traffic Study Scoping Agreement

Appendix 1.2: Site Adjacent Queues

Appendix 3.1: Traffic Counts

Appendix 3.2: Existing (2024) Conditions Intersection Operations Analysis Worksheets

Appendix 3.3: Existing (2024) Conditions Traffic Signal Warrant Analysis Worksheets

Appendix 3.4: Existing (2024) Conditions Queuing Analysis Worksheets

Appendix 5.1: Opening Year Cumulative (2027) Without Project Conditions Intersection Operations Analysis Worksheets

Appendix 5.2: Opening Year Cumulative (2027) With Project Conditions Intersection Operations Analysis Worksheets

Appendix 5.3: Opening Year Cumulative (2027) Without Project Conditions Traffic Signal Warrant Analysis Worksheets

Appendix 5.4: Opening Year Cumulative (2027) With Project Conditions Traffic Signal Warrant Analysis Worksheets

Appendix 5.5: Opening Year Cumulative (2027) Without Project Conditions Off-Ramp Queueing Analysis Worksheets

Appendix 5.6: Opening Year Cumulative (2027) With Project Conditions Off-Ramp Queueing Analysis Worksheets

Appendix 5.7: Opening Year Cumulative (2027) With Project Conditions Intersection Operations Analysis Worksheets With Improvements

Appendix 5.8: Opening Year Cumulative (2027) With Project Conditions Off-Ramp Queueing Analysis s Worksheets With Improvements

LIST OF EXHIBITS

Exhibit 1-1: Location Map 2
Exhibit 1-2: Preliminary Site Plan 3
Exhibit 1-3: Study Area 5
Exhibit 1-4: Opening Year (2027) Recommended Traffic Controls and Intersection Lane Configurations 9
Exhibit 1-5: Site Access Recommendations 12
Exhibit 3-1: Existing Number of Through Lanes and Intersection Controls 20
Exhibit 3-2: Town of Apple Valley General Plan Circulation Element 21
Exhibit 3-3: Town of Apple Valley General Plan Roadway Cross-Sections 22
Exhibit 3-4: Town of Apple Valley Existing and Planned Bicycle Facilities 24
Exhibit 3-5: Existing Transit Routes 25
Exhibit 3-6: Town of Apple Valley Truck Routes 26
Exhibit 3-7: Existing (2024) Peak Hour Traffic Volumes 27
Exhibit 4-1: Project (Trucks) Trip Distribution 34
Exhibit 4-2: Project (Passenger Car) Trip Distribution 35
Exhibit 4-3: Project Only Traffic Volumes 37
Exhibit 4-4: Cumulative Development Location Map 40
Exhibit 4-5: Cumulative Only Traffic Volumes 41
Exhibit 5-1: Opening Year Cumulative (2027) Without Project Traffic Volumes 44
Exhibit 5-2: Opening Year Cumulative (2027) With Project Traffic Volumes 45

LIST OF TABLES

Table 1-1: Intersection Analysis Locations 6
Table 1-2: Summary of LOS 7
Table 1-3: Improvements to Maintain General Plan Consistency 8
Table 2-1: Signalized Intersection LOS Thresholds 16
Table 2-2: Unsignalized Intersection LOS Thresholds 17
Table 3-1: Intersection Analysis for Existing (2024) Conditions 28
Table 3-2: Peak Hour Queuing Summary for Existing (2024) Conditions 29
Table 4-1: Project Trip Generation Summary Actual Vehicles 32
Table 4-2: Project Trip Generation Summary passenger car equivalent (pce) 33
Table 4-3: Cumulative Development Land Use Summary 39
Table 5-1: Intersection Analysis for Opening year Cumulative (2027) Conditions 46
Table 5-2: Peak Hour Queuing Summary for Opening Year Cumulative (2027) Conditions 47
Table 5-3: Intersection Analysis for Opening Year Cumulative (2027) Conditions With Improvements 49
Table 5-4: Peak Hour Queuing Summary for Opening Year Cumulative (2027) Conditions With improvements 50
Table 5-5: SimTraffic Queuing Summary for Opening Year Cumulative (2027) Conditions With improvements 51
Table 6-1: Project Fair Share Calculations 56

LIST OF ABBREVIATED TERMS

(1)	Reference
ADT	Average Daily Traffic
CA MUTCD	California Manual on Uniform Traffic Control Devices
Caltrans	California Department of Transportation
CMP	Congestion Management Program
DIF	Development Impact Fee
HCM	Highway Capacity Manual
HDM	Highway Design Manual
ITE	Institute of Transportation Engineers
LOS	Level of Service
NAVISP	North Apple Valley Industrial Specific Plan
PCE	Passenger Car Equivalent
PHF	Peak Hour Factor
Project	Lecangs Dakota Apple Valley Industrial
SBCTA	San Bernardino County Transportation Authority
TA	Traffic Analysis
v/c	Volume to Capacity
vphgpl	Vehicles per Hour Green per Lane
VVTA	Victor Valley Transit Authority

This page intentionally left blank

1 SUMMARY OF FINDINGS

This report presents the results of the Traffic Analysis (TA) for the Lecangs Dakota Apple Valley Industrial (**Project**), which consists of the development of a 627,200 square foot industrial warehouse and distribution building located within the North Apple Valley Industrial Specific Plan (NAVISP) in the Town of Apple Valley, as shown on Exhibit 1-1.

The purpose of this TA is to evaluate the potential circulation system deficiencies that may result when the Project is developed and where circulation system (intersection and/or roadway) improvements are needed to maintain acceptable levels of service consistent with the Town's General Plan level of service goals and policies. As the Town has not adopted their own traffic analysis guidelines, they utilize to the San Bernardino County Transportation Impact Study Guidelines (July 9, 2019) (**County Guidelines**).

The scope of analysis included in this evaluation is based on County Guidelines and consultation with Town of Apple Valley staff during the TA scoping process. (1) (2) The TA Scoping Agreement is included in Appendix 1.1 and has been reviewed and approved by the Town of Apple Valley.

1.1 PROJECT OVERVIEW

1.1.1 LAND USE

The Project consists of the development of a 627,200 square foot industrial warehouse and distribution building. The site is located between Dachshund Avenue (which becomes Dakota Road south of Fresno Road) and Ramona Road, south of Gustine Street and north of Fresno Road.

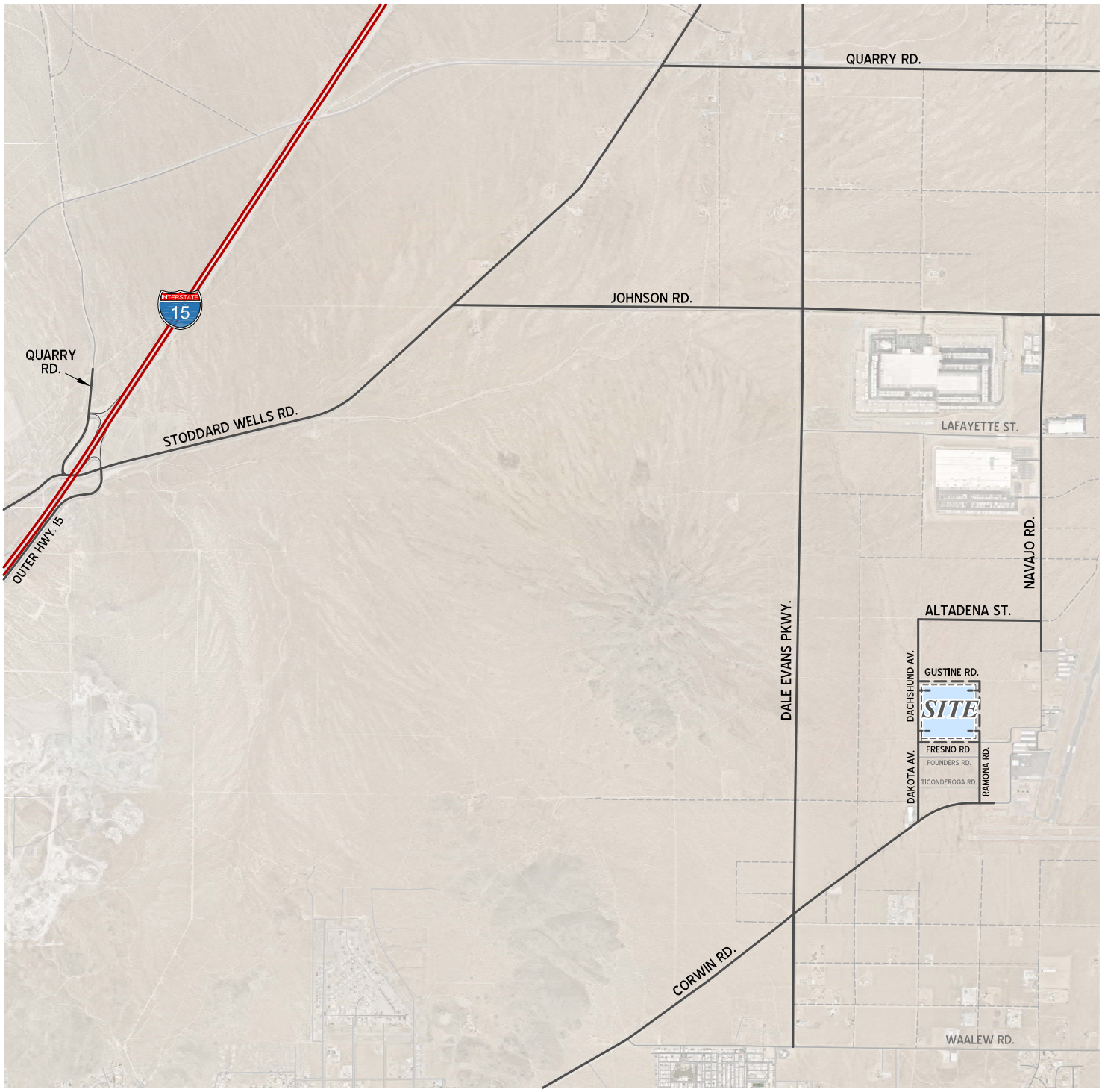
The preliminary site plan for the Project is shown on Exhibit 1-2. Access to the site will be accommodated via two driveways along Dachshund Avenue and two driveways on Ramona Road. All driveways are assumed to allow for full access (no turn restrictions). The Project is anticipated to have an Opening Year of 2027. Regional access to the Project site is accommodated from the I-15 Freeway.

1.1.2 TRIP GENERATION

In order to develop the traffic characteristics of the high-cube warehouse land use for the Proposed Project, trip-generation statistics published in the TUMF High-Cube Warehouse Trip Generation Study (WSP, January 29, 2019) are used. The purpose of WSP 2019 study was to gather enough data to develop reliable trip generation rates for centers for use in traffic impact studies in the Inland Empire.

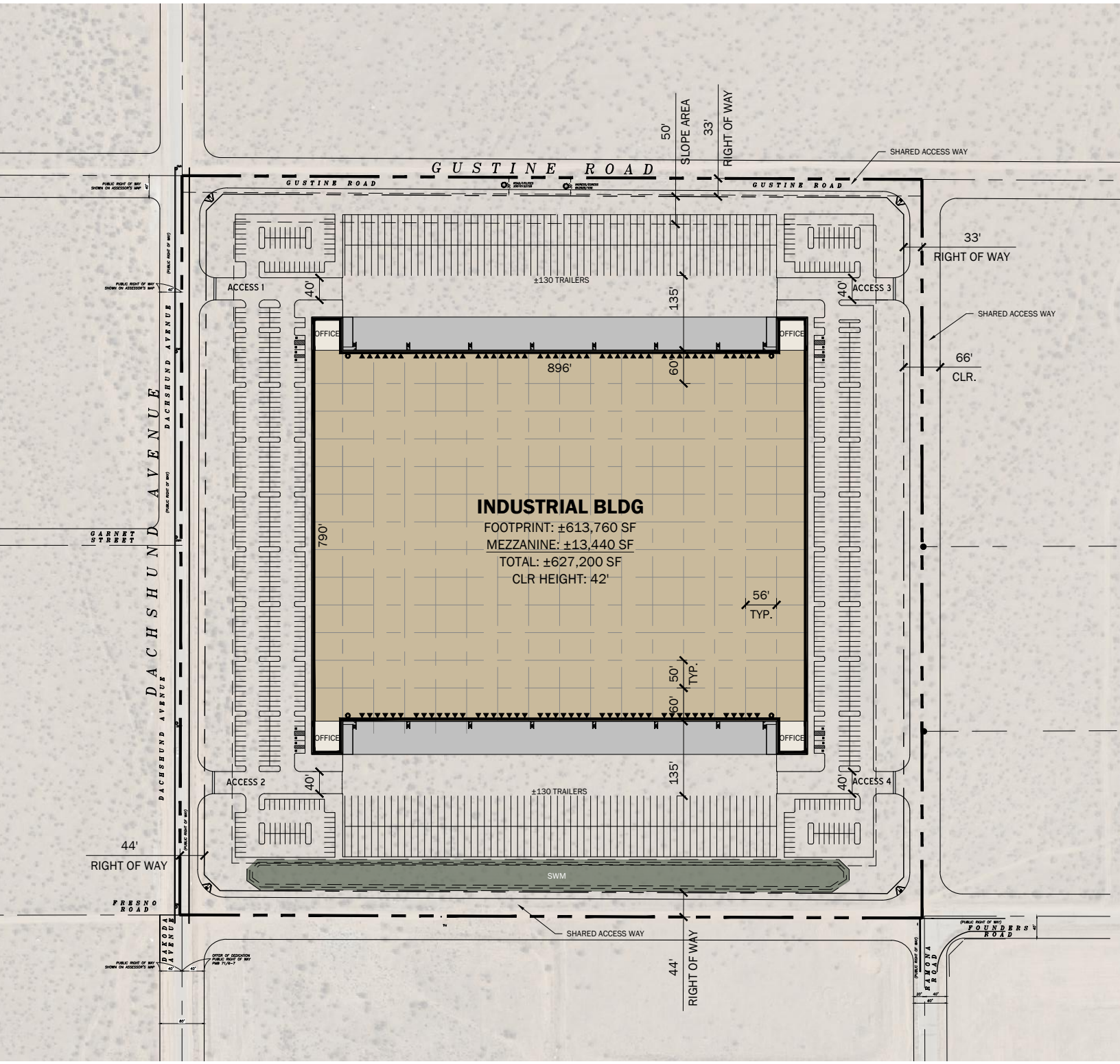
The Project is anticipated to generate a total of 1,335 two-way vehicle trip-ends per day with 77 AM peak hour trips and 104 PM peak hour trips (actual vehicles). The Project is anticipated to generate a total of 2,138 Passenger Car Equivalent (PCE) trip-ends per day with 123 AM PCE peak vehicle hour trips and 167 PM PCE peak hour vehicle trips. The assumptions and methods used to estimate the Project's trip generation characteristics are discussed in greater detail in Section 4.1 *Project Trip Generation* of this report.

EXHIBIT 1-1: LOCATION MAP



16091_01 - Study Area.dwg

EXHIBIT 1-2: PRELIMINARY SITE PLAN



1.2 ANALYSIS SCENARIOS

For the purposes of this TA, potential deficiencies to intersection LOS have been assessed for each of the following conditions:

- Existing (2024) Conditions
- Opening Year Cumulative (2027) Without Project Conditions
- Opening Year Cumulative (2027) With Project Conditions

1.2.1 EXISTING (2024) CONDITIONS

Information for Existing (2024) conditions is disclosed to represent the baseline traffic conditions as they existed at the time this report was prepared. Local schools were in session with in-person instruction at the time of the traffic counts. Traffic counts were conducted in April and late August, 2024.

1.2.2 OPENING YEAR CUMULATIVE (2027) CONDITIONS

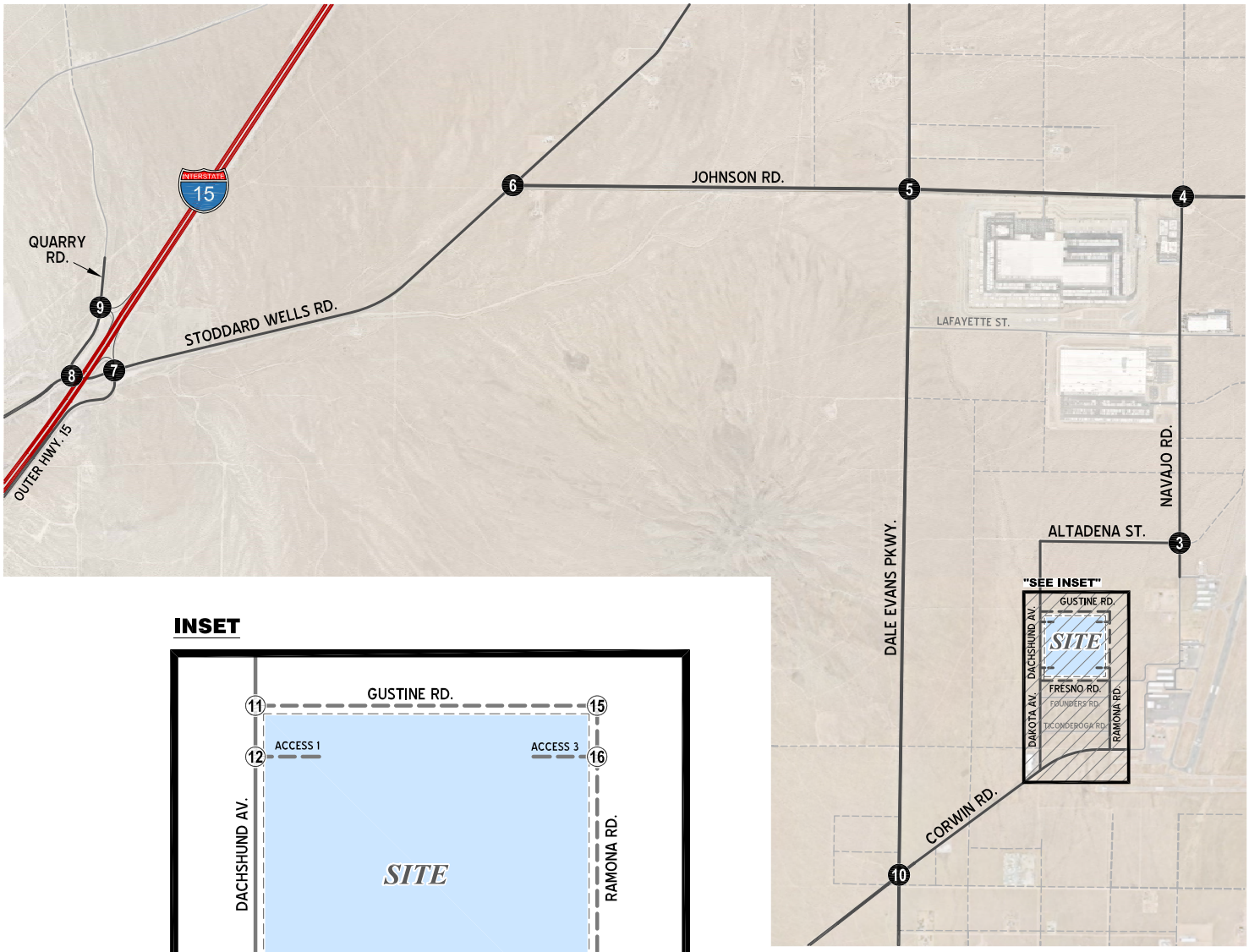
Consistent with County Guidelines, Opening Year Cumulative (2027) traffic conditions analysis determines the potential opening year cumulative circulation system deficiencies. To account for growth in traffic between Existing (2024) traffic conditions and the Project Opening Year Cumulative (2027), a growth rate of 2 percent was assumed (2.0% per year compounded over 3 years or $1.02^{3 \text{ years}}$ for a total of 6.12%). The roadway network is similar to Existing conditions except for new connections to be constructed by the Project. Conservatively, this TA estimates the area ambient traffic growth and then adds traffic generated by other known or probable related projects. These related projects are at least in part already accounted for in the assumed ambient growth rates; and some of these related projects may not be implemented and operational within the 2027 Opening Year timeframe assumed for the Project. The resulting traffic growth utilized in the TA (traffic generated by related projects) would therefore tend to overstate rather than understate background cumulative traffic deficiencies under 2027 traffic conditions.

Consistent with County Guidelines, a list of known and reasonably foreseeable cumulative development projects has been compiled based on information provided by the Town of Apple Valley Planning Department.

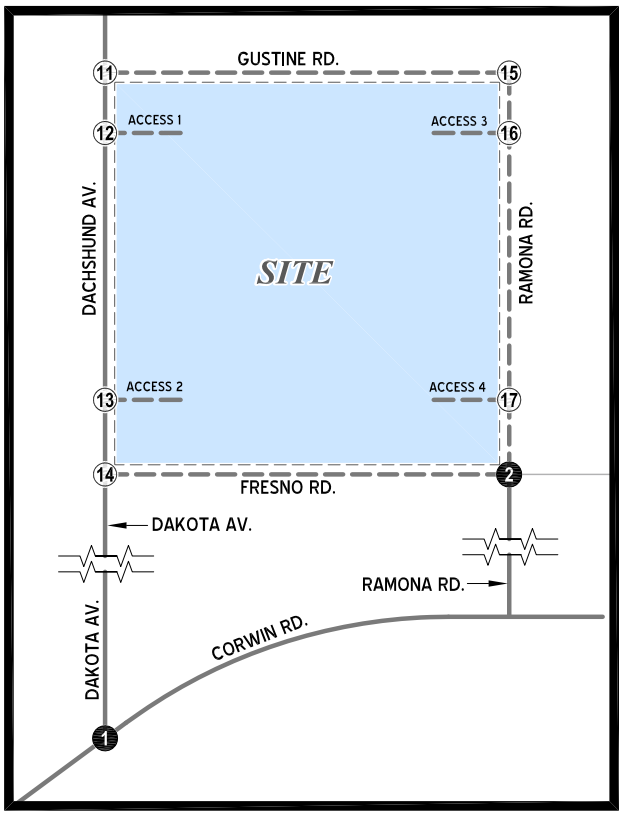
1.3 STUDY AREA

For the purposes of this TA, a total of 17 study area intersections were selected for evaluation based on County Guidelines and consultation with Town of Apple Valley staff. The study area is shown graphically on Exhibit 1-3 and the intersections included for study are also listed in Table 1-1. At a minimum, the study area includes intersections where the Project is anticipated to contribute 50 or more peak hour trips per the County's Guidelines. The "50 peak hour trip" criterion represents a minimum number of trips at which a typical intersection would have the potential to be affected by a given development proposal. The 50 peak hour trip criterion is a traffic engineering rule of thumb that is accepted and widely used within San Bernardino County (including the Town of Apple Valley) for estimating a potential area of influence (i.e., study area).

EXHIBIT 1-3: TRAFFIC ANALYSIS STUDY AREA



INSET



LEGEND:

- (10) = EXISTING ANALYSIS LOCATION
- (7) = FUTURE ANALYSIS LOCATION
- = FUTURE ROADWAY

N

TABLE 1-1: INTERSECTION ANALYSIS LOCATIONS

#	Intersection	#	Intersection
1	Dakota Av. / Corwin Rd.	10	Dale Evans Pkwy. / Corwin Rd.
2	Ramona Rd. / Fresno Rd.	11	Dachshund Av. / Gustine Rd.
3	Navajo Rd. / Altadena St.	12	Dachshund Av. / Access 1
4	Navajo Rd. / Johnson Rd.	13	Dachshund Av. / Access 2
5	Dale Evans Pkwy. / Johnson Rd.	14	Dachshund Av. / Fresno Rd.
6	Stoddard Wells Rd. / Johnson Rd.	15	Ramona Rd. / Gustine Rd.
7	I-15 NB Ramps / Stoddard Wells Rd.	16	Ramona Rd. / Access 3
8	Quarry Rd. / Stoddard Wells Rd.	17	Ramona Rd. / Access 4
9	Quarry Rd. / I-15 SB Ramps		

1.4 GENERAL PLAN CONSISTENCY REQUIREMENTS FOR INTERSECTIONS

This section provides a brief overview of the intersection level of service (LOS) deficiencies identified in this report. The LOS standards used for this assessment are consistent with those identified in the Town of Apple Valley General Plan. Section 2 *Methodologies* provides a detailed explanation on the methodologies used for this assessment, while Section 3 *Area Conditions* and Section 5 *Opening Year Cumulative (2027) Traffic Conditions* include the operations analysis results for each analysis scenario. Additionally, a summary of the peak hour LOS analysis results is presented in Table 1-2.

1.4.1 EXISTING (2024) CONDITIONS

The assessment of existing (2024) traffic conditions is performed to establish a baseline of current LOS operations from which the effects of the Project's future contribution of traffic can be measured. The study area intersections were found to currently operate at an acceptable LOS (i.e., at or above the Town of Apple Valley's adopted General Plan thresholds) during the peak hours.

1.4.2 OPENING YEAR CUMULATIVE (2027) CONDITIONS

An assessment of opening year cumulative traffic conditions is performed to identify whether the traffic contribution associated with both the proposed Project and that of other reasonably foreseeable future development projects in the area have the potential to cause intersection LOS to fall below the Town's adopted thresholds. The Project's contribution to these forecasted LOS deficiencies is typically addressed through fee payments to an established fee program (both local and regional).

The results of the LOS assessments for cumulative traffic conditions are also summarized in Table 1-2, while Section 5 *Opening Year Cumulative (2027) Traffic Conditions* of the report provide a more detailed list of the forecast LOS deficiencies.

TABLE 1-2: LEVEL OF SERVICE (LOS) SUMMARY

#	Intersection	Existing 2024 AM	Existing 2024 PM	2027 Without Project AM	2027 Without Project PM	2027 With Project AM	2027 With Project PM
1	Dakota Av. / Corwin Rd.	A - D	A - D	A - D	A - D	A - D	A - D
2	Ramona Rd. / Fresno Rd.	A - D	A - D	A - D	A - D	A - D	A - D
3	Navajo Rd. / Altadena St.	A - D	A - D	A - D	A - D	A - D	A - D
4	Navajo Rd. / Johnson Rd.	A - D	A - D	F	F	F	F
5	Dale Evans Pkwy. / Johnson Rd.	A - D	A - D	F	F	F	F
6	Stoddard Wells Rd. / Johnson Rd.	A - D	A - D	F	F	F	F
7	I-15 NB Ramps / Stoddard Wells Rd.	A - D	A - D	F	F	F	F
8	Quarry Rd. / Stoddard Wells Rd.	A - D	A - D	A - D	F	A - D	F
9	Quarry Rd. / I-15 SB Ramps	A - D	A - D	A - D	F	A - D	F
10	Dale Evans Pkwy. / Corwin Rd.	A - D	A - D	A - D	A - D	A - D	A - D
11	Dachshund Av. / Gustine Rd.	N/A	N/A	N/A	N/A	A - D	A - D
12	Dachshund Av. / Access 1	N/A	N/A	N/A	N/A	A - D	A - D
13	Dachshund Av. / Access 2	N/A	N/A	N/A	N/A	A - D	A - D
14	Dachshund Av. / Fresno Rd.	N/A	N/A	N/A	N/A	A - D	A - D
15	Ramona Rd. / Gustine Rd.	N/A	N/A	N/A	N/A	A - D	A - D
16	Ramona Rd. / Access 3	N/A	N/A	N/A	N/A	A - D	A - D
17	Ramona Rd. / Access 4	N/A	N/A	N/A	N/A	A - D	A - D

Legend:

= A - D = E = F

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Excel\[16091 - Report.xlsx]1-2_LOS Summary

1.5 RECOMMENDATIONS

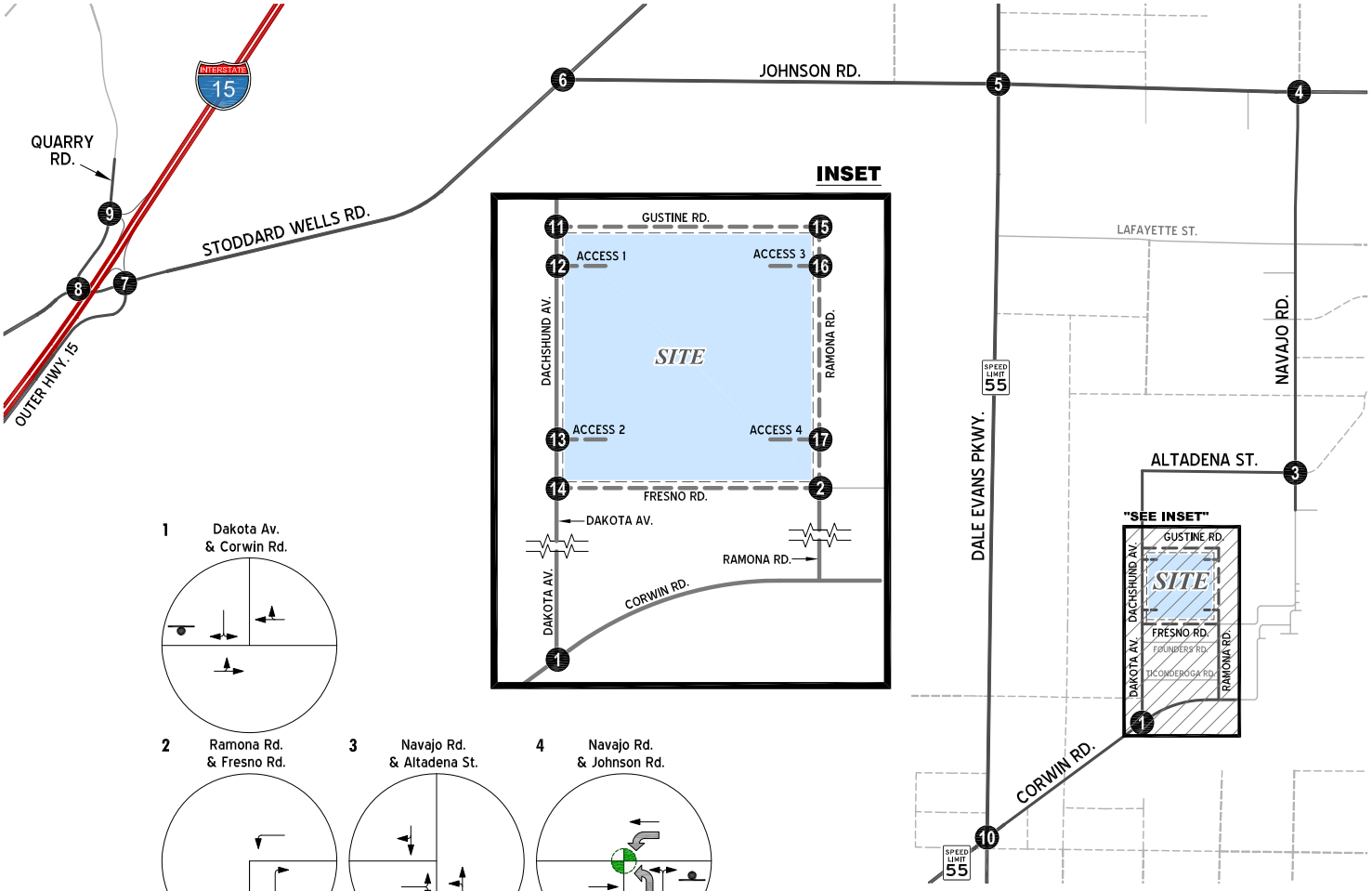
1.5.1 INTERSECTION IMPROVEMENT RECOMMENDATIONS NECESSARY TO MAINTAIN GENERAL PLAN CONSISTENCY

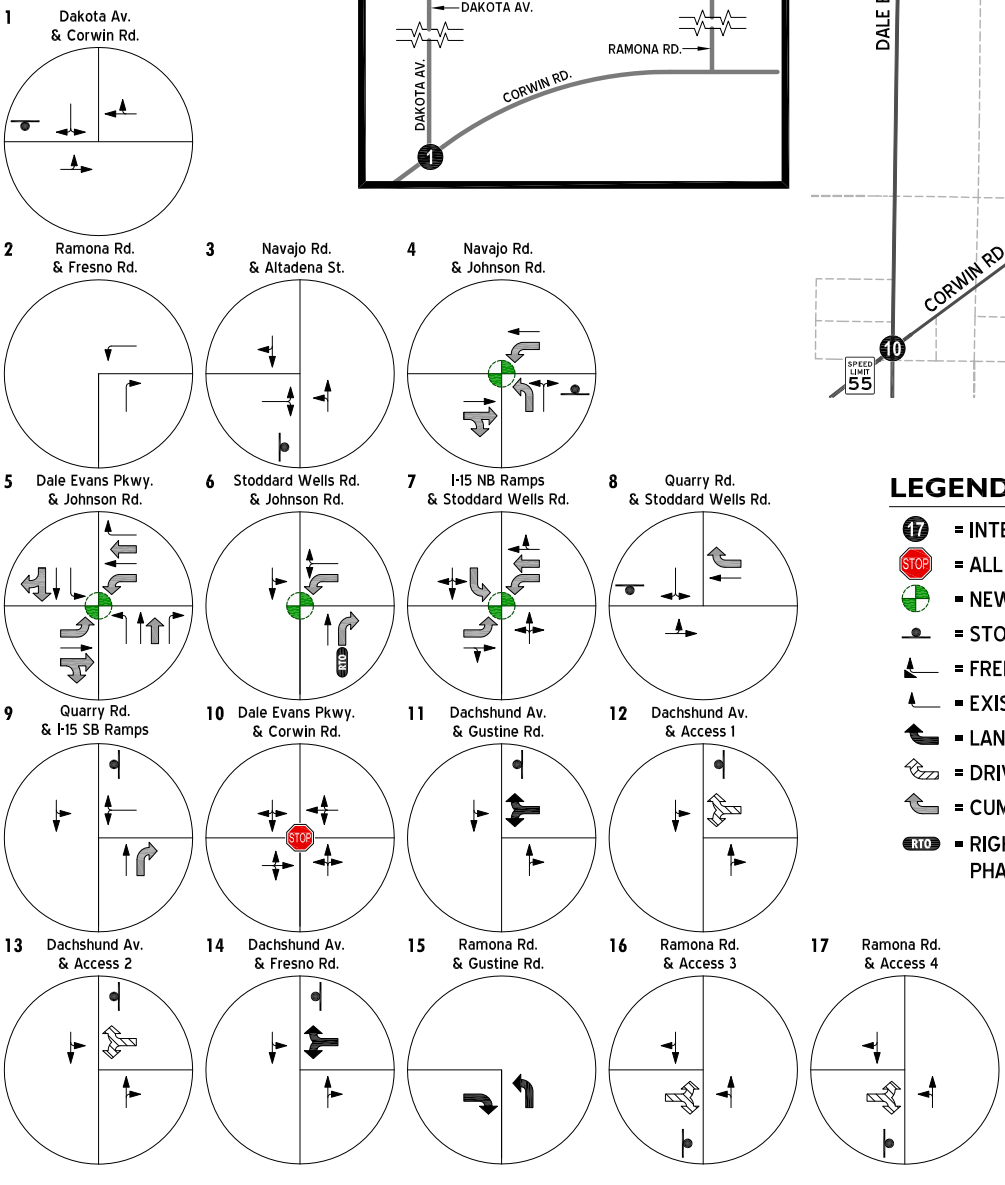
Based on the results of this TA, intersection improvement recommendations necessary to maintain the Town of Apple Valley General Plan LOS standards are listed Table 1-3 shown on Exhibit 1-4.

TABLE 1-3: IMPROVEMENTS TO MAINTAIN GENERAL PLAN CONSISTENCY

#	Intersection Location	Jurisdiction	Opening Year Cumulative (2027)	
			Without Project	With Project
4	Navajo Rd. & Johnson Rd.	Town of Apple Valley	Install a traffic signal	Same
			Add 2nd EB through lane	Same
			Add WB left turn lane	Same
			Add NB left turn lane	Same
5	Dale Evans Pkwy. & Johnson Rd.	Town of Apple Valley, County	Install a traffic signal	Same
			Add 2nd NB through lane	Same
			Add 2nd SB through lane	Same
			Add 2nd EB through lane	Same
			Add 2nd WB through lane	Same
			Add EB left turn lane	Same
			Add WB left turn lane	Same
6	Stoddard Wells Rd. & Johnson Rd.	Town of Apple Valley, County	Install a traffic signal	Same
			Add NB right turn lane	Same
			Add WB left turn lane	Same
			Provide NBR overlap phase	Same
7	I-15 NB Ramps & Stoddard Wells Rd.	Town of Apple Valley, Caltrans	Install a traffic signal	Same
			Add 2nd WB through lane	Same
			Add SB left turn lane	Same
			Add EB left turn lane	Same
			Add WB left turn lane	Same
8	Quarry Rd. & Stoddard Wells Rd.	County	Add WB right turn lane	Same
9	Quarry Rd. & I-15 SB Ramps	County, Caltrans	Add NB right turn lane	Same

EXHIBIT 1-4: OPENING YEAR (2027)
RECOMMENDED TRAFFIC CONTROLS AND INTERSECTION LANE CONFIGURATIONS





LEGEND:

- = INTERSECTION ID
- = ALL WAY STOP
- = NEW TRAFFIC SIGNAL
- = STOP SIGN
- = FREE RIGHT TURN
- = EXISTING LANE
- = LANE IMPROVEMENT
- = DRIVEWAY IMPROVEMENT
- = CUMULATIVE IMPROVEMENT
- = RIGHT TURN OVERLAP PHASING IMPROVEMENT

1.5.2 ON-SITE CIRCULATION RECOMMENDATIONS

The following recommendations are based on the improvements needed to accommodate site access and maintain acceptable peak hour LOS at site access and on-site intersections are described below and shown on Exhibit 1-5. The site adjacent queuing analysis worksheets are provided in Appendix 1.2 for Opening Year Cumulative (2027) With Project traffic conditions. No site adjacent queues are anticipated with the proposed improvements.

Recommendation 1 – Dachshund Avenue & Access 1 (#12) – The following improvements are necessary to accommodate site access:

- Project to install a stop control on the westbound approach and construct a shared left-right turn lane (Project driveway).

Recommendation 2 – Dachshund Avenue & Access 2 (#13) – The following improvements are necessary to accommodate site access:

- Project to install a stop control on the westbound approach and construct a shared left-right turn lane (Project driveway).

Recommendation 3 – Ramona Road & Access 3 (#16) – The following improvements are necessary to accommodate site access:

- Project to install a stop control on the eastbound approach and construct a shared left-right turn lane (Project driveway).
- Project to construct a northbound shared through-left turn lane.
- Project to construct a southbound shared through-right turn lane.

Recommendation 4 – Ramona Road & Access 4 (#17) – The following improvements are necessary to accommodate site access:

- Project to install a stop control on the eastbound approach and construct a shared left-right turn lane (Project driveway).
- Project to construct a northbound shared through-left turn lane.
- Project to construct a southbound shared through-right turn lane.

Recommendation 5 – Dachshund Avenue & Gustine Road (#11) – The following improvements are necessary to accommodate site access:

- Project to install a stop control on the westbound approach and construct a shared left-right turn lane.

Recommendation 6 – Dachshund Avenue & Fresno Road (#14) – The following improvements are necessary to accommodate site access:

- Project to install a stop control on the westbound approach and construct a shared left-right turn lane.

Recommendation 7 – Ramona Road & Gustine Road (#15) – The following improvements are necessary to accommodate site access:

- Project to construct a northbound left turn lane.
- Project to construct an eastbound right turn lane.

Recommendation 8 – Ramona Road & Fresno Road (#2) – The following improvements are necessary to accommodate site access:

- Project to install a stop control on the eastbound and westbound approaches and construct a shared eastbound left-right turn lane.

Recommendation 9 – Dachshund Avenue is a north-south oriented roadway located along the site's western boundary. The Project is to construct Dachshund Avenue from the site's northern boundary (Gustine Road) to the site's southern boundary (Fresno Road) at its ultimate half-section width as a secondary roadway (ultimate 88-foot right-of-way), consistent with the Town's standards.

Recommendation 10 – Ramona Road is a north-south oriented roadway located along the site's eastern boundary. The Project is to construct Ramona Road from the site's northern boundary (Gustine Road) to the site's southern boundary (Fresno Road) as a 2-lane local roadway.

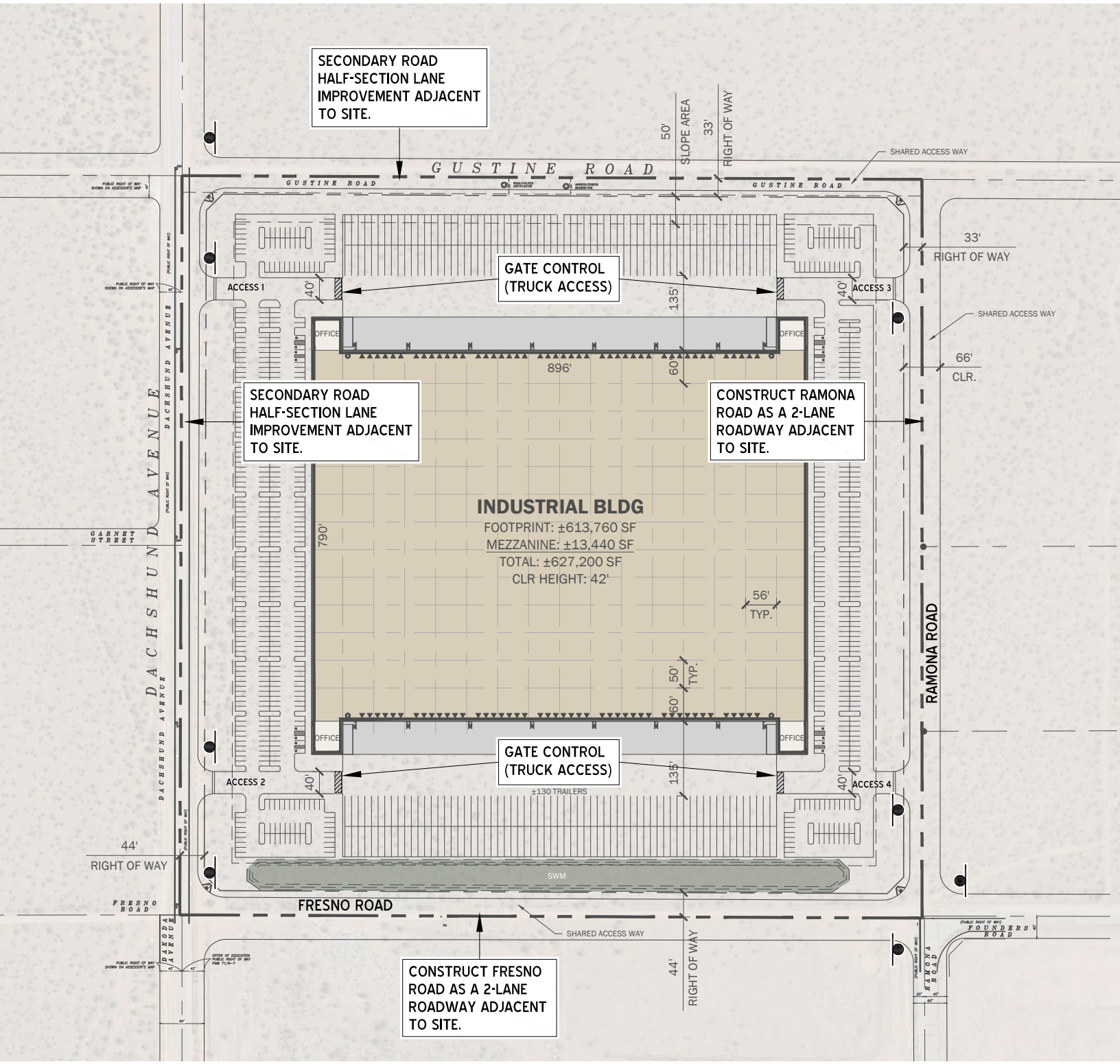
Recommendation 11 – Gustine Road is an east-west oriented roadway located along the site's northern boundary. The Project is to construct Gustine Road from the Project's western boundary (Dachshund Avenue) to the site's eastern boundary (Ramona Road) at its ultimate half-section width as a secondary roadway (ultimate 88-foot right-of-way), consistent with the Town's standards. The Project will also provide an additional 12 feet of pavement width to accommodate one westbound lane from the Project's eastern boundary to Dachshund Avenue to facilitate site access.

Recommendation 12 – Fresno Road is an east-west oriented roadway located along the site's southern boundary. The Project is to construct Fresno Road from the Project's western boundary (Dachshund Avenue) to the site's eastern boundary (Ramona Road) as a 2-lane local roadway.

On-site traffic signing and striping should be implemented agreeable with the provisions of the California Manual on Uniform Traffic Control Devices (CA MUTCD) and in conjunction with detailed construction plans for the Project site.

Sight distance at each project access point should be reviewed with respect to standard California Department of Transportation (Caltrans) and Town of Apple Valley sight distance standards at the time of preparation of final grading, landscape, and street improvement plans.

EXHIBIT 1-5: SITE ACCESS RECOMMENDATIONS



1.6 QUEUING ANALYSIS

The traffic modeling and signal timing optimization software package SimTraffic has been utilized to assess the queues, for both on-site roadways (Project design features) and off-site interchange off-ramp queues, for Opening Year (2027) With Improvement conditions. SimTraffic is designed to model networks of signalized and unsignalized intersections, with the primary purpose of checking and fine-tuning signal operations. SimTraffic uses the input parameters from Synchro to generate random simulations. These random simulations generated by SimTraffic have been utilized to determine the 95th percentile queue lengths observed for each applicable turn lane. A SimTraffic simulation has been recorded up to 5 times, during the weekday AM and weekday PM peak hours, and has been seeded for 5-minute periods with 15-minute recording intervals.

1.6.1 OFF-SITE QUEUING

Existing (2024) Conditions

Although not required by County Guidelines, a review of freeway off-ramp queues has also been included at the request of Caltrans. Based on the results of this analysis, there are currently no freeway off-ramp movements found to exceed available off-ramp storage capacity during the weekday AM or PM peak 95th percentile traffic flows.

Cumulative Traffic Conditions

The following movements are anticipated to exceed available off-ramp storage capacity during the weekday AM or PM peak 95th percentile traffic flows under Opening Year Cumulative (2027) Without Project traffic conditions:

- I-15 Northbound Ramps & Stoddard Wells Road (#7) – Southbound shared left-through-right – AM and PM peak hours

1.6.2 ON-SITE QUEUING

The results of the queuing analysis worksheets for the weekday AM and PM peak hours are provided in Appendix 1.2 of this report for Opening Year Cumulative (2027) With Project traffic conditions and have been used to verify the recommended pocket lengths for each of the Project access intersections, as discussed in Section 1.5 *Recommendations*.

This Page Intentionally Left Blank

2 METHODOLOGIES

This section of the report presents the methodologies used to perform the traffic analyses summarized in this report. The methodologies described are consistent with Town of Apple Valley's Traffic Study Guidelines.

2.1 LEVEL OF SERVICE

Traffic operations of roadway facilities are described using the term "Level of Service" (LOS). LOS is a qualitative description of traffic flow based on several factors, such as speed, travel time, delay, and freedom to maneuver. Six levels are typically defined ranging from LOS A, representing completely free-flow conditions, to LOS F, representing a breakdown in flow resulting in stop-and-go conditions. LOS E represents operations at or near capacity, an unstable level where vehicles are operating with the minimum spacing for maintaining uniform flow.

2.2 INTERSECTION CAPACITY ANALYSIS

The definitions of LOS for interrupted traffic flow (flow restrained by the existence of traffic signals and other traffic control devices) differ slightly depending on the type of traffic control. The LOS is typically dependent on the quality of traffic flow at the intersections along a roadway. The 7th Edition Highway Capacity Manual (HCM) methodology expresses the LOS at an intersection in terms of delay time for the various intersection approaches. (4) The HCM uses different procedures depending on the type of intersection control.

2.2.1 SIGNALIZED INTERSECTIONS

The Town of Apple Valley requires signalized intersection operations analysis based on the methodology described in the HCM. (4) Intersection LOS operations are based on an intersection's average control delay. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. For signalized intersections, LOS is related to the average control delay per vehicle and is correlated to a LOS designation as described in Table 2-1. The saturation flow rates utilized are consistent with the rates identified in the San Bernardino County CMP.

The traffic modeling and signal timing optimization software package Synchro (Version 11) is utilized to analyze signalized intersections within the study area. Synchro is a macroscopic traffic software program that is based on the signalized intersection capacity analysis as specified in the HCM. Macroscopic level models represent traffic in terms of aggregate measures for each movement at the study intersections. Equations are used to determine measures of effectiveness such as delay and queue length. The level of service and capacity analysis performed by Synchro takes into consideration optimization and coordination of signalized intersections within a network.

TABLE 2-1: SIGNALIZED INTERSECTION LOS THRESHOLDS

Description	Average Control Delay (Seconds), V/C ≤ 1.0	Level of Service, V/C ≤ 1.0[1]
Operations with very low delay occurring with favorable progression and/or short cycle length.	0 to 10.00	A
Operations with low delay occurring with good progression and/or short cycle lengths.	10.01 to 20.00	B
Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	20.01 to 35.00	C
Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	35.01 to 55.00	D
Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	55.01 to 80.00	E
Operation with delays unacceptable to most drivers occurring due to over saturation, poor progression, or very long cycle lengths.	80.01 and up	F

The peak hour traffic volumes have been adjusted using a peak hour factor (PHF) to reflect peak 15-minute volumes. Customary practice for LOS analysis is to use a peak 15-minute rate of flow. However, flow rates are typically expressed in vehicles per hour. The PHF is the relationship between the peak 15-minute flow rate and the full hourly volume (e.g., PHF = [Hourly Volume] / [4 x Peak 15-minute Flow Rate]). The use of a 15-minute PHF produces a more detailed analysis as compared to analyzing vehicles per hour. Existing PHFs have been used for all analysis scenarios. Per the HCM, PHF values over 0.95 often are indicative of high traffic volumes with capacity constraints on peak hour flows while lower PHF values are indicative of greater variability of flow during the peak hour. (4)

2.2.2 UNSIGNALIZED INTERSECTIONS

The Town of Apple Valley requires the operations of unsignalized intersections to be evaluated using the methodology described in the HCM. (4) The LOS rating is based on the weighted average control delay expressed in seconds per vehicle (see Table 2-2). At two-way or side-street stop-controlled intersections, LOS is calculated for each controlled movement and for the left turn movement from the major street, as well as for the intersection as a whole. For approaches composed of a single lane, the delay is computed as the average of all movements in that lane. Delay for the intersection is reported for the worst individual movement at a two-way stop-controlled intersection. For all-way stop-controlled intersections, LOS is computed for the intersection as a whole (average delay).

TABLE 2-2: UNSIGNALIZED INTERSECTION LOS THRESHOLDS

Description	Average Control Delay (Seconds), V/C ≤ 1.0	Level of Service, V/C ≤ 1.0[1]
Little or no delays.	0 to 10.00	A
Short traffic delays.	10.01 to 15.00	B
Average traffic delays.	15.01 to 25.00	C
Long traffic delays.	25.01 to 35.00	D
Very long traffic delays.	35.01 to 50.00	E
Extreme traffic delays with intersection capacity exceeded.	> 50.00	F

2.3 TRAFFIC SIGNAL WARRANT ANALYSIS METHODOLOGY

The term "signal warrants" refers to the list of established criteria used by Caltrans and other public agencies to quantitatively justify or ascertain the potential need for installation of a traffic signal at an otherwise unsignalized intersection. This TA uses the signal warrant criteria presented in the latest edition of the California Department of Transportation (Caltrans) California Manual on Uniform Traffic Control Devices *(CA MUTCD)* for all study area intersections. (6)

The signal warrant criteria for Existing conditions are based upon several factors, including volume of vehicular and pedestrian traffic, frequency of accidents, and location of school areas. The CA MUTCD indicates that the installation of a traffic signal should be considered if one or more of the signal warrants are met. (6) Specifically, this TA utilizes the Peak Hour Volume-based Warrant 3 as the appropriate representative traffic signal warrant analysis for existing study area intersections for all analysis scenarios. Warrant 3 is appropriate to use for this TA because it provides specialized warrant criteria for intersections with urban characteristics (e.g., adjacent major streets operating at or below 40 miles per hour) or rural characteristics (e.g., adjacent major streets operating above 40 miles per hour). For the purposes of this study, the speed limit was the basis for determining whether Urban or Rural warrants were used for a given intersection.

Future intersections that do not currently exist have been assessed regarding the potential need for new traffic signals based on future average daily traffic (ADT) volumes, using the Caltrans planning level ADT-based signal warrant analysis worksheets.

The traffic signal warrant analysis for Existing (2024) conditions are presented in Section 3 *Area Conditions.* The traffic signal warrant analyses for future conditions are presented in Section 5 *Opening Year Cumulative (2027) Traffic Conditions*.

It is important to note that a signal warrant defines the minimum condition under which the installation of a traffic signal might be warranted. Meeting this threshold condition does not require that a traffic control signal be installed at a particular location, but rather, that other traffic factors and conditions be evaluated in order to determine whether the signal is truly justified. It should also be noted that signal warrants do not necessarily correlate with LOS. An intersection may satisfy a signal warrant condition and operate at or above acceptable LOS or operate below acceptable LOS and not meet a signal warrant.

2.4 QUEUING ANALYSIS

The 95th percentile queuing of vehicles has been assessed at the Project access driveways to determine appropriate turn lane lengths. The traffic progression analysis tool and HCM intersection analysis program, Synchro, has been used to assess the potential deficiencies/needs of the Project access intersections. Storage (turn-pocket) length recommendations at the driveways have been based upon the 95th percentile queue resulting from the Synchro progression analysis. The footnote from the Synchro output sheets indicates if the 95th percentile cycle exceeds capacity. Traffic is simulated for two complete cycles of the 95th percentile traffic in Synchro in order to account for the effects of spillover between cycles. In practice, the 95th percentile queue shown will rarely be exceeded and the queues shown with the footnote are acceptable for the design of storage bays. The 95th percentile queue is derived from the average queue plus 1.65 standard deviations. The 95th percentile queue is not necessarily ever observed, it is simply based on statistical calculations.

2.5 MINIMUM ACCEPTABLE LEVELS OF SERVICE (LOS)

According to the Town of Apple Valley's General Plan, LOS C or better is preferable, but LOS D is the minimum acceptable condition that should be maintained during the peak commute hours, where feasible. Therefore, for the purposes of this traffic analysis, LOS D has also been considered the acceptable threshold for all study area intersections.

2.6 DEFICIENCY CRITERIA

This section outlines the methodology used in this analysis related to identifying circulation system deficiencies. Per the County's Traffic Study Guidelines, at intersections where the LOS falls below, or is expected to fall below an acceptable threshold with or without the addition of the Project, feasible measures shall be identified to mitigate the Project's impacts for all Project scenario conditions. The TA calculates the Project's fair share towards each improvement required to serve cumulative conditions with or without the Project.

2.7 PROJECT FAIR SHARE CALCULATION METHODOLOGY

In cases where this TA identifies that the Project would contribute additional traffic volumes to traffic deficiencies, Project fair share costs of improvements necessary to address deficiencies have been identified. The Project's fair share cost of improvements is determined based on the following equation, which is the ratio of Project traffic to new future traffic, and new future traffic is Project traffic plus future development traffic:

Project Fair Share % = Project AM/PM Traffic / (2027 With Project AM/PM Total Traffic – Existing AM/PM Traffic)

The Project fair share percentage has been calculated for both the AM peak hour and PM peak hour and the higher of the two has been selected. The Project fair share contribution calculations are presented in Section 6 *Local and Regional Funding Mechanisms* of this TA.

3 AREA CONDITIONS

This section provides a summary of the existing circulation network, the Town of Apple Valley General Plan Circulation Network, and a review of existing peak hour intersection operations, traffic signal warrant, and freeway off-ramp queuing analyses.

3.1 EXISTING CIRCULATION NETWORK

Pursuant to the agreement with Town of Apple Valley staff (Appendix 1.1), the study area includes a total of 17 existing and future intersections as shown previously on Exhibit 1-3. Exhibit 3-1 illustrates the study area intersections located near the proposed Project and identifies the number of through traffic lanes for existing roadways and intersection traffic controls.

3.2 TOWN OF APPLE VALLEY GENERAL PLAN CIRCULATION ELEMENT

The roadway classifications and planned (ultimate) roadway cross-sections of the major roadways within the study area, as identified on the Town of Apple Valley General Plan Circulation Element, are described subsequently. Exhibit 3-2 shows the Town of Apple Valley General Plan Circulation Element. Exhibit 3-3 illustrates the Town of Apple Valley General Plan roadway cross-sections.

Major Divided Parkways are designed to accommodate six travel lanes with a 20-foot center median and 15-foot parkways on each side of the roadway, within a 142-foot right-of-way. Dale Evans Parkway is classified as a Major Divided Parkway in the Town of Apple Valley.

Major Divided Arterials are designed to accommodate six travel lanes with a 12-foot center turn lane or median and 10-foot bike or parking lanes on each side of the roadway, within a 128-foot right-of-way. Stoddard Wells Road, south of Johnson Road is classified as a Major Divided Arterial in the Town of Apple Valley.

Major Roads are designed to accommodate four travel lanes with a 12-foot center turn lane or median and two bike or parking lanes, within a 104-foot right-of-way. The following study area roadways within the Town of Apple Valley are classified as Major Roads:

- Stoddard Wells Road, north of Johnson Road
- Johnson Road
- Corwin Road
- Dakota Road, south of Fresno Road

Secondary Roads are designed to accommodate four travel lanes with a bike or parking lane, within an 88-foot right-of-way. The following study area roadways within the Town of Apple Valley are classified as Secondary Roads:

- Navajo Road
- Dachshund Avenue
- Gustine Road

EXHIBIT 3-1: EXISTING TRAFFIC CONTROLS AND INTERSECTION LANE CONFIGURATIONS

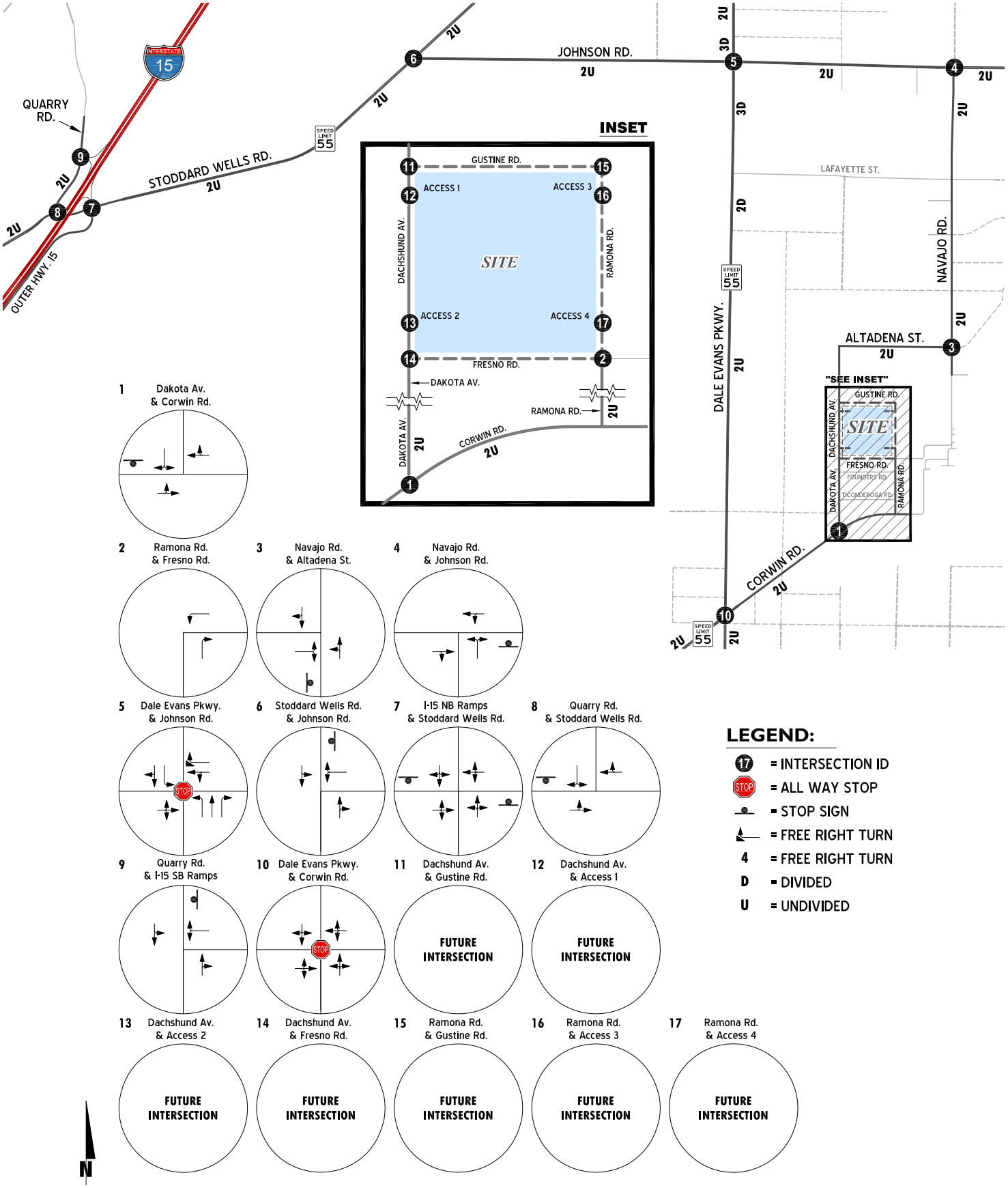


EXHIBIT 3-2: TOWN OF APPLE VALLEY GENERAL PLAN STREET SYSTEM

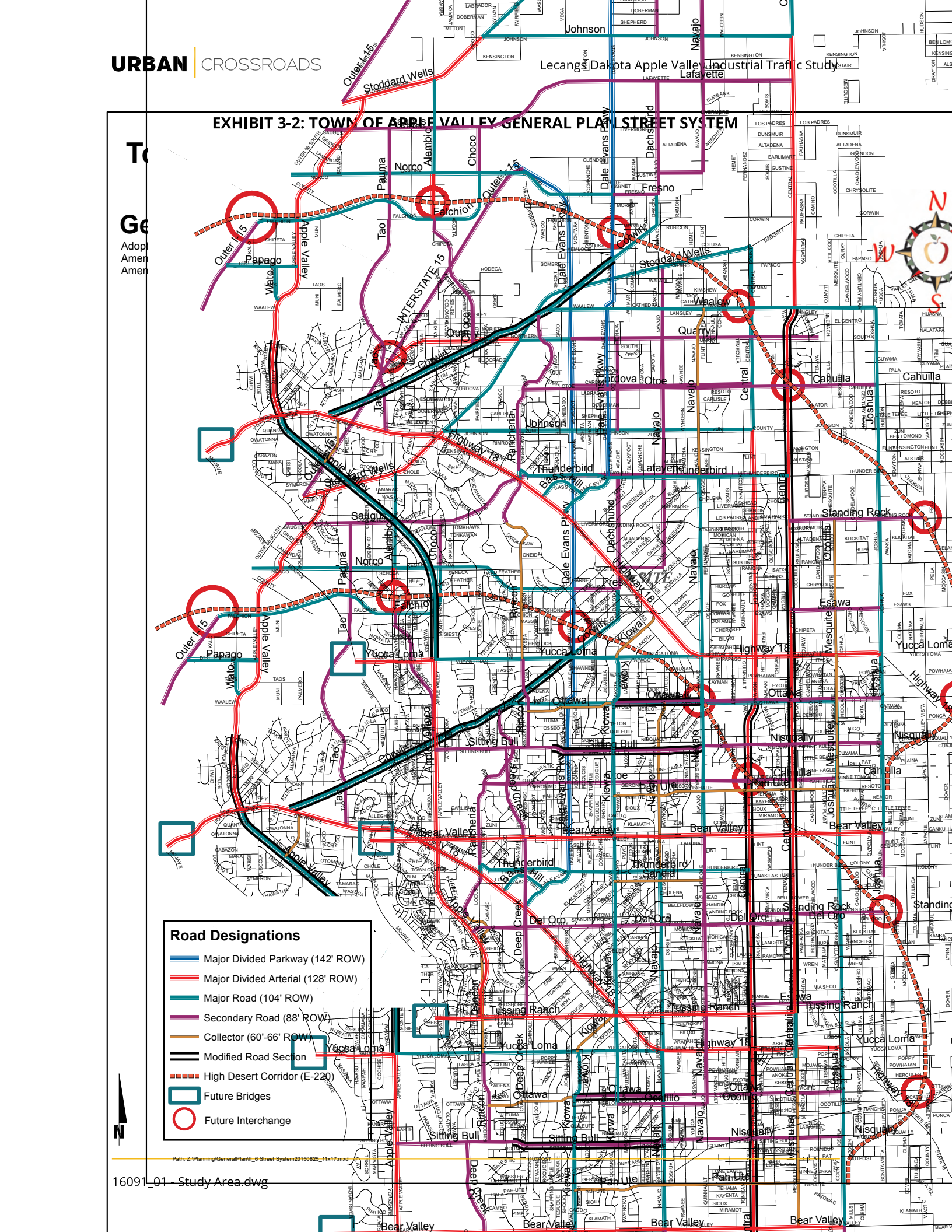
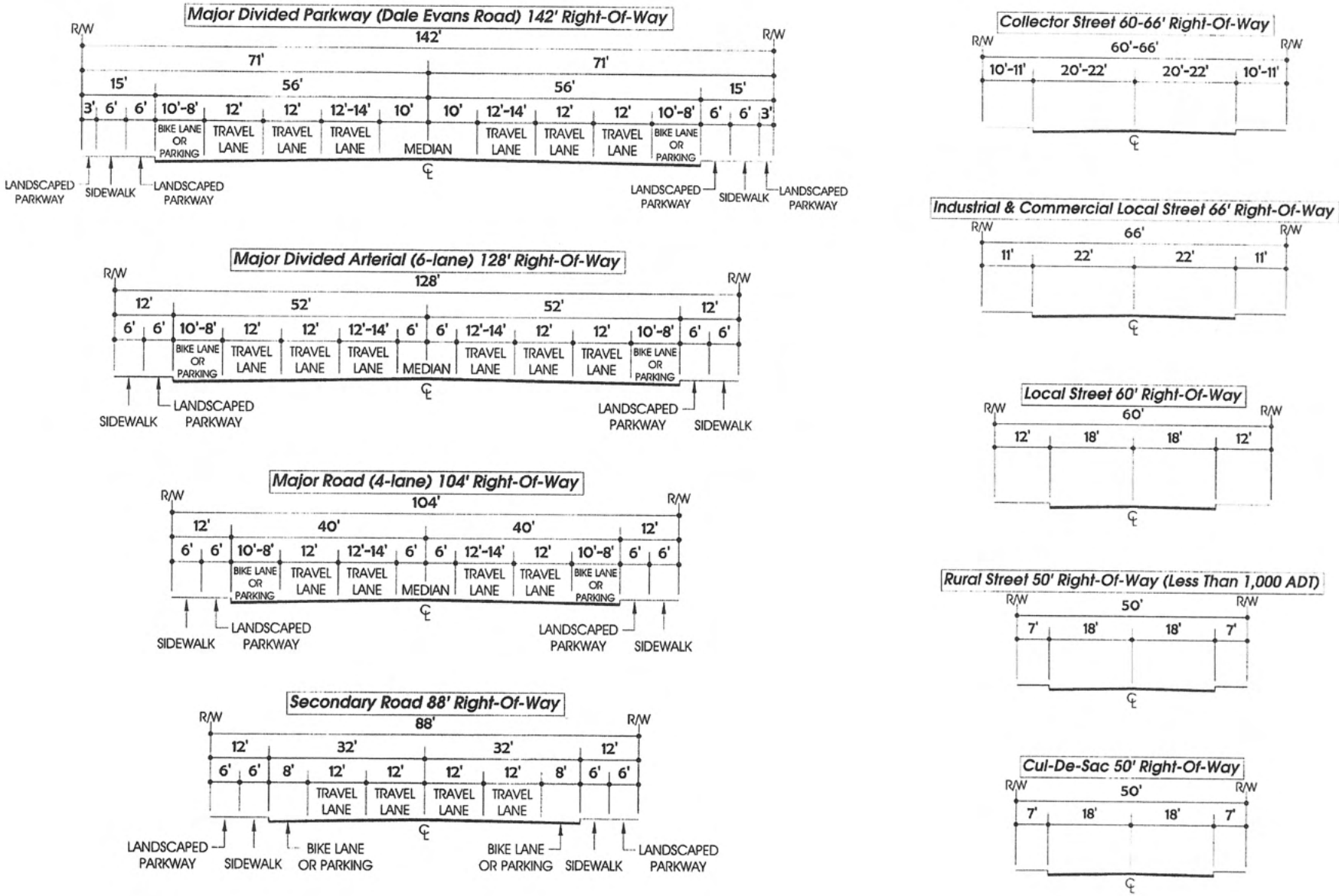


EXHIBIT 3-3: TOWN OF APPLE VALLEY GENERAL PLAN ROADWAY CROSS-SECTIONS



Source: Urban Crossroads 11.24.2008

3.3 BICYCLE AND PEDESTRIAN FACILITIES

Exhibit 3-4 illustrates the Town of Apple Valley bike paths. As shown at Exhibit 3-4, there are proposed Class II bike lanes on Dale Evans Parkway (between Fresno and Corwin Road), and Class I bike paths along Stoddard Wells Road, Dale Evans Parkway, and Corwin Road. There are no pedestrian facilities in close proximity to the Project. Field observations indicate nominal pedestrian and bicycle activity within the study area.

3.4 TRANSIT SERVICE

The study area is currently served by Victor Valley Transit Authority (VVTA), a public transit agency serving various jurisdictions within San Bernardino County. The existing transit routes within the study area are shown on Exhibit 3-5. Route 42 currently runs along Dale Evans Parkway, Johnson Road, and Corwin Road.

Transit service is reviewed and updated by VVTA periodically to address ridership, budget and community demand needs. Changes in land use can affect these periodic adjustments which may lead to either enhanced or reduced service where appropriate. As such, it is recommended that the applicant work in conjunction with VVTA to potentially provide bus service to the site.

3.5 TRUCK ROUTES

The Town of Apple Valley truck routes are shown on Exhibit 3-6. Through truck routes are included on Dale Evans Parkway, and Johnson Road east of Dale Evans Parkway in the study area. Local Truck Routes are also shown on Stoddard Wells Road, Johnson Road west of Dale Evans Parkway, Navajo Road, Fresno Road. These designated truck routes have been utilized for both the proposed Project and future cumulative development projects for the purposes of this TA.

3.6 EXISTING (2024) TRAFFIC COUNTS

The intersection LOS analysis is based on the traffic volumes observed during the peak hour conditions using traffic count data collected in April 2024 and late August 2024. The following peak hours were selected for analysis:

- Weekday AM Peak Hour (peak hour between 7:00 AM and 9:00 AM)
- Weekday PM Peak Hour (peak hour between 4:00 PM and 6:00 PM)

The 2024 weekday AM and weekday PM peak hour count data is representative of typical weekday peak hour traffic conditions in the study area. There were no observations made in the field that would indicate atypical traffic conditions on the count dates, such as construction activity or detour routes and near-by schools were in session and operating on normal schedules. The raw manual peak hour turning movement traffic count data sheets are included in Appendix 3.1. Existing weekday AM and weekday PM peak hour intersection volumes are also shown on Exhibit 3-7. Existing weekday ADT volumes are shown on Exhibit 3-7. Where actual 24-hour tube count data was not available, Existing ADT volumes were based upon factored intersection peak hour counts collected using the following formula for each intersection leg:

Weekday PM Peak Hour (Approach Volume + Exit Volume) x 8.00 = Leg Volume

EXHIBIT 3-4: TOWN OF APPLE VALLEY EXISTING AND PLANNED BICYCLE FACILITIES

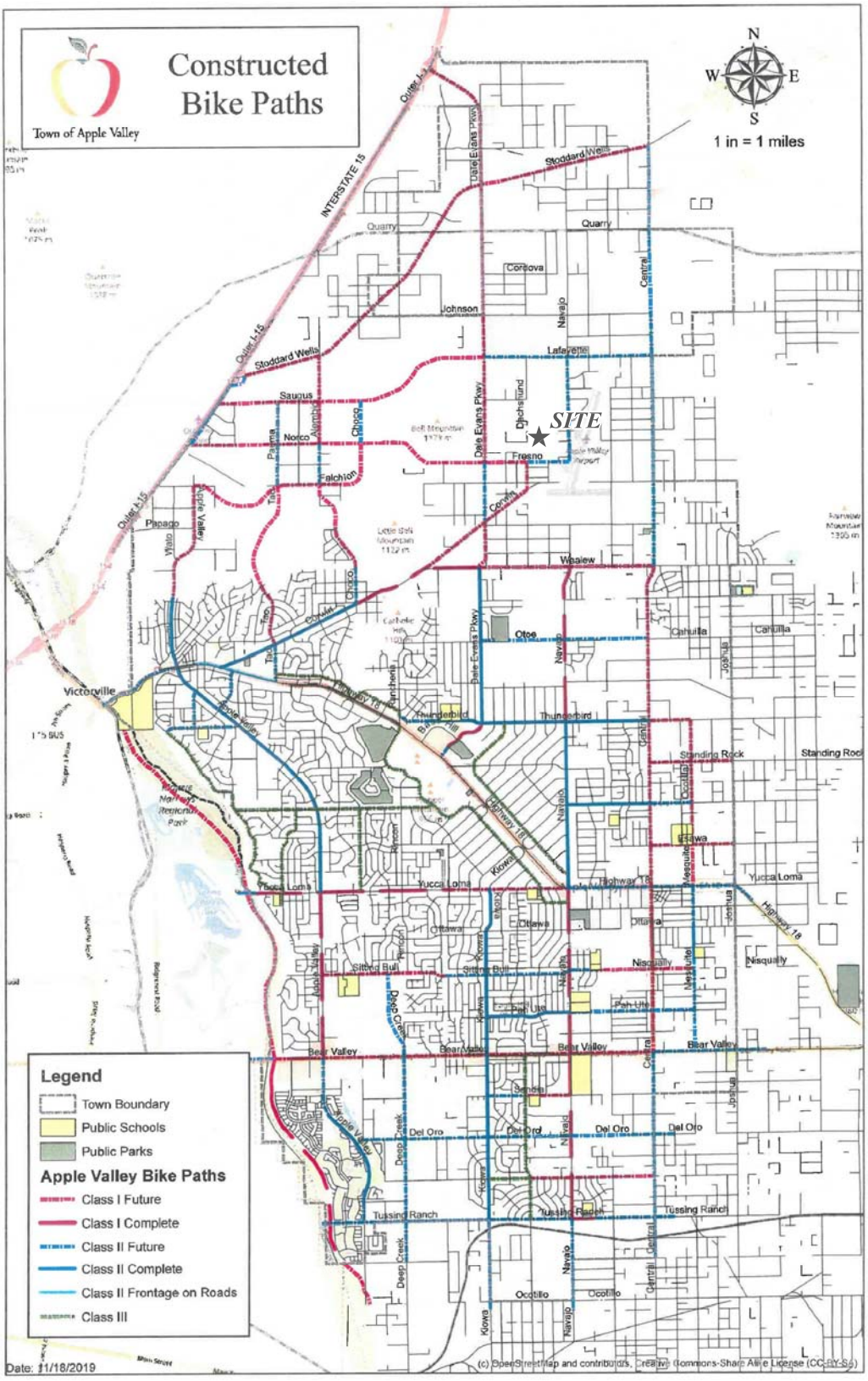
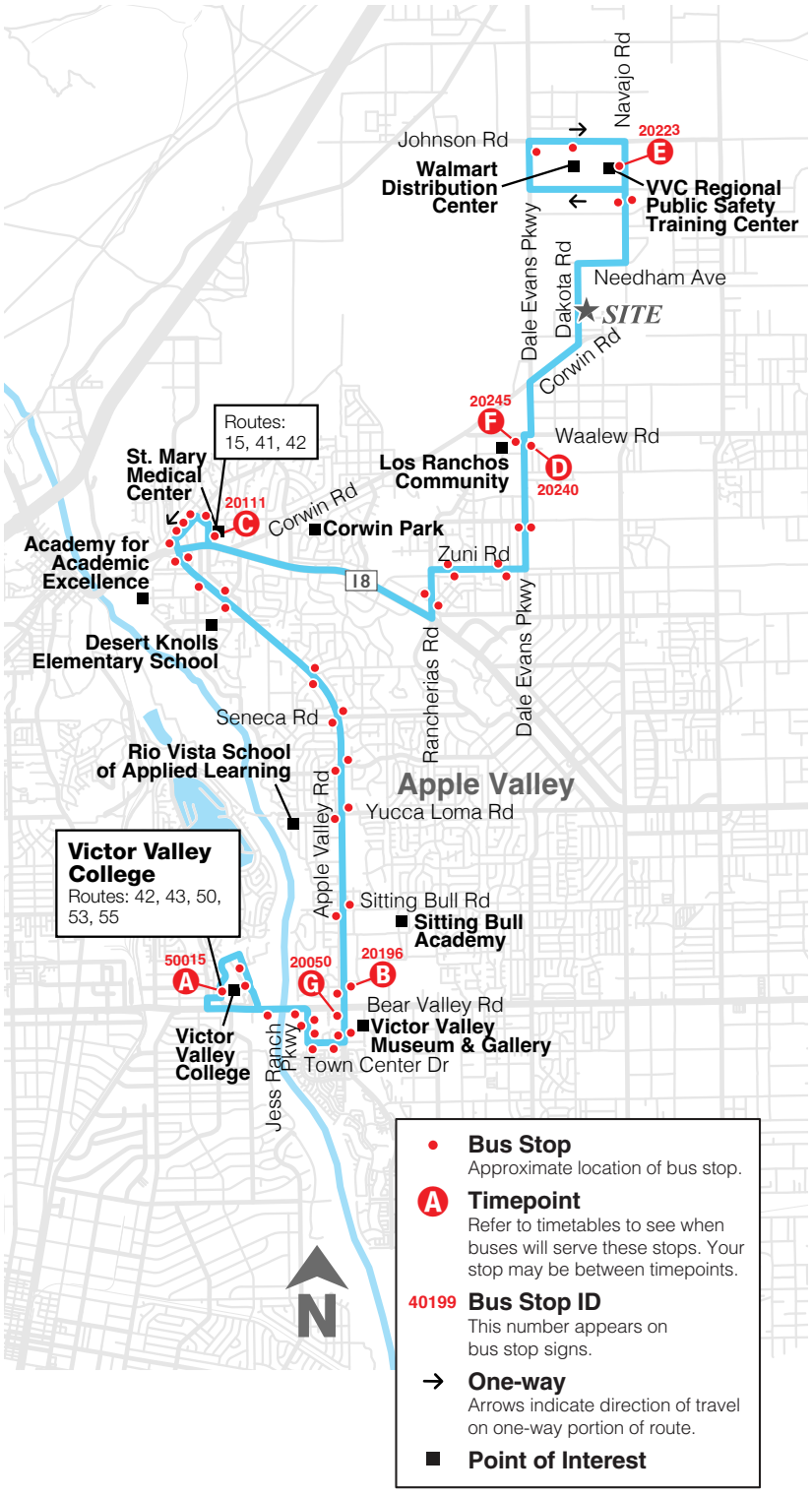


EXHIBIT 3-5: EXISTING TRANSIT ROUTES

42 Apple Valley Road



Monday-Friday

Northbo

	Victor Valley College A	Apple Valley Rd & Pimlico Rd B	Kasota Rd & Hwy 18 C
AM	5:50	5:57	6:10
	6:50	6:57	7:10
	7:50	7:57	8:10
	8:50	8:57	9:10
	9:50	9:58	10:11
	10:50	10:58	11:11
	11:50	11:58	**12:11**
PM	**12:50**	**12:58**	**1:11**
	1:50	**1:58**	**2:11**
	2:50	**2:58**	**3:11**
	3:50	**3:58**	**4:12**
	4:50	**4:58**	**5:12**
	5:50	**5:58**	**6:12**
	6:50	**6:58**	**7:12**
	7:50	**7:58**	**8:09**
	8:50	**8:58**	**9:09**

Saturday

Northbo

	Victor Valley College A	Apple Valley Rd & Pimlico Rd B	Kasota Rd & Hwy 18 C
AM	6:50	6:58	7:12
	7:50	7:58	8:12
	8:50	8:58	9:12
	9:50	9:58	10:12
	10:50	10:58	11:12
	11:50	11:58	**12:12**
PM	**12:50**	**12:58**	**1:12**
	1:50	**1:58**	**2:12**
	2:50	**2:58**	**3:12**
	3:50	**3:58**	**4:12**
	4:50	**4:58**	**5:12**
	5:50	**5:58**	**6:12**
	6:50	**6:58**	**7:12**
	7:50	**7:58**	**8:12**

Sunday

Northbo

	Victor Valley College A	Apple Valley Rd & Pimlico Rd B	Kasota Rd & Hwy 18 C
AM	7:50	7:58	8:12
	8:50	8:58	9:12
	9:50	9:58	10:12
	10:50	10:58	11:12
	11:50	11:58	**12:12**
PM	**12:50**	**12:58**	**1:12**
	1:50	**1:58**	**2:12**
	2:50	**2:58**	**3:12**
	3:50	**3:58**	**4:12**
	4:50	**4:58**	**5:12**

N

EXHIBIT 3-6: TOWN OF APPLE VALLEY TRUCK ROUTES

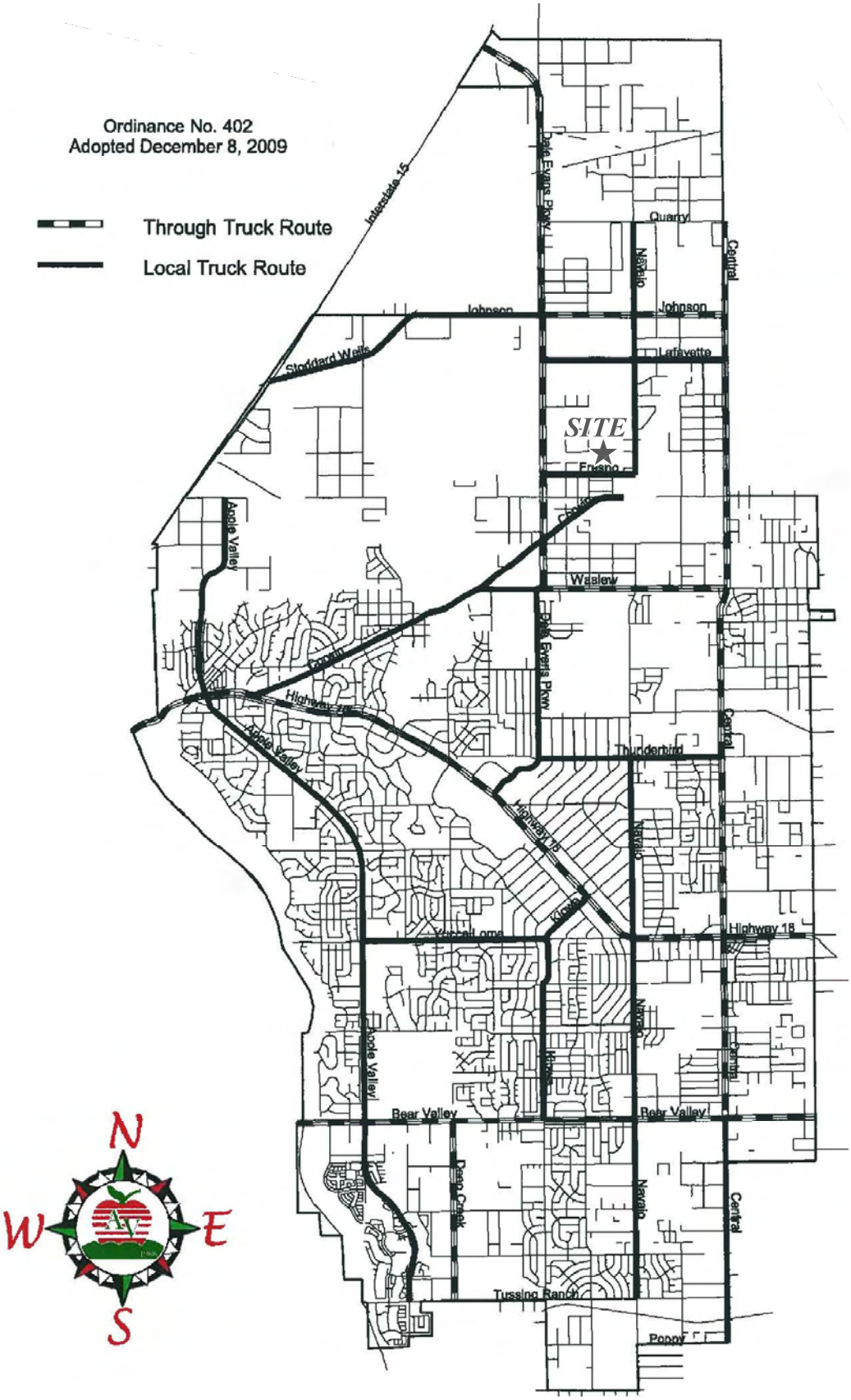
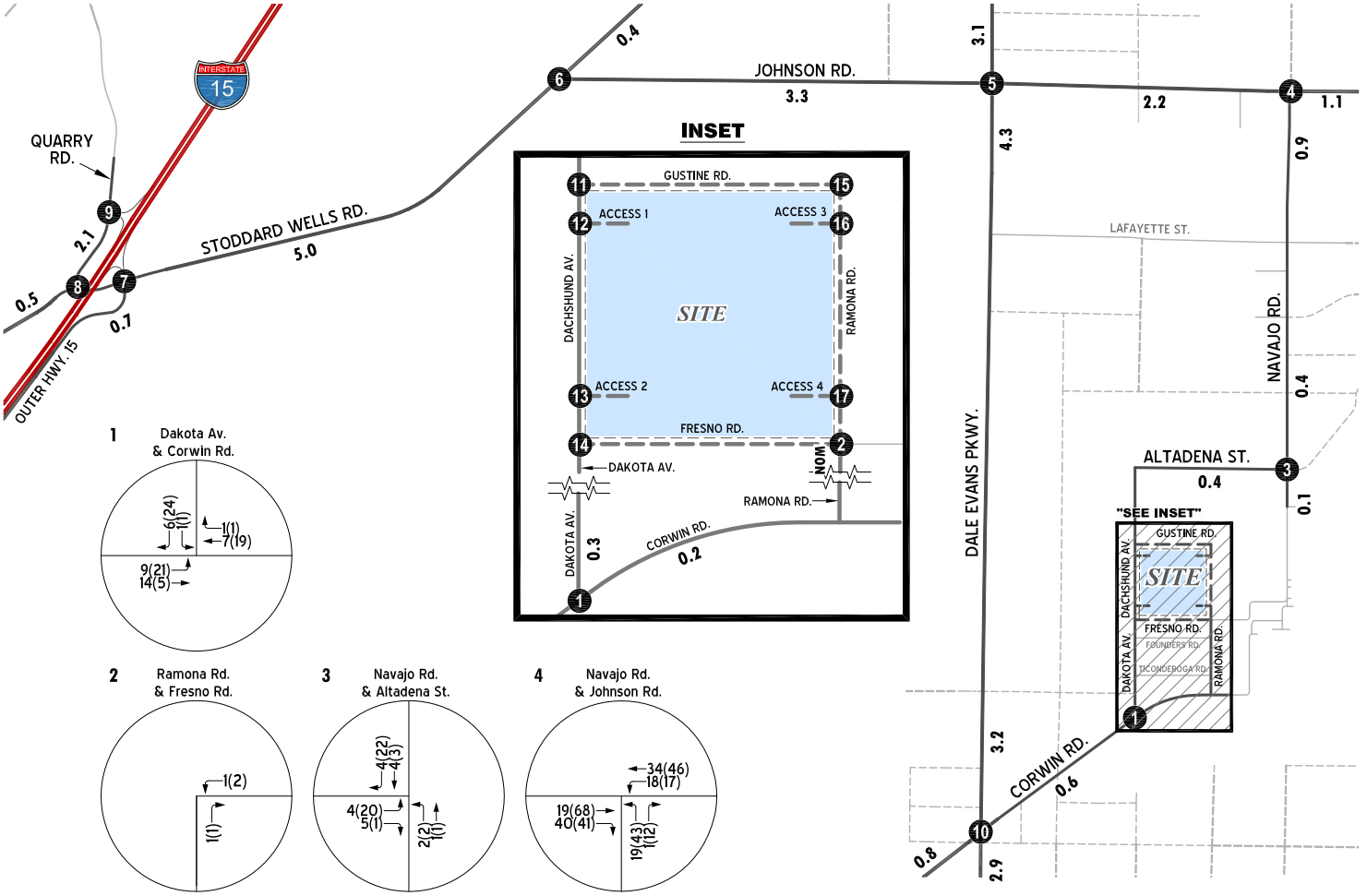
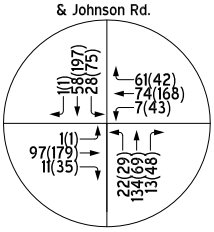
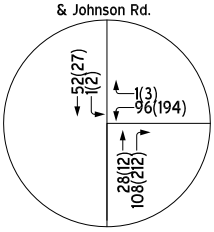
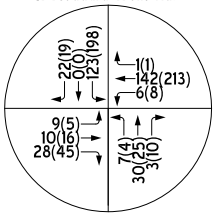


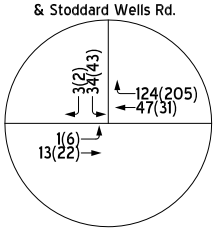
EXHIBIT 3-7: EXISTING (2024) TRAFFIC VOLUMES (PASSENGER CAR EQUIVALENT)

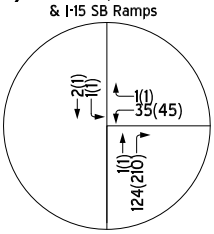


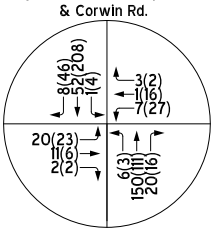


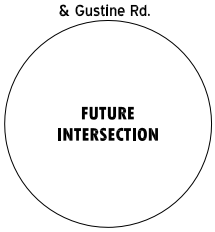


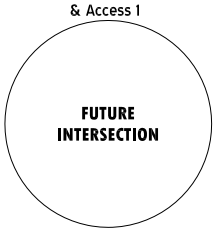


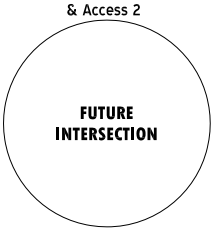


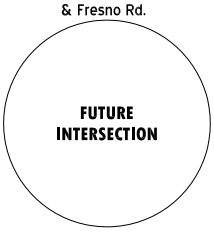


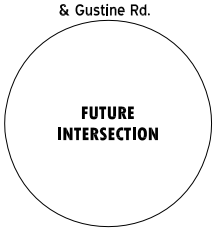


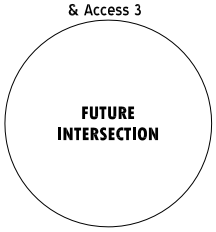


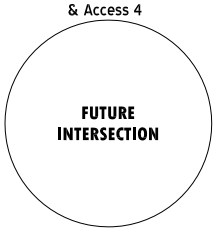












LEGEND:

- (#) = INTERSECTION ID
- = FUTURE ROADWAY
- 10.0 = VEHICLES PER DAY (1000'S)
- NOM = NOMINAL, LESS THAN 50 VEHICLES PER DAY

A comparison of the PM peak hour and daily traffic volumes of various roadway segments within the study area indicate that the peak-to-daily relationship is approximately 12.50 percent. As such, the above equation utilizing a factor of 8.00 estimates the ADT volumes on the study area roadway segments assuming a peak-to-daily relationship of approximately 10.35 percent (i.e., 1/0.1250 = 8.00) and was assumed to sufficiently estimate ADT volumes for planning-level analyses.

3.7 INTERSECTION OPERATIONS ANALYSIS

Existing peak hour traffic operations have been evaluated for the study area intersections based on the analysis methodologies presented in Section 2.2 *Intersection Capacity Analysis* of this report. The intersection operations analysis results are summarized in Table 3-1, which indicates that all the study area intersections are currently operating at an acceptable LOS during the peak hours. The intersection operations analysis worksheets are included in Appendix 3.2 of this TA.

TABLE 3-1: INTERSECTION ANALYSIS FOR EXISTING (2024) CONDITIONS

#	Intersection	Traffic Control[1]	Delay[2] (secs.) AM	Delay[2] (secs.) PM	Level of Service AM	Level of Service PM
1	Dakota Av. / Corwin Rd.	CSS	8.5	8.6	A	A
2	Ramona Rd. / Fresno Rd.	CSS	8.5	8.5	A	A
3	Navajo Rd. / Altadena St.	CSS	8.5	8.7	A	A
4	Navajo Rd. / Johnson Rd.	CSS	9.4	10.0	A	B
5	Dale Evans Pkwy. / Johnson Rd.	AWS	9.8	16.5	A	C
6	Stoddard Wells Rd. / Johnson Rd.	CSS	10.0	12.5	B	B
7	I-15 NB Ramps / Stoddard Wells Rd.	CSS	11.2	21.7	B	C
8	Quarry Rd. / Stoddard Wells Rd.	CSS	9.4	10.7	A	B
9	Quarry Rd. / I-15 SB Ramps	CSS	9.1	10.0	A	B
10	Dale Evans Pkwy. / Corwin Rd.	AWS	7.9	8.7	A	A
11	Dachshund Av. / Gustine Rd.	CSS	Future Intersection			
12	Dachshund Av. / Access 1	CSS	Future Intersection			
13	Dachshund Av. / Access 2	CSS	Future Intersection			
14	Dachshund Av. / Fresno Rd.	CSS	Future Intersection			
15	Ramona Rd. / Gustine Rd.	CSS	Future Intersection			
16	Ramona Rd. / Access 3	CSS	Future Intersection			
17	Ramona Rd. / Access 4	CSS	Future Intersection			

* **BOLD** = LOS does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

[1] AWS = All-Way Stop; CSS = Cross-Street Stop; CSS = Improvement

[2] Per the Highway Capacity Manual (7th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

3.8 TRAFFIC SIGNAL WARRANT ANALYSIS

Traffic signal warrants for Existing traffic conditions are based on existing peak hour intersection turning volumes. The following unsignalized study area intersection currently warrants a traffic signal for Existing traffic conditions:

- Dale Evans Parkway & Johnson Road (#5)

Existing conditions traffic signal warrant analysis worksheets are provided in Appendix 3.3.

3.9 QUEUING ANALYSIS

Queuing analysis findings are presented in Table 3-2. As shown in Table 3-2, there are currently no study area off-ramps experiencing queuing issues during the peak hours under Existing (2024) traffic conditions. Worksheets for Existing traffic conditions queuing analysis are provided in Appendix 3.4.

TABLE 3-2: PEAK HOUR QUEUING SUMMARY FOR EXISTING (2024) CONDITIONS

#	Intersection	Movement	Available Stacking Distance (Feet)	95th Percentile Queue (Feet)		Acceptable? [1]	
				AM Peak Hour	PM Peak Hour	AM	PM
7	I-15 NB Ramps / Stoddard Wells Rd.	SBL/T/R	1,000	20	100	Yes	Yes
9	Quarry Rd. / I-15 SB Ramps	WBL/R	1,000	5	8	Yes	Yes

[1] Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided.

This Page Intentionally Left Blank

4 PROJECTED FUTURE TRAFFIC

This section presents the traffic volumes estimated to be generated by the Project, as well as the Project's trip assignment onto the study area roadway network. The Project consists of the development of a 627,200 square foot industrial warehouse and distribution building.

The site is located between Dachshund Avenue (which becomes Dakota Road south of Fresno Road) and Ramona Road, south of Gustine Street and north of Fresno Road.

Access to the site will be accommodated via two driveways along Dachshund Avenue and two driveways on Ramona Road. All driveways are assumed to allow for full access (no turn restrictions). The Project is anticipated to have an Opening Year of 2027.

4.1 PROJECT TRIP GENERATION

Trip generation represents the amount of traffic which is both attracted to, and produced by, a development. Determining traffic generation for a specific project is therefore based upon forecasting the amount of traffic that is expected to be both attracted to, and produced by, the specific land uses being proposed for a given development. In order to develop the traffic characteristics of the high-cube warehouse land use for the Proposed Project, trip-generation statistics published in the TUMF High-Cube Warehouse Trip Generation Study (WSP, January 29, 2019) are used. The vehicle mix (passenger cars versus trucks) has been obtained from the ITE's Trip Generation Manual.

Table 4-1 shows the trip generation rates and resulting Project trip generation summary, which shows the Project is anticipated to generate a net total of 1,335 two-way vehicle trip-ends per day with 77 AM peak hour trips and 104 PM peak hour trips (actual vehicles).

PCE factors were applied to the trip generation rates for heavy trucks (large 2-axles, 3-axles, 4+-axles). PCEs allow the typical "real-world" mix of vehicle types to be represented as a single, standardized unit, such as the passenger car, to be used for the purposes of capacity and level of service analyses. The PCE factors are consistent with the recommended PCE factors in the County's Guidelines.

Table 4-2 shows the resulting Project trip generation summary in PCE, which shows the Project is anticipated to generate a total of 2,138 Passenger Car Equivalent (PCE) trip-ends per day with 123 AM PCE peak vehicle hour trips and 167 PM PCE peak hour vehicle trips.

4.2 PROJECT TRIP DISTRIBUTION

The Project trip distribution represents the directional orientation of traffic to and from the Project site. Trip distribution is the process of identifying the probable destinations, directions or traffic routes that will be utilized by Project traffic. The potential interaction between the planned land uses and surrounding regional access routes are considered, to identify the route where the Project traffic would distribute. The Project trip distribution represents the directional orientation of traffic to and from the Project site. The Project trip distributions are shown on Exhibit 4-1 for trucks and Exhibit 4-2 for passenger cars. The Project truck trip distribution patterns adhere to the Town's approved truck routes and were part of the TA scoping process (see Appendix 1.1).

TABLE 4-1: PROJECT TRIP GENERATION SUMMARY
ACTUAL VEHICLES

Proposed Project Trip Generation Rates[1]

Land Use	ITE LU Code	Quantity[2]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
High-Cube Warehouse[3]	-	627.200 TSF	0.094	0.028	0.122	0.046	0.119	0.165	2.129
Passenger Cars			0.066	0.020	0.086	0.033	0.082	0.115	1.489
2 to 4-Axle+ Trucks			0.028	0.008	0.036	0.014	0.036	0.050	0.640

Proposed Project Trip Generation Results

Land Use	ITE LU Code	Quantity[2]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
High-Cube Warehouse	-	627.200 TSF							
- Passenger Cars			41	13	54	21	52	73	934
- Truck Trips (Actual)			18	5	23	9	22	31	401
PROJECT TOTAL TRIPS (ACTUAL VEHICLES)[4]			59	18	77	30	74	104	1,335

[1] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, 11th Edition (2021).

[2] TSF = Thousand Square Feet; DU = Dwelling Units

[3] Source: *TUMF High-Cube Warehouse Trip Generation Study*. Prepared by WSP, January 2019.
Passenger and Truck AM/PM peak hour (in/out) splits are estimated from based on ITE peak-to-daily relationship
Truck Daily Rate Source: *Notice of Preparation of a Draft Environmental Impact Report for the Proposed Potrero Logistics Center*.
Prepared by South Coast Air Quality Management District (SCAQMD), June 2020.

[4] Total Net Trips (Actual Vehicles) = Passenger Cars + Net Truck Trips (Actual Trucks).

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Excel\[16091 - Report.xlsx]16091 TG - Actual_WSP

TABLE 4-2: PROJECT TRIP GENERATION SUMMARY
PASSENGER CAR EQUIVALENT (PCE)

Project Trip Generation Rates[1]

Land Use	ITE LU Code	Quantity[2]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
High-Cube Warehouse[3]	-	627.200 TSF	0.150	0.045	0.195	0.075	0.190	0.265	3.409
		Passenger Cars	0.066	0.020	0.086	0.033	0.082	0.115	1.489
		2 to 4-Axle+ Trucks (PCE = 3.0)	0.084	0.025	0.109	0.042	0.108	0.150	1.920

Project Trip Generation Results

Land Use	ITE LU Code	Quantity[2]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
High-Cube Warehouse	-	627.200 TSF							
- Passenger Cars			41	13	54	21	52	73	934
- Truck Trips (PCE = 3.0)			53	16	69	26	68	94	1,204
PROJECT TOTAL EXTERNAL TRIPS (PCE)[4]			94	29	123	47	120	167	2,138

[1] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, 11th Edition (2021).

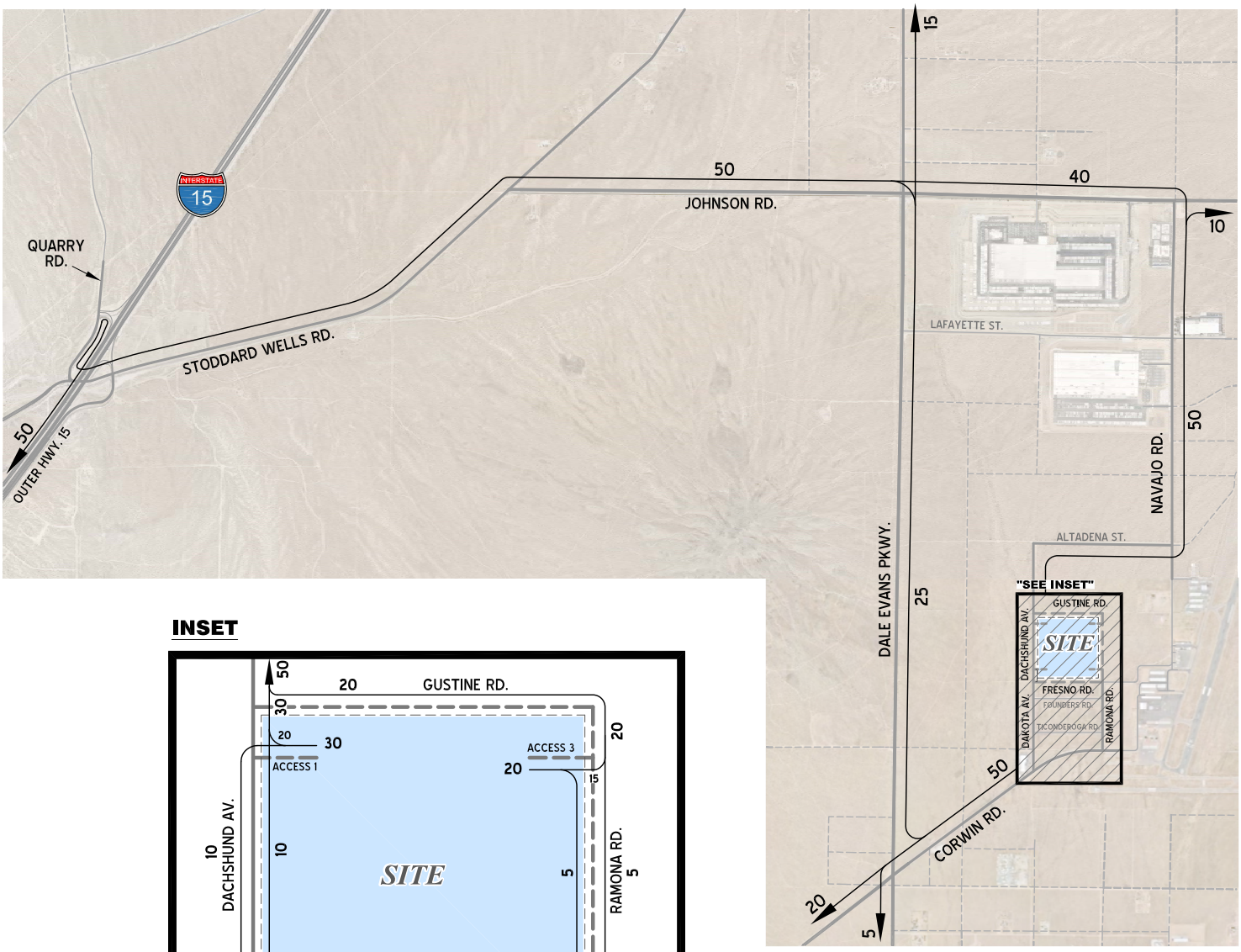
[2] TSF = Thousand Square Feet; DU = Dwelling Units

[3] Source: *TUMF High-Cube Warehouse Trip Generation Study* . Prepared by WSP, January 2019.
Passenger and Truck AM/PM peak hour (in/out) splits are estimated from based on ITE peak-to-daily relationship
Truck Daily Rate Source: *Notice of Preparation of a Draft Environmental Impact Report for the Proposed Potrero Logistics Center* .
Prepared by South Coast Air Quality Management District (SCAQMD), June 2020.

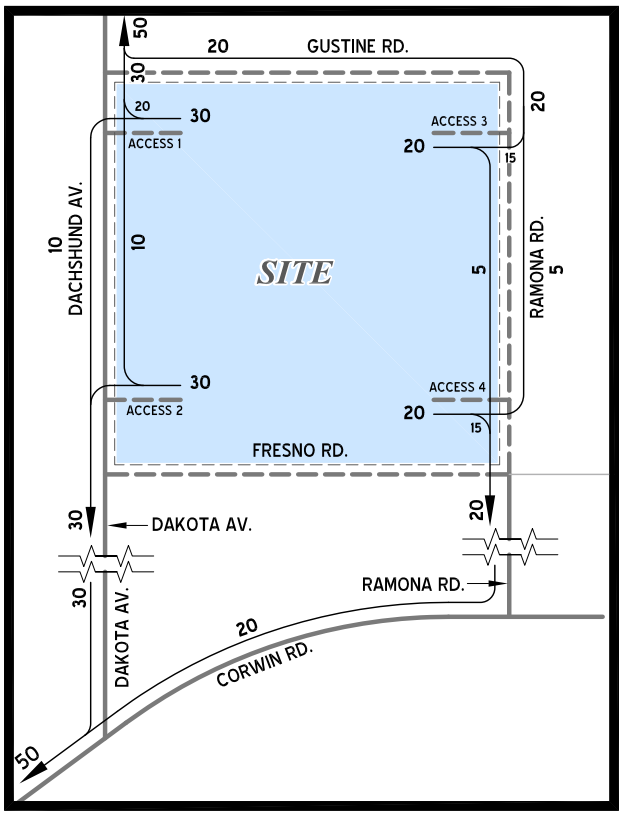
[4] Total Net Trips (PCE) = Passenger Cars + Net Truck Trips (Passenger Car Equivalent).

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Excel\[16091 - Report.xlsx]16091 TG - PCE

EXHIBIT 4-1: PROJECT (TRUCK) TRIP DISTRIBUTION



INSET



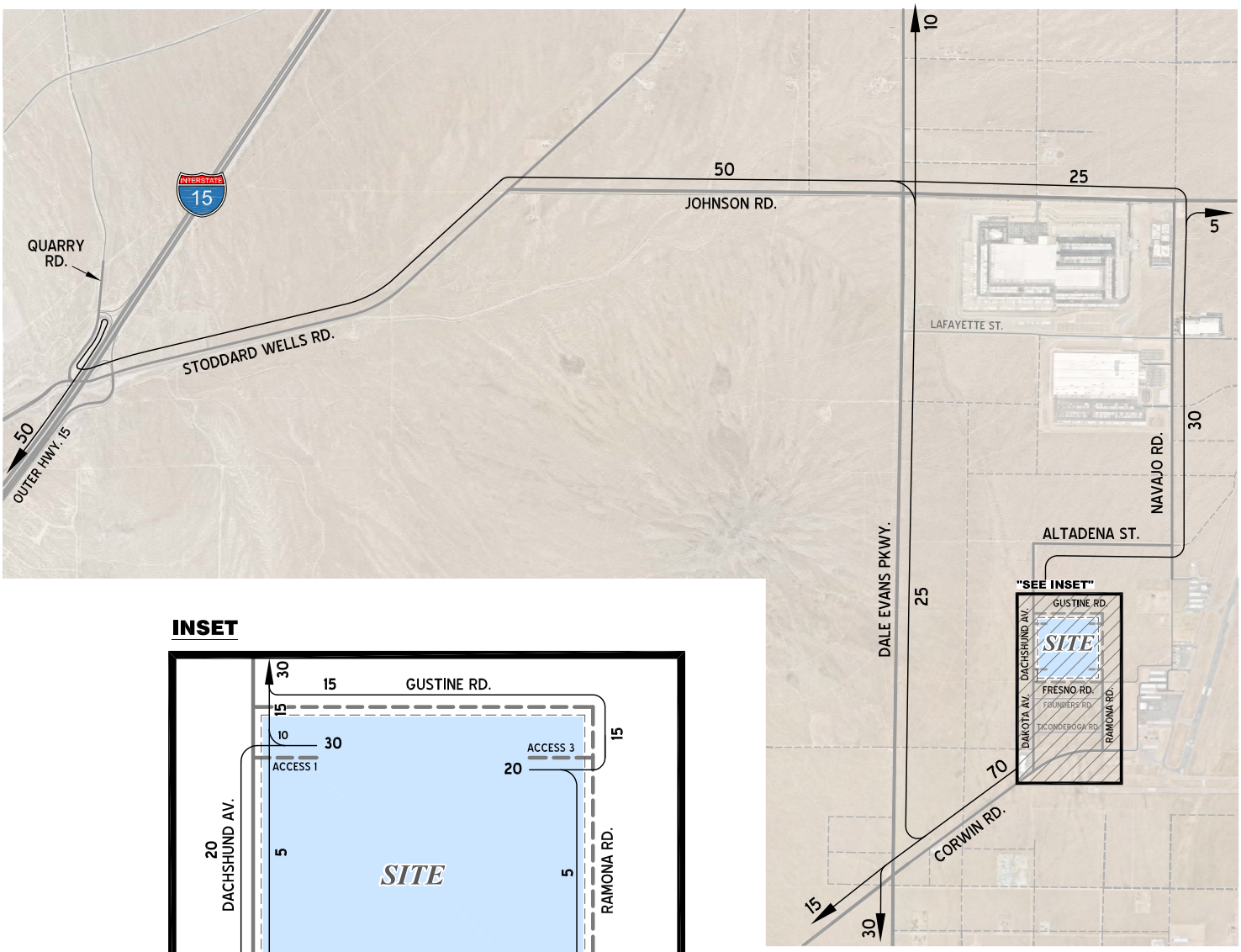
LEGEND:

10 = PERCENT TO/FROM PROJECT

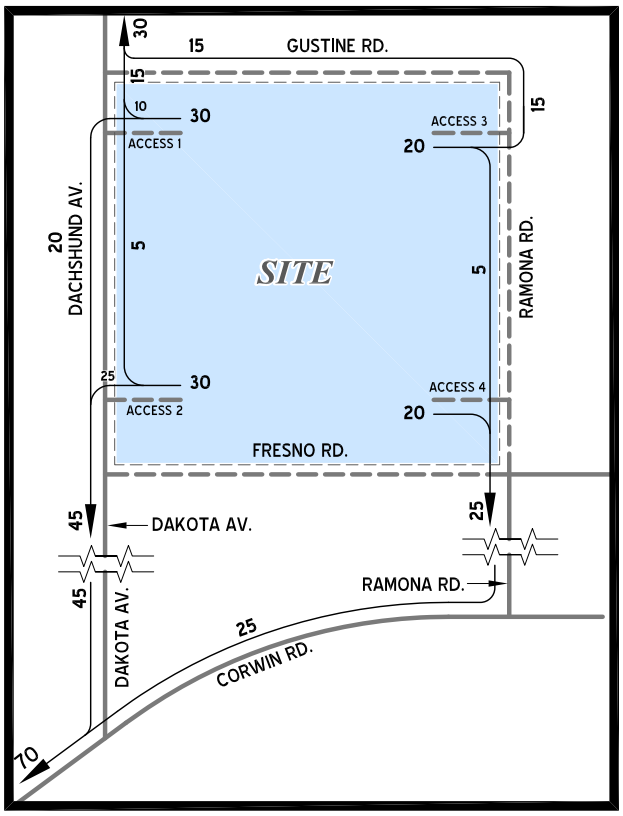
= FUTURE ROADWAY

N

EXHIBIT 4-2: PROJECT (PASSENGER CAR) TRIP DISTRIBUTION



INSET



LEGEND:

10 = PERCENT TO/FROM PROJECT

= FUTURE ROADWAY

N

4.3 MODAL SPLIT

The potential for Project trips to be reduced by the use of public transit, walking, or bicycling have not been included as part of the Project's estimated trip generation. Essentially, the Project's traffic projections are "conservative" in that these alternative travel modes would reduce the forecasted traffic volumes.

4.4 PROJECT TRIP ASSIGNMENT

The assignment of traffic from the Project area to the adjoining roadway system is based upon the Project trip generation, trip distribution, and the arterial highway and local street system improvements that would be in place by the time of initial occupancy of the Project. Based on the identified Project traffic generation and trip distribution patterns, Project weekday peak hour intersection turn movement volumes and ADT, in actual vehicles, are shown on Exhibit 4-3.

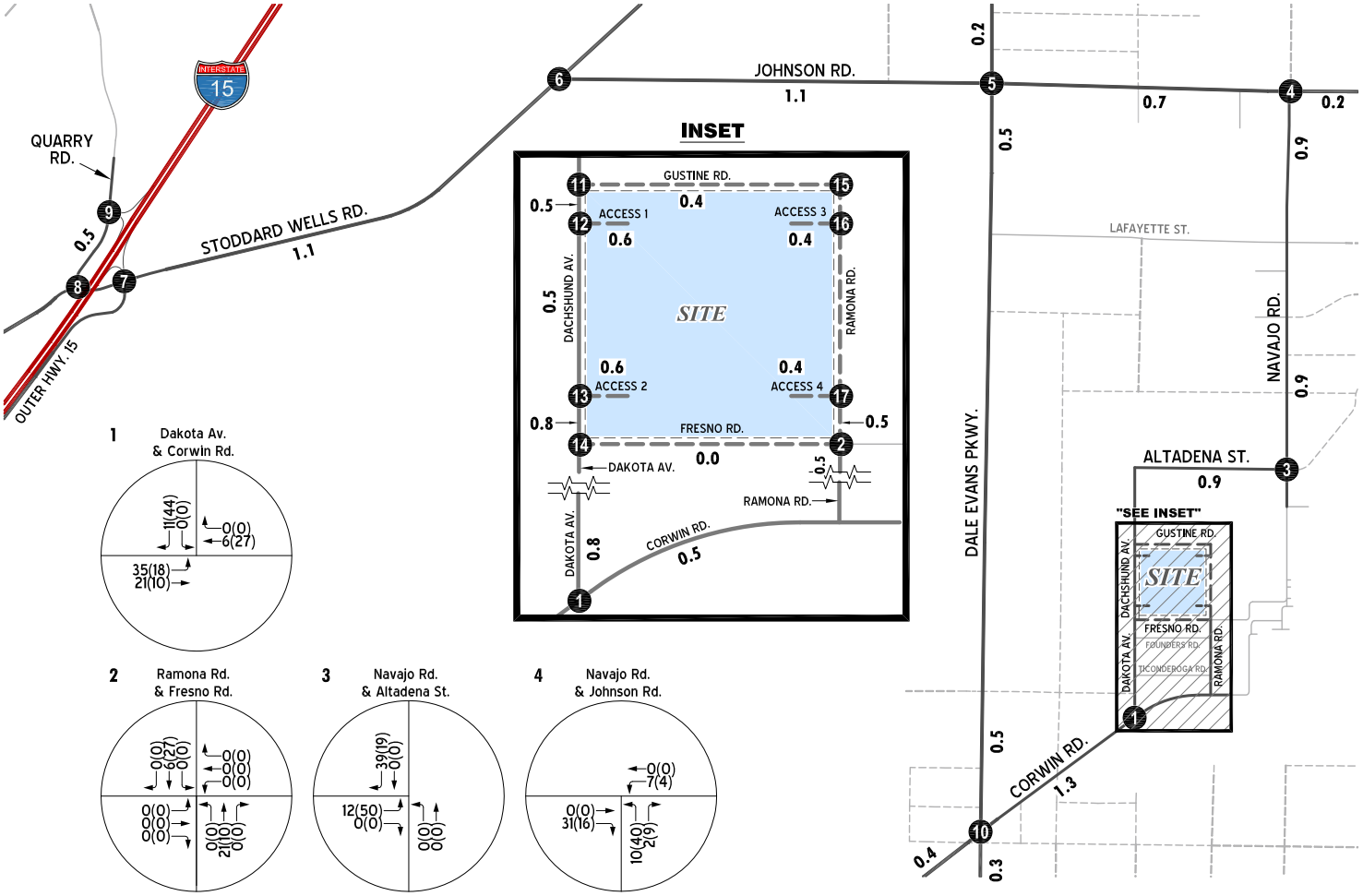
4.5 BACKGROUND TRAFFIC

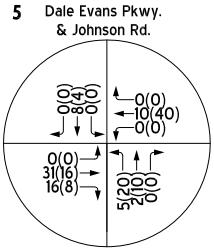
Future year traffic forecasts have been based upon background (ambient) growth at 2.0% per year, compounded annually. The total ambient growth is 6.12% for 2027 traffic. The ambient growth factor is intended to approximate regional traffic growth. This ambient growth rate is added to existing traffic volumes to account for area-wide growth not reflected by cumulative development projects. Ambient growth has been added to daily and peak hour traffic volumes on surrounding roadways, in addition to traffic generated by the development of future projects that have been approved but not yet built and/or for which development applications have been filed and are under consideration by governing agencies. The traffic generated by the proposed Project is manually added to the base volume to determine Opening Year Cumulative forecasts.

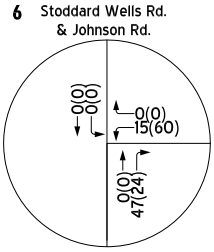
The traffic analysis includes the following traffic conditions, with the various traffic components:

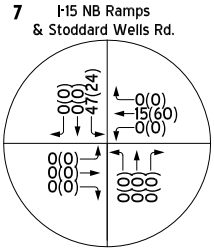
- Opening Year Cumulative (2027) Without Project
    - Existing 2024 volumes
    - Ambient growth traffic (6.12%)
    - Cumulative Development traffic
- Opening Year Cumulative (2027) With Project
    - Existing 2024 volumes
    - Ambient growth traffic (6.12%)
    - Cumulative Development traffic
    - Project Traffic

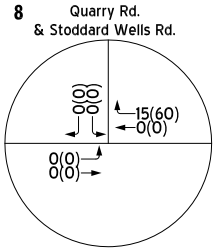
EXHIBIT 4-3: PROJECT ONLY TRAFFIC VOLUMES (PASSENGER CAR EQUIVALENT)

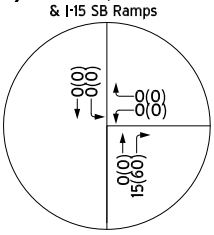


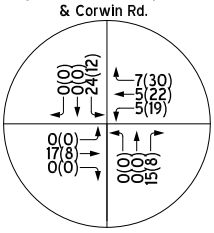


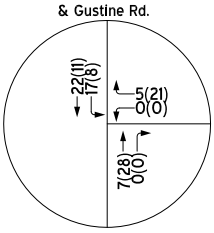


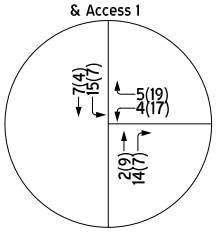


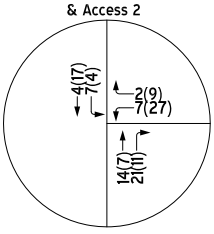


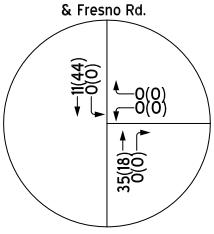


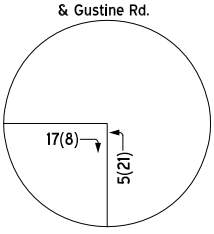


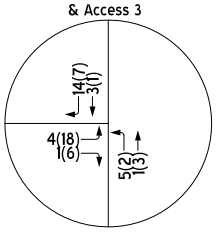


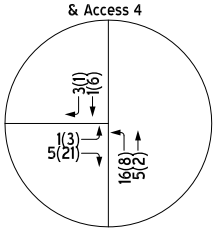












LEGEND:

- (#) = INTERSECTION ID
- = FUTURE ROADWAY
- 10.0 = VEHICLES PER DAY (1000'S)

4.6 CUMULATIVE DEVELOPMENT TRAFFIC

A cumulative project list was developed for the purposes of this analysis through consultation with planning and engineering staff from the Town of Apple Valley. The cumulative projects listed are those that would generate traffic and would contribute traffic to study area intersections. Exhibit 4-4 illustrates the cumulative development location map. A summary of cumulative development projects and their proposed land uses are shown in Table 4-3. If applicable, the traffic generated by individual cumulative projects was manually added to the Opening Year Cumulative (2027) forecasts to ensure that traffic generated by the listed cumulative development projects in Table 4-3 is reflected as part of the background traffic. In an effort to conduct a conservative analysis, the cumulative projects are added in conjunction with the ambient growth identified in Section 4.5 *Background Traffic*. Cumulative peak hour intersection turning movement volumes and ADT are shown on Exhibits 4-6.

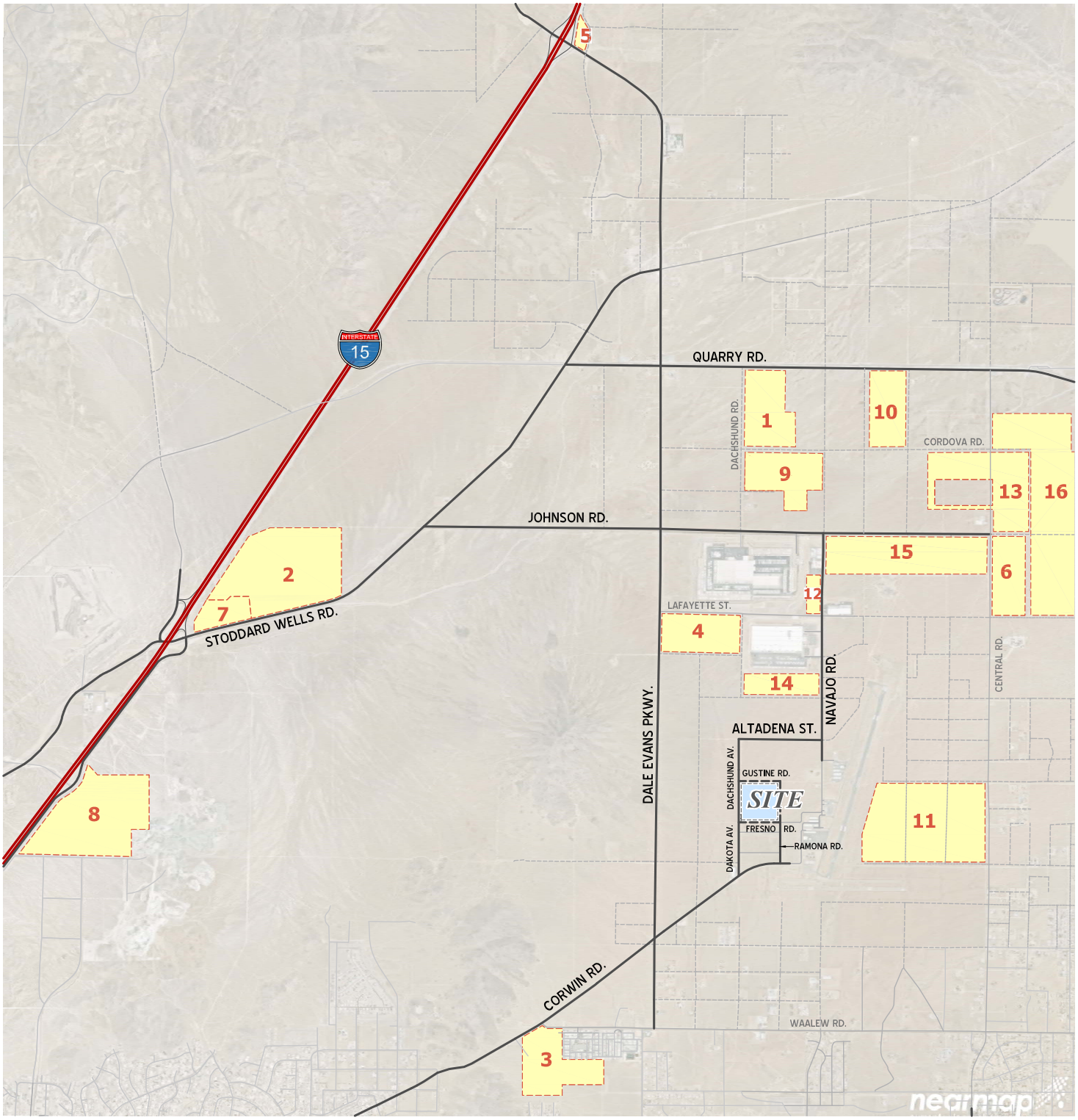
TABLE 4-3: CUMULATIVE DEVELOPMENT LAND USE SUMMARY

TAZ	Project	Land Use	Quantity	Units[1]
1	Cordova Road Logistics (SEC Dachshund Av. & Quarry Rd.)	High-Cube Fulfillment Center	1,144.33	TSF
		High-Cube Cold Storage	201.94	TSF
2	Apple Valley 143	Industrial/Warehouse	2,518.50	TSF
3	TTM 20306 (south of Waalew & east of Corwin)	Single Family Residential	160	DU
4	Lafayette Street Logistics (Redwood West)	High-Cube Warehouse	1,026.41	TSF
		High-Cube Cold Storage	181.13	TSF
5	Apple Valley Gateway Center (north of Dale Evans & east of I-15)	Pad A - Hotel	84	RM
		Pad B - Fast-Food Restaurant w/ Drive-Thru	5.769	TSF
		Pad C - Gas Station with C-Store (5 TSF)	16	VFP
		Pad D - Gas Station with C-Store (3.35 TSF)	12	VFP
		Pad E - Fast-Food Restaurant w/ Drive-Thru	4.00	TSF
		Pad F - Fast-Food Restaurant w/ Drive-Thru	4.20	TSF
		Pad G - Restaurant	4.00	TSF
		Pad H - Shops	10.261	TSF
		Pad I - Fast-Food Restaurant w/ Drive-Thru	2.80	TSF
6	1M Warehouse (east of Central Road, between Johnson Road & Lafayette Street)	High Cube Fulfillment Center Warehouse	1,080.125	TSF
7	Apple Valley I-15 Travel Center (Love's Travel Stop - north of Stoddard Wells & east of I-15)	RV Park	80	Spaces
		Gas Station with C-Store (9.66 TSF)	26	VFP
		Fast-Food Restaurant w/ Drive-Thru	3.043	TSF
		Truck Maintenance/Tire Building	13.786	TSF
8	Inland Empire North Logistics Ctr. (north of Falchion Road & east of I-5)	Industrial/Warehouse	2,604.446	TSF
9	Cordova Quarry	High-Cube Cold Storage	1,559.952	TSF
10	Quarry at Pawnee	High-Cube Cold Storage	1,462.342	TSF
11	Lake Creek Logistics Center (Apple Valley Logistics Center)	General Light Industrial (10%)	348.074	TSF
		High-Cube Cold Storage (10%)	348.074	TSF
		High-Cube Fulfillment (80%)	2,784.588	TSF
12	Green Trucking Solutions	High-Cube Cold Storage	385.004	TSF
13	Apple Valley 3PL Center	Industrial/Warehouse	2,134.000	TSF
14	Watson High Desert Logistics West	High-Cube Fulfillment Center (Non-Sort)	896.500	TSF
15	Watson High Desert Logistics East	High-Cube Fulfillment Center (Non-Sort)	2,832.600	TSF
16	North Apple Valley Industrial Park	Warhousing	5,821.709	TSF

[1] DU = Dwelling Units; TSF = Thousand Square Feet; RM = Room; VFP = Vehicle Fueling Positions

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Excel\[16091 - Report.xlsx]16091-C

EXHIBIT 4-4: CUMULATIVE DEVELOPMENT LOCATION MAP



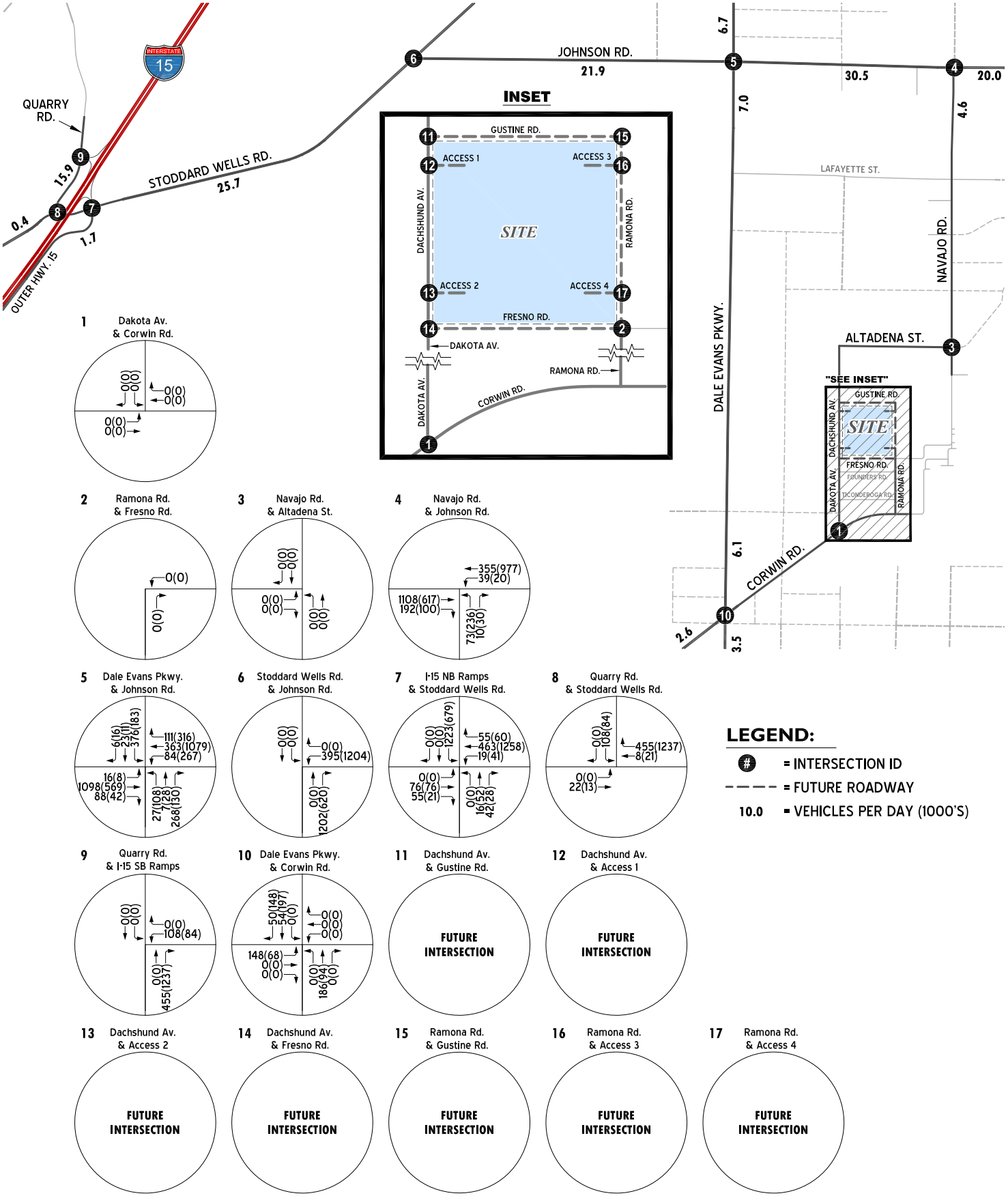
LEGEND:

(#) = CUMULATIVE DEVELOPMENT ID

N

16091_01 - Study Area.dwg

EXHIBIT 4-5: CUMULATIVE ONLY TRAFFIC VOLUMES



This Page Intentionally Left Blank

5 OPENING YEAR CUMULATIVE (2027) TRAFFIC CONDITIONS

This section discusses the methods used to develop Opening Year Cumulative (2027) Without and With Project traffic forecasts, and the resulting intersection operations, and traffic signal warrant analyses.

5.1 ROADWAY IMPROVEMENTS

The lane configurations and traffic controls assumed to be in place for Opening Year Cumulative (2027) conditions are consistent with those shown previously on Exhibit 3-1, with the exception of Project and Cumulative project driveways and those facilities assumed to be constructed by the Project or Cumulative projects to provide site access are also assumed to be in place for Opening Year Cumulative conditions only (e.g., intersection and roadway improvements along the Project's or Cumulative project's frontage and driveways).

5.2 WITHOUT PROJECT TRAFFIC VOLUME FORECASTS

This scenario includes Existing traffic volumes, plus an ambient growth rate of 6.12%, plus traffic from pending and approved but not yet constructed known development projects in the area. The weekday AM and PM peak hour volumes which can be expected for Opening Year Cumulative (2027) Without Project traffic conditions are shown on Exhibit 5-1. The weekday ADT which can be expected for Opening Year Cumulative (2027) Without Project traffic conditions are shown on Exhibit 5-1.

5.3 WITH PROJECT TRAFFIC VOLUME FORECASTS

This scenario includes Opening Year Cumulative (2027) Without Project traffic in conjunction with the addition of Project traffic. The weekday AM and PM peak hour volumes which can be expected for Opening Year Cumulative (2027) With Project traffic conditions are shown on Exhibit 5-2. The weekday ADT which can be expected for Opening Year Cumulative (2027) With Project traffic conditions are shown on Exhibit 5-2.

5.4 INTERSECTION OPERATIONS ANALYSIS

5.4.1 OPENING YEAR CUMULATIVE (2027) WITHOUT PROJECT TRAFFIC CONDITIONS

LOS calculations were conducted for the study intersections to evaluate their operations under Opening Year Cumulative (2027) Without Project conditions with roadway and intersection geometrics consistent with Section 5.1 *Roadway Improvements*. As shown in Table 5-1, the following study area intersections are anticipated to operate at an unacceptable LOS under Opening Year Cumulative (2027) Without Project traffic conditions:

- Navajo Road & Johnson Road (#4) – LOS F AM and PM peak hours
- Dale Evans Parkway & Johnson Road (#5) – LOS F AM and PM peak hours
- Stoddard Wells Road & Johnson Road (#6) – LOS F AM and PM peak hours
- I-15 Northbound Ramps & Stoddard Wells Road (#7) – LOS F AM and PM peak hours
- Quarry Road & Stoddard Wells Road (#8) – LOS F PM peak hour only
- Quarry Road & I-15 Southbound Ramps (#9) – LOS F PM peak hour only

EXHIBIT 5-1: OPENING YEAR CUMULATIVE (2027) WITHOUT PROJECT TRAFFIC VOLUMES

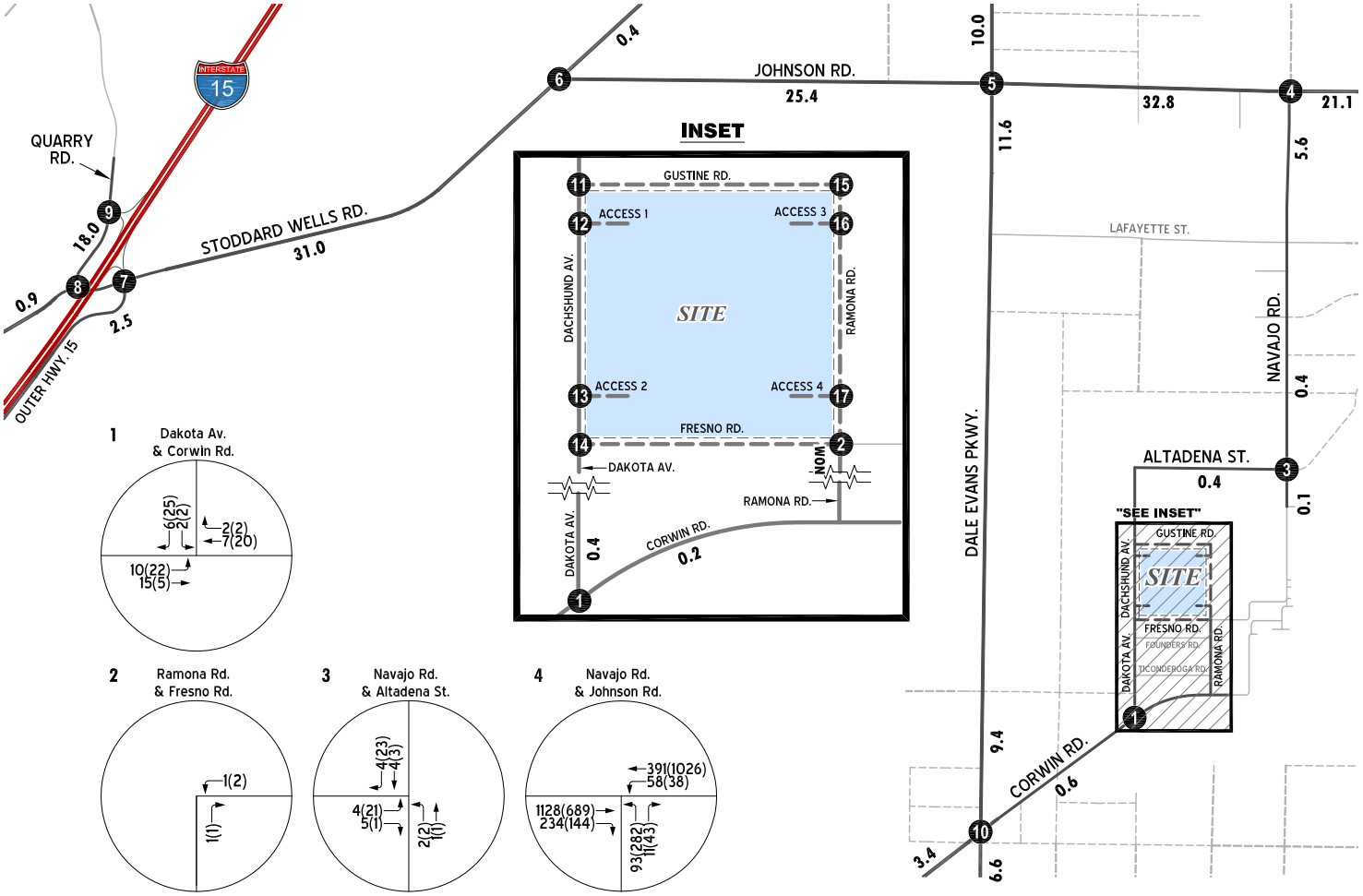
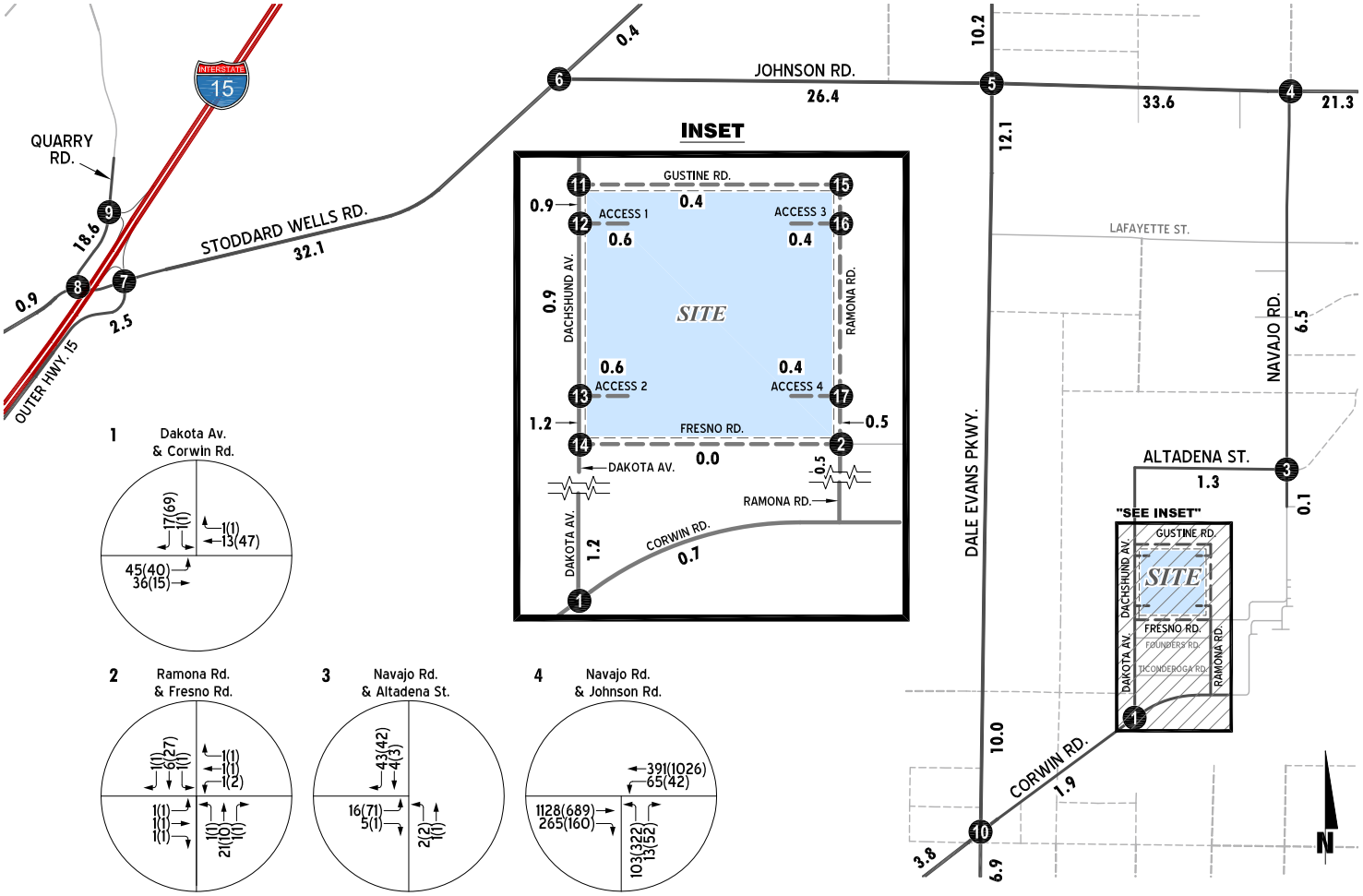
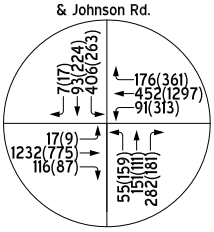
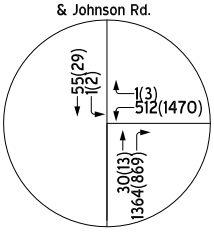
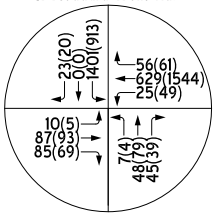

INTERSTATE 15
QUARRY RD.
STODDARD WELLS RD.
OUTER HWY. 15
JOHNSON RD.
DALE EVANS PKWY.
CORWIN RD.
LAFAYETTE ST.
NAVAJO RD.
ALTADENA ST.
"SEE INSET"
INSET
GUSTINE RD.
ACCESS 1
ACCESS 2
ACCESS 3
ACCESS 4
SITE
DACHSHUND AV.
RAMONA RD.
FRESNO RD.
DAKOTA AV.
FOUNDERS RD.
ZEPHYR RD.
ZEROLITE RD.
ZEROLITE PL.
ZEPHYR CT.
ZEPHYR PL.
ZEROLITE CT.
ZEPHYR AV.
ZEROLITE AV.
ZEPHYR WY.
ZEROLITE WY.
ZEPHYR ST.
ZEROLITE ST.
ZEPHYR LN.
ZEROLITE LN.
ZEPHYR DR.
ZEROLITE DR.
ZEPHYR TR.
ZEROLITE TR.
ZEPHYR PKWY.
ZEROLITE PKWY.
ZEPHYR BLVD.
ZEROLITE BLVD.
ZEPHYR CIR.
ZEROLITE CIR.
ZEPHYR WAY.
ZEROLITE WAY.
ZEPHYR ROAD.
ZEROLITE ROAD.
ZEPHYR STREET.
ZEROLITE STREET.
ZEPHYR LANE.
ZEROLITE LANE.
ZEPHYR DRIVE.
ZEROLITE DRIVE.
ZEPHYR TRAIL.
ZEROLITE TRAIL.
ZEPHYR PARKWAY.
ZEROLITE PARKWAY.
ZEPHYR BOULEVARD.
ZEROLITE BOULEVARD.
ZEPHYR CIRCLE.
ZEROLITE CIRCLE

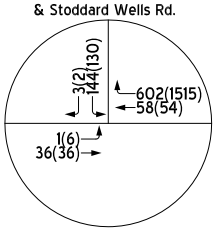
EXHIBIT 5-2: OPENING YEAR CUMULATIVE (2027) WITH PROJECT TRAFFIC VOLUMES

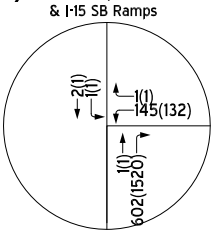


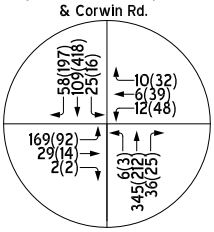


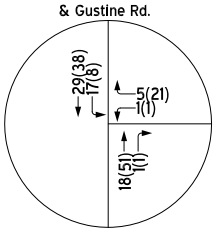


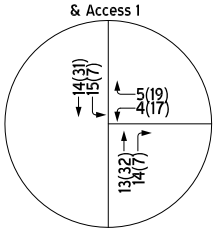


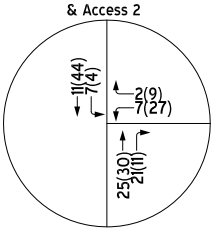


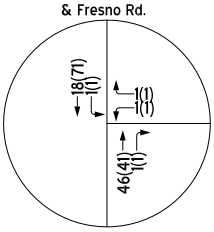


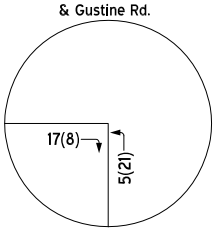


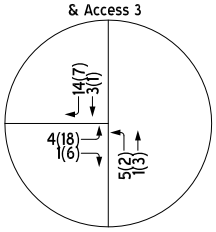


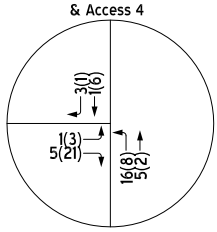












LEGEND:

- (#) = INTERSECTION ID
- = FUTURE ROADWAY
- 10.0 = VEHICLES PER DAY (1000'S)

The intersection operations analysis worksheets for Opening Year Cumulative (2027) Without Project traffic conditions are included in Appendix 5.1 of this TA.

5.4.2 OPENING YEAR CUMULATIVE (2027) WITH PROJECT TRAFFIC CONDITIONS

As shown in Table 5-1, there are no additional study area intersections that are anticipated to operate at an unacceptable LOS with the addition of Project traffic under Opening Year Cumulative (2027) With Project traffic conditions. The intersection operations analysis worksheets for Opening Year Cumulative (2027) With Project traffic conditions are included in Appendix 5.2 of this TA.

TABLE 5-1: INTERSECTION ANALYSIS FOR OPENING YEAR CUMULATIVE (2027) CONDITIONS

			2027 Without Project				2027 With Project			
			Delay[2] (secs.)		Level of Service		Delay[2] (secs.)		Level of Service	
#	Intersection	Traffic Control[1]	AM	PM	AM	PM	AM	PM	AM	PM
1	Dakota Av. / Corwin Rd.	CSS	8.5	8.6	A	A	8.6	9.0	A	A
2	Ramona Rd. / Fresno Rd.	CSS	8.5	8.5	A	A	8.9	9.0	A	A
3	Navajo Rd. / Altadena St.	CSS	8.5	8.7	A	A	8.8	9.1	A	A
4	Navajo Rd. / Johnson Rd.	CSS	**>100.0**	**>100.0**	**F**	**F**	**>100.0**	**>100.0**	**F**	**F**
5	Dale Evans Pkwy. / Johnson Rd.	AWS	**>100.0**	**>100.0**	**F**	**F**	**>100.0**	**>100.0**	**F**	**F**
6	Stoddard Wells Rd. / Johnson Rd.	CSS	**>100.0**	**>100.0**	**F**	**F**	**>100.0**	**>100.0**	**F**	**F**
7	I-15 NB Ramps / Stoddard Wells Rd.	CSS	**>100.0**	**>100.0**	**F**	**F**	**>100.0**	**>100.0**	**F**	**F**
8	Quarry Rd. / Stoddard Wells Rd.	CSS	14.3	**>100.0**	B	**F**	14.5	**>100.0**	B	**F**
9	Quarry Rd. / I-15 SB Ramps	CSS	13.1	**>100.0**	B	**F**	13.3	**>100.0**	B	**F**
10	Dale Evans Pkwy. / Corwin Rd.	AWS	11.7	21.3	B	C	12.8	28.6	B	D
11	Dachshund Av. / Gustine Rd.	CSS	Future Intersection				8.5	8.7	A	A
12	Dachshund Av. / Access 1	CSS	Future Intersection				8.6	8.8	A	A
13	Dachshund Av. / Access 2	CSS	Future Intersection				8.8	9.0	A	A
14	Dachshund Av. / Fresno Rd.	CSS	Future Intersection				8.7	8.8	A	A
15	Ramona Rd. / Gustine Rd.	CSS	Future Intersection				8.4	8.3	A	A
16	Ramona Rd. / Access 3	CSS	Future Intersection				8.6	8.6	A	A
17	Ramona Rd. / Access 4	CSS	Future Intersection				8.4	8.5	A	A

* **BOLD** = LOS does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

[1] AWS = All-Way Stop; CSS = Cross-Street Stop; CSS = Improvement

[2] Per the Highway Capacity Manual (7th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

5.5 TRAFFIC SIGNAL WARRANT ANALYSIS

Traffic signal warrants have been performed for Opening Year Cumulative (2027) traffic conditions based on peak hour intersection turning movements volumes or planning level (ADT) volumes. The following study area intersections are anticipated to meet a traffic signal warrant under Opening Year Cumulative (2027) Without Project traffic conditions:

- Navajo Road & Johnson Road (#4)
- Stoddard Wells Road & Johnson Road (#6)
- I-15 Northbound Ramps & Stoddard Wells Road (#7)
- Quarry Rd. & Stoddard Wells Rd (#8)
- Quarry Rd. & I-15 SB Ramps (#9)

With the addition of Project traffic, the intersection of Dale Evans Parkway & Corwin (#10) Road is anticipated to meet a traffic signal warrant under Opening Year Cumulative (2027) With Project traffic conditions.

As mentioned previously, meeting this threshold condition does not require that a traffic control signal be installed at a particular location, but rather, that other traffic factors and conditions be evaluated in order to determine whether the signal is truly justified. It should also be noted that signal warrants do not necessarily correlate with LOS. An intersection may satisfy a signal warrant condition and operate at or above acceptable LOS or operate below acceptable LOS and not meet a signal warrant.

The Opening Year Cumulative (2027) Without Project and With Project traffic conditions traffic signal warrant analysis worksheets are provided in Appendices 5.3 and 5.4, respectively.

5.6 OFF-RAMP QUEUING ANALYSIS

Queuing analysis findings for Opening Year Cumulative (2027) Without Project are presented in Table 5-2. As shown in Table 5-2, the southbound shared left-through-right lane for the intersection of I-15 Northbound Ramps & Stoddard Wells Road (#7) is anticipated to experience queueing issues during the weekday AM or weekday PM peak 95th percentile traffic flows under Opening Year Cumulative (2027) Without Project traffic conditions. The addition of Project traffic is not anticipated to result in additional off-ramp queuing issue during the weekday AM or weekday PM peak 95th percentile traffic flows under Opening Year Cumulative (2027) With Project traffic conditions.

Worksheets for Opening Year Cumulative (2027) Without Project and With Project traffic conditions queuing analysis are provided in Appendices 5.5 and 5.6, respectively.

TABLE 5-2: PEAK HOUR QUEUING SUMMARY FOR OPENING YEAR CUMULATIVE (2027) CONDITIONS

			Available Stacking Distance (Feet)	2027 Without Project				2027 With Project			
				95th Percentile Queue (Feet)		Acceptable? [1]		95th Percentile Queue (Feet)		Acceptable? [1]	
#	Intersection	Movement		AM Peak	PM Peak	AM	PM	AM Peak	PM Peak	AM	PM
7	I-15 NB Ramps / Stoddard Wells Rd.	SBL/T/R	1,000	**3,913**	**4,203**	**No**	**No**	**4,085**	**4,320**	**No**	**No**
9	Quarry Rd. / I-15 SB Ramps	WBL/R	1,000	30	353	Yes	Yes	30	380	Yes	Yes

[1]Stacking distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided. **BOLD** = 95th percentile queue exceeds the available storage.

5.7 INTERSECTION DEFICIENCIES AND CUMULATIVE IMPROVEMENTS

The effectiveness of the recommended improvement strategies to address Opening Year Cumulative (2027) traffic deficiencies are presented in Table 5-3 to achieve pre-project delay or better. Worksheets for Opening Year Cumulative (2027) With Project conditions, with improvements, HCM calculation worksheets are provided in Appendix 5.7.

5.7.1 RECOMMENDED IMPROVEMENTS TO ADDRESS DEFICIENCIES AT INTERSECTIONS

The following cumulative intersection improvements are recommended:

#	Intersection Location	Jurisdiction	Opening Year Cumulative (2027)	
			Without Project	With Project
4	Navajo Rd. & Johnson Rd.	Town of Apple Valley	Install a traffic signal	Same
			Add 2nd EB through lane	Same
			Add WB left turn lane	Same
			Add NB left turn lane	Same
5	Dale Evans Pkwy. & Johnson Rd.	Town of Apple Valley, County	Install a traffic signal	Same
			Add 2nd NB through lane	Same
			Add 2nd SB through lane	Same
			Add 2nd EB through lane	Same
			Add 2nd WB through lane	Same
			Add EB left turn lane	Same
			Add WB left turn lane	Same
6	Stoddard Wells Rd. & Johnson Rd.	Town of Apple Valley, County	Install a traffic signal	Same
			Add NB right turn lane	Same
			Add WB left turn lane	Same
			Provide NBR overlap phase	Same
7	I-15 NB Ramps & Stoddard Wells Rd.	Town of Apple Valley, Caltrans	Install a traffic signal	Same
			Add 2nd WB through lane	Same
			Add SB left turn lane	Same
			Add EB left turn lane	Same
			Add WB left turn lane	Same
8	Quarry Rd. & Stoddard Wells Rd.	County	Add WB right turn lane	Same
9	Quarry Rd. & I-15 SB Ramps	County, Caltrans	Add NB right turn lane	Same

TABLE 5-3: INTERSECTION ANALYSIS FOR OPENING YEAR CUMULATIVE (2027) CONDITIONS WITH IMPROVEMENTS

#	Intersection	Traffic Control[1]	Intersection Approach Lanes[2] Northbound L	T	R	Southbound L	T	R	Eastbound L	T	R	Westbound L	T	R	Delay[3] (secs.) AM	PM	Level of Service AM	PM
4	Navajo Rd. / Johnson Rd.																	
	- Without Improvements	CSS	0	1	0	0	0	0	0	1	0	0	1	0	**>100.0**	**>100.0**	**F**	**F**
	- With Improvements	**TS**	**1.5**	0	0.5	0	0	0	0	**2**	0	**1**	1	0	12.2	35.9	B	D
5	Dale Evans Pkwy. / Johnson Rd.																	
	- Without Improvements	AWS	1	1	1	1	1	0	0	1!	0	0	1	1>>	**>100.0**	**>100.0**	**F**	**F**
	- With Improvements	**TS**	1	**2**	1	1	**2**	0	**1**	**2**	0	**1**	**2**	1	54.9	53.6	D	D
6	Stoddard Wells Rd. / Johnson Rd.																	
	- Without Improvements	CSS	0	1	0	0	1	0	0	0	0	0	1	0	**>100.0**	**>100.0**	**F**	**F**
	- With Improvements	**TS**	0	1	**1>**	0	1	0	0	0	0	**1.5**	0	0.5	21.4	16.3	C	B
7	I-15 NB Ramps / Stoddard Wells Rd.																	
	- Without Improvements	CSS	0	1	0	0	1	0	0	1	0	0	1	0	**>100.0**	**>100.0**	**F**	**F**
	- With Improvements	**TS**	0	1!	0	**1**	1!	0	**1**	1	0	**1**	**2**	0	24.7	45.0	C	D
8	Quarry Rd. / Stoddard Wells Rd.																	
	- Without Improvements	CSS	0	0	0	0	1	0	0	1	0	0	1	0	14.5	**>100.0**	B	**F**
	- With Improvements	CSS	0	0	0	0	1	0	0	1	0	0	1	**1**	10.0	30.1	B	D
9	Quarry Rd. / I-15 SB Ramps																	
	- Without Improvements	CSS	0	1	0	0	1	0	0	0	0	0	1	0	13.3	**>100.0**	B	**F**
	- With Improvements	CSS	0	1	**1**	0	1	0	0	0	0	0	1	0	9.3	28.9	A	D

* **BOLD** = LOS does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

[1] TS = Traffic Signal; CSS = Cross-Street Stop; AWS = All Way Stop

[2] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; 0.5 = Shared Lane; 1! = Shared Left/Through/Right lane; >> = Free-Right Turn; > = Right Turn Overlap Phasing; **1** = Improvement

[3] Per the Highway Capacity Manual (7th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

5.7.2 RECOMMENDED IMPROVEMENTS TO ADDRESS DEFICIENCIES FOR OFF-RAMP QUEUES

The effectiveness of the recommended improvement strategies to address Opening Year Cumulative (2027) off-ramp deficiencies are presented in Table 5-4 based on queues calculated in Synchro. Table 5-5 presents the queueing analysis results for both off-ramp and project access intersections using random simulations generated by SimTraffic to determine the 95th percentile queue lengths observed for each applicable turn lane.

TABLE 5-4: PEAK HOUR QUEUING SUMMARY FOR OPENING YEAR CUMULATIVE (2027) CONDITIONS WITH IMPROVEMENTS

				2027 With Project			
				95th Percentile Queue (Feet)		Acceptable? [1]	
#	Intersection	Movement	Available Stacking Distance (Feet)	AM Peak	PM Peak	AM	PM
7	I-15 NB Ramps / Stoddard Wells Rd.	<u>SBL</u>	1,000	750 [2]	625 [2]	Yes	Yes
		SBL/T/R	1,000	556	486 [2]	Yes	Yes

<u>Underline</u> = Improvement

[1] Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided.

[2] 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

The improvements are consistent with the intersection improvements identified in Table 5-3. Worksheets for Opening Year Cumulative (2027) With Project conditions, with improvements, off-ramp queueing analysis worksheets are provided in Appendix 5.8.

5.8 SITE ACCESS IMPROVEMENTS

Dachshund Avenue & Access 1 (#12) – The following improvements are necessary to accommodate site access:

- Project to install a stop control on the westbound approach and construct a shared left-right turn lane (Project driveway).

Dachshund Avenue & Access 2 (#13) – The following improvements are necessary to accommodate site access:

- Project to install a stop control on the westbound approach and construct a shared left-right turn lane (Project driveway).

Ramona Road & Access 3 (#16) – The following improvements are necessary to accommodate site access:

- Project to install a stop control on the eastbound approach and construct a shared left-right turn lane (Project driveway).
- Project to construct a northbound shared through-left turn lane.
- Project to construct a southbound shared through-right turn lane.

TABLE 5-5: SIMTRAFFIC QUEUEING SUMMARY
FOR OPENING YEAR CUMULATIVE (2027) CONDITIONS WITH IMPROVEMENTS

ID	Intersection	Movement	# of Lanes	2027 With Project Peak Hour Volume				Available Stacking Distance (Feet)	95th Percentile Queue Length (ft.)[1,3]		Acceptable? [1]	
				AM	PM	Pk Hr	Volume		AM	PM	AM	AM
FREEWAY RAMPS												
7	I-15 NB Ramps / Stoddard Wells Rd.											
		SBL	1	±980	±640	PM	980	1,000	324	309	Yes	Yes
		SB L/T/R	1	±444	±293	PM	444	1,000	358	329	Yes	Yes
9	Quarry Rd. / I-15 SB Ramps											
		WB L/R	1	145	132	AM	145	1,000	55	199	Yes	Yes
PROJECT ACCESS												
12	Dachshund Av. / Access 1											
		NB T/R	1	27	39	PM	39	>200	NOM	NOM	Yes	Yes
		SB L/T	1	29	38	PM	38	>150	NOM	8	Yes	Yes
		WB L/R	1	9	36	PM	36	>50	28	49	Yes	Yes
13	Dachshund Av. / Access 2						0					
		NB T/R	1	46	41	AM	46	>200	NOM	NOM	Yes	Yes
		SB L/T	1	18	48	PM	48	>150	NOM	NOM	Yes	Yes
		WB L/R	1	9	36	PM	36	>50	29	43	Yes	Yes
16	Ramona Rd. / Access 3											
		NB L/T	1	6	5	AM	6	>200	NOM	NOM	Yes	Yes
		SB T/R	1	17	8	AM	17	>150	NOM	NOM	Yes	Yes
		EB L/R	1	5	24	PM	24	>50	23	43	Yes	Yes
17	Ramona Rd. / Access 4						0					
		NB L/T	1	21	10	AM	21	>200	NOM	NOM	Yes	Yes
		SB T/R	1	4	7	PM	7	>150	NOM	NOM	Yes	Yes
		EB L/R	1	6	24	PM	24	>50	22	34	Yes	Yes

Underline = Improvement

[1] Queue length calculated using SimTraffic.

[2] Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided.

[3] NOM = Nominal, less than 5 feet.

[4] Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided.

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Excel\[16091 - Report.xlsx]5-5 - SimTraffic_Queues

Ramona Road & Access 4 (#17) – The following improvements are necessary to accommodate site access:

- Project to install a stop control on the eastbound approach and construct a shared left-right turn lane (Project driveway).
- Project to construct a northbound shared through-left turn lane.
- Project to construct a southbound shared through-right turn lane.

Dachshund Avenue & Gustine Road (#11) – The following improvements are necessary to accommodate site access:

- Project to install a stop control on the westbound approach and construct a shared left-right turn lane.

Dachshund Avenue & Fresno Road (#14) – The following improvements are necessary to accommodate site access:

- Project to install a stop control on the westbound approach and construct a shared left-right turn lane.

Ramona Road & Gustine Road (#15) – The following improvements are necessary to accommodate site access:

- Project to construct a northbound left turn lane.
- Project to construct an eastbound right turn lane.

Ramona Road & Fresno Road (#2) – The following improvements are necessary to accommodate site access:

- Project to install a stop control on the eastbound and westbound approaches and construct a shared eastbound left-right turn lane.

Dachshund Avenue is a north-south oriented roadway located along the site's western boundary. The Project is to construct Dachshund Avenue from the site's northern boundary (Gustine Road) to the site's southern boundary (Fresno Road) at its ultimate half-section width as a secondary roadway (ultimate 88-foot right-of-way), consistent with the Town's standards.

Ramona Road is a north-south oriented roadway located along the site's eastern boundary. The Project is to construct Ramona Road from the site's northern boundary (Gustine Road) to the site's southern boundary (Fresno Road) as a 2-lane local roadway.

Gustine Road is an east-west oriented roadway located along the site's northern boundary. The Project is to construct Gustine Road from the Project's western boundary (Dachshund Avenue) to the site's eastern boundary (Ramona Road) at its ultimate half-section width as a secondary roadway (ultimate 88-foot right-of-way), consistent with the Town's standards. The Project will also provide an additional 12 feet of pavement width to accommodate one westbound lane from the Project's eastern boundary to Dachshund Avenue to facilitate site access.

Fresno Road is an east-west oriented roadway located along the site's southern boundary. The Project is to construct Fresno Road from the Project's western boundary (Dachshund Avenue) to the site's eastern boundary (Ramona Road) as a 2-lane local roadway.

This page intentionally left blank

6 LOCAL AND REGIONAL FUNDING MECHANISMS

Transportation improvements within the Town of Apple Valley are funded through a combination of direct project mitigation, development impact fee programs or fair share contributions, such as the Town of Apple Valley Development Impact Fee (DIF) program. Identification and timing of needed improvements is generally determined through local jurisdictions based upon a variety of factors.

6.1 TOWN OF APPLE VALLEY DEVELOPMENT IMPACT FEE (DIF) PROGRAM

The Town of Apple Valley has implemented a DIF program. This program collects fees from new single-family residential, multi-family residential, commercial, office use, and industrial developments. These fees serve to fund compliant facilities such as law enforcement, storm drainage, sanitary sewer, and general government fees. Fees are also allocated to finance parks and Apple Valley fire. Under the Town's DIF program, the Town may grant developers a credit against specific components of fees when those developers construct certain facilities and landscaped medians identified in the list of improvements funded by the DIF program.

6.2 MEASURE "I" FUNDS

In 2004, the voters of San Bernardino County approved the 30-year extension of Measure "I", a one-half of one percent sales tax on retail transactions, through the year 2040, for transportation projects including, but not limited to, infrastructure improvements, commuter rail, public transit, and other identified improvements. The Measure "I" extension requires that a regional traffic impact fee be created to ensure development is paying its fair share. A regional Nexus study was prepared by San Bernardino County Transportation Authority (SBCTA) and concluded that each jurisdiction should include a regional fee component in their local programs to meet the Measure "I" requirement. The regional component assigns specific facilities and cost sharing formulas to each jurisdiction and was most recently updated in September 2017. Revenues collected through these programs are used in tandem with Measure "I" funds to deliver projects identified in the Nexus Study.

While Measure "I" is a self-executing sales tax administered by SBCTA, it bears discussion here because the funds raised through Measure "I" have funded, and will continue to fund, new transportation facilities in San Bernardino County, including within the Town of Apple Valley.

6.3 FAIR SHARE CONTRIBUTION

Project improvements may include a combination of fee payments to established programs, construction of specific improvements, payment of a fair share contribution toward future improvements or a combination of these approaches. Improvements constructed by development may be eligible for a fee credit or reimbursement through the program where appropriate (to be determined at the Town's discretion).

When off-site improvements are identified with a minor share of responsibility assigned to proposed development, the approving jurisdiction may elect to collect a fair share contribution or require the development to construct improvements. Detailed fair share calculations, for each Project site and peak hour, has been provided in Table 6-1 for the applicable deficient study area intersections.

TABLE 6-1: PROJECT FAIR SHARE CALCULATIONS

#	Intersection	Existing (2024) Traffic	2027 w/ Project Traffic	Project Only Traffic	Total New Traffic[1]	Project Fair Share (%)[2]
4	Navajo Rd. / Johnson Rd.					
	• AM Peak Hour	130	2,891	50	2,761	1.8%
	• PM Peak Hour	227	3,046	69	2,819	**2.4%**
5	Dale Evans Pkwy. / Johnson Rd.					
	• AM Peak Hour	506	3,185	72	2,679	2.7%
	• PM Peak Hour	885	4,096	98	3,211	**3.1%**
6	Stoddard Wells Rd. / Johnson Rd.					
	• AM Peak Hour	284	2,023	62	1,739	3.6%
	• PM Peak Hour	450	2,439	84	1,989	**4.2%**
7	I-15 NB Ramps / Stoddard Wells Rd.					
	• AM Peak Hour	380	4,924	62	4,544	1.4%
	• PM Peak Hour	543	5,519	84	4,976	**1.7%**
8	Quarry Rd. / Stoddard Wells Rd.					
	• AM Peak Hour	222	2,195	15	1,973	0.8%
	• PM Peak Hour	309	3,352	60	3,043	**2.0%**
9	Quarry Rd. / I-15 SB Ramps					
	• AM Peak Hour	164	1,600	15	1,436	1.0%
	• PM Peak Hour	257	2,897	60	2,640	**2.3%**

[1] Total New Traffic = (2027 With Project - Existing Traffic)

[2] Project Fair Share % = (Project Only Traffic / Total New Traffic)

7 REFERENCES

1. **County of San Bernardino.** *County of San Bernardino Transportation Impact Study Guidelines.* County of San Bernardino : s.n., July 2019.
2. **San Bernardino Associated Governments.** *Congestion Management Program for County of San Bernardino.* County of San Bernardino : s.n., Updated June 2016.
3. **Transportation Research Board.** *Highway Capacity Manual (HCM).* 6th Edition. s.l. : National Academy of Sciences, 2022.
4. **Caltrans.** California Manual on Uniform Traffic Control Devices (MUTCD). [book auth.] California Department of Transportation. *California Manual on Uniform Traffic Control Devices (CAMUTCD).* 2017.

This page intentionally left blank

APPENDIX 1.1: TRAFFIC STUDY SCOPING AGREEMENT

This Page Intentionally Left Blank

MEMORANDUM

URBAN CROSSROADS

DATE: August 19, 2024
TO: Richard Hirsch, Town of Apple Valley
FROM: John Kain, AICP and Marlie Whiteman, P.E., Urban Crossroads
JOB NO: 16091-01 TA Scope.docx

LECANGS DAKOTA APPLE VALLEY INDUSTRIAL SCOPING AGREEMENT

The firm of Urban Crossroads, Inc. is pleased to submit this scoping letter regarding the traffic analysis for Lecangs Dakota Apple Valley Industrial development (**Project**), which is located within the North Apple Valley Industrial Specific Plan (**NAVISP**) in the Town of Apple Valley. This letter describes the proposed Project trip generation, trip distribution, and analysis methodology, which have been used to establish the draft proposed Project study area and analysis locations. The following scoping agreement has been prepared in accordance with the County's Transportation Impact Study Guidelines, dated July 9, 2019 (since the Town uses the County guidelines).

PROJECT DESCRIPTION

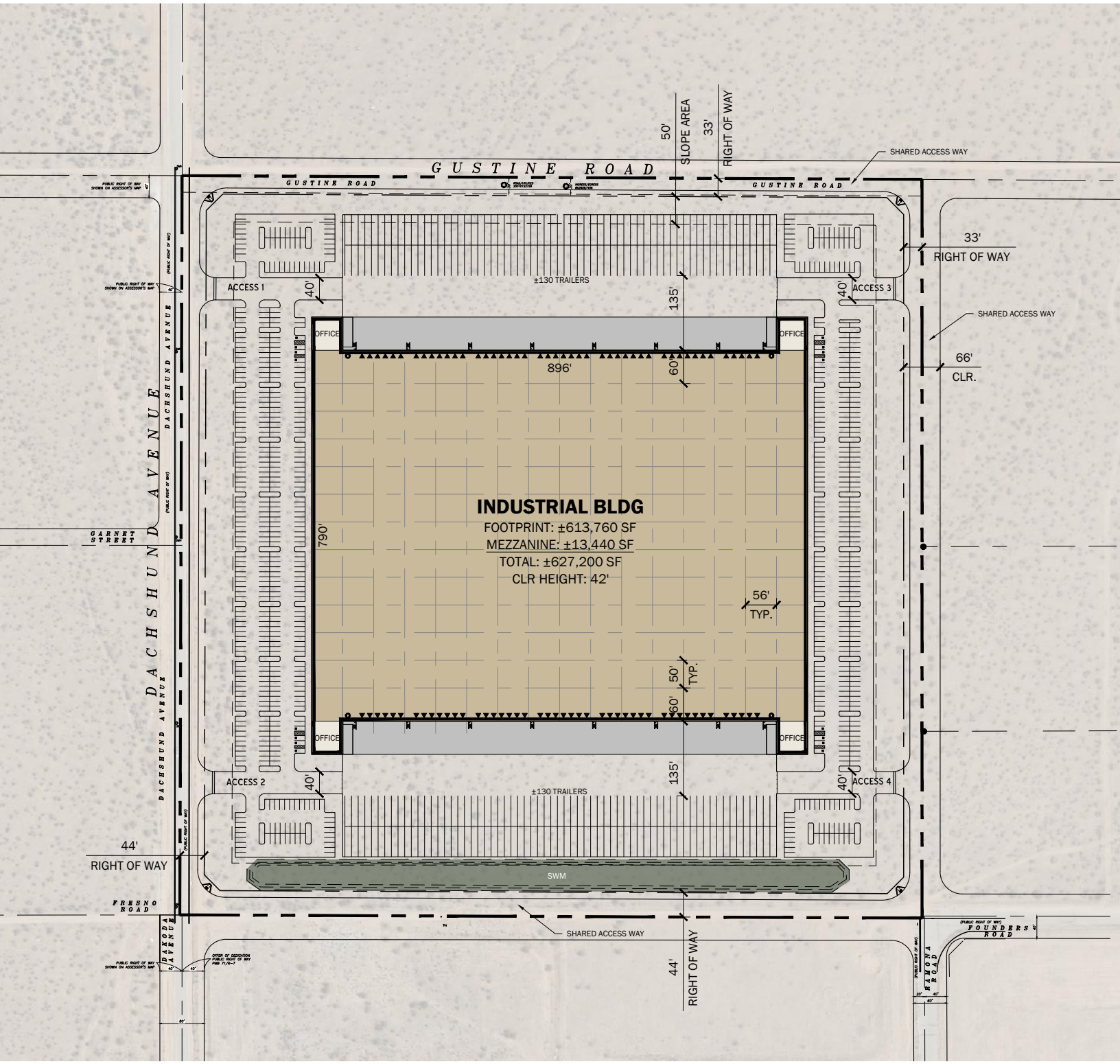
The Project consists of the development of a 627,200 square foot industrial warehouse and distribution building. The site is located between Dachshund Avenue (which becomes Dakota Road south of Fresno Road) and Ramona Road, south of Gustine Street and north of Fresno Road. In order to develop the traffic characteristics of the high-cube warehouse land use for the Proposed Project, trip-generation statistics published in the TUMF High-Cube Warehouse Trip Generation Study (WSP, January 29, 2019) are used. The purpose of WSP 2019 study was to gather enough data to develop reliable trip generation rates for centers for use in traffic impact studies in the Inland Empire.

A preliminary site plan for the proposed Project is shown on Exhibit 1. Access to the site will be accommodated via two driveways along Dachshund Avenue and two driveways on Ramona Road. All driveways are assumed to allow for full access (no turn restrictions). The Project is anticipated to have an Opening Year of 2026.

TRIP GENERATION

Trip generation represents the amount of traffic which is both attracted to and produced by a development. Determining traffic generation for a specific project is therefore based upon forecasting the amount of traffic that is expected to be both attracted to and produced by the specific land uses being proposed for a given development

EXHIBIT 1: PRELIMINARY SITE PLAN



Refinements to the raw trip generation estimates for the Project have been made to provide a more detailed breakdown of trips by vehicle type (passenger cars or trucks). Passenger car equivalents (PCEs) allow the typical "real-world" mix of vehicle types to be represented as a single, standardized unit, such as the passenger car, to be used for the purposes of capacity and level of service analyses.

Table 1 shows the trip generation rates and resulting Project trip generation summary, which shows the Project is anticipated to generate a net total of 1,335 two-way vehicle trip-ends per day with 77 AM peak hour trips and 104 PM peak hour trips (actual vehicles).

Passenger car equivalent (**PCE**) factors were applied to the trip generation rates for heavy trucks (large 2-axles, 3-axles, 4+-axles). PCEs allow the typical "real-world" mix of vehicle types to be represented as a single, standardized unit, such as the passenger car, to be used for the purposes of capacity and level of service analyses. The PCE factors are consistent with the recommended PCE factors in the County's Guidelines.

Table 2 shows the resulting Project trip generation summary in PCE, which shows the Project is anticipated to generate a net total of 2,138 two-way PCE vehicle trip-ends per day with 123 PCE AM peak hour trips and 167 PCE PM peak hour trips. Consistent with the County requirements, the peak hour intersection operations analysis will be conducted using the PCE volumes shown in Table 2.

TRIP DISTRIBUTION

The Project trip distribution represents the directional orientation of traffic to and from the Project site. Trip distribution is the process of identifying the probable destinations, directions or traffic routes that will be utilized by Project traffic. The potential interaction between the planned land uses and surrounding regional access routes are considered, to identify the route where the Project traffic would distribute. The Project trip distribution represents the directional orientation of traffic to and from the Project site. The proposed Project trip distributions are shown in Exhibit 2 for passenger cars and Exhibit 3 for trucks. The Project truck trip distribution patterns adhere to the Town's approved truck routes.

ANALYSIS SCENARIOS

Consistent with the County's Guidelines, intersection analysis will be provided for the following analysis scenarios during the AM and PM peak hours (7-9 AM and 4-6 PM):

1. Existing (2024) Conditions
2. Opening Year Cumulative (2026) Without Project Conditions
3. Opening Year Cumulative (2026) With Project Conditions

All study area intersections will be evaluated using the Highway Capacity Manual (HCM) 7th Edition analysis methodology. The study area that is proposed to be evaluated is shown on Exhibit 4.

Exhibit 5 shows the Town of Apple Valley General Plan Street System and Exhibit 6 illustrates the Town of Apple Valley General Plan roadway cross-sections.

TABLE 1: PROJECT TRIP GENERATION SUMMARY
ACTUAL VEHICLES

Proposed Project Trip Generation Rates[1]

Land Use	ITE LU Code	Quantity[2]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
High-Cube Warehouse[3]	-	627.200 TSF	0.094	0.028	0.122	0.046	0.119	0.165	2.129
Passenger Cars			0.066	0.020	0.086	0.033	0.082	0.115	1.489
2 to 4-Axle+ Trucks			0.028	0.008	0.036	0.014	0.036	0.050	0.640

Proposed Project Trip Generation Results

Land Use	ITE LU Code	Quantity[2]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
High-Cube Warehouse	-	627.200 TSF							
- Passenger Cars			41	13	54	21	52	73	934
- Truck Trips (Actual)			18	5	23	9	22	31	401
PROJECT TOTAL TRIPS (ACTUAL VEHICLES)[4]			59	18	77	30	74	104	1,335

[1] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, 11th Edition (2021).

[2] TSF = Thousand Square Feet; DU = Dwelling Units

[3] Source: *TUMF High-Cube Warehouse Trip Generation Study*. Prepared by WSP, January 2019.
Passenger and Truck AM/PM peak hour (in/out) splits are estimated from based on ITE peak-to-daily relationship
Truck Daily Rate Source: *Notice of Preparation of a Draft Environmental Impact Report for the Proposed Potrero Logistics Center*.
Prepared by South Coast Air Quality Management District (SCAQMD), June 2020.

[4] Total Net Trips (Actual Vehicles) = Passenger Cars + Net Truck Trips (Actual Trucks).

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Excel\[16091 - Scope.xlsx]16091 TG - Actual_WSP

TABLE 2: PROJECT TRIP GENERATION SUMMARY
PASSENGER CAR EQUIVALENT (PCE)

Project Trip Generation Rates[1]

Land Use	ITE LU Code	Quantity[2]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
High-Cube Warehouse[3]	-	627.200 TSF	0.150	0.045	0.195	0.075	0.190	0.265	3.409
		Passenger Cars	0.066	0.020	0.086	0.033	0.082	0.115	1.489
		2 to 4-Axle+ Trucks (PCE = 3.0)	0.084	0.025	0.109	0.042	0.108	0.150	1.920

Project Trip Generation Results

Land Use	ITE LU Code	Quantity[2]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
High-Cube Warehouse	-	627.200 TSF							
- Passenger Cars			41	13	54	21	52	73	934
- Truck Trips (PCE = 3.0)			53	16	69	26	68	94	1,204
PROJECT TOTAL EXTERNAL TRIPS (PCE)[4]			94	29	123	47	120	167	2,138

[1] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, 11th Edition (2021).

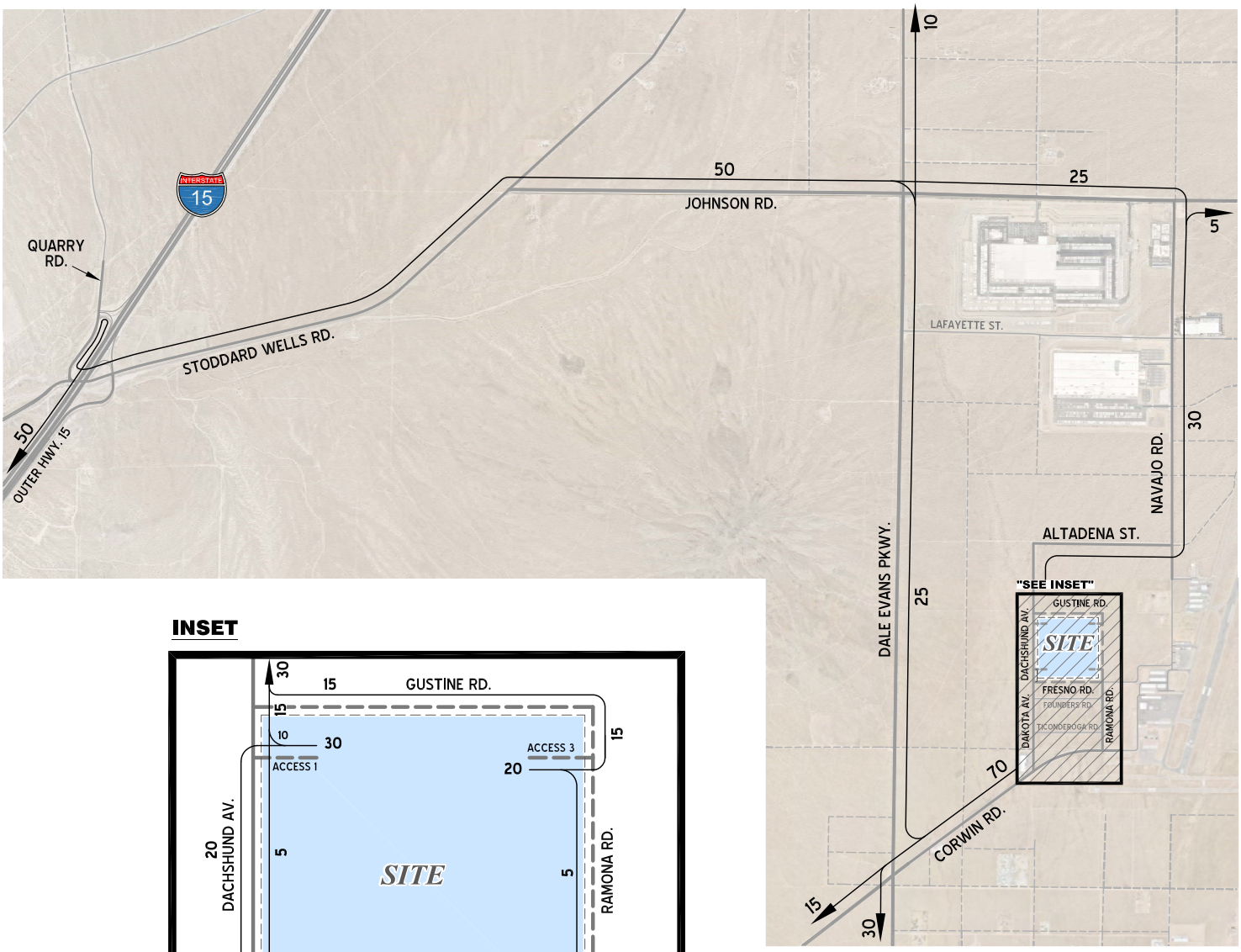
[2] TSF = Thousand Square Feet; DU = Dwelling Units

[3] Source: *TUMF High-Cube Warehouse Trip Generation Study* . Prepared by WSP, January 2019.
Passenger and Truck AM/PM peak hour (in/out) splits are estimated from based on ITE peak-to-daily relationship
Truck Daily Rate Source: *Notice of Preparation of a Draft Environmental Impact Report for the Proposed Potrero Logistics Center* .
Prepared by South Coast Air Quality Management District (SCAQMD), June 2020.

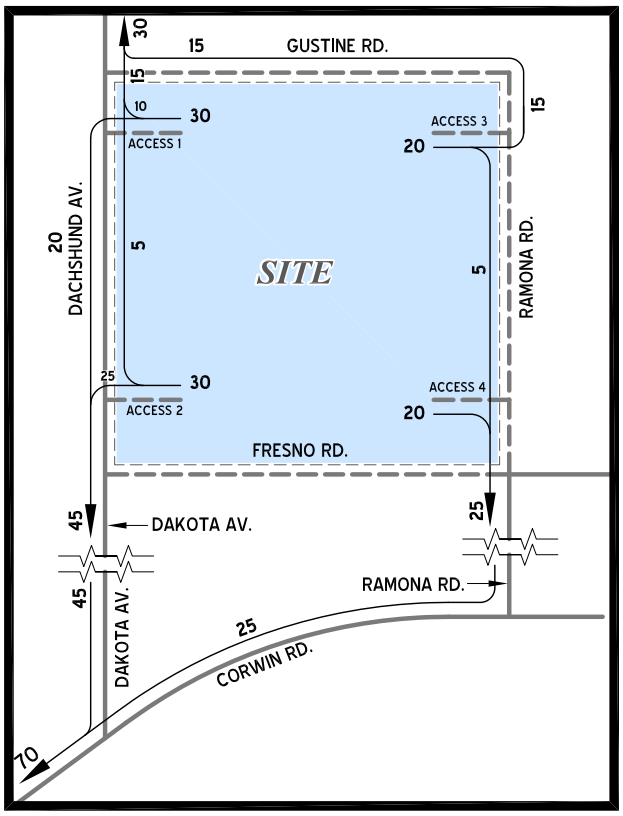
[4] Total Net Trips (PCE) = Passenger Cars + Net Truck Trips (Passenger Car Equivalent).

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Excel\[16091 - Scope.xlsx]16091 TG - PCE

EXHIBIT 2: PROJECT (PASSENGER CAR) TRIP DISTRIBUTION



INSET



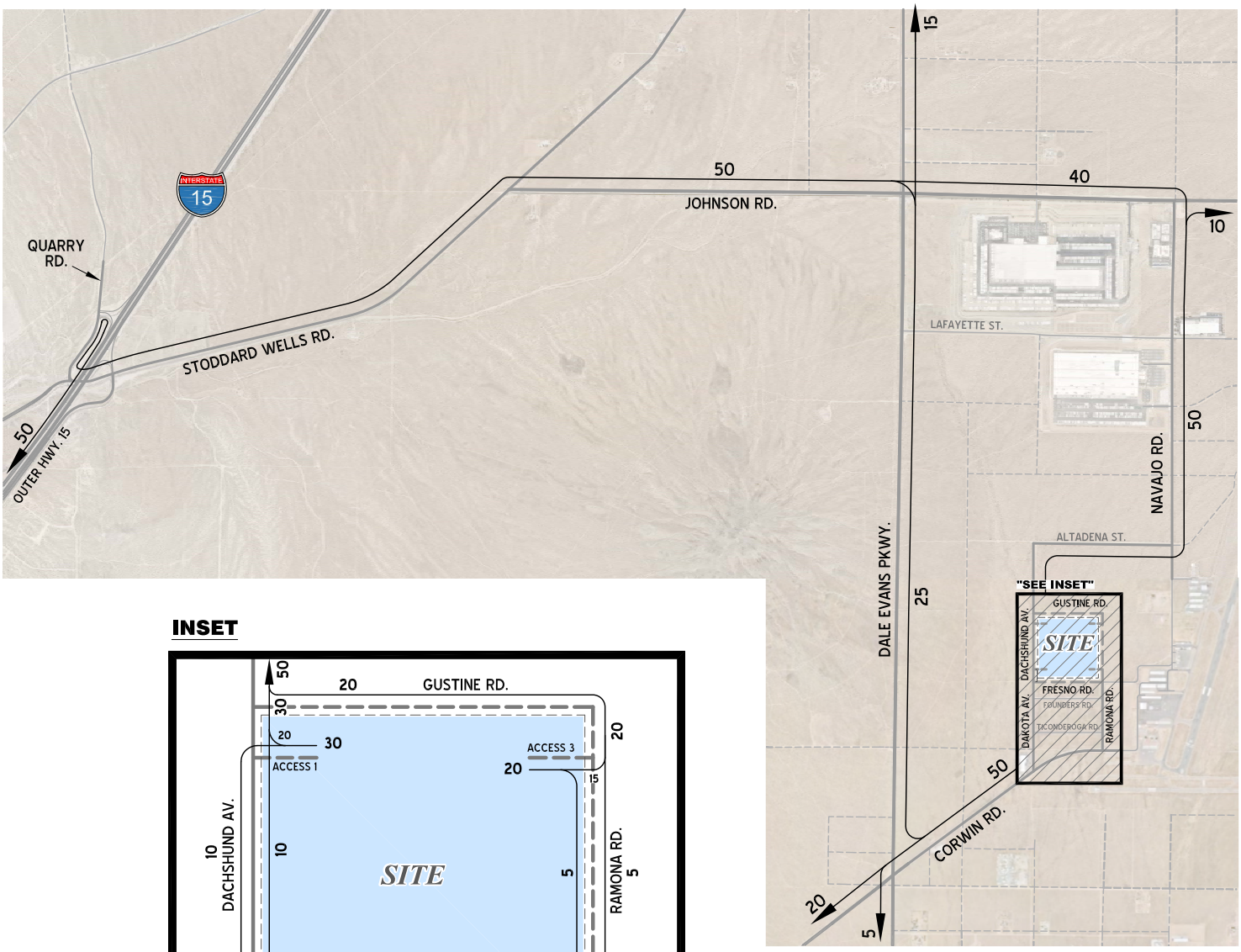
LEGEND:

10 = PERCENT TO/FROM PROJECT

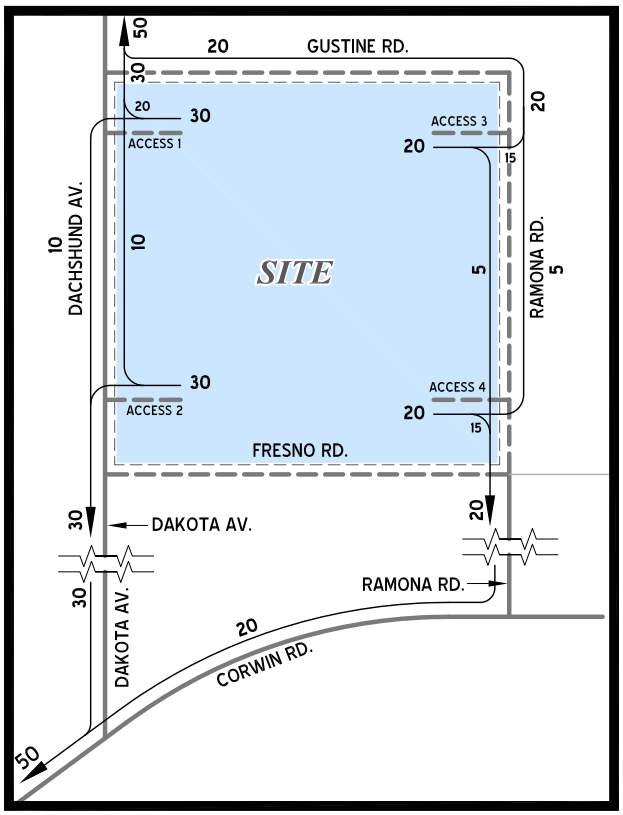
= FUTURE ROADWAY

N

EXHIBIT 3: PROJECT (TRUCK) TRIP DISTRIBUTION



INSET



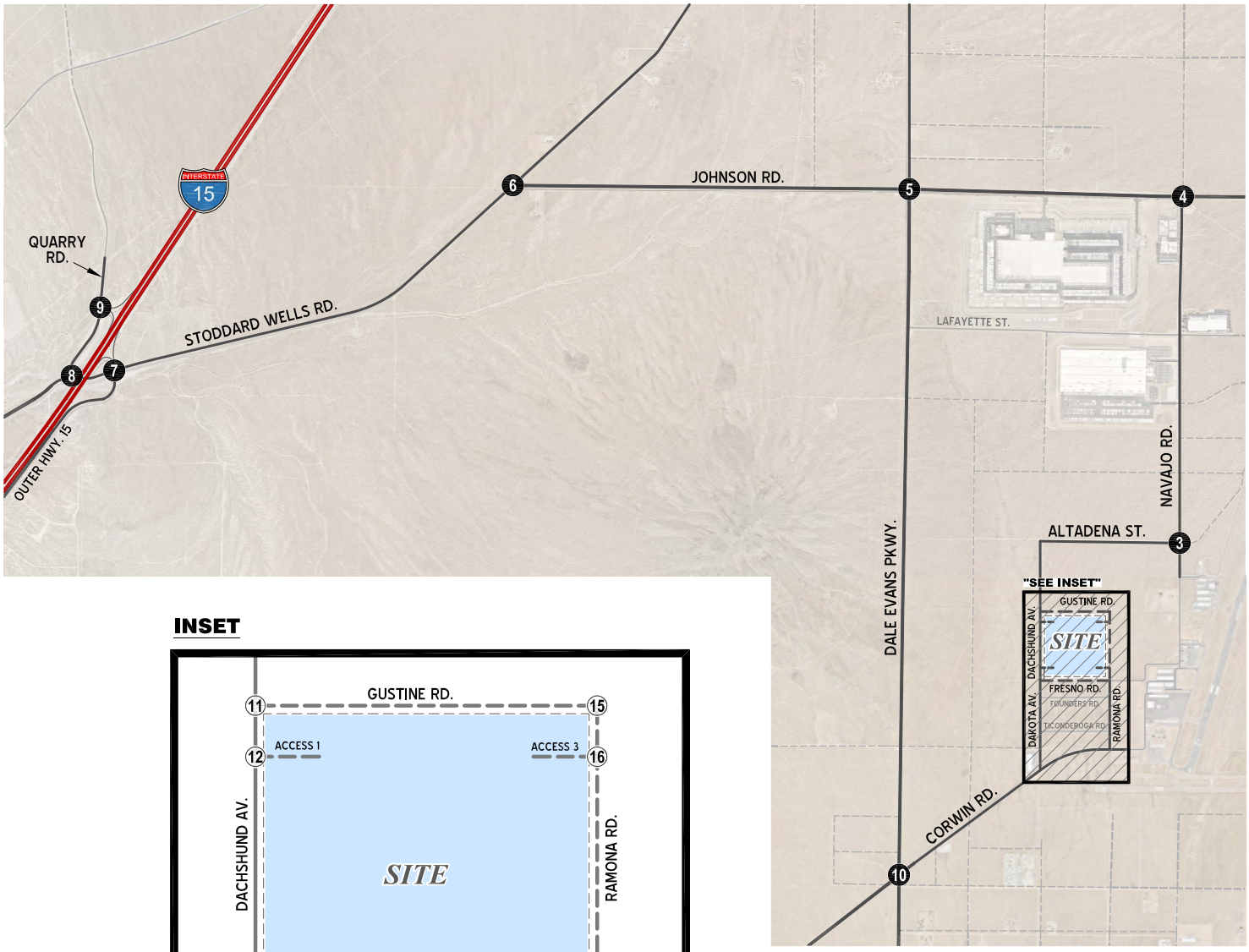
LEGEND:

10 = PERCENT TO/FROM PROJECT

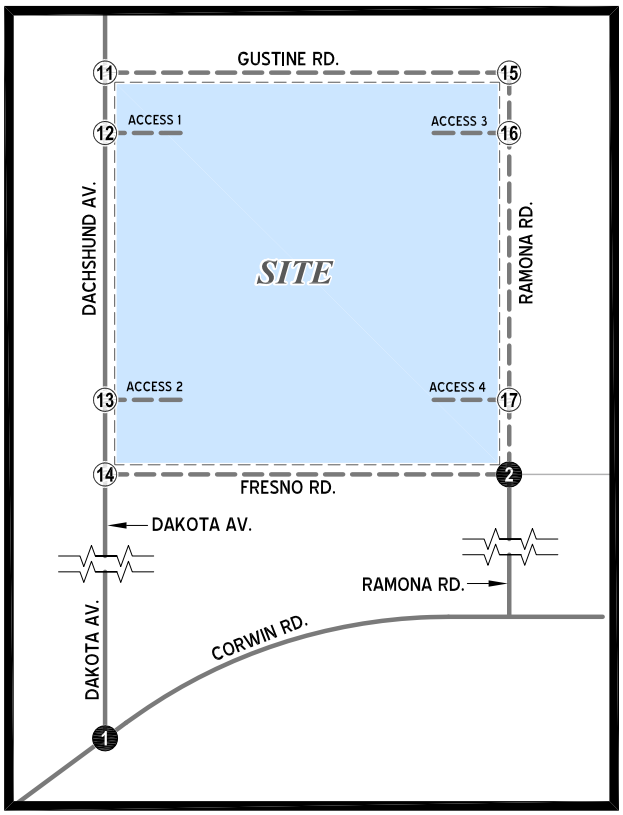
= FUTURE ROADWAY

N

EXHIBIT 4: TRAFFIC ANALYSIS STUDY AREA



INSET



LEGEND:

- 10 = EXISTING ANALYSIS LOCATION
- 7 = FUTURE ANALYSIS LOCATION
- = FUTURE ROADWAY

N

EXHIBIT 5: TOWN OF APPLE VALLEY GENERAL PLAN STREET SYSTEM

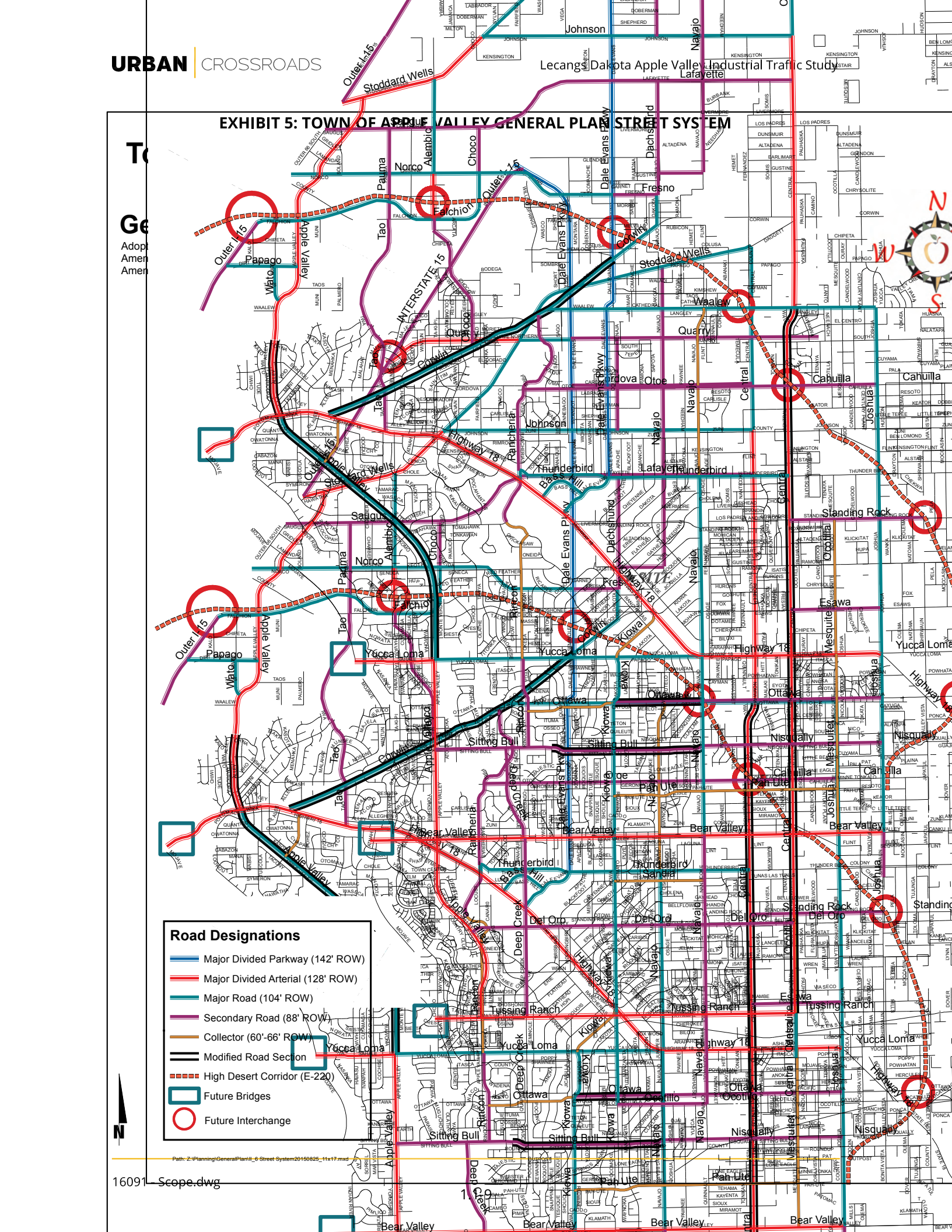
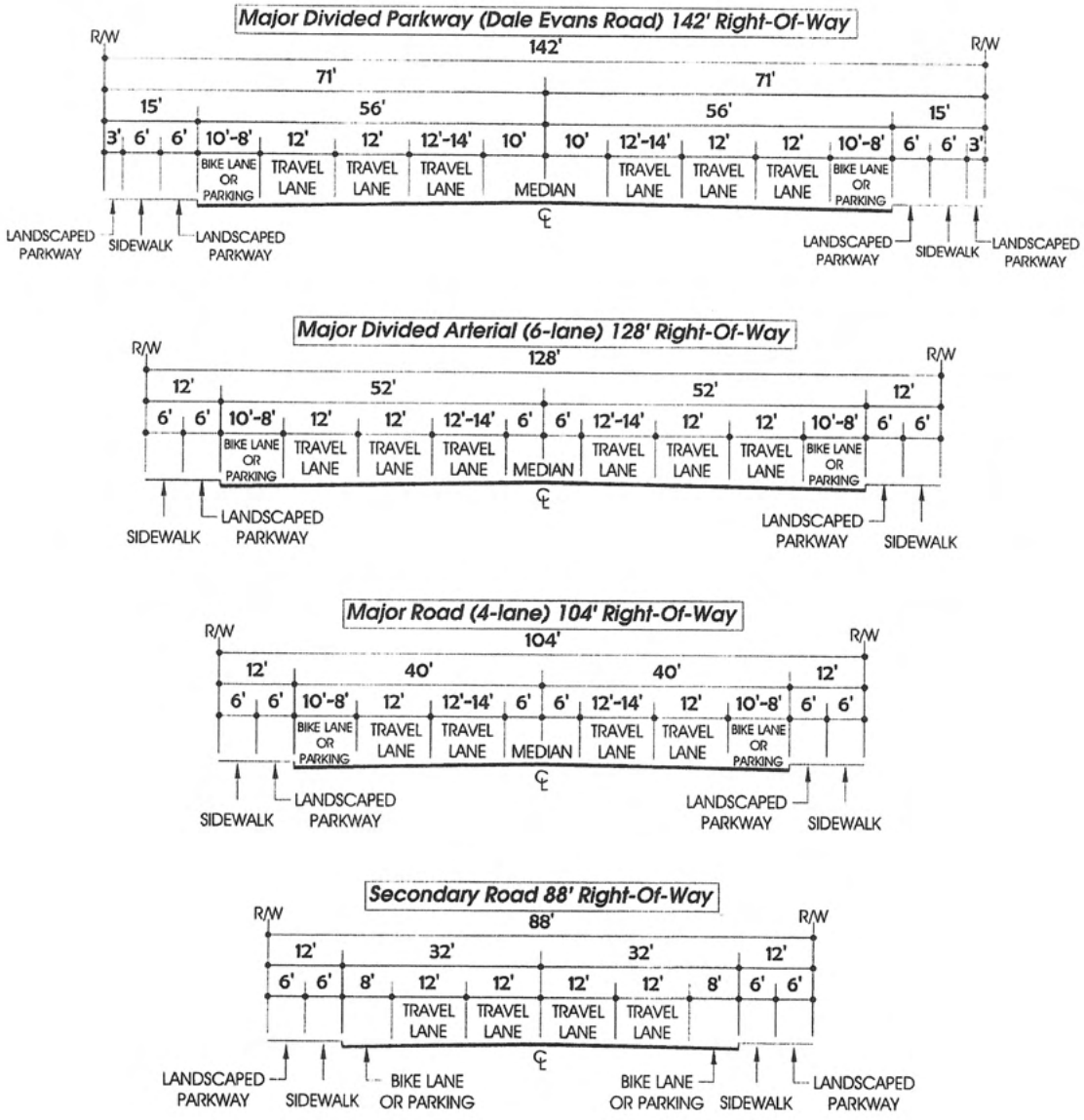


EXHIBIT 6: TOWN OF APPLE VALLEY GENERAL PLAN ROADWAY CROSS-SECTIONS



Source: Urban Crossroads 11.24.2008

TRAFFIC COUNTS

Majority of the traffic counts within the study area were collected in January 2024 and April 2024. New traffic counts (classified by vehicle type) will be conducted for the remaining intersections while local schools are in session and operating on a typical bell schedule. No adjustments are proposed to the traffic counts for the baseline traffic condition with the exception of any adjustments to account for volume balancing between closely spaced intersections.

AMBIENT GROWTH

Future year traffic forecasts will include background (ambient) growth at 2.0% per year, compounded annually. The total ambient growth is 4.04% for 2026 traffic conditions. The ambient growth factor is intended to approximate regional traffic growth. This ambient growth rate will be added to existing traffic volumes to account for area-wide growth not reflected by cumulative development projects.

CUMULATIVE PROJECTS

Exhibit 5 shows the locations of the cumulative projects listed on Table 3. It is requested that the Town review the list and also provide any additional current cumulative projects within the study area for inclusion in the Traffic Analysis.

IDENTIFYING DEFICIENCIES

The identification of project deficiencies is designed to identify potential level of service (**LOS**) problems and to address them before they occur. This will provide a framework for establishing transportation-related project conditions by the Town.

A project deficiency occurs when a signalized or unsignalized intersection is forecast to degrade intersection operations below the Town's acceptable LOS standard, which is identified in the Town's Circulation Element, or if a project adds five seconds of delay or more to an intersection that operates below acceptable standards without the addition of project traffic. Additionally, all unsignalized intersections shall be evaluated for a peak hour traffic signal warrant based on the California Manual on Uniform Transportation Control Devices (**MUTCD**). Any unsignalized intersection that meets the peak hour signal warrant is considered deficient.

IDENTIFYING IMPROVEMENTS AND COST ESTIMATES

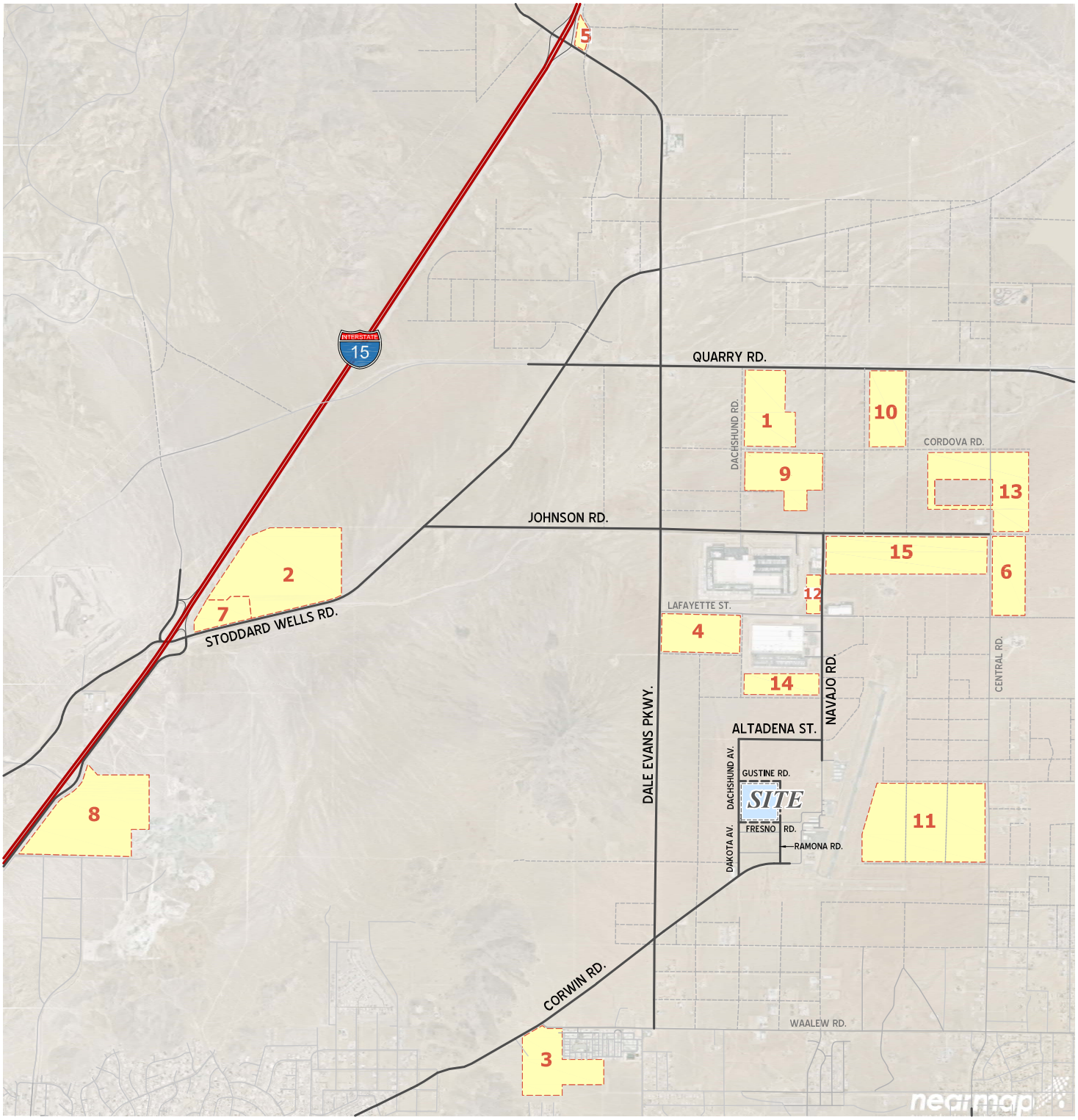
Physical improvements shall be identified at all intersections that are forecast to operate deficiently. Improvements under future year conditions must bring intersection operations to acceptable standards, while improvements under opening year conditions must bring intersection operations to better than pre-project conditions.

TABLE 3: LIST OF CUMULATIVE PROJECTS

TAZ	Project	Land Use	Quantity	Units[1]
1	Cordova Road Logistics (SEC Dachshund Av. & Quarry Rd.)	High-Cube Fulfillment Center	1,144.33	TSF
		High-Cube Cold Storage	201.94	TSF
2	Apple Valley 143	Industrial/Warehouse	2,518.50	TSF
3	TTM 20306 (south of Waalew & east of Corwin)	Single Family Residential	160	DU
4	Lafayette Street Logistics (Redwood West)	High-Cube Warehouse	1,026.41	TSF
		High-Cube Cold Storage	181.13	TSF
5	Apple Valley Gateway Center (north of Dale Evans & east of I-15)	Pad A - Hotel	84	RM
		Pad B - Fast-Food Restaurant w/ Drive-Thru	5.769	TSF
		Pad C - Gas Station with C-Store (5 TSF)	16	VFP
		Pad D - Gas Station with C-Store (3.35 TSF)	12	VFP
		Pad E - Fast-Food Restaurant w/ Drive-Thru	4.00	TSF
		Pad F - Fast-Food Restaurant w/ Drive-Thru	4.20	TSF
		Pad G - Restaurant	4.00	TSF
		Pad H - Shops	10.261	TSF
		Pad I - Fast-Food Restaurant w/ Drive-Thru	2.80	TSF
6	1M Warehouse (east of Central Road, between Johnson Road & Lafayette Street)	High Cube Fulfillment Center Warehouse	1,080.125	TSF
7	Apple Valley I-15 Travel Center (Love's Travel Stop - north of Stoddard Wells & east of I-15)	RV Park	80	Spaces
		Gas Station with C-Store (9.66 TSF)	26	VFP
		Fast-Food Restaurant w/ Drive-Thru	3.043	TSF
		Truck Maintenance/Tire Building	13.786	TSF
8	Inland Empire North Logistics Ctr. (north of Falchion Road & east of I-5)	Industrial/Warehouse	2,604.446	TSF
9	Cordova Quarry	High-Cube Cold Storage	1,559.952	TSF
10	Quarry at Pawnee	High-Cube Cold Storage	1,462.342	TSF
11	Lake Creek Logistics Center (Apple Valley Logistics Center)	General Light Industrial (10%)	348.074	TSF
		High-Cube Cold Storage (10%)	348.074	TSF
		High-Cube Fulfillment (80%)	2,784.588	TSF
12	Green Trucking Solutions	High-Cube Cold Storage	385.004	TSF
13	Apple Valley 3PL Center	Industrial/Warehouse	2,134.000	TSF
14	Watson High Desert Logistics West	High-Cube Fulfillment Center (Non-Sort)	896.500	TSF
15	Watson High Desert Logistics East	High-Cube Fulfillment Center (Non-Sort)	2,832.600	TSF

[1] DU = Dwelling Units; TSF = Thousand Square Feet; RM = Room; VFP = Vehicle Fueling Positions

EXHIBIT 7: CUMULATIVE DEVELOPMENT LOCATION MAP



LEGEND:

(#) = CUMULATIVE DEVELOPMENT ID

N

Opening year improvement costs are the sole responsibility of the project, and future year improvement costs are based on a fair share contribution calculation. The project's fair share contribution for future year improvements can be estimated using the following equation:

$$Fair\ Share\ Percentage = \frac{Project\ Trips}{Future\ Year\ With\ Project - Existing}$$

SITE ACCESS AND CHARACTERISTICS

LOS shall be estimated at all project driveways to ensure they are sized accordingly. The site should be reviewed to ensure that it does not have any design characteristics that would promote inefficient circulation. For example, proposed driveways should provide sufficient length so that vehicles entering the site will not cause subsequent vehicles entering the site to spill back into the Town transportation system. Additionally, driveways should have adequate space between existing/proposed driveways and other existing intersections to limit adverse effects at adjacent facilities and discourage weaving. Finally, the project's parking supply shall satisfy requirements set forth by the Town.

SPECIAL ISSUES

The following special issues will also be addressed:

- ***Queuing Analysis:*** conduct 95th percentile queuing assessment to ensure turn pockets can accommodate the anticipated peak hour queues at the Project driveways and at site adjacent intersections.
- ***Traffic Signal Warrant Analysis:*** Conduct traffic signal warrant analysis for all existing and future unsignalized study area intersections, which also includes all Project driveways.

SIGNAL TIMING

It is requested that the Town provide signal timing for any signalized Town-controlled intersections.

If you have any questions or comments, we can be reached at jkain@urbanxroads.com for John or mwhiteman@urbanxroads.com for Marlie

APPENDIX 1.2: SITE ADJACENT QUEUES

This Page Intentionally Left Blank

Intersection: 12: Dachshund Av. & Access 1

Movement	WB
Directions Served	LR
Maximum Queue (ft)	25
Average Queue (ft)	7
95th Queue (ft)	28
Link Distance (ft)	324
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 13: Dachshund Av. & Access 2

Movement	WB
Directions Served	LR
Maximum Queue (ft)	24
Average Queue (ft)	8
95th Queue (ft)	29
Link Distance (ft)	333
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 16: Ramona Rd. & Access 3

Movement	EB
Directions Served	LR
Maximum Queue (ft)	18
Average Queue (ft)	5
95th Queue (ft)	23
Link Distance (ft)	313
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 17: Ramona Rd. & Access 4

Movement	EB
Directions Served	LR
Maximum Queue (ft)	23
Average Queue (ft)	5
95th Queue (ft)	22
Link Distance (ft)	339
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Zone Summary

Zone wide Queuing Penalty: 0

Intersection: 12: Dachshund Av. & Access 1

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	40	5
Average Queue (ft)	22	1
95th Queue (ft)	49	8
Link Distance (ft)	324	169
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 13: Dachshund Av. & Access 2

Movement	WB
Directions Served	LR
Maximum Queue (ft)	30
Average Queue (ft)	20
95th Queue (ft)	43
Link Distance (ft)	333
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 16: Ramona Rd. & Access 3

Movement	EB
Directions Served	LR
Maximum Queue (ft)	36
Average Queue (ft)	16
95th Queue (ft)	43
Link Distance (ft)	313
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 17: Ramona Rd. & Access 4

Movement	EB
Directions Served	LR
Maximum Queue (ft)	31
Average Queue (ft)	11
95th Queue (ft)	34
Link Distance (ft)	339
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Zone Summary

Zone wide Queuing Penalty: 0

APPENDIX 3.1: TRAFFIC COUNTS

This Page Intentionally Left Blank

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Dakota Avenue
E/W: Corwin Road
Weather: Clear

File Name : 01_APV_Dak_Cor AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

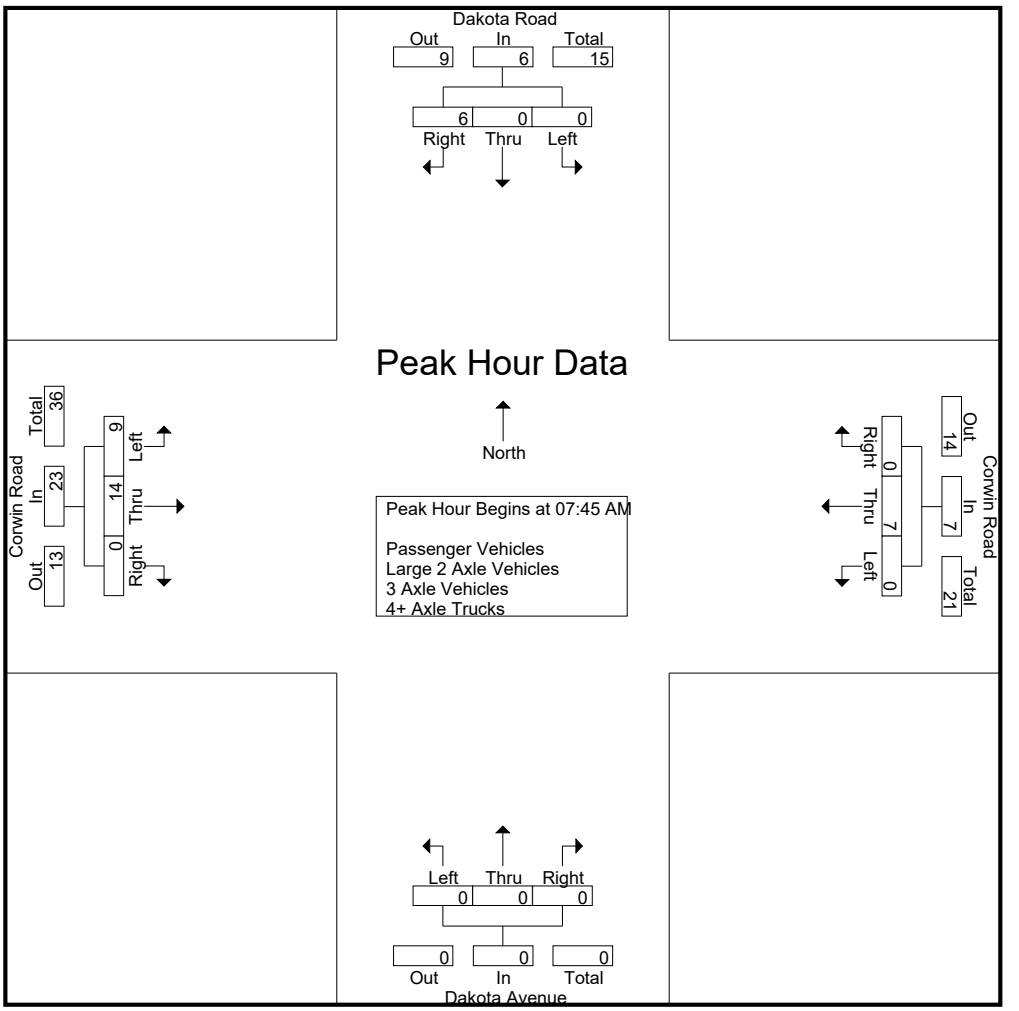
	Dakota Road Southbound				Corwin Road Westbound				Dakota Avenue Northbound				Corwin Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	1	1	0	1	0	1	0	0	0	0	3	5	0	8	10
07:15 AM	0	0	2	2	0	2	0	2	0	0	0	0	3	2	0	5	9
07:30 AM	0	0	1	1	0	3	0	3	0	0	0	0	0	1	0	1	5
07:45 AM	0	0	0	0	0	1	0	1	0	0	0	0	2	6	0	8	9
Total	0	0	4	4	0	7	0	7	0	0	0	0	8	14	0	22	33
08:00 AM	0	0	1	1	0	0	0	0	0	0	0	0	3	3	0	6	7
08:15 AM	0	0	2	2	0	1	0	1	0	0	0	0	1	2	0	3	6
08:30 AM	0	0	3	3	0	5	0	5	0	0	0	0	3	3	0	6	14
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	3	3
Total	0	0	6	6	0	6	0	6	0	0	0	0	8	10	0	18	30
Grand Total	0	0	10	10	0	13	0	13	0	0	0	0	16	24	0	40	63
Apprch %	0	0	100		0	100	0		0	0	0		40	60	0		
Total %	0	0	15.9	15.9	0	20.6	0	20.6	0	0	0	0	25.4	38.1	0	63.5	
Passenger Vehicles	0	0	10	10	0	13	0	13	0	0	0	0	16	24	0	40	63
% Passenger Vehicles	0	0	100	100	0	100	0	100	0	0	0	0	100	100	0	100	100
Large 2 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Large 2 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% 3 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4+ Axle Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% 4+ Axle Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Dakota Road Southbound				Corwin Road Westbound				Dakota Avenue Northbound				Corwin 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 07:45 AM																	
07:45 AM	0	0	0	0	0	1	0	1	0	0	0	0	2	**6**	0	**8**	9
08:00 AM	0	0	1	1	0	0	0	0	0	0	0	0	**3**	3	0	6	7
08:15 AM	0	0	2	2	0	1	0	1	0	0	0	0	1	2	0	3	6
08:30 AM	0	0	**3**	**3**	0	**5**	0	**5**	0	0	0	0	3	3	0	6	**14**
Total Volume	0	0	6	6	0	7	0	7	0	0	0	0	9	14	0	23	36
% App. Total	0	0	100		0	100	0		0	0	0		39.1	60.9	0		
PHF	.000	.000	.500	.500	.000	.350	.000	.350	.000	.000	.000	.000	.750	.583	.000	.719	.643

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Dakota Avenue
E/W: Corwin Road
Weather: Clear

File Name : 01_APV_Dak_Cor AM
Site Code : 05124741
Start Date : 8/27/2024
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				07:00 AM				07:00 AM				07:45 AM			
+0 mins.	0	0	0	0	0	1	0	1	0	0	0	0	2	**6**	0	**8**
+15 mins.	0	0	1	1	0	2	0	2	0	0	0	0	**3**	3	0	6
+30 mins.	0	0	2	2	0	**3**	0	**3**	0	0	0	0	1	2	0	3
+45 mins.	0	0	**3**	**3**	0	1	0	1	0	0	0	0	3	3	0	6
Total Volume	0	0	6	6	0	7	0	7	0	0	0	0	9	14	0	23
% App. Total	0	0	100		0	100	0		0	0	0		39.1	60.9	0	
PHF	.000	.000	.500	.500	.000	.583	.000	.583	.000	.000	.000	.000	.750	.583	.000	.719

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Dakota Avenue
E/W: Corwin Road
Weather: Clear

File Name : 01_APV_Dak_Cor AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- Passenger Vehicles

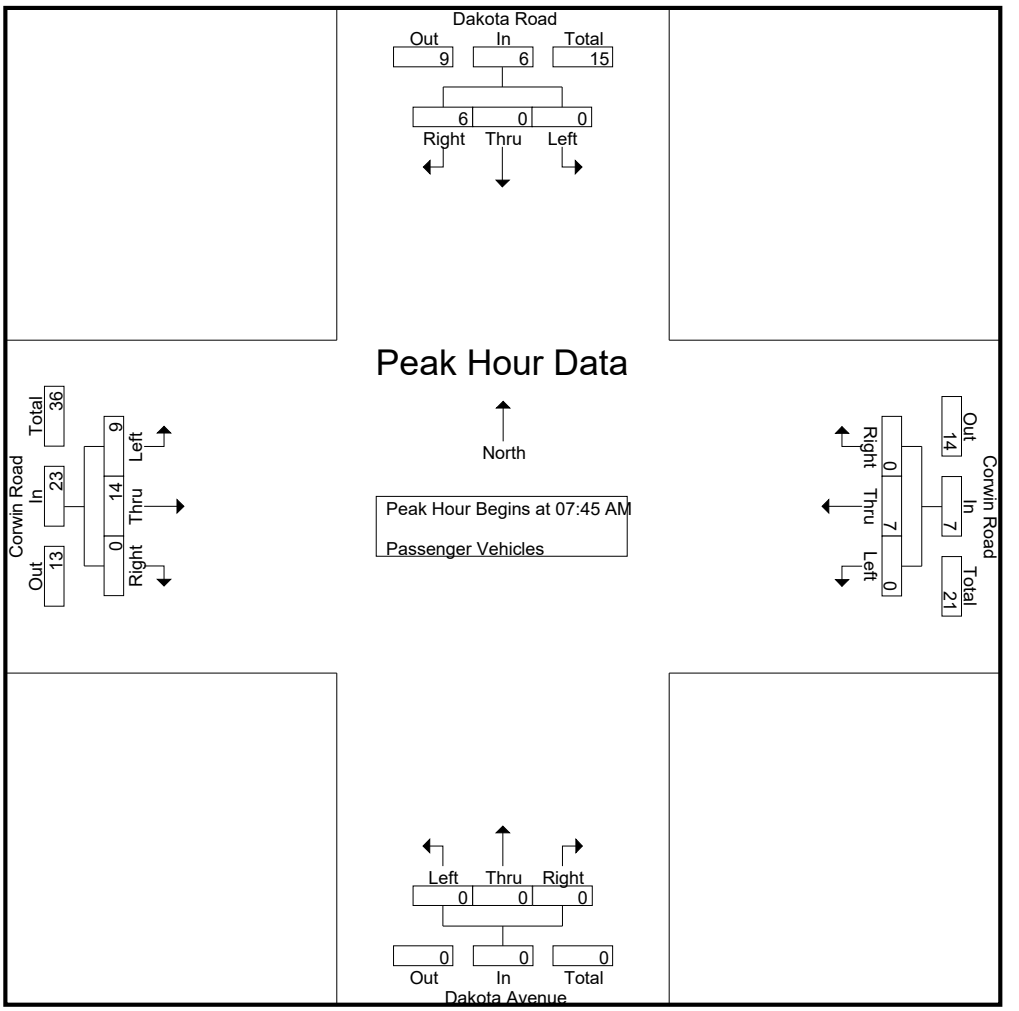
	Dakota Road Southbound				Corwin Road Westbound				Dakota Avenue Northbound				Corwin Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	1	1	0	1	0	1	0	0	0	0	3	5	0	8	10
07:15 AM	0	0	2	2	0	2	0	2	0	0	0	0	3	2	0	5	9
07:30 AM	0	0	1	1	0	3	0	3	0	0	0	0	0	1	0	1	5
07:45 AM	0	0	0	0	0	1	0	1	0	0	0	0	2	6	0	8	9
Total	0	0	4	4	0	7	0	7	0	0	0	0	8	14	0	22	33
08:00 AM	0	0	1	1	0	0	0	0	0	0	0	0	3	3	0	6	7
08:15 AM	0	0	2	2	0	1	0	1	0	0	0	0	1	2	0	3	6
08:30 AM	0	0	3	3	0	5	0	5	0	0	0	0	3	3	0	6	14
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	3	3
Total	0	0	6	6	0	6	0	6	0	0	0	0	8	10	0	18	30
Grand Total	0	0	10	10	0	13	0	13	0	0	0	0	16	24	0	40	63
Apprch %	0	0	100		0	100	0		0	0	0		40	60	0		
Total %	0	0	15.9	15.9	0	20.6	0	20.6	0	0	0	0	25.4	38.1	0	63.5	

	Dakota Road Southbound				Corwin Road Westbound				Dakota Avenue Northbound				Corwin 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 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	0	0	0	1	0	1	0	0	0	0	2	**6**	0	**8**	9
08:00 AM	0	0	1	1	0	0	0	0	0	0	0	0	**3**	3	0	6	7
08:15 AM	0	0	2	2	0	1	0	1	0	0	0	0	1	2	0	3	6
08:30 AM	0	0	**3**	**3**	0	**5**	0	**5**	0	0	0	0	3	3	0	6	**14**
Total Volume	0	0	6	6	0	7	0	7	0	0	0	0	9	14	0	23	36
% App. Total	0	0	100		0	100	0		0	0	0		39.1	60.9	0		
PHF	.000	.000	.500	.500	.000	.350	.000	.350	.000	.000	.000	.000	.750	.583	.000	.719	.643

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Dakota Avenue
E/W: Corwin Road
Weather: Clear

File Name : 01_APV_Dak_Cor AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	0	0	0	0	0	1	0	1	0	0	0	0	2	**6**	0	**8**
+15 mins.	0	0	1	1	0	0	0	0	0	0	0	0	**3**	3	0	6
+30 mins.	0	0	2	2	0	1	0	1	0	0	0	0	1	2	0	3
+45 mins.	0	0	**3**	**3**	0	**5**	0	**5**	0	0	0	0	3	3	0	6
Total Volume	0	0	6	6	0	7	0	7	0	0	0	0	9	14	0	23
% App. Total	0	0	100		0	100	0		0	0	0		39.1	60.9	0	
PHF	.000	.000	.500	.500	.000	.350	.000	.350	.000	.000	.000	.000	.750	.583	.000	.719

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Dakota Avenue
E/W: Corwin Road
Weather: Clear

File Name : 01_APV_Dak_Cor AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- Large 2 Axle Vehicles

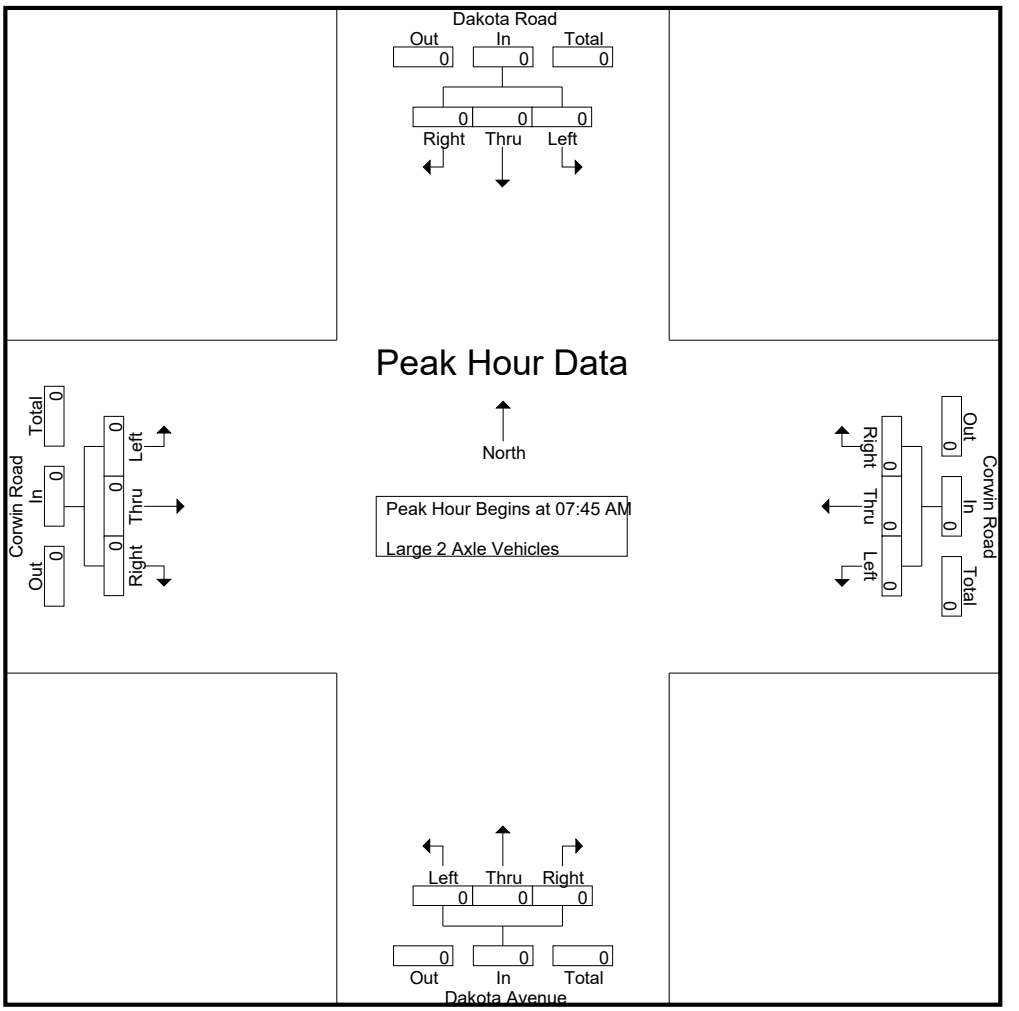
	Dakota Road Southbound				Corwin Road Westbound				Dakota Avenue Northbound				Corwin Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0		
Total %																	

	Dakota Road Southbound				Corwin Road Westbound				Dakota Avenue Northbound				Corwin 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 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Dakota Avenue
E/W: Corwin Road
Weather: Clear

File Name : 01_APV_Dak_Cor AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Dakota Avenue
E/W: Corwin Road
Weather: Clear

File Name : 01_APV_Dak_Cor AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- 3 Axle Vehicles

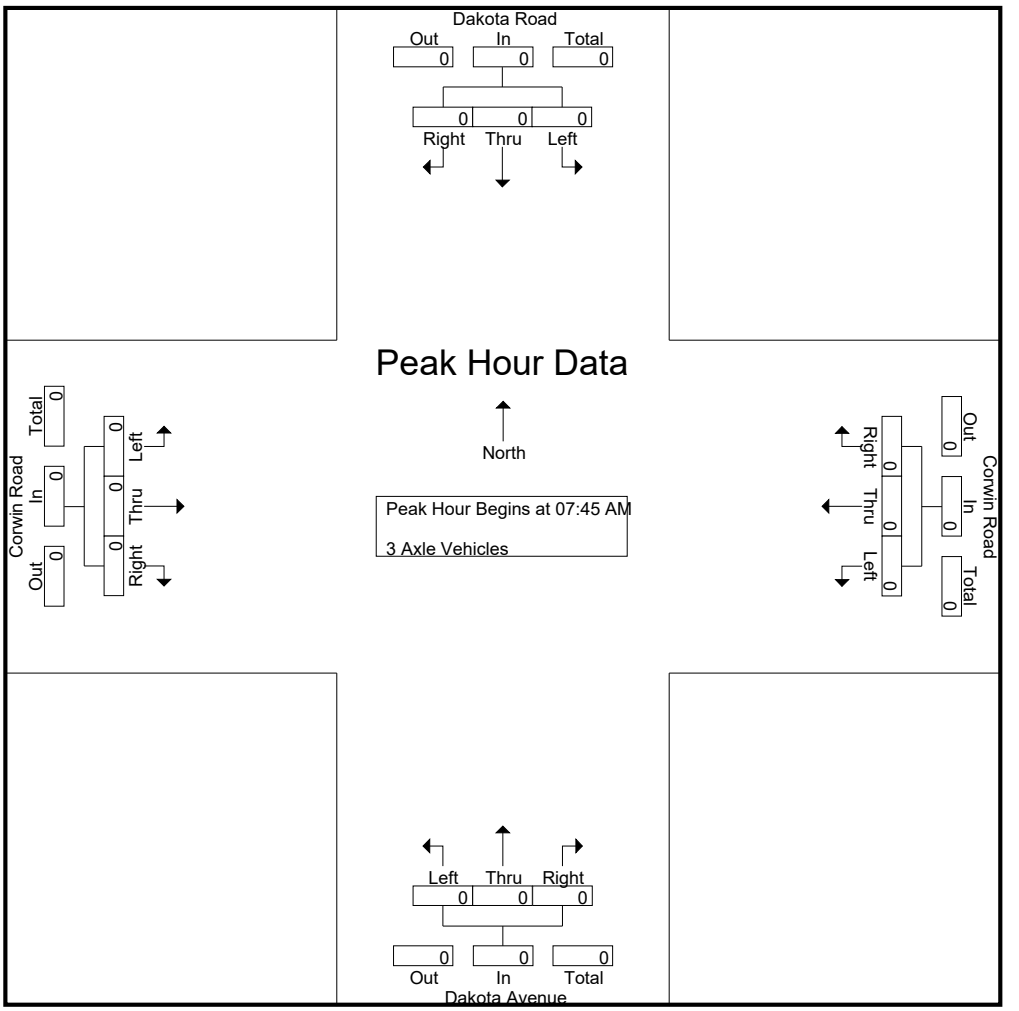
	Dakota Road Southbound				Corwin Road Westbound				Dakota Avenue Northbound				Corwin Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0		
Total %																	

	Dakota Road Southbound				Corwin Road Westbound				Dakota Avenue Northbound				Corwin 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 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Dakota Avenue
E/W: Corwin Road
Weather: Clear

File Name : 01_APV_Dak_Cor AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Dakota Avenue
E/W: Corwin Road
Weather: Clear

File Name : 01_APV_Dak_Cor AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- 4+ Axle Trucks

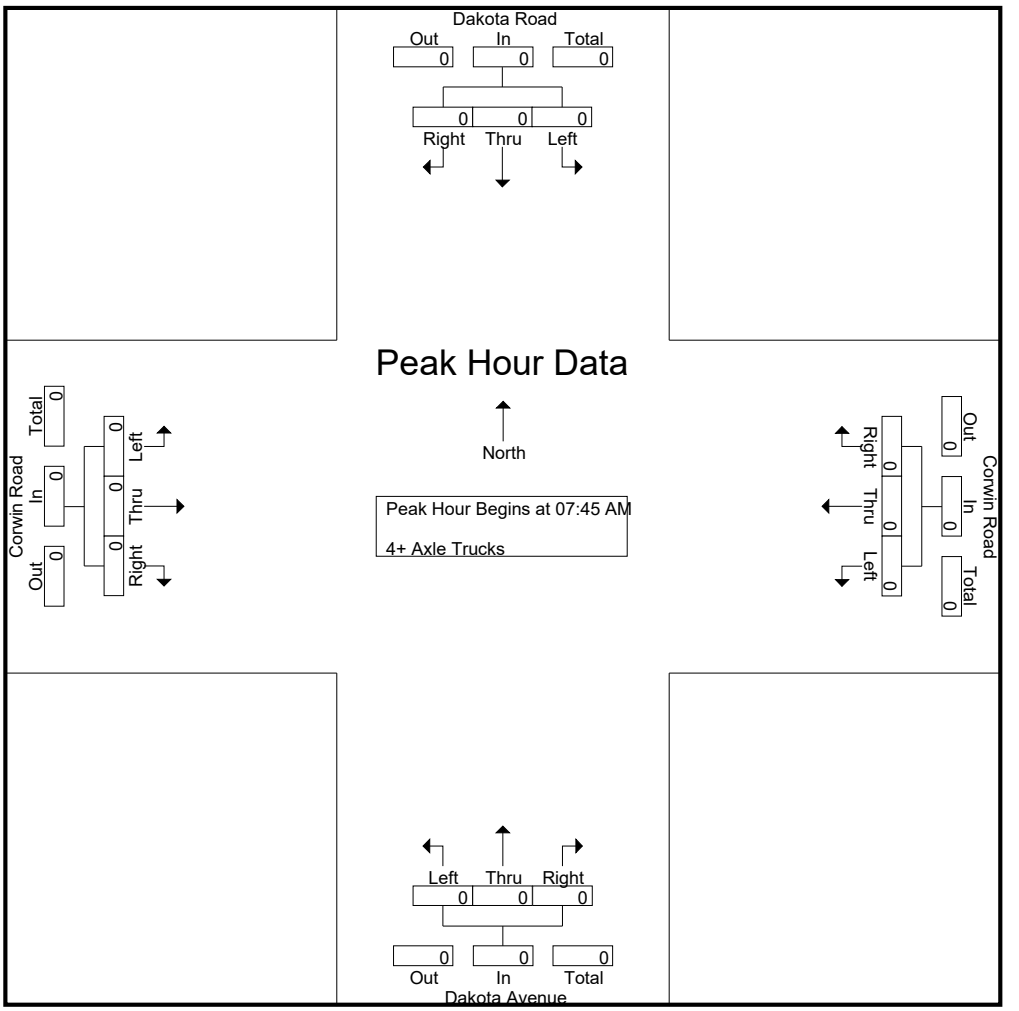
	Dakota Road Southbound				Corwin Road Westbound				Dakota Avenue Northbound				Corwin Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0		
Total %																	

	Dakota Road Southbound				Corwin Road Westbound				Dakota Avenue Northbound				Corwin 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 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Dakota Avenue
E/W: Corwin Road
Weather: Clear

File Name : 01_APV_Dak_Cor AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Dakota Avenue
E/W: Corwin Road
Weather: Clear

File Name : 01_APV_Dak_Cor PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

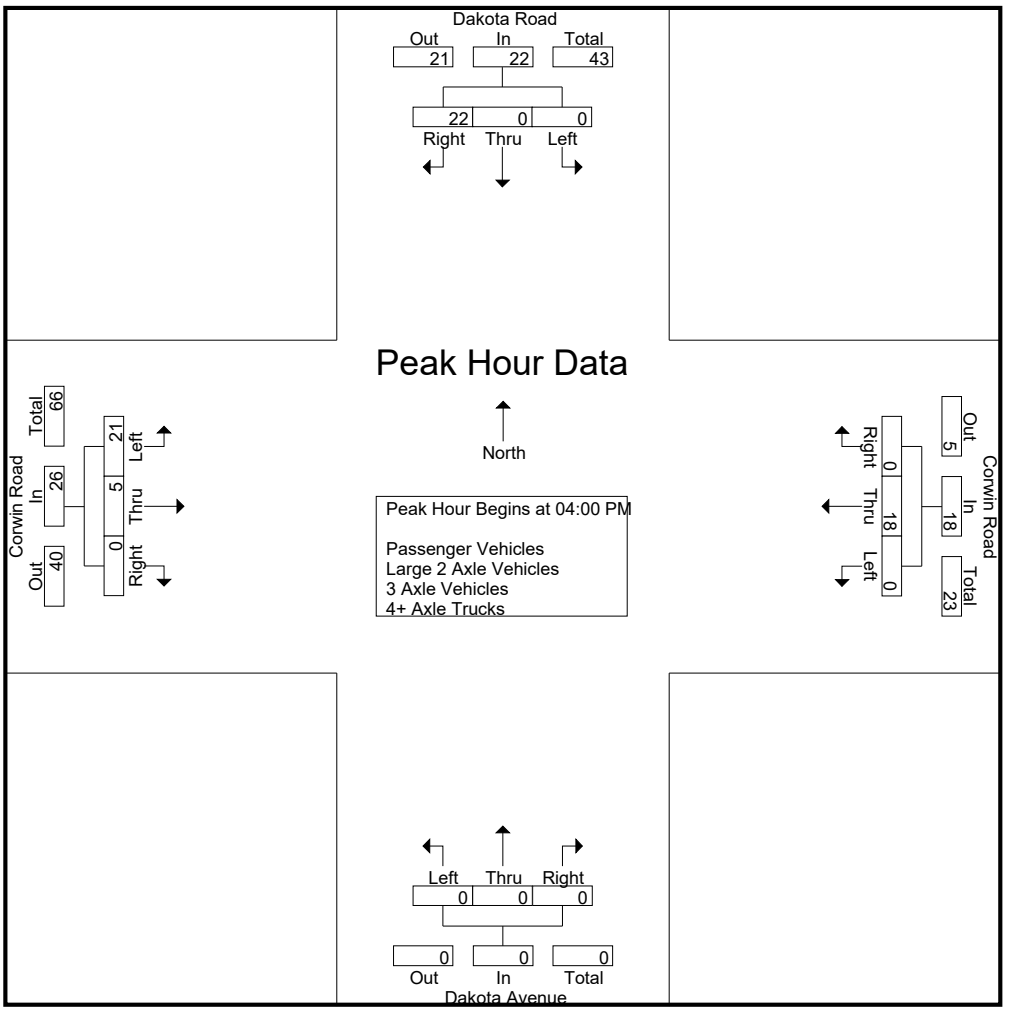
	Dakota Road Southbound				Corwin Road Westbound				Dakota Avenue Northbound				Corwin Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	7	7	0	8	0	8	0	0	0	0	7	2	0	9	24
04:15 PM	0	0	7	7	0	4	0	4	0	0	0	0	7	1	0	8	19
04:30 PM	0	0	6	6	0	1	0	1	0	0	0	0	2	0	0	2	9
04:45 PM	0	0	2	2	0	5	0	5	0	0	0	0	5	2	0	7	14
Total	0	0	22	22	0	18	0	18	0	0	0	0	21	5	0	26	66
05:00 PM	0	0	5	5	0	1	0	1	0	0	0	0	0	2	0	2	8
05:15 PM	0	0	1	1	0	1	0	1	0	0	0	0	0	1	0	1	3
05:30 PM	0	0	6	6	0	2	0	2	0	0	0	0	1	0	0	1	9
05:45 PM	0	0	1	1	0	2	0	2	0	1	0	1	0	0	0	0	4
Total	0	0	13	13	0	6	0	6	0	1	0	1	1	3	0	4	24
Grand Total	0	0	35	35	0	24	0	24	0	1	0	1	22	8	0	30	90
Apprch %	0	0	100		0	100	0		0	100	0		73.3	26.7	0		
Total %	0	0	38.9	38.9	0	26.7	0	26.7	0	1.1	0	1.1	24.4	8.9	0	33.3	
Passenger Vehicles	0	0	34	34	0	23	0	23	0	1	0	1	22	8	0	30	88
% Passenger Vehicles	0	0	97.1	97.1	0	95.8	0	95.8	0	100	0	100	100	100	0	100	97.8
Large 2 Axle Vehicles	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	2
% Large 2 Axle Vehicles	0	0	2.9	2.9	0	4.2	0	4.2	0	0	0	0	0	0	0	0	2.2
3 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% 3 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4+ Axle Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% 4+ Axle Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Dakota Road Southbound				Corwin Road Westbound				Dakota Avenue Northbound				Corwin 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	0	0	**7**	**7**	0	**8**	0	**8**	0	0	0	0	**7**	**2**	0	**9**	**24**
04:15 PM	0	0	7	7	0	4	0	4	0	0	0	0	7	1	0	8	19
04:30 PM	0	0	6	6	0	1	0	1	0	0	0	0	2	0	0	2	9
04:45 PM	0	0	2	2	0	5	0	5	0	0	0	0	5	2	0	7	14
Total Volume	0	0	22	22	0	18	0	18	0	0	0	0	21	5	0	26	66
% App. Total	0	0	100		0	100	0		0	0	0		80.8	19.2	0		
PHF	.000	.000	.786	.786	.000	.563	.000	.563	.000	.000	.000	.000	.750	.625	.000	.722	.688

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Dakota Avenue
E/W: Corwin Road
Weather: Clear

File Name : 01_APV_Dak_Cor PM
Site Code : 05124741
Start Date : 8/27/2024
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				05:00 PM				04:00 PM			
+0 mins.	0	0	**7**	**7**	0	**8**	0	**8**	0	0	0	0	**7**	**2**	0	**9**
+15 mins.	0	0	7	7	0	4	0	4	0	0	0	0	7	1	0	8
+30 mins.	0	0	6	6	0	1	0	1	0	0	0	0	2	0	0	2
+45 mins.	0	0	2	2	0	5	0	5	0	**1**	0	**1**	5	2	0	7
Total Volume	0	0	22	22	0	18	0	18	0	1	0	1	21	5	0	26
% App. Total	0	0	100		0	100	0		0	100	0		80.8	19.2	0	
PHF	.000	.000	.786	.786	.000	.563	.000	.563	.000	.250	.000	.250	.750	.625	.000	.722

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Dakota Avenue
E/W: Corwin Road
Weather: Clear

File Name : 01_APV_Dak_Cor PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- Passenger Vehicles

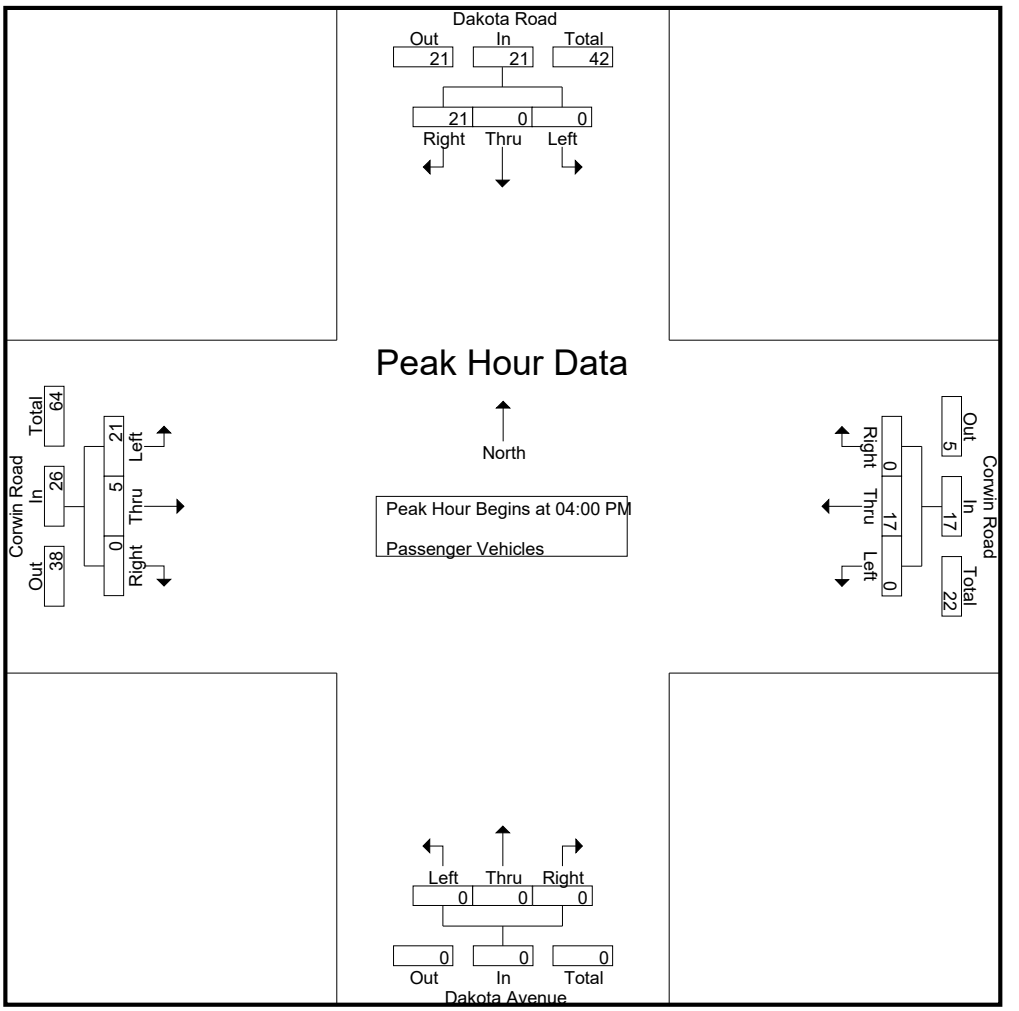
	Dakota Road Southbound				Corwin Road Westbound				Dakota Avenue Northbound				Corwin Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	7	7	0	7	0	7	0	0	0	0	7	2	0	9	23
04:15 PM	0	0	6	6	0	4	0	4	0	0	0	0	7	1	0	8	18
04:30 PM	0	0	6	6	0	1	0	1	0	0	0	0	2	0	0	2	9
04:45 PM	0	0	2	2	0	5	0	5	0	0	0	0	5	2	0	7	14
Total	0	0	21	21	0	17	0	17	0	0	0	0	21	5	0	26	64
05:00 PM	0	0	5	5	0	1	0	1	0	0	0	0	0	2	0	2	8
05:15 PM	0	0	1	1	0	1	0	1	0	0	0	0	0	1	0	1	3
05:30 PM	0	0	6	6	0	2	0	2	0	0	0	0	1	0	0	1	9
05:45 PM	0	0	1	1	0	2	0	2	0	1	0	1	0	0	0	0	4
Total	0	0	13	13	0	6	0	6	0	1	0	1	1	3	0	4	24
Grand Total	0	0	34	34	0	23	0	23	0	1	0	1	22	8	0	30	88
Apprch %	0	0	100		0	100	0		0	100	0		73.3	26.7	0		
Total %	0	0	38.6	38.6	0	26.1	0	26.1	0	1.1	0	1.1	25	9.1	0	34.1	

	Dakota Road Southbound				Corwin Road Westbound				Dakota Avenue Northbound				Corwin 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 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	**7**	**7**	0	**7**	0	**7**	0	0	0	0	**7**	**2**	0	**9**	**23**
04:15 PM	0	0	6	6	0	4	0	4	0	0	0	0	7	1	0	8	18
04:30 PM	0	0	6	6	0	1	0	1	0	0	0	0	2	0	0	2	9
04:45 PM	0	0	2	2	0	5	0	5	0	0	0	0	5	2	0	7	14
Total Volume	0	0	21	21	0	17	0	17	0	0	0	0	21	5	0	26	64
% App. Total	0	0	100		0	100	0		0	0	0		80.8	19.2	0		
PHF	.000	.000	.750	.750	.000	.607	.000	.607	.000	.000	.000	.000	.750	.625	.000	.722	.696

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Dakota Avenue
E/W: Corwin Road
Weather: Clear

File Name : 01_APV_Dak_Cor PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 2



Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	**7**	**7**	0	**7**	0	**7**	0	0	0	0	**7**	**2**	0	**9**
+15 mins.	0	0	6	6	0	4	0	4	0	0	0	0	7	1	0	8
+30 mins.	0	0	6	6	0	1	0	1	0	0	0	0	2	0	0	2
+45 mins.	0	0	2	2	0	5	0	5	0	0	0	0	5	2	0	7
Total Volume	0	0	21	21	0	17	0	17	0	0	0	0	21	5	0	26
% App. Total	0	0	100		0	100	0		0	0	0		80.8	19.2	0	
PHF	.000	.000	.750	.750	.000	.607	.000	.607	.000	.000	.000	.000	.750	.625	.000	.722

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Dakota Avenue
E/W: Corwin Road
Weather: Clear

File Name : 01_APV_Dak_Cor PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- Large 2 Axle Vehicles

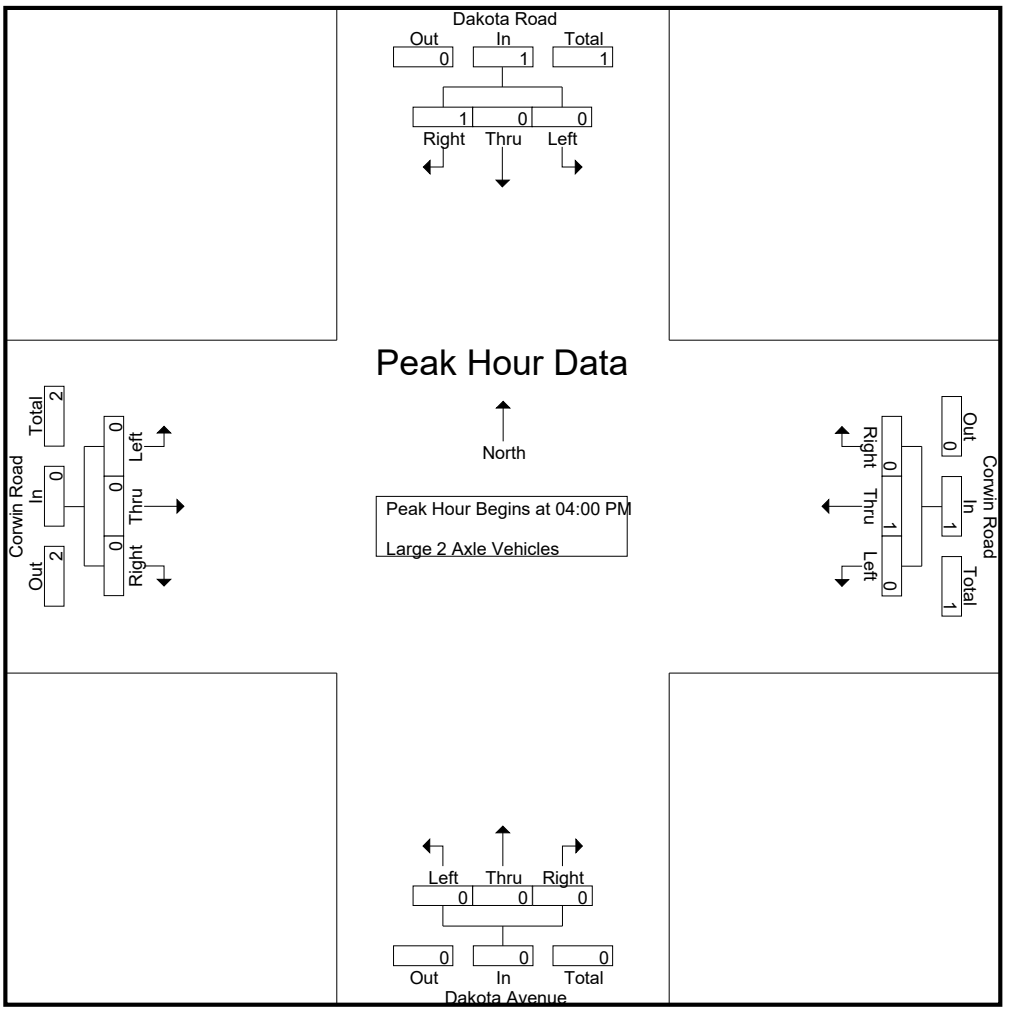
	Dakota Road Southbound				Corwin Road Westbound				Dakota Avenue Northbound				Corwin Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
04:15 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	2
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	2
Apprch %	0	0	100		0	100	0		0	0	0		0	0	0		
Total %	0	0	50	50	0	50	0	50	0	0	0	0	0	0	0	0	

	Dakota Road Southbound				Corwin Road Westbound				Dakota Avenue Northbound				Corwin 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 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	**1**	0	**1**	0	0	0	0	0	0	0	0	**1**
04:15 PM	0	0	**1**	**1**	0	0	0	0	0	0	0	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	2
% App. Total	0	0	100		0	100	0		0	0	0		0	0	0		
PHF	.000	.000	.250	.250	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.500

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Dakota Avenue
E/W: Corwin Road
Weather: Clear

File Name : 01_APV_Dak_Cor PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 2



Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	0	0	0	**1**	0	**1**	0	0	0	0	0	0	0	0
+15 mins.	0	0	**1**	**1**	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0
% App. Total	0	0	100		0	100	0		0	0	0		0	0	0	
PHF	.000	.000	.250	.250	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Dakota Avenue
E/W: Corwin Road
Weather: Clear

File Name : 01_APV_Dak_Cor PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- 3 Axle Vehicles

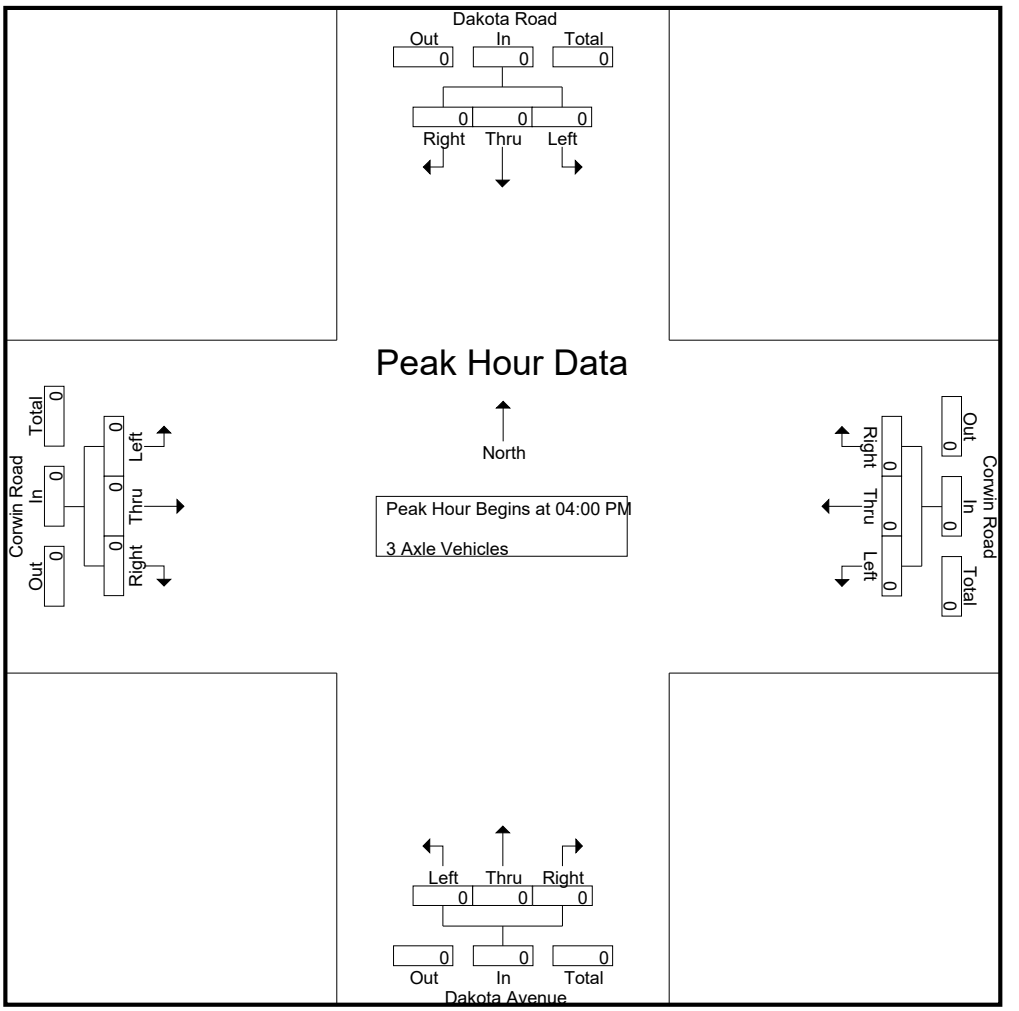
	Dakota Road Southbound				Corwin Road Westbound				Dakota Avenue Northbound				Corwin Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0		
Total %																	

	Dakota Road Southbound				Corwin Road Westbound				Dakota Avenue Northbound				Corwin 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 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Dakota Avenue
E/W: Corwin Road
Weather: Clear

File Name : 01_APV_Dak_Cor PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 2



Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Dakota Avenue
E/W: Corwin Road
Weather: Clear

File Name : 01_APV_Dak_Cor PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- 4+ Axle Trucks

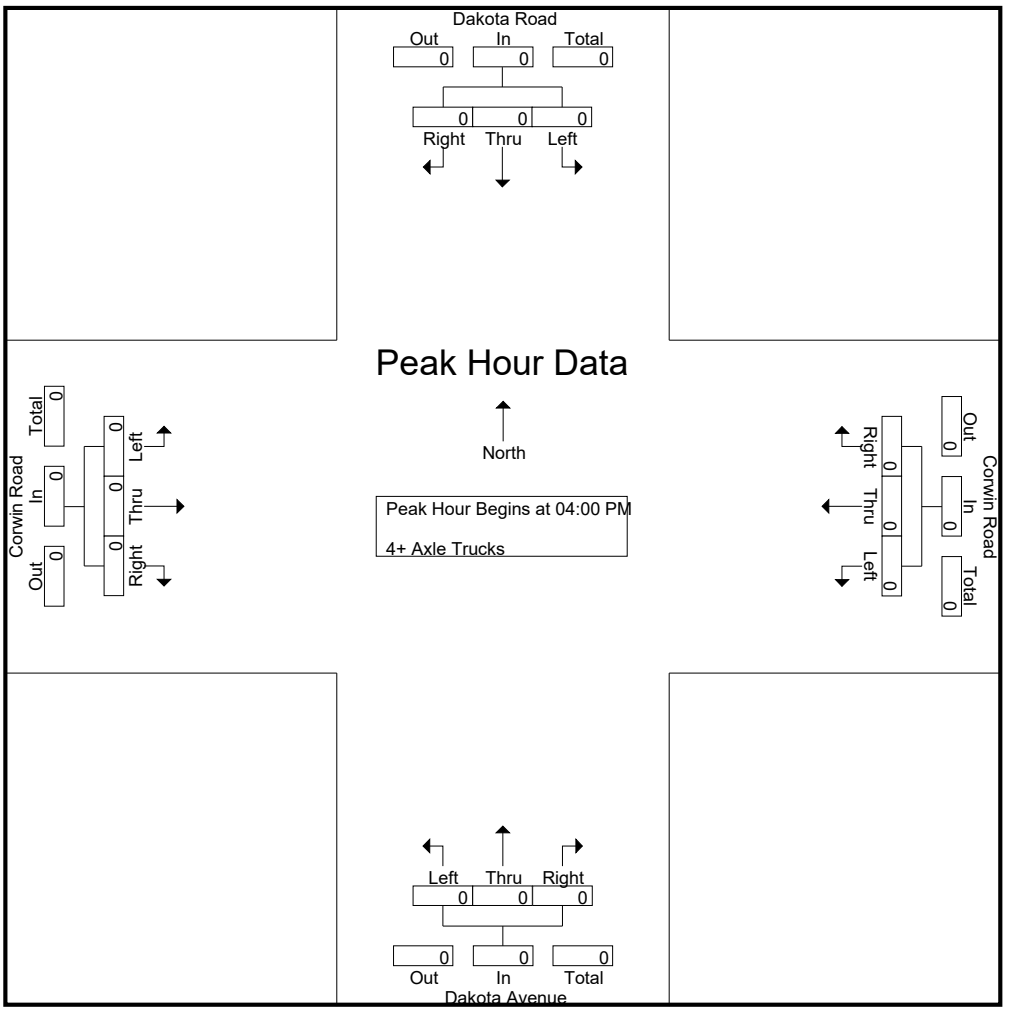
	Dakota Road Southbound				Corwin Road Westbound				Dakota Avenue Northbound				Corwin Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0		
Total %																	

	Dakota Road Southbound				Corwin Road Westbound				Dakota Avenue Northbound				Corwin 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 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Dakota Avenue
E/W: Corwin Road
Weather: Clear

File Name : 01_APV_Dak_Cor PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 2



Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Ramona Road
E/W: Fresno Road
Weather: Clear

File Name : 02_APV_Ram_Fres AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

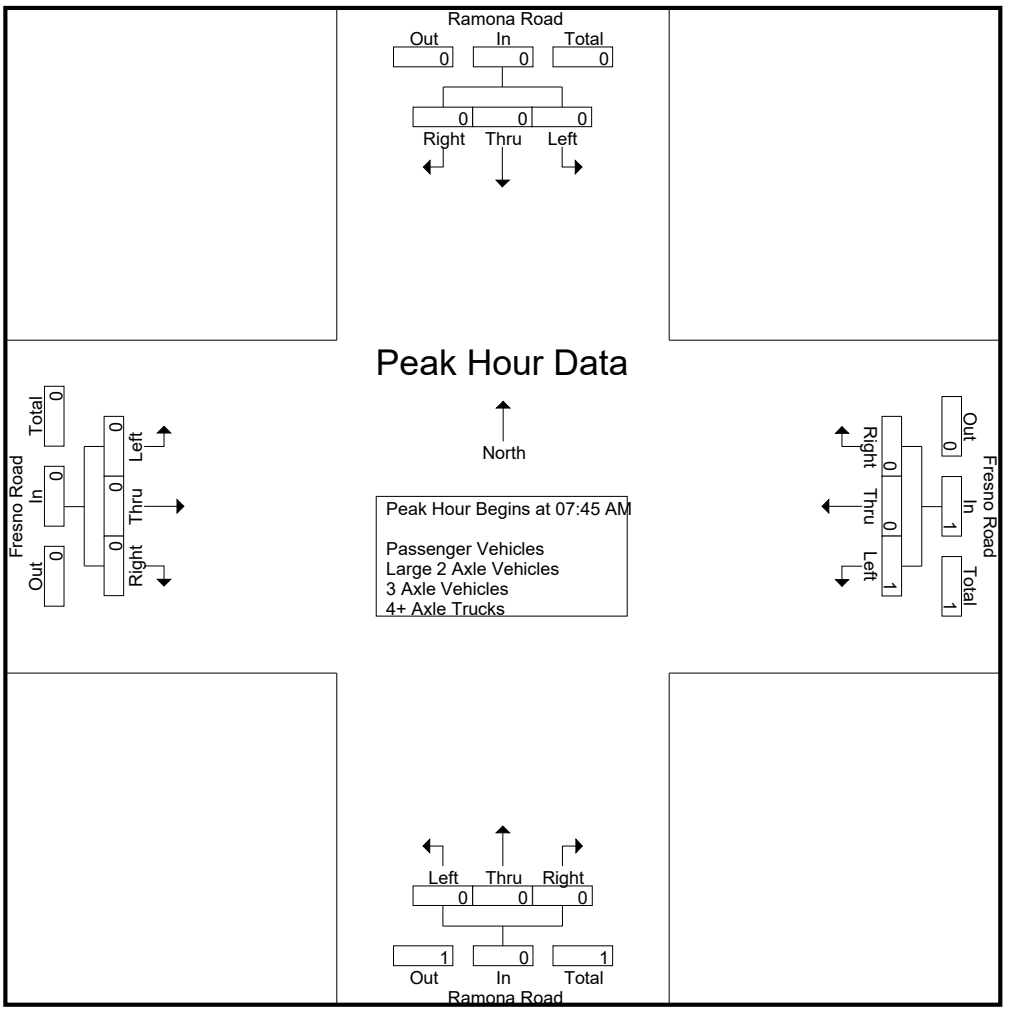
	Ramona Road Southbound				Fresno Road Westbound				Ramona Road Northbound				Fresno Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
Grand Total	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
Apprch %	0	0	0		100	0	0		0	0	0		0	0	0		
Total %	0	0	0	0	100	0	0	100	0	0	0	0	0	0	0	0	
Passenger Vehicles	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
% Passenger Vehicles	0	0	0	0	100	0	0	100	0	0	0	0	0	0	0	0	100
Large 2 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Large 2 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% 3 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4+ Axle Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% 4+ Axle Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Ramona Road Southbound				Fresno Road Westbound				Ramona Road Northbound				Fresno 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 07:45 AM																	
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	**1**	0	0	**1**	0	0	0	0	0	0	0	0	**1**
Total Volume	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
% App. Total	0	0	0		100	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.250	.000	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.250

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Ramona Road
E/W: Fresno Road
Weather: Clear

File Name : 02_APV_Ram_Fres AM
Site Code : 05124741
Start Date : 8/27/2024
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:

	07:00 AM				07:45 AM				07:00 AM				07:00 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	**1**	0	0	**1**	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0
% App. Total	0	0	0		100	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.250	.000	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Ramona Road
E/W: Fresno Road
Weather: Clear

File Name : 02_APV_Ram_Fres AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- Passenger Vehicles

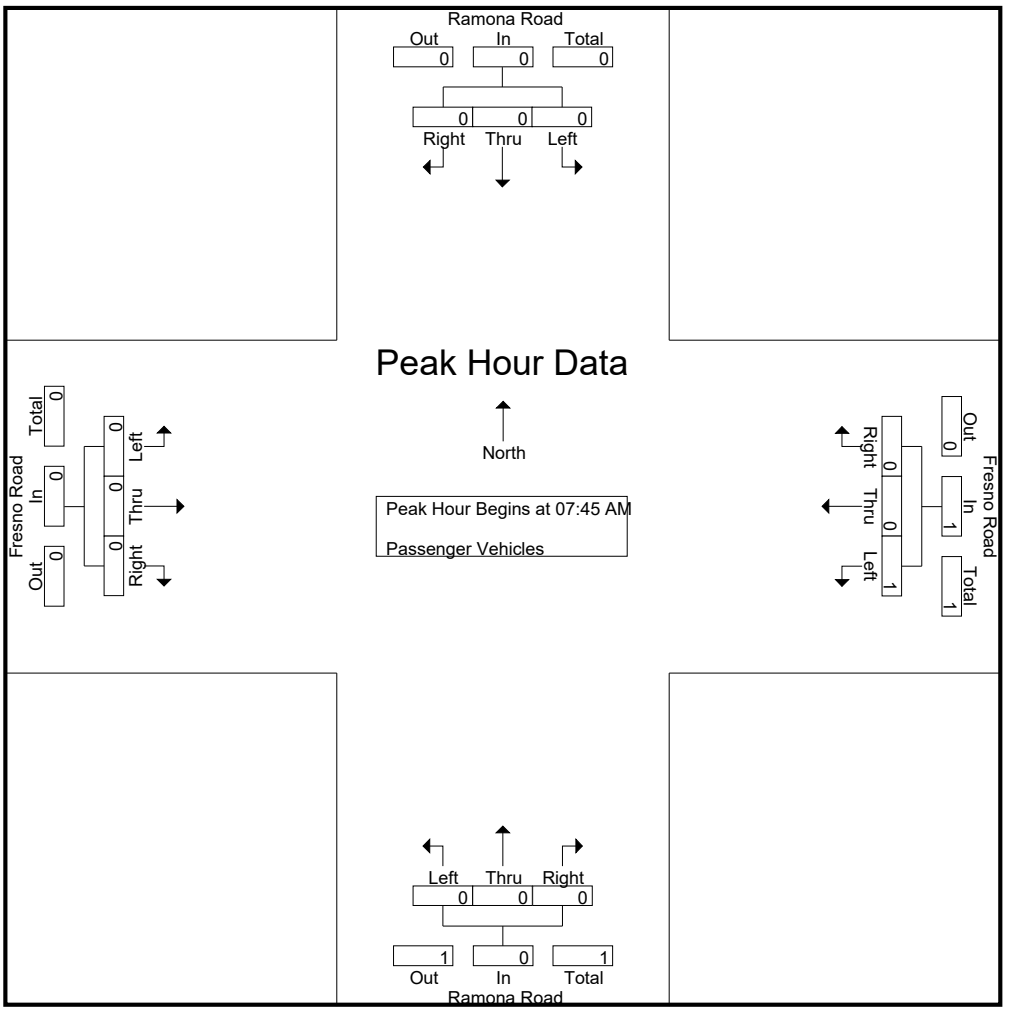
	Ramona Road Southbound				Fresno Road Westbound				Ramona Road Northbound				Fresno Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
Grand Total	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
Apprch %	0	0	0		100	0	0		0	0	0		0	0	0		
Total %	0	0	0	0	100	0	0	100	0	0	0	0	0	0	0	0	

	Ramona Road Southbound				Fresno Road Westbound				Ramona Road Northbound				Fresno 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 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	**1**	0	0	**1**	0	0	0	0	0	0	0	0	**1**
Total Volume	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
% App. Total	0	0	0		100	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.250	.000	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.250

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Ramona Road
E/W: Fresno Road
Weather: Clear

File Name : 02_APV_Ram_Fres AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	**1**	0	0	**1**	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0
% App. Total	0	0	0		100	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.250	.000	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Ramona Road
E/W: Fresno Road
Weather: Clear

File Name : 02_APV_Ram_Fres AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- Large 2 Axle Vehicles

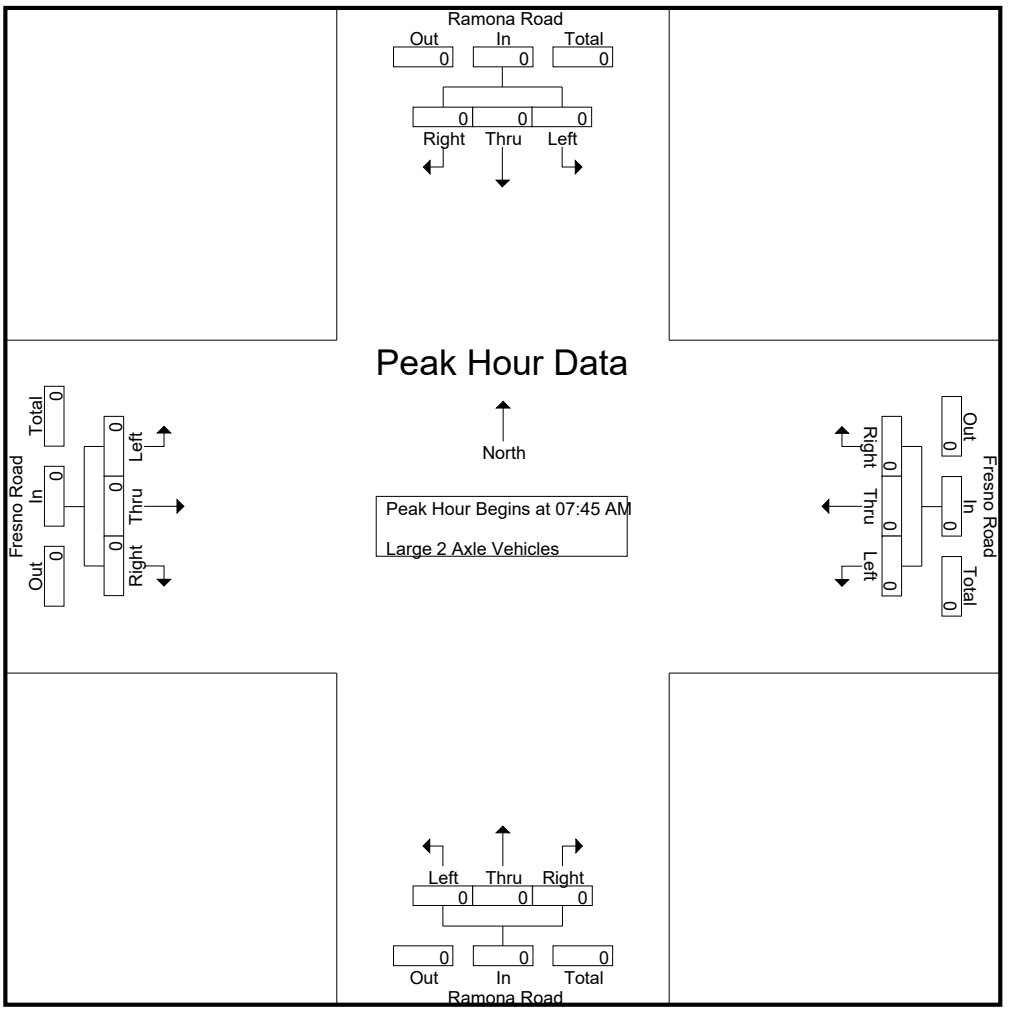
	Ramona Road Southbound				Fresno Road Westbound				Ramona Road Northbound				Fresno Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0		
Total %																	

	Ramona Road Southbound				Fresno Road Westbound				Ramona Road Northbound				Fresno 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 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Ramona Road
E/W: Fresno Road
Weather: Clear

File Name : 02_APV_Ram_Fres AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Ramona Road
E/W: Fresno Road
Weather: Clear

File Name : 02_APV_Ram_Fres AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- 3 Axle Vehicles

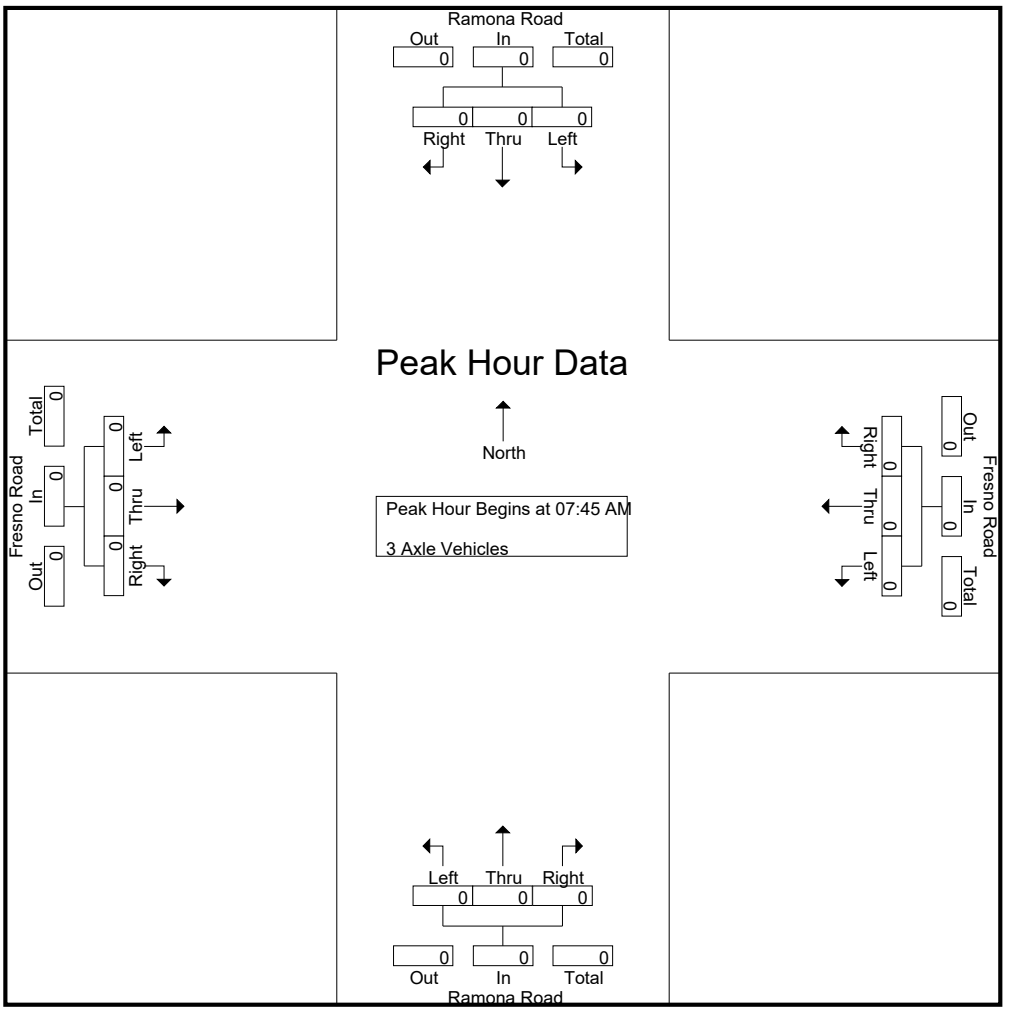
	Ramona Road Southbound				Fresno Road Westbound				Ramona Road Northbound				Fresno Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0		
Total %																	

	Ramona Road Southbound				Fresno Road Westbound				Ramona Road Northbound				Fresno 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 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Ramona Road
E/W: Fresno Road
Weather: Clear

File Name : 02_APV_Ram_Fres AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Ramona Road
E/W: Fresno Road
Weather: Clear

File Name : 02_APV_Ram_Fres AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- 4+ Axle Trucks

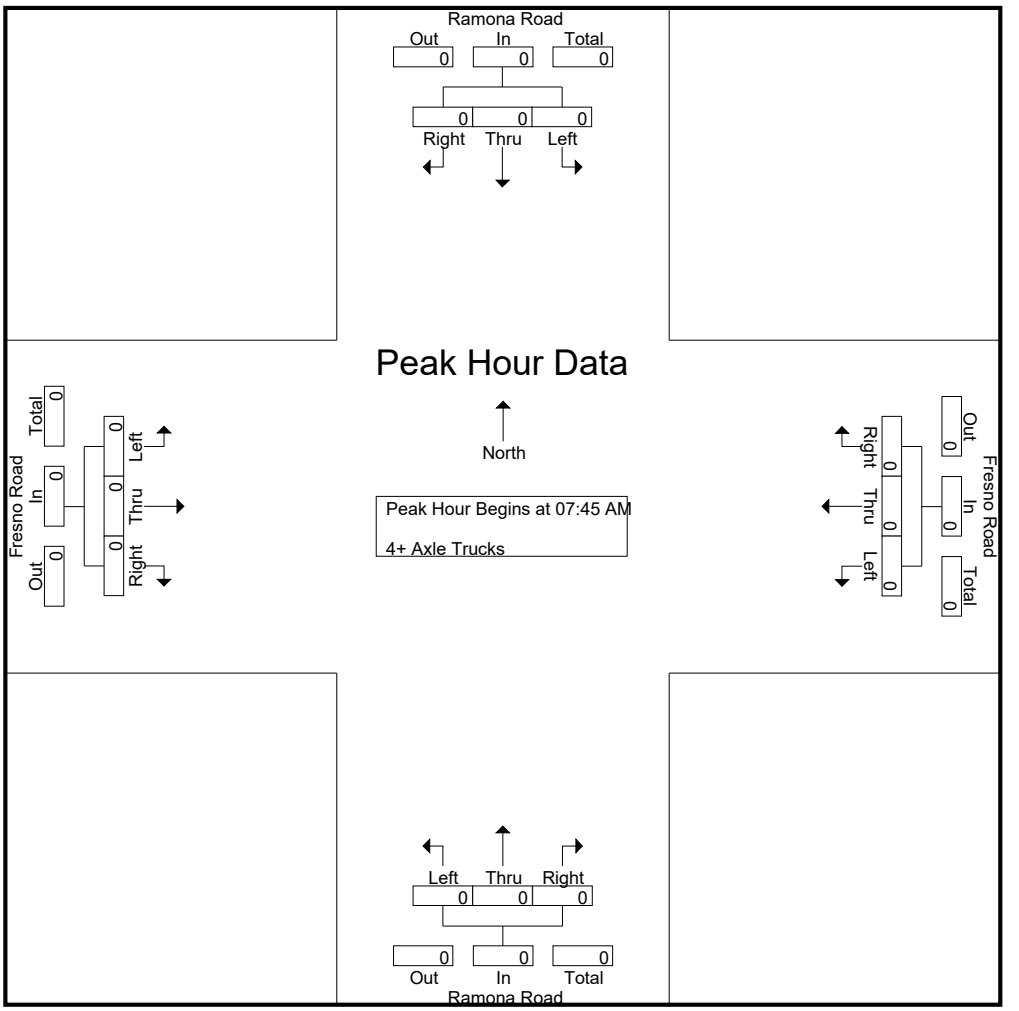
	Ramona Road Southbound				Fresno Road Westbound				Ramona Road Northbound				Fresno Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0		
Total %																	

	Ramona Road Southbound				Fresno Road Westbound				Ramona Road Northbound				Fresno 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 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Ramona Road
E/W: Fresno Road
Weather: Clear

File Name : 02_APV_Ram_Fres AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Ramona Road
E/W: Fresno Road
Weather: Clear

File Name : 02_APV_Ram_Fres PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

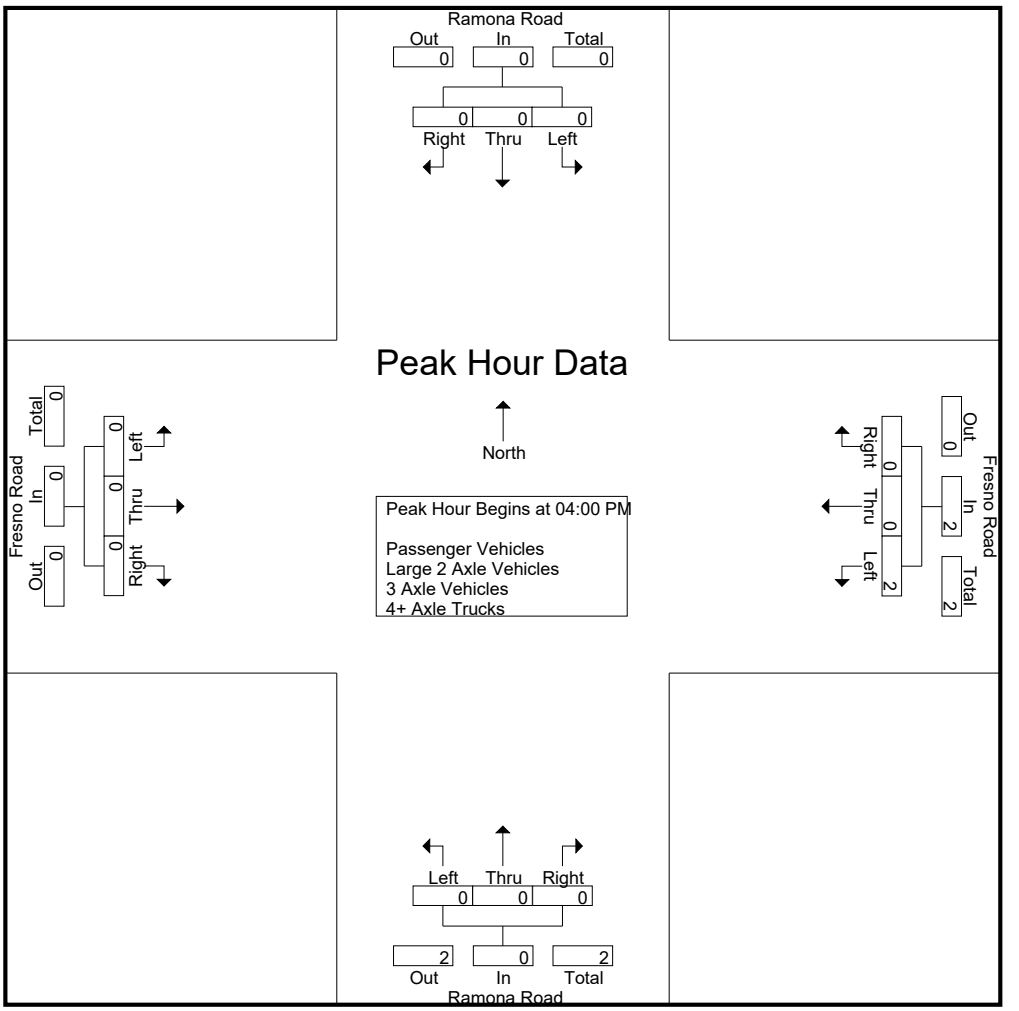
	Ramona Road Southbound				Fresno Road Westbound				Ramona Road Northbound				Fresno Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	2
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
Grand Total	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	3
Apprch %	0	0	0		100	0	0		0	0	0		0	0	0		
Total %	0	0	0	0	100	0	0	100	0	0	0	0	0	0	0	0	
Passenger Vehicles	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	3
% Passenger Vehicles	0	0	0	0	100	0	0	100	0	0	0	0	0	0	0	0	100
Large 2 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Large 2 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% 3 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4+ Axle Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% 4+ Axle Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Ramona Road Southbound				Fresno Road Westbound				Ramona Road Northbound				Fresno 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	0	0	0	0	**1**	0	0	**1**	0	0	0	0	0	0	0	0	**1**
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	2
% App. Total	0	0	0		100	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.500	.000	.000	.500	.000	.000	.000	.000	.000	.000	.000	.000	.500

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Ramona Road
E/W: Fresno Road
Weather: Clear

File Name : 02_APV_Ram_Fres PM
Site Code : 05124741
Start Date : 8/27/2024
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				04:00 PM			
+0 mins.	0	0	0	0	**1**	0	0	**1**	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0
% App. Total	0	0	0		100	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.500	.000	.000	.500	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Ramona Road
E/W: Fresno Road
Weather: Clear

File Name : 02_APV_Ram_Fres PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- Passenger Vehicles

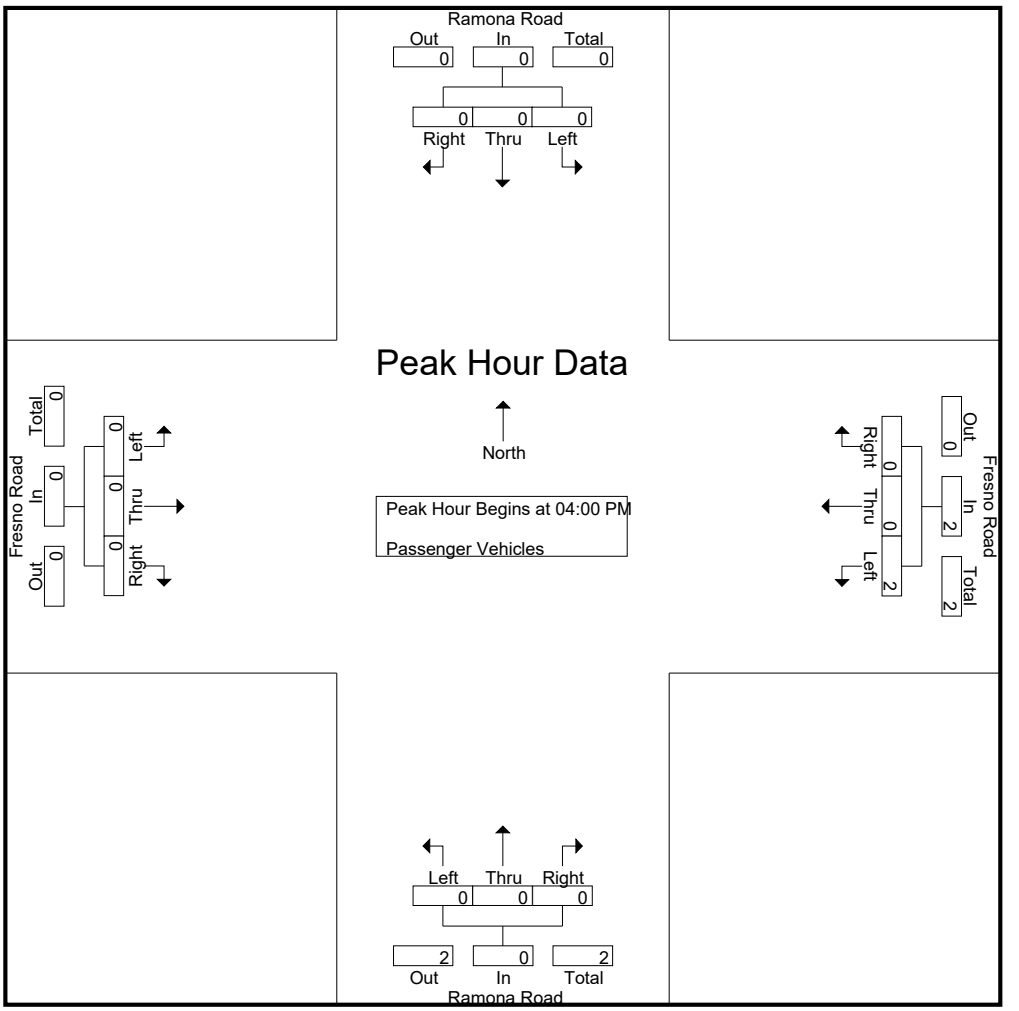
	Ramona Road Southbound				Fresno Road Westbound				Ramona Road Northbound				Fresno Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	2
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
Grand Total	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	3
Apprch %	0	0	0		100	0	0		0	0	0		0	0	0		
Total %	0	0	0	0	100	0	0	100	0	0	0	0	0	0	0	0	

	Ramona Road Southbound				Fresno Road Westbound				Ramona Road Northbound				Fresno 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 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	**1**	0	0	**1**	0	0	0	0	0	0	0	0	**1**
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	2
% App. Total	0	0	0		100	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.500	.000	.000	.500	.000	.000	.000	.000	.000	.000	.000	.000	.500

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Ramona Road
E/W: Fresno Road
Weather: Clear

File Name : 02_APV_Ram_Fres PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 2



Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	0	0	**1**	0	0	**1**	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0
% App. Total	0	0	0		100	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.500	.000	.000	.500	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Ramona Road
E/W: Fresno Road
Weather: Clear

File Name : 02_APV_Ram_Fres PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- Large 2 Axle Vehicles

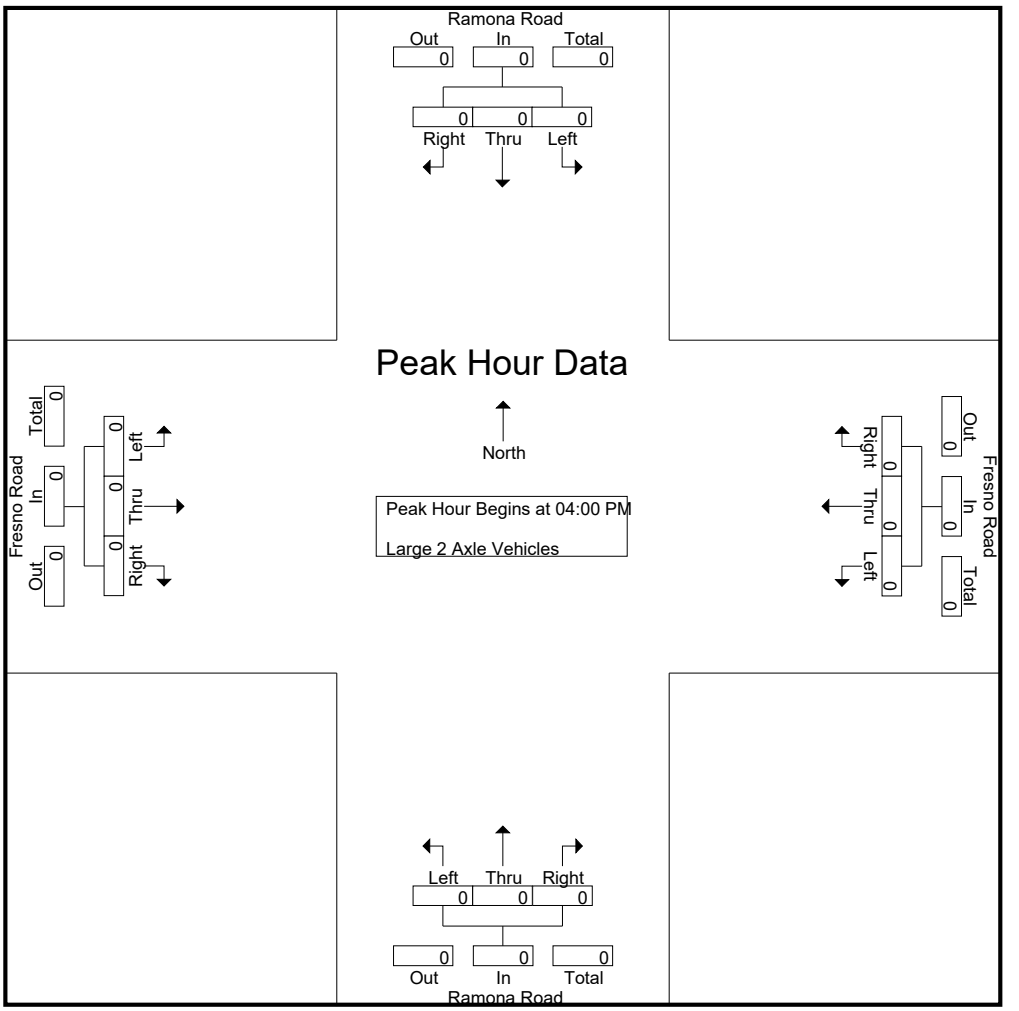
	Ramona Road Southbound				Fresno Road Westbound				Ramona Road Northbound				Fresno Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0		
Total %																	

	Ramona Road Southbound				Fresno Road Westbound				Ramona Road Northbound				Fresno 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 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Ramona Road
E/W: Fresno Road
Weather: Clear

File Name : 02_APV_Ram_Fres PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 2



Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Ramona Road
E/W: Fresno Road
Weather: Clear

File Name : 02_APV_Ram_Fres PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- 3 Axle Vehicles

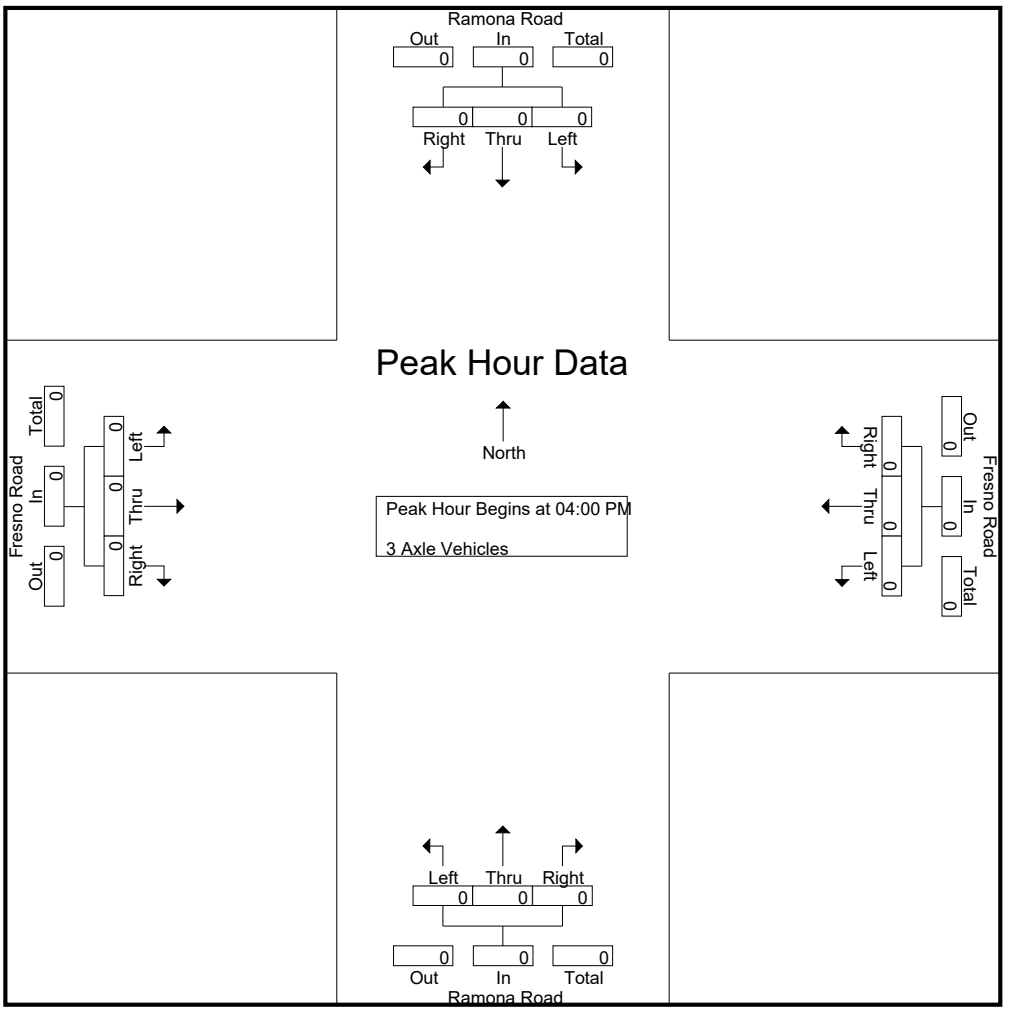
	Ramona Road Southbound				Fresno Road Westbound				Ramona Road Northbound				Fresno Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0		
Total %																	

	Ramona Road Southbound				Fresno Road Westbound				Ramona Road Northbound				Fresno 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 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Ramona Road
E/W: Fresno Road
Weather: Clear

File Name : 02_APV_Ram_Fres PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 2



Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Ramona Road
E/W: Fresno Road
Weather: Clear

File Name : 02_APV_Ram_Fres PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- 4+ Axle Trucks

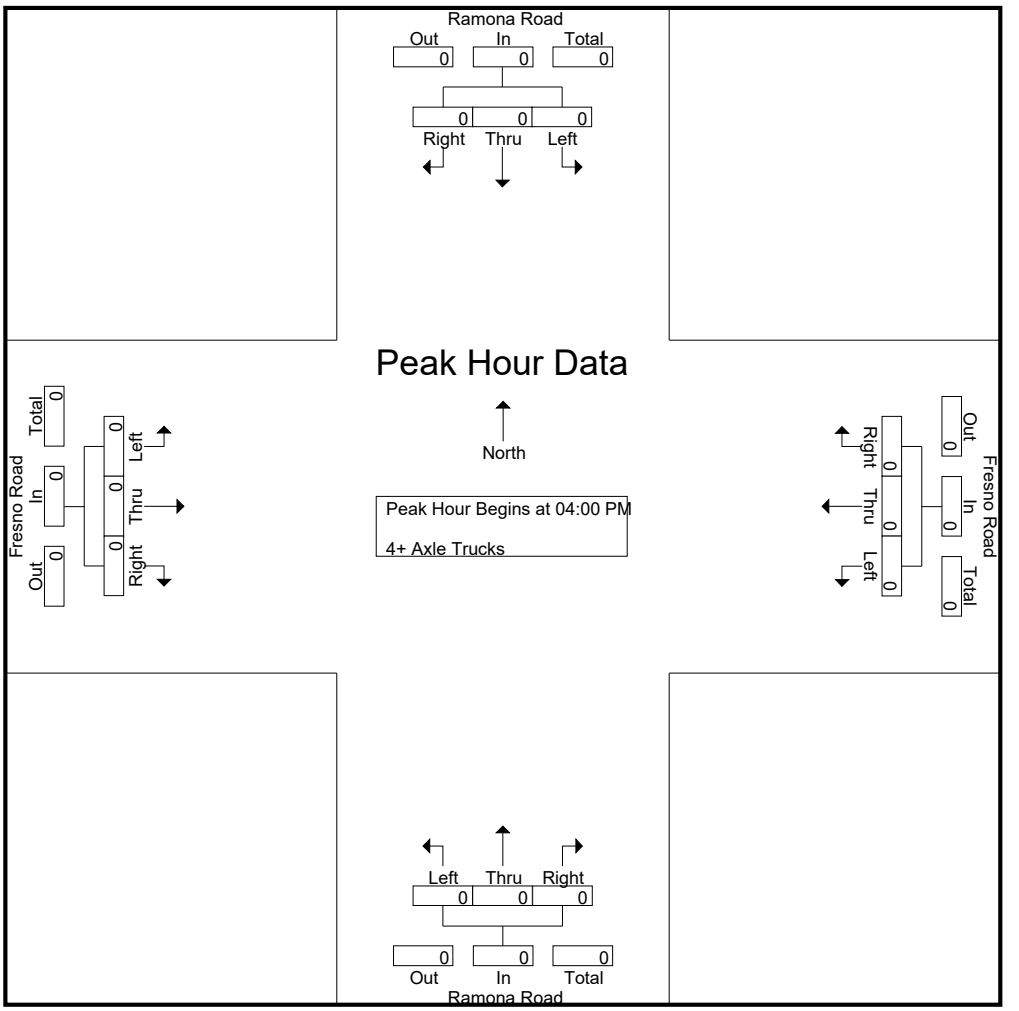
	Ramona Road Southbound				Fresno Road Westbound				Ramona Road Northbound				Fresno Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0		
Total %																	

	Ramona Road Southbound				Fresno Road Westbound				Ramona Road Northbound				Fresno 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 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Ramona Road
E/W: Fresno Road
Weather: Clear

File Name : 02_APV_Ram_Fres PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 2



Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Navajo Road
E/W: Altadena Street/Needham Avenue
Weather: Clear

File Name : 03_APV_Nav_Alta AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

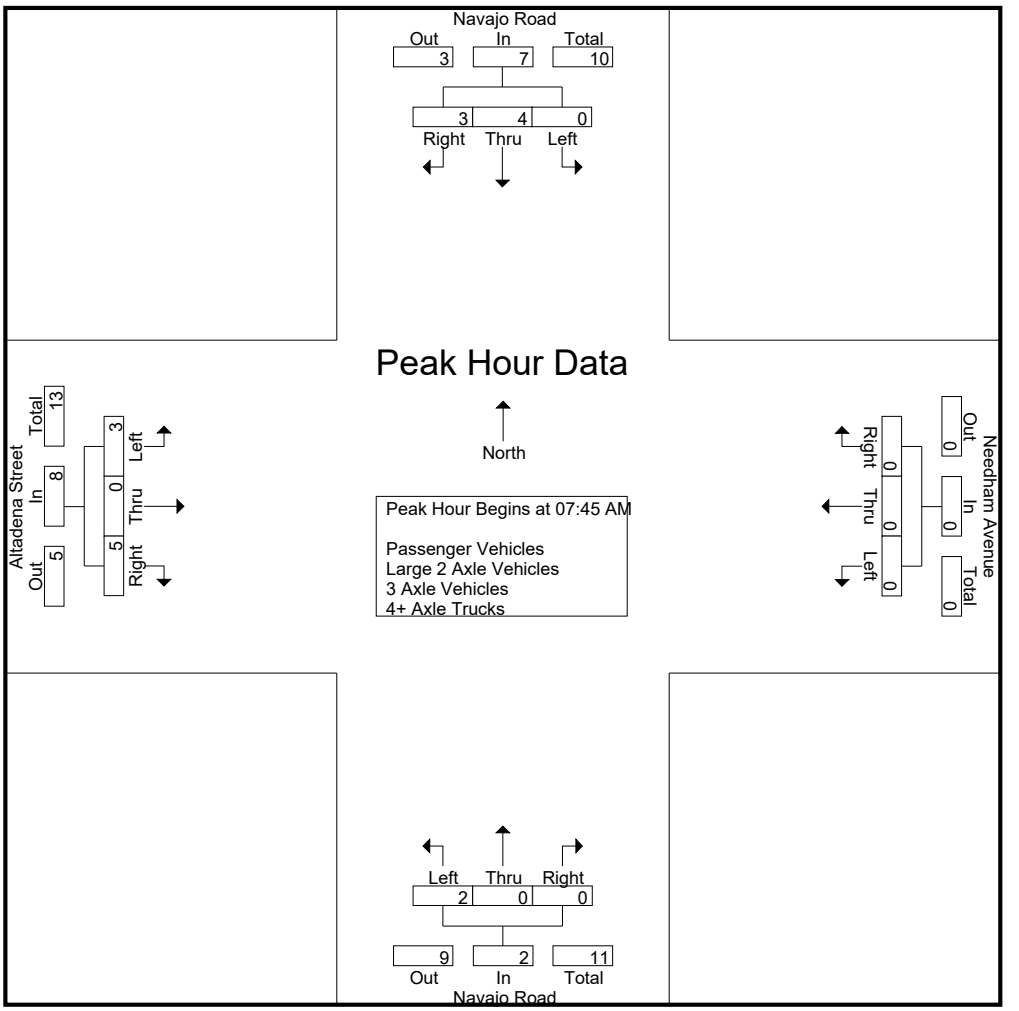
	Navajo Road Southbound				Needham Avenue Westbound				Navajo Road Northbound				Altadena Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	2
07:15 AM	0	0	2	2	0	0	0	0	1	0	0	1	2	0	1	3	6
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2
Total	0	0	2	2	0	0	0	0	1	0	0	1	4	0	4	8	11
08:00 AM	0	1	0	1	0	0	0	0	0	0	0	0	3	0	0	3	4
08:15 AM	0	2	2	4	0	0	0	0	1	0	0	1	0	0	1	1	6
08:30 AM	0	1	1	2	0	0	0	0	1	0	0	1	0	0	2	2	5
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	2
Total	0	4	3	7	0	0	0	0	2	0	0	2	4	0	4	8	17
Grand Total	0	4	5	9	0	0	0	0	3	0	0	3	8	0	8	16	28
Apprch %	0	44.4	55.6		0	0	0		100	0	0		50	0	50		
Total %	0	14.3	17.9	32.1	0	0	0	0	10.7	0	0	10.7	28.6	0	28.6	57.1	
Passenger Vehicles	0	4	5	9	0	0	0	0	3	0	0	3	8	0	8	16	28
% Passenger Vehicles	0	100	100	100	0	0	0	0	100	0	0	100	100	0	100	100	100
Large 2 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Large 2 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% 3 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4+ Axle Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% 4+ Axle Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Navajo Road Southbound				Needham Avenue Westbound				Navajo Road Northbound				Altadena Street 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 07:45 AM																	
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**2**	2	2
08:00 AM	0	1	0	1	0	0	0	0	0	0	0	0	**3**	0	0	**3**	4
08:15 AM	0	**2**	**2**	**4**	0	0	0	0	**1**	0	0	**1**	0	0	1	1	**6**
08:30 AM	0	1	1	2	0	0	0	0	1	0	0	1	0	0	2	2	5
Total Volume	0	4	3	7	0	0	0	0	2	0	0	2	3	0	5	8	17
% App. Total	0	57.1	42.9		0	0	0		100	0	0		37.5	0	62.5		
PHF	.000	.500	.375	.438	.000	.000	.000	.000	.500	.000	.000	.500	.250	.000	.625	.667	.708

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Navajo Road
E/W: Altadena Street/Needham Avenue
Weather: Clear

File Name : 03_APV_Nav_Alta AM
Site Code : 05124741
Start Date : 8/27/2024
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				07:00 AM				07:45 AM				07:15 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	**3**
+15 mins.	0	1	0	1	0	0	0	0	0	0	0	0	1	0	0	1
+30 mins.	0	**2**	**2**	**4**	0	0	0	0	**1**	0	0	**1**	0	0	**2**	2
+45 mins.	0	1	1	2	0	0	0	0	1	0	0	1	**3**	0	0	3
Total Volume	0	4	3	7	0	0	0	0	2	0	0	2	6	0	3	9
% App. Total	0	57.1	42.9		0	0	0		100	0	0		66.7	0	33.3	
PHF	.000	.500	.375	.438	.000	.000	.000	.000	.500	.000	.000	.500	.500	.000	.375	.750

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Navajo Road
E/W: Altadena Street/Needham Avenue
Weather: Clear

File Name : 03_APV_Nav_Alta AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- Passenger Vehicles

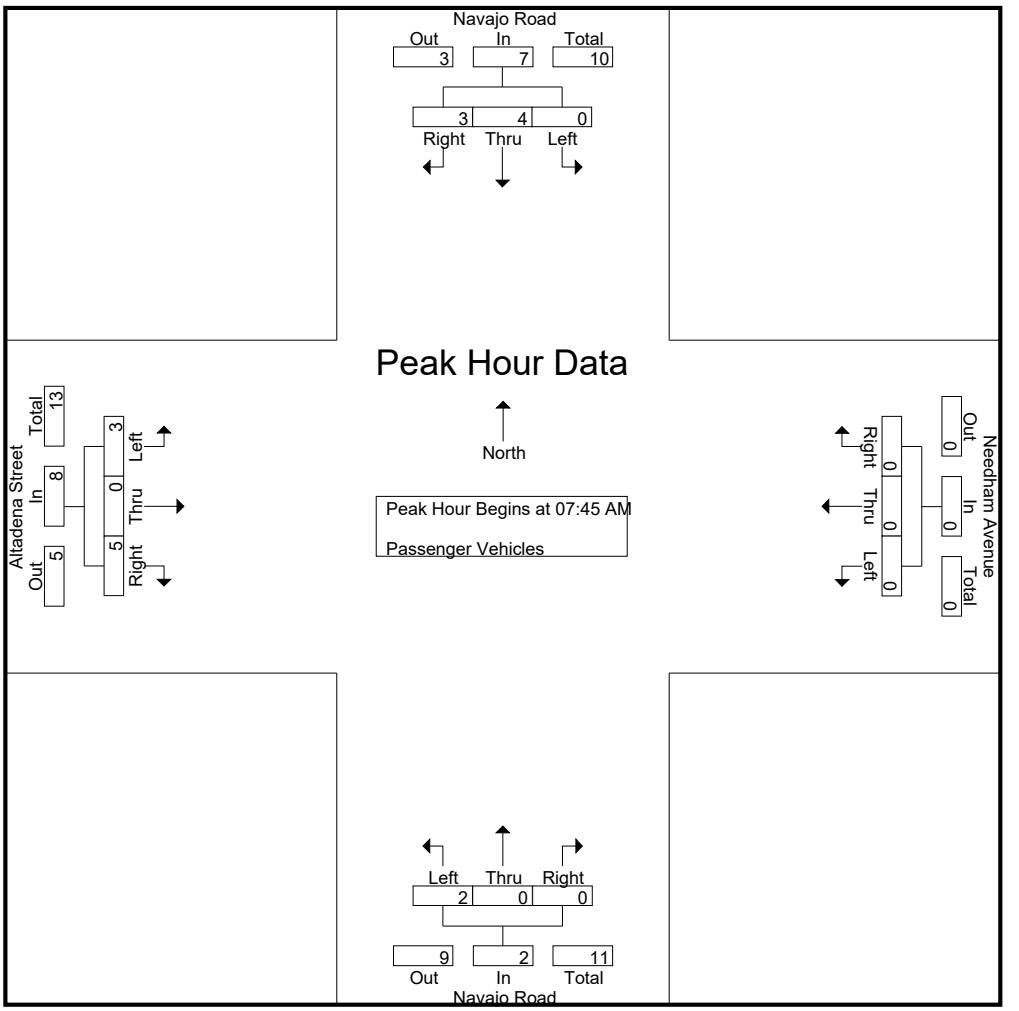
	Navajo Road Southbound				Needham Avenue Westbound				Navajo Road Northbound				Altadena Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	2
07:15 AM	0	0	2	2	0	0	0	0	1	0	0	1	2	0	1	3	6
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2
Total	0	0	2	2	0	0	0	0	1	0	0	1	4	0	4	8	11
08:00 AM	0	1	0	1	0	0	0	0	0	0	0	0	3	0	0	3	4
08:15 AM	0	2	2	4	0	0	0	0	1	0	0	1	0	0	1	1	6
08:30 AM	0	1	1	2	0	0	0	0	1	0	0	1	0	0	2	2	5
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	2
Total	0	4	3	7	0	0	0	0	2	0	0	2	4	0	4	8	17
Grand Total	0	4	5	9	0	0	0	0	3	0	0	3	8	0	8	16	28
Apprch %	0	44.4	55.6		0	0	0		100	0	0		50	0	50		
Total %	0	14.3	17.9	32.1	0	0	0	0	10.7	0	0	10.7	28.6	0	28.6	57.1	

	Navajo Road Southbound				Needham Avenue Westbound				Navajo Road Northbound				Altadena Street 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 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**2**	2	2
08:00 AM	0	1	0	1	0	0	0	0	0	0	0	0	**3**	0	0	**3**	4
08:15 AM	0	**2**	**2**	**4**	0	0	0	0	**1**	0	0	**1**	0	0	1	1	**6**
08:30 AM	0	1	1	2	0	0	0	0	1	0	0	1	0	0	2	2	5
Total Volume	0	4	3	7	0	0	0	0	2	0	0	2	3	0	5	8	17
% App. Total	0	57.1	42.9		0	0	0		100	0	0		37.5	0	62.5		
PHF	.000	.500	.375	.438	.000	.000	.000	.000	.500	.000	.000	.500	.250	.000	.625	.667	.708

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Navajo Road
E/W: Altadena Street/Needham Avenue
Weather: Clear

File Name : 03_APV_Nav_Alta AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**2**	2
+15 mins.	0	1	0	1	0	0	0	0	0	0	0	0	**3**	0	0	**3**
+30 mins.	0	**2**	**2**	**4**	0	0	0	0	**1**	0	0	**1**	0	0	1	1
+45 mins.	0	1	1	2	0	0	0	0	1	0	0	1	0	0	2	2
Total Volume	0	4	3	7	0	0	0	0	2	0	0	2	3	0	5	8
% App. Total	0	57.1	42.9		0	0	0		100	0	0		37.5	0	62.5	
PHF	.000	.500	.375	.438	.000	.000	.000	.000	.500	.000	.000	.500	.250	.000	.625	.667

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Navajo Road
E/W: Altadena Street/Needham Avenue
Weather: Clear

File Name : 03_APV_Nav_Alta AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- Large 2 Axle Vehicles

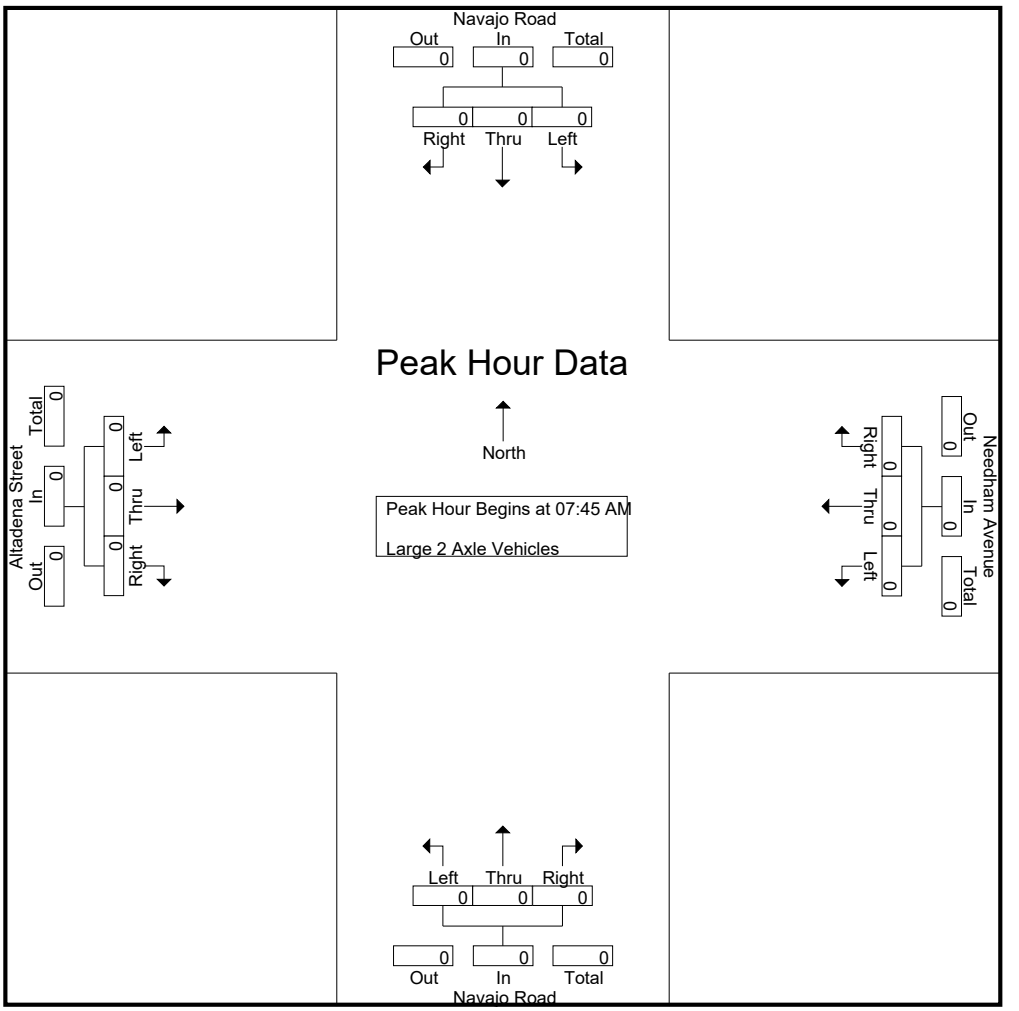
	Navajo Road Southbound				Needham Avenue Westbound				Navajo Road Northbound				Altadena Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0		
Total %																	

	Navajo Road Southbound				Needham Avenue Westbound				Navajo Road Northbound				Altadena Street 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 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Navajo Road
E/W: Altadena Street/Needham Avenue
Weather: Clear

File Name : 03_APV_Nav_Alta AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Navajo Road
E/W: Altadena Street/Needham Avenue
Weather: Clear

File Name : 03_APV_Nav_Alta AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- 3 Axle Vehicles

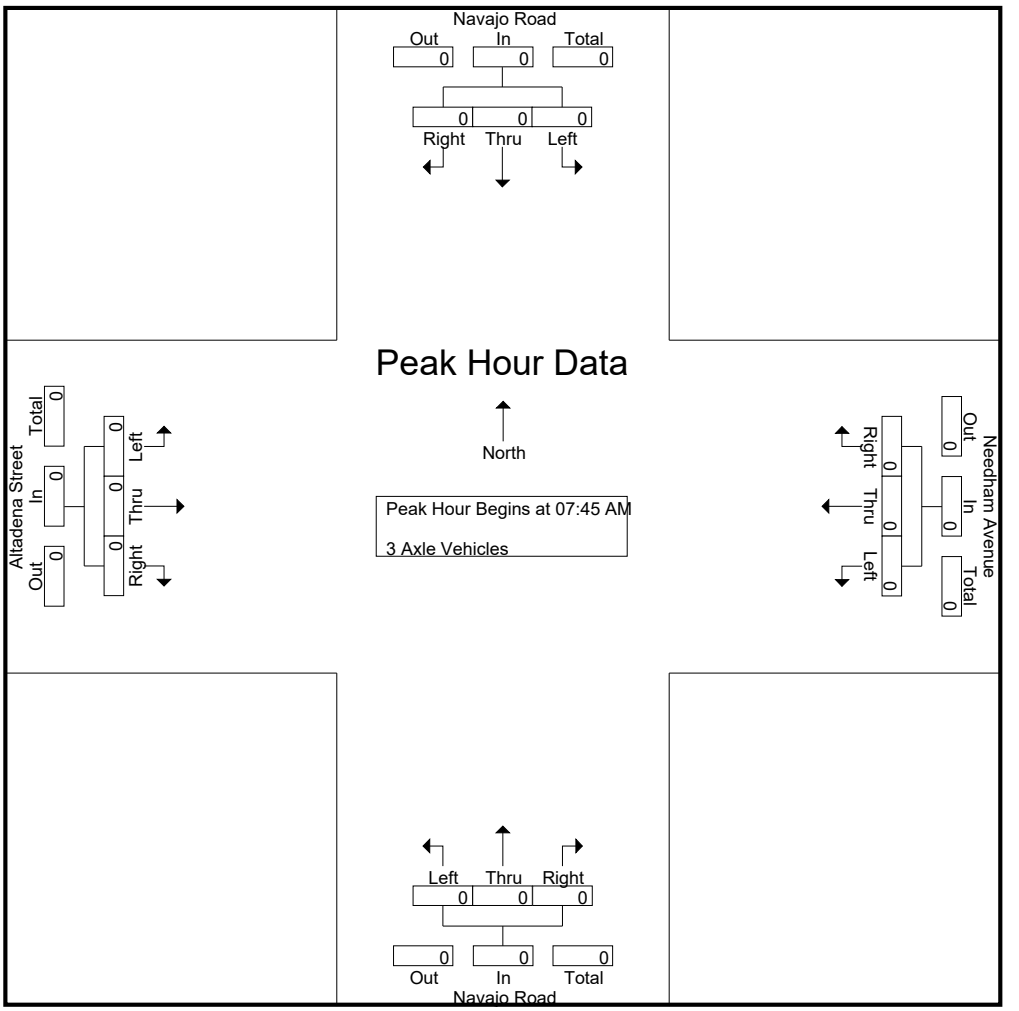
	Navajo Road Southbound				Needham Avenue Westbound				Navajo Road Northbound				Altadena Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0		
Total %																	

	Navajo Road Southbound				Needham Avenue Westbound				Navajo Road Northbound				Altadena Street 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 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Navajo Road
E/W: Altadena Street/Needham Avenue
Weather: Clear

File Name : 03_APV_Nav_Alta AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Navajo Road
E/W: Altadena Street/Needham Avenue
Weather: Clear

File Name : 03_APV_Nav_Alta AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- 4+ Axle Trucks

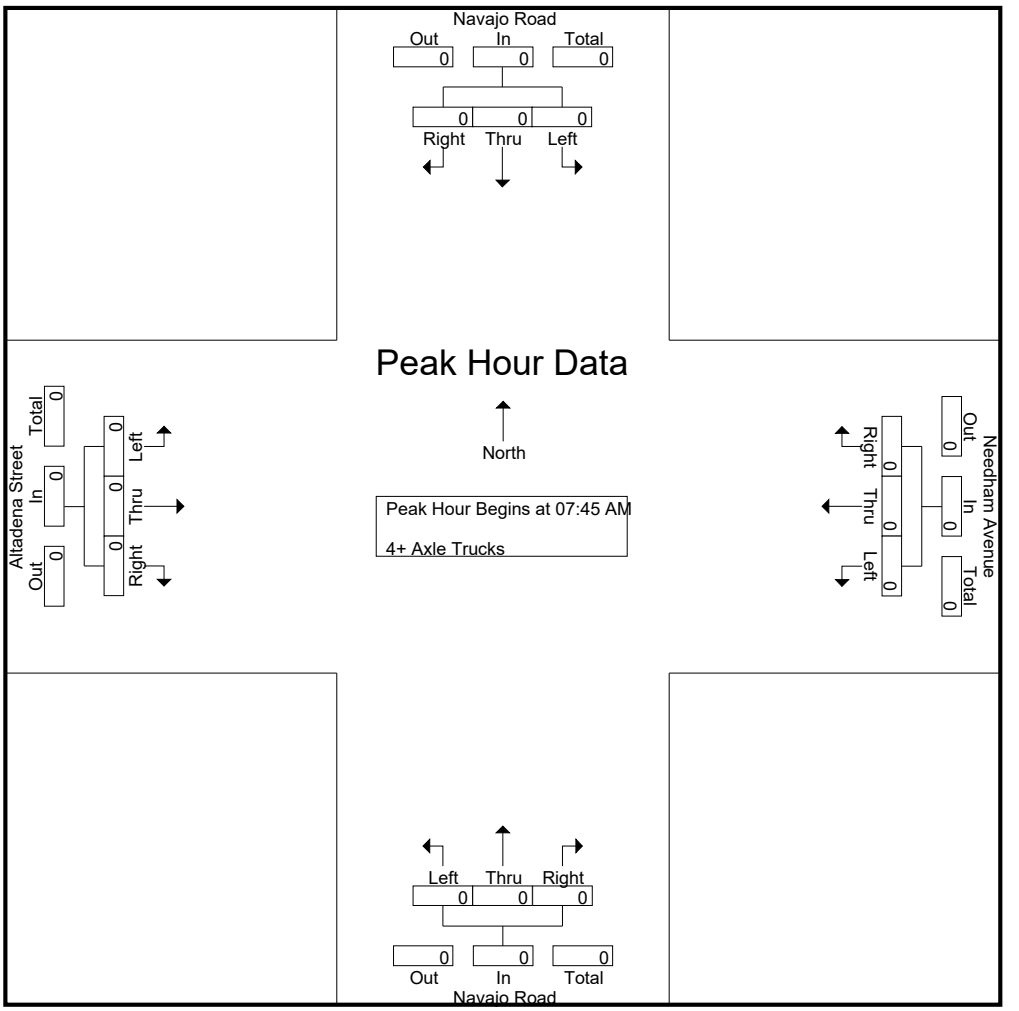
	Navajo Road Southbound				Needham Avenue Westbound				Navajo Road Northbound				Altadena Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0		
Total %																	

	Navajo Road Southbound				Needham Avenue Westbound				Navajo Road Northbound				Altadena Street 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 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Navajo Road
E/W: Altadena Street/Needham Avenue
Weather: Clear

File Name : 03_APV_Nav_Alta AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Navajo Road
E/W: Altadena Street/Needham Avenue
Weather: Clear

File Name : 03_APV_Nav_Alta PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

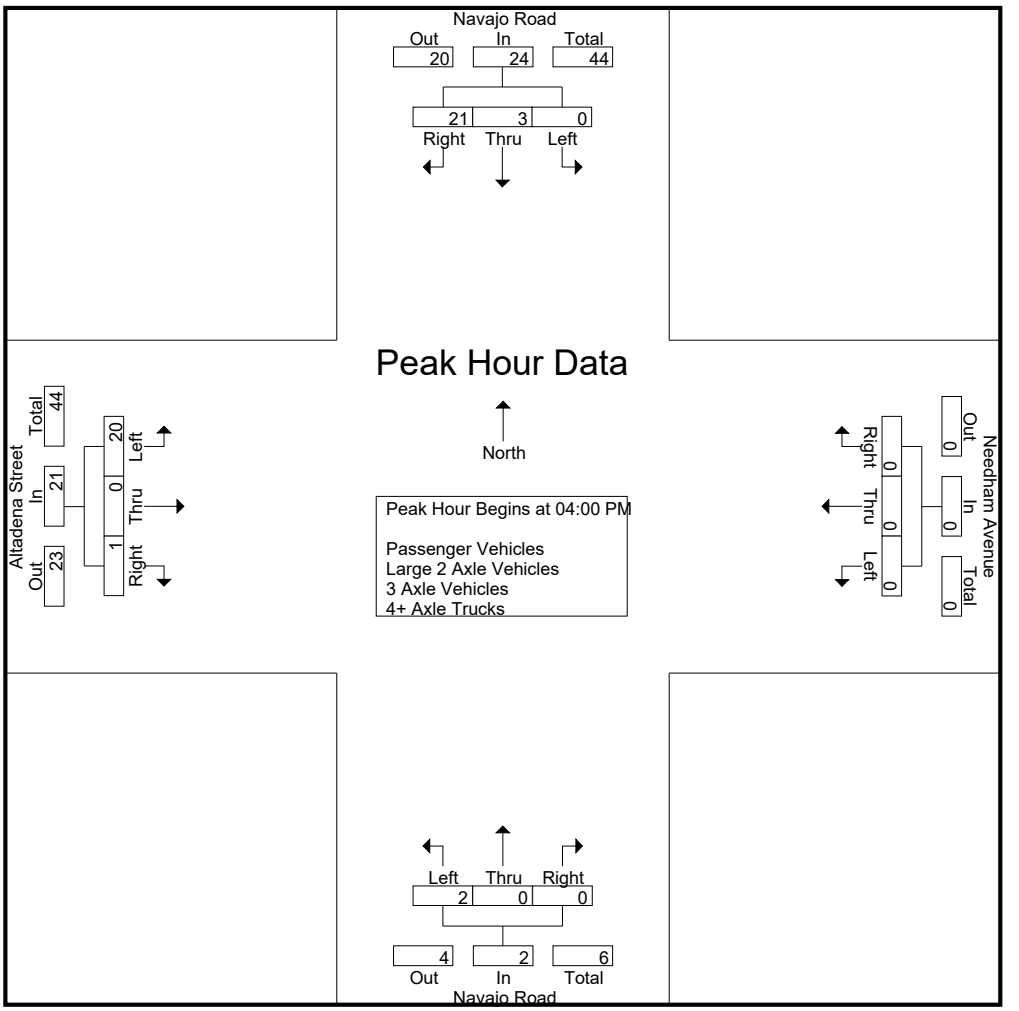
	Navajo Road Southbound				Needham Avenue Westbound				Navajo Road Northbound				Altadena Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	2	7	9	0	0	0	0	1	0	0	1	6	0	0	6	16
04:15 PM	0	0	6	6	0	0	0	0	1	0	0	1	8	0	0	8	15
04:30 PM	0	1	5	6	0	0	0	0	0	0	0	0	1	0	1	2	8
04:45 PM	0	0	3	3	0	0	0	0	0	0	0	0	5	0	0	5	8
Total	0	3	21	24	0	0	0	0	2	0	0	2	20	0	1	21	47
05:00 PM	0	0	5	5	0	0	0	0	0	0	0	0	2	0	0	2	7
05:15 PM	0	0	1	1	0	0	0	0	0	1	0	1	0	0	0	0	2
05:30 PM	0	0	5	5	0	0	0	0	1	0	0	1	1	0	0	1	7
05:45 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	12	12	0	0	0	0	1	1	0	2	3	0	0	3	17
Grand Total	0	3	33	36	0	0	0	0	3	1	0	4	23	0	1	24	64
Apprch %	0	8.3	91.7		0	0	0		75	25	0		95.8	0	4.2		
Total %	0	4.7	51.6	56.2	0	0	0	0	4.7	1.6	0	6.2	35.9	0	1.6	37.5	
Passenger Vehicles	0	3	32	35	0	0	0	0	3	1	0	4	23	0	1	24	63
% Passenger Vehicles	0	100	97	97.2	0	0	0	0	100	100	0	100	100	0	100	100	98.4
Large 2 Axle Vehicles	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
% Large 2 Axle Vehicles	0	0	3	2.8	0	0	0	0	0	0	0	0	0	0	0	0	1.6
3 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% 3 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4+ Axle Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% 4+ Axle Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Navajo Road Southbound				Needham Avenue Westbound				Navajo Road Northbound				Altadena Street 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	0	**2**	**7**	**9**	0	0	0	0	**1**	0	0	**1**	6	0	0	6	**16**
04:15 PM	0	0	6	6	0	0	0	0	1	0	0	1	**8**	0	0	**8**	15
04:30 PM	0	1	5	6	0	0	0	0	0	0	0	0	1	0	**1**	2	8
04:45 PM	0	0	3	3	0	0	0	0	0	0	0	0	5	0	0	5	8
Total Volume	0	3	21	24	0	0	0	0	2	0	0	2	20	0	1	21	47
% App. Total	0	12.5	87.5		0	0	0		100	0	0		95.2	0	4.8		
PHF	.000	.375	.750	.667	.000	.000	.000	.000	.500	.000	.000	.500	.625	.000	.250	.656	.734

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Navajo Road
E/W: Altadena Street/Needham Avenue
Weather: Clear

File Name : 03_APV_Nav_Alta PM
Site Code : 05124741
Start Date : 8/27/2024
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				04:00 PM			
+0 mins.	0	**2**	**7**	**9**	0	0	0	0	**1**	0	0	**1**	6	0	0	6
+15 mins.	0	0	6	6	0	0	0	0	1	0	0	1	**8**	0	0	**8**
+30 mins.	0	1	5	6	0	0	0	0	0	0	0	0	1	0	**1**	2
+45 mins.	0	0	3	3	0	0	0	0	0	0	0	0	5	0	0	5
Total Volume	0	3	21	24	0	0	0	0	2	0	0	2	20	0	1	21
% App. Total	0	12.5	87.5		0	0	0		100	0	0		95.2	0	4.8	
PHF	.000	.375	.750	.667	.000	.000	.000	.000	.500	.000	.000	.500	.625	.000	.250	.656

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Navajo Road
E/W: Altadena Street/Needham Avenue
Weather: Clear

File Name : 03_APV_Nav_Alta PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- Passenger Vehicles

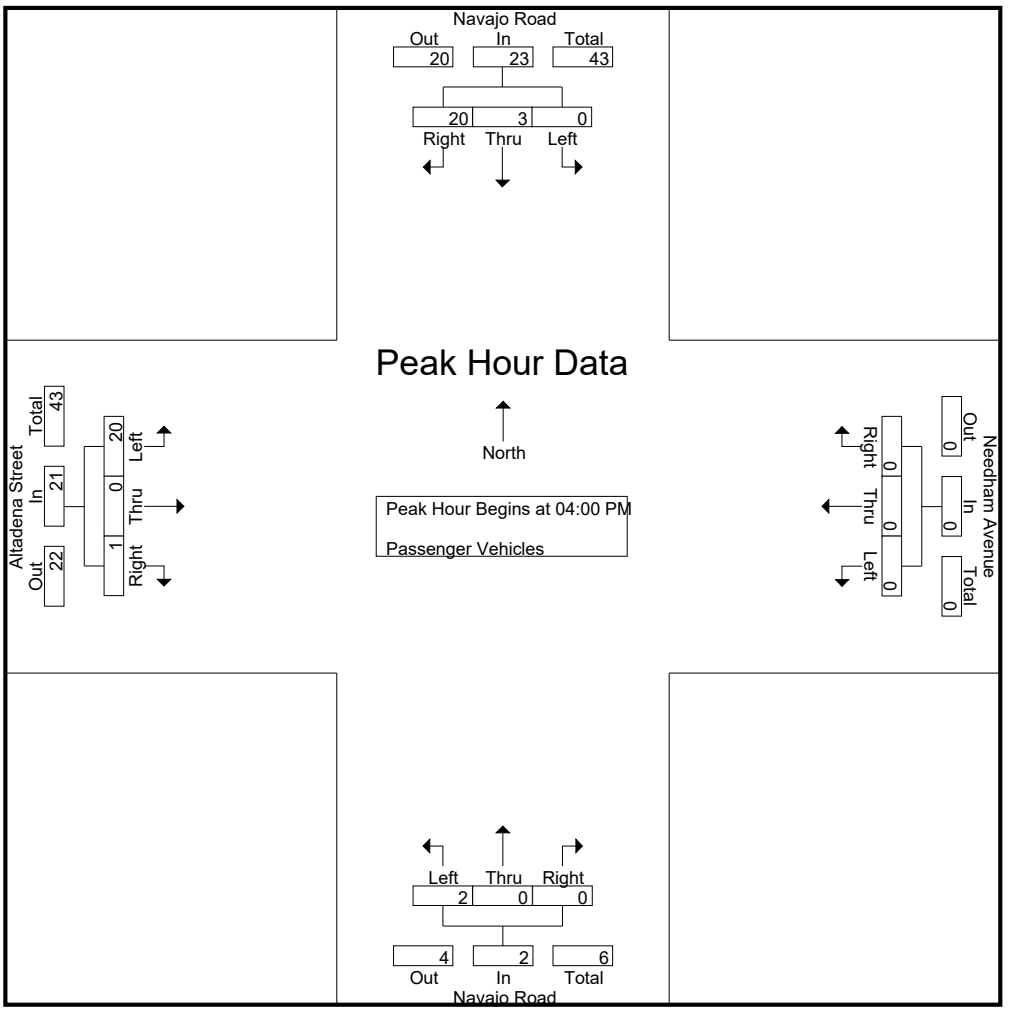
	Navajo Road Southbound				Needham Avenue Westbound				Navajo Road Northbound				Altadena Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	2	7	9	0	0	0	0	1	0	0	1	6	0	0	6	16
04:15 PM	0	0	5	5	0	0	0	0	1	0	0	1	8	0	0	8	14
04:30 PM	0	1	5	6	0	0	0	0	0	0	0	0	1	0	1	2	8
04:45 PM	0	0	3	3	0	0	0	0	0	0	0	0	5	0	0	5	8
Total	0	3	20	23	0	0	0	0	2	0	0	2	20	0	1	21	46
05:00 PM	0	0	5	5	0	0	0	0	0	0	0	0	2	0	0	2	7
05:15 PM	0	0	1	1	0	0	0	0	0	1	0	1	0	0	0	0	2
05:30 PM	0	0	5	5	0	0	0	0	1	0	0	1	1	0	0	1	7
05:45 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	12	12	0	0	0	0	1	1	0	2	3	0	0	3	17
Grand Total	0	3	32	35	0	0	0	0	3	1	0	4	23	0	1	24	63
Apprch %	0	8.6	91.4		0	0	0		75	25	0		95.8	0	4.2		
Total %	0	4.8	50.8	55.6	0	0	0	0	4.8	1.6	0	6.3	36.5	0	1.6	38.1	

	Navajo Road Southbound				Needham Avenue Westbound				Navajo Road Northbound				Altadena Street 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 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	**2**	**7**	**9**	0	0	0	0	**1**	0	0	**1**	6	0	0	6	**16**
04:15 PM	0	0	5	5	0	0	0	0	1	0	0	1	**8**	0	0	**8**	14
04:30 PM	0	1	5	6	0	0	0	0	0	0	0	0	1	0	**1**	2	8
04:45 PM	0	0	3	3	0	0	0	0	0	0	0	0	5	0	0	5	8
Total Volume	0	3	20	23	0	0	0	0	2	0	0	2	20	0	1	21	46
% App. Total	0	13	87		0	0	0		100	0	0		95.2	0	4.8		
PHF	.000	.375	.714	.639	.000	.000	.000	.000	.500	.000	.000	.500	.625	.000	.250	.656	.719

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Navajo Road
E/W: Altadena Street/Needham Avenue
Weather: Clear

File Name : 03_APV_Nav_Alta PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 2



Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	**2**	**7**	**9**	0	0	0	0	**1**	0	0	**1**	6	0	0	6
+15 mins.	0	0	5	5	0	0	0	0	1	0	0	1	**8**	0	0	**8**
+30 mins.	0	1	5	6	0	0	0	0	0	0	0	0	1	0	**1**	2
+45 mins.	0	0	3	3	0	0	0	0	0	0	0	0	5	0	0	5
Total Volume	0	3	20	23	0	0	0	0	2	0	0	2	20	0	1	21
% App. Total	0	13	87		0	0	0		100	0	0		95.2	0	4.8	
PHF	.000	.375	.714	.639	.000	.000	.000	.000	.500	.000	.000	.500	.625	.000	.250	.656

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Navajo Road
E/W: Altadena Street/Needham Avenue
Weather: Clear

File Name : 03_APV_Nav_Alta PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- Large 2 Axle Vehicles

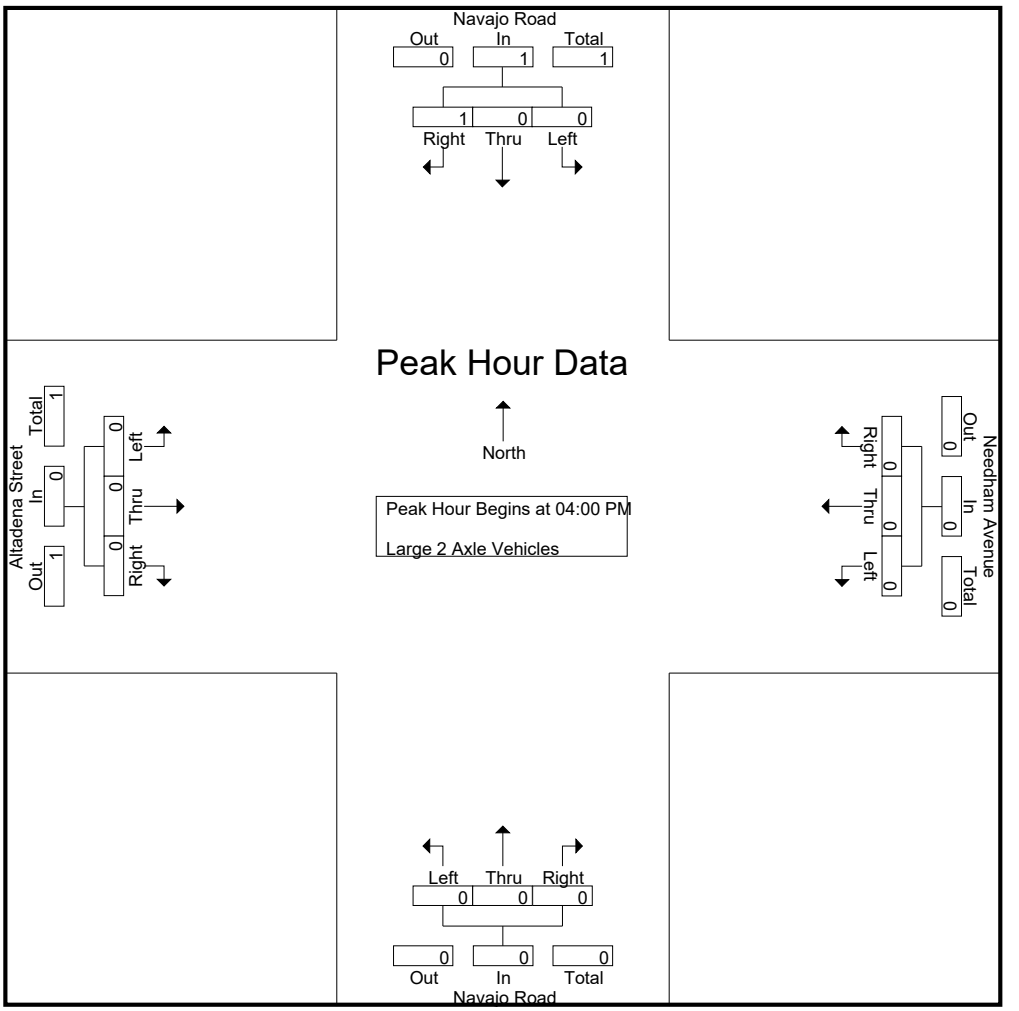
	Navajo Road Southbound				Needham Avenue Westbound				Navajo Road Northbound				Altadena Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Apprch %	0	0	100		0	0	0		0	0	0		0	0	0		
Total %	0	0	100	100	0	0	0	0	0	0	0	0	0	0	0	0	

	Navajo Road Southbound				Needham Avenue Westbound				Navajo Road Northbound				Altadena Street 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 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	**1**	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**1**
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
% App. Total	0	0	100		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.250	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Navajo Road
E/W: Altadena Street/Needham Avenue
Weather: Clear

File Name : 03_APV_Nav_Alta PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 2



Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	**1**	**1**	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	100		0	0	0		0	0	0		0	0	0	
PHF	.000	.000	.250	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Navajo Road
E/W: Altadena Street/Needham Avenue
Weather: Clear

File Name : 03_APV_Nav_Alta PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- 3 Axle Vehicles

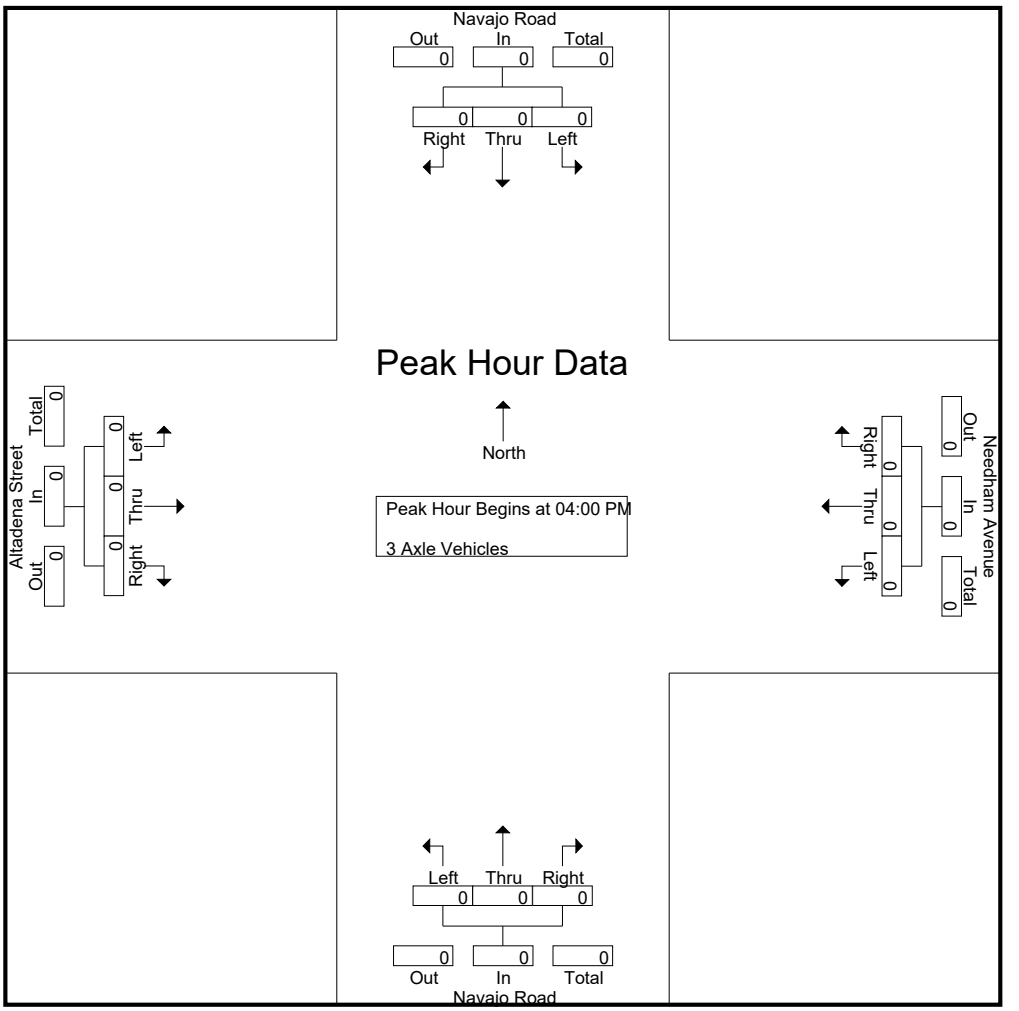
	Navajo Road Southbound				Needham Avenue Westbound				Navajo Road Northbound				Altadena Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0		
Total %																	

	Navajo Road Southbound				Needham Avenue Westbound				Navajo Road Northbound				Altadena Street 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 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Navajo Road
E/W: Altadena Street/Needham Avenue
Weather: Clear

File Name : 03_APV_Nav_Alta PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 2



Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Navajo Road
E/W: Altadena Street/Needham Avenue
Weather: Clear

File Name : 03_APV_Nav_Alta PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- 4+ Axle Trucks

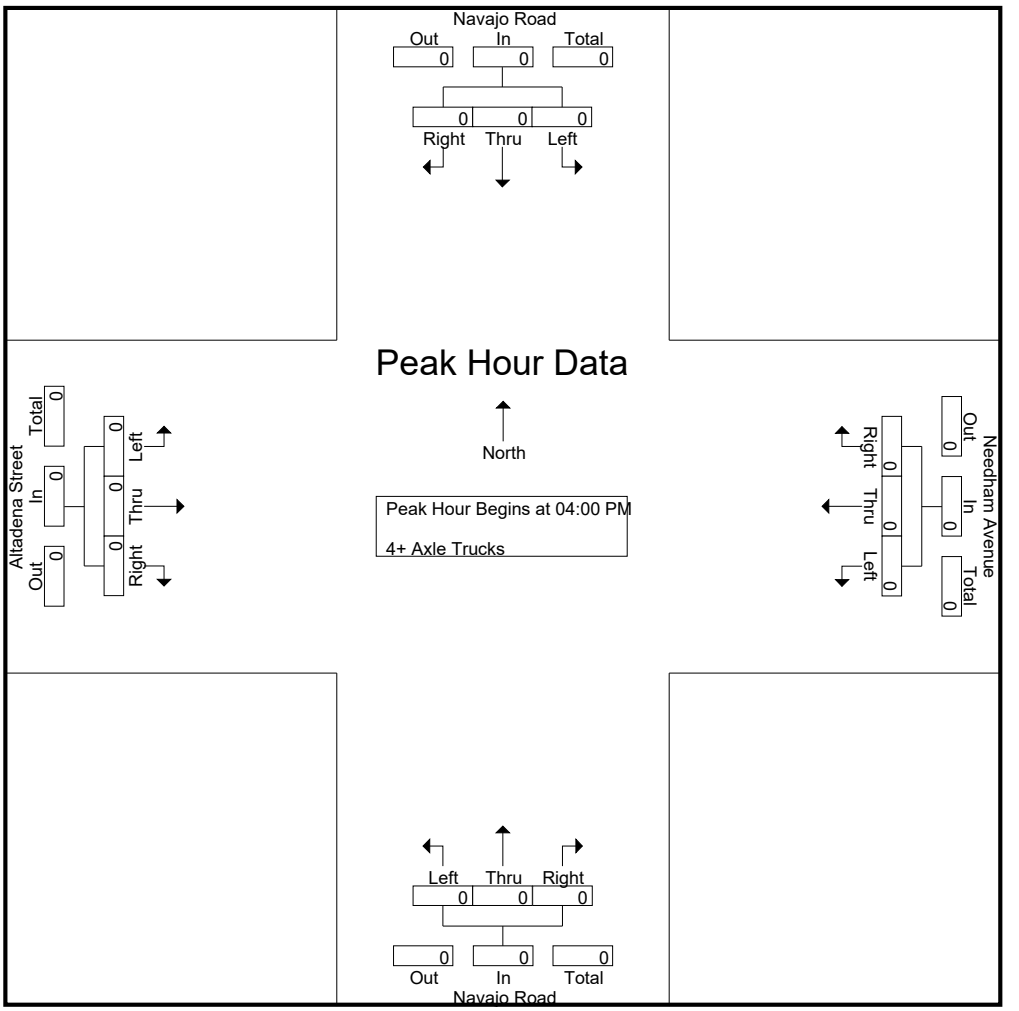
	Navajo Road Southbound				Needham Avenue Westbound				Navajo Road Northbound				Altadena Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0		
Total %																	

	Navajo Road Southbound				Needham Avenue Westbound				Navajo Road Northbound				Altadena Street 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 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Navajo Road
E/W: Altadena Street/Needham Avenue
Weather: Clear

File Name : 03_APV_Nav_Alta PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 2



Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

INTERSECTION TURNING MOVEMENT COUNTS

T020624

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, Apr 2, 24	LOCATION:	Apple Valley	PROJECT #: SC4523
	NORTH & SOUTH:	Navajo Rd	LOCATION #: 11
	EAST & WEST:	Johnson Rd	CONTROL: STOP N

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Navajo Rd			SOUTHBOUND Navajo Rd			EASTBOUND Johnson Rd			WESTBOUND Johnson Rd			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	1	0	0	0	0	0	0	4	3	2	7	0	17
	7:15 AM	1	0	0	0	0	0	0	4	4	1	4	0	14
	7:30 AM	4	0	0	0	0	0	0	5	13	2	8	0	32
	7:45 AM	0	0	0	0	0	0	0	2	10	1	10	0	23
	8:00 AM	2	0	0	0	0	0	0	1	4	10	4	0	21
	8:15 AM	2	0	0	0	0	0	0	5	7	1	6	0	21
	8:30 AM	4	0	1	0	0	0	0	3	7	3	6	0	24
	8:45 AM	4	0	0	0	0	0	0	3	15	3	1	0	26
	VOLUMES	18	0	1	0	0	0	0	27	63	23	46	0	178
	APPROACH %	95%	0%	5%	0%	0%	0%	0%	30%	70%	33%	67%	0%	
	APP/DEPART	19	/	0	0	/	86	90	/	28	69	/	64	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	8	0	0	0	0	0	0	13	34	14	28	0	97
	APPROACH %	100%	0%	0%	0%	0%	0%	0%	28%	72%	33%	67%	0%	
	PEAK HR FACTOR		0.500			0.000			0.653			0.750		0.758
	APP/DEPART	8	/	0	0	/	48	47	/	13	42	/	36	0
PM	4:00 PM	9	0	2	0	0	0	0	23	6	2	10	0	52
	4:15 PM	12	0	1	0	0	0	0	9	14	7	19	0	62
	4:30 PM	7	0	1	0	0	0	0	14	5	3	7	0	37
	4:45 PM	6	0	2	0	0	0	0	12	9	5	4	0	38
	5:00 PM	3	0	2	0	0	0	0	14	3	1	3	0	26
	5:15 PM	2	0	0	0	0	0	0	13	5	0	3	0	23
	5:30 PM	23	0	7	0	0	0	0	13	2	0	5	0	50
	5:45 PM	3	0	0	0	0	0	0	11	9	3	2	0	28
	VOLUMES	65	0	15	0	0	0	0	109	53	21	53	0	316
	APPROACH %	81%	0%	19%	0%	0%	0%	0%	67%	33%	28%	72%	0%	
	APP/DEPART	80	/	0	0	/	74	162	/	124	74	/	118	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	34	0	6	0	0	0	0	58	34	17	40	0	189
	APPROACH %	85%	0%	15%	0%	0%	0%	0%	63%	37%	30%	70%	0%	
	PEAK HR FACTOR		0.769			0.000			0.793			0.548		0.762
	APP/DEPART	40	/	0	0	/	51	92	/	64	57	/	74	0

U-TURNS

NB 0	SB 0	EB 0	WB 0	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Navajo Rd

NORTH LEG

Johnson Rd WEST LEG — EAST LEG **Johnson Rd**

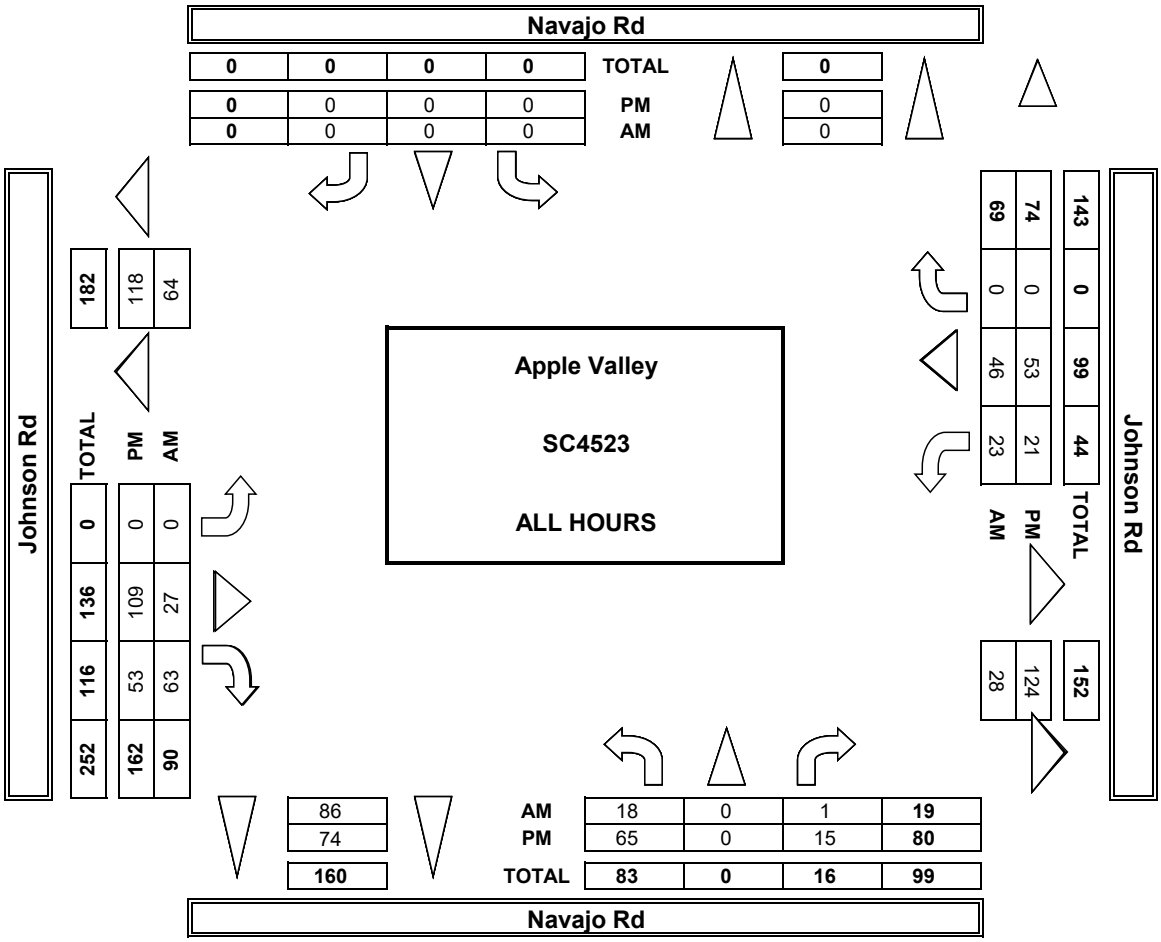
SOUTH LEG

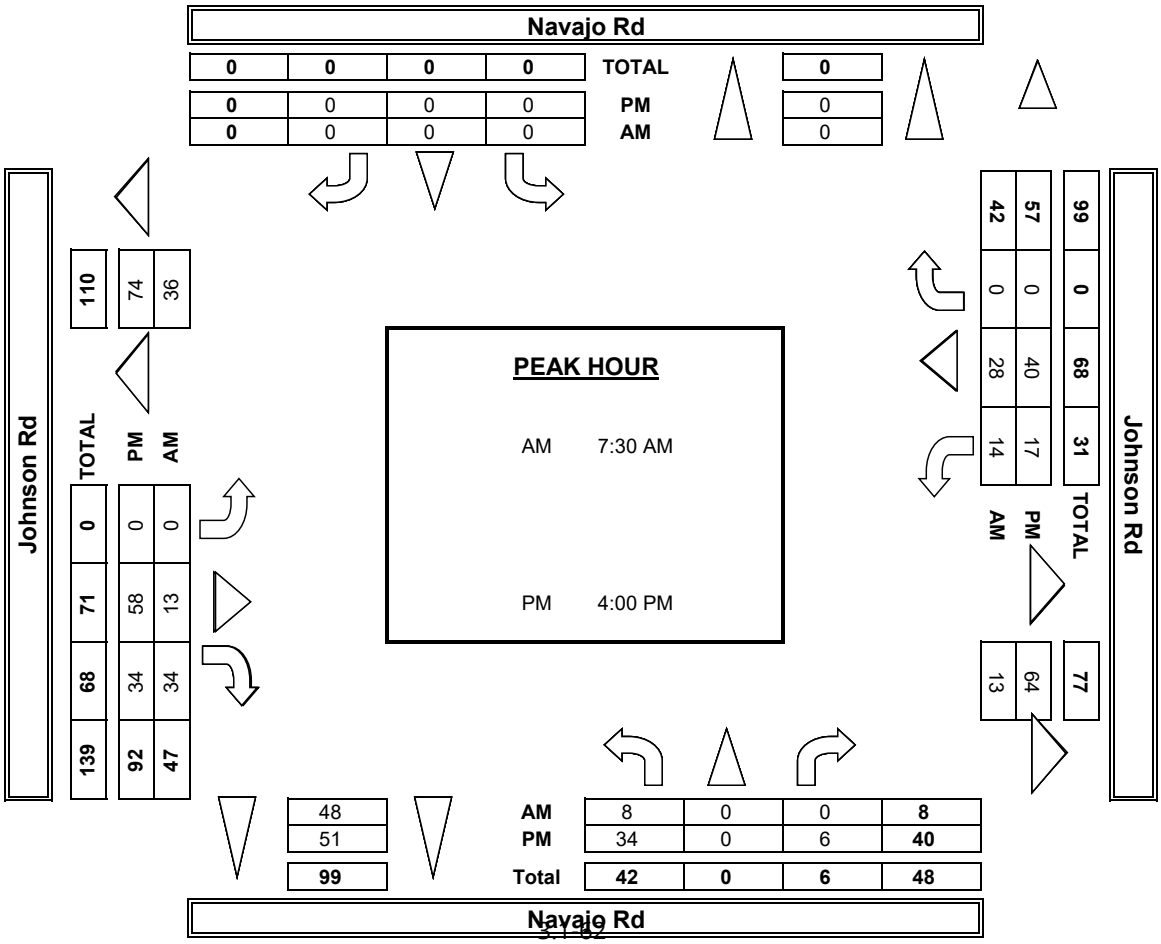
Navajo Rd

		ALL PED + BIKE & SCOOTER					PEDESTRIAN CROSSINGS					BICYCLE & SCOOTER CROSSINGS				
		E LEG	W LEG	S LEG	N LEG	TOTAL	E LEG	W LEG	S LEG	N LEG	TOTAL	EL	WL	SL	NL	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





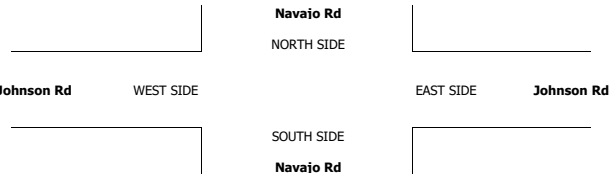
INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 4/2/24 TUESDAY	LOCATION:	Apple Valley	PROJECT #:	SC4523
	NORTH & SOUTH:	Navajo Rd	LOCATION #:	11
	EAST & WEST:	Johnson Rd	CONTROL:	STOP N

	NOTES:											
PCE Adjusted	Class	1	2	3	4	5	6		AM PM MD OTHER OTHER		▲ N	
	Factor	1	1.5	2	3	2	2			◄ W		E ►
											S ▼	

		NORTHBOUND Navajo Rd			SOUTHBOUND Navajo Rd			EASTBOUND Johnson Rd			WESTBOUND Johnson Rd				U-TURNS				
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	3	0	0	0	0	0	0	5	6	2	10	0	25					0
	7:15 AM	3	0	0	0	0	0	0	4	4	1	5	0	17					0
	7:30 AM	9	0	0	0	0	0	0	5	13	3	9	0	39					0
	7:45 AM	0	0	0	0	0	0	0	4	10	1	11	0	26					0
	8:00 AM	5	0	0	0	0	0	0	1	7	11	5	0	28					0
	8:15 AM	6	0	0	0	0	0	0	6	11	2	7	0	31					0
	8:30 AM	9	0	1	0	0	0	0	3	10	3	6	0	31					0
	8:45 AM	10	0	0	0	0	0	0	5	17	3	1	0	36					0
	VOLUMES	44	0	1	0	0	0	0	32	78	25	53	0	232	0	0	0	0	0
	APPROACH %	98%	0%	2%	0%	0%	0%	0%	29%	71%	32%	68%	0%						
	APP/DEPART	45	/	0	0	/	102	110	/	33	77	/	97	0					
	BEGIN PEAK HR	7:30 AM																	
	VOLUMES	20	0	0	0	0	0	0	16	41	16	31	0	123					
	APPROACH %	100%	0%	0%	0%	0%	0%	0%	27%	73%	33%	67%	0%						
	PEAK HR FACTOR	0.542			0.000			0.785			0.750			0.795					
	APP/DEPART	20	/	0	0	/	57	57	/	16	47	/	51	0					
PM	4:00 PM	11	0	4	0	0	0	0	23	6	2	11	0	57					0
	4:15 PM	12	0	1	0	0	0	0	10	22	7	19	0	71					0
	4:30 PM	12	0	1	0	0	0	0	15	5	3	9	0	44					0
	4:45 PM	9	0	2	0	0	0	0	12	9	5	6	0	43					0
	5:00 PM	9	0	2	0	0	0	0	15	5	1	5	0	37					0
	5:15 PM	4	0	0	0	0	0	0	13	7	0	3	0	27					0
	5:30 PM	24	0	7	0	0	0	0	13	5	0	5	0	54					0
	5:45 PM	7	0	0	0	0	0	0	14	9	3	2	0	35					0
	VOLUMES	88	0	17	0	0	0	0	114	68	21	59	0	367	0	0	0	0	0
	APPROACH %	84%	0%	16%	0%	0%	0%	0%	63%	37%	26%	74%	0%						
	APP/DEPART	105	/	0	0	/	89	182	/	131	80	/	147	0					
	BEGIN PEAK HR	4:00 PM																	
	VOLUMES	44	0	8	0	0	0	0	60	42	17	44	0	215					
	APPROACH %	85%	0%	15%	0%	0%	0%	0%	59%	41%	28%	72%	0%						
	PEAK HR FACTOR	0.867			0.000			0.793			0.587			0.755					
	APP/DEPART	52	/	0	0	/	59	102	/	68	61	/	88	0					



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Navajo Rd	LOCATION #:	11
TUESDAY	EAST & WEST:	Johnson Rd	CONTROL:	STOP N

CLASS 1: PASSENGER VEHICLES

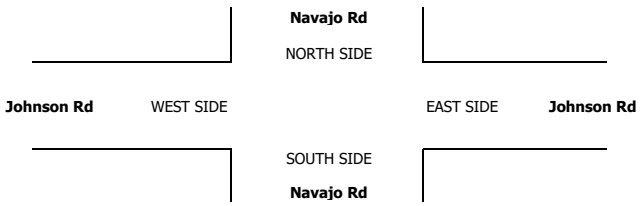
NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Navajo Rd			SOUTHBOUND Navajo Rd			EASTBOUND Johnson Rd			WESTBOUND Johnson Rd			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	3	1	2	5	0	11
	7:15 AM	0	0	0	0	0	0	0	4	4	1	3	0	12
	7:30 AM	1	0	0	0	0	0	0	5	13	1	7	0	27
	7:45 AM	0	0	0	0	0	0	0	1	10	1	9	0	21
	8:00 AM	0	0	0	0	0	0	0	1	2	9	2	0	14
	8:15 AM	0	0	0	0	0	0	0	4	5	0	5	0	14
	8:30 AM	0	0	1	0	0	0	0	3	5	3	6	0	18
	8:45 AM	1	0	0	0	0	0	0	2	14	3	1	0	21
	VOLUMES	2	0	1	0	0	0	0	23	54	20	38	0	138
	APPROACH %	67%	0%	33%	0%	0%	0%	0%	30%	70%	34%	66%	0%	
	APP/DEPART	3	/	0	0	/	74	77	/	24	58	/	40	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	1	0	0	0	0	0	0	11	30	11	23	0	76
	APPROACH %	100%	0%	0%	0%	0%	0%	0%	27%	73%	32%	68%	0%	
	PEAK HR FACTOR		0.250			0.000			0.569			0.773		0.704
	APP/DEPART	1	/	0	0	/	41	41	/	11	34	/	24	0
PM	4:00 PM	8	0	1	0	0	0	0	23	6	2	9	0	49
	4:15 PM	12	0	1	0	0	0	0	7	9	7	19	0	55
	4:30 PM	4	0	1	0	0	0	0	13	5	3	5	0	31
	4:45 PM	4	0	2	0	0	0	0	12	9	5	2	0	34
	5:00 PM	0	0	2	0	0	0	0	12	2	1	2	0	19
	5:15 PM	1	0	0	0	0	0	0	13	3	0	3	0	20
	5:30 PM	22	0	7	0	0	0	0	13	0	0	5	0	47
	5:45 PM	1	0	0	0	0	0	0	9	9	3	2	0	24
	VOLUMES	52	0	14	0	0	0	0	102	43	21	47	0	279
	APPROACH %	79%	0%	21%	0%	0%	0%	0%	70%	30%	31%	69%	0%	
	APP/DEPART	66	/	0	0	/	64	145	/	116	68	/	99	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	28	0	5	0	0	0	0	55	29	17	35	0	169
	APPROACH %	85%	0%	15%	0%	0%	0%	0%	65%	35%	33%	67%	0%	
	PEAK HR FACTOR		0.635			0.000			0.724			0.500		0.768
	APP/DEPART	33	/	0	0	/	46	84	/	60	52	/	63	0

U-TURNS					
NB	SB	EB	WB	TTL	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	

RTOR			
NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Navajo Rd	LOCATION #:	11
TUESDAY	EAST & WEST:	Johnson Rd	CONTROL:	STOP N

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

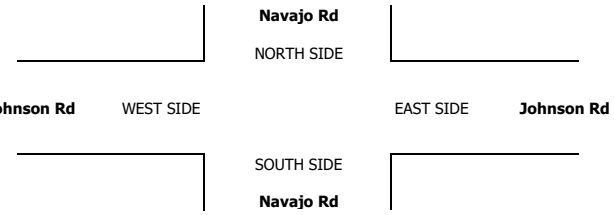
		NORTHBOUND Navajo Rd			SOUTHBOUND Navajo Rd			EASTBOUND Johnson Rd			WESTBOUND Johnson Rd			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	1	0	0	1	0	2
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	1
	7:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
	8:00 AM	1	0	0	0	0	0	0	0	0	1	2	0	4
	8:15 AM	0	0	0	0	0	0	0	1	0	1	1	0	3
	8:30 AM	1	0	0	0	0	0	0	0	1	0	0	0	2
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	2	0	0	0	0	0	0	2	1	3	5	0	13
	APPROACH %	100%	0%	0%	0%	0%	0%	0%	67%	33%	38%	63%	0%	
	APP/DEPART	2	/	0	0	/	4	3	/	2	8	/	7	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	1	0	0	0	0	0	0	1	0	3	4	0	9
	APPROACH %	100%	0%	0%	0%	0%	0%	0%	100%	0%	43%	57%	0%	
	PEAK HR FACTOR		0.250			0.000			0.250			0.583		0.563
	APP/DEPART	1	/	0	0	/	3	1	/	1	7	/	5	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	2	0	0	0	0	2
	4:30 PM	0	0	0	0	0	0	0	1	0	0	1	0	2
	4:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
	5:00 PM	0	0	0	0	0	0	0	2	0	0	0	0	2
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
	VOLUMES	0	0	0	0	0	0	0	6	0	0	2	0	8
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
	APP/DEPART	0	/	0	0	/	0	6	/	6	2	/	2	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	0	0	0	0	0	0	3	0	0	2	0	5
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
	PEAK HR FACTOR		0.000			0.000			0.375			0.500		0.625
	APP/DEPART	0	/	0	0	/	0	3	/	3	2	/	2	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Navajo Rd	LOCATION #:	11
TUESDAY	EAST & WEST:	Johnson Rd	CONTROL:	STOP N

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Navajo Rd			SOUTHBOUND Navajo Rd			EASTBOUND Johnson Rd			WESTBOUND Johnson Rd			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	1	0	0	0	0	0	0	0	0	0	0	0	1
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	1	0	0	0	0	0	0	0	0	0	1	0	2
	APPROACH %	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	
	APP/DEPART	1	/	0	0	/	0	0	/	0	1	/	2	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	1	0	1
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.250		0.250
	APP/DEPART	0	/	0	0	/	0	0	/	0	1	/	1	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
	4:15 PM	0	0	0	0	0	0	0	0	1	0	0	0	1
	4:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
	4:45 PM	1	0	0	0	0	0	0	0	0	0	1	0	2
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	1	0	0	0	1
	5:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	1
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	1	0	0	0	0	0	0	0	3	0	3	0	7
	APPROACH %	100%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	
	APP/DEPART	1	/	0	0	/	3	3	/	0	3	/	4	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	1	0	0	0	0	0	0	0	1	0	3	0	5
	APPROACH %	100%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	
	PEAK HR FACTOR		0.250			0.000			0.250			0.750		0.625
	APP/DEPART	1	/	0	0	/	1	1	/	0	3	/	4	0

	U-TURNS					RTOR			
	NB	SB	EB	WB	TTL	NRR X	SRR X	ERR X	WRR X
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0		0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0		0	0	0	0

Navajo Rd

NORTH SIDE

Johnson Rd WEST SIDE EAST SIDE **Johnson Rd**

SOUTH SIDE

Navajo Rd

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Navajo Rd	LOCATION #:	11
TUESDAY	EAST & WEST:	Johnson Rd	CONTROL:	STOP N

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Navajo Rd			SOUTHBOUND Navajo Rd			EASTBOUND Johnson Rd			WESTBOUND Johnson Rd			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	1	0	0	0	0	0	0	0	1	0	1	0	3
	7:15 AM	1	0	0	0	0	0	0	0	0	0	0	0	1
	7:30 AM	2	0	0	0	0	0	0	0	0	0	0	0	2
	7:45 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
	8:00 AM	1	0	0	0	0	0	0	0	1	0	0	0	2
	8:15 AM	2	0	0	0	0	0	0	0	2	0	0	0	4
	8:30 AM	1	0	0	0	0	0	0	0	1	0	0	0	2
	8:45 AM	3	0	0	0	0	0	0	1	1	0	0	0	5
	VOLUMES	11	0	0	0	0	0	0	2	6	0	1	0	20
	APPROACH %	100%	0%	0%	0%	0%	0%	0%	25%	75%	0%	100%	0%	
	APP/DEPART	11	/	0	0	/	6	8	/	2	1	/	12	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	5	0	0	0	0	0	0	1	3	0	0	0	9
	APPROACH %	100%	0%	0%	0%	0%	0%	0%	25%	75%	0%	0%	0%	
	PEAK HR FACTOR		0.625			0.000			0.500			0.000		0.563
	APP/DEPART	5	/	0	0	/	3	4	/	1	0	/	5	0
PM	4:00 PM	1	0	1	0	0	0	0	0	0	0	0	0	2
	4:15 PM	0	0	0	0	0	0	0	0	3	0	0	0	3
	4:30 PM	2	0	0	0	0	0	0	0	0	0	0	0	2
	4:45 PM	1	0	0	0	0	0	0	0	0	0	0	0	1
	5:00 PM	3	0	0	0	0	0	0	0	1	0	1	0	5
	5:15 PM	1	0	0	0	0	0	0	0	0	0	0	0	1
	5:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	1
	5:45 PM	2	0	0	0	0	0	0	1	0	0	0	0	3
	VOLUMES	10	0	1	0	0	0	0	1	5	0	1	0	18
	APPROACH %	91%	0%	9%	0%	0%	0%	0%	17%	83%	0%	100%	0%	
	APP/DEPART	11	/	0	0	/	5	6	/	2	1	/	11	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	4	0	1	0	0	0	0	0	3	0	0	0	8
	APPROACH %	80%	0%	20%	0%	0%	0%	0%	0%	100%	0%	0%	0%	
	PEAK HR FACTOR		0.625			0.000			0.250			0.000		0.667
	APP/DEPART	5	/	0	0	/	3	3	/	1	0	/	4	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Navajo Rd

NORTH SIDE

Johnson Rd WEST SIDE EAST SIDE **Johnson Rd**

SOUTH SIDE

Navajo Rd

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Navajo Rd	LOCATION #:	11
TUESDAY	EAST & WEST:	Johnson Rd	CONTROL:	STOP N

CLASS 5: RV

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Navajo Rd			SOUTHBOUND Navajo Rd			EASTBOUND Johnson Rd			WESTBOUND Johnson Rd			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Navajo Rd

NORTH SIDE

Johnson Rd WEST SIDE EAST SIDE **Johnson Rd**

SOUTH SIDE

Navajo Rd

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Navajo Rd	LOCATION #:	11
TUESDAY	EAST & WEST:	Johnson Rd	CONTROL:	STOP N

CLASS 6: BUSES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Navajo Rd			SOUTHBOUND Navajo Rd			EASTBOUND Johnson Rd			WESTBOUND Johnson Rd			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	1	0	0	0	1
	7:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
	7:30 AM	1	0	0	0	0	0	0	0	0	0	0	0	1
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	1	0	0	0	1
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	1	0	0	0	0	0	0	0	0	0	0	0	1
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	2	0	0	0	0	0	0	0	2	0	1	0	5
	APPROACH %	100%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	
	APP/DEPART	2	/	0	0	/	2	2	/	0	1	/	3	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	1	0	0	0	0	0	0	0	1	0	0	0	2
	APPROACH %	100%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	
	PEAK HR FACTOR		0.250			0.000			0.250			0.000		0.500
	APP/DEPART	1	/	0	0	/	1	1	/	0	0	/	1	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	1	0	0	0	1
	4:30 PM	1	0	0	0	0	0	0	0	0	0	0	0	1
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	1	0	0	0	1
	5:30 PM	1	0	0	0	0	0	0	0	0	0	0	0	1
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	2	0	0	0	0	0	0	0	2	0	0	0	4
	APPROACH %	100%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	
	APP/DEPART	2	/	0	0	/	2	2	/	0	0	/	2	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	1	0	0	0	0	0	0	0	1	0	0	0	2
	APPROACH %	100%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	
	PEAK HR FACTOR		0.250			0.000			0.250			0.000		0.500
	APP/DEPART	1	/	0	0	/	1	1	/	0	0	/	1	0

U-TURNS NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	

RTOR NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Navajo Rd

NORTH SIDE

Johnson Rd WEST SIDE EAST SIDE **Johnson Rd**

SOUTH SIDE

Navajo Rd

INTERSECTION TURNING MOVEMENT COUNTS

T020624

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, Apr 2, 24

LOCATION: Apple Valley
NORTH & SOUTH: Dale Evans Pkwy
EAST & WEST: Johnson Rd

PROJECT #: SC4523
LOCATION #: 9
CONTROL: STOP ALL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N / ◄ W / E ► / S ▼

		NORTHBOUND Dale Evans Pkwy			SOUTHBOUND Dale Evans Pkwy			EASTBOUND Johnson Rd			WESTBOUND Johnson Rd			
	LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0.5	WT 0.5	WR 1	TOTAL
AM	7:00 AM	3	27	2	1	10	0	0	12	2	2	6	5	70
	7:15 AM	3	32	6	4	16	1	0	7	1	1	3	8	82
	7:30 AM	2	35	3	8	12	0	0	24	2	2	11	7	106
	7:45 AM	4	24	2	2	12	0	0	17	4	0	16	5	86
	8:00 AM	1	26	2	2	8	0	0	13	1	0	9	6	68
	8:15 AM	0	20	3	2	10	0	0	13	3	0	8	5	64
	8:30 AM	1	19	4	2	16	0	0	20	4	1	12	4	83
	8:45 AM	4	16	4	2	14	0	0	22	3	2	7	3	77
	VOLUMES	18	199	26	23	98	1	0	128	20	8	72	43	636
	APPROACH %	7%	82%	11%	19%	80%	1%	0%	86%	14%	7%	59%	35%	
	APP/DEPART	243	/	242	122	/	126	148	/	177	123	/	91	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	12	118	13	15	50	1	0	60	9	5	36	25	344
	APPROACH %	8%	83%	9%	23%	76%	2%	0%	87%	13%	8%	55%	38%	
	PEAK HR FACTOR		0.872			0.786			0.663			0.786		0.811
	APP/DEPART	143	/	143	66	/	64	69	/	88	66	/	49	0
PM	4:00 PM	4	10	13	11	36	0	0	31	10	25	72	9	221
	4:15 PM	2	14	28	10	42	0	0	74	7	7	27	4	215
	4:30 PM	11	13	6	8	50	0	0	25	5	7	15	5	145
	4:45 PM	5	25	1	5	47	0	0	13	8	4	14	4	126
	5:00 PM	0	13	1	13	52	0	0	18	3	3	11	4	118
	5:15 PM	2	11	1	9	41	0	0	14	2	5	9	4	98
	5:30 PM	3	13	1	7	31	1	0	11	6	3	33	2	111
	5:45 PM	3	19	1	7	33	0	0	19	5	2	5	1	95
	VOLUMES	30	118	52	70	332	1	0	205	46	56	186	33	1,129
	APPROACH %	15%	59%	26%	17%	82%	0%	0%	82%	18%	20%	68%	12%	
	APP/DEPART	200	/	151	403	/	434	251	/	327	275	/	217	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	22	62	48	34	175	0	0	143	30	43	128	22	707
	APPROACH %	17%	47%	36%	16%	84%	0%	0%	83%	17%	22%	66%	11%	
	PEAK HR FACTOR		0.750			0.901			0.534			0.455		0.800
	APP/DEPART	132	/	84	209	/	248	173	/	225	193	/	150	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Dale Evans Pkwy

NORTH LEG

Johnson Rd WEST LEG — EAST LEG **Johnson Rd**

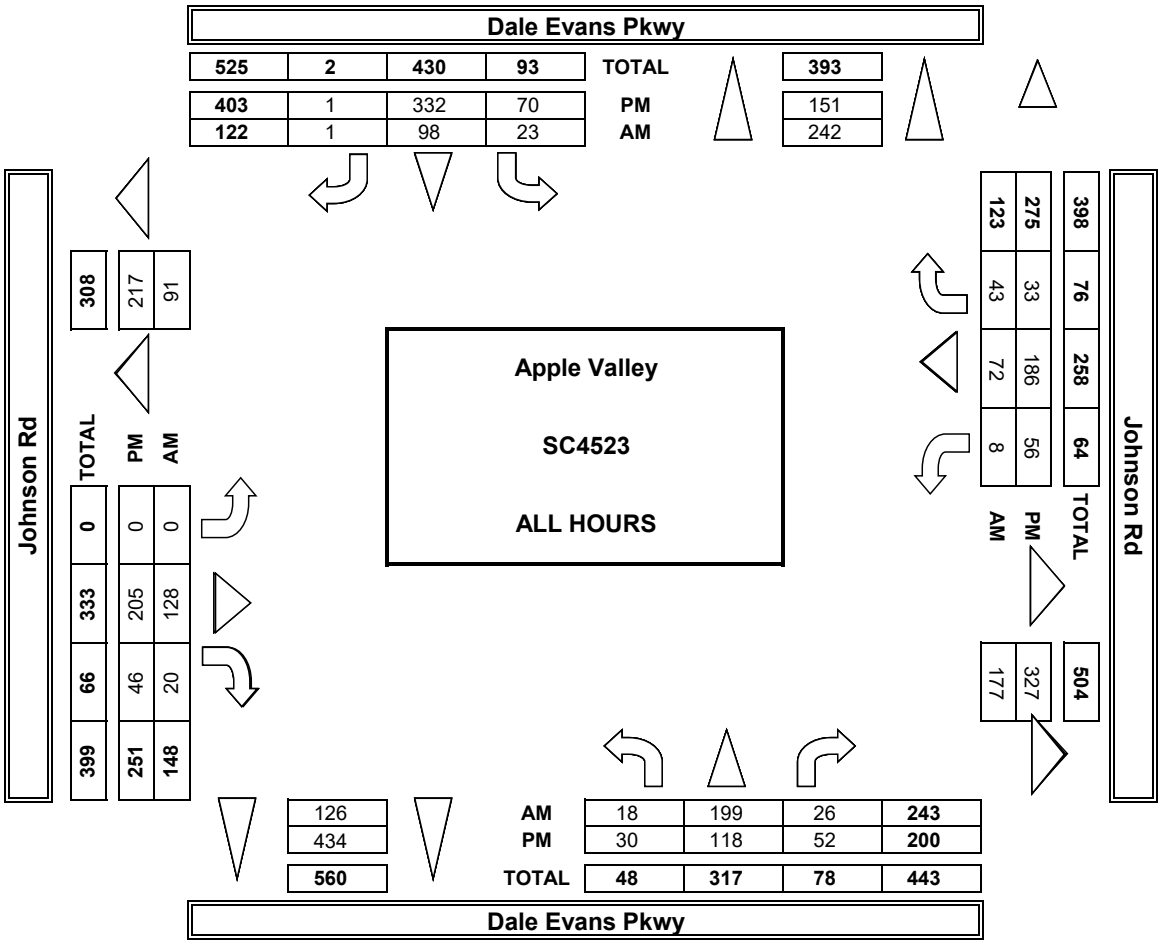
SOUTH LEG

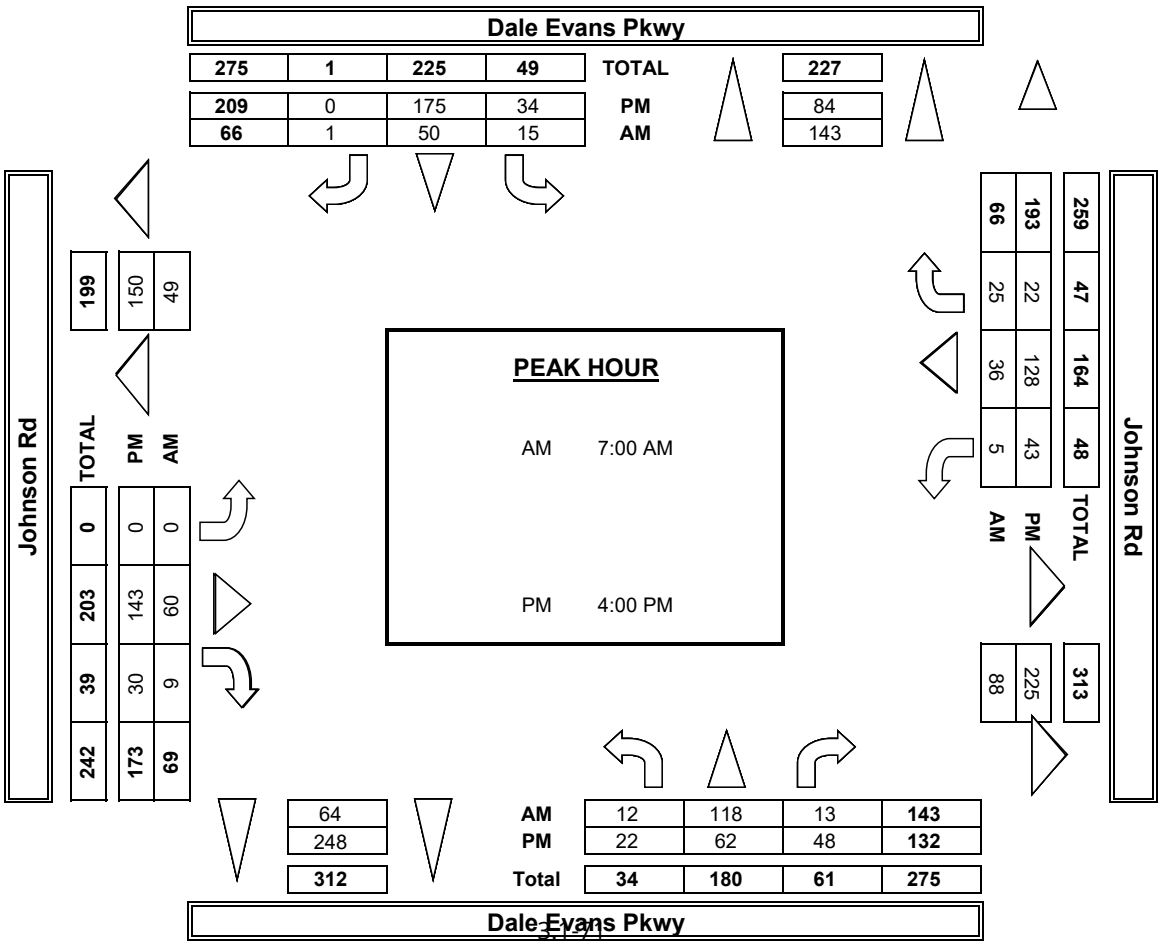
Dale Evans Pkwy

		ALL PED + BIKE & SCOOTER					PEDESTRIAN CROSSINGS					BICYCLE & SCOOTER CROSSINGS				
		E LEG	W LEG	S LEG	N LEG	TOTAL	E LEG	W LEG	S LEG	N LEG	TOTAL	EL	WL	SL	NL	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





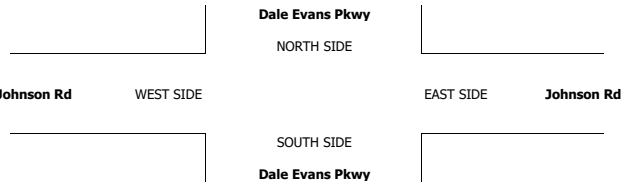
INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Dale Evans Pkwy	LOCATION #:	9
TUESDAY	EAST & WEST:	Johnson Rd	CONTROL:	STOP ALL

	NOTES:												
PCE Adjusted	Class	1	2	3	4	5	6			AM		▲ N	
	Factor	1	1.5	2	3	2	2			PM	◄ W		E ►
										MD			
										OTHER		S ▼	
										OTHER			

		NORTHBOUND Dale Evans Pkwy			SOUTHBOUND Dale Evans Pkwy			EASTBOUND Johnson Rd			WESTBOUND Johnson Rd				U-TURNS				
	LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0.5	WT 0.5	WR 1	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	3	30	3	1	11	0	0	17	2	2	11	11	90					0
	7:15 AM	6	35	6	6	16	1	0	11	1	3	5	19	108					0
	7:30 AM	4	40	3	14	14	0	0	32	2	3	21	16	149					0
	7:45 AM	7	25	2	6	18	0	0	19	5	0	29	15	124					0
	8:00 AM	1	28	3	6	11	0	0	22	1	0	13	18	103					0
	8:15 AM	0	23	3	3	11	0	0	21	4	0	15	9	87					0
	8:30 AM	1	22	4	6	19	0	0	33	8	2	22	10	126					0
	8:45 AM	6	18	4	4	15	0	0	31	3	2	15	8	105					0
	VOLUMES	27	219	28	46	114	1	0	185	25	12	129	106	891	0	0	0	0	0
	APPROACH %	10%	80%	10%	29%	71%	1%	0%	88%	12%	5%	52%	43%						
	APP/DEPART	274	/	325	161	/	151	210	/	259	247	/	157	0					
	BEGIN PEAK HR		7:00 AM																
	VOLUMES	19	129	14	27	59	1	0	79	10	8	65	61	470					
	APPROACH %	12%	80%	9%	31%	68%	1%	0%	89%	11%	6%	49%	45%						
	PEAK HR FACTOR		0.862			0.772			0.647			0.767		0.791					
	APP/DEPART	162	/	190	87	/	76	88	/	120	134	/	85	0					
PM	4:00 PM	4	12	13	18	38	0	0	34	11	25	80	16	251					0
	4:15 PM	2	16	29	16	44	0	0	95	8	7	30	8	253					0
	4:30 PM	15	13	6	22	55	0	0	31	5	8	20	9	184					0
	4:45 PM	6	25	1	11	50	0	0	17	11	4	22	6	152					0
	5:00 PM	0	15	1	25	54	0	0	28	4	3	17	12	159					0
	5:15 PM	2	14	2	13	44	0	0	20	2	5	15	12	129					0
	5:30 PM	5	13	1	13	32	1	0	16	6	4	37	2	130					0
	5:45 PM	3	19	1	13	34	0	0	26	5	2	7	3	113					0
	VOLUMES	37	127	54	131	350	1	0	266	51	58	227	68	1,369	0	0	0	0	0
	APPROACH %	17%	58%	25%	27%	73%	0%	0%	84%	16%	16%	64%	19%						
	APP/DEPART	218	/	195	482	/	459	317	/	450	353	/	265	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	27	66	49	67	186	0	0	176	35	44	151	39	839					
	APPROACH %	19%	46%	35%	26%	74%	0%	0%	84%	16%	19%	65%	17%						
	PEAK HR FACTOR		0.755			0.820			0.516			0.485		0.829					
	APP/DEPART	142	/	105	253	/	265	211	/	292	234	/	178	0					



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Dale Evans Pkwy	LOCATION #:	9
TUESDAY	EAST & WEST:	Johnson Rd	CONTROL:	STOP ALL

CLASS 1: PASSENGER VEHICLES

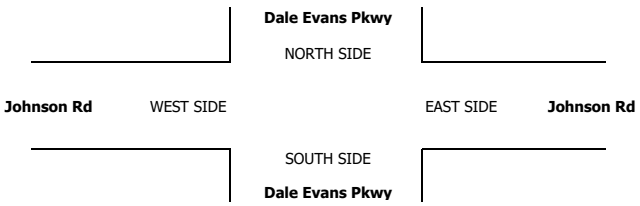
NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

	NORTHBOUND Dale Evans Pkwy			SOUTHBOUND Dale Evans Pkwy			EASTBOUND Johnson Rd			WESTBOUND Johnson Rd			
LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0.5	WT 0.5	WR 1	TOTAL
7:00 AM	3	21	1	1	9	0	0	9	2	2	3	2	53
7:15 AM	1	30	6	3	16	1	0	4	1	0	2	2	66
7:30 AM	1	30	3	5	10	0	0	20	2	1	6	2	80
7:45 AM	2	23	2	0	8	0	0	16	3	0	9	0	63
8:00 AM	1	24	1	0	4	0	0	7	1	0	5	0	43
8:15 AM	0	16	3	1	9	0	0	7	2	0	4	3	45
8:30 AM	1	17	4	0	14	0	0	12	1	0	6	1	56
8:45 AM	3	14	4	1	13	0	0	15	3	2	3	0	58
VOLUMES	12	175	24	11	83	1	0	90	15	5	38	10	464
APPROACH %	6%	83%	11%	12%	87%	1%	0%	86%	14%	9%	72%	19%	
APP/DEPART	211	/	185	95	/	103	105	/	125	53	/	51	0
BEGIN PEAK HR	7:00 AM												
VOLUMES	7	104	12	9	43	1	0	49	8	3	20	6	262
APPROACH %	6%	85%	10%	17%	81%	2%	0%	86%	14%	10%	69%	21%	
PEAK HR FACTOR		0.831			0.663			0.648			0.806		0.819
APP/DEPART	123	/	110	53	/	54	57	/	70	29	/	28	0
4:00 PM	4	9	13	7	33	0	0	29	9	25	67	5	201
4:15 PM	2	13	27	6	39	0	0	63	6	7	25	2	190
4:30 PM	9	13	6	1	46	0	0	21	5	6	12	3	122
4:45 PM	4	25	1	2	45	0	0	11	6	4	8	3	109
5:00 PM	0	12	1	7	51	0	0	11	2	3	8	0	95
5:15 PM	2	9	0	7	38	0	0	11	2	5	5	0	79
5:30 PM	2	13	1	4	30	1	0	8	6	2	31	2	100
5:45 PM	3	19	1	4	31	0	0	15	5	2	4	0	84
VOLUMES	26	113	50	38	313	1	0	169	41	54	160	15	980
APPROACH %	14%	60%	26%	11%	89%	0%	0%	80%	20%	24%	70%	7%	
APP/DEPART	189	/	128	352	/	408	210	/	257	229	/	187	0
BEGIN PEAK HR	4:00 PM												
VOLUMES	19	60	47	16	163	0	0	124	26	42	112	13	622
APPROACH %	15%	48%	37%	9%	91%	0%	0%	83%	17%	25%	67%	8%	
PEAK HR FACTOR		0.750			0.952			0.543			0.430		0.774
APP/DEPART	126	/	73	179	/	231	150	/	187	167	/	131	0

U-TURNS					
NB	SB	EB	WB	TTL	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	

RTOR			
NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Dale Evans Pkwy	LOCATION #:	9
TUESDAY	EAST & WEST:	Johnson Rd	CONTROL:	STOP ALL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Dale Evans Pkwy			SOUTHBOUND Dale Evans Pkwy			EASTBOUND Johnson Rd			WESTBOUND Johnson Rd			
	LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0.5	WT 0.5	WR 1	TOTAL
AM	7:00 AM	0	6	0	0	1	0	0	0	0	0	1	0	8
	7:15 AM	1	1	0	0	0	0	0	1	0	0	0	0	3
	7:30 AM	0	2	0	0	0	0	0	0	0	0	0	1	3
	7:45 AM	1	1	0	0	0	0	0	0	1	0	1	0	4
	8:00 AM	0	1	0	0	2	0	0	0	0	0	2	0	5
	8:15 AM	0	2	0	0	1	0	0	1	1	0	1	0	6
	8:30 AM	0	0	0	0	0	0	0	1	0	0	1	0	2
	8:45 AM	0	1	0	0	1	0	0	0	0	0	0	0	2
	VOLUMES	2	14	0	0	5	0	0	3	2	0	6	1	33
	APPROACH %	13%	88%	0%	0%	100%	0%	0%	60%	40%	0%	86%	14%	
	APP/DEPART	16	/	15	5	/	7	5	/	3	7	/	8	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	2	10	0	0	1	0	0	1	1	0	2	1	18
	APPROACH %	17%	83%	0%	0%	100%	0%	0%	50%	50%	0%	67%	33%	
	PEAK HR FACTOR		0.500			0.250			0.500			0.750		0.563
	APP/DEPART	12	/	11	1	/	2	2	/	1	3	/	4	0
PM	4:00 PM	0	0	0	0	2	0	0	0	0	0	1	0	3
	4:15 PM	0	0	0	1	3	0	0	1	1	0	0	0	6
	4:30 PM	0	0	0	0	2	0	0	1	0	0	0	0	3
	4:45 PM	0	0	0	0	1	0	0	0	0	0	1	0	2
	5:00 PM	0	0	0	0	0	0	0	2	1	0	0	0	3
	5:15 PM	0	1	0	0	2	0	0	0	0	0	0	0	3
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	2	0	0	1	0	0	0	0	3
	VOLUMES	0	1	0	1	12	0	0	5	2	0	2	0	23
	APPROACH %	0%	100%	0%	8%	92%	0%	0%	71%	29%	0%	100%	0%	
	APP/DEPART	1	/	1	13	/	14	7	/	6	2	/	2	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	0	0	1	8	0	0	2	1	0	2	0	14
	APPROACH %	0%	0%	0%	11%	89%	0%	0%	67%	33%	0%	100%	0%	
	PEAK HR FACTOR		0.000			0.563			0.375			0.500		0.583
	APP/DEPART	0	/	0	9	/	9	3	/	3	2	/	2	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	

Dale Evans Pkwy

NORTH SIDE

Johnson Rd WEST SIDE EAST SIDE **Johnson Rd**

SOUTH SIDE

Dale Evans Pkwy

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Dale Evans Pkwy	LOCATION #:	9
TUESDAY	EAST & WEST:	Johnson Rd	CONTROL:	STOP ALL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Dale Evans Pkwy			SOUTHBOUND Dale Evans Pkwy			EASTBOUND Johnson Rd			WESTBOUND Johnson Rd			
	LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0.5	WT 0.5	WR 1	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
	7:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
	7:30 AM	0	1	0	0	1	0	0	0	0	0	0	0	2
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	1	0	0	0	0	0	3	0	0	1	0	5
	8:15 AM	0	1	0	1	0	0	0	3	0	0	0	0	5
	8:30 AM	0	1	0	0	0	0	0	2	2	0	1	0	6
	8:45 AM	0	0	0	0	0	0	0	5	0	0	0	1	6
	VOLUMES	0	4	0	1	1	0	0	15	2	0	2	1	26
	APPROACH %	0%	100%	0%	50%	50%	0%	0%	88%	12%	0%	67%	33%	
	APP/DEPART	4	/	5	2	/	3	17	/	16	3	/	2	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	0	1	0	0	1	0	0	2	0	0	0	0	4
	APPROACH %	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.250			0.250			0.500			0.000		0.500
	APP/DEPART	1	/	1	1	/	1	2	/	2	0	/	0	0
PM	4:00 PM	0	0	0	1	0	0	0	1	1	0	1	0	4
	4:15 PM	0	0	0	1	0	0	0	0	0	0	1	0	2
	4:30 PM	0	0	0	0	0	0	0	1	0	0	1	0	2
	4:45 PM	1	0	0	0	0	0	0	0	1	0	3	0	5
	5:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
	5:15 PM	0	0	0	0	0	0	0	0	0	0	2	0	2
	5:30 PM	0	0	0	0	1	0	0	1	0	0	0	0	2
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	1	0	0	2	1	0	0	4	2	0	8	0	18
	APPROACH %	100%	0%	0%	67%	33%	0%	0%	67%	33%	0%	100%	0%	
	APP/DEPART	1	/	0	3	/	3	6	/	6	8	/	9	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	1	0	0	2	0	0	0	2	2	0	6	0	13
	APPROACH %	100%	0%	0%	100%	0%	0%	0%	50%	50%	0%	100%	0%	
	PEAK HR FACTOR		0.250			0.500			0.500			0.500		0.650
	APP/DEPART	1	/	0	2	/	2	4	/	4	6	/	7	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Dale Evans Pkwy

NORTH SIDE

Johnson Rd WEST SIDE EAST SIDE **Johnson Rd**

SOUTH SIDE

Dale Evans Pkwy

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Dale Evans Pkwy	LOCATION #:	9
TUESDAY	EAST & WEST:	Johnson Rd	CONTROL:	STOP ALL

CLASS 4: 4 OR MORE AXLE TRUCKS

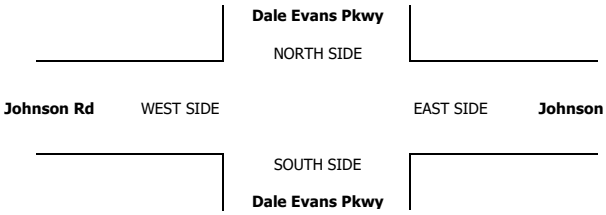
NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Dale Evans Pkwy			SOUTHBOUND Dale Evans Pkwy			EASTBOUND Johnson Rd			WESTBOUND Johnson Rd			
	LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0.5	WT 0.5	WR 1	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	2	0	0	2	3	7
	7:15 AM	1	1	0	1	0	0	0	1	0	1	1	5	11
	7:30 AM	1	1	0	3	0	0	0	4	0	0	5	4	18
	7:45 AM	1	0	0	2	2	0	0	1	0	0	6	5	17
	8:00 AM	0	0	0	2	0	0	0	3	0	0	1	6	12
	8:15 AM	0	0	0	0	0	0	0	2	0	0	3	2	7
	8:30 AM	0	1	0	2	1	0	0	5	1	0	4	3	17
	8:45 AM	1	0	0	1	0	0	0	2	0	0	4	2	10
	VOLUMES	4	3	0	11	3	0	0	20	1	1	26	30	99
	APPROACH %	57%	43%	0%	79%	21%	0%	0%	95%	5%	2%	46%	53%	
	APP/DEPART	7	/	33	14	/	5	21	/	31	57	/	30	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	3	2	0	6	2	0	0	8	0	1	14	17	53
	APPROACH %	60%	40%	0%	75%	25%	0%	0%	100%	0%	3%	44%	53%	
	PEAK HR FACTOR		0.625			0.500			0.500			0.727		0.736
	APP/DEPART	5	/	19	8	/	3	8	/	14	32	/	17	0
PM	4:00 PM	0	1	0	3	0	0	0	1	0	0	3	3	11
	4:15 PM	0	1	0	2	0	0	0	10	0	0	1	2	16
	4:30 PM	2	0	0	7	2	0	0	2	0	0	2	2	17
	4:45 PM	0	0	0	3	1	0	0	2	1	0	2	1	10
	5:00 PM	0	1	0	6	1	0	0	4	0	0	3	4	19
	5:15 PM	0	1	0	2	1	0	0	3	0	0	2	4	13
	5:30 PM	1	0	0	3	0	0	0	2	0	0	2	0	8
	5:45 PM	0	0	0	3	0	0	0	3	0	0	1	1	8
	VOLUMES	3	4	0	29	5	0	0	27	1	0	16	17	102
	APPROACH %	43%	57%	0%	85%	15%	0%	0%	96%	4%	0%	48%	52%	
	APP/DEPART	7	/	21	34	/	6	28	/	56	33	/	19	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	2	2	0	15	3	0	0	15	1	0	8	8	54
	APPROACH %	50%	50%	0%	83%	17%	0%	0%	94%	6%	0%	50%	50%	
	PEAK HR FACTOR		0.500			0.500			0.400			0.667		0.794
	APP/DEPART	4	/	10	18	/	4	16	/	30	16	/	10	0

U-TURNS					
	NB	SB	EB	WB	TTL
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	
	0	0	0	0	
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	
	0	0	0	0	

RTOR			
NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Dale Evans Pkwy	LOCATION #:	9
TUESDAY	EAST & WEST:	Johnson Rd	CONTROL:	STOP ALL

CLASS 5: RV

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Dale Evans Pkwy			SOUTHBOUND Dale Evans Pkwy			EASTBOUND Johnson Rd			WESTBOUND Johnson Rd			
	LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0.5	WT 0.5	WR 1	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Dale Evans Pkwy

NORTH SIDE

Johnson Rd WEST SIDE EAST SIDE **Johnson Rd**

SOUTH SIDE

Dale Evans Pkwy

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Dale Evans Pkwy	LOCATION #:	9
TUESDAY	EAST & WEST:	Johnson Rd	CONTROL:	STOP ALL

CLASS 6: BUSES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

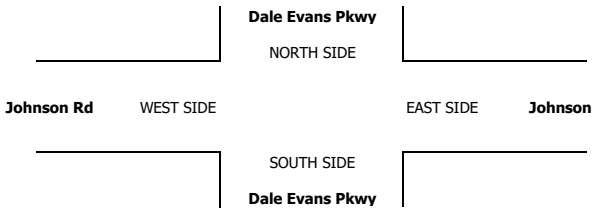
		NORTHBOUND Dale Evans Pkwy			SOUTHBOUND Dale Evans Pkwy			EASTBOUND Johnson Rd			WESTBOUND Johnson Rd			
	LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0.5	WT 0.5	WR 1	TOTAL
AM	7:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	1
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	1
	7:30 AM	0	1	0	0	1	0	0	0	0	1	0	0	3
	7:45 AM	0	0	0	0	2	0	0	0	0	0	0	0	2
	8:00 AM	0	0	1	0	2	0	0	0	0	0	0	0	3
	8:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
	8:30 AM	0	0	0	0	1	0	0	0	0	1	0	0	2
	8:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
	VOLUMES	0	3	2	0	6	0	0	0	0	2	0	1	14
	APPROACH %	0%	60%	40%	0%	100%	0%	0%	0%	0%	67%	0%	33%	
	APP/DEPART	5	/	4	6	/	8	0	/	2	3	/	0	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	0	1	1	0	3	0	0	0	0	1	0	1	7
	APPROACH %	0%	50%	50%	0%	100%	0%	0%	0%	0%	50%	0%	50%	
	PEAK HR FACTOR		0.500			0.375			0.000			0.500		0.583
	APP/DEPART	2	/	2	3	/	4	0	/	1	2	/	0	0
PM	4:00 PM	0	0	0	0	1	0	0	0	0	0	0	1	2
	4:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	1
	4:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	1
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	1
	5:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	1
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	2	0	1	0	0	0	0	2	0	1	6
	APPROACH %	0%	0%	100%	0%	100%	0%	0%	0%	0%	67%	0%	33%	
	APP/DEPART	2	/	1	1	/	3	0	/	2	3	/	0	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	0	1	0	1	0	0	0	0	1	0	1	4
	APPROACH %	0%	0%	100%	0%	100%	0%	0%	0%	0%	50%	0%	50%	
	PEAK HR FACTOR		0.250			0.250			0.000			0.500		0.500
	APP/DEPART	1	/	1	1	/	2	0	/	1	2	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

T020624

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, Apr 2, 24	LOCATION:	Apple Valley	PROJECT #: SC4523
	NORTH & SOUTH:	Stoddard Wells Rd	LOCATION #: 4
	EAST & WEST:	Johnson Rd	CONTROL: STOP W

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Stoddard Wells Rd			SOUTHBOUND Stoddard Wells Rd			EASTBOUND Johnson Rd			WESTBOUND Johnson Rd			
	LANES:	NL X	NT 1	NR 1	SL 1	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL
AM	7:00 AM	0	8	12	1	4	0	0	0	0	11	0	0	36
	7:15 AM	0	5	14	0	4	0	0	0	0	7	0	0	30
	7:30 AM	0	5	23	0	3	0	0	0	0	11	0	0	42
	7:45 AM	0	3	18	0	9	0	0	0	0	21	0	0	51
	8:00 AM	0	5	17	0	4	0	0	0	0	10	0	0	36
	8:15 AM	0	5	17	0	7	0	0	0	0	9	0	0	38
	8:30 AM	0	2	23	1	1	0	0	0	0	12	0	0	39
	8:45 AM	0	2	20	0	11	0	0	0	0	7	0	0	40
	VOLUMES	0	35	144	2	43	0	0	0	0	88	0	0	312
	APPROACH %	0%	20%	80%	4%	96%	0%	0%	0%	0%	100%	0%	0%	
	APP/DEPART	179	/	35	45	/	131	0	/	146	88	/	0	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	0	18	75	0	23	0	0	0	0	51	0	0	167
	APPROACH %	0%	19%	81%	0%	100%	0%	0%	0%	0%	100%	0%	0%	
	PEAK HR FACTOR		0.830			0.639			0.000			0.607		0.819
	APP/DEPART	93	/	18	23	/	74	0	/	75	51	/	0	0
PM	4:00 PM	0	1	41	2	7	0	0	0	0	81	0	0	132
	4:15 PM	0	6	76	0	6	0	0	0	0	27	0	1	116
	4:30 PM	0	2	26	0	5	0	0	0	0	23	0	0	56
	4:45 PM	0	2	20	0	6	0	0	0	0	22	0	2	52
	5:00 PM	0	3	20	0	1	0	0	0	0	10	0	0	34
	5:15 PM	0	2	18	0	2	0	0	0	0	12	0	0	34
	5:30 PM	0	2	21	0	4	0	0	0	0	37	0	0	64
	5:45 PM	0	1	22	1	3	0	0	0	0	9	0	0	36
	VOLUMES	0	19	244	3	34	0	0	0	0	221	0	3	524
	APPROACH %	0%	7%	93%	8%	92%	0%	0%	0%	0%	99%	0%	1%	
	APP/DEPART	263	/	22	37	/	255	0	/	247	224	/	0	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	11	163	2	24	0	0	0	0	153	0	3	356
	APPROACH %	0%	6%	94%	8%	92%	0%	0%	0%	0%	98%	0%	2%	
	PEAK HR FACTOR		0.530			0.722			0.000			0.481		0.674
	APP/DEPART	174	/	14	26	/	177	0	/	165	156	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Stoddard Wells Rd

NORTH LEG

Johnson Rd WEST LEG — EAST LEG **Johnson Rd**

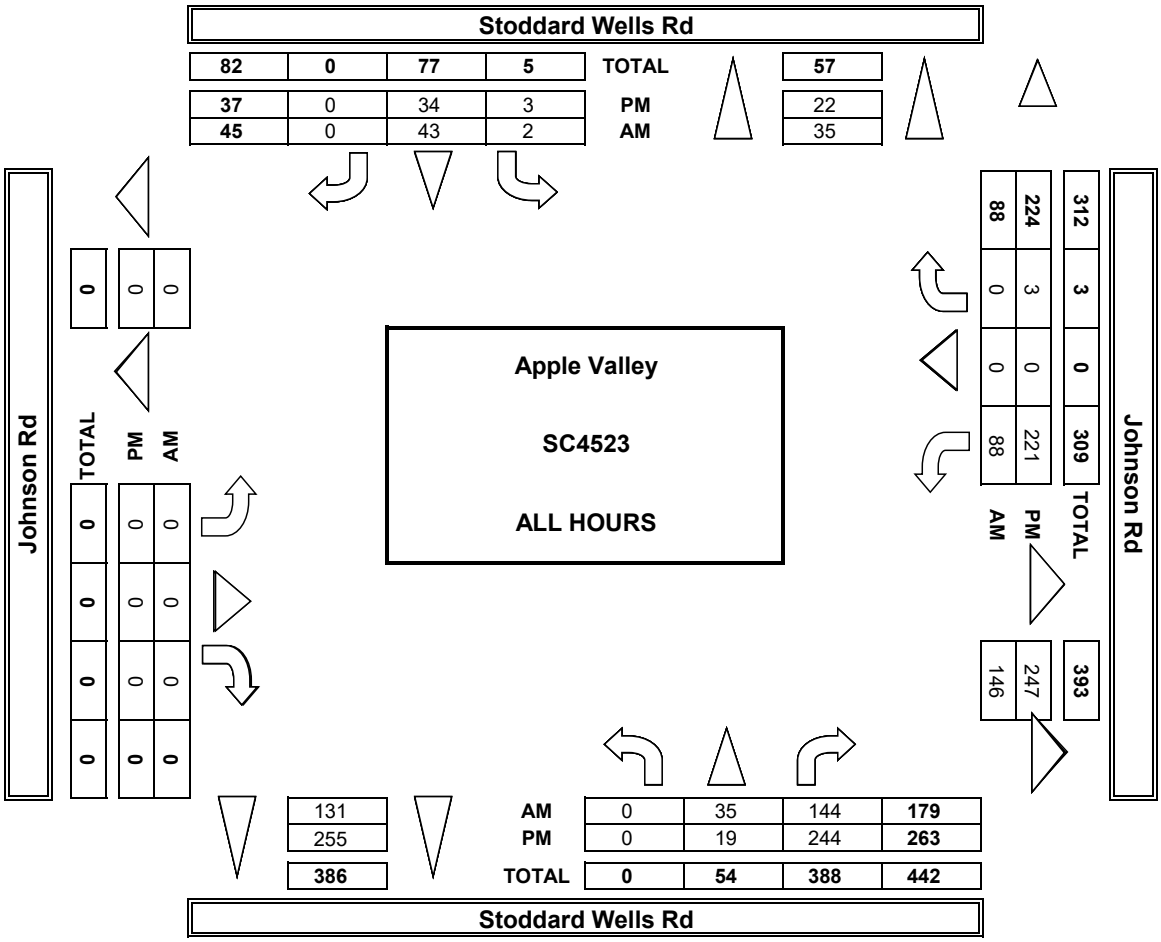
SOUTH LEG

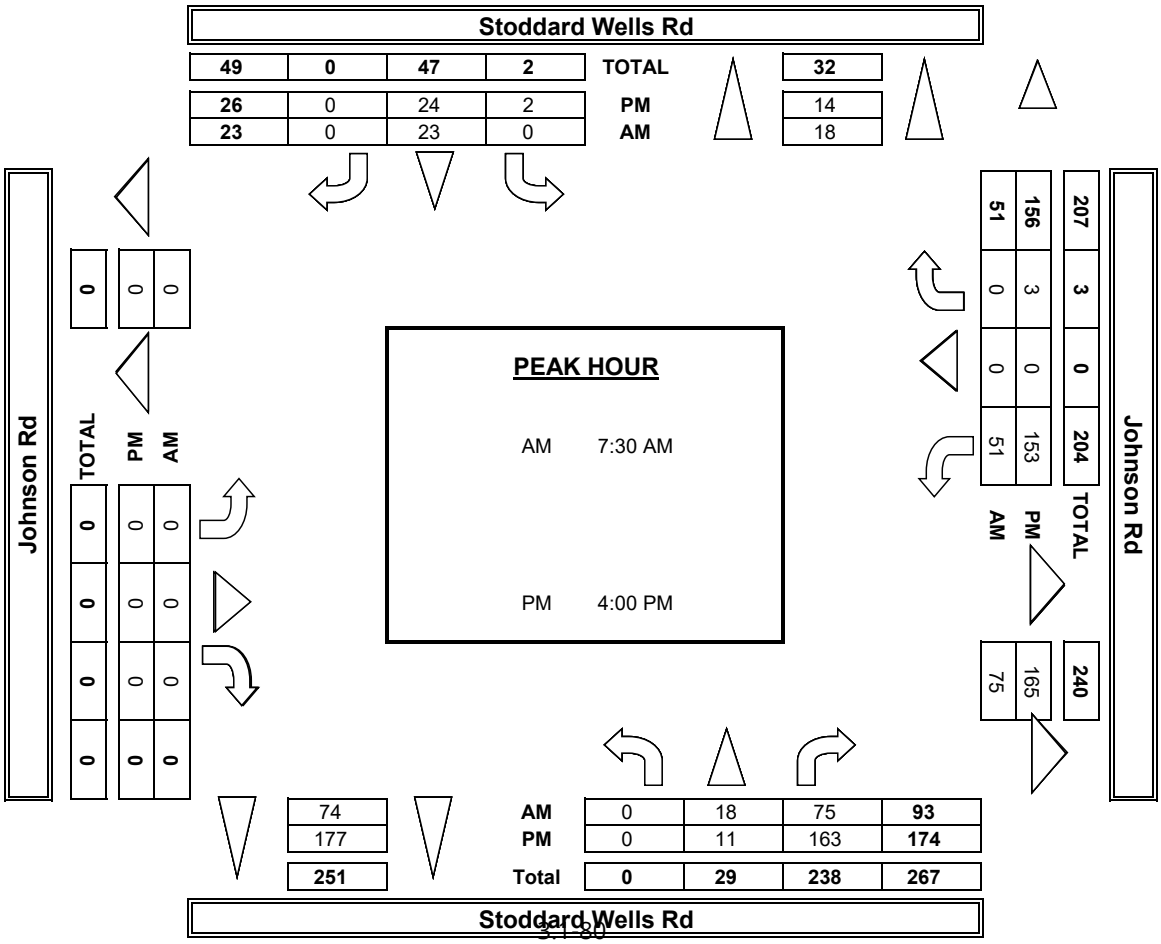
Stoddard Wells Rd

		ALL PED + BIKE & SCOOTER					PEDESTRIAN CROSSINGS					BICYCLE & SCOOTER CROSSINGS				
		E LEG	W LEG	S LEG	N LEG	TOTAL	E LEG	W LEG	S LEG	N LEG	TOTAL	EL	WL	SL	NL	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 4/2/24 TUESDAY	LOCATION:	Apple Valley	PROJECT #:	SC4523
	NORTH & SOUTH:	Stoddard Wells Rd	LOCATION #:	4
	EAST & WEST:	Johnson Rd	CONTROL:	STOP W

	NOTES:											
PCE Adjusted	Class	1	2	3	4	5	6		AM		▲ N	
	Factor	1	1.5	2	3	2	2		PM	◄ W		E ►
									MD		S ▼	
									OTHER			
									OTHER			

	NORTHBOUND Stoddard Wells Rd			SOUTHBOUND Stoddard Wells Rd			EASTBOUND Johnson Rd			WESTBOUND Johnson Rd				U-TURNS				
LANES:	NL X	NT 1	NR 1	SL 1	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL	NB	SB	EB	WB	TTL
7:00 AM	0	10	17	1	4	0	0	0	0	21	0	0	53					0
7:15 AM	0	6	20	0	6	0	0	0	0	12	0	0	43					0
7:30 AM	0	6	30	0	5	0	0	0	0	22	0	0	63					0
7:45 AM	0	3	19	0	24	0	0	0	0	41	0	0	86					0
8:00 AM	0	10	29	0	10	0	0	0	0	14	0	0	63					0
8:15 AM	0	9	27	0	13	0	0	0	0	16	0	0	65					0
8:30 AM	0	3	38	1	1	0	0	0	0	20	0	0	62					0
8:45 AM	0	4	27	0	16	0	0	0	0	16	0	0	62					0
AM VOLUMES	0	51	206	2	78	0	0	0	0	160	0	0	496	0	0	0	0	0
AM APPROACH %	0%	20%	80%	3%	98%	0%	0%	0%	0%	100%	0%	0%						
AM APP/DEPART	257	/	51	80	/	238	0	/	208	160	/	0	0					
AM BEGIN PEAK HR	7:30 AM																	
AM VOLUMES	0	28	105	0	52	0	0	0	0	92	0	0	276					
AM APPROACH %	0%	21%	79%	0%	100%	0%	0%	0%	0%	100%	0%	0%						
AM PEAK HR FACTOR	0.849			0.548			0.000			0.568			0.802					
AM APP/DEPART	133	/	28	52	/	144	0	/	105	92	/	0	0					
4:00 PM	0	1	46	2	7	0	0	0	0	87	0	0	142					0
4:15 PM	0	6	96	0	8	0	0	0	0	32	0	1	143					0
4:30 PM	0	3	30	0	5	0	0	0	0	30	0	0	67					0
4:45 PM	0	2	30	0	6	0	0	0	0	35	0	2	75					0
5:00 PM	0	3	28	0	3	0	0	0	0	14	0	0	48					0
5:15 PM	0	4	24	0	2	0	0	0	0	20	0	0	50					0
5:30 PM	0	2	26	0	5	0	0	0	0	43	0	0	76					0
5:45 PM	0	1	29	1	3	0	0	0	0	11	0	0	45					0
PM VOLUMES	0	22	308	3	39	0	0	0	0	271	0	3	644	0	0	0	0	0
PM APPROACH %	0%	7%	93%	7%	93%	0%	0%	0%	0%	99%	0%	1%						
PM APP/DEPART	329	/	25	42	/	309	0	/	311	274	/	0	0					
PM BEGIN PEAK HR	4:00 PM																	
PM VOLUMES	0	12	201	2	26	0	0	0	0	183	0	3	426					
PM APPROACH %	0%	5%	95%	7%	93%	0%	0%	0%	0%	98%	0%	2%						
PM PEAK HR FACTOR	0.521			0.778			0.000			0.536			0.747					
PM APP/DEPART	213	/	15	28	/	209	0	/	203	186	/	0	0					



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Stoddard Wells Rd	LOCATION #:	4
TUESDAY	EAST & WEST:	Johnson Rd	CONTROL:	STOP W

CLASS 1: PASSENGER VEHICLES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

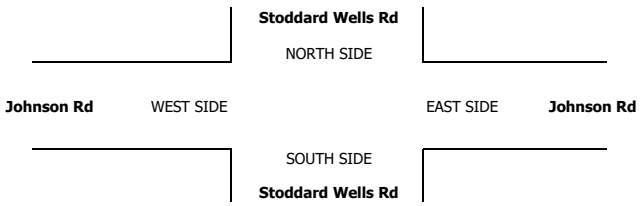
	NORTHBOUND Stoddard Wells Rd			SOUTHBOUND Stoddard Wells Rd			EASTBOUND Johnson Rd			WESTBOUND Johnson Rd			
LANES:	NL X	NT 1	NR 1	SL 1	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL
7:00 AM	0	7	9	1	4	0	0	0	0	6	0	0	27
7:15 AM	0	3	10	0	3	0	0	0	0	4	0	0	20
7:30 AM	0	3	19	0	2	0	0	0	0	5	0	0	29
7:45 AM	0	3	17	0	1	0	0	0	0	9	0	0	30
8:00 AM	0	1	8	0	1	0	0	0	0	6	0	0	16
8:15 AM	0	3	10	0	4	0	0	0	0	5	0	0	22
8:30 AM	0	1	14	1	1	0	0	0	0	7	0	0	24
8:45 AM	0	1	14	0	8	0	0	0	0	2	0	0	25
AM VOLUMES	0	22	101	2	24	0	0	0	0	44	0	0	193
AM APPROACH %	0%	18%	82%	8%	92%	0%	0%	0%	0%	100%	0%	0%	
AM APP/DEPART	123	/	22	26	/	68	0	/	103	44	/	0	0
BEGIN PEAK HR		7:30 AM											
AM PEAK VOLUMES	0	10	54	0	8	0	0	0	0	25	0	0	97
AM PEAK APPROACH %	0%	16%	84%	0%	100%	0%	0%	0%	0%	100%	0%	0%	
AM PEAK HR FACTOR		0.727			0.500			0.000			0.694		0.808
AM PEAK APP/DEPART	64	/	10	8	/	33	0	/	54	25	/	0	0
4:00 PM	0	1	37	2	7	0	0	0	0	77	0	0	124
4:15 PM	0	6	66	0	5	0	0	0	0	24	0	1	102
4:30 PM	0	1	23	0	5	0	0	0	0	19	0	0	48
4:45 PM	0	2	15	0	6	0	0	0	0	13	0	2	38
5:00 PM	0	3	14	0	0	0	0	0	0	8	0	0	25
5:15 PM	0	1	15	0	2	0	0	0	0	7	0	0	25
5:30 PM	0	2	18	0	3	0	0	0	0	34	0	0	57
5:45 PM	0	1	18	1	3	0	0	0	0	8	0	0	31
PM VOLUMES	0	17	206	3	31	0	0	0	0	190	0	3	450
PM APPROACH %	0%	8%	92%	9%	91%	0%	0%	0%	0%	98%	0%	2%	
PM APP/DEPART	223	/	20	34	/	221	0	/	209	193	/	0	0
BEGIN PEAK HR		4:00 PM											
PM PEAK VOLUMES	0	10	141	2	23	0	0	0	0	133	0	3	312
PM PEAK APPROACH %	0%	7%	93%	8%	92%	0%	0%	0%	0%	98%	0%	2%	
PM PEAK HR FACTOR		0.524			0.694			0.000			0.442		0.629
PM PEAK APP/DEPART	151	/	13	25	/	156	0	/	143	136	/	0	0

U-TURNS

	NB	SB	EB	WB	TTL
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0

RTOR

	NRR X	SRR X	ERR X	WRR X
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Stoddard Wells Rd	LOCATION #:	4
TUESDAY	EAST & WEST:	Johnson Rd	CONTROL:	STOP W

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Stoddard Wells Rd			SOUTHBOUND Stoddard Wells Rd			EASTBOUND Johnson Rd			WESTBOUND Johnson Rd			
	LANES:	NL X	NT 1	NR 1	SL 1	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	2	1	0	0	0	0	0	0	1	0	0	4
	7:30 AM	0	2	1	0	0	0	0	0	0	0	0	0	3
	7:45 AM	0	0	0	0	1	0	0	0	0	3	0	0	4
	8:00 AM	0	2	2	0	0	0	0	0	0	2	0	0	6
	8:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	1
	8:30 AM	0	0	1	0	0	0	0	0	0	1	0	0	2
	8:45 AM	0	0	0	0	1	0	0	0	0	1	0	0	2
	VOLUMES	0	6	5	0	2	0	0	0	0	9	0	0	22
	APPROACH %	0%	55%	45%	0%	100%	0%	0%	0%	0%	100%	0%	0%	
	APP/DEPART	11	/	6	2	/	11	0	/	5	9	/	0	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	0	4	3	0	1	0	0	0	0	6	0	0	14
	APPROACH %	0%	57%	43%	0%	100%	0%	0%	0%	0%	100%	0%	0%	
	PEAK HR FACTOR		0.438			0.250			0.000			0.500		0.583
	APP/DEPART	7	/	4	1	/	7	0	/	3	6	/	0	0
PM	4:00 PM	0	0	1	0	0	0	0	0	0	1	0	0	2
	4:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	1
	4:30 PM	0	1	1	0	0	0	0	0	0	0	0	0	2
	4:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	1
	5:00 PM	0	0	2	0	0	0	0	0	0	0	0	0	2
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
	5:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	1
	VOLUMES	0	1	5	0	1	0	0	0	0	3	0	0	10
	APPROACH %	0%	17%	83%	0%	100%	0%	0%	0%	0%	100%	0%	0%	
	APP/DEPART	6	/	1	1	/	4	0	/	5	3	/	0	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	1	2	0	0	0	0	0	0	3	0	0	6
	APPROACH %	0%	33%	67%	0%	0%	0%	0%	0%	0%	100%	0%	0%	
	PEAK HR FACTOR		0.375			0.000			0.000			0.750		0.750
	APP/DEPART	3	/	1	0	/	3	0	/	2	3	/	0	0

U-TURNS					
	NB	SB	EB	WB	TTL
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0

RTOR			
NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Stoddard Wells Rd

NORTH SIDE

Johnson Rd WEST SIDE EAST SIDE **Johnson Rd**

SOUTH SIDE

Stoddard Wells Rd

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Stoddard Wells Rd	LOCATION #:	4
TUESDAY	EAST & WEST:	Johnson Rd	CONTROL:	STOP W

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Stoddard Wells Rd			SOUTHBOUND Stoddard Wells Rd			EASTBOUND Johnson Rd			WESTBOUND Johnson Rd				U-TURNS					RTOR			
	LANES:	NL X	NT 1	NR 1	SL 1	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL	NB	SB	EB	WB	TTL	NRR X	SRR X	ERR X	WRR X
AM	7:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	3	0	0	0	0	0	0	1	0	0	4	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	4	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0
	8:30 AM	0	1	2	0	0	0	0	0	0	1	0	0	4	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	5	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0
	VOLUMES	0	1	17	0	0	0	0	0	0	3	0	0	21	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	6%	94%	0%	0%	0%	0%	0%	0%	100%	0%	0%										
	APP/DEPART	18	/	1	0	/	3	0	/	17	3	/	0	0									
	BEGIN PEAK HR		7:30 AM																				
	VOLUMES	0	0	8	0	0	0	0	0	0	2	0	0	10	0	0	0	0		0	0	0	0
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	0%	0%										
	PEAK HR FACTOR		0.500			0.000			0.000			0.500		0.625									
	APP/DEPART	8	/	0	0	/	2	0	/	8	2	/	0	0									
PM	4:00 PM	0	0	2	0	0	0	0	0	0	1	0	0	3	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	1	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	5	0	0	0	0	0	0	8	0	0	13	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	0%	0%										
	APP/DEPART	5	/	0	0	/	8	0	/	5	8	/	0	0									
	BEGIN PEAK HR		4:00 PM																				
	VOLUMES	0	0	3	0	0	0	0	0	0	6	0	0	9	0	0	0	0		0	0	0	0
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	0%	0%										
	PEAK HR FACTOR		0.375			0.000			0.000			0.375		0.563									
	APP/DEPART	3	/	0	0	/	6	0	/	3	6	/	0	0									

Stoddard Wells Rd

NORTH SIDE

Johnson Rd WEST SIDE EAST SIDE **Johnson Rd**

SOUTH SIDE

Stoddard Wells Rd

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Stoddard Wells Rd	LOCATION #:	4
TUESDAY	EAST & WEST:	Johnson Rd	CONTROL:	STOP W

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

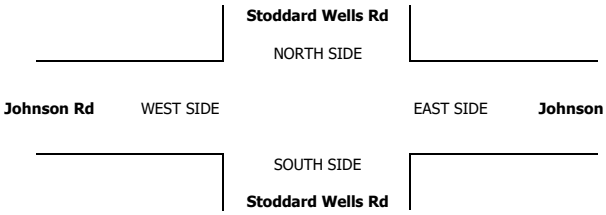
		NORTHBOUND Stoddard Wells Rd			SOUTHBOUND Stoddard Wells Rd			EASTBOUND Johnson Rd			WESTBOUND Johnson Rd			
	LANES:	NL X	NT 1	NR 1	SL 1	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL
AM	7:00 AM	0	1	2	0	0	0	0	0	0	5	0	0	8
	7:15 AM	0	0	2	0	1	0	0	0	0	2	0	0	5
	7:30 AM	0	0	3	0	1	0	0	0	0	5	0	0	9
	7:45 AM	0	0	0	0	7	0	0	0	0	9	0	0	16
	8:00 AM	0	2	4	0	3	0	0	0	0	1	0	0	10
	8:15 AM	0	2	3	0	3	0	0	0	0	3	0	0	11
	8:30 AM	0	0	6	0	0	0	0	0	0	3	0	0	9
	8:45 AM	0	1	1	0	2	0	0	0	0	4	0	0	8
	VOLUMES	0	6	21	0	17	0	0	0	0	32	0	0	76
	APPROACH %	0%	22%	78%	0%	100%	0%	0%	0%	0%	100%	0%	0%	
	APP/DEPART	27	/	6	17	/	49	0	/	21	32	/	0	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	0	4	10	0	14	0	0	0	0	18	0	0	46
	APPROACH %	0%	29%	71%	0%	100%	0%	0%	0%	0%	100%	0%	0%	
	PEAK HR FACTOR		0.583			0.500			0.000			0.500		0.719
	APP/DEPART	14	/	4	14	/	32	0	/	10	18	/	0	0
PM	4:00 PM	0	0	1	0	0	0	0	0	0	2	0	0	3
	4:15 PM	0	0	10	0	1	0	0	0	0	2	0	0	13
	4:30 PM	0	0	1	0	0	0	0	0	0	3	0	0	4
	4:45 PM	0	0	5	0	0	0	0	0	0	4	0	0	9
	5:00 PM	0	0	3	0	1	0	0	0	0	2	0	0	6
	5:15 PM	0	1	3	0	0	0	0	0	0	3	0	0	7
	5:30 PM	0	0	2	0	0	0	0	0	0	3	0	0	5
	5:45 PM	0	0	3	0	0	0	0	0	0	1	0	0	4
	VOLUMES	0	1	28	0	2	0	0	0	0	20	0	0	51
	APPROACH %	0%	3%	97%	0%	100%	0%	0%	0%	0%	100%	0%	0%	
	APP/DEPART	29	/	1	2	/	22	0	/	28	20	/	0	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	0	17	0	1	0	0	0	0	11	0	0	29
	APPROACH %	0%	0%	100%	0%	100%	0%	0%	0%	0%	100%	0%	0%	
	PEAK HR FACTOR		0.425			0.250			0.000			0.688		0.558
	APP/DEPART	17	/	0	1	/	12	0	/	17	11	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Stoddard Wells Rd	LOCATION #:	4
TUESDAY	EAST & WEST:	Johnson Rd	CONTROL:	STOP W

CLASS 5: RV

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Stoddard Wells Rd			SOUTHBOUND Stoddard Wells Rd			EASTBOUND Johnson Rd			WESTBOUND Johnson Rd			
	LANES:	NL X	NT 1	NR 1	SL 1	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Stoddard Wells Rd

NORTH SIDE

Johnson Rd WEST SIDE EAST SIDE **Johnson Rd**

SOUTH SIDE

Stoddard Wells Rd

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Stoddard Wells Rd	LOCATION #:	4
TUESDAY	EAST & WEST:	Johnson Rd	CONTROL:	STOP W

CLASS 6:	NOTES:
BUSES	

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Stoddard Wells Rd			SOUTHBOUND Stoddard Wells Rd			EASTBOUND Johnson Rd			WESTBOUND Johnson Rd				U-TURNS					RTOR			
	LANES:	NL X	NT 1	NR 1	SL 1	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL	NB	SB	EB	WB	TTL	NRR X	SRR X	ERR X	WRR X
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%										
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0									
	BEGIN PEAK HR		7:30 AM																				
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%										
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000									
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0									
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%										
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0									
	BEGIN PEAK HR		4:00 PM																				
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%										
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000									
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0									

Stoddard Wells Rd

NORTH SIDE

Johnson Rd WEST SIDE EAST SIDE **Johnson Rd**

SOUTH SIDE

Stoddard Wells Rd

INTERSECTION TURNING MOVEMENT COUNTS

T020624

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, Apr 2, 24	LOCATION:	Apple Valley	PROJECT #: SC4523
	NORTH & SOUTH:	I-15 NB Ramps	LOCATION #: 3
	EAST & WEST:	Stoddard Wells Rd	CONTROL: STOP N/S

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND I-15 NB Ramps			SOUTHBOUND I-15 NB Ramps			EASTBOUND Stoddard Wells Rd			WESTBOUND Stoddard Wells Rd			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	0	4	0	18	0	4	0	0	5	0	13	0	44
	7:15 AM	0	12	2	17	1	3	0	1	1	0	12	0	49
	7:30 AM	1	4	0	28	0	3	2	0	9	1	13	0	61
	7:45 AM	1	7	2	16	0	5	1	1	2	2	26	0	63
	8:00 AM	1	10	0	21	0	4	1	2	7	0	17	0	63
	8:15 AM	0	9	1	21	0	3	2	1	1	2	13	0	53
	8:30 AM	0	5	2	21	0	3	1	2	6	0	13	0	53
	8:45 AM	1	3	0	22	1	1	0	1	12	4	15	1	61
	VOLUMES	4	54	7	164	2	26	7	8	43	9	122	1	448
	APPROACH %	6%	83%	11%	85%	1%	13%	12%	14%	74%	7%	92%	1%	
	APP/DEPART	65	/	63	193	/	54	58	/	179	132	/	152	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	3	30	3	86	0	15	6	4	19	5	69	0	241
	APPROACH %	8%	83%	8%	84%	0%	15%	21%	14%	66%	7%	93%	0%	
	PEAK HR FACTOR		0.818			0.823			0.659			0.661		0.956
	APP/DEPART	36	/	37	102	/	24	29	/	93	74	/	87	0
PM	4:00 PM	0	7	4	49	0	4	1	1	6	4	86	0	162
	4:15 PM	2	4	3	65	0	6	2	3	10	2	37	0	134
	4:30 PM	0	6	1	26	0	2	0	4	11	0	26	0	76
	4:45 PM	0	4	2	16	0	2	0	2	13	0	31	0	70
	5:00 PM	0	9	2	21	0	2	2	3	13	0	11	0	63
	5:15 PM	0	3	0	12	1	0	0	0	7	1	13	0	37
	5:30 PM	1	2	0	27	0	2	0	0	9	1	39	0	81
	5:45 PM	0	1	3	22	0	0	1	1	11	1	13	0	53
	VOLUMES	3	36	15	238	1	18	6	14	80	9	256	0	676
	APPROACH %	6%	67%	28%	93%	0%	7%	6%	14%	80%	3%	97%	0%	
	APP/DEPART	54	/	42	257	/	90	100	/	267	265	/	277	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	2	21	10	156	0	14	3	10	40	6	180	0	442
	APPROACH %	6%	64%	30%	92%	0%	8%	6%	19%	75%	3%	97%	0%	
	PEAK HR FACTOR		0.750			0.599			0.883			0.517		0.682
	APP/DEPART	33	/	24	170	/	46	53	/	176	186	/	196	0

U-TURNS

NB 0	SB 0	EB 0	WB 0	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	1	0	0	1
0	1	0	0	
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

I-15 NB Ramps

NORTH LEG

Stoddard Wells Rd WEST LEG EAST LEG **Stoddard Wells Rd**

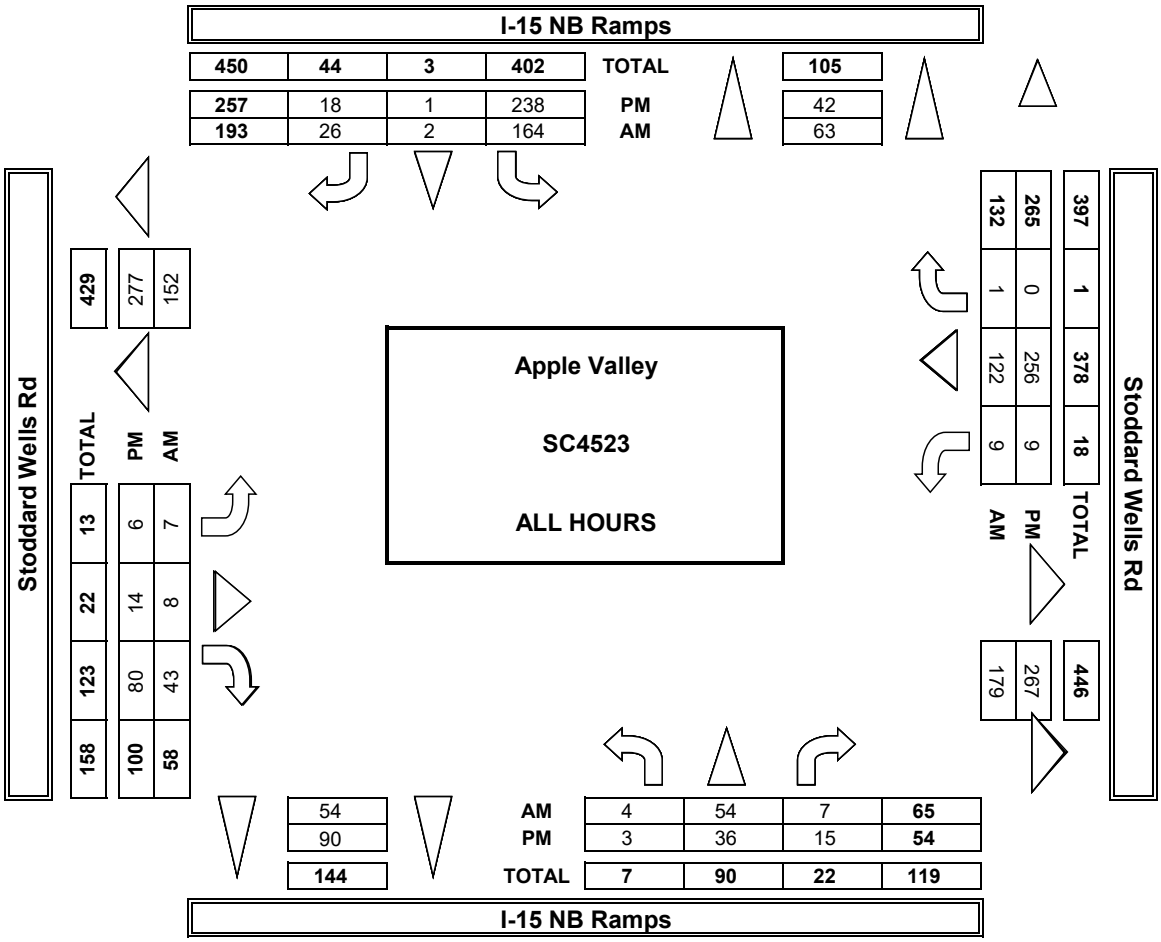
SOUTH LEG

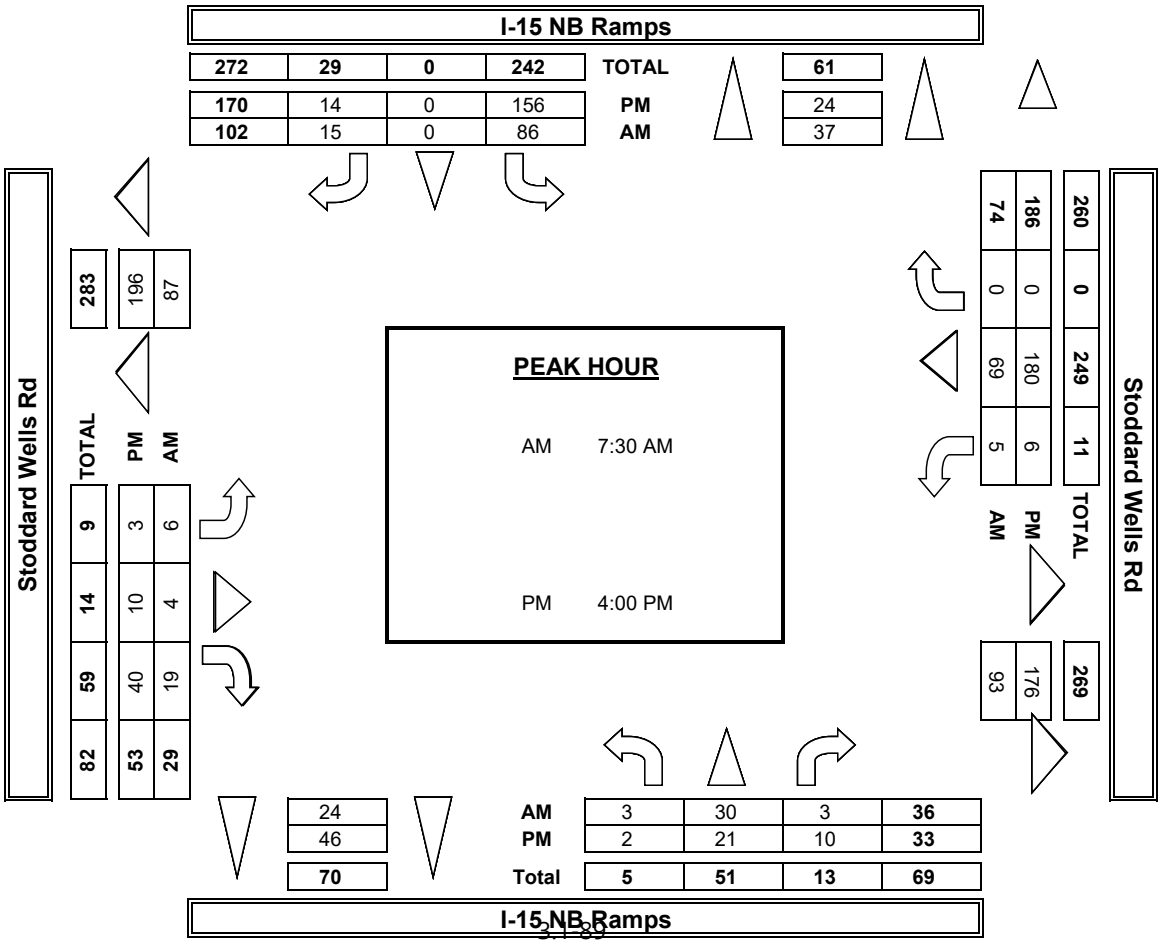
I-15 NB Ramps

	ALL PED + BIKE & SCOOTER					PEDESTRIAN CROSSINGS					BICYCLE & SCOOTER CROSSINGS				
		E LEG	W LEG	S LEG	N LEG	TOTAL	E LEG	W LEG	S LEG	N LEG	TOTAL	EL	WL	SL	NL	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





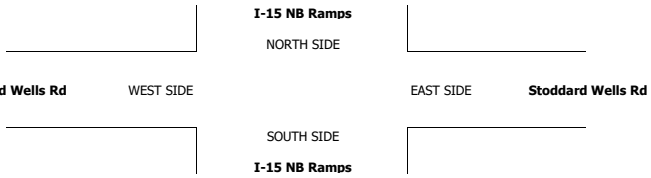
INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 4/2/24 TUESDAY	LOCATION:	Apple Valley	PROJECT #:	SC4523
	NORTH & SOUTH:	I-15 NB Ramps	LOCATION #:	3
	EAST & WEST:	Stoddard Wells Rd	CONTROL:	STOP N/S

	NOTES:											
PCE Adjusted	Class	1	2	3	4	5	6		AM		▲ N	
	Factor	1	1.5	2	3	2	2		PM MD	◄ W		E ►
									OTHER		S ▼	
									OTHER			

		NORTHBOUND I-15 NB Ramps			SOUTHBOUND I-15 NB Ramps			EASTBOUND Stoddard Wells Rd			WESTBOUND Stoddard Wells Rd				U-TURNS				
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	0	5	0	24	0	5	0	0	6	0	22	0	61					0
	7:15 AM	0	14	2	24	1	4	0	3	2	0	19	0	68					0
	7:30 AM	1	4	0	33	0	3	2	0	10	1	26	0	79					0
	7:45 AM	3	7	2	22	0	8	1	2	3	2	54	0	103					0
	8:00 AM	3	10	0	33	0	7	1	3	11	0	28	0	96					0
	8:15 AM	0	9	1	33	0	4	4	3	1	3	24	0	81					0
	8:30 AM	0	9	2	35	0	5	1	3	8	0	21	0	83					0
	8:45 AM	1	3	0	31	1	2	0	1	13	4	27	1	83					0
	VOLUMES	8	61	7	234	2	38	9	15	52	10	218	1	654	0	0	0	0	0
	APPROACH %	11%	80%	9%	86%	1%	14%	12%	20%	68%	4%	95%	0%						
	APP/DEPART	76	/	71	273	/	64	76	/	256	229	/	264	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	7	30	3	121	0	22	8	8	25	6	131	0	359					
	APPROACH %	18%	75%	8%	85%	0%	15%	20%	20%	60%	4%	96%	0%						
	PEAK HR FACTOR		0.769			0.888			0.675			0.615		0.871					
	APP/DEPART	40	/	38	142	/	30	41	/	132	137	/	160	0					
PM	4:00 PM	0	7	4	56	0	5	1	1	6	4	91	0	174					0
	4:15 PM	4	6	3	82	0	7	4	6	11	4	45	0	171					0
	4:30 PM	0	8	1	31	0	3	0	5	11	0	34	0	92					0
	4:45 PM	0	4	2	21	0	5	0	5	16	0	44	0	95					0
	5:00 PM	0	11	2	35	0	2	3	3	14	0	16	0	85					0
	5:15 PM	0	3	0	14	1	0	0	0	7	1	23	0	49					0
	5:30 PM	1	2	0	35	0	5	0	0	9	1	46	0	98					0
	5:45 PM	0	1	3	26	0	0	1	1	11	1	15	0	59					0
	VOLUMES	5	42	15	298	1	25	9	20	84	11	313	0	822	0	0	0	0	0
	APPROACH %	8%	68%	24%	92%	0%	8%	8%	17%	75%	3%	97%	0%						
	APP/DEPART	62	/	51	324	/	96	112	/	333	324	/	343	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	4	25	10	189	0	19	5	16	44	8	213	0	531					
	APPROACH %	10%	64%	26%	91%	0%	9%	8%	24%	68%	4%	96%	0%						
	PEAK HR FACTOR		0.750			0.586			0.780			0.583		0.763					
	APP/DEPART	39	/	30	208	/	52	64	/	215	221	/	235	0					



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	I-15 NB Ramps	LOCATION #:	3
TUESDAY	EAST & WEST:	Stoddard Wells Rd	CONTROL:	STOP N/S

CLASS 1: PASSENGER VEHICLES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

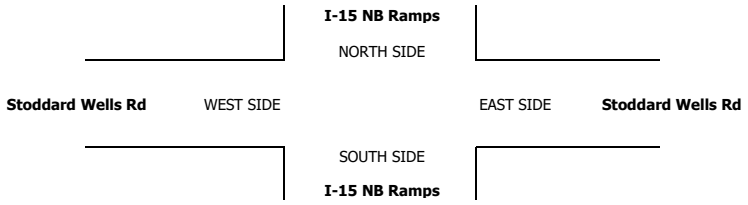
		NORTHBOUND (I-15 NB Ramps)			SOUTHBOUND (I-15 NB Ramps)			EASTBOUND (Stoddard Wells Rd)			WESTBOUND (Stoddard Wells Rd)			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	0	3	0	14	0	3	0	0	4	0	8	0	32
	7:15 AM	0	11	2	11	1	2	0	0	0	0	8	0	35
	7:30 AM	1	4	0	25	0	3	2	0	8	1	6	0	50
	7:45 AM	0	7	2	13	0	3	1	0	1	2	11	0	40
	8:00 AM	0	10	0	11	0	1	1	0	5	0	9	0	37
	8:15 AM	0	9	1	13	0	1	1	0	1	1	7	0	34
	8:30 AM	0	3	2	12	0	2	1	1	5	0	8	0	34
	8:45 AM	1	3	0	14	1	0	0	1	11	4	8	1	44
	VOLUMES	2	50	7	113	2	15	6	2	35	8	65	1	306
	APPROACH %	3%	85%	12%	87%	2%	12%	14%	5%	81%	11%	88%	1%	
	APP/DEPART	59	/	57	130	/	45	43	/	122	74	/	82	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	1	30	3	62	0	8	5	0	15	4	33	0	161
	APPROACH %	3%	88%	9%	89%	0%	11%	25%	0%	75%	11%	89%	0%	
	PEAK HR FACTOR		0.850			0.625			0.500			0.712		0.805
	APP/DEPART	34	/	35	70	/	19	20	/	65	37	/	42	0
PM	4:00 PM	0	7	4	43	0	3	1	1	6	4	83	0	152
	4:15 PM	1	3	3	56	0	4	1	1	9	1	32	0	111
	4:30 PM	0	5	1	23	0	1	0	3	11	0	21	0	65
	4:45 PM	0	4	2	13	0	0	0	0	10	0	22	0	51
	5:00 PM	0	8	2	13	0	2	1	3	12	0	8	0	49
	5:15 PM	0	3	0	11	1	0	0	0	7	1	7	0	30
	5:30 PM	1	2	0	22	0	0	0	0	9	1	34	0	69
	5:45 PM	0	1	3	20	0	0	1	1	11	1	12	0	50
	VOLUMES	2	33	15	201	1	10	4	9	75	8	219	0	577
	APPROACH %	4%	66%	30%	95%	0%	5%	5%	10%	85%	4%	96%	0%	
	APP/DEPART	50	/	37	212	/	84	88	/	225	227	/	231	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	1	19	10	135	0	8	2	5	36	5	158	0	379
	APPROACH %	3%	63%	33%	94%	0%	6%	5%	12%	84%	3%	97%	0%	
	PEAK HR FACTOR		0.682			0.596			0.768			0.468		0.623
	APP/DEPART	30	/	21	143	/	41	43	/	150	163	/	167	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
X	X	X	X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	I-15 NB Ramps	LOCATION #:	3
TUESDAY	EAST & WEST:	Stoddard Wells Rd	CONTROL:	STOP N/S

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND I-15 NB Ramps			SOUTHBOUND I-15 NB Ramps			EASTBOUND Stoddard Wells Rd			WESTBOUND Stoddard Wells Rd				U-TURNS					RTOR			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL	NB	SB	EB	WB	TTL	NRR X	SRR X	ERR X	WRR X
AM	7:00 AM	0	0	0	1	0	0	0	0	1	0	1	0	3	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	2	0	0	0	0	1	0	1	0	4	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	1	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	1	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	2	0	2	0	2	0	0	2	0	8	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	2	0	0	0	1	1	0	4	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	1	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	2	0	0	0	0	1	0	1	0	4	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	9	0	5	0	2	4	1	8	0	29	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	64%	0%	36%	0%	33%	67%	11%	89%	0%										
	APP/DEPART	0	/	0	14	/	5	6	/	11	9	/	13	0									
	BEGIN PEAK HR		7:30 AM																				
	VOLUMES	0	0	0	3	0	5	0	2	1	1	4	0	16	0	0	0	0		0	0	0	0
	APPROACH %	0%	0%	0%	38%	0%	63%	0%	67%	33%	20%	80%	0%										
	PEAK HR FACTOR		0.000			0.500			0.375			0.625		0.500									
	APP/DEPART	0	/	0	8	/	2	3	/	5	5	/	9	0									
PM	4:00 PM	0	0	0	2	0	1	0	0	0	0	1	0	4	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	1	0	2	0	1	1	0	0	0	5	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	1	0	1	0	0	1	0	3	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	1	0	1	0	1	2	0	1	0	6	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	1	0	0	1	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	1	0	1	0	0	0	0	2	0	4	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	6	0	6	1	3	4	0	5	0	25	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	50%	0%	50%	13%	38%	50%	0%	100%	0%										
	APP/DEPART	0	/	1	12	/	4	8	/	9	5	/	11	0									
	BEGIN PEAK HR		4:00 PM																				
	VOLUMES	0	0	0	4	0	5	0	3	3	0	3	0	18	0	0	0	0		0	0	0	0
	APPROACH %	0%	0%	0%	44%	0%	56%	0%	50%	50%	0%	100%	0%										
	PEAK HR FACTOR		0.000			0.750			0.500			0.750		0.750									
	APP/DEPART	0	/	0	9	/	3	6	/	7	3	/	8	0									

I-15 NB Ramps

NORTH SIDE

Stoddard Wells Rd WEST SIDE EAST SIDE **Stoddard Wells Rd**

SOUTH SIDE

I-15 NB Ramps

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	I-15 NB Ramps	LOCATION #:	3
TUESDAY	EAST & WEST:	Stoddard Wells Rd	CONTROL:	STOP N/S

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND I-15 NB Ramps			SOUTHBOUND I-15 NB Ramps			EASTBOUND Stoddard Wells Rd			WESTBOUND Stoddard Wells Rd			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	0	1	0	1	0	1	0	0	0	0	0	0	3
	7:15 AM	0	0	0	2	0	1	0	0	0	0	0	0	3
	7:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
	7:45 AM	0	0	0	0	0	0	0	1	1	0	1	0	3
	8:00 AM	0	0	0	5	0	0	0	0	0	0	2	0	7
	8:15 AM	0	0	0	4	0	0	0	0	0	0	0	0	4
	8:30 AM	0	0	0	3	0	0	0	1	0	0	1	0	5
	8:45 AM	0	0	0	4	0	1	0	0	0	0	1	0	6
	VOLUMES	0	1	0	19	0	3	0	2	1	0	6	0	32
	APPROACH %	0%	100%	0%	86%	0%	14%	0%	67%	33%	0%	100%	0%	
	APP/DEPART	1	/	1	22	/	1	3	/	21	6	/	9	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	0	0	0	9	0	0	0	1	1	0	4	0	15
	APPROACH %	0%	0%	0%	100%	0%	0%	0%	50%	50%	0%	100%	0%	
	PEAK HR FACTOR		0.000			0.450			0.250			0.500		0.536
	APP/DEPART	0	/	0	9	/	1	2	/	10	4	/	4	0
PM	4:00 PM	0	0	0	2	0	0	0	0	0	0	0	0	2
	4:15 PM	0	0	0	0	0	0	0	0	0	0	2	0	2
	4:30 PM	0	0	0	1	0	0	0	0	0	0	1	0	2
	4:45 PM	0	0	0	0	0	0	0	0	0	0	4	0	4
	5:00 PM	0	0	0	1	0	0	0	0	0	0	1	0	2
	5:15 PM	0	0	0	0	0	0	0	0	0	0	2	0	2
	5:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	1
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	5	0	0	0	0	0	0	10	0	15
	APPROACH %	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	0%	
	APP/DEPART	0	/	0	5	/	0	0	/	5	10	/	10	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	0	0	3	0	0	0	0	0	0	7	0	10
	APPROACH %	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	0%	
	PEAK HR FACTOR		0.000			0.375			0.000			0.438		0.625
	APP/DEPART	0	/	0	3	/	0	0	/	3	7	/	7	0

U-TURNS					
NB	SB	EB	WB	TTL	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0		
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0		

RTOR			
NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

I-15 NB Ramps

NORTH SIDE

Stoddard Wells Rd WEST SIDE EAST SIDE **Stoddard Wells Rd**

SOUTH SIDE

I-15 NB Ramps

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	I-15 NB Ramps	LOCATION #:	3
TUESDAY	EAST & WEST:	Stoddard Wells Rd	CONTROL:	STOP N/S

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

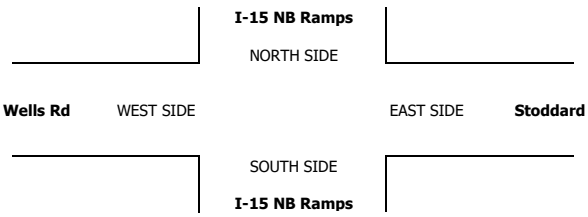
	NORTHBOUND I-15 NB Ramps			SOUTHBOUND I-15 NB Ramps			EASTBOUND Stoddard Wells Rd			WESTBOUND Stoddard Wells Rd			
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
7:00 AM	0	0	0	2	0	0	0	0	0	0	4	0	6
7:15 AM	0	1	0	2	0	0	0	1	0	0	3	0	7
7:30 AM	0	0	0	2	0	0	0	0	0	0	6	0	8
7:45 AM	1	0	0	3	0	1	0	0	0	0	13	0	18
8:00 AM	1	0	0	3	0	1	0	0	2	0	4	0	11
8:15 AM	0	0	0	4	0	0	1	1	0	0	5	0	11
8:30 AM	0	2	0	5	0	1	0	0	1	0	3	0	12
8:45 AM	0	0	0	2	0	0	0	0	0	0	5	0	7
VOLUMES	2	3	0	23	0	3	1	2	3	0	43	0	81
APPROACH %	40%	60%	0%	85%	0%	11%	17%	33%	50%	0%	100%	0%	
APP/DEPART	5	/	5	27	/	3	6	/	25	43	/	48	0
BEGIN PEAK HR		7:30 AM											
VOLUMES	2	0	0	12	0	2	1	1	2	0	28	0	49
APPROACH %	100%	0%	0%	80%	0%	13%	25%	25%	50%	0%	100%	0%	
PEAK HR FACTOR		0.500			0.750			0.500			0.538		0.681
APP/DEPART	2	/	2	15	/	2	4	/	13	28	/	32	0
4:00 PM	0	0	0	2	0	0	0	0	0	0	2	0	4
4:15 PM	1	1	0	8	0	0	1	1	0	1	3	0	16
4:30 PM	0	1	0	2	0	0	0	0	0	0	3	0	6
4:45 PM	0	0	0	2	0	1	0	1	1	0	4	0	9
5:00 PM	0	1	0	6	0	0	0	0	0	0	2	0	9
5:15 PM	0	0	0	1	0	0	0	0	0	0	4	0	5
5:30 PM	0	0	0	3	0	1	0	0	0	0	3	0	7
5:45 PM	0	0	0	2	0	0	0	0	0	0	1	0	3
VOLUMES	1	3	0	26	0	2	1	2	1	1	22	0	59
APPROACH %	25%	75%	0%	93%	0%	7%	25%	50%	25%	4%	96%	0%	
APP/DEPART	4	/	4	28	/	2	4	/	28	23	/	25	0
BEGIN PEAK HR		4:00 PM											
VOLUMES	1	2	0	14	0	1	1	2	1	1	12	0	35
APPROACH %	33%	67%	0%	93%	0%	7%	25%	50%	25%	8%	92%	0%	
PEAK HR FACTOR		0.375			0.469			0.500			0.813		0.547
APP/DEPART	3	/	3	15	/	2	4	/	16	13	/	14	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	1	0	0	
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

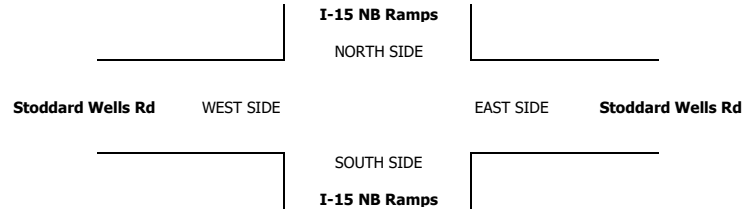
DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	I-15 NB Ramps	LOCATION #:	3
TUESDAY	EAST & WEST:	Stoddard Wells Rd	CONTROL:	STOP N/S

CLASS 5: RV

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND I-15 NB Ramps			SOUTHBOUND I-15 NB Ramps			EASTBOUND Stoddard Wells Rd			WESTBOUND Stoddard Wells Rd				U-TURNS					RTOR			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL	NB	SB	EB	WB	TTL	NRR X	SRR X	ERR X	WRR X
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%										
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0									
	BEGIN PEAK HR		7:30 AM																				
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%										
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000									
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0									
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%										
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0									
	BEGIN PEAK HR		4:00 PM																				
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%										
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000									
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0									



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	I-15 NB Ramps	LOCATION #:	3
TUESDAY	EAST & WEST:	Stoddard Wells Rd	CONTROL:	STOP N/S

CLASS 6:	NOTES:
BUSES	

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

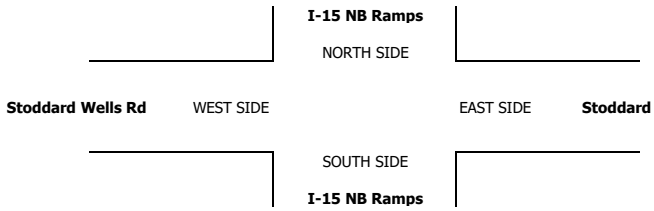
	NORTHBOUND I-15 NB Ramps			SOUTHBOUND I-15 NB Ramps			EASTBOUND Stoddard Wells Rd			WESTBOUND Stoddard Wells Rd			
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
AM APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
AM APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
BEGIN PEAK HR		7:30 AM											
AM VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
AM APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
AM APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
PM APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
PM APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
BEGIN PEAK HR		4:00 PM											
PM VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
PM APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
PM APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

T020624

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, Apr 2, 24	LOCATION:	Apple Valley	PROJECT #: SC4523
	NORTH & SOUTH:	Quarry Rd	LOCATION #: 2
	EAST & WEST:	Stoddard Wells Rd	CONTROL: STOP S

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Quarry Rd			SOUTHBOUND Quarry Rd			EASTBOUND Stoddard Wells Rd			WESTBOUND Stoddard Wells Rd			
	LANES:	NL X	NT X	NR X	SL 0	ST X	SR 0	EL 0	ET 1	ER X	WL X	WT 1	WR 1	TOTAL
AM	7:00 AM	0	0	0	4	0	0	0	0	0	0	3	13	20
	7:15 AM	0	0	0	1	0	1	0	1	0	0	6	11	20
	7:30 AM	0	0	0	8	0	0	1	3	0	0	4	12	28
	7:45 AM	0	0	0	2	0	0	0	2	0	0	12	18	34
	8:00 AM	0	0	0	8	0	1	0	2	0	0	6	18	35
	8:15 AM	0	0	0	1	0	0	0	3	0	0	4	11	19
	8:30 AM	0	0	0	6	0	0	2	3	0	0	1	14	26
	8:45 AM	0	0	0	12	0	1	2	1	0	0	6	13	35
	VOLUMES	0	0	0	42	0	3	5	15	0	0	42	110	217
	APPROACH %	0%	0%	0%	93%	0%	7%	25%	75%	0%	0%	28%	72%	
	APP/DEPART	0	/	115	45	/	0	20	/	57	152	/	45	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	0	0	19	0	2	1	8	0	0	28	59	117
	APPROACH %	0%	0%	0%	90%	0%	10%	11%	89%	0%	0%	32%	68%	
	PEAK HR FACTOR		0.000			0.583			0.563			0.725		0.836
	APP/DEPART	0	/	60	21	/	0	9	/	27	87	/	30	0
PM	4:00 PM	0	0	0	9	0	0	0	3	0	0	2	96	110
	4:15 PM	0	0	0	10	0	1	2	4	0	0	5	36	58
	4:30 PM	0	0	0	10	0	1	1	3	0	0	6	19	40
	4:45 PM	0	0	0	13	0	0	2	2	0	0	4	28	49
	5:00 PM	0	0	0	13	0	0	6	4	0	0	3	11	37
	5:15 PM	0	0	0	6	0	2	3	1	0	0	0	13	25
	5:30 PM	0	0	0	10	0	1	1	1	0	0	1	39	53
	5:45 PM	0	0	0	11	0	1	0	2	0	0	1	14	29
	VOLUMES	0	0	0	82	0	6	15	20	0	0	22	256	401
	APPROACH %	0%	0%	0%	93%	0%	7%	43%	57%	0%	0%	8%	92%	
	APP/DEPART	0	/	271	88	/	0	35	/	102	278	/	28	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	0	0	42	0	2	5	12	0	0	17	179	257
	APPROACH %	0%	0%	0%	95%	0%	5%	29%	71%	0%	0%	9%	91%	
	PEAK HR FACTOR		0.000			0.846			0.708			0.500		0.584
	APP/DEPART	0	/	184	44	/	0	17	/	54	196	/	19	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Quarry Rd

NORTH LEG

Stoddard Wells Rd WEST LEG EAST LEG **Stoddard Wells Rd**

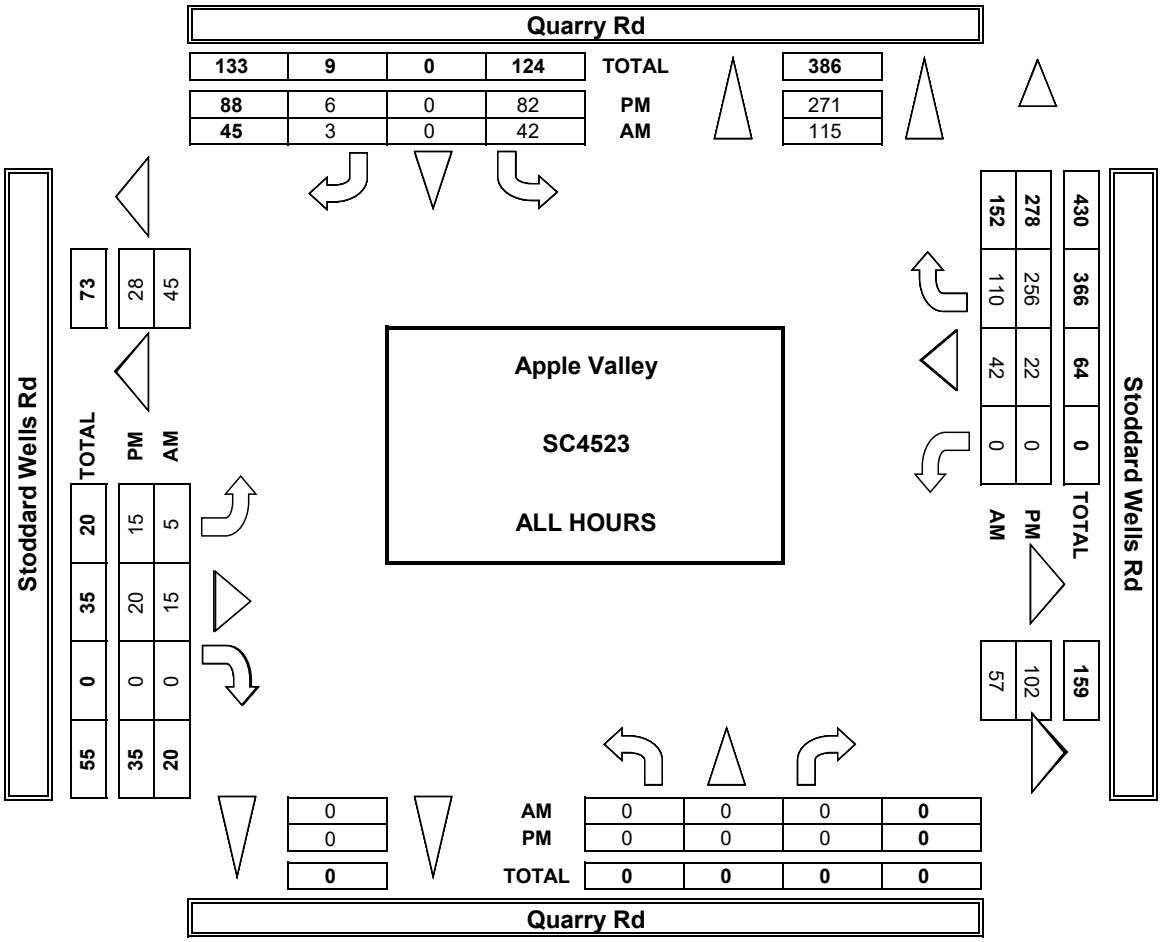
SOUTH LEG

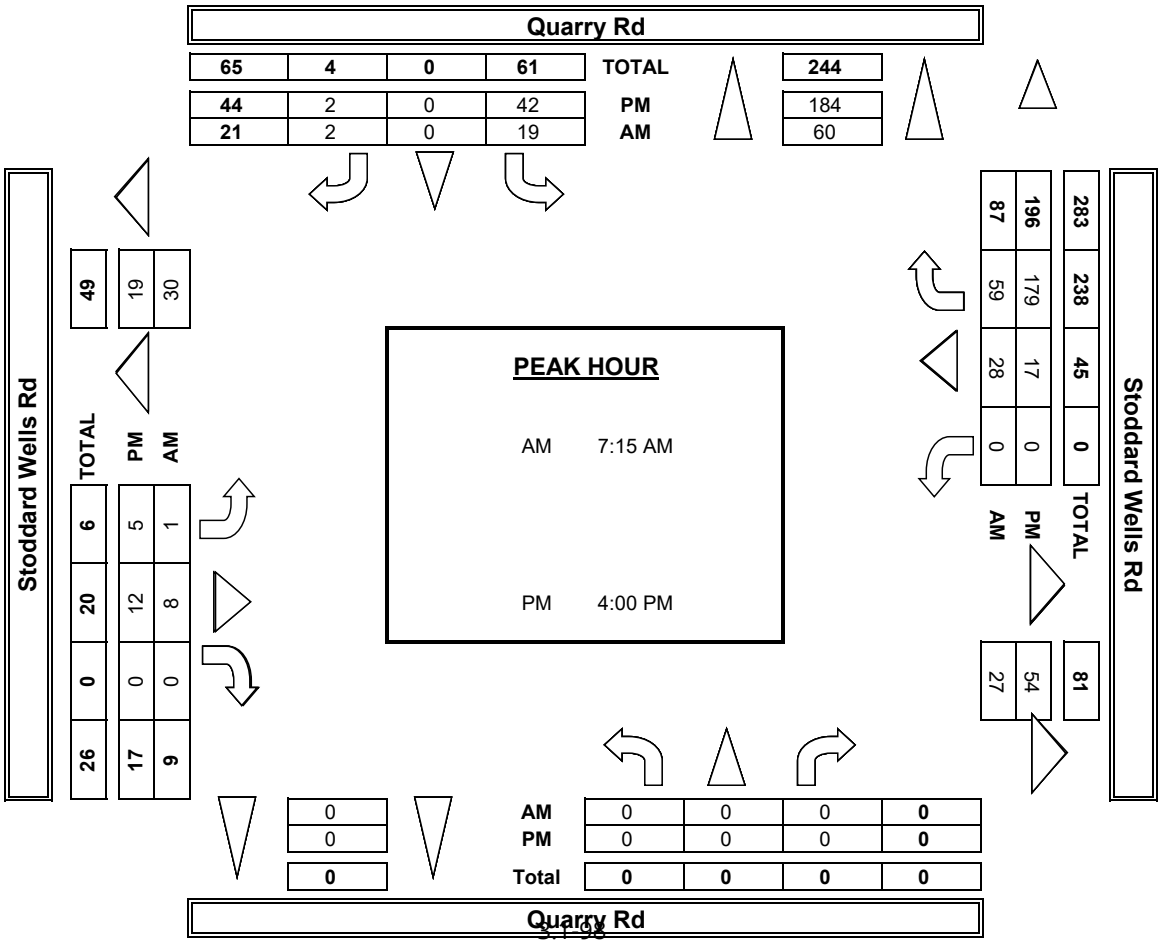
Quarry Rd

		ALL PED + BIKE & SCOOTER					PEDESTRIAN CROSSINGS					BICYCLE & SCOOTER CROSSINGS				
		E LEG	W LEG	S LEG	N LEG	TOTAL	E LEG	W LEG	S LEG	N LEG	TOTAL	EL	WL	SL	NL	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

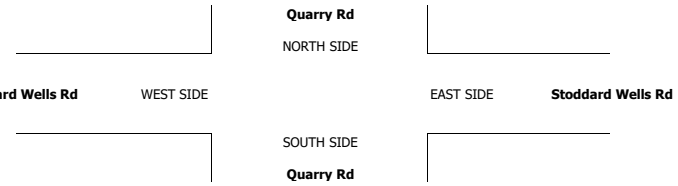
DATE: 4/2/24 TUESDAY	LOCATION:	Apple Valley	PROJECT #:	SC4523
	NORTH & SOUTH:	Quarry Rd	LOCATION #:	2
	EAST & WEST:	Stoddard Wells Rd	CONTROL:	STOP S

NOTES:

PCE Adjusted									
Class	1	2	3	4	5	6			
Factor	1	1.5	2	3	2	2			

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Quarry Rd			SOUTHBOUND Quarry Rd			EASTBOUND Stoddard Wells Rd			WESTBOUND Stoddard Wells Rd				U-TURNS				
	LANES:	NL X	NT X	NR X	SL 0	ST X	SR 0	EL 0	ET 1	ER X	WL X	WT 1	WR 1	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	0	0	0	5	0	0	0	0	0	0	5	22	32					0
	7:15 AM	0	0	0	2	0	1	0	3	0	0	7	19	31					0
	7:30 AM	0	0	0	8	0	0	1	4	0	0	7	22	42					0
	7:45 AM	0	0	0	3	0	0	0	3	0	0	22	37	65					0
	8:00 AM	0	0	0	12	0	1	0	3	0	0	9	32	57					0
	8:15 AM	0	0	0	1	0	0	0	7	0	0	5	20	33					0
	8:30 AM	0	0	0	6	0	0	3	6	0	0	1	24	39					0
	8:45 AM	0	0	0	13	0	1	3	1	0	0	10	24	51					0
	VOLUMES	0	0	0	49	0	3	6	27	0	0	65	199	348	0	0	0	0	0
	APPROACH %	0%	0%	0%	94%	0%	6%	18%	82%	0%	0%	25%	75%						
	APP/DEPART	0	/	205	52	/	0	33	/	75	264	/	68	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	0	0	0	25	0	2	1	13	0	0	45	110	194					
	APPROACH %	0%	0%	0%	92%	0%	8%	7%	93%	0%	0%	29%	71%						
	PEAK HR FACTOR		0.000			0.510			0.750			0.658		0.752					
	APP/DEPART	0	/	111	27	/	0	14	/	37	154	/	47	0					
PM	4:00 PM	0	0	0	9	0	0	0	4	0	0	5	99	116					0
	4:15 PM	0	0	0	10	0	1	2	9	0	0	9	43	74					0
	4:30 PM	0	0	0	10	0	1	1	4	0	0	10	24	49					0
	4:45 PM	0	0	0	14	0	0	3	6	0	0	8	39	69					0
	5:00 PM	0	0	0	14	0	0	6	5	0	0	3	16	43					0
	5:15 PM	0	0	0	6	0	2	3	1	0	0	0	23	35					0
	5:30 PM	0	0	0	10	0	3	1	1	0	0	1	49	65					0
	5:45 PM	0	0	0	11	0	1	0	2	0	0	1	16	31					0
	VOLUMES	0	0	0	84	0	8	16	31	0	0	36	308	481	0	0	0	0	0
	APPROACH %	0%	0%	0%	91%	0%	9%	34%	66%	0%	0%	10%	90%						
	APP/DEPART	0	/	324	92	/	0	46	/	114	344	/	44	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	0	0	0	43	0	2	6	22	0	0	31	205	308					
	APPROACH %	0%	0%	0%	96%	0%	4%	20%	80%	0%	0%	13%	87%						
	PEAK HR FACTOR		0.000			0.804			0.625			0.568		0.663					
	APP/DEPART	0	/	210	45	/	0	28	/	65	235	/	33	0					



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Quarry Rd	LOCATION #:	2
TUESDAY	EAST & WEST:	Stoddard Wells Rd	CONTROL:	STOP S

CLASS 1: PASSENGER VEHICLES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

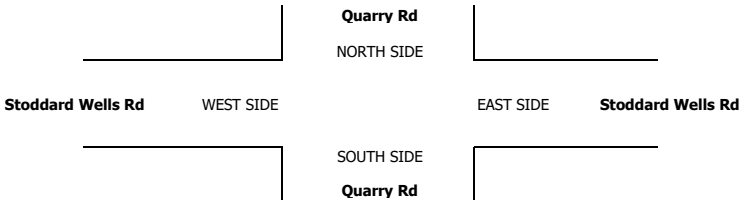
	NORTHBOUND (Quarry Rd)			SOUTHBOUND (Quarry Rd)			EASTBOUND (Stoddard Wells Rd)			WESTBOUND (Stoddard Wells Rd)			
LANES:	NL X	NT X	NR X	SL 0	ST X	SR 0	EL 0	ET 1	ER X	WL X	WT 1	WR 1	TOTAL
7:00 AM	0	0	0	3	0	0	0	0	0	0	2	8	13
7:15 AM	0	0	0	0	0	1	0	0	0	0	4	6	11
7:30 AM	0	0	0	8	0	0	1	2	0	0	2	7	20
7:45 AM	0	0	0	1	0	0	0	1	0	0	5	8	15
8:00 AM	0	0	0	6	0	1	0	0	0	0	4	9	20
8:15 AM	0	0	0	1	0	0	0	1	0	0	2	6	10
8:30 AM	0	0	0	6	0	0	1	1	0	0	1	8	17
8:45 AM	0	0	0	11	0	1	1	1	0	0	3	7	24
VOLUMES	0	0	0	36	0	3	3	6	0	0	23	59	130
APPROACH %	0%	0%	0%	92%	0%	8%	33%	67%	0%	0%	28%	72%	
APP/DEPART	0	/	62	39	/	0	9	/	42	82	/	26	0
BEGIN PEAK HR		7:15 AM											
VOLUMES	0	0	0	15	0	2	1	3	0	0	15	30	66
APPROACH %	0%	0%	0%	88%	0%	12%	25%	75%	0%	0%	33%	67%	
PEAK HR FACTOR		0.000			0.531			0.333			0.865		0.825
APP/DEPART	0	/	31	17	/	0	4	/	18	45	/	17	0
4:00 PM	0	0	0	9	0	0	0	2	0	0	0	93	104
4:15 PM	0	0	0	10	0	1	2	0	0	0	2	32	47
4:30 PM	0	0	0	10	0	1	1	2	0	0	2	16	32
4:45 PM	0	0	0	11	0	0	1	0	0	0	1	21	34
5:00 PM	0	0	0	12	0	0	6	3	0	0	3	8	32
5:15 PM	0	0	0	6	0	2	3	1	0	0	0	7	19
5:30 PM	0	0	0	10	0	0	1	1	0	0	1	32	45
5:45 PM	0	0	0	11	0	1	0	2	0	0	1	13	28
VOLUMES	0	0	0	79	0	5	14	11	0	0	10	222	341
APPROACH %	0%	0%	0%	94%	0%	6%	56%	44%	0%	0%	4%	96%	
APP/DEPART	0	/	236	84	/	0	25	/	90	232	/	15	0
BEGIN PEAK HR		4:00 PM											
VOLUMES	0	0	0	40	0	2	4	4	0	0	5	162	217
APPROACH %	0%	0%	0%	95%	0%	5%	50%	50%	0%	0%	3%	97%	
PEAK HR FACTOR		0.000			0.955			0.667			0.449		0.522
APP/DEPART	0	/	166	42	/	0	8	/	44	167	/	7	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Quarry Rd	LOCATION #:	2
TUESDAY	EAST & WEST:	Stoddard Wells Rd	CONTROL:	STOP S

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS	NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Quarry Rd			SOUTHBOUND Quarry Rd			EASTBOUND Stoddard Wells Rd			WESTBOUND Stoddard Wells Rd			
	LANES:	NL X	NT X	NR X	SL 0	ST X	SR 0	EL 0	ET 1	ER X	WL X	WT 1	WR 1	TOTAL
AM	7:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	1
	7:15 AM	0	0	0	1	0	0	0	0	0	0	2	1	4
	7:30 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
	7:45 AM	0	0	0	0	0	0	0	0	0	0	3	0	3
	8:00 AM	0	0	0	0	0	0	0	2	0	0	0	2	4
	8:15 AM	0	0	0	0	0	0	0	0	0	0	2	1	3
	8:30 AM	0	0	0	0	0	0	1	0	0	0	0	1	2
	8:45 AM	0	0	0	1	0	0	1	0	0	0	1	0	3
	VOLUMES	0	0	0	3	0	0	2	3	0	0	8	5	21
	APPROACH %	0%	0%	0%	100%	0%	0%	40%	60%	0%	0%	62%	38%	
	APP/DEPART	0	/	7	3	/	0	5	/	6	13	/	8	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	0	0	1	0	0	0	3	0	0	5	3	12
	APPROACH %	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	63%	38%	
	PEAK HR FACTOR		0.000			0.250			0.375			0.667		0.750
	APP/DEPART	0	/	3	1	/	0	3	/	4	8	/	5	0
PM	4:00 PM	0	0	0	0	0	0	0	1	0	0	1	2	4
	4:15 PM	0	0	0	0	0	0	0	2	0	0	1	0	3
	4:30 PM	0	0	0	0	0	0	0	1	0	0	3	0	4
	4:45 PM	0	0	0	2	0	0	1	0	0	0	0	1	4
	5:00 PM	0	0	0	1	0	0	0	1	0	0	0	0	2
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	3	3
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	3	0	0	1	5	0	0	5	6	20
	APPROACH %	0%	0%	0%	100%	0%	0%	17%	83%	0%	0%	45%	55%	
	APP/DEPART	0	/	7	3	/	0	6	/	8	11	/	5	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	0	0	2	0	0	1	4	0	0	5	3	15
	APPROACH %	0%	0%	0%	100%	0%	0%	20%	80%	0%	0%	63%	38%	
	PEAK HR FACTOR		0.000			0.250			0.625			0.667		0.938
	APP/DEPART	0	/	4	2	/	0	5	/	6	8	/	5	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Quarry Rd

NORTH SIDE

Stoddard Wells Rd WEST SIDE EAST SIDE **Stoddard Wells Rd**

SOUTH SIDE

Quarry Rd

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Quarry Rd	LOCATION #:	2
TUESDAY	EAST & WEST:	Stoddard Wells Rd	CONTROL:	STOP S

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Quarry Rd			SOUTHBOUND Quarry Rd			EASTBOUND Stoddard Wells Rd			WESTBOUND Stoddard Wells Rd			
	LANES:	NL X	NT X	NR X	SL 0	ST X	SR 0	EL 0	ET 1	ER X	WL X	WT 1	WR 1	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	1
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	1
	7:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
	7:45 AM	0	0	0	1	0	0	0	1	0	0	0	1	3
	8:00 AM	0	0	0	0	0	0	0	0	0	0	1	1	2
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	1	0	0	0	1	2
	8:45 AM	0	0	0	0	0	0	0	0	0	0	1	1	2
	VOLUMES	0	0	0	1	0	0	0	2	0	0	3	6	12
	APPROACH %	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	33%	67%	
	APP/DEPART	0	/	6	1	/	0	2	/	3	9	/	3	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	0	0	1	0	0	0	1	0	0	2	3	7
	APPROACH %	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	40%	60%	
	PEAK HR FACTOR		0.000			0.250			0.250			0.625		0.583
	APP/DEPART	0	/	3	1	/	0	1	/	2	5	/	2	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	1	1	2
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	1
	4:45 PM	0	0	0	0	0	0	0	0	0	0	2	2	4
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	1
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	2	2
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	3	7	10
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	30%	70%	
	APP/DEPART	0	/	7	0	/	0	0	/	0	10	/	3	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	3	4	7
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	43%	57%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.438		0.438
	APP/DEPART	0	/	4	0	/	0	0	/	0	7	/	3	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Quarry Rd

NORTH SIDE

Stoddard Wells Rd WEST SIDE EAST SIDE **Stoddard Wells Rd**

SOUTH SIDE

Quarry Rd

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Quarry Rd	LOCATION #:	2
TUESDAY	EAST & WEST:	Stoddard Wells Rd	CONTROL:	STOP S

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Quarry Rd			SOUTHBOUND Quarry Rd			EASTBOUND Stoddard Wells Rd			WESTBOUND Stoddard Wells Rd			
	LANES:	NL X	NT X	NR X	SL 0	ST X	SR 0	EL 0	ET 1	ER X	WL X	WT 1	WR 1	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	1	4	5
	7:15 AM	0	0	0	0	0	0	0	1	0	0	0	3	4
	7:30 AM	0	0	0	0	0	0	0	0	0	0	1	5	6
	7:45 AM	0	0	0	0	0	0	0	0	0	0	4	9	13
	8:00 AM	0	0	0	2	0	0	0	0	0	0	1	6	9
	8:15 AM	0	0	0	0	0	0	0	2	0	0	0	4	6
	8:30 AM	0	0	0	0	0	0	0	1	0	0	0	4	5
	8:45 AM	0	0	0	0	0	0	0	0	0	0	1	5	6
	VOLUMES	0	0	0	2	0	0	0	4	0	0	8	40	54
	APPROACH %	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	17%	83%	
	APP/DEPART	0	/	40	2	/	0	4	/	6	48	/	8	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	0	0	2	0	0	0	1	0	0	6	23	32
	APPROACH %	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	21%	79%	
	PEAK HR FACTOR		0.000			0.250			0.250			0.558		0.615
	APP/DEPART	0	/	23	2	/	0	1	/	3	29	/	6	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	1	1	2
	4:15 PM	0	0	0	0	0	0	0	2	0	0	1	3	6
	4:30 PM	0	0	0	0	0	0	0	0	0	0	1	2	3
	4:45 PM	0	0	0	0	0	0	0	2	0	0	1	4	7
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	2	2
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	4	4
	5:30 PM	0	0	0	0	0	1	0	0	0	0	0	4	5
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	1
	VOLUMES	0	0	0	0	0	1	0	4	0	0	4	21	30
	APPROACH %	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	16%	84%	
	APP/DEPART	0	/	21	1	/	0	4	/	4	25	/	5	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	0	0	0	0	0	0	4	0	0	4	10	18
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	29%	71%	
	PEAK HR FACTOR		0.000			0.000			0.500			0.700		0.643
	APP/DEPART	0	/	10	0	/	0	4	/	4	14	/	4	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Quarry Rd

NORTH SIDE

Stoddard Wells Rd WEST SIDE EAST SIDE **Stoddard Wells Rd**

SOUTH SIDE

Quarry Rd

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Quarry Rd	LOCATION #:	2
TUESDAY	EAST & WEST:	Stoddard Wells Rd	CONTROL:	STOP S

CLASS 5: RV

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Quarry Rd			SOUTHBOUND Quarry Rd			EASTBOUND Stoddard Wells Rd			WESTBOUND Stoddard Wells Rd			
	LANES:	NL X	NT X	NR X	SL 0	ST X	SR 0	EL 0	ET 1	ER X	WL X	WT 1	WR 1	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Quarry Rd

NORTH SIDE

Stoddard Wells Rd WEST SIDE EAST SIDE **Stoddard Wells Rd**

SOUTH SIDE

Quarry Rd

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Quarry Rd	LOCATION #:	2
TUESDAY	EAST & WEST:	Stoddard Wells Rd	CONTROL:	STOP S

CLASS 6:	NOTES:
BUSES	

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Quarry Rd			SOUTHBOUND Quarry Rd			EASTBOUND Stoddard Wells Rd			WESTBOUND Stoddard Wells Rd			
	LANES:	NL X	NT X	NR X	SL 0	ST X	SR 0	EL 0	ET 1	ER X	WL X	WT 1	WR 1	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0

U-TURNS					
	NB	SB	EB	WB	TTL
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0

RTOR				
	NRR X	SRR X	ERR X	WRR X
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0

Quarry Rd

NORTH SIDE

Stoddard Wells Rd WEST SIDE EAST SIDE **Stoddard Wells Rd**

SOUTH SIDE

Quarry Rd

INTERSECTION TURNING MOVEMENT COUNTS

T020624

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, Apr 2, 24	LOCATION:	Apple Valley	PROJECT #: SC4523
	NORTH & SOUTH:	Quarry Rd	LOCATION #: 1
	EAST & WEST:	I-15 SB Ramps	CONTROL: STOP W

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Quarry Rd			SOUTHBOUND Quarry Rd			EASTBOUND I-15 SB Ramps			WESTBOUND I-15 SB Ramps			
	LANES:	NL X	NT 1	NR 0	SL 0	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL
AM	7:00 AM	0	0	12	0	0	0	0	0	0	3	0	0	15
	7:15 AM	0	0	12	0	0	0	0	0	0	2	0	0	14
	7:30 AM	0	1	12	1	0	0	0	0	0	8	0	1	23
	7:45 AM	0	0	17	0	0	0	0	0	0	2	0	0	19
	8:00 AM	0	0	19	0	1	0	0	0	0	9	0	0	29
	8:15 AM	0	0	11	0	0	0	0	0	0	0	0	0	11
	8:30 AM	0	1	14	1	1	0	0	0	0	5	0	1	23
	8:45 AM	0	0	16	0	0	0	0	0	0	13	0	0	29
	VOLUMES	0	2	113	2	2	0	0	0	0	42	0	2	164
	APPROACH %	0%	2%	98%	50%	50%	0%	0%	0%	0%	93%	0%	4%	
	APP/DEPART	115	/	4	4	/	44	0	/	116	45	/	0	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	0	1	60	1	2	0	0	0	0	27	0	1	92
	APPROACH %	0%	2%	98%	33%	67%	0%	0%	0%	0%	96%	0%	4%	
	PEAK HR FACTOR		0.803			0.375			0.000			0.538		0.793
	APP/DEPART	61	/	2	3	/	29	0	/	61	28	/	0	0
PM	4:00 PM	0	0	94	0	0	0	0	0	0	7	0	1	102
	4:15 PM	0	0	39	1	0	0	0	0	0	12	0	0	52
	4:30 PM	0	0	20	0	0	0	0	0	0	11	0	0	31
	4:45 PM	0	0	30	0	0	0	0	0	0	13	0	0	43
	5:00 PM	0	0	17	0	1	0	0	0	0	12	0	1	31
	5:15 PM	0	0	17	0	1	0	0	0	0	8	0	0	26
	5:30 PM	0	0	40	0	0	0	0	0	0	11	0	0	51
	5:45 PM	0	0	13	1	0	0	0	0	0	11	0	1	26
	VOLUMES	0	0	270	2	2	0	0	0	0	85	0	3	364
	APPROACH %	0%	0%	100%	50%	50%	0%	0%	0%	0%	94%	0%	3%	
	APP/DEPART	270	/	3	4	/	87	0	/	274	90	/	0	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	0	183	1	0	0	0	0	0	43	0	1	229
	APPROACH %	0%	0%	100%	100%	0%	0%	0%	0%	0%	96%	0%	2%	
	PEAK HR FACTOR		0.487			0.250			0.000			0.865		0.556
	APP/DEPART	183	/	1	1	/	43	0	/	185	45	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	1	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	1	1
0	0	0	0	0
0	0	0	1	1
0	0	0	2	2
0	0	0	1	

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Quarry Rd

NORTH LEG

I-15 SB Ramps WEST LEG EAST LEG **I-15 SB Ramps**

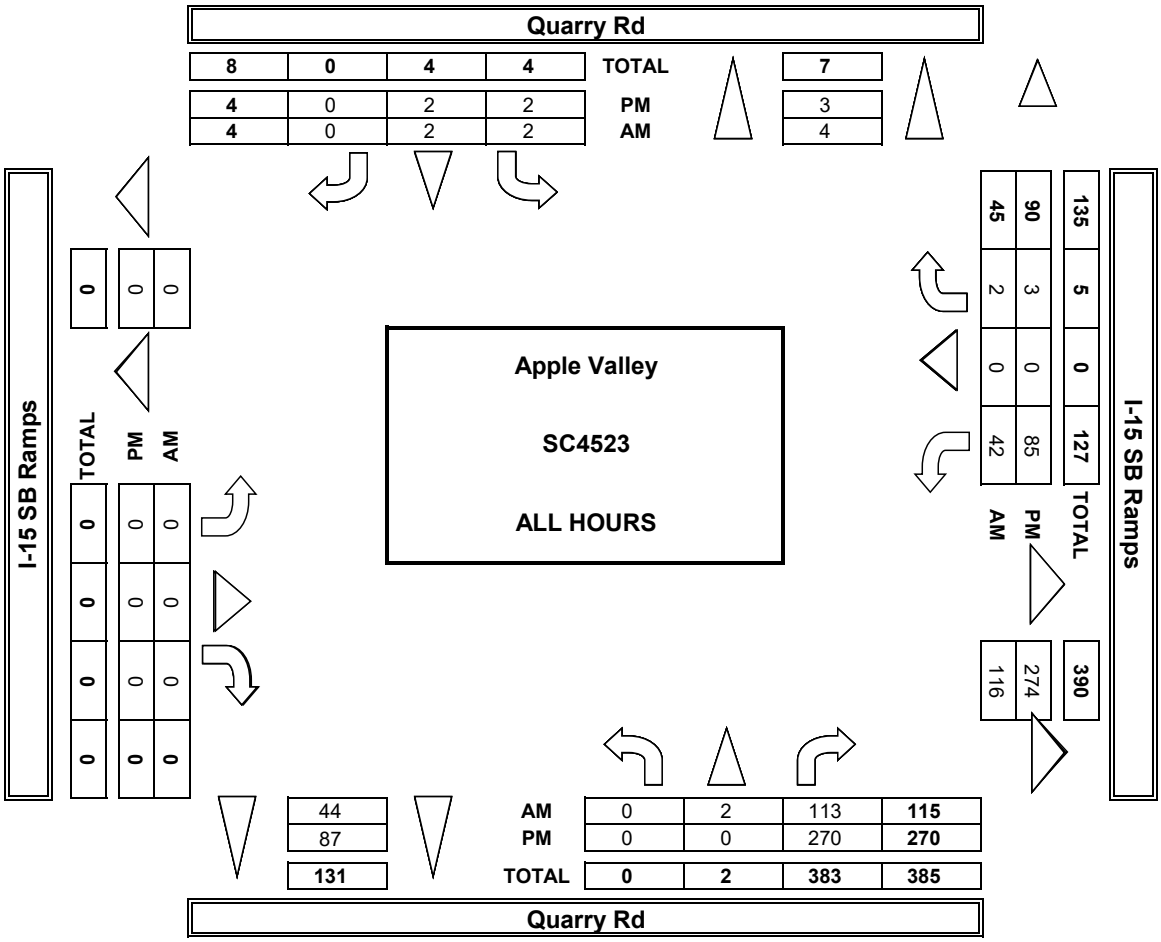
SOUTH LEG

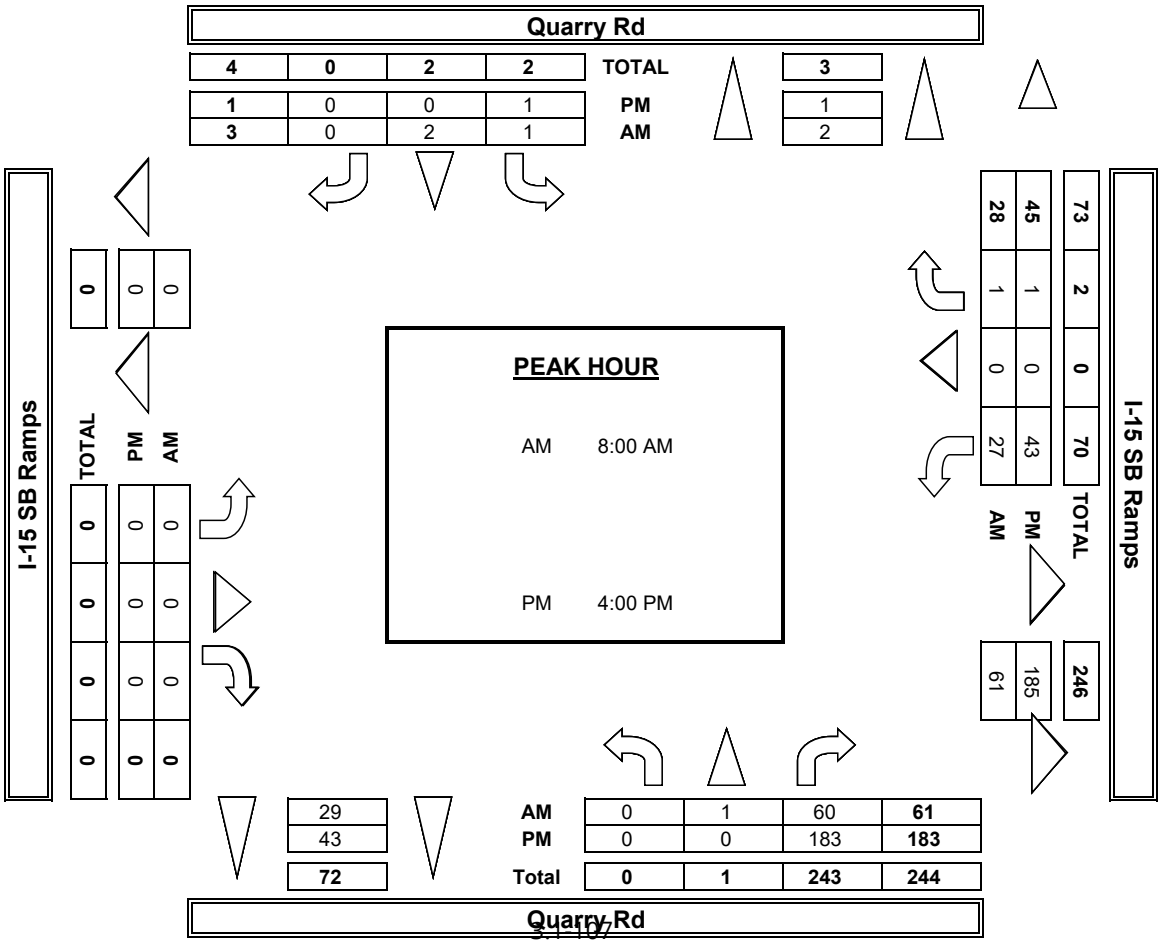
Quarry Rd

		ALL PED + BIKE & SCOOTER					PEDESTRIAN CROSSINGS					BICYCLE & SCOOTER CROSSINGS				
		E LEG	W LEG	S LEG	N LEG	TOTAL	E LEG	W LEG	S LEG	N LEG	TOTAL	EL	WL	SL	NL	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





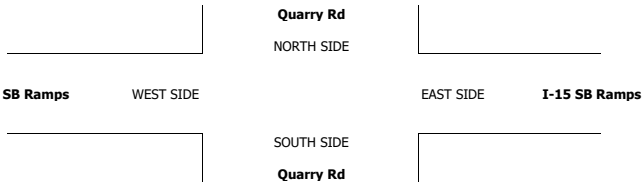
INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 4/2/24 TUESDAY	LOCATION:	Apple Valley	PROJECT #: SC4523
	NORTH & SOUTH:	Quarry Rd	LOCATION #: 1
	EAST & WEST:	I-15 SB Ramps	CONTROL: STOP W

	NOTES:										
PCE Adjusted	Class	1	2	3	4	5	6			AM PM MD OTHER OTHER	▲ N ◄ W E ► S ▼
	Factor	1	1.5	2	3	2	2				

		NORTHBOUND Quarry Rd			SOUTHBOUND Quarry Rd			EASTBOUND I-15 SB Ramps			WESTBOUND I-15 SB Ramps				U-TURNS				
	LANES:	NL X	NT 1	NR 0	SL 0	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	0	0	21	0	0	0	0	0	0	4	0	0	25					0
	7:15 AM	0	0	20	0	0	0	0	0	0	3	0	0	22					0
	7:30 AM	0	1	22	1	0	0	0	0	0	8	0	1	33					0
	7:45 AM	0	0	34	0	0	0	0	0	0	3	0	0	37					0
	8:00 AM	0	0	35	0	1	0	0	0	0	13	0	0	49					0
	8:15 AM	0	0	20	0	0	0	0	0	0	0	0	0	20					0
	8:30 AM	0	1	22	1	1	0	0	0	0	5	0	1	31					0
	8:45 AM	0	0	30	0	0	0	0	0	0	14	0	0	43					0
	VOLUMES	0	2	203	2	2	0	0	0	0	49	0	2	259	0	0	0	0	0
	APPROACH %	0%	1%	99%	50%	50%	0%	0%	0%	0%	96%	0%	4%						
	APP/DEPART	205	/	4	4	/	51	0	/	205	51	/	0	0					
	BEGIN PEAK HR		8:00 AM																
	VOLUMES	0	1	106	1	2	0	0	0	0	32	0	1	143					
	APPROACH %	0%	1%	99%	33%	67%	0%	0%	0%	0%	97%	0%	3%						
	PEAK HR FACTOR		0.764			0.375			0.000			0.602		0.727					
	APP/DEPART	107	/	2	3	/	34	0	/	107	33	/	0	0					
PM	4:00 PM	0	0	98	0	0	0	0	0	0	7	0	1	106					0
	4:15 PM	0	0	45	1	0	0	0	0	0	12	0	0	58					0
	4:30 PM	0	0	25	0	0	0	0	0	0	11	0	0	36					0
	4:45 PM	0	0	41	0	0	0	0	0	0	14	0	0	55					0
	5:00 PM	0	0	22	0	1	0	0	0	0	13	0	1	37					0
	5:15 PM	0	0	27	0	1	0	0	0	0	8	0	0	36					0
	5:30 PM	0	0	50	0	0	0	0	0	0	13	0	0	63					0
	5:45 PM	0	0	15	1	0	0	0	0	0	11	0	1	28					0
	VOLUMES	0	0	323	2	2	0	0	0	0	89	0	3	418	0	0	0	0	0
	APPROACH %	0%	0%	100%	50%	50%	0%	0%	0%	0%	97%	0%	3%						
	APP/DEPART	323	/	3	4	/	91	0	/	325	92	/	0	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	0	0	209	1	0	0	0	0	0	44	0	1	255					
	APPROACH %	0%	0%	100%	100%	0%	0%	0%	0%	0%	98%	0%	2%						
	PEAK HR FACTOR		0.533			0.250			0.000			0.804		0.601					
	APP/DEPART	209	/	1	1	/	44	0	/	210	45	/	0	0					



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Quarry Rd	LOCATION #:	1
TUESDAY	EAST & WEST:	I-15 SB Ramps	CONTROL:	STOP W

CLASS 1: PASSENGER VEHICLES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

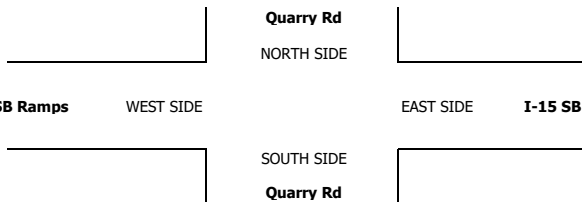
	NORTHBOUND (Quarry Rd)			SOUTHBOUND (Quarry Rd)			EASTBOUND (I-15 SB Ramps)			WESTBOUND (I-15 SB Ramps)			
LANES:	NL X	NT 1	NR 0	SL 0	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL
7:00 AM	0	0	7	0	0	0	0	0	0	2	0	0	9
7:15 AM	0	0	7	0	0	0	0	0	0	1	0	0	8
7:30 AM	0	1	7	1	0	0	0	0	0	8	0	1	18
7:45 AM	0	0	8	0	0	0	0	0	0	1	0	0	9
8:00 AM	0	0	9	0	1	0	0	0	0	7	0	0	17
8:15 AM	0	0	6	0	0	0	0	0	0	0	0	0	6
8:30 AM	0	1	8	1	1	0	0	0	0	5	0	1	17
8:45 AM	0	0	8	0	0	0	0	0	0	12	0	0	20
VOLUMES	0	2	60	2	2	0	0	0	0	36	0	2	105
APPROACH %	0%	3%	97%	50%	50%	0%	0%	0%	0%	92%	0%	5%	
APP/DEPART	62	/	4	4	/	38	0	/	63	39	/	0	0
BEGIN PEAK HR		8:00 AM											
VOLUMES	0	1	31	1	2	0	0	0	0	24	0	1	60
APPROACH %	0%	3%	97%	33%	67%	0%	0%	0%	0%	96%	0%	4%	
PEAK HR FACTOR		0.889			0.375			0.000			0.521		0.750
APP/DEPART	32	/	2	3	/	26	0	/	32	25	/	0	0
4:00 PM	0	0	90	0	0	0	0	0	0	7	0	1	98
4:15 PM	0	0	36	1	0	0	0	0	0	12	0	0	49
4:30 PM	0	0	17	0	0	0	0	0	0	11	0	0	28
4:45 PM	0	0	22	0	0	0	0	0	0	11	0	0	33
5:00 PM	0	0	14	0	1	0	0	0	0	11	0	1	27
5:15 PM	0	0	11	0	1	0	0	0	0	8	0	0	20
5:30 PM	0	0	33	0	0	0	0	0	0	10	0	0	43
5:45 PM	0	0	12	1	0	0	0	0	0	11	0	1	25
VOLUMES	0	0	235	2	2	0	0	0	0	81	0	3	325
APPROACH %	0%	0%	100%	50%	50%	0%	0%	0%	0%	94%	0%	3%	
APP/DEPART	235	/	3	4	/	83	0	/	239	86	/	0	0
BEGIN PEAK HR		4:00 PM											
VOLUMES	0	0	165	1	0	0	0	0	0	41	0	1	209
APPROACH %	0%	0%	100%	100%	0%	0%	0%	0%	0%	95%	0%	2%	
PEAK HR FACTOR		0.458			0.250			0.000			0.896		0.528
APP/DEPART	165	/	1	1	/	41	0	/	167	43	/	0	0

U-TURNS

AM NB	AM SB	AM EB	AM WB	AM TTL	PM NB	PM SB	PM EB	PM WB	PM TTL	BEGIN PEAK HR NB	BEGIN PEAK HR SB	BEGIN PEAK HR EB	BEGIN PEAK HR WB
0	0	0	0	0	0	0	0	1	1	0	0	0	0
0	0	0	0	0	0	0	0	0	0				
0	0	0	0	0	0	0	0	0	0				
0	0	0	1	1	0	0	0	0	0				
0	0	0	0	0	0	0	0	0	0				
0	0	0	0	0	0	0	0	0	0				
0	0	0	0	0	0	0	0	0	0				
0	0	0	0	0	0	0	0	0	0				
0	0	0	1	1	0	0	0	2	2				

RTOR

AM NRR	AM SRR	AM ERR	AM WRR	PM NRR	PM SRR	PM ERR	PM WRR	BEGIN PEAK HR NRR	BEGIN PEAK HR SRR	BEGIN PEAK HR ERR	BEGIN PEAK HR WRR
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0				
0	0	0	0	0	0	0	0				
0	0	0	0	0	0	0	0				
0	0	0	0	0	0	0	0				
0	0	0	0	0	0	0	0				
0	0	0	0	0	0	0	0				
0	0	0	0	0	0	0	0				
0	0	0	0	0	0	0	0				



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Quarry Rd	LOCATION #:	1
TUESDAY	EAST & WEST:	I-15 SB Ramps	CONTROL:	STOP W

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Quarry Rd)			SOUTHBOUND (Quarry Rd)			EASTBOUND (I-15 SB Ramps)			WESTBOUND (I-15 SB Ramps)			
	LANES:	NL X	NT 1	NR 0	SL 0	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	1
	7:15 AM	0	0	1	0	0	0	0	0	0	1	0	0	2
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	2	0	0	0	0	0	0	0	0	0	2
	8:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	1
	8:30 AM	0	0	2	0	0	0	0	0	0	0	0	0	2
	8:45 AM	0	0	1	0	0	0	0	0	0	1	0	0	2
	VOLUMES	0	0	7	0	0	0	0	0	0	3	0	0	10
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	0%	0%	
	APP/DEPART	7	/	0	0	/	3	0	/	7	3	/	0	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	0	0	6	0	0	0	0	0	0	1	0	0	7
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	0%	0%	
	PEAK HR FACTOR		0.750			0.000			0.000			0.250		0.875
	APP/DEPART	6	/	0	0	/	1	0	/	6	1	/	0	0
PM	4:00 PM	0	0	2	0	0	0	0	0	0	0	0	0	2
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	2	0	0	0	0	0	0	2	0	0	4
	5:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	1
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	3	0	0	0	0	0	0	0	0	0	3
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	7	0	0	0	0	0	0	3	0	0	10
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	0%	0%	
	APP/DEPART	7	/	0	0	/	3	0	/	7	3	/	0	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	0	4	0	0	0	0	0	0	2	0	0	6
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	0%	0%	
	PEAK HR FACTOR		0.500			0.000			0.000			0.250		0.375
	APP/DEPART	4	/	0	0	/	2	0	/	4	2	/	0	0

U-TURNS					
	NB	SB	EB	WB	TTL
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0

RTOR			
NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Quarry Rd

NORTH SIDE

I-15 SB Ramps WEST SIDE EAST SIDE **I-15 SB Ramps**

SOUTH SIDE

Quarry Rd

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

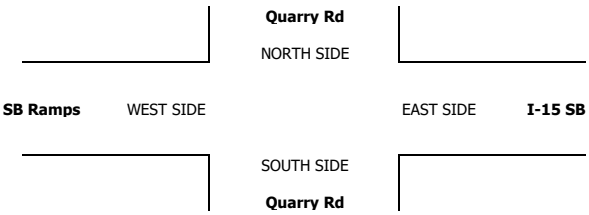
DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Quarry Rd	LOCATION #:	1
TUESDAY	EAST & WEST:	I-15 SB Ramps	CONTROL:	STOP W

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Quarry Rd			SOUTHBOUND Quarry Rd			EASTBOUND I-15 SB Ramps			WESTBOUND I-15 SB Ramps				U-TURNS					RTOR			
	LANES:	NL X	NT 1	NR 0	SL 0	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL	NB	SB	EB	WB	TTL	NRR X	SRR X	ERR X	WRR X
AM	7:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	1	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	6	0	0	0	0	0	0	1	0	0	7	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	0%	0%										
	APP/DEPART	6	/	0	0	/	1	0	/	6	1	/	0	0									
	BEGIN PEAK HR		8:00 AM																				
	VOLUMES	0	0	3	0	0	0	0	0	0	0	0	0	3	0	0	0	0		0	0	0	0
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%										
	PEAK HR FACTOR		0.750			0.000			0.000			0.000		0.750									
	APP/DEPART	3	/	0	0	/	0	0	/	3	0	/	0	0									
PM	4:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	2	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	2	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	7	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%										
	APP/DEPART	7	/	0	0	/	0	0	/	7	0	/	0	0									
	BEGIN PEAK HR		4:00 PM																				
	VOLUMES	0	0	4	0	0	0	0	0	0	0	0	0	4	0	0	0	0		0	0	0	0
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%										
	PEAK HR FACTOR		0.500			0.000			0.000			0.000		0.500									
	APP/DEPART	4	/	0	0	/	0	0	/	4	0	/	0	0									



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Quarry Rd	LOCATION #:	1
TUESDAY	EAST & WEST:	I-15 SB Ramps	CONTROL:	STOP W

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

	NORTHBOUND Quarry Rd			SOUTHBOUND Quarry Rd			EASTBOUND I-15 SB Ramps			WESTBOUND I-15 SB Ramps			
LANES:	NL X	NT 1	NR 0	SL 0	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL
7:00 AM	0	0	4	0	0	0	0	0	0	0	0	0	4
7:15 AM	0	0	3	0	0	0	0	0	0	0	0	0	3
7:30 AM	0	0	5	0	0	0	0	0	0	0	0	0	5
7:45 AM	0	0	8	0	0	0	0	0	0	0	0	0	8
8:00 AM	0	0	7	0	0	0	0	0	0	2	0	0	9
8:15 AM	0	0	4	0	0	0	0	0	0	0	0	0	4
8:30 AM	0	0	3	0	0	0	0	0	0	0	0	0	3
8:45 AM	0	0	6	0	0	0	0	0	0	0	0	0	6
AM VOLUMES	0	0	40	0	0	0	0	0	0	2	0	0	42
AM APPROACH %	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	0%	0%	
AM APP/DEPART	40	/	0	0	/	2	0	/	40	2	/	0	0
BEGIN PEAK HR		8:00 AM											
AM VOLUMES	0	0	20	0	0	0	0	0	0	2	0	0	22
AM APPROACH %	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	0%	0%	
AM PEAK HR FACTOR		0.714			0.000			0.000			0.250		0.611
AM APP/DEPART	20	/	0	0	/	2	0	/	20	2	/	0	0
4:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	1
4:15 PM	0	0	3	0	0	0	0	0	0	0	0	0	3
4:30 PM	0	0	2	0	0	0	0	0	0	0	0	0	2
4:45 PM	0	0	4	0	0	0	0	0	0	0	0	0	4
5:00 PM	0	0	2	0	0	0	0	0	0	0	0	0	2
5:15 PM	0	0	4	0	0	0	0	0	0	0	0	0	4
5:30 PM	0	0	4	0	0	0	0	0	0	1	0	0	5
5:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	1
PM VOLUMES	0	0	21	0	0	0	0	0	0	1	0	0	22
PM APPROACH %	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	0%	0%	
PM APP/DEPART	21	/	0	0	/	1	0	/	21	1	/	0	0
BEGIN PEAK HR		4:00 PM											
PM VOLUMES	0	0	10	0	0	0	0	0	0	0	0	0	10
PM APPROACH %	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
PM PEAK HR FACTOR		0.625			0.000			0.000			0.000		0.625
PM APP/DEPART	10	/	0	0	/	0	0	/	10	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Quarry Rd

NORTH SIDE

I-15 SB Ramps WEST SIDE EAST SIDE **I-15 SB Ramps**

SOUTH SIDE

Quarry Rd

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Quarry Rd	LOCATION #:	1
TUESDAY	EAST & WEST:	I-15 SB Ramps	CONTROL:	STOP W

CLASS 5: RV

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

	NORTHBOUND (Quarry Rd)			SOUTHBOUND (Quarry Rd)			EASTBOUND (I-15 SB Ramps)			WESTBOUND (I-15 SB Ramps)			
LANES:	NL X	NT 1	NR 0	SL 0	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL
AM													
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
BEGIN PEAK HR		8:00 AM											
VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
PM													
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
BEGIN PEAK HR		4:00 PM											
VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Quarry Rd

NORTH SIDE

I-15 SB Ramps WEST SIDE EAST SIDE **I-15 SB Ramps**

SOUTH SIDE

Quarry Rd

INTERSECTION TURNING MOVEMENT COUNTS

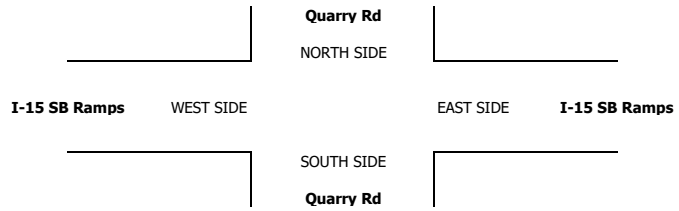
PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Quarry Rd	LOCATION #:	1
TUESDAY	EAST & WEST:	I-15 SB Ramps	CONTROL:	STOP W

CLASS 6:	NOTES:
BUSES	

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Quarry Rd			SOUTHBOUND Quarry Rd			EASTBOUND I-15 SB Ramps			WESTBOUND I-15 SB Ramps				U-TURNS					RTOR			
	LANES:	NL X	NT 1	NR 0	SL 0	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL	NB	SB	EB	WB	TTL	NRR X	SRR X	ERR X	WRR X
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%										
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0									
	BEGIN PEAK HR		8:00 AM																				
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%										
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000									
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0									
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%										
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0									
	BEGIN PEAK HR		4:00 PM																				
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%										
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000									
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0									



INTERSECTION TURNING MOVEMENT COUNTS

T020624

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, Apr 2, 24	LOCATION:	Apple Valley	PROJECT #: SC4523
	NORTH & SOUTH:	Dale Evans Pkwy	LOCATION #: 10
	EAST & WEST:	Corwin Rd	CONTROL: STOP ALL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Dale Evans Pkwy			SOUTHBOUND Dale Evans Pkwy			EASTBOUND Corwin Rd			WESTBOUND Corwin Rd				U-TURNS					RTOR			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL	NRR X	SRR X	ERR X	WRR X
AM	7:00 AM	0	33	4	0	12	3	3	3	0	1	0	0	59	0	0	0	0	0	0	0	0	0
	7:15 AM	0	41	1	0	16	1	7	3	0	1	0	1	71	0	0	0	0	0	0	0	0	0
	7:30 AM	0	31	6	0	9	4	5	2	1	1	0	0	59	0	0	0	0	0	0	0	0	0
	7:45 AM	4	32	8	1	12	0	3	2	0	3	0	1	66	0	0	0	0	0	0	0	0	0
	8:00 AM	0	24	4	0	4	0	7	1	0	2	2	0	44	0	0	0	0	0	0	0	0	0
	8:15 AM	0	20	4	1	8	6	4	3	1	4	4	0	55	0	0	0	0	0	0	0	0	0
	8:30 AM	1	24	4	0	9	6	5	1	1	1	1	1	54	0	0	0	0	0	0	0	0	0
	8:45 AM	1	20	1	0	19	4	1	2	0	1	0	0	49	0	0	0	0	0	0	0	0	0
	VOLUMES	6	225	32	2	89	24	35	17	3	14	7	3	457	0	0	0	0	0	0	0	0	0
	APPROACH %	2%	86%	12%	2%	77%	21%	64%	31%	5%	58%	29%	13%										
	APP/DEPART	263	/	263	115	/	106	55	/	51	24	/	37	0									
	BEGIN PEAK HR		7:00 AM																				
	VOLUMES	4	137	19	1	49	8	18	10	1	6	0	2	255	0	0	0	0		0	0	0	0
	APPROACH %	3%	86%	12%	2%	84%	14%	62%	34%	3%	75%	0%	25%										
	PEAK HR FACTOR		0.909			0.853			0.725			0.500		0.898									
	APP/DEPART	160	/	157	58	/	56	29	/	30	8	/	12	0									
PM	4:00 PM	0	25	4	0	53	16	5	3	1	6	7	0	120	0	0	0	0	0	0	0	0	0
	4:15 PM	1	34	5	1	44	9	11	0	0	5	4	0	114	0	0	0	0	0	0	0	0	0
	4:30 PM	1	21	3	1	52	11	4	2	0	8	3	2	108	0	0	0	0	0	0	0	0	0
	4:45 PM	1	28	3	1	50	9	2	1	1	6	2	0	104	0	0	0	0	0	0	0	0	0
	5:00 PM	0	13	1	1	50	12	2	1	0	6	2	0	88	0	0	0	0	0	0	0	0	0
	5:15 PM	0	14	2	0	42	3	5	1	0	2	2	0	71	0	0	0	0	0	0	0	0	0
	5:30 PM	0	17	1	1	36	8	0	0	0	3	1	0	67	0	0	0	0	0	0	0	0	0
	5:45 PM	1	17	3	0	35	4	2	2	0	5	1	0	70	0	0	1	0	1	0	0	0	0
	VOLUMES	4	169	22	5	362	72	31	10	2	41	22	2	743	0	0	1	0	1	0	0	0	0
	APPROACH %	2%	87%	11%	1%	82%	16%	70%	23%	5%	63%	34%	3%										
	APP/DEPART	195	/	202	439	/	405	44	/	37	65	/	99	0									
	BEGIN PEAK HR		4:00 PM																				
	VOLUMES	3	108	15	3	199	45	22	6	2	25	16	2	446	0	0	0	0		0	0	0	0
	APPROACH %	2%	86%	12%	1%	81%	18%	73%	20%	7%	58%	37%	5%										
	PEAK HR FACTOR		0.788			0.895			0.682			0.827		0.929									
	APP/DEPART	126	/	132	247	/	226	30	/	24	43	/	64	0									

Dale Evans Pkwy

NORTH LEG

Corwin Rd WEST LEG EAST LEG **Corwin Rd**

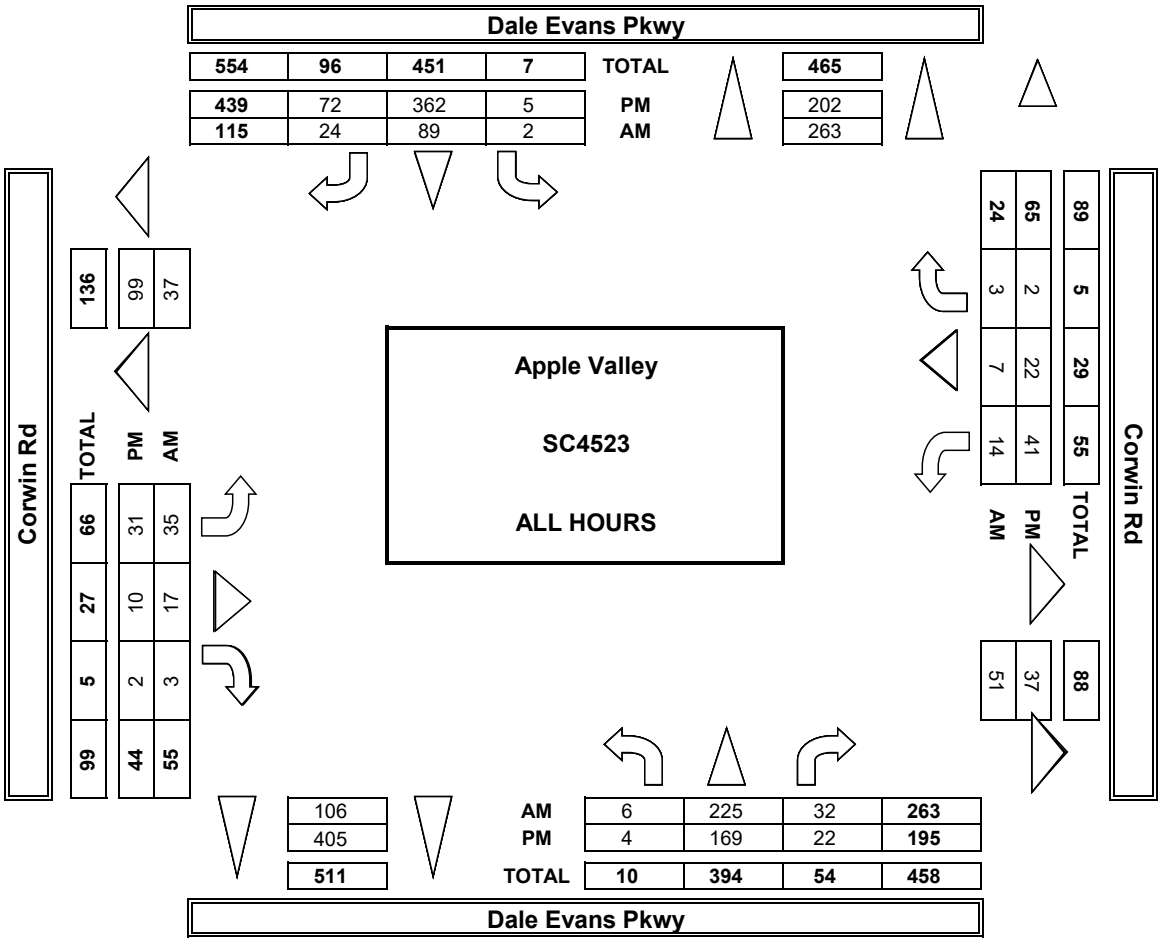
SOUTH LEG

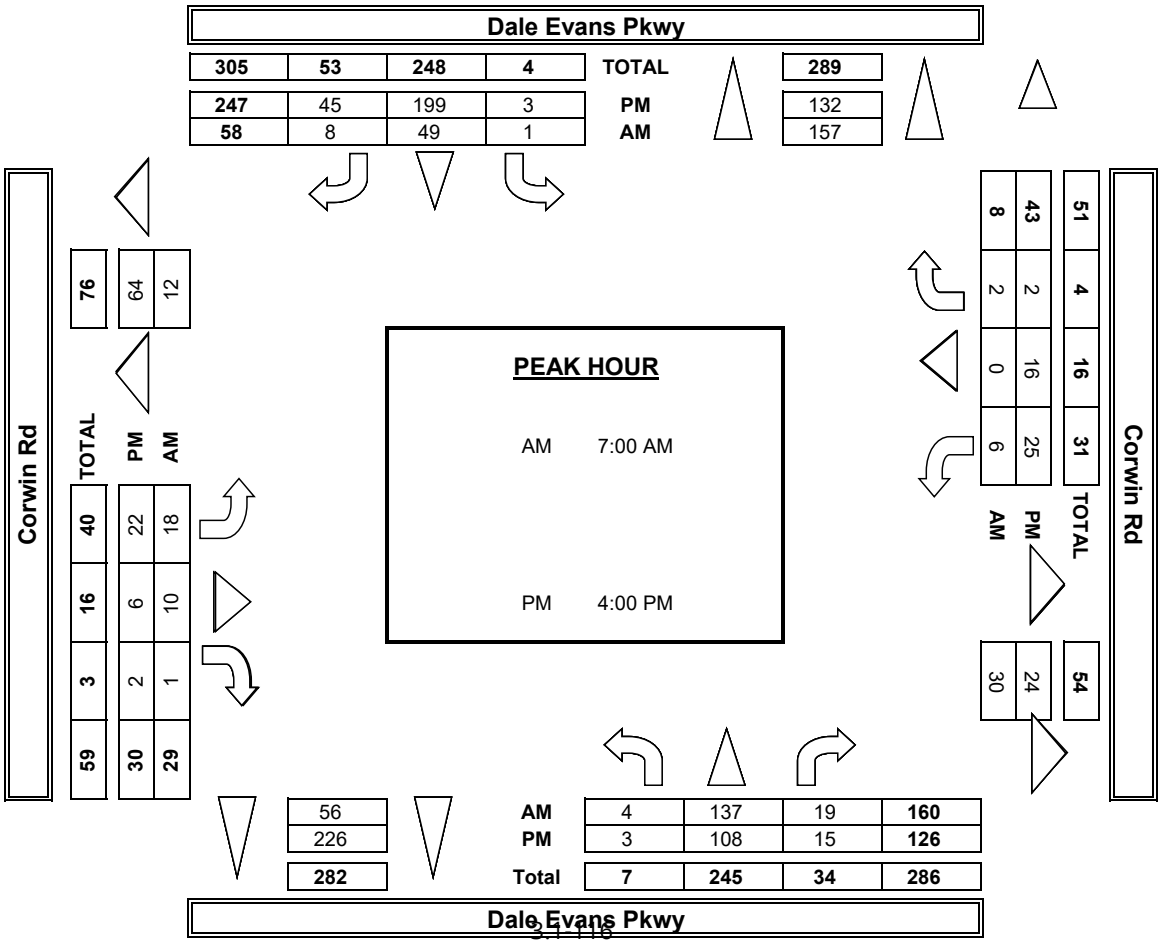
Dale Evans Pkwy

		ALL PED + BIKE & SCOOTER					PEDESTRIAN CROSSINGS					BICYCLE & SCOOTER CROSSINGS				
		E LEG	W LEG	S LEG	N LEG	TOTAL	E LEG	W LEG	S LEG	N LEG	TOTAL	EL	WL	SL	NL	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1

AimTD LLC

TURNING MOVEMENT COUNTS





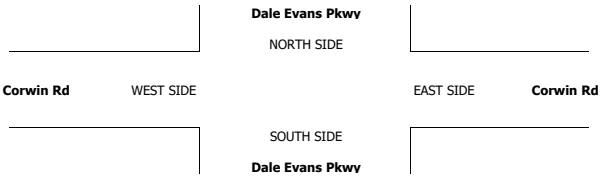
INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 4/2/24 TUESDAY	LOCATION:	Apple Valley	PROJECT #:	SC4523
	NORTH & SOUTH:	Dale Evans Pkwy	LOCATION #:	10
	EAST & WEST:	Corwin Rd	CONTROL:	STOP ALL

	NOTES:											
PCE Adjusted	Class	1	2	3	4	5	6			AM PM MD OTHER OTHER	▲ N ◄ W E ► S ▼	
	Factor	1	1.5	2	3	2	2					

	NORTHBOUND Dale Evans Pkwy			SOUTHBOUND Dale Evans Pkwy			EASTBOUND Corwin Rd			WESTBOUND Corwin Rd				U-TURNS				
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL	NB	SB	EB	WB	TTL
7:00 AM	0	37	4	0	13	3	3	4	0	1	0	0	64					0
7:15 AM	0	48	1	0	16	1	7	4	0	2	0	2	79					0
7:30 AM	0	36	6	0	11	6	7	2	2	1	0	0	71					0
7:45 AM	7	32	9	1	14	0	3	2	0	3	0	1	72					0
8:00 AM	0	28	4	0	7	0	7	1	0	2	4	0	53					0
8:15 AM	0	21	5	1	10	6	6	3	1	4	5	0	60					0
8:30 AM	1	28	4	0	11	9	5	1	1	1	1	1	63					0
8:45 AM	2	26	1	0	20	4	1	2	0	1	0	0	57					0
AM VOLUMES	10	254	33	2	101	29	39	18	4	15	10	4	517	0	0	0	0	0
AM APPROACH %	3%	86%	11%	2%	76%	22%	64%	30%	7%	53%	35%	13%						
AM APP/DEPART	297	/	297	132	/	119	61	/	53	28	/	49	0					
AM BEGIN PEAK HR		7:00 AM																
AM VOLUMES	7	152	20	1	54	10	20	11	2	7	0	3	285					
AM APPROACH %	4%	85%	11%	2%	83%	16%	61%	33%	6%	72%	0%	28%						
AM PEAK HR FACTOR		0.918			0.949			0.750			0.563		0.900					
AM APP/DEPART	178	/	174	65	/	62	33	/	32	9	/	17	0					
4:00 PM	0	27	4	0	54	16	5	4	1	6	7	0	124					0
4:15 PM	1	35	5	1	46	9	11	0	0	5	4	0	117					0
4:30 PM	1	23	4	2	54	12	5	2	0	8	3	2	114					0
4:45 PM	2	28	3	1	56	10	2	1	1	8	2	0	113					0
5:00 PM	0	15	1	1	54	12	2	1	0	6	2	0	94					0
5:15 PM	0	18	3	0	43	3	5	1	0	2	2	0	76					0
5:30 PM	0	19	1	1	38	9	0	0	0	3	1	0	72					0
5:45 PM	2	17	3	0	35	4	2	2	0	5	1	0	71					0
PM VOLUMES	6	182	23	6	379	75	32	11	2	43	22	2	780	0	0	0	0	0
PM APPROACH %	3%	86%	11%	1%	83%	16%	71%	25%	4%	64%	33%	3%						
PM APP/DEPART	211	/	215	459	/	423	45	/	40	67	/	103	0					
PM BEGIN PEAK HR		4:00 PM																
PM VOLUMES	4	113	16	4	209	47	23	7	2	27	16	2	468					
PM APPROACH %	3%	85%	12%	1%	81%	18%	71%	22%	6%	60%	36%	4%						
PM PEAK HR FACTOR		0.808			0.932			0.716			0.856		0.946					
PM APP/DEPART	133	/	138	259	/	238	32	/	26	45	/	67	0					



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Dale Evans Pkwy	LOCATION #:	10
TUESDAY	EAST & WEST:	Corwin Rd	CONTROL:	STOP ALL

CLASS 1: PASSENGER VEHICLES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

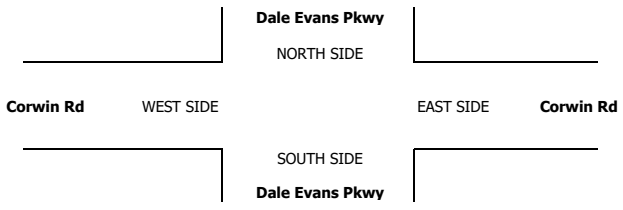
		NORTHBOUND (Dale Evans Pkwy)			SOUTHBOUND (Dale Evans Pkwy)			EASTBOUND (Corwin Rd)			WESTBOUND (Corwin Rd)			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	0	27	4	0	11	3	3	2	0	1	0	0	51
	7:15 AM	0	37	1	0	16	1	7	2	0	0	0	0	64
	7:30 AM	0	26	6	0	8	2	4	2	0	1	0	0	49
	7:45 AM	2	32	7	1	10	0	3	2	0	3	0	1	61
	8:00 AM	0	19	4	0	2	0	7	1	0	2	1	0	36
	8:15 AM	0	19	3	1	5	6	3	3	1	4	3	0	48
	8:30 AM	1	22	4	0	7	4	5	1	1	1	1	1	48
	8:45 AM	0	15	1	0	18	4	1	2	0	1	0	0	42
	VOLUMES	3	197	30	2	77	20	33	15	2	13	5	2	399
	APPROACH %	1%	86%	13%	2%	78%	20%	66%	30%	4%	65%	25%	10%	
	APP/DEPART	230	/	232	99	/	92	50	/	47	20	/	28	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	2	122	18	1	45	6	17	8	0	5	0	1	225
	APPROACH %	1%	86%	13%	2%	87%	12%	68%	32%	0%	83%	0%	17%	
	PEAK HR FACTOR		0.866			0.765			0.694			0.375		0.879
	APP/DEPART	142	/	140	52	/	50	25	/	27	6	/	8	0
PM	4:00 PM	0	22	4	0	52	16	5	2	1	6	7	0	115
	4:15 PM	1	33	5	1	41	9	11	0	0	5	4	0	110
	4:30 PM	1	20	2	0	51	10	3	2	0	8	3	2	102
	4:45 PM	0	28	3	1	45	8	2	1	1	3	2	0	94
	5:00 PM	0	12	1	1	48	12	2	1	0	6	2	0	85
	5:15 PM	0	11	1	0	41	3	5	1	0	2	2	0	66
	5:30 PM	0	16	1	1	35	7	0	0	0	3	1	0	64
	5:45 PM	0	17	3	0	35	4	2	2	0	5	1	0	69
	VOLUMES	2	159	20	4	348	69	30	9	2	38	22	2	706
	APPROACH %	1%	88%	11%	1%	83%	16%	71%	21%	5%	61%	35%	3%	
	APP/DEPART	181	/	191	421	/	388	42	/	33	62	/	94	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	2	103	14	2	189	43	21	5	2	22	16	2	421
	APPROACH %	2%	87%	12%	1%	81%	18%	75%	18%	7%	55%	40%	5%	
	PEAK HR FACTOR		0.763			0.860			0.636			0.769		0.915
	APP/DEPART	119	/	126	234	/	213	28	/	21	40	/	61	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	1	0	1
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Dale Evans Pkwy	LOCATION #:	10
TUESDAY	EAST & WEST:	Corwin Rd	CONTROL:	STOP ALL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

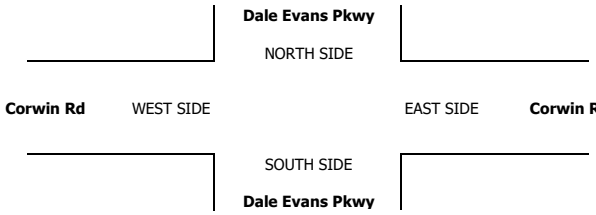
		NORTHBOUND Dale Evans Pkwy			SOUTHBOUND Dale Evans Pkwy			EASTBOUND Corwin Rd			WESTBOUND Corwin Rd			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	0	5	0	0	1	0	0	1	0	0	0	0	7
	7:15 AM	0	1	0	0	0	0	0	1	0	1	0	1	4
	7:30 AM	0	3	0	0	0	0	0	0	0	0	0	0	3
	7:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	1
	8:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	2
	8:15 AM	0	1	1	0	3	0	0	0	0	0	1	0	6
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	2	0	0	1	0	0	0	0	0	0	0	3
	VOLUMES	0	14	2	0	5	0	0	2	0	1	1	1	26
	APPROACH %	0%	88%	13%	0%	100%	0%	0%	100%	0%	33%	33%	33%	
	APP/DEPART	16	/	15	5	/	6	2	/	4	3	/	1	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	0	9	1	0	1	0	0	2	0	1	0	1	15
	APPROACH %	0%	90%	10%	0%	100%	0%	0%	100%	0%	50%	0%	50%	
	PEAK HR FACTOR		0.500			0.250			0.500			0.250		0.536
	APP/DEPART	10	/	10	1	/	2	2	/	3	2	/	0	0
PM	4:00 PM	0	2	0	0	1	0	0	0	0	0	0	0	3
	4:15 PM	0	0	0	0	2	0	0	0	0	0	0	0	2
	4:30 PM	0	0	1	1	0	1	1	0	0	0	0	0	4
	4:45 PM	0	0	0	0	3	0	0	0	0	3	0	0	6
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	1	1	0	1	0	0	0	0	0	0	0	3
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	3	2	1	7	1	1	0	0	3	0	0	18
	APPROACH %	0%	60%	40%	11%	78%	11%	100%	0%	0%	100%	0%	0%	
	APP/DEPART	5	/	4	9	/	10	1	/	3	3	/	1	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	2	1	1	6	1	1	0	0	3	0	0	15
	APPROACH %	0%	67%	33%	13%	75%	13%	100%	0%	0%	100%	0%	0%	
	PEAK HR FACTOR		0.375			0.667			0.250			0.250		0.625
	APP/DEPART	3	/	3	8	/	9	1	/	2	3	/	1	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

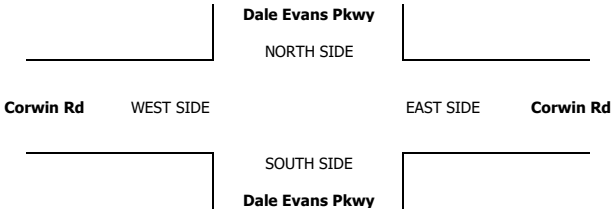
DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Dale Evans Pkwy	LOCATION #:	10
TUESDAY	EAST & WEST:	Corwin Rd	CONTROL:	STOP ALL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Dale Evans Pkwy			SOUTHBOUND Dale Evans Pkwy			EASTBOUND Corwin Rd			WESTBOUND Corwin Rd				U-TURNS					RTOR			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL	NB	SB	EB	WB	TTL	NRR X	SRR X	ERR X	WRR X
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	1	0	0	1	0	0	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	100%	0%	0%	100%	0%	0%	0%	100%	0%	0%	0%										
	APP/DEPART	1	/	1	1	/	2	1	/	0	0	/	0	0									
	BEGIN PEAK HR		7:00 AM																				
	VOLUMES	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0		0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%										
	PEAK HR FACTOR		0.000			0.000			0.250			0.000		0.250									
	APP/DEPART	0	/	0	0	/	1	1	/	0	0	/	0	0									
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%										
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0									
	BEGIN PEAK HR		4:00 PM																				
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%										
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000									
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0									



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Dale Evans Pkwy	LOCATION #:	10
TUESDAY	EAST & WEST:	Corwin Rd	CONTROL:	STOP ALL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Dale Evans Pkwy			SOUTHBOUND Dale Evans Pkwy			EASTBOUND Corwin Rd			WESTBOUND Corwin Rd			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	3	0	0	0	0	0	0	0	0	0	0	3
	7:30 AM	0	1	0	0	1	0	1	0	0	0	0	0	3
	7:45 AM	1	0	0	0	0	0	0	0	0	0	0	0	1
	8:00 AM	0	0	0	0	1	0	0	0	0	0	1	0	2
	8:15 AM	0	0	0	0	0	0	1	0	0	0	0	0	1
	8:30 AM	0	2	0	0	0	1	0	0	0	0	0	0	3
	8:45 AM	0	2	0	0	0	0	0	0	0	0	0	0	2
	VOLUMES	1	8	0	0	2	1	2	0	0	0	1	0	15
	APPROACH %	11%	89%	0%	0%	67%	33%	100%	0%	0%	0%	100%	0%	
	APP/DEPART	9	/	10	3	/	2	2	/	0	1	/	3	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	1	4	0	0	1	0	1	0	0	0	0	0	7
	APPROACH %	20%	80%	0%	0%	100%	0%	100%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.417			0.250			0.250			0.000		0.583
	APP/DEPART	5	/	5	1	/	1	1	/	0	0	/	1	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	2
	4:45 PM	0	0	0	0	2	0	0	0	0	0	0	0	2
	5:00 PM	0	1	0	0	2	0	0	0	0	0	0	0	3
	5:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
	5:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	2
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	4	0	0	6	0	0	0	0	0	0	0	10
	APPROACH %	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	4	/	4	6	/	6	0	/	0	0	/	0	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	1	0	0	3	0	0	0	0	0	0	0	4
	APPROACH %	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.250			0.375			0.000			0.000		0.500
	APP/DEPART	1	/	1	3	/	3	0	/	0	0	/	0	0

U-TURNS					
	NB	SB	EB	WB	TTL
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Dale Evans Pkwy	LOCATION #:	10
TUESDAY	EAST & WEST:	Corwin Rd	CONTROL:	STOP ALL

CLASS 5: RV

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Dale Evans Pkwy			SOUTHBOUND Dale Evans Pkwy			EASTBOUND Corwin Rd			WESTBOUND Corwin Rd			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Dale Evans Pkwy

NORTH SIDE

Corwin Rd WEST SIDE EAST SIDE **Corwin Rd**

SOUTH SIDE

Dale Evans Pkwy

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Dale Evans Pkwy	LOCATION #:	10
TUESDAY	EAST & WEST:	Corwin Rd	CONTROL:	STOP ALL

CLASS 6: BUSES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

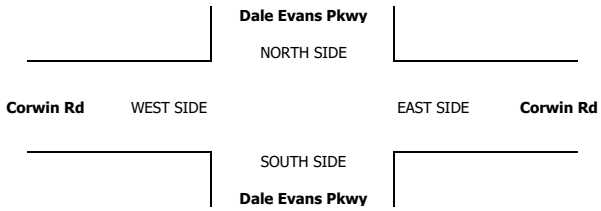
	NORTHBOUND Dale Evans Pkwy			SOUTHBOUND Dale Evans Pkwy			EASTBOUND Corwin Rd			WESTBOUND Corwin Rd			
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
7:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	1	0	0	0	2	0	0	0	0	0	0	3
7:45 AM	1	0	0	0	2	0	0	0	0	0	0	0	3
8:00 AM	0	2	0	0	1	0	0	0	0	0	0	0	3
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	1	1	0	0	0	0	0	0	2
8:45 AM	1	1	0	0	0	0	0	0	0	0	0	0	2
AM VOLUMES	2	5	0	0	4	3	0	0	0	0	0	0	14
AM APPROACH %	29%	71%	0%	0%	57%	43%	0%	0%	0%	0%	0%	0%	
AM APP/DEPART	7	/	5	7	/	4	0	/	0	0	/	5	0
BEGIN PEAK HR		7:00 AM											
PEAK HR VOLUMES	1	2	0	0	2	2	0	0	0	0	0	0	7
PEAK HR APPROACH %	33%	67%	0%	0%	50%	50%	0%	0%	0%	0%	0%	0%	
PEAK HR FACTOR		0.750			0.500			0.000			0.000		0.583
AM PEAK HR APP/DEPART	3	/	2	4	/	2	0	/	0	0	/	3	0
4:00 PM	0	1	0	0	0	0	0	1	0	0	0	0	2
4:15 PM	0	1	0	0	1	0	0	0	0	0	0	0	2
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	1	0	0	0	0	1	0	0	0	0	0	0	2
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	1
5:45 PM	1	0	0	0	0	0	0	0	0	0	0	0	1
PM VOLUMES	2	3	0	0	1	2	0	1	0	0	0	0	9
PM APPROACH %	40%	60%	0%	0%	33%	67%	0%	100%	0%	0%	0%	0%	
PM APP/DEPART	5	/	3	3	/	1	1	/	1	0	/	4	0
BEGIN PEAK HR		4:00 PM											
PEAK HR VOLUMES	1	2	0	0	1	1	0	1	0	0	0	0	6
PEAK HR APPROACH %	33%	67%	0%	0%	50%	50%	0%	100%	0%	0%	0%	0%	
PEAK HR FACTOR		0.750			0.500			0.250			0.000		0.750
PM PEAK HR APP/DEPART	3	/	2	2	/	1	1	/	1	0	/	2	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



A102423

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Tuesday, April 02, 2024 **CITY:** Apple Valley

JOB #: SC4523 **LOCATION:** CLASS4 Stoddard Wells Rd east of I-15 NB Ramps

AM TIME	EB 1	2	3	4	5	6	TOTAL
0:00	1	0	0	0	0	0	1
0:15	3	0	0	1	0	0	4
0:30	2	0	1	0	0	0	3
0:45	2	0	1	1	0	0	4
1:00	0	0	0	2	0	0	2
1:15	2	0	1	1	0	0	4
1:30	5	0	0	0	0	0	5
1:45	5	0	0	0	0	0	5
2:00	2	0	1	1	0	0	4
2:15	2	0	0	0	0	0	2
2:30	4	0	0	1	0	0	5
2:45	8	0	0	0	0	0	8
3:00	7	0	0	0	0	0	7
3:15	6	0	0	0	0	0	6
3:30	15	0	0	1	0	0	16
3:45	17	0	0	2	0	0	19
4:00	18	0	0	0	0	0	18
4:15	25	0	1	0	0	0	26
4:30	33	0	0	2	0	0	35
4:45	63	0	0	3	0	0	66
5:00	29	0	1	3	0	0	33
5:15	60	1	0	3	0	0	64
5:30	32	2	1	4	0	0	39
5:45	34	0	0	2	0	0	36
6:00	20	0	2	6	0	0	28
6:15	23	2	2	0	0	0	27
6:30	17	3	1	2	0	0	23
6:45	14	2	1	3	0	0	20
7:00	14	1	1	2	0	0	18
7:15	13	2	2	3	0	0	20
7:30	25	1	0	2	0	0	28
7:45	15	0	1	3	0	0	19
8:00	11	4	5	3	0	0	23
8:15	14	0	4	5	0	0	23
8:30	15	1	4	5	0	0	25
8:45	15	2	4	2	0	0	23
9:00	13	0	1	9	0	0	23
9:15	6	2	3	8	0	0	19
9:30	10	4	3	3	0	0	20
9:45	4	2	1	3	0	0	10
10:00	10	1	7	10	0	0	28
10:15	6	4	2	4	0	0	16
10:30	11	2	6	10	0	0	29
10:45	5	4	3	3	0	0	15
11:00	8	6	2	6	0	0	22
11:15	6	1	1	4	0	0	12
11:30	7	1	5	4	0	0	17
11:45	8	1	3	7	0	0	19
TOTAL	665	49	71	134	0	0	919

AM PEAK HOUR	4:45 AM
AM PEAK VOLUME	202

PM Time	EB 1	2	3	4	5	6	TOTAL
12:00	3	2	5	4	0	0	14
12:15	5	0	2	4	0	0	11
12:30	8	1	2	7	0	0	18
12:45	4	0	2	8	0	0	14
13:00	9	2	1	3	0	0	15
13:15	7	1	2	3	0	0	13
13:30	10	1	6	6	0	0	23
13:45	13	1	3	3	0	0	20
14:00	10	0	2	5	0	0	17
14:15	21	4	1	4	0	0	30
14:30	18	1	2	3	0	0	24
14:45	13	0	1	5	0	0	19
15:00	17	1	1	6	0	0	25
15:15	31	1	4	5	0	0	41
15:30	27	4	2	8	0	0	41
15:45	52	1	0	4	0	0	57
16:00	48	2	2	2	0	0	54
16:15	60	2	0	9	0	0	71
16:30	27	1	1	2	0	0	31
16:45	15	2	0	3	0	0	20
17:00	18	1	1	6	0	0	26
17:15	11	0	0	1	0	0	12
17:30	22	1	1	3	0	0	27
17:45	24	0	0	2	0	0	26
18:00	10	1	2	5	0	0	18
18:15	12	0	0	9	0	0	21
18:30	12	0	3	4	0	0	19
18:45	10	0	0	3	0	0	13
19:00	10	0	1	0	0	0	11
19:15	9	0	0	0	0	0	9
19:30	11	1	0	5	0	0	17
19:45	7	0	2	3	0	0	12
20:00	8	0	0	2	0	0	10
20:15	6	0	0	6	0	0	12
20:30	11	0	0	5	0	0	16
20:45	9	0	3	1	1	0	14
21:00	4	0	0	0	0	0	4
21:15	4	0	1	2	0	0	7
21:30	1	0	0	0	0	0	1
21:45	7	0	0	2	0	0	9
22:00	3	0	0	2	0	0	5
22:15	5	0	0	1	0	0	6
22:30	2	0	1	0	0	0	3
22:45	3	0	2	2	0	0	7
23:00	0	0	0	1	0	0	1
23:15	1	0	0	0	0	0	1
23:30	0	0	1	2	0	0	3
23:45	1	0	0	3	0	0	4
TOTAL	619	31	57	164	1	0	872

AM PEAK HOUR	3:30 PM
AM PEAK VOLUME	223

CLASS 1	PASSENGER VEHICLES	TOTAL: AM+PM	1,284	80	128	298	1	0	1,791
CLASS 2	2-AXLE TRUCKS	% OF TOTAL	71.7%	4.5%	7.1%	16.6%	0.1%	0.0%	100.0%
CLASS 3	3-AXLE TRUCKS								
CLASS 4	4 OR MORE AXLE TRUCKS								
CLASS 5	RV	TOTAL: ALL	2,346	148	191	678	1	0	3,364
CLASS 6	Buses	% OF TOTAL	69.7%	4.4%	5.7%	20.2%	0.0%	0.0%	100.0%

A102423

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Tuesday, April 02, 2024
JOB #: SC4523
CITY: Apple Valley
LOCATION: CLASS4 Stoddard Wells Rd east of I-15 NB Ramps

AM	WB						
TIME	1	2	3	4	5	6	TOTAL
0:00	2	0	1	2	0	0	5
0:15	1	0	0	2	0	0	3
0:30	2	0	0	2	0	0	4
0:45	2	0	0	2	0	0	4
1:00	9	0	0	1	0	0	10
1:15	7	0	0	0	0	0	7
1:30	7	0	0	3	0	0	10
1:45	2	0	0	1	0	0	3
2:00	9	0	0	1	0	0	10
2:15	4	0	0	1	0	0	5
2:30	11	1	0	6	0	0	18
2:45	11	0	0	1	0	0	12
3:00	29	0	0	1	0	0	30
3:15	19	0	0	2	0	0	21
3:30	15	0	0	1	0	0	16
3:45	19	0	0	2	0	0	21
4:00	5	0	0	1	0	0	6
4:15	1	0	1	0	0	0	2
4:30	3	0	0	2	0	0	5
4:45	5	0	0	3	0	0	8
5:00	7	0	0	2	0	0	9
5:15	3	0	0	1	0	0	4
5:30	8	2	0	0	0	0	10
5:45	6	1	1	2	0	0	10
6:00	13	0	0	4	0	0	17
6:15	5	0	0	2	0	0	7
6:30	8	0	0	4	0	0	12
6:45	6	0	0	7	0	0	13
7:00	8	1	0	4	0	0	13
7:15	8	1	0	3	0	0	12
7:30	7	0	1	6	0	0	14
7:45	13	1	1	13	0	0	28
8:00	9	2	2	4	0	0	17
8:15	8	2	0	5	0	0	15
8:30	8	1	1	3	0	0	13
8:45	13	1	1	5	0	0	20
9:00	10	0	0	7	0	0	17
9:15	7	1	3	5	0	0	16
9:30	3	0	0	9	0	0	12
9:45	4	3	1	5	0	0	13
10:00	6	1	4	6	0	0	17
10:15	7	1	2	10	0	0	20
10:30	3	0	1	11	0	0	15
10:45	6	5	1	9	0	0	21
11:00	8	2	1	9	0	0	20
11:15	2	1	2	12	0	0	17
11:30	11	6	1	10	0	0	28
11:45	8	4	2	4	0	0	18
TOTAL	368	37	27	196	0	0	628

AM PEAK HOUR	3:00 AM
AM PEAK VOLUME	88

PM	WB						
Time	1	2	3	4	5	6	TOTAL
12:00	10	2	2	3	0	0	17
12:15	4	1	3	6	0	0	14
12:30	6	2	1	7	0	0	16
12:45	7	3	0	8	0	0	18
13:00	10	1	0	8	0	0	19
13:15	10	1	2	8	0	0	21
13:30	20	1	1	6	0	0	28
13:45	30	1	0	3	0	0	34
14:00	14	1	1	5	0	0	21
14:15	7	1	0	7	0	0	15
14:30	34	0	0	4	0	0	38
14:45	14	0	1	4	0	0	19
15:00	21	1	3	9	0	0	34
15:15	18	2	1	4	0	0	25
15:30	61	4	0	9	0	0	74
15:45	31	1	1	4	0	0	37
16:00	87	1	0	2	0	0	90
16:15	33	0	2	4	0	0	39
16:30	21	1	1	3	0	0	26
16:45	22	1	4	4	0	0	31
17:00	8	0	1	2	0	0	11
17:15	8	0	2	4	0	0	14
17:30	35	2	0	3	0	0	40
17:45	13	0	0	1	0	0	14
18:00	6	0	0	1	0	0	7
18:15	11	1	2	3	0	0	17
18:30	20	0	0	1	0	0	21
18:45	13	0	0	10	0	0	23
19:00	9	0	0	6	0	0	15
19:15	10	0	1	5	0	0	16
19:30	10	0	0	3	0	0	13
19:45	9	0	1	0	0	0	10
20:00	3	2	0	3	0	0	8
20:15	7	0	0	4	0	0	11
20:30	9	0	1	3	0	0	13
20:45	12	1	0	5	0	0	18
21:00	13	0	0	3	0	0	16
21:15	8	0	0	0	0	0	8
21:30	4	0	0	3	0	0	7
21:45	2	0	0	0	0	0	2
22:00	6	0	0	4	0	0	10
22:15	3	0	0	1	0	0	4
22:30	8	0	1	0	0	0	9
22:45	3	0	0	2	0	0	5
23:00	1	0	1	1	0	0	3
23:15	0	0	1	1	0	0	2
23:30	2	0	1	6	0	0	9
23:45	1	0	1	1	0	0	3
TOTAL	694	31	36	184	0	0	945

AM PEAK HOUR	3:30 PM
AM PEAK VOLUME	240

TOTAL: AM+PM	1,062	68	63	380	0	0	1,573
% OF TOTAL	67.5%	4.3%	4.0%	24.2%	0.0%	0.0%	100.0%

CLASS 1	PASSENGER VEHICLES
CLASS 2	2-AXLE TRUCKS
CLASS 3	3-AXLE TRUCKS
CLASS 4	4 OR MORE AXLE TRUCKS
CLASS 5	RV
CLASS 6	BUS

A102423

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Tuesday, April 02, 2024 **CITY:** Apple Valley

JOB #: SC4523 **LOCATION:** CLASS4 Stoddard Wells Rd east of I-15 NB Ramps

AM TIME	COMBINED 1	2	3	4	5	6	TOTAL	PM Time	COMBINED 1	2	3	4	5	6	TOTAL
0:00	3	0	1	2	0	0	6	12:00	13	4	7	7	0	0	31
0:15	4	0	0	3	0	0	7	12:15	9	1	5	10	0	0	25
0:30	4	0	1	2	0	0	7	12:30	14	3	3	14	0	0	34
0:45	4	0	1	3	0	0	8	12:45	11	3	2	16	0	0	32
1:00	9	0	0	3	0	0	12	13:00	19	3	1	11	0	0	34
1:15	9	0	1	1	0	0	11	13:15	17	2	4	11	0	0	34
1:30	12	0	0	3	0	0	15	13:30	30	2	7	12	0	0	51
1:45	7	0	0	1	0	0	8	13:45	43	2	3	6	0	0	54
2:00	11	0	1	2	0	0	14	14:00	24	1	3	10	0	0	38
2:15	6	0	0	1	0	0	7	14:15	28	5	1	11	0	0	45
2:30	15	1	0	7	0	0	23	14:30	52	1	2	7	0	0	62
2:45	19	0	0	1	0	0	20	14:45	27	0	2	9	0	0	38
3:00	36	0	0	1	0	0	37	15:00	38	2	4	15	0	0	59
3:15	25	0	0	2	0	0	27	15:15	49	3	5	9	0	0	66
3:30	30	0	0	2	0	0	32	15:30	88	8	2	17	0	0	115
3:45	36	0	0	4	0	0	40	15:45	83	2	1	8	0	0	94
4:00	23	0	0	1	0	0	24	16:00	135	3	2	4	0	0	144
4:15	26	0	2	0	0	0	28	16:15	93	2	2	13	0	0	110
4:30	36	0	0	4	0	0	40	16:30	48	2	2	5	0	0	57
4:45	68	0	0	6	0	0	74	16:45	37	3	4	7	0	0	51
5:00	36	0	1	5	0	0	42	17:00	26	1	2	8	0	0	37
5:15	63	1	0	4	0	0	68	17:15	19	0	2	5	0	0	26
5:30	40	4	1	4	0	0	49	17:30	57	3	1	6	0	0	67
5:45	40	1	1	4	0	0	46	17:45	37	0	0	3	0	0	40
6:00	33	0	2	10	0	0	45	18:00	16	1	2	6	0	0	25
6:15	28	2	2	2	0	0	34	18:15	23	1	2	12	0	0	38
6:30	25	3	1	6	0	0	35	18:30	32	0	3	5	0	0	40
6:45	20	2	1	10	0	0	33	18:45	23	0	0	13	0	0	36
7:00	22	2	1	6	0	0	31	19:00	19	0	1	6	0	0	26
7:15	21	3	2	6	0	0	32	19:15	19	0	1	5	0	0	25
7:30	32	1	1	8	0	0	42	19:30	21	1	0	8	0	0	30
7:45	28	1	2	16	0	0	47	19:45	16	0	3	3	0	0	22
8:00	20	6	7	7	0	0	40	20:00	11	2	0	5	0	0	18
8:15	22	2	4	10	0	0	38	20:15	13	0	0	10	0	0	23
8:30	23	2	5	8	0	0	38	20:30	20	0	1	8	0	0	29
8:45	28	3	5	7	0	0	43	20:45	21	1	3	6	1	0	32
9:00	23	0	1	16	0	0	40	21:00	17	0	0	3	0	0	20
9:15	13	3	6	13	0	0	35	21:15	12	0	1	2	0	0	15
9:30	13	4	3	12	0	0	32	21:30	5	0	0	3	0	0	8
9:45	8	5	2	8	0	0	23	21:45	9	0	0	2	0	0	11
10:00	16	2	11	16	0	0	45	22:00	9	0	0	6	0	0	15
10:15	13	5	4	14	0	0	36	22:15	8	0	0	2	0	0	10
10:30	14	2	7	21	0	0	44	22:30	10	0	2	0	0	0	12
10:45	11	9	4	12	0	0	36	22:45	6	0	2	4	0	0	12
11:00	16	8	3	15	0	0	42	23:00	1	0	1	2	0	0	4
11:15	8	2	3	16	0	0	29	23:15	1	0	1	1	0	0	3
11:30	18	7	6	14	0	0	45	23:30	2	0	2	8	0	0	12
11:45	16	5	5	11	0	0	37	23:45	2	0	1	4	0	0	7
TOTAL	1,033	86	98	330	0	0	1,547	TOTAL	1,313	62	93	348	1	0	1,817

AM PEAK HOUR	4:45 AM
AM PEAK VOLUME	233

AM PEAK HOUR	3:30 PM
AM PEAK VOLUME	463

CLASS 1	PASSENGER VEHICLES
CLASS 2	2-AXLE TRUCKS
CLASS 3	3-AXLE TRUCKS
CLASS 4	4 OR MORE AXLE TRUCKS
CLASS 5	RV
CLASS 6	Buses

	1	2	3	4	5	6	TOTAL
TOTAL: AM+PM	2,346	148	191	678	1	0	3,364
% OF TOTAL	69.7%	4.4%	5.7%	20.2%	0.0%	0.0%	100.0%

31124

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Tuesday, April 02, 2024 **CITY:** Apple Valley

JOB #: SC4523 **LOCATION:** CLASS2 Johnson Rd west of Navajo Rd

AM	EB							PM	EB						
TIME	1	2	3	4	5	6	TOTAL	Time	1	2	3	4	5	6	TOTAL
0:00	3	3	0	1	0	0	7	12:00	6	2	0	1	0	1	10
0:15	3	0	0	0	0	0	3	12:15	1	1	0	0	0	0	2
0:30	1	1	1	1	0	0	4	12:30	0	1	0	0	0	0	1
0:45	2	0	1	1	0	0	4	12:45	1	0	0	3	0	0	4
1:00	2	0	0	0	0	0	2	13:00	3	2	1	5	0	1	12
1:15	1	0	1	1	0	0	3	13:15	3	3	0	0	0	0	6
1:30	2	0	0	0	0	0	2	13:30	3	4	0	1	0	0	8
1:45	2	0	0	1	0	0	3	13:45	4	0	0	3	0	0	7
2:00	5	1	0	0	0	0	6	14:00	10	2	0	2	0	1	15
2:15	0	1	1	1	0	0	3	14:15	13	3	0	3	0	0	19
2:30	1	0	1	2	0	0	4	14:30	7	1	0	2	0	0	10
2:45	4	0	0	0	0	0	4	14:45	12	3	0	0	0	0	15
3:00	17	4	0	0	0	0	21	15:00	10	4	0	1	0	0	15
3:15	2	0	0	1	0	0	3	15:15	16	9	0	1	0	1	27
3:30	4	1	0	1	0	0	6	15:30	13	10	0	4	0	0	27
3:45	0	1	0	1	0	0	2	15:45	22	8	0	1	0	0	31
4:00	2	1	0	1	0	0	4	16:00	29	0	0	0	0	0	29
4:15	0	1	0	0	0	0	1	16:15	16	2	1	3	0	1	23
4:30	3	1	0	0	0	0	4	16:30	18	1	0	0	0	0	19
4:45	9	1	0	1	0	0	11	16:45	21	0	0	0	0	0	21
5:00	2	0	1	1	0	0	4	17:00	14	2	0	1	0	0	17
5:15	3	1	0	0	0	0	4	17:15	16	0	1	0	0	1	18
5:30	9	0	0	3	0	0	12	17:30	13	0	1	1	0	0	15
5:45	12	1	0	2	0	0	15	17:45	18	1	0	1	0	0	20
6:00	8	3	0	0	0	0	11	18:00	8	3	1	0	0	0	12
6:15	1	1	0	2	0	0	4	18:15	2	4	0	2	0	1	9
6:30	4	2	0	0	0	1	7	18:30	4	1	0	1	0	0	6
6:45	4	2	0	2	0	0	8	18:45	7	2	0	0	0	0	9
7:00	4	1	0	1	0	1	7	19:00	2	3	0	1	0	1	7
7:15	8	0	0	0	0	0	8	19:15	7	2	0	2	0	0	11
7:30	18	0	0	0	0	0	18	19:30	8	0	0	0	0	0	8
7:45	11	0	0	1	0	0	12	19:45	6	1	0	1	0	0	8
8:00	3	0	0	1	0	1	5	20:00	4	0	0	1	0	1	6
8:15	9	1	0	2	0	0	12	20:15	4	1	0	0	0	0	5
8:30	8	1	0	1	0	0	10	20:30	7	0	0	2	0	0	9
8:45	16	0	0	2	0	0	18	20:45	4	1	1	0	0	1	7
9:00	6	2	0	2	0	1	11	21:00	2	0	0	0	0	0	2
9:15	5	1	0	0	0	0	6	21:15	1	1	0	1	0	0	3
9:30	2	2	0	3	0	0	7	21:30	2	1	0	1	0	0	4
9:45	3	1	0	1	0	0	5	21:45	5	1	0	1	0	0	7
10:00	1	2	1	3	0	0	7	22:00	2	4	0	1	0	0	7
10:15	3	3	2	1	0	1	10	22:15	2	1	0	2	0	0	5
10:30	7	1	1	2	0	0	11	22:30	1	0	0	1	0	0	2
10:45	3	1	1	0	0	0	5	22:45	1	0	0	0	0	0	1
11:00	1	6	0	2	0	2	11	23:00	0	0	0	1	0	0	1
11:15	3	0	0	1	0	0	4	23:15	3	0	1	1	0	0	5
11:30	1	1	0	0	0	0	2	23:30	0	1	1	0	0	0	2
11:45	2	2	0	1	0	0	5	23:45	1	1	0	2	0	0	4
TOTAL	220	51	11	47	0	7	336	TOTAL	352	87	8	54	0	10	511

AM PEAK HOUR	8:15 AM
AM PEAK VOLUME	51

AM PEAK HOUR	3:15 PM
AM PEAK VOLUME	114

CLASS 1	PASSENGER VEHICLES	TOTAL: AM+PM	572	138	19	101	0	17	847
CLASS 2	2-AXLE TRUCKS	% OF TOTAL	67.5%	16.3%	2.2%	11.9%	0.0%	2.0%	100.0%
CLASS 3	3-AXLE TRUCKS								
CLASS 4	4 OR MORE AXLE TRUCKS								
CLASS 5	RV	TOTAL: ALL	980	279	37	201	0	37	1,534
CLASS 6	Buses	% OF TOTAL	63.9%	18.2%	2.4%	13.1%	0.0%	2.4%	100.0%

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Tuesday, April 02, 2024
JOB #: SC4523
CITY: Apple Valley
LOCATION: CLASS2 Johnson Rd west of Navajo Rd

AM TIME	WB 1	2	3	4	5	6	TOTAL	PM Time	WB 1	2	3	4	5	6	TOTAL
0:00	0	0	0	0	0	0	0	12:00	2	2	1	0	0	0	5
0:15	0	0	1	1	0	0	2	12:15	1	1	0	0	0	0	2
0:30	0	0	0	1	0	0	1	12:30	2	0	0	2	0	1	5
0:45	0	1	0	1	0	0	2	12:45	1	2	0	0	0	0	3
1:00	0	1	0	2	0	0	3	13:00	1	1	0	2	0	0	4
1:15	3	1	0	2	0	0	6	13:15	5	2	1	1	0	0	9
1:30	3	1	0	1	0	0	5	13:30	5	1	0	1	0	1	8
1:45	1	1	0	1	0	0	3	13:45	4	2	0	1	0	1	8
2:00	2	1	0	0	0	0	3	14:00	3	3	0	0	0	0	6
2:15	2	2	0	0	0	0	4	14:15	5	1	0	1	0	0	7
2:30	2	3	0	3	0	0	8	14:30	8	1	0	2	0	1	12
2:45	0	0	0	2	0	0	2	14:45	1	3	0	1	0	0	5
3:00	2	1	0	0	0	0	3	15:00	5	3	1	2	0	0	11
3:15	2	0	0	1	0	0	3	15:15	1	2	0	0	0	0	3
3:30	6	2	0	2	0	0	10	15:30	6	2	0	0	0	1	9
3:45	3	0	0	1	0	0	4	15:45	6	3	0	3	0	0	12
4:00	2	1	0	1	0	0	4	16:00	17	0	1	1	0	0	19
4:15	6	2	1	0	0	0	9	16:15	31	0	0	0	0	0	31
4:30	2	3	0	2	0	0	7	16:30	9	1	1	2	0	1	14
4:45	5	4	1	2	0	0	12	16:45	6	1	2	1	0	0	10
5:00	9	6	0	0	0	1	16	17:00	2	0	0	4	0	0	6
5:15	9	6	0	0	0	0	15	17:15	4	0	0	1	0	0	5
5:30	2	7	0	0	0	0	9	17:30	27	0	0	0	0	1	28
5:45	5	2	0	0	0	0	7	17:45	3	0	0	2	0	0	5
6:00	9	2	0	0	0	1	12	18:00	4	1	0	1	0	0	6
6:15	5	3	0	2	0	0	10	18:15	8	5	0	1	0	0	14
6:30	4	1	0	1	0	1	7	18:30	6	1	0	1	0	1	9
6:45	1	2	0	0	0	0	3	18:45	8	1	0	3	0	0	12
7:00	5	1	0	2	0	0	8	19:00	4	3	0	1	0	0	8
7:15	3	0	0	1	0	1	5	19:15	5	1	0	0	0	0	6
7:30	8	0	1	2	0	1	12	19:30	5	0	0	1	0	1	7
7:45	9	1	0	0	0	0	10	19:45	4	1	0	0	0	0	5
8:00	2	3	0	1	0	0	6	20:00	0	0	0	1	0	0	1
8:15	5	1	0	2	0	0	8	20:15	2	3	0	1	0	0	6
8:30	6	1	1	1	0	1	10	20:30	14	1	0	0	0	1	16
8:45	2	0	0	3	0	0	5	20:45	10	5	0	0	0	0	15
9:00	7	1	1	3	0	0	12	21:00	7	3	0	0	0	0	10
9:15	5	0	0	1	0	0	6	21:15	3	2	0	1	0	0	6
9:30	0	2	0	3	0	2	7	21:30	1	0	0	1	0	0	2
9:45	0	0	0	2	0	0	2	21:45	3	0	0	1	0	0	4
10:00	1	1	0	2	0	0	4	22:00	5	1	0	1	0	0	7
10:15	1	1	1	0	0	0	3	22:15	0	1	0	1	0	0	2
10:30	3	1	0	1	0	1	6	22:30	1	1	0	1	0	0	3
10:45	6	4	0	1	0	0	11	22:45	0	0	1	0	0	0	1
11:00	9	1	0	1	0	0	11	23:00	0	0	0	0	0	0	0
11:15	2	1	0	1	0	0	4	23:15	1	1	1	0	0	0	3
11:30	2	4	1	1	0	1	9	23:30	0	0	0	1	0	0	1
11:45	1	3	1	1	0	0	6	23:45	0	0	0	1	0	0	1
TOTAL	162	79	9	55	0	10	315	**TOTAL**	246	62	9	45	0	10	372
				AM PEAK HOUR			4:45 AM					**AM PEAK HOUR**			3:45 PM
				AM PEAK VOLUME			52					**AM PEAK VOLUME**			76

CLASS 1	PASSENGER VEHICLES	**TOTAL: AM+PM**	408	141	18	100	0	20	687
CLASS 2	2-AXLE TRUCKS	**% OF TOTAL**	59.4%	20.5%	2.6%	14.6%	0.0%	2.9%	100.0%
CLASS 3	3-AXLE TRUCKS								
CLASS 4	4 OR MORE AXLE TRUCKS								
CLASS 5	RV								
CLASS 6	BUS								

31124

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Tuesday, April 02, 2024 **CITY:** Apple Valley

JOB #: SC4523 **LOCATION:** CLASS2 Johnson Rd west of Navajo Rd

AM	COMBINED							PM	COMBINED						
TIME	1	2	3	4	5	6	TOTAL	Time	1	2	3	4	5	6	TOTAL
0:00	3	3	0	1	0	0	7	12:00	8	4	1	1	0	1	15
0:15	3	0	1	1	0	0	5	12:15	2	2	0	0	0	0	4
0:30	1	1	1	2	0	0	5	12:30	2	1	0	2	0	1	6
0:45	2	1	1	2	0	0	6	12:45	2	2	0	3	0	0	7
1:00	2	1	0	2	0	0	5	13:00	4	3	1	7	0	1	16
1:15	4	1	1	3	0	0	9	13:15	8	5	1	1	0	0	15
1:30	5	1	0	1	0	0	7	13:30	8	5	0	2	0	1	16
1:45	3	1	0	2	0	0	6	13:45	8	2	0	4	0	1	15
2:00	7	2	0	0	0	0	9	14:00	13	5	0	2	0	1	21
2:15	2	3	1	1	0	0	7	14:15	18	4	0	4	0	0	26
2:30	3	3	1	5	0	0	12	14:30	15	2	0	4	0	1	22
2:45	4	0	0	2	0	0	6	14:45	13	6	0	1	0	0	20
3:00	19	5	0	0	0	0	24	15:00	15	7	1	3	0	0	26
3:15	4	0	0	2	0	0	6	15:15	17	11	0	1	0	1	30
3:30	10	3	0	3	0	0	16	15:30	19	12	0	4	0	1	36
3:45	3	1	0	2	0	0	6	15:45	28	11	0	4	0	0	43
4:00	4	2	0	2	0	0	8	16:00	46	0	1	1	0	0	48
4:15	6	3	1	0	0	0	10	16:15	47	2	1	3	0	1	54
4:30	5	4	0	2	0	0	11	16:30	27	2	1	2	0	1	33
4:45	14	5	1	3	0	0	23	16:45	27	1	2	1	0	0	31
5:00	11	6	1	1	0	1	20	17:00	16	2	0	5	0	0	23
5:15	12	7	0	0	0	0	19	17:15	20	0	1	1	0	1	23
5:30	11	7	0	3	0	0	21	17:30	40	0	1	1	0	1	43
5:45	17	3	0	2	0	0	22	17:45	21	1	0	3	0	0	25
6:00	17	5	0	0	0	1	23	18:00	12	4	1	1	0	0	18
6:15	6	4	0	4	0	0	14	18:15	10	9	0	3	0	1	23
6:30	8	3	0	1	0	2	14	18:30	10	2	0	2	0	1	15
6:45	5	4	0	2	0	0	11	18:45	15	3	0	3	0	0	21
7:00	9	2	0	3	0	1	15	19:00	6	6	0	2	0	1	15
7:15	11	0	0	1	0	1	13	19:15	12	3	0	2	0	0	17
7:30	26	0	1	2	0	1	30	19:30	13	0	0	1	0	1	15
7:45	20	1	0	1	0	0	22	19:45	10	2	0	1	0	0	13
8:00	5	3	0	2	0	1	11	20:00	4	0	0	2	0	1	7
8:15	14	2	0	4	0	0	20	20:15	6	4	0	1	0	0	11
8:30	14	2	1	2	0	1	20	20:30	21	1	0	2	0	1	25
8:45	18	0	0	5	0	0	23	20:45	14	6	1	0	0	1	22
9:00	13	3	1	5	0	1	23	21:00	9	3	0	0	0	0	12
9:15	10	1	0	1	0	0	12	21:15	4	3	0	2	0	0	9
9:30	2	4	0	6	0	2	14	21:30	3	1	0	2	0	0	6
9:45	3	1	0	3	0	0	7	21:45	8	1	0	2	0	0	11
10:00	2	3	1	5	0	0	11	22:00	7	5	0	2	0	0	14
10:15	4	4	3	1	0	1	13	22:15	2	2	0	3	0	0	7
10:30	10	2	1	3	0	1	17	22:30	2	1	0	2	0	0	5
10:45	9	5	1	1	0	0	16	22:45	1	0	1	0	0	0	2
11:00	10	7	0	3	0	2	22	23:00	0	0	0	1	0	0	1
11:15	5	1	0	2	0	0	8	23:15	4	1	2	1	0	0	8
11:30	3	5	1	1	0	1	11	23:30	0	1	1	1	0	0	3
11:45	3	5	1	2	0	0	11	23:45	1	1	0	3	0	0	5
TOTAL	382	130	20	102	0	17	651	TOTAL	598	149	17	99	0	20	883

AM PEAK HOUR	8:15 AM
AM PEAK VOLUME	86

AM PEAK HOUR	3:30 PM
AM PEAK VOLUME	181

TOTAL: AM+PM	980	279	37	201	0	37	1,534		
% OF TOTAL	63.9%	18.2%	2.4%	13.1%	0.0%	2.4%	100.0%		

CLASS 1	PASSENGER VEHICLES
CLASS 2	2-AXLE TRUCKS
CLASS 3	3-AXLE TRUCKS
CLASS 4	4 OR MORE AXLE TRUCKS
CLASS 5	RV
CLASS 6	Buses

Counts Unlimited, Inc.

PO Box 1178
Corona, CA 92878
Phone: (951) 268-6268
email: counts@countsunlimited.com

Town of Apple Valley
Johnson Road
W/ Central Road
24 Hour Directional Classification Count

APV003
Site Code: 051-24070

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
01/30/24	0	10	0	0	0	0	0	0	0	0	0	0	0	10
01:00	0	13	0	0	0	0	0	0	1	0	0	0	0	14
02:00	0	5	0	0	0	0	0	0	1	0	0	0	0	6
03:00	0	**17**	2	0	0	0	0	0	0	0	0	0	0	**19**
04:00	0	7	1	0	0	0	0	0	1	0	0	0	0	9
05:00	0	7	1	0	0	0	0	**1**	1	0	0	0	0	10
06:00	0	11	6	0	0	**1**	0	1	0	0	0	0	0	19
07:00	0	7	4	0	0	0	0	0	1	0	0	0	0	12
08:00	0	9	2	0	0	0	0	0	0	0	0	0	0	11
09:00	0	6	1	0	0	1	0	0	0	0	0	0	0	8
10:00	**1**	9	5	0	0	0	0	0	**2**	0	0	0	0	17
11:00	0	2	**8**	0	**1**	0	0	1	2	0	0	0	0	14
12 PM	0	18	5	0	**2**	0	0	0	0	0	0	0	0	25
13:00	0	20	8	0	1	0	0	0	**1**	0	0	0	0	30
14:00	0	21	9	0	1	0	0	**1**	0	0	0	0	0	32
15:00	**1**	52	17	0	2	0	0	1	1	0	0	0	0	74
16:00	0	**56**	**25**	0	0	**1**	0	0	0	0	0	0	0	**82**
17:00	0	43	11	0	0	0	0	0	1	0	0	0	0	55
18:00	0	26	2	0	0	0	0	1	1	0	0	0	0	30
19:00	0	14	0	0	0	0	0	0	1	0	0	0	0	15
20:00	0	8	0	0	0	0	0	0	0	0	0	0	0	8
21:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
22:00	0	14	0	0	0	0	0	0	0	0	0	0	0	14
23:00	0	7	0	0	0	0	0	0	0	0	0	0	0	7
Total	2	386	107	0	7	3	0	6	14	0	0	0	0	525
Percent	0.4%	73.5%	20.4%	0.0%	1.3%	0.6%	0.0%	1.1%	2.7%	0.0%	0.0%	0.0%	0.0%	
AM Peak	10:00	03:00	11:00		11:00	06:00		05:00	10:00					03:00
Vol.	1	17	8		1	1		1	2					19
PM Peak	15:00	16:00	16:00		12:00	16:00		14:00	13:00					16:00
Vol.	1	56	25		2	1		1	1					82
Grand Total	2	386	107	0	7	3	0	6	14	0	0	0	0	525
Percent	0.4%	73.5%	20.4%	0.0%	1.3%	0.6%	0.0%	1.1%	2.7%	0.0%	0.0%	0.0%	0.0%	

Counts Unlimited, Inc.

PO Box 1178
Corona, CA 92878
Phone: (951) 268-6268
email: counts@countsunlimited.com

Town of Apple Valley
Johnson Road
W/ Central Road
24 Hour Directional Classification Count

APV003
Site Code: 051-24070

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
01/30/24	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:00	0	0	0	0	1	0	0	0	0	0	0	0	0	1
02:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
03:00	0	6	1	0	0	0	0	0	0	0	0	0	0	7
04:00	0	32	7	0	0	0	0	**1**	0	0	0	0	0	40
05:00	0	**42**	**14**	0	0	0	0	0	0	0	0	0	0	**56**
06:00	0	28	5	1	0	0	0	0	**1**	0	0	0	0	35
07:00	0	31	5	1	0	0	0	0	1	0	0	0	0	38
08:00	0	17	6	**2**	1	0	0	0	1	0	0	0	0	27
09:00	0	16	3	0	0	0	0	1	0	0	0	0	0	20
10:00	**1**	9	3	0	2	0	0	0	0	0	0	0	0	15
11:00	1	8	2	0	**3**	0	0	0	1	0	0	0	0	15
12 PM	0	13	6	0	0	0	0	0	**2**	0	0	0	0	21
13:00	**1**	13	**9**	0	0	0	0	0	0	0	0	0	0	23
14:00	0	10	6	0	**1**	0	0	0	1	0	0	0	0	18
15:00	0	18	9	**1**	0	1	0	0	1	0	0	0	0	30
16:00	0	**40**	9	0	1	**2**	0	**2**	1	0	0	0	0	**55**
17:00	0	13	2	0	0	0	0	0	0	0	0	0	0	15
18:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
19:00	1	7	0	0	0	0	0	0	2	0	0	0	0	10
20:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
21:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
22:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
23:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
Total	4	324	87	5	9	3	0	4	11	0	0	0	0	447
Percent	0.9%	72.5%	19.5%	1.1%	2.0%	0.7%	0.0%	0.9%	2.5%	0.0%	0.0%	0.0%	0.0%	
AM Peak	10:00	05:00	05:00	08:00	11:00			04:00	06:00					05:00
Vol.	1	42	14	2	3			1	1					56
PM Peak	13:00	16:00	13:00	15:00	14:00	16:00		16:00	12:00					16:00
Vol.	1	40	9	1	1	2		2	2					55
Grand Total	4	324	87	5	9	3	0	4	11	0	0	0	0	447
Percent	0.9%	72.5%	19.5%	1.1%	2.0%	0.7%	0.0%	0.9%	2.5%	0.0%	0.0%	0.0%	0.0%	

Counts Unlimited, Inc.

PO Box 1178
Corona, CA 92878
Phone: (951) 268-6268
email: counts@countsunlimited.com

Town of Apple Valley
Johnson Road
W/ Central Road
24 Hour Directional Classification Count

APV003
Site Code: 051-24070

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
01/30/24	0	11	0	0	0	0	0	0	0	0	0	0	0	11
01:00	0	13	0	0	1	0	0	0	1	0	0	0	0	15
02:00	0	9	0	0	0	0	0	0	1	0	0	0	0	10
03:00	0	23	3	0	0	0	0	0	0	0	0	0	0	26
04:00	0	39	8	0	0	0	0	**1**	1	0	0	0	0	49
05:00	0	**49**	**15**	0	0	0	0	1	1	0	0	0	0	**66**
06:00	0	39	11	1	0	**1**	0	1	1	0	0	0	0	54
07:00	0	38	9	1	0	0	0	0	2	0	0	0	0	50
08:00	0	26	8	**2**	1	0	0	0	1	0	0	0	0	38
09:00	0	22	4	0	0	1	0	1	0	0	0	0	0	28
10:00	**2**	18	8	0	2	0	0	0	2	0	0	0	0	32
11:00	1	10	10	0	**4**	0	0	1	**3**	0	0	0	0	29
12 PM	0	31	11	0	**2**	0	0	0	2	0	0	0	0	46
13:00	**1**	33	17	0	1	0	0	0	1	0	0	0	0	53
14:00	0	31	15	0	2	0	0	1	1	0	0	0	0	50
15:00	1	70	26	**1**	2	1	0	1	2	0	0	0	0	104
16:00	0	**96**	**34**	0	1	**3**	0	**2**	1	0	0	0	0	**137**
17:00	0	56	13	0	0	0	0	0	1	0	0	0	0	70
18:00	0	30	2	0	0	0	0	1	1	0	0	0	0	34
19:00	1	21	0	0	0	0	0	0	**3**	0	0	0	0	25
20:00	0	12	0	0	0	0	0	0	0	0	0	0	0	12
21:00	0	7	0	0	0	0	0	0	0	0	0	0	0	7
22:00	0	17	0	0	0	0	0	0	0	0	0	0	0	17
23:00	0	9	0	0	0	0	0	0	0	0	0	0	0	9
Total	6	710	194	5	16	6	0	10	25	0	0	0	0	972
Percent	0.6%	73.0%	20.0%	0.5%	1.6%	0.6%	0.0%	1.0%	2.6%	0.0%	0.0%	0.0%	0.0%	
AM Peak	10:00	05:00	05:00	08:00	11:00	06:00		04:00	11:00					05:00
Vol.	2	49	15	2	4	1		1	3					66
PM Peak	13:00	16:00	16:00	15:00	12:00	16:00		16:00	19:00					16:00
Vol.	1	96	34	1	2	3		2	3					137
Grand Total	6	710	194	5	16	6	0	10	25	0	0	0	0	972
Percent	0.6%	73.0%	20.0%	0.5%	1.6%	0.6%	0.0%	1.0%	2.6%	0.0%	0.0%	0.0%	0.0%	

A102423

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Tuesday, April 02, 2024 **CITY:** Apple Valley

JOB #: SC4523 **LOCATION:** CLASS3 Dale Evans Pkwy south of Johnson Rd

AM	NB						
TIME	1	2	3	4	5	6	TOTAL
0:00	3	0	0	1	0	0	4
0:15	6	0	0	0	0	0	6
0:30	2	0	0	0	0	0	2
0:45	5	0	0	0	0	0	5
1:00	1	0	0	1	0	0	2
1:15	2	0	0	0	0	0	2
1:30	4	0	0	0	0	0	4
1:45	0	0	0	0	0	0	0
2:00	6	0	0	0	0	0	6
2:15	1	0	0	0	0	0	1
2:30	9	0	0	1	0	0	10
2:45	10	0	0	0	0	0	10
3:00	2	1	0	0	0	0	3
3:15	11	0	0	0	0	0	11
3:30	10	0	0	0	0	0	10
3:45	10	0	0	0	0	0	10
4:00	11	0	0	0	0	0	11
4:15	19	0	0	0	0	0	19
4:30	19	0	0	1	0	0	20
4:45	33	0	0	1	0	0	34
5:00	35	1	0	0	0	0	36
5:15	49	5	0	0	0	0	54
5:30	52	0	0	0	0	0	52
5:45	29	1	0	0	0	0	30
6:00	22	0	1	2	0	0	25
6:15	33	1	0	0	0	1	35
6:30	33	1	0	0	0	0	34
6:45	26	1	1	1	0	0	29
7:00	25	6	0	0	0	1	32
7:15	37	2	0	2	0	0	41
7:30	34	2	1	2	0	1	40
7:45	27	2	0	1	0	0	30
8:00	26	1	1	0	0	1	29
8:15	19	2	1	0	0	1	23
8:30	22	0	1	1	0	0	24
8:45	21	1	0	1	0	1	24
9:00	17	1	0	4	0	1	23
9:15	14	2	2	3	0	0	21
9:30	16	2	1	1	0	0	20
9:45	23	3	0	2	0	0	28
10:00	16	1	1	0	1	1	20
10:15	15	2	1	2	0	0	20
10:30	12	2	2	1	0	0	17
10:45	17	1	0	2	0	0	20
11:00	9	2	0	0	0	1	12
11:15	11	1	0	0	0	0	12
11:30	15	3	0	1	0	0	19
11:45	23	1	2	0	0	0	26
TOTAL	842	48	15	31	1	9	946

AM PEAK HOUR	4:45 AM
AM PEAK VOLUME	176

PM	NB						
Time	1	2	3	4	5	6	TOTAL
12:00	25	2	1	0	0	1	29
12:15	20	0	1	1	0	0	22
12:30	15	1	0	1	0	0	17
12:45	20	1	1	3	0	0	25
13:00	17	0	0	1	0	1	19
13:15	25	1	1	1	0	0	28
13:30	26	1	0	1	0	1	29
13:45	23	1	0	2	0	0	26
14:00	31	2	0	0	1	1	35
14:15	34	1	0	2	0	1	38
14:30	33	0	0	0	0	2	35
14:45	18	2	0	1	0	0	21
15:00	18	1	2	0	0	2	23
15:15	23	0	0	0	0	1	24
15:30	39	1	0	1	0	0	41
15:45	22	0	0	1	0	0	23
16:00	26	0	0	1	0	0	27
16:15	42	0	0	1	0	1	44
16:30	28	0	0	2	0	0	30
16:45	30	0	1	0	0	0	31
17:00	13	0	0	1	0	0	14
17:15	11	1	0	1	0	1	14
17:30	16	0	0	1	0	0	17
17:45	23	0	0	0	0	0	23
18:00	12	0	0	0	0	0	12
18:15	13	1	0	1	0	1	16
18:30	14	0	0	1	1	0	16
18:45	9	0	0	1	0	0	10
19:00	7	0	0	0	0	1	8
19:15	10	0	0	1	0	0	11
19:30	11	0	1	1	0	0	13
19:45	8	0	1	2	0	0	11
20:00	11	0	0	1	0	1	13
20:15	16	0	0	0	0	0	16
20:30	12	1	1	0	0	0	14
20:45	6	0	0	0	0	0	6
21:00	11	0	0	0	0	0	11
21:15	13	0	0	0	0	0	13
21:30	5	0	0	0	0	0	5
21:45	8	0	0	0	0	0	8
22:00	12	0	0	0	0	0	12
22:15	6	0	0	0	0	0	6
22:30	4	0	0	1	0	0	5
22:45	3	0	0	0	0	0	3
23:00	0	0	0	0	0	0	0
23:15	5	0	0	0	0	0	5
23:30	5	0	0	0	0	0	5
23:45	2	0	0	0	0	0	2
TOTAL	781	17	10	31	2	15	856

AM PEAK HOUR	3:30 PM
AM PEAK VOLUME	135

CLASS 1	PASSENGER VEHICLES
CLASS 2	2-AXLE TRUCKS
CLASS 3	3-AXLE TRUCKS
CLASS 4	4 OR MORE AXLE TRUCKS
CLASS 5	RV
CLASS 6	Buses

TOTAL: AM+PM	1,623	65	25	62	3	24	1,802
% OF TOTAL	90.1%	3.6%	1.4%	3.4%	0.2%	1.3%	100.0%
TOTAL: ALL	3,407	137	55	124	4	52	3,779
% OF TOTAL	90.2%	3.6%	1.5%	3.3%	0.1%	1.4%	100.0%

A102423

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Tuesday, April 02, 2024
JOB #: SC4523
CITY: Apple Valley
LOCATION: CLASS3 Dale Evans Pkwy south of Johnson Rd

AM TIME	SB 1	2	3	4	5	6	TOTAL
0:00	7	0	0	0	0	0	7
0:15	0	0	0	0	0	0	0
0:30	5	0	0	0	0	0	5
0:45	7	1	0	2	0	0	10
1:00	9	0	0	0	0	0	9
1:15	6	0	0	0	0	0	6
1:30	2	0	0	0	0	0	2
1:45	3	0	0	0	0	0	3
2:00	4	1	0	0	0	0	5
2:15	4	0	0	0	0	0	4
2:30	2	0	0	0	0	0	2
2:45	16	0	0	1	0	0	17
3:00	29	0	0	1	0	0	30
3:15	10	0	0	0	0	0	10
3:30	10	0	0	0	0	0	10
3:45	14	0	0	0	0	0	14
4:00	9	0	0	0	0	0	9
4:15	6	0	0	0	0	0	6
4:30	7	0	0	0	0	0	7
4:45	26	1	0	1	0	0	28
5:00	7	0	0	1	0	0	8
5:15	10	0	0	0	0	0	10
5:30	16	1	0	1	0	0	18
5:45	18	0	0	0	0	0	18
6:00	7	0	0	0	0	0	7
6:15	9	1	0	1	0	1	12
6:30	11	0	1	0	0	1	13
6:45	6	0	0	0	0	0	6
7:00	13	1	0	0	0	0	14
7:15	17	0	0	1	0	0	18
7:30	13	0	1	0	0	2	16
7:45	11	1	0	2	0	2	16
8:00	5	2	0	0	0	2	9
8:15	11	2	0	0	0	0	13
8:30	15	0	2	2	0	2	21
8:45	18	1	0	0	0	0	19
9:00	12	1	0	2	0	0	15
9:15	15	0	1	1	0	0	17
9:30	19	1	0	0	0	1	21
9:45	12	1	0	1	0	0	14
10:00	17	1	2	1	0	0	21
10:15	14	3	0	1	0	0	18
10:30	22	0	2	4	0	1	29
10:45	17	1	0	1	0	0	19
11:00	21	1	0	1	0	0	23
11:15	16	2	0	1	0	0	19
11:30	22	0	2	1	0	1	26
11:45	23	1	1	1	0	0	26
TOTAL	573	24	12	28	0	13	650

AM PEAK HOUR	11:00 AM
AM PEAK VOLUME	94

PM Time	SB 1	2	3	4	5	6	TOTAL
12:00	23	1	3	1	0	0	28
12:15	23	1	1	1	0	0	26
12:30	23	0	1	3	0	1	28
12:45	22	2	0	2	0	0	26
13:00	16	3	0	1	0	0	20
13:15	14	1	0	1	0	0	16
13:30	25	1	1	2	0	1	30
13:45	21	2	0	0	0	1	24
14:00	18	2	2	0	1	1	24
14:15	26	0	2	0	0	0	28
14:30	31	1	0	1	0	2	35
14:45	37	2	1	2	0	1	43
15:00	29	2	1	2	0	0	34
15:15	44	4	0	1	0	1	50
15:30	51	3	0	0	0	1	55
15:45	53	5	1	0	0	0	59
16:00	67	2	1	0	0	1	71
16:15	52	4	0	0	0	0	56
16:30	57	2	0	2	0	1	62
16:45	55	1	1	2	0	0	59
17:00	56	1	0	1	0	0	58
17:15	45	2	0	1	0	0	48
17:30	38	0	1	0	0	1	40
17:45	38	2	0	0	0	0	40
18:00	31	1	0	1	0	0	33
18:15	28	0	0	0	0	0	28
18:30	25	1	0	0	0	1	27
18:45	20	0	0	2	0	0	22
19:00	27	0	1	0	0	0	28
19:15	18	0	0	1	0	0	19
19:30	18	1	0	0	0	1	20
19:45	21	1	0	0	0	0	22
20:00	13	0	0	0	0	0	13
20:15	13	0	0	0	0	0	13
20:30	16	0	0	1	0	1	18
20:45	19	0	0	1	0	0	20
21:00	15	0	1	0	0	0	16
21:15	12	0	0	1	0	0	13
21:30	9	0	0	0	0	0	9
21:45	5	0	0	0	0	0	5
22:00	7	0	0	2	0	0	9
22:15	2	0	0	1	0	0	3
22:30	8	0	0	0	0	0	8
22:45	9	0	0	0	0	0	9
23:00	10	0	0	0	0	0	10
23:15	13	0	0	0	0	0	13
23:30	7	0	0	0	0	0	7
23:45	1	0	0	1	0	0	2
TOTAL	1,211	48	18	34	1	15	1,327

AM PEAK HOUR	4:00 PM
AM PEAK VOLUME	248

TOTAL: AM+PM	1,784	72	30	62	1	28	1,977
% OF TOTAL	90.2%	3.6%	1.5%	3.1%	0.1%	1.4%	100.0%

CLASS 1	PASSENGER VEHICLES
CLASS 2	2-AXLE TRUCKS
CLASS 3	3-AXLE TRUCKS
CLASS 4	4 OR MORE AXLE TRUCKS
CLASS 5	RV
CLASS 6	BUS

A102423

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Tuesday, April 02, 2024 **CITY:** Apple Valley

JOB #: SC4523 **LOCATION:** CLASS3 Dale Evans Pkwy south of Johnson Rd

AM TIME	COMBINED 1	2	3	4	5	6	TOTAL	PM Time	COMBINED 1	2	3	4	5	6	TOTAL
0:00	10	0	0	1	0	0	11	12:00	48	3	4	1	0	1	57
0:15	6	0	0	0	0	0	6	12:15	43	1	2	2	0	0	48
0:30	7	0	0	0	0	0	7	12:30	38	1	1	4	0	1	45
0:45	12	1	0	2	0	0	15	12:45	42	3	1	5	0	0	51
1:00	10	0	0	1	0	0	11	13:00	33	3	0	2	0	1	39
1:15	8	0	0	0	0	0	8	13:15	39	2	1	2	0	0	44
1:30	6	0	0	0	0	0	6	13:30	51	2	1	3	0	2	59
1:45	3	0	0	0	0	0	3	13:45	44	3	0	2	0	1	50
2:00	10	1	0	0	0	0	11	14:00	49	4	2	0	2	2	59
2:15	5	0	0	0	0	0	5	14:15	60	1	2	2	0	1	66
2:30	11	0	0	1	0	0	12	14:30	64	1	0	1	0	4	70
2:45	26	0	0	1	0	0	27	14:45	55	4	1	3	0	1	64
3:00	31	1	0	1	0	0	33	15:00	47	3	3	2	0	2	57
3:15	21	0	0	0	0	0	21	15:15	67	4	0	1	0	2	74
3:30	20	0	0	0	0	0	20	15:30	90	4	0	1	0	1	96
3:45	24	0	0	0	0	0	24	15:45	75	5	1	1	0	0	82
4:00	20	0	0	0	0	0	20	16:00	93	2	1	1	0	1	98
4:15	25	0	0	0	0	0	25	16:15	94	4	0	1	0	1	100
4:30	26	0	0	1	0	0	27	16:30	85	2	0	4	0	1	92
4:45	59	1	0	2	0	0	62	16:45	85	1	2	2	0	0	90
5:00	42	1	0	1	0	0	44	17:00	69	1	0	2	0	0	72
5:15	59	5	0	0	0	0	64	17:15	56	3	0	2	0	1	62
5:30	68	1	0	1	0	0	70	17:30	54	0	1	1	0	1	57
5:45	47	1	0	0	0	0	48	17:45	61	2	0	0	0	0	63
6:00	29	0	1	2	0	0	32	18:00	43	1	0	1	0	0	45
6:15	42	2	0	1	0	2	47	18:15	41	1	0	1	0	1	44
6:30	44	1	1	0	0	1	47	18:30	39	1	0	1	1	1	43
6:45	32	1	1	1	0	0	35	18:45	29	0	0	3	0	0	32
7:00	38	7	0	0	0	1	46	19:00	34	0	1	0	0	1	36
7:15	54	2	0	3	0	0	59	19:15	28	0	0	2	0	0	30
7:30	47	2	2	2	0	3	56	19:30	29	1	1	1	0	1	33
7:45	38	3	0	3	0	2	46	19:45	29	1	1	2	0	0	33
8:00	31	3	1	0	0	3	38	20:00	24	0	0	1	0	1	26
8:15	30	4	1	0	0	1	36	20:15	29	0	0	0	0	0	29
8:30	37	0	3	3	0	2	45	20:30	28	1	1	1	0	1	32
8:45	39	2	0	1	0	1	43	20:45	25	0	0	1	0	0	26
9:00	29	2	0	6	0	1	38	21:00	26	0	1	0	0	0	27
9:15	29	2	3	4	0	0	38	21:15	25	0	0	1	0	0	26
9:30	35	3	1	1	0	1	41	21:30	14	0	0	0	0	0	14
9:45	35	4	0	3	0	0	42	21:45	13	0	0	0	0	0	13
10:00	33	2	3	1	1	1	41	22:00	19	0	0	2	0	0	21
10:15	29	5	1	3	0	0	38	22:15	8	0	0	1	0	0	9
10:30	34	2	4	5	0	1	46	22:30	12	0	0	1	0	0	13
10:45	34	2	0	3	0	0	39	22:45	12	0	0	0	0	0	12
11:00	30	3	0	1	0	1	35	23:00	10	0	0	0	0	0	10
11:15	27	3	0	1	0	0	31	23:15	18	0	0	0	0	0	18
11:30	37	3	2	2	0	1	45	23:30	12	0	0	0	0	0	12
11:45	46	2	3	1	0	0	52	23:45	3	0	0	1	0	0	4
TOTAL	1,415	72	27	59	1	22	1,596	TOTAL	1,992	65	28	65	3	30	2,183

AM PEAK HOUR	4:45 AM	PM PEAK HOUR	4:00 PM
AM PEAK VOLUME	240	AM PEAK VOLUME	380

TOTAL: AM+PM	3,407	137	55	124	4	52	3,779
% OF TOTAL	90.2%	3.6%	1.5%	3.3%	0.1%	1.4%	100.0%

CLASS 1	PASSENGER VEHICLES
CLASS 2	2-AXLE TRUCKS
CLASS 3	3-AXLE TRUCKS
CLASS 4	4 OR MORE AXLE TRUCKS
CLASS 5	RV
CLASS 6	Buses

31124

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Tuesday, April 02, 2024 **CITY:** Apple Valley

JOB #: SC4523 **LOCATION:** CLASS1 Navajo Rd north of Los Padres Rd

AM TIME	NB 1	2	3	4	5	6	TOTAL
0:00	1	0	0	0	0	0	1
0:15	0	0	0	0	0	0	0
0:30	0	0	0	0	0	0	0
0:45	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0
1:15	0	0	0	0	0	0	0
1:30	0	0	0	0	0	0	0
1:45	1	0	0	0	0	0	1
2:00	1	0	0	0	0	0	1
2:15	0	0	0	0	0	0	0
2:30	0	0	0	0	0	0	0
2:45	0	0	0	0	0	0	0
3:00	1	0	0	0	0	0	1
3:15	0	0	0	0	0	0	0
3:30	3	0	0	0	0	0	3
3:45	1	0	0	0	0	0	1
4:00	1	0	0	0	0	0	1
4:15	2	0	0	0	0	0	2
4:30	6	1	0	0	0	0	7
4:45	8	0	0	0	0	0	8
5:00	0	0	0	0	0	0	0
5:15	3	1	0	0	0	0	4
5:30	0	0	0	0	0	0	0
5:45	2	1	0	0	0	0	3
6:00	2	0	0	0	0	0	2
6:15	0	0	0	0	0	0	0
6:30	0	0	0	0	0	0	0
6:45	1	0	0	0	0	0	1
7:00	1	0	0	0	0	0	1
7:15	0	1	0	0	0	0	1
7:30	1	0	0	0	0	0	1
7:45	1	0	0	0	0	0	1
8:00	0	0	0	0	0	0	0
8:15	2	0	0	0	0	0	2
8:30	1	0	0	0	0	0	1
8:45	2	0	0	0	0	0	2
9:00	1	2	0	0	0	0	3
9:15	2	0	1	0	0	0	3
9:30	3	1	0	0	0	0	4
9:45	4	0	0	0	0	0	4
10:00	2	0	0	0	0	0	2
10:15	1	1	0	0	0	0	2
10:30	2	0	0	0	0	0	2
10:45	0	0	0	0	0	0	0
11:00	0	0	0	0	0	0	0
11:15	1	0	0	0	0	0	1
11:30	1	1	0	0	0	0	2
11:45	2	0	0	0	0	0	2
TOTAL	60	9	1	0	0	0	70

AM PEAK HOUR	4:30 AM
AM PEAK VOLUME	19

PM Time	NB 1	2	3	4	5	6	TOTAL
12:00	0	0	0	0	0	0	0
12:15	1	0	0	0	0	0	1
12:30	0	1	0	0	0	0	1
12:45	0	1	0	0	0	0	1
13:00	1	0	0	0	0	0	1
13:15	0	0	0	0	0	0	0
13:30	3	0	0	0	0	0	3
13:45	2	1	0	0	0	0	3
14:00	0	1	0	0	0	0	1
14:15	4	0	0	0	0	0	4
14:30	3	0	0	0	0	0	3
14:45	2	2	0	0	0	0	4
15:00	0	0	0	1	0	0	1
15:15	8	4	1	0	0	0	13
15:30	3	2	0	0	0	0	5
15:45	4	0	0	0	0	0	4
16:00	3	2	0	0	0	0	5
16:15	5	0	1	0	0	0	6
16:30	2	0	0	0	0	0	2
16:45	2	0	0	0	0	0	2
17:00	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0
17:30	1	0	0	0	0	0	1
17:45	1	0	0	0	0	0	1
18:00	0	0	0	0	0	0	0
18:15	1	0	0	0	0	0	1
18:30	1	0	0	0	0	0	1
18:45	0	0	0	0	0	0	0
19:00	1	0	0	0	0	0	1
19:15	1	1	0	0	0	0	2
19:30	1	0	0	0	0	0	1
19:45	0	1	0	0	0	0	1
20:00	0	0	0	0	0	0	0
20:15	2	0	0	0	0	0	2
20:30	1	0	0	0	0	0	1
20:45	0	0	0	0	0	0	0
21:00	0	0	0	0	0	0	0
21:15	2	0	0	0	0	0	2
21:30	1	0	0	0	0	0	1
21:45	1	0	0	0	0	0	1
22:00	0	0	0	0	0	0	0
22:15	0	0	0	0	0	0	0
22:30	0	0	0	0	0	0	0
22:45	0	0	0	0	0	0	0
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	0	0	0	0	0	0	0
TOTAL	57	16	2	1	0	0	76

AM PEAK HOUR	3:15 PM
AM PEAK VOLUME	27

CLASS 1	PASSENGER VEHICLES	TOTAL: AM+PM	117	25	3	1	0	0	146
CLASS 2	2-AXLE TRUCKS	% OF TOTAL	80.1%	17.1%	2.1%	0.7%	0.0%	0.0%	100.0%
CLASS 3	3-AXLE TRUCKS								
CLASS 4	4 OR MORE AXLE TRUCKS								
CLASS 5	RV	TOTAL: ALL	305	66	4	2	0	0	377
CLASS 6	Buses	% OF TOTAL	80.9%	17.5%	1.1%	0.5%	0.0%	0.0%	100.0%

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Tuesday, April 02, 2024
JOB #: SC4523
CITY: Apple Valley
LOCATION: CLASS1 Navajo Rd north of Los Padres Rd

AM TIME	SB 1	2	3	4	5	6	TOTAL	PM Time	SB 1	2	3	4	5	6	TOTAL
0:00	0	0	0	0	0	0	0	12:00	0	0	0	0	0	0	0
0:15	1	0	0	0	0	0	1	12:15	1	0	0	0	0	0	1
0:30	1	1	0	0	0	0	2	12:30	1	2	0	0	0	0	3
0:45	0	0	0	0	0	0	0	12:45	3	0	0	0	0	0	3
1:00	2	0	0	0	0	0	2	13:00	1	0	0	0	0	0	1
1:15	0	0	0	0	0	0	0	13:15	1	1	0	0	0	0	2
1:30	1	0	0	0	0	0	1	13:30	7	2	0	0	0	0	9
1:45	2	0	0	0	0	0	2	13:45	6	1	0	0	0	0	7
2:00	2	0	0	0	0	0	2	14:00	3	0	0	0	0	0	3
2:15	1	0	0	0	0	0	1	14:15	5	1	0	0	0	0	6
2:30	0	0	0	0	0	0	0	14:30	10	3	0	0	0	0	13
2:45	0	0	0	0	0	0	0	14:45	5	1	0	0	0	0	6
3:00	5	1	0	0	0	0	6	15:00	4	0	0	1	0	0	5
3:15	4	0	0	0	0	0	4	15:15	5	1	0	0	0	0	6
3:30	3	0	0	0	0	0	3	15:30	10	0	0	0	0	0	10
3:45	4	0	0	0	0	0	4	15:45	2	0	0	0	0	0	2
4:00	4	0	0	0	0	0	4	16:00	4	5	0	0	0	0	9
4:15	1	0	0	0	0	0	1	16:15	0	0	0	0	0	0	0
4:30	0	0	0	0	0	0	0	16:30	4	0	0	0	0	0	4
4:45	2	0	0	0	0	0	2	16:45	1	0	0	0	0	0	1
5:00	0	0	0	0	0	0	0	17:00	0	0	0	0	0	0	0
5:15	0	2	0	0	0	0	2	17:15	2	0	0	0	0	0	2
5:30	1	0	0	0	0	0	1	17:30	5	0	0	0	0	0	5
5:45	1	1	0	0	0	0	2	17:45	5	1	0	0	0	0	6
6:00	0	0	0	0	0	0	0	18:00	1	1	0	0	0	0	2
6:15	0	0	0	0	0	0	0	18:15	1	0	0	0	0	0	1
6:30	0	0	0	0	0	0	0	18:30	7	1	0	0	0	0	8
6:45	0	0	0	0	0	0	0	18:45	5	0	0	0	0	0	5
7:00	0	0	0	0	0	0	0	19:00	0	1	0	0	0	0	1
7:15	0	0	0	0	0	0	0	19:15	0	0	0	0	0	0	0
7:30	1	1	0	0	0	0	2	19:30	1	0	0	0	0	0	1
7:45	1	1	0	0	0	0	2	19:45	1	0	0	0	0	0	1
8:00	2	4	0	0	0	0	6	20:00	5	0	0	0	0	0	5
8:15	1	0	0	0	0	0	1	20:15	2	1	0	0	0	0	3
8:30	1	0	1	0	0	0	2	20:30	2	0	0	0	0	0	2
8:45	2	1	0	0	0	0	3	20:45	0	0	0	0	0	0	0
9:00	2	1	0	0	0	0	3	21:00	4	0	0	0	0	0	4
9:15	2	0	0	0	0	0	2	21:15	1	0	0	0	0	0	1
9:30	3	0	0	0	0	0	3	21:30	0	0	0	0	0	0	0
9:45	2	0	0	0	0	0	2	21:45	0	0	0	0	0	0	0
10:00	1	1	0	0	0	0	2	22:00	0	0	0	0	0	0	0
10:15	4	1	0	0	0	0	5	22:15	0	0	0	0	0	0	0
10:30	1	0	0	0	0	0	1	22:30	3	0	0	0	0	0	3
10:45	2	0	0	0	0	0	2	22:45	0	0	0	0	0	0	0
11:00	3	1	0	0	0	0	4	23:00	0	0	0	0	0	0	0
11:15	2	1	0	0	0	0	3	23:15	0	0	0	0	0	0	0
11:30	2	2	0	0	0	0	4	23:30	0	0	0	0	0	0	0
11:45	2	0	0	0	0	0	2	23:45	1	0	0	0	0	0	1
TOTAL	69	19	1	0	0	0	89	**TOTAL**	119	22	0	1	0	0	142
	AM PEAK HOUR						3:00 AM					**AM PEAK HOUR**			2:30 PM
	AM PEAK VOLUME						17					**AM PEAK VOLUME**			30

TOTAL: AM+PM	188	41	1	1	0	0	231
% OF TOTAL	81.4%	17.7%	0.4%	0.4%	0.0%	0.0%	100.0%

CLASS 1	PASSENGER VEHICLES
CLASS 2	2-AXLE TRUCKS
CLASS 3	3-AXLE TRUCKS
CLASS 4	4 OR MORE AXLE TRUCKS
CLASS 5	RV
CLASS 6	BUS

31124

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Tuesday, April 02, 2024 **CITY:** Apple Valley

JOB #: SC4523 **LOCATION:** CLASS1 Navajo Rd north of Los Padres Rd

AM TIME	COMBINED 1	2	3	4	5	6	TOTAL	PM Time	COMBINED 1	2	3	4	5	6	TOTAL
0:00	1	0	0	0	0	0	1	12:00	0	0	0	0	0	0	0
0:15	1	0	0	0	0	0	1	12:15	2	0	0	0	0	0	2
0:30	1	1	0	0	0	0	2	12:30	1	3	0	0	0	0	4
0:45	0	0	0	0	0	0	0	12:45	3	1	0	0	0	0	4
1:00	2	0	0	0	0	0	2	13:00	2	0	0	0	0	0	2
1:15	0	0	0	0	0	0	0	13:15	1	1	0	0	0	0	2
1:30	1	0	0	0	0	0	1	13:30	10	2	0	0	0	0	12
1:45	3	0	0	0	0	0	3	13:45	8	2	0	0	0	0	10
2:00	3	0	0	0	0	0	3	14:00	3	1	0	0	0	0	4
2:15	1	0	0	0	0	0	1	14:15	9	1	0	0	0	0	10
2:30	0	0	0	0	0	0	0	14:30	13	3	0	0	0	0	16
2:45	0	0	0	0	0	0	0	14:45	7	3	0	0	0	0	10
3:00	6	1	0	0	0	0	7	15:00	4	0	0	2	0	0	6
3:15	4	0	0	0	0	0	4	15:15	13	5	1	0	0	0	19
3:30	6	0	0	0	0	0	6	15:30	13	2	0	0	0	0	15
3:45	5	0	0	0	0	0	5	15:45	6	0	0	0	0	0	6
4:00	5	0	0	0	0	0	5	16:00	7	7	0	0	0	0	14
4:15	3	0	0	0	0	0	3	16:15	5	0	1	0	0	0	6
4:30	6	1	0	0	0	0	7	16:30	6	0	0	0	0	0	6
4:45	10	0	0	0	0	0	10	16:45	3	0	0	0	0	0	3
5:00	0	0	0	0	0	0	0	17:00	0	0	0	0	0	0	0
5:15	3	3	0	0	0	0	6	17:15	2	0	0	0	0	0	2
5:30	1	0	0	0	0	0	1	17:30	6	0	0	0	0	0	6
5:45	3	2	0	0	0	0	5	17:45	6	1	0	0	0	0	7
6:00	2	0	0	0	0	0	2	18:00	1	1	0	0	0	0	2
6:15	0	0	0	0	0	0	0	18:15	2	0	0	0	0	0	2
6:30	0	0	0	0	0	0	0	18:30	8	1	0	0	0	0	9
6:45	1	0	0	0	0	0	1	18:45	5	0	0	0	0	0	5
7:00	1	0	0	0	0	0	1	19:00	1	1	0	0	0	0	2
7:15	0	1	0	0	0	0	1	19:15	1	1	0	0	0	0	2
7:30	2	1	0	0	0	0	3	19:30	2	0	0	0	0	0	2
7:45	2	1	0	0	0	0	3	19:45	1	1	0	0	0	0	2
8:00	2	4	0	0	0	0	6	20:00	5	0	0	0	0	0	5
8:15	3	0	0	0	0	0	3	20:15	4	1	0	0	0	0	5
8:30	2	0	1	0	0	0	3	20:30	3	0	0	0	0	0	3
8:45	4	1	0	0	0	0	5	20:45	0	0	0	0	0	0	0
9:00	3	3	0	0	0	0	6	21:00	4	0	0	0	0	0	4
9:15	4	0	1	0	0	0	5	21:15	3	0	0	0	0	0	3
9:30	6	1	0	0	0	0	7	21:30	1	0	0	0	0	0	1
9:45	6	0	0	0	0	0	6	21:45	1	0	0	0	0	0	1
10:00	3	1	0	0	0	0	4	22:00	0	0	0	0	0	0	0
10:15	5	2	0	0	0	0	7	22:15	0	0	0	0	0	0	0
10:30	3	0	0	0	0	0	3	22:30	3	0	0	0	0	0	3
10:45	2	0	0	0	0	0	2	22:45	0	0	0	0	0	0	0
11:00	3	1	0	0	0	0	4	23:00	0	0	0	0	0	0	0
11:15	3	1	0	0	0	0	4	23:15	0	0	0	0	0	0	0
11:30	3	3	0	0	0	0	6	23:30	0	0	0	0	0	0	0
11:45	4	0	0	0	0	0	4	23:45	1	0	0	0	0	0	1
TOTAL	129	28	2	0	0	0	159	TOTAL	176	38	2	2	0	0	218
				AM PEAK HOUR			4:00 AM					AM PEAK HOUR			3:15 PM
				AM PEAK VOLUME			25					AM PEAK VOLUME			54

TOTAL: AM+PM	305	66	4	2	0	0	377
% OF TOTAL	80.9%	17.5%	1.1%	0.5%	0.0%	0.0%	100.0%

CLASS 1	PASSENGER VEHICLES
CLASS 2	2-AXLE TRUCKS
CLASS 3	3-AXLE TRUCKS
CLASS 4	4 OR MORE AXLE TRUCKS
CLASS 5	RV
CLASS 6	Buses

Counts Unlimited, Inc.

PO Box 1178
Corona, CA 92878
(951) 268-6268
email: counts@countsunlimited.com

City of Apple Valley
Dakota Avenue
N/ Corwin Road
24 Hour Directional Classification Count

APV001
Site Code: 051-24741

Northbound

Start Time	Motorcy	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
08/27/24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	8	0	0	0	**1**	0	0	0	0	0	0	0	9
04:00	0	**19**	1	0	0	0	0	0	0	0	0	0	0	**20**
05:00	0	13	**2**	0	0	0	0	0	0	0	0	0	0	15
06:00	0	4	1	0	0	0	0	0	0	0	0	0	0	5
07:00	0	7	1	0	0	0	0	0	0	0	0	0	0	8
08:00	0	6	1	0	**1**	0	0	0	0	0	0	0	0	8
09:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
10:00	0	2	2	0	0	0	0	0	0	0	0	0	0	4
11:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
12 PM	0	0	2	0	**1**	0	0	0	0	0	0	0	0	3
13:00	0	4	0	0	1	0	0	0	0	0	0	0	0	5
14:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
15:00	0	8	1	0	1	0	0	0	0	0	0	0	0	10
16:00	0	**15**	**4**	0	0	0	0	0	0	0	0	0	0	**19**
17:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
18:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
19:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
20:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21:00	0	4	1	0	0	0	0	0	0	0	0	0	0	5
22:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	115	18	0	4	1	0	0	0	0	0	0	0	138
Percent	0.0%	83.3%	13.0%	0.0%	2.9%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak		04:00	05:00		08:00	03:00								04:00
Vol.		19	2		1	1								20
PM Peak		16:00	16:00		12:00									16:00
Vol.		15	4		1									19
Grand Total	0	115	18	0	4	1	0	0	0	0	0	0	0	138
Percent	0.0%	83.3%	13.0%	0.0%	2.9%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	

Counts Unlimited, Inc.

PO Box 1178
Corona, CA 92878
(951) 268-6268
email: counts@countsunlimited.com

City of Apple Valley
Dakota Avenue
N/ Corwin Road
24 Hour Directional Classification Count

APV001
Site Code: 051-24741

Southbound

Start Time	Motorcy	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
08/27/24	0	0	**2**	0	0	0	0	0	0	0	0	0	0	2
01:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	7	0	0	0	0	0	0	0	0	0	0	0	7
04:00	0	7	0	0	0	0	0	0	0	0	0	0	0	7
05:00	0	6	1	0	0	0	0	0	0	0	0	0	0	7
06:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
07:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
08:00	0	5	0	0	**1**	0	0	0	0	0	0	0	0	6
09:00	0	**9**	1	0	1	0	0	0	0	0	0	0	0	**11**
10:00	0	3	1	0	0	0	0	**1**	0	0	0	0	0	5
11:00	0	6	1	0	1	0	0	0	**1**	0	0	0	0	9
12 PM	0	**18**	1	0	1	**1**	0	0	**1**	0	0	0	0	**22**
13:00	0	11	1	0	**2**	0	0	0	0	0	0	0	0	14
14:00	0	14	2	0	1	0	0	0	0	0	0	0	0	17
15:00	0	6	2	0	2	0	0	0	0	0	0	0	0	10
16:00	0	17	4	0	1	0	0	0	0	0	0	0	0	22
17:00	0	7	**5**	0	1	0	0	0	0	0	0	0	0	13
18:00	0	9	0	0	0	0	0	0	0	0	0	0	0	9
19:00	0	0	2	0	0	0	0	0	0	0	0	0	0	2
20:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
21:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
22:00	0	11	1	0	0	0	0	0	0	0	0	0	0	12
23:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
Total	0	153	25	0	11	1	0	1	2	0	0	0	0	193
Percent	0.0%	79.3%	13.0%	0.0%	5.7%	0.5%	0.0%	0.5%	1.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak		09:00	00:00		08:00			10:00	11:00					09:00
Vol.		9	2		1			1	1					11
PM Peak		12:00	17:00		13:00	12:00			12:00					12:00
Vol.		18	5		2	1			1					22
Grand Total	0	153	25	0	11	1	0	1	2	0	0	0	0	193
Percent	0.0%	79.3%	13.0%	0.0%	5.7%	0.5%	0.0%	0.5%	1.0%	0.0%	0.0%	0.0%	0.0%	

Counts Unlimited, Inc.

PO Box 1178
Corona, CA 92878
(951) 268-6268
email: counts@countsunlimited.com

City of Apple Valley
Dakota Avenue
N/ Corwin Road
24 Hour Directional Classification Count

APV001
Site Code: 051-24741

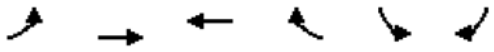
Northbound, Southbound

Start Time	Motorcy	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
08/27/24	0	0	2	0	0	0	0	0	0	0	0	0	0	2
01:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
02:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
03:00	0	15	0	0	0	**1**	0	0	0	0	0	0	0	16
04:00	0	**26**	1	0	0	0	0	0	0	0	0	0	0	**27**
05:00	0	19	**3**	0	0	0	0	0	0	0	0	0	0	22
06:00	0	7	1	0	0	0	0	0	0	0	0	0	0	8
07:00	0	10	2	0	0	0	0	0	0	0	0	0	0	12
08:00	0	11	1	0	**2**	0	0	0	0	0	0	0	0	14
09:00	0	15	1	0	1	0	0	0	0	0	0	0	0	17
10:00	0	5	3	0	0	0	0	**1**	0	0	0	0	0	9
11:00	0	7	1	0	1	0	0	0	**1**	0	0	0	0	10
12 PM	0	18	3	0	2	**1**	0	0	**1**	0	0	0	0	25
13:00	0	15	1	0	**3**	0	0	0	0	0	0	0	0	19
14:00	0	18	2	0	1	0	0	0	0	0	0	0	0	21
15:00	0	14	3	0	3	0	0	0	0	0	0	0	0	20
16:00	0	**32**	**8**	0	1	0	0	0	0	0	0	0	0	**41**
17:00	0	9	5	0	1	0	0	0	0	0	0	0	0	15
18:00	0	14	0	0	0	0	0	0	0	0	0	0	0	14
19:00	0	2	3	0	0	0	0	0	0	0	0	0	0	5
20:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
21:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
22:00	0	14	1	0	0	0	0	0	0	0	0	0	0	15
23:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
Total	0	268	43	0	15	2	0	1	2	0	0	0	0	331
Percent	0.0%	81.0%	13.0%	0.0%	4.5%	0.6%	0.0%	0.3%	0.6%	0.0%	0.0%	0.0%	0.0%	
AM Peak		04:00	05:00		08:00	03:00		10:00	11:00					04:00
Vol.		26	3		2	1		1	1					27
PM Peak		16:00	16:00		13:00	12:00			12:00					16:00
Vol.		32	8		3	1			1					41
Grand Total	0	268	43	0	15	2	0	1	2	0	0	0	0	331
Percent	0.0%	81.0%	13.0%	0.0%	4.5%	0.6%	0.0%	0.3%	0.6%	0.0%	0.0%	0.0%	0.0%	

This Page Intentionally Left Blank

APPENDIX 3.2: EXISTING (2024) CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

This Page Intentionally Left Blank



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	9	14	7	1	1	6
Future Volume (vph)	9	14	7	1	1	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		55	55		45	
Link Distance (ft)		3330	1344		1769	
Travel Time (s)		41.3	16.7		26.8	
Peak Hour Factor	0.64	0.64	0.64	0.64	0.64	0.64
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

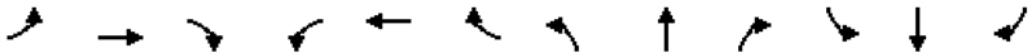
Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	9	14	7	1	1	6
Future Vol, veh/h	9	14	7	1	1	6
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	64	64	64	64	64	64
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	14	22	11	2	2	9

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	13	0	-	0	62	12
Stage 1	-	-	-	-	12	-
Stage 2	-	-	-	-	50	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1619	-	-	-	950	1075
Stage 1	-	-	-	-	1016	-
Stage 2	-	-	-	-	978	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1619	-	-	-	941	1075
Mov Cap-2 Maneuver	-	-	-	-	941	-
Stage 1	-	-	-	-	1007	-
Stage 2	-	-	-	-	978	-

Approach	EB	WB	SB
HCM Control Delay, s/v	2.83	0	8.45
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	704	-	-	-	1054
HCM Lane V/C Ratio	0.009	-	-	-	0.01
HCM Control Delay (s/veh)	7.2	0	-	-	8.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	1	0	0	0	0	1	0	0	0
Future Volume (vph)	0	0	0	1	0	0	0	0	1	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1354			321			1023			285	
Travel Time (s)		20.5			4.9			15.5			4.3	
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	1	0	0	0	0	1	0	0	0
Future Vol, veh/h	0	0	0	1	0	0	0	0	1	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	50	50	50	50	50	50	50	50	50
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	0	2	0	0	0	0	2	0	0	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2	4	2	3	3	1	2	0	0	2	0	0
Stage 1	2	2	-	1	1	-	-	-	-	-	-	-
Stage 2	0	2	-	2	2	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	1026	896	1088	1024	897	1090	1634	-	-	1634	-	-
Stage 1	1026	898	-	1027	899	-	-	-	-	-	-	-
Stage 2	-	898	-	1026	898	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	1026	896	1088	1024	897	1090	1634	-	-	1634	-	-
Mov Cap-2 Maneuver	1026	896	-	1024	897	-	-	-	-	-	-	-
Stage 1	1026	898	-	1027	899	-	-	-	-	-	-	-
Stage 2	-	898	-	1026	898	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	8.52	0	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1634	-	-	-	1024	1634	-	-
HCM Lane V/C Ratio	-	-	-	-	0.002	-	-	-
HCM Control Delay (s/veh)	0	-	-	0	8.5	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0	0	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	4	5	2	1	4	4
Future Volume (vph)	4	5	2	1	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			55	55	
Link Distance (ft)	2664			475	6664	
Travel Time (s)	60.5			5.9	82.6	
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	5	2	1	4	4
Future Vol, veh/h	4	5	2	1	4	4
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	71	71	71	71	71	71
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	6	7	3	1	6	6

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	15	8	11	0	-	0
Stage 1	8	-	-	-	-	-
Stage 2	7	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	1008	1079	1621	-	-	-
Stage 1	1020	-	-	-	-	-
Stage 2	1021	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1006	1079	1621	-	-	-
Mov Cap-2 Maneuver	1006	-	-	-	-	-
Stage 1	1018	-	-	-	-	-
Stage 2	1021	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.49	4.82	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1200	-	1046	-	-
HCM Lane V/C Ratio	0.002	-	0.012	-	-
HCM Control Delay (s/veh)	7.2	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	19	40	18	34	19	1
Future Volume (vph)	19	40	18	34	19	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	0		0	100
Storage Lanes		0	0		1	0
Taper Length (ft)			90		90	
Link Speed (mph)	45			45	55	
Link Distance (ft)	5327			1321	6664	
Travel Time (s)	80.7			20.0	82.6	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	19	40	18	34	19	1
Future Vol, veh/h	19	40	18	34	19	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	76	76	76	76	76	76
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	25	53	24	45	25	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	78	0	143	51
Stage 1	-	-	-	-	51	-
Stage 2	-	-	-	-	92	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1534	-	854	1022
Stage 1	-	-	-	-	976	-
Stage 2	-	-	-	-	937	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1534	-	840	1022
Mov Cap-2 Maneuver	-	-	-	-	840	-
Stage 1	-	-	-	-	976	-
Stage 2	-	-	-	-	922	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	2.56	9.38
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	848	-	-	623	-
HCM Lane V/C Ratio	0.031	-	-	0.015	-
HCM Control Delay (s/veh)	9.4	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	97	11	7	74	61	22	134	13	28	58	1
Future Volume (vph)	1	97	11	7	74	61	22	134	13	28	58	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		165	100		0	325		0
Storage Lanes	0		0	0		1	1		1	1		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		45			45			55			55	
Link Distance (ft)		7616			5327			4005			1074	
Travel Time (s)		115.4			80.7			49.6			13.3	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

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	1	97	11	7	74	61	22	134	13	28	58	1
Future Vol, veh/h	1	97	11	7	74	61	22	134	13	28	58	1
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	1	120	14	9	91	75	27	165	16	35	72	1
Number of Lanes	0	1	0	0	1	1	1	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	3	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	2	2	1
HCM Control Delay, s/veh	10.2	9.2	10.1	9.6
HCM LOS	B	A	B	A

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	1%	9%	0%	100%	0%
Vol Thru, %	0%	100%	0%	89%	91%	0%	0%	98%
Vol Right, %	0%	0%	100%	10%	0%	100%	0%	2%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	22	134	13	109	81	61	28	59
LT Vol	22	0	0	1	7	0	28	0
Through Vol	0	134	0	97	74	0	0	58
RT Vol	0	0	13	11	0	61	0	1
Lane Flow Rate	27	165	16	135	100	75	35	73
Geometry Grp	6	6	6	6	6	6	6	6
Degree of Util (X)	0.047	0.264	0.023	0.218	0.163	0.107	0.062	0.121
Departure Headway (Hd)	6.26	5.755	5.049	5.823	5.869	5.122	6.493	5.975
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	573	625	710	618	612	700	553	601
Service Time	3.984	3.479	2.772	3.549	3.594	2.847	4.22	3.701
HCM Lane V/C Ratio	0.047	0.264	0.023	0.218	0.163	0.107	0.063	0.121
HCM Control Delay, s/veh	9.3	10.5	7.9	10.2	9.7	8.5	9.7	9.5
HCM Lane LOS	A	B	A	B	A	A	A	A
HCM 95th-tile Q	0.1	1.1	0.1	0.8	0.6	0.4	0.2	0.4



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	96	1	28	108	1	52
Future Volume (vph)	96	1	28	108	1	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	45		45			45
Link Distance (ft)	7616		549			661
Travel Time (s)	115.4		8.3			10.0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

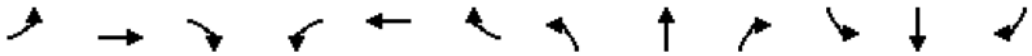
Intersection	
Int Delay, s/veh	3.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	96	1	28	108	1	52
Future Vol, veh/h	96	1	28	108	1	52
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	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	112	1	33	126	1	60

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	158	95	0	0	158	0
Stage 1	95	-	-	-	-	-
Stage 2	63	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	838	967	-	-	1434	-
Stage 1	933	-	-	-	-	-
Stage 2	965	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	837	967	-	-	1434	-
Mov Cap-2 Maneuver	837	-	-	-	-	-
Stage 1	933	-	-	-	-	-
Stage 2	964	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	9.96	0	0.14
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	838	34	-
HCM Lane V/C Ratio	-	-	0.135	0.001	-
HCM Control Delay (s/veh)	-	-	10	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	10	28	6	142	1	7	30	3	123	0	22
Future Volume (vph)	9	10	28	6	142	1	7	30	3	123	0	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		889			1144			979			330	
Travel Time (s)		13.5			17.3			22.3			7.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

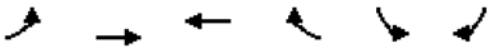
Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	9	10	28	6	142	1	7	30	3	123	0	22
Future Vol, veh/h	9	10	28	6	142	1	7	30	3	123	0	22
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	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	9	10	29	6	148	1	7	31	3	128	0	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	149	0	0	40	0	0	204	205	25	206	219	148
Stage 1	-	-	-	-	-	-	44	44	-	161	161	-
Stage 2	-	-	-	-	-	-	160	161	-	45	58	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1445	-	-	1583	-	-	758	695	1057	756	683	904
Stage 1	-	-	-	-	-	-	976	862	-	846	769	-
Stage 2	-	-	-	-	-	-	846	768	-	974	850	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1445	-	-	1583	-	-	731	687	1057	712	675	904
Mov Cap-2 Maneuver	-	-	-	-	-	-	731	687	-	712	675	-
Stage 1	-	-	-	-	-	-	969	857	-	842	765	-
Stage 2	-	-	-	-	-	-	821	765	-	930	845	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	1.44	0.29	10.36	11.15
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	713	300	-	-	72	-	-	736
HCM Lane V/C Ratio	0.058	0.006	-	-	0.004	-	-	0.205
HCM Control Delay (s/veh)	10.4	7.5	0	-	7.3	0	-	11.2
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.8



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1	13	47	124	34	3
Future Volume (vph)	1	13	47	124	34	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0	0	25
Storage Lanes	0			0	1	0
Taper Length (ft)	90				90	
Link Speed (mph)		45	45		45	
Link Distance (ft)		1552	889		1482	
Travel Time (s)		23.5	13.5		22.5	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	13	47	124	34	3
Future Vol, veh/h	1	13	47	124	34	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	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, %	0	0	0	0	0	0
Mvmt Flow	1	15	56	148	40	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	56	0	-	0	148	130
Stage 1	-	-	-	-	130	-
Stage 2	-	-	-	-	18	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1562	-	-	-	849	925
Stage 1	-	-	-	-	901	-
Stage 2	-	-	-	-	1010	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1562	-	-	-	849	925
Mov Cap-2 Maneuver	-	-	-	-	849	-
Stage 1	-	-	-	-	900	-
Stage 2	-	-	-	-	1010	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.52	0	9.44
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	129	-	-	-	854
HCM Lane V/C Ratio	0.001	-	-	-	0.052
HCM Control Delay (s/veh)	7.3	0	-	-	9.4
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.2



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	35	1	1	124	1	2
Future Volume (vph)	35	1	1	124	1	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		45			45
Link Distance (ft)	263		1482			525
Travel Time (s)	6.0		22.5			8.0
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

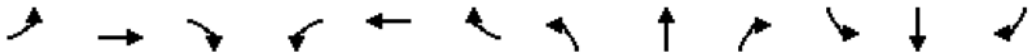
Intersection	
Int Delay, s/veh	2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	35	1	1	124	1	2
Future Vol, veh/h	35	1	1	124	1	2
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	79	79	79	79	79	79
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	44	1	1	157	1	3

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	85	80	0	0	158	0
Stage 1	80	-	-	-	-	-
Stage 2	5	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	922	986	-	-	1434	-
Stage 1	948	-	-	-	-	-
Stage 2	1023	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	921	986	-	-	1434	-
Mov Cap-2 Maneuver	921	-	-	-	-	-
Stage 1	948	-	-	-	-	-
Stage 2	1022	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	9.11	0	2.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	922	600	-
HCM Lane V/C Ratio	-	-	0.049	0.001	-
HCM Control Delay (s/veh)	-	-	9.1	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	11	2	7	1	3	6	150	20	1	52	8
Future Volume (vph)	20	11	2	7	1	3	6	150	20	1	52	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1375			3330			1135			747	
Travel Time (s)		17.0			41.3			14.1			9.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other

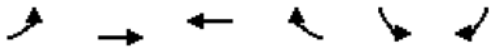
Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	11	2	7	1	3	6	150	20	1	52	8
Future Vol, veh/h	20	11	2	7	1	3	6	150	20	1	52	8
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	22	12	2	8	1	3	7	167	22	1	58	9
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, s/veh	7.8	7.5	8.1	7.5
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	3%	61%	64%	2%
Vol Thru, %	85%	33%	9%	85%
Vol Right, %	11%	6%	27%	13%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	176	33	11	61
LT Vol	6	20	7	1
Through Vol	150	11	1	52
RT Vol	20	2	3	8
Lane Flow Rate	196	37	12	68
Geometry Grp	1	1	1	1
Degree of Util (X)	0.216	0.046	0.015	0.076
Departure Headway (Hd)	3.976	4.561	4.468	4.059
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	898	790	806	873
Service Time	2.023	2.561	2.469	2.129
HCM Lane V/C Ratio	0.218	0.047	0.015	0.078
HCM Control Delay, s/veh	8.1	7.8	7.5	7.5
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.8	0.1	0	0.2



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	21	5	19	1	1	24
Future Volume (vph)	21	5	19	1	1	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		55	55		45	
Link Distance (ft)		3330	1344		1769	
Travel Time (s)		41.3	16.7		26.8	
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

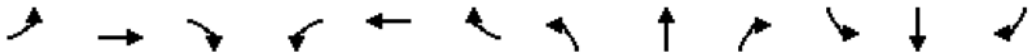
Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	21	5	19	1	1	24
Future Vol, veh/h	21	5	19	1	1	24
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	69	69	69	69	69	69
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	30	7	28	1	1	35

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	29	0	-	0	96	28
Stage 1	-	-	-	-	28	-
Stage 2	-	-	-	-	68	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1597	-	-	-	908	1053
Stage 1	-	-	-	-	999	-
Stage 2	-	-	-	-	960	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1597	-	-	-	890	1053
Mov Cap-2 Maneuver	-	-	-	-	890	-
Stage 1	-	-	-	-	980	-
Stage 2	-	-	-	-	960	-

Approach	EB	WB	SB
HCM Control Delay, s/v	5.89	0	8.57
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1454	-	-	-	1045
HCM Lane V/C Ratio	0.019	-	-	-	0.035
HCM Control Delay (s/veh)	7.3	0	-	-	8.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	2	0	0	0	0	1	0	0	0
Future Volume (vph)	0	0	0	2	0	0	0	0	1	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1354			321			1023			285	
Travel Time (s)		20.5			4.9			15.5			4.3	
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	2	0	0	0	0	1	0	0	0
Future Vol, veh/h	0	0	0	2	0	0	0	0	1	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	50	50	50	50	50	50	50	50	50
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	0	4	0	0	0	0	2	0	0	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2	4	2	3	3	1	2	0	0	2	0	0
Stage 1	2	2	-	1	1	-	-	-	-	-	-	-
Stage 2	0	2	-	2	2	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	1026	896	1088	1024	897	1090	1634	-	-	1634	-	-
Stage 1	1026	898	-	1027	899	-	-	-	-	-	-	-
Stage 2	-	898	-	1026	898	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	1026	896	1088	1024	897	1090	1634	-	-	1634	-	-
Mov Cap-2 Maneuver	1026	896	-	1024	897	-	-	-	-	-	-	-
Stage 1	1026	898	-	1027	899	-	-	-	-	-	-	-
Stage 2	-	898	-	1026	898	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	8.53	0	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1634	-	-	-	1024	1634	-	-
HCM Lane V/C Ratio	-	-	-	-	0.004	-	-	-
HCM Control Delay (s/veh)	0	-	-	0	8.5	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0	0	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	20	1	2	1	3	22
Future Volume (vph)	20	1	2	1	3	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			55	55	
Link Distance (ft)	2664			475	6664	
Travel Time (s)	60.5			5.9	82.6	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

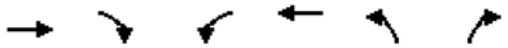
Intersection	
Int Delay, s/veh	4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	1	2	1	3	22
Future Vol, veh/h	20	1	2	1	3	22
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	73	73	73	73	73	73
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	27	1	3	1	4	30

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	26	19	34	0	-	0
Stage 1	19	-	-	-	-	-
Stage 2	7	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	995	1065	1590	-	-	-
Stage 1	1009	-	-	-	-	-
Stage 2	1021	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	993	1065	1590	-	-	-
Mov Cap-2 Maneuver	993	-	-	-	-	-
Stage 1	1007	-	-	-	-	-
Stage 2	1021	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.72	4.85	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1200	-	996	-	-
HCM Lane V/C Ratio	0.002	-	0.029	-	-
HCM Control Delay (s/veh)	7.3	0	8.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	68	41	17	46	43	12
Future Volume (vph)	68	41	17	46	43	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	0		0	100
Storage Lanes		0	0		1	0
Taper Length (ft)			90		90	
Link Speed (mph)	45			45	55	
Link Distance (ft)	5327			1835	6664	
Travel Time (s)	80.7			27.8	82.6	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

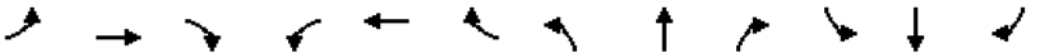
Intersection	
Int Delay, s/veh	3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	68	41	17	46	43	12
Future Vol, veh/h	68	41	17	46	43	12
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	76	76	76	76	76	76
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	89	54	22	61	57	16

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	143	0	222	116
Stage 1	-	-	-	-	116	-
Stage 2	-	-	-	-	105	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1452	-	771	941
Stage 1	-	-	-	-	914	-
Stage 2	-	-	-	-	924	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1452	-	759	941
Mov Cap-2 Maneuver	-	-	-	-	759	-
Stage 1	-	-	-	-	914	-
Stage 2	-	-	-	-	909	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	2.03	10
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	792	-	-	486	-
HCM Lane V/C Ratio	0.091	-	-	0.015	-
HCM Control Delay (s/veh)	10	-	-	7.5	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	179	35	43	168	42	29	69	48	75	197	1
Future Volume (vph)	1	179	35	43	168	42	29	69	48	75	197	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		165	100		0	325		0
Storage Lanes	0		0	0		1	1		1	1		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		45			45			55			55	
Link Distance (ft)		7616			5327			4005			1074	
Travel Time (s)		115.4			80.7			49.6			13.3	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

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	1	179	35	43	168	42	29	69	48	75	197	1
Future Vol, veh/h	1	179	35	43	168	42	29	69	48	75	197	1
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	1	224	44	54	210	53	36	86	60	94	246	1
Number of Lanes	0	1	0	0	1	1	1	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	3	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	2	2	1
HCM Control Delay, s/veh	18.7	17.4	11.9	16.3
HCM LOS	C	C	B	C

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	0%	20%	0%	100%	0%
Vol Thru, %	0%	100%	0%	83%	80%	0%	0%	99%
Vol Right, %	0%	0%	100%	16%	0%	100%	0%	1%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	29	69	48	215	211	42	75	198
LT Vol	29	0	0	1	43	0	75	0
Through Vol	0	69	0	179	168	0	0	197
RT Vol	0	0	48	35	0	42	0	1
Lane Flow Rate	36	86	60	269	264	53	94	248
Geometry Grp	6	6	6	6	6	6	6	6
Degree of Util (X)	0.085	0.189	0.119	0.548	0.547	0.097	0.206	0.509
Departure Headway (Hd)	8.395	7.88	7.16	7.335	7.462	6.646	7.925	7.407
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	426	454	499	492	483	538	452	485
Service Time	6.166	5.651	4.93	5.096	5.223	4.406	5.689	5.171
HCM Lane V/C Ratio	0.085	0.189	0.12	0.547	0.547	0.099	0.208	0.511
HCM Control Delay, s/veh	12	12.5	10.9	18.7	18.9	10.1	12.7	17.7
HCM Lane LOS	B	B	B	C	C	B	B	C
HCM 95th-tile Q	0.3	0.7	0.4	3.3	3.2	0.3	0.8	2.8



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	194	3	12	212	2	27
Future Volume (vph)	194	3	12	212	2	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	45		45			45
Link Distance (ft)	7616		549			661
Travel Time (s)	115.4		8.3			10.0
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

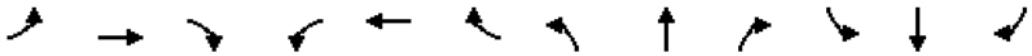
Intersection	
Int Delay, s/veh	5.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	194	3	12	212	2	27
Future Vol, veh/h	194	3	12	212	2	27
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	67	67	67	67	67	67
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	290	4	18	316	3	40

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	222	176	0	0	334	0
Stage 1	176	-	-	-	-	-
Stage 2	46	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	770	872	-	-	1236	-
Stage 1	859	-	-	-	-	-
Stage 2	981	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	768	872	-	-	1236	-
Mov Cap-2 Maneuver	768	-	-	-	-	-
Stage 1	859	-	-	-	-	-
Stage 2	979	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	12.54	0	0.55
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	770	124	-
HCM Lane V/C Ratio	-	-	0.382	0.002	-
HCM Control Delay (s/veh)	-	-	12.5	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.8	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	16	45	8	213	1	4	25	10	198	0	19
Future Volume (vph)	5	16	45	8	213	1	4	25	10	198	0	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		889			1144			979			330	
Travel Time (s)		13.5			17.3			22.3			7.5	
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

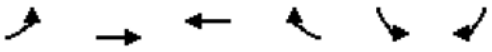
Intersection	
Int Delay, s/veh	9.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	16	45	8	213	1	4	25	10	198	0	19
Future Vol, veh/h	5	16	45	8	213	1	4	25	10	198	0	19
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	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	7	24	66	12	313	1	6	37	15	291	0	28

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	315	0	0	90	0	0	408	410	57	394	442	314
Stage 1	-	-	-	-	-	-	71	71	-	337	337	-
Stage 2	-	-	-	-	-	-	337	338	-	57	104	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1257	-	-	1518	-	-	557	535	1015	569	513	731
Stage 1	-	-	-	-	-	-	943	839	-	681	644	-
Stage 2	-	-	-	-	-	-	682	644	-	960	813	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1257	-	-	1518	-	-	528	526	1015	514	505	731
Mov Cap-2 Maneuver	-	-	-	-	-	-	528	526	-	514	505	-
Stage 1	-	-	-	-	-	-	938	834	-	675	638	-
Stage 2	-	-	-	-	-	-	649	638	-	899	808	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.6	0.27	11.62	21.7
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	601	119	-	-	65	-	-	528
HCM Lane V/C Ratio	0.095	0.006	-	-	0.008	-	-	0.605
HCM Control Delay (s/veh)	11.6	7.9	0	-	7.4	0	-	21.7
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	4



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	6	22	31	205	43	2
Future Volume (vph)	6	22	31	205	43	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0	0	25
Storage Lanes	0			0	1	0
Taper Length (ft)	90				90	
Link Speed (mph)		45	45		45	
Link Distance (ft)		1552	889		1482	
Travel Time (s)		23.5	13.5		22.5	
Peak Hour Factor	0.58	0.58	0.58	0.58	0.58	0.58
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	22	31	205	43	2
Future Vol, veh/h	6	22	31	205	43	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	58	58	58	58	58	58
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	10	38	53	353	74	3

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	53	0	-	0	289	230
Stage 1	-	-	-	-	230	-
Stage 2	-	-	-	-	59	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1565	-	-	-	706	814
Stage 1	-	-	-	-	813	-
Stage 2	-	-	-	-	969	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1565	-	-	-	701	814
Mov Cap-2 Maneuver	-	-	-	-	701	-
Stage 1	-	-	-	-	807	-
Stage 2	-	-	-	-	969	-

Approach	EB	WB	SB
HCM Control Delay, s/v	1.57	0	10.73
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	386	-	-	-	706
HCM Lane V/C Ratio	0.007	-	-	-	0.11
HCM Control Delay (s/veh)	7.3	0	-	-	10.7
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.4



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	45	1	1	210	1	1
Future Volume (vph)	45	1	1	210	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		45			45
Link Distance (ft)	263		1482			525
Travel Time (s)	6.0		22.5			8.0
Peak Hour Factor	0.56	0.56	0.56	0.56	0.56	0.56
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

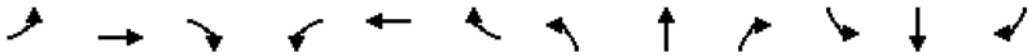
Intersection	
Int Delay, s/veh	1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	45	1	1	210	1	1
Future Vol, veh/h	45	1	1	210	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	56	56	56	56	56	56
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	80	2	2	375	2	2

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	195	189	0	0	377	0
Stage 1	189	-	-	-	-	-
Stage 2	5	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	799	858	-	-	1193	-
Stage 1	848	-	-	-	-	-
Stage 2	1023	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	798	858	-	-	1193	-
Mov Cap-2 Maneuver	798	-	-	-	-	-
Stage 1	848	-	-	-	-	-
Stage 2	1021	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	10.02	0	4.01
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	799	900	-
HCM Lane V/C Ratio	-	-	0.103	0.001	-
HCM Control Delay (s/veh)	-	-	10	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	6	2	27	16	2	3	111	16	4	208	46
Future Volume (vph)	23	6	2	27	16	2	3	111	16	4	208	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1375			3330			1135			747	
Travel Time (s)		17.0			41.3			14.1			9.3	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	8.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	6	2	27	16	2	3	111	16	4	208	46
Future Vol, veh/h	23	6	2	27	16	2	3	111	16	4	208	46
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	25	6	2	29	17	2	3	119	17	4	224	49
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, s/veh	8.2	8.3	8.2	9.1
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	74%	60%	2%
Vol Thru, %	85%	19%	36%	81%
Vol Right, %	12%	6%	4%	18%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	130	31	45	258
LT Vol	3	23	27	4
Through Vol	111	6	16	208
RT Vol	16	2	2	46
Lane Flow Rate	140	33	48	277
Geometry Grp	1	1	1	1
Degree of Util (X)	0.168	0.046	0.066	0.32
Departure Headway (Hd)	4.315	4.976	4.938	4.149
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	833	720	726	868
Service Time	2.331	3.002	2.964	2.162
HCM Lane V/C Ratio	0.168	0.046	0.066	0.319
HCM Control Delay, s/veh	8.2	8.2	8.3	9.1
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	0.1	0.2	1.4

APPENDIX 3.3: EXISTING (2024) CONDITIONS TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS

This Page Intentionally Left Blank

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

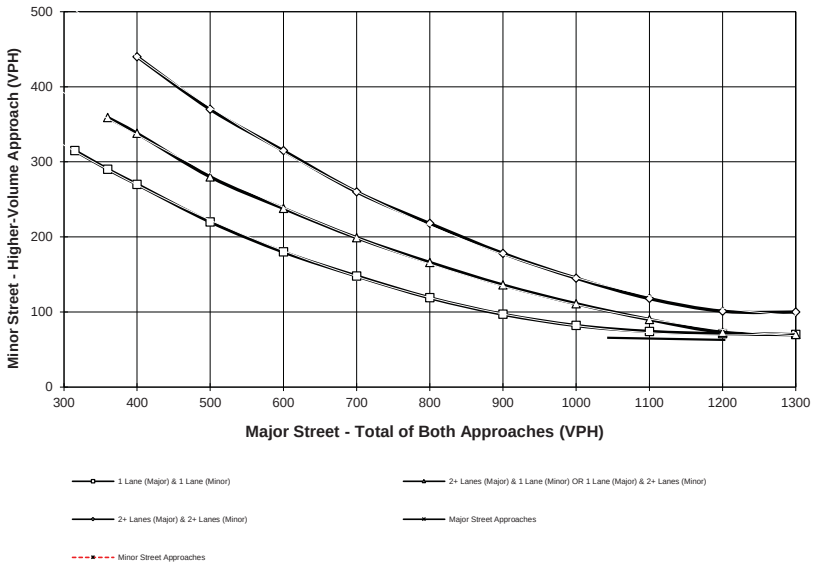
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING (2024) AM Peak Hour Warrants**

Major Street Name = **Corwin Rd.** Total of Both Approaches (VPH) = **31**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Dakota Av.** High Volume Approach (VPH) = **7**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #1

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Warrants\01 - Existing\01R_AM.xls\Fig 4C-4 (Rural Peak)

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

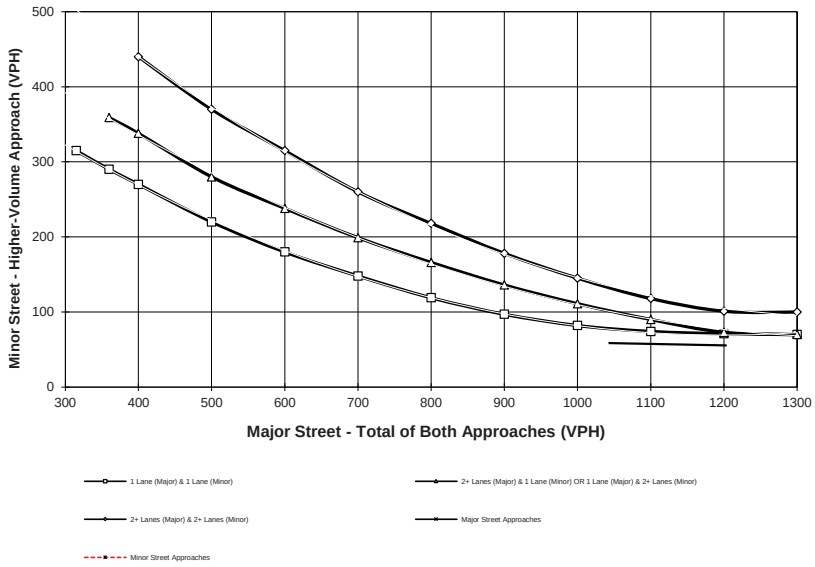
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING (2024) PM Peak Hour Warrants**

Major Street Name = **Corwin Rd.** Total of Both Approaches (VPH) = **46**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Dakota Av.** High Volume Approach (VPH) = **25**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #1

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Warrants\01 - Existing\01R_PM.xls\Fig 4C-4 (Rural Peak)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

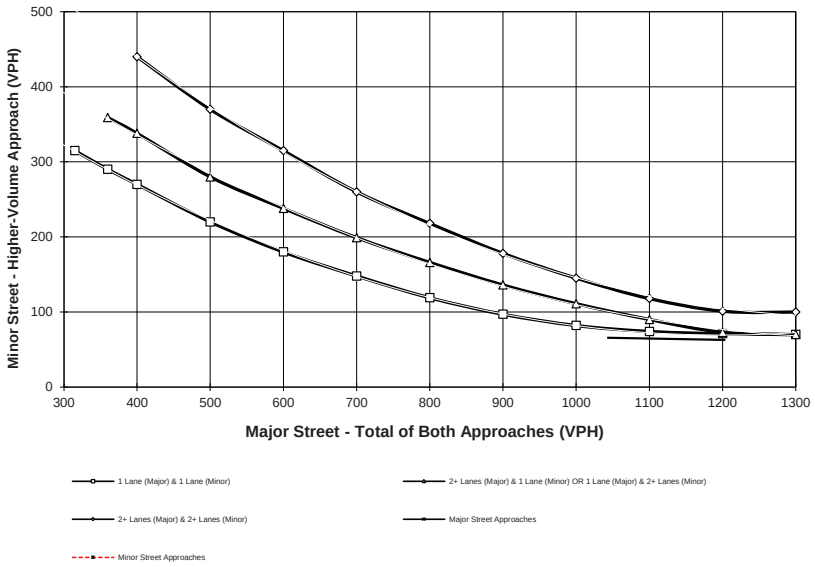
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING (2024) AM Peak Hour Warrants**

Major Street Name = **Ramona Rd.** Total of Both Approaches (VPH) = **1**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Fresno Rd.** High Volume Approach (VPH) = **1**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #2

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Warrants\01 - Existing\02R_AM.xls\Fig 4C-4 (Rural Peak)

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

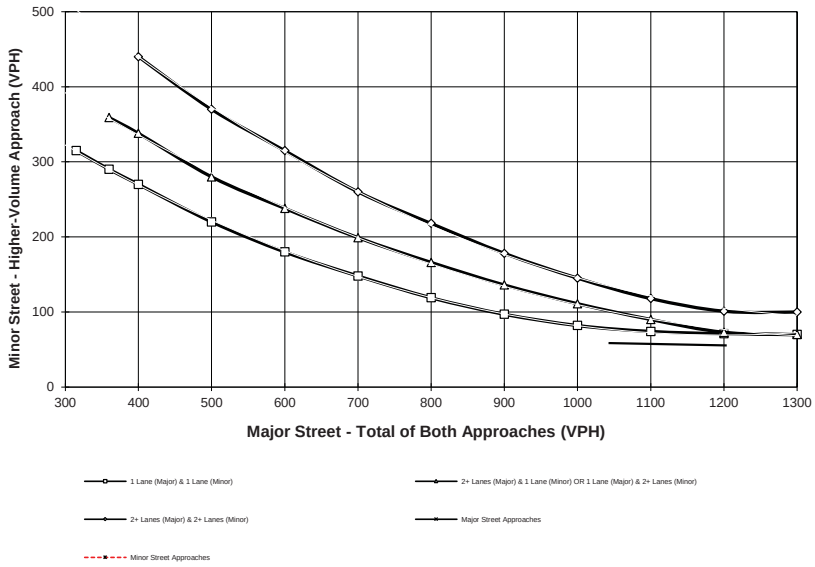
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING (2024) PM Peak Hour Warrants**

Major Street Name = **Fresno Rd.** Total of Both Approaches (VPH) = **2**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Ramona Rd.** High Volume Approach (VPH) = **1**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #2

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Warrants\01 - Existing\02R_PM.xls\Fig 4C-4 (Rural Peak)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

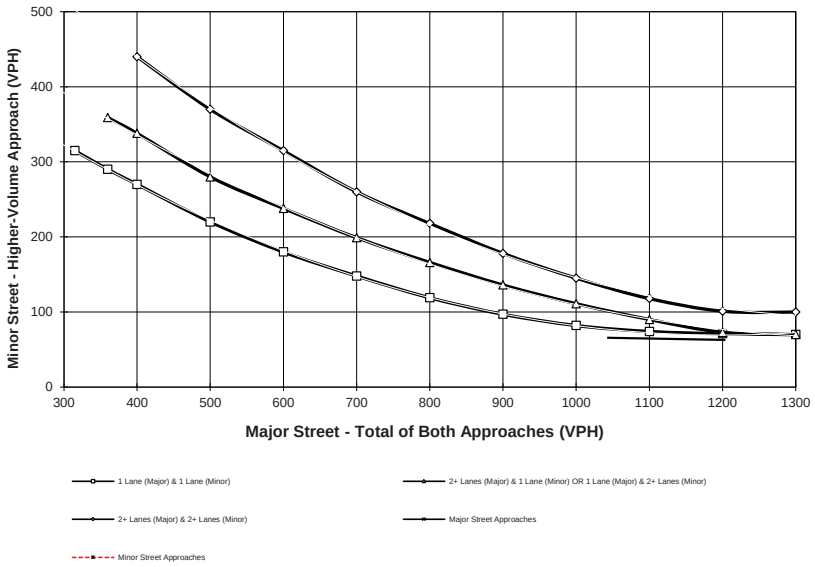
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING (2024) AM Peak Hour Warrants**

Major Street Name = **Navajo Rd.** Total of Both Approaches (VPH) = **11**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Altadena St.** High Volume Approach (VPH) = **9**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #3

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

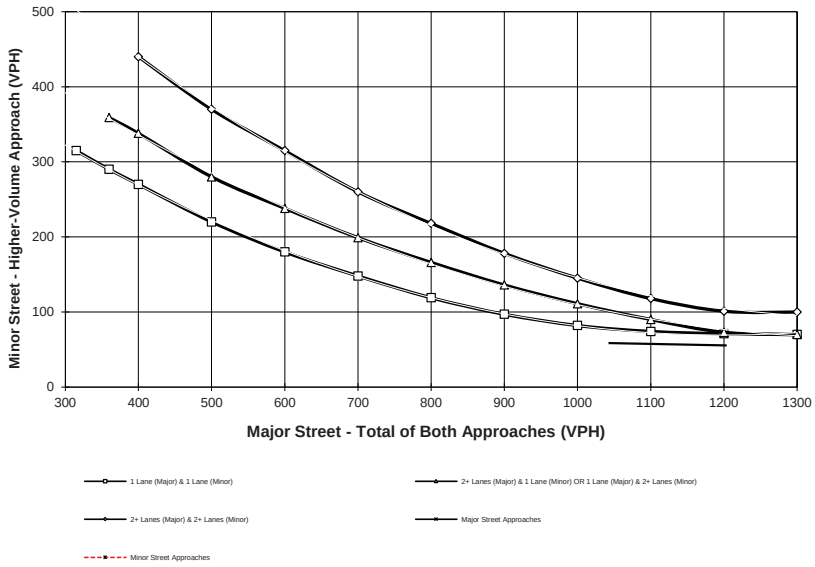
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING (2024) PM Peak Hour Warrants**

Major Street Name = **Navajo Rd.** Total of Both Approaches (VPH) = **28**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Altadena St.** High Volume Approach (VPH) = **21**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #3

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

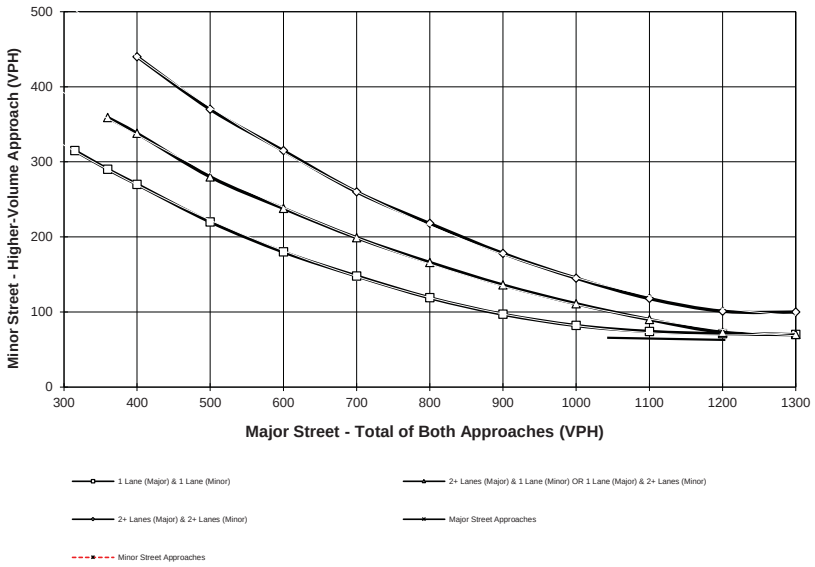
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING (2024) AM Peak Hour Warrants**

Major Street Name = **Johnson Rd.** Total of Both Approaches (VPH) = **111**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Navajo Rd.** High Volume Approach (VPH) = **20**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #4

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

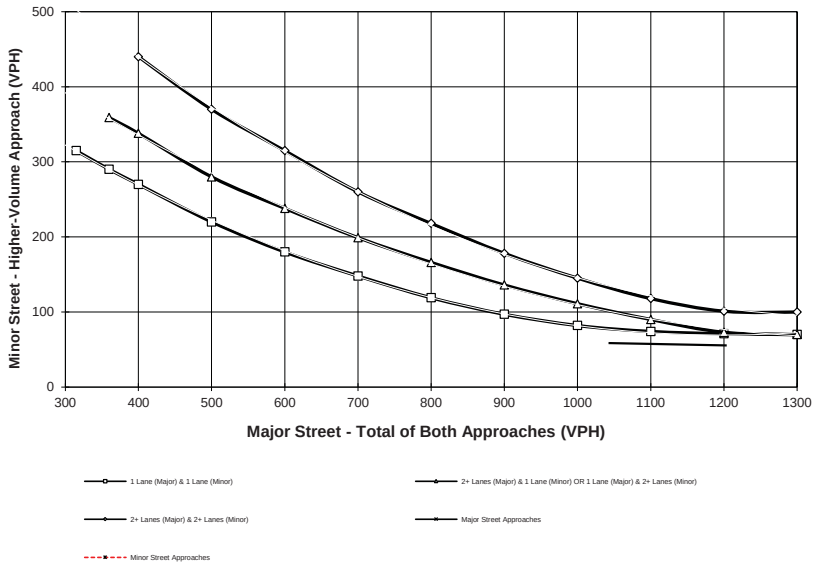
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING (2024) PM Peak Hour Warrants**

Major Street Name = **Johnson Rd.** Total of Both Approaches (VPH) = **172**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Navajo Rd.** High Volume Approach (VPH) = **55**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #4

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

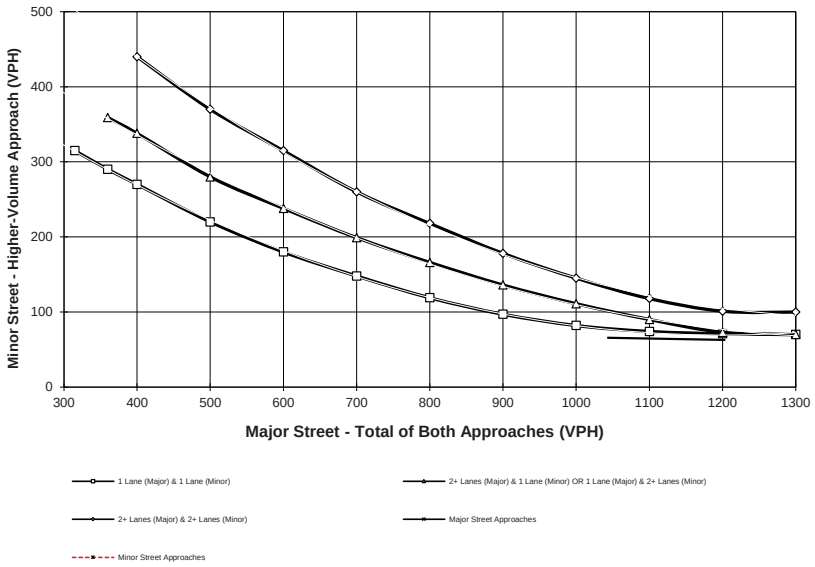
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING (2024) AM Peak Hour Warrants**

Major Street Name = **Dale Evans Pkwy.** Total of Both Approaches (VPH) = **256**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Johnson Rd.** High Volume Approach (VPH) = **142**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #5

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

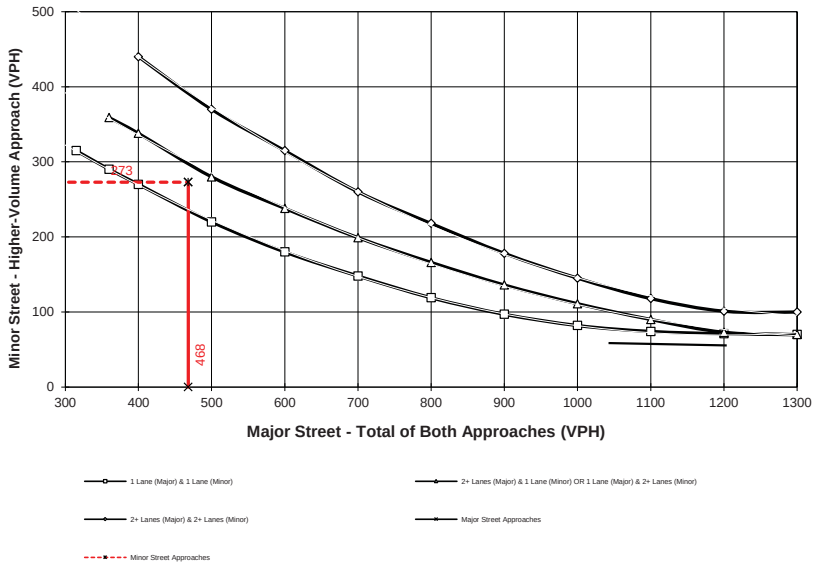
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING (2024) PM Peak Hour Warrants**

Major Street Name = **Johnson Rd.** Total of Both Approaches (VPH) = **468**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Dale Evans Pkwy.** High Volume Approach (VPH) = **273**
Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #5

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

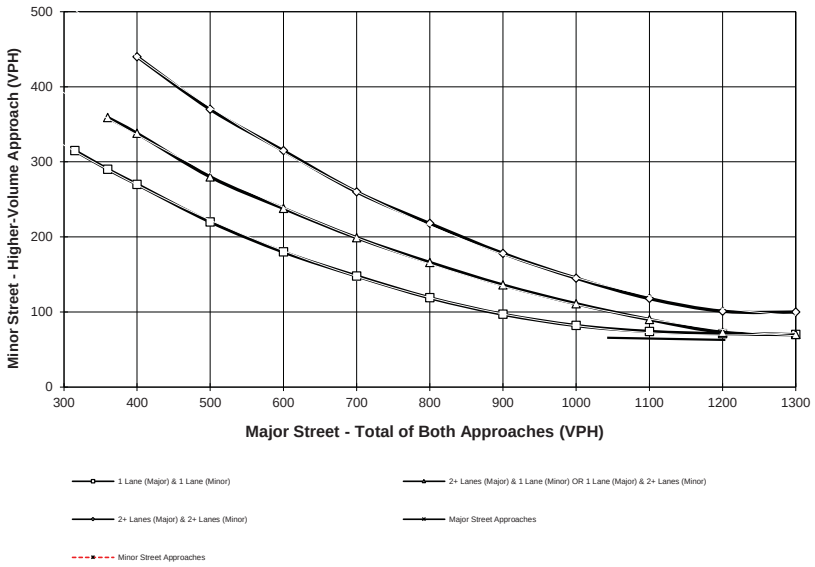
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING (2024) AM Peak Hour Warrants**

Major Street Name = **Stoddard Wells Rd.** Total of Both Approaches (VPH) = **189**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Johnson Rd.** High Volume Approach (VPH) = **97**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #6

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

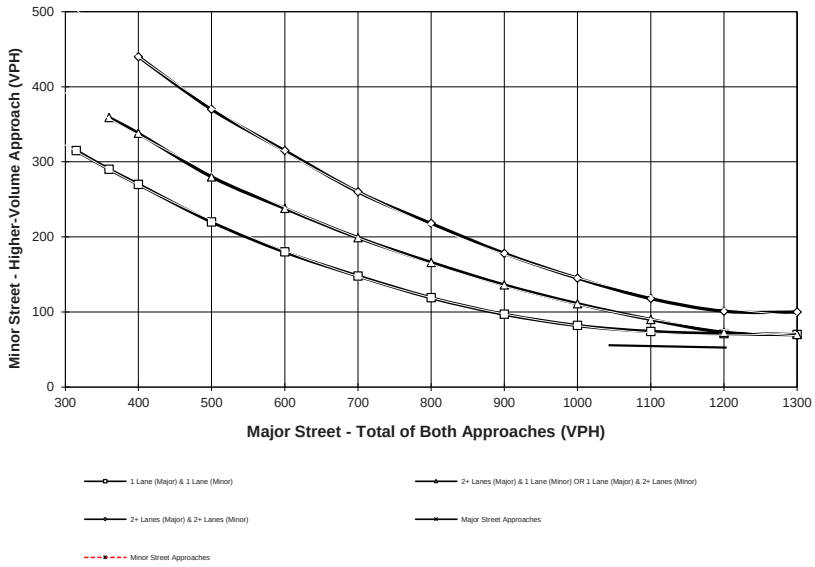
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING (2024) PM Peak Hour Warrants**

Major Street Name = **Stoddard Wells Rd.** Total of Both Approaches (VPH) = **253**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Johnson Rd.** High Volume Approach (VPH) = **197**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #6

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

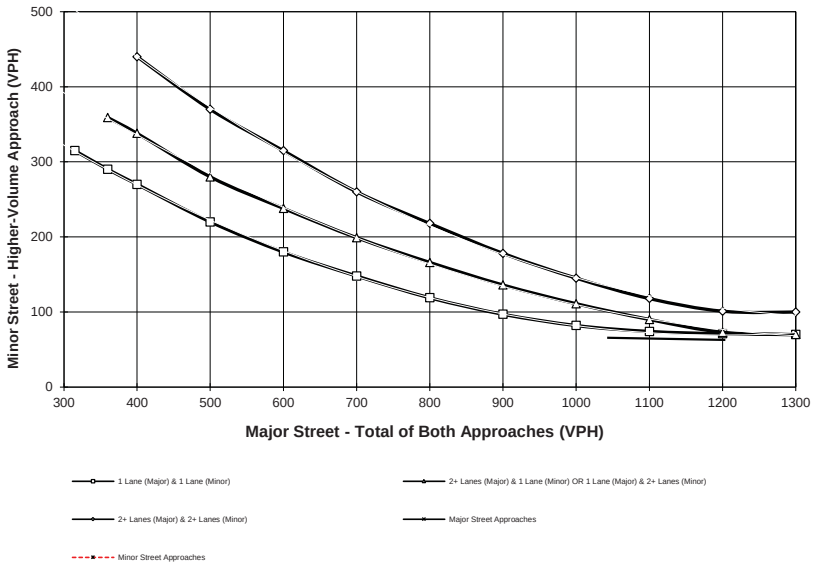
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING (2024) AM Peak Hour Warrants**

Major Street Name = **Stoddard Wells Rd.** Total of Both Approaches (VPH) = **196**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **I-15 NB Ramps - Outer Hwy. 15** High Volume Approach (VPH) = **145**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #7

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

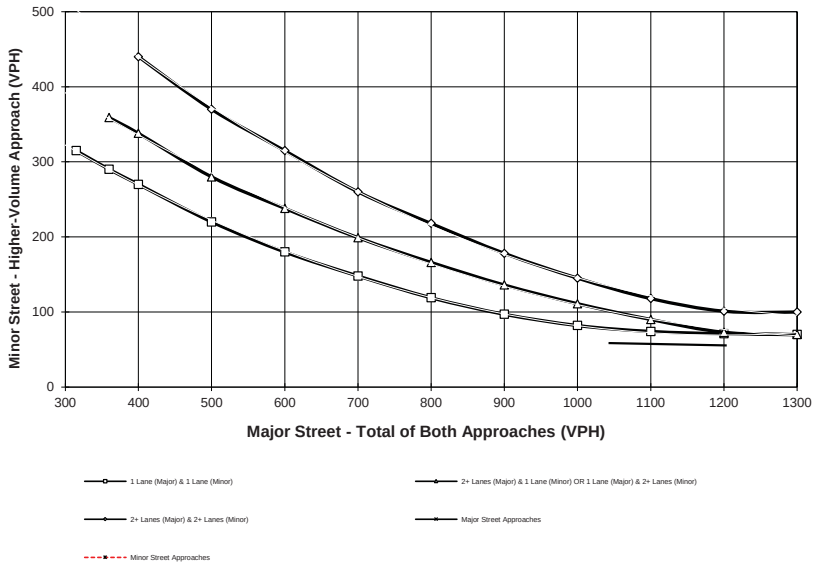
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING (2024) PM Peak Hour Warrants**

Major Street Name = **Stoddard Wells Rd.** Total of Both Approaches (VPH) = **288**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **I-15 NB Ramps - Outer Hwy. 15** High Volume Approach (VPH) = **217**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #7

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

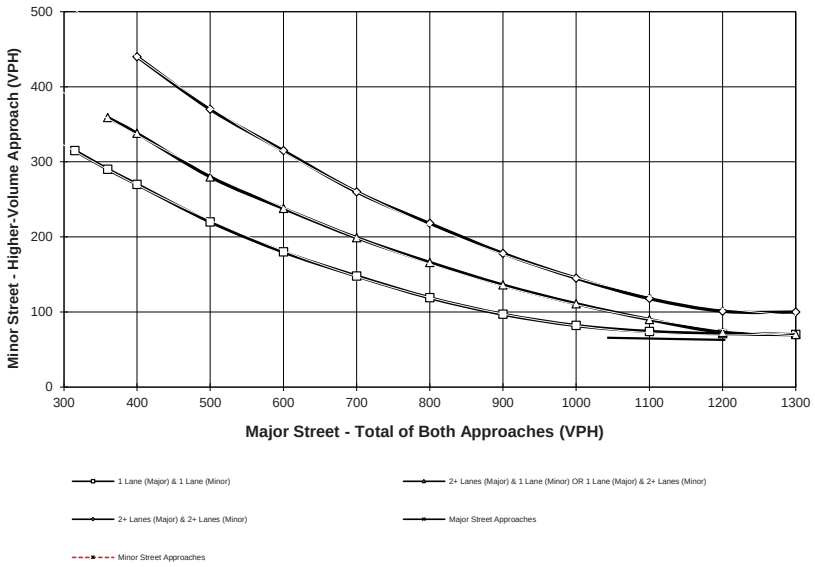
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING (2024) AM Peak Hour Warrants**

Major Street Name = **Stoddard Wells Rd.** Total of Both Approaches (VPH) = **185**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Quarry Rd.** High Volume Approach (VPH) = **37**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #8

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

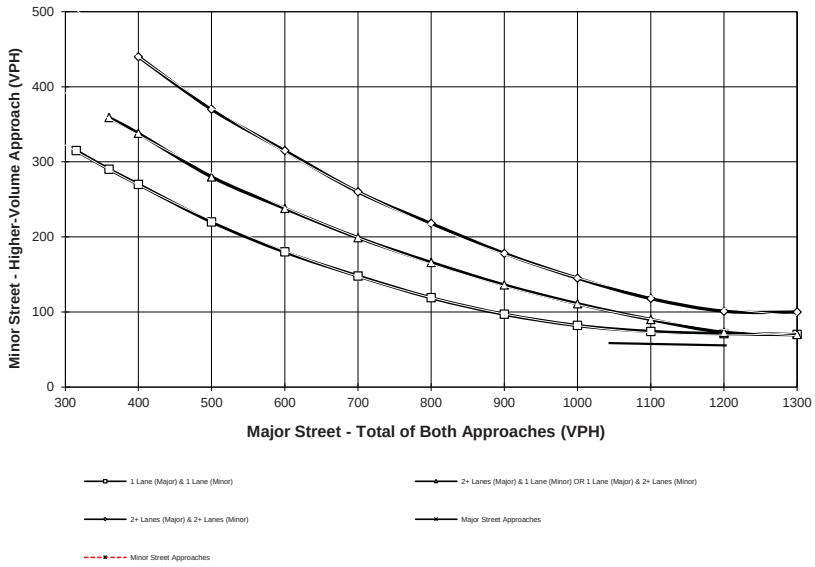
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING (2024) PM Peak Hour Warrants**

Major Street Name = **Stoddard Wells Rd.** Total of Both Approaches (VPH) = **264**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Quarry Rd.** High Volume Approach (VPH) = **45**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #8

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

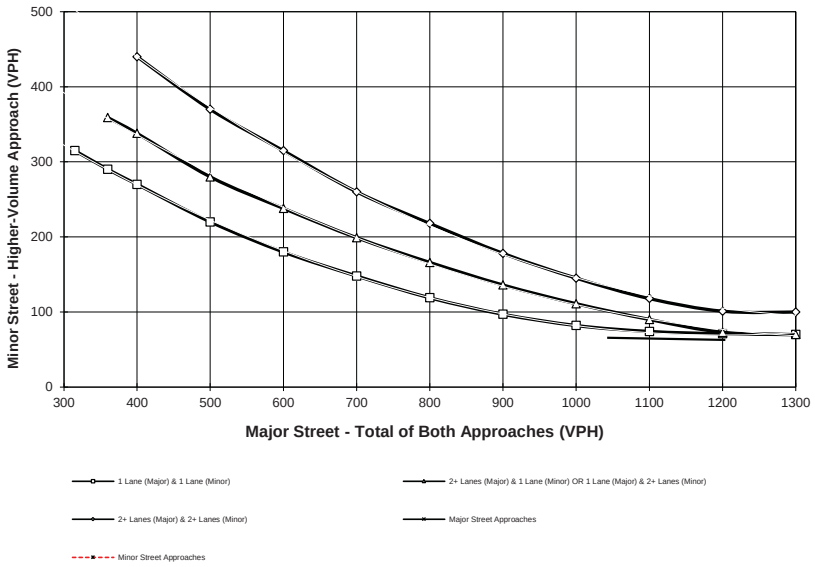
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING (2024) AM Peak Hour Warrants**

Major Street Name = **Quarry Rd.** Total of Both Approaches (VPH) = **128**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **I-15 SB Ramps** High Volume Approach (VPH) = **36**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #9

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

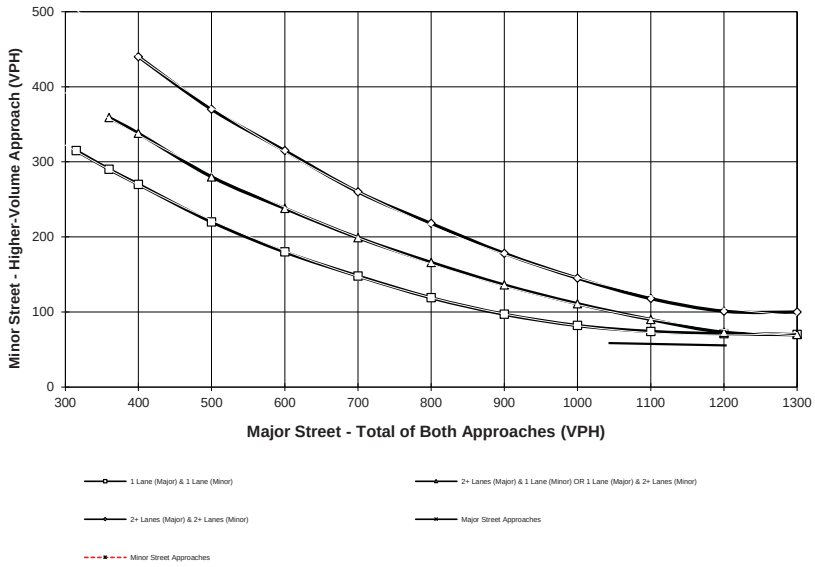
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING (2024) PM Peak Hour Warrants**

Major Street Name = **Quarry Rd.** Total of Both Approaches (VPH) = **213**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **I-15 SB Ramps** High Volume Approach (VPH) = **46**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #9

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

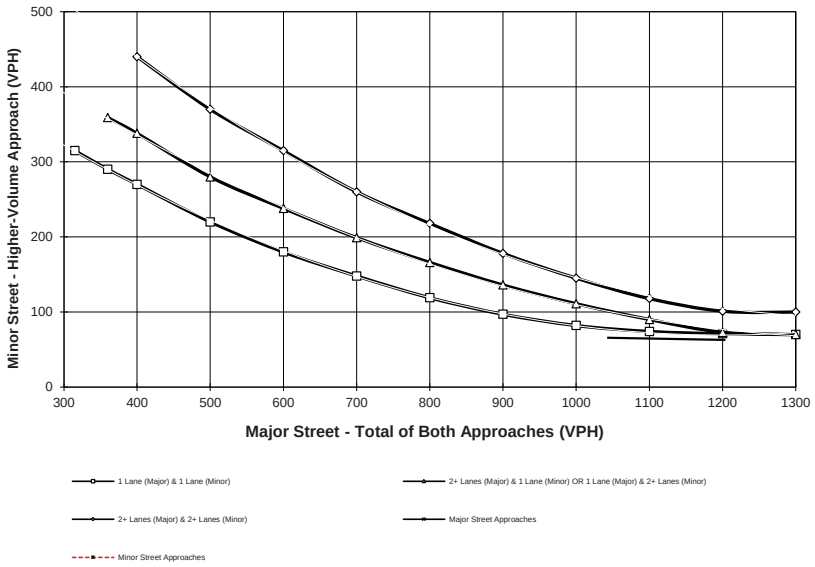
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING (2024) AM Peak Hour Warrants**

Major Street Name = **Dale Evans Pkwy.** Total of Both Approaches (VPH) = **237**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Corwin Rd.** High Volume Approach (VPH) = **33**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #10

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

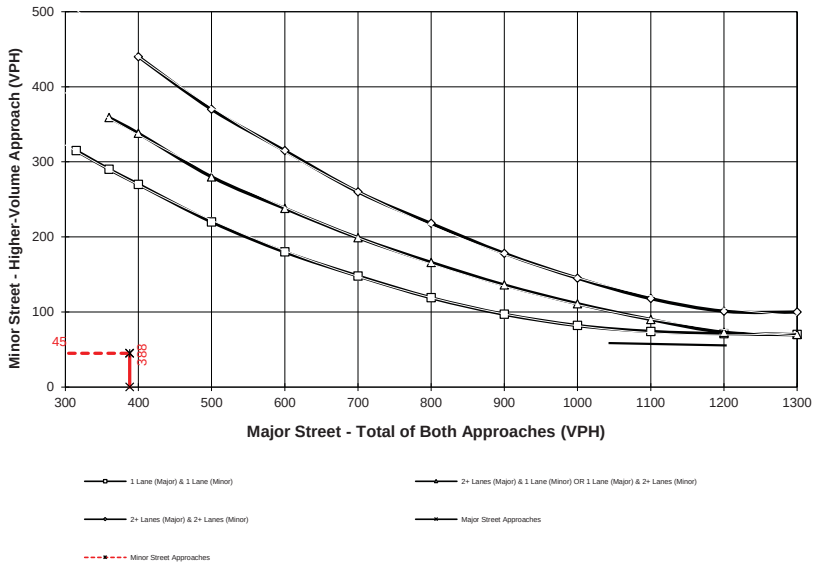
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING (2024) PM Peak Hour Warrants**

Major Street Name = **Dale Evans Pkwy.** Total of Both Approaches (VPH) = **388**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Corwin Rd.** High Volume Approach (VPH) = **45**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #10

APPENDIX 3.4: EXISTING (2024) CONDITIONS QUEUING ANALYSIS WORKSHEETS

This Page Intentionally Left Blank

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	9	10	28	6	142	1	7	30	3	123	0	22
Future Vol, veh/h	9	10	28	6	142	1	7	30	3	123	0	22
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	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	9	10	29	6	148	1	7	31	3	128	0	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	149	0	0	40	0	0	204	205	25	206	219	148
Stage 1	-	-	-	-	-	-	44	44	-	161	161	-
Stage 2	-	-	-	-	-	-	160	161	-	45	58	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1445	-	-	1583	-	-	758	695	1057	756	683	904
Stage 1	-	-	-	-	-	-	976	862	-	846	769	-
Stage 2	-	-	-	-	-	-	846	768	-	974	850	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1445	-	-	1583	-	-	731	687	1057	712	675	904
Mov Cap-2 Maneuver	-	-	-	-	-	-	731	687	-	712	675	-
Stage 1	-	-	-	-	-	-	969	857	-	842	765	-
Stage 2	-	-	-	-	-	-	821	765	-	930	845	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	1.44	0.29	10.36	11.15
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	713	300	-	-	72	-	-	736
HCM Lane V/C Ratio	0.058	0.006	-	-	0.004	-	-	0.205
HCM Control Delay (s/veh)	10.4	7.5	0	-	7.3	0	-	11.2
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.8

Intersection	
Int Delay, s/veh	2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	35	1	1	124	1	2
Future Vol, veh/h	35	1	1	124	1	2
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	79	79	79	79	79	79
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	44	1	1	157	1	3

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	85	80	0	0	158	0
Stage 1	80	-	-	-	-	-
Stage 2	5	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	922	986	-	-	1434	-
Stage 1	948	-	-	-	-	-
Stage 2	1023	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	921	986	-	-	1434	-
Mov Cap-2 Maneuver	921	-	-	-	-	-
Stage 1	948	-	-	-	-	-
Stage 2	1022	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	9.11	0	2.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	922	600	-
HCM Lane V/C Ratio	-	-	0.049	0.001	-
HCM Control Delay (s/veh)	-	-	9.1	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	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	5	16	45	8	213	1	4	25	10	198	0	19
Future Vol, veh/h	5	16	45	8	213	1	4	25	10	198	0	19
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	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	7	24	66	12	313	1	6	37	15	291	0	28

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	315	0	0	90	0	0	408	410	57	394	442	314
Stage 1	-	-	-	-	-	-	71	71	-	337	337	-
Stage 2	-	-	-	-	-	-	337	338	-	57	104	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1257	-	-	1518	-	-	557	535	1015	569	513	731
Stage 1	-	-	-	-	-	-	943	839	-	681	644	-
Stage 2	-	-	-	-	-	-	682	644	-	960	813	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1257	-	-	1518	-	-	528	526	1015	514	505	731
Mov Cap-2 Maneuver	-	-	-	-	-	-	528	526	-	514	505	-
Stage 1	-	-	-	-	-	-	938	834	-	675	638	-
Stage 2	-	-	-	-	-	-	649	638	-	899	808	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.6	0.27	11.62	21.7
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	601	119	-	-	65	-	-	528
HCM Lane V/C Ratio	0.095	0.006	-	-	0.008	-	-	0.605
HCM Control Delay (s/veh)	11.6	7.9	0	-	7.4	0	-	21.7
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	4

Intersection	
Int Delay, s/veh	1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	45	1	1	210	1	1
Future Vol, veh/h	45	1	1	210	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	56	56	56	56	56	56
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	80	2	2	375	2	2

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	195	189	0	0	377	0
Stage 1	189	-	-	-	-	-
Stage 2	5	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	799	858	-	-	1193	-
Stage 1	848	-	-	-	-	-
Stage 2	1023	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	798	858	-	-	1193	-
Mov Cap-2 Maneuver	798	-	-	-	-	-
Stage 1	848	-	-	-	-	-
Stage 2	1021	-	-	-	-	-

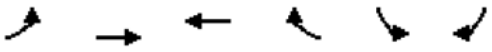
Approach	WB	NB	SB
HCM Control Delay, s/v	10.02	0	4.01
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	799	900	-
HCM Lane V/C Ratio	-	-	0.103	0.001	-
HCM Control Delay (s/veh)	-	-	10	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0	-

APPENDIX 5.1: OPENING YEAR CUMULATIVE (2027) WITHOUT PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

This Page Intentionally Left Blank

1: Corwin Rd. & Dakota Av.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	10	15	7	2	2	6
Future Volume (vph)	10	15	7	2	2	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		55	55		45	
Link Distance (ft)		3330	1344		1769	
Travel Time (s)		41.3	16.7		26.8	
Peak Hour Factor	0.64	0.64	0.64	0.64	0.64	0.64
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	3.3

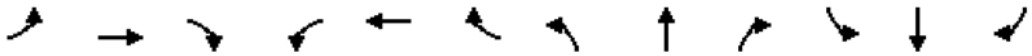
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	15	7	2	2	6
Future Vol, veh/h	10	15	7	2	2	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	64	64	64	64	64	64
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	16	23	11	3	3	9

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	14	0	-	0	67	13
Stage 1	-	-	-	-	13	-
Stage 2	-	-	-	-	55	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1617	-	-	-	943	1074
Stage 1	-	-	-	-	1016	-
Stage 2	-	-	-	-	973	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1617	-	-	-	934	1074
Mov Cap-2 Maneuver	-	-	-	-	934	-
Stage 1	-	-	-	-	1006	-
Stage 2	-	-	-	-	973	-

Approach	EB	WB	SB
HCM Control Delay, s/v	2.9	0	8.52
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	720	-	-	-	1035
HCM Lane V/C Ratio	0.01	-	-	-	0.012
HCM Control Delay (s/veh)	7.2	0	-	-	8.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

2: Ramona Rd. & Fresno Rd.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	1	0	0	0	1	1	0	0	0
Future Volume (vph)	0	0	0	1	0	0	0	1	1	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1354			321			1023			285	
Travel Time (s)		20.5			4.9			15.5			4.3	
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	1	0	0	0	1	1	0	0	0
Future Vol, veh/h	0	0	0	1	0	0	0	1	1	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	50	50	50	50	50	50	50	50	50
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	0	2	0	0	0	2	2	0	0	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	4	6	2	5	5	3	2	0	0	4	0	0
Stage 1	2	2	-	3	3	-	-	-	-	-	-	-
Stage 2	2	4	-	2	2	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	1022	893	1088	1021	894	1087	1634	-	-	1631	-	-
Stage 1	1026	898	-	1025	897	-	-	-	-	-	-	-
Stage 2	1026	897	-	1026	898	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	1022	893	1088	1021	894	1087	1634	-	-	1631	-	-
Mov Cap-2 Maneuver	1022	893	-	1021	894	-	-	-	-	-	-	-
Stage 1	1026	898	-	1025	897	-	-	-	-	-	-	-
Stage 2	1026	897	-	1026	898	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	8.53	0	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1634	-	-	-	1021	1631	-	-
HCM Lane V/C Ratio	-	-	-	-	0.002	-	-	-
HCM Control Delay (s/veh)	0	-	-	0	8.5	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0	0	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	4	5	2	1	4	4
Future Volume (vph)	4	5	2	1	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			55	55	
Link Distance (ft)	2664			475	6664	
Travel Time (s)	60.5			5.9	82.6	
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

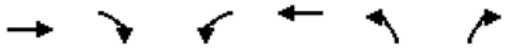
Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	5	2	1	4	4
Future Vol, veh/h	4	5	2	1	4	4
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	71	71	71	71	71	71
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	6	7	3	1	6	6

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	15	8	11	0	-	0
Stage 1	8	-	-	-	-	-
Stage 2	7	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	1008	1079	1621	-	-	-
Stage 1	1020	-	-	-	-	-
Stage 2	1021	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1006	1079	1621	-	-	-
Mov Cap-2 Maneuver	1006	-	-	-	-	-
Stage 1	1018	-	-	-	-	-
Stage 2	1021	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.49	4.82	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1200	-	1046	-	-
HCM Lane V/C Ratio	0.002	-	0.012	-	-
HCM Control Delay (s/veh)	7.2	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1128	234	58	391	93	11
Future Volume (vph)	1128	234	58	391	93	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	0		0	100
Storage Lanes		0	0		1	0
Taper Length (ft)			90		90	
Link Speed (mph)	45			45	55	
Link Distance (ft)	5327			1835	6664	
Travel Time (s)	80.7			27.8	82.6	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	93

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1128	234	58	391	93	11
Future Vol, veh/h	1128	234	58	391	93	11
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	76	76	76	76	76	76
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1484	308	76	514	122	14

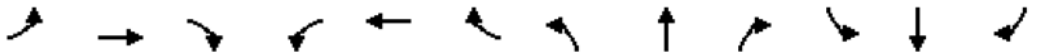
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1792	0	2305	1638
Stage 1	-	-	-	-	1638	-
Stage 2	-	-	-	-	667	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	350	-	~ 43	125
Stage 1	-	-	-	-	176	-
Stage 2	-	-	-	-	514	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	350	-	~ 30	125
Mov Cap-2 Maneuver	-	-	-	-	~ 30	-
Stage 1	-	-	-	-	176	-
Stage 2	-	-	-	-	357	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	2.34	$ 1703.09
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	32	-	-	233	-
HCM Lane V/C Ratio	4.23	-	-	0.218	-
HCM Control Delay (s/veh)	$ 1703.1	-	-	18.1	0
HCM Lane LOS	F	-	-	C	A
HCM 95th %tile Q(veh)	16.2	-	-	0.8	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

5: Dale Evans Pkwy. & Johnson Rd.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	1201	100	91	442	176	50	149	282	406	85	7
Future Volume (vph)	17	1201	100	91	442	176	50	149	282	406	85	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		165	100		0	325		0
Storage Lanes	0		0	0		1	1		1	1		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		45			45			55			55	
Link Distance (ft)		7616			5327			4005			1074	
Travel Time (s)		115.4			80.7			49.6			13.3	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	985.4
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	1201	100	91	442	176	50	149	282	406	85	7
Future Vol, veh/h	17	1201	100	91	442	176	50	149	282	406	85	7
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	21	1483	123	112	546	217	62	184	348	501	105	9
Number of Lanes	0	1	0	0	1	1	1	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	3	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	2	2	1
HCM Control Delay, s/veh	1885.2	403.7	94.6	292.3
HCM LOS	F	F	F	F

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	1%	17%	0%	100%	0%
Vol Thru, %	0%	100%	0%	91%	83%	0%	0%	92%
Vol Right, %	0%	0%	100%	8%	0%	100%	0%	8%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	50	149	282	1318	533	176	406	92
LT Vol	50	0	0	17	91	0	406	0
Through Vol	0	149	0	1201	442	0	0	85
RT Vol	0	0	282	100	0	176	0	7
Lane Flow Rate	62	184	348	1627	658	217	501	114
Geometry Grp	6	6	6	6	6	6	6	6
Degree of Util (X)	0.194	0.554	0.981	5.113	2.006	0.615	1.613	0.348
Departure Headway (Hd)	25.59	25.017	24.214	14.204	22.581	21.656	22.265	21.601
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	141	147	153	277	171	169	170	168
Service Time	23.29	22.717	21.914	11.904	20.281	19.356	19.965	19.301
HCM Lane V/C Ratio	0.44	1.252	2.275	5.874	3.848	1.284	2.947	0.679
HCM Control Delay, s/veh	34.3	55.1	126.1	1885.2	519.2	53.9	350.5	35.4
HCM Lane LOS	D	F	F	F	F	F	F	E
HCM 95th-tile Q	0.7	2.8	7.2	133.9	24.9	3.4	17.9	1.4



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	497	1	30	1317	1	55
Future Volume (vph)	497	1	30	1317	1	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	45		45			45
Link Distance (ft)	7616		549			661
Travel Time (s)	115.4		8.3			10.0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	102.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	497	1	30	1317	1	55
Future Vol, veh/h	497	1	30	1317	1	55
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	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	578	1	35	1531	1	64

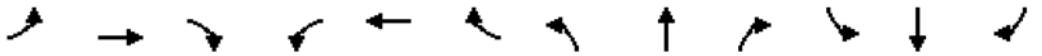
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	867	801	0	0	1566	0
Stage 1	801	-	-	-	-	-
Stage 2	66	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	~ 326	388	-	-	427	-
Stage 1	~ 445	-	-	-	-	-
Stage 2	962	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 325	388	-	-	427	-
Mov Cap-2 Maneuver	~ 325	-	-	-	-	-
Stage 1	~ 445	-	-	-	-	-
Stage 2	959	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	$ 391.13	0	0.24
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	325	32	-
HCM Lane V/C Ratio	-	-	1.781	0.003	-
HCM Control Delay (s/veh)	-	-	$ 391.1	13.5	0
HCM Lane LOS	-	-	F	B	A
HCM 95th %tile Q(veh)	-	-	37.5	0	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

7: Frontage Rd./I-15 NB Ramps & Stoddard Wells Rd.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	87	85	25	614	56	7	48	45	1354	0	23
Future Volume (vph)	10	87	85	25	614	56	7	48	45	1354	0	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		889			1144			979			330	
Travel Time (s)		13.5			17.3			22.3			7.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	1562

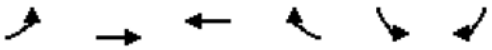
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	87	85	25	614	56	7	48	45	1354	0	23
Future Vol, veh/h	10	87	85	25	614	56	7	48	45	1354	0	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	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	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	10	91	89	26	640	58	7	50	47	1410	0	24

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	698	0	0	179	0	0	847	906	135	857	921	669
Stage 1	-	-	-	-	-	-	156	156	-	721	721	-
Stage 2	-	-	-	-	-	-	692	750	-	136	200	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	908	-	-	1409	-	-	284	278	919	~ 280	273	461
Stage 1	-	-	-	-	-	-	851	773	-	~ 422	435	-
Stage 2	-	-	-	-	-	-	438	422	-	~ 872	739	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	908	-	-	1409	-	-	258	266	919	~ 208	261	461
Mov Cap-2 Maneuver	-	-	-	-	-	-	258	266	-	~ 208	261	-
Stage 1	-	-	-	-	-	-	840	763	-	~ 409	422	-
Stage 2	-	-	-	-	-	-	402	409	-	~ 763	730	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.5	0.27	17.56	$ 2668.72
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	390	90	-	-	64	-	-	210
HCM Lane V/C Ratio	0.267	0.011	-	-	0.018	-	-	6.837
HCM Control Delay (s/veh)	17.6	9	0	-	7.6	0	-	$ 2668.7
HCM Lane LOS	C	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	1.1	0	-	-	0.1	-	-	156.5

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1	36	58	587	144	3
Future Volume (vph)	1	36	58	587	144	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0	0	25
Storage Lanes	0			0	1	0
Taper Length (ft)	90				90	
Link Speed (mph)		45	45		45	
Link Distance (ft)		1552	889		1482	
Travel Time (s)		23.5	13.5		22.5	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	36	58	587	144	3
Future Vol, veh/h	1	36	58	587	144	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	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, %	0	0	0	0	0	0
Mvmt Flow	1	43	69	699	171	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	69	0	-	0	464	418
Stage 1	-	-	-	-	418	-
Stage 2	-	-	-	-	45	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1545	-	-	-	560	639
Stage 1	-	-	-	-	668	-
Stage 2	-	-	-	-	982	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1545	-	-	-	560	639
Mov Cap-2 Maneuver	-	-	-	-	560	-
Stage 1	-	-	-	-	668	-
Stage 2	-	-	-	-	982	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.2	0	14.29
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	49	-	-	-	561
HCM Lane V/C Ratio	0.001	-	-	-	0.312
HCM Control Delay (s/veh)	7.3	0	-	-	14.3
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	1.3



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	145	1	1	587	1	2
Future Volume (vph)	145	1	1	587	1	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		45			45
Link Distance (ft)	263		1482			525
Travel Time (s)	6.0		22.5			8.0
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

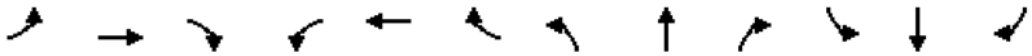
Intersection	
Int Delay, s/veh	2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	145	1	1	587	1	2
Future Vol, veh/h	145	1	1	587	1	2
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	79	79	79	79	79	79
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	184	1	1	743	1	3

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	378	373	0	0	744	0
Stage 1	373	-	-	-	-	-
Stage 2	5	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	628	678	-	-	873	-
Stage 1	701	-	-	-	-	-
Stage 2	1023	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	627	678	-	-	873	-
Mov Cap-2 Maneuver	627	-	-	-	-	-
Stage 1	701	-	-	-	-	-
Stage 2	1022	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	13.12	0	3.04
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	627	600	-
HCM Lane V/C Ratio	-	-	0.295	0.001	-
HCM Control Delay (s/veh)	-	-	13.1	9.1	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.2	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	169	12	2	7	1	3	6	345	21	1	109	58
Future Volume (vph)	169	12	2	7	1	3	6	345	21	1	109	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1375			3330			1135			747	
Travel Time (s)		17.0			41.3			14.1			9.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other

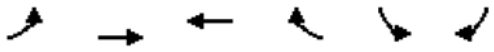
Control Type: Unsignalized

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	169	12	2	7	1	3	6	345	21	1	109	58
Future Vol, veh/h	169	12	2	7	1	3	6	345	21	1	109	58
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	188	13	2	8	1	3	7	383	23	1	121	64
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, s/veh	11	8.8	13.1	9.4
HCM LOS	B	A	B	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	92%	64%	1%
Vol Thru, %	93%	7%	9%	65%
Vol Right, %	6%	1%	27%	35%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	372	183	11	168
LT Vol	6	169	7	1
Through Vol	345	12	1	109
RT Vol	21	2	3	58
Lane Flow Rate	413	203	12	187
Geometry Grp	1	1	1	1
Degree of Util (X)	0.538	0.308	0.019	0.248
Departure Headway (Hd)	4.685	5.459	5.713	4.776
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	765	651	630	745
Service Time	2.749	3.554	3.713	2.856
HCM Lane V/C Ratio	0.54	0.312	0.019	0.251
HCM Control Delay, s/veh	13.1	11	8.8	9.4
HCM Lane LOS	B	B	A	A
HCM 95th-tile Q	3.3	1.3	0.1	1



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	22	5	20	2	2	25
Future Volume (vph)	22	5	20	2	2	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		55	55		45	
Link Distance (ft)		3330	1344		1769	
Travel Time (s)		41.3	16.7		26.8	
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	5.2

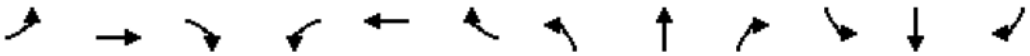
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	22	5	20	2	2	25
Future Vol, veh/h	22	5	20	2	2	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	69	69	69	69	69	69
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	32	7	29	3	3	36

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	32	0	-	0	101	30
Stage 1	-	-	-	-	30	-
Stage 2	-	-	-	-	71	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1593	-	-	-	902	1050
Stage 1	-	-	-	-	997	-
Stage 2	-	-	-	-	957	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1593	-	-	-	884	1050
Mov Cap-2 Maneuver	-	-	-	-	884	-
Stage 1	-	-	-	-	977	-
Stage 2	-	-	-	-	957	-

Approach	EB	WB	SB
HCM Control Delay, s/v	5.95	0	8.61
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1467	-	-	-	1035
HCM Lane V/C Ratio	0.02	-	-	-	0.038
HCM Control Delay (s/veh)	7.3	0	-	-	8.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

2: Ramona Rd. & Fresno Rd.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	2	0	0	0	1	1	0	0	0
Future Volume (vph)	0	0	0	2	0	0	0	1	1	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1354			321			1023			285	
Travel Time (s)		20.5			4.9			15.5			4.3	
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	2	0	0	0	1	1	0	0	0
Future Vol, veh/h	0	0	0	2	0	0	0	1	1	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	50	50	50	50	50	50	50	50	50
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	0	4	0	0	0	2	2	0	0	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	4	6	2	5	5	3	2	0	0	4	0	0
Stage 1	2	2	-	3	3	-	-	-	-	-	-	-
Stage 2	2	4	-	2	2	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	1022	893	1088	1021	894	1087	1634	-	-	1631	-	-
Stage 1	1026	898	-	1025	897	-	-	-	-	-	-	-
Stage 2	1026	897	-	1026	898	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	1022	893	1088	1021	894	1087	1634	-	-	1631	-	-
Mov Cap-2 Maneuver	1022	893	-	1021	894	-	-	-	-	-	-	-
Stage 1	1026	898	-	1025	897	-	-	-	-	-	-	-
Stage 2	1026	897	-	1026	898	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	8.54	0	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1634	-	-	-	1021	1631	-	-
HCM Lane V/C Ratio	-	-	-	-	0.004	-	-	-
HCM Control Delay (s/veh)	0	-	-	0	8.5	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0	0	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	21	1	2	1	3	23
Future Volume (vph)	21	1	2	1	3	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			55	55	
Link Distance (ft)	2664			475	6664	
Travel Time (s)	60.5			5.9	82.6	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

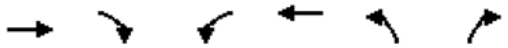
Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	21	1	2	1	3	23
Future Vol, veh/h	21	1	2	1	3	23
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	73	73	73	73	73	73
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	29	1	3	1	4	32

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	27	20	36	0	-	0
Stage 1	20	-	-	-	-	-
Stage 2	7	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	994	1064	1588	-	-	-
Stage 1	1008	-	-	-	-	-
Stage 2	1021	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	992	1064	1588	-	-	-
Mov Cap-2 Maneuver	992	-	-	-	-	-
Stage 1	1006	-	-	-	-	-
Stage 2	1021	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.73	4.85	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1200	-	995	-	-
HCM Lane V/C Ratio	0.002	-	0.03	-	-
HCM Control Delay (s/veh)	7.3	0	8.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	689	144	38	1026	282	43
Future Volume (vph)	689	144	38	1026	282	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	0		0	100
Storage Lanes		0	0		1	0
Taper Length (ft)			90		90	
Link Speed (mph)	45			45	55	
Link Distance (ft)	5327			1835	6664	
Travel Time (s)	80.7			27.8	82.6	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1011.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	689	144	38	1026	282	43
Future Vol, veh/h	689	144	38	1026	282	43
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	76	76	76	76	76	76
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	907	189	50	1350	371	57

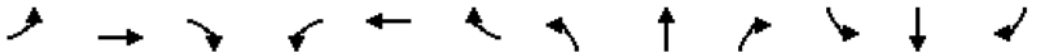
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1096	0	2451	1001
Stage 1	-	-	-	-	1001	-
Stage 2	-	-	-	-	1450	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	644	-	~ 35	297
Stage 1	-	-	-	-	~ 358	-
Stage 2	-	-	-	-	~ 218	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	644	-	~ 24	297
Mov Cap-2 Maneuver	-	-	-	-	~ 24	-
Stage 1	-	-	-	-	~ 358	-
Stage 2	-	-	-	-	~ 150	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.39	$ 6913.96
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	27	-	-	64	-
HCM Lane V/C Ratio	15.75	-	-	0.078	-
HCM Control Delay (s/veh)	$ 6914	-	-	11.1	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	53.1	-	-	0.3	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

5: Dale Evans Pkwy. & Johnson Rd.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	759	79	313	1257	361	139	101	181	263	220	17
Future Volume (vph)	9	759	79	313	1257	361	139	101	181	263	220	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		165	100		0	325		0
Storage Lanes	0		0	0		1	1		1	1		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		45			45			55			55	
Link Distance (ft)		7616			5327			4005			1074	
Travel Time (s)		115.4			80.7			49.6			13.3	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	1309.2
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	759	79	313	1257	361	139	101	181	263	220	17
Future Vol, veh/h	9	759	79	313	1257	361	139	101	181	263	220	17
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	11	949	99	391	1571	451	174	126	226	329	275	21
Number of Lanes	0	1	0	0	1	1	1	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	3	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	2	2	1
HCM Control Delay, s/veh	1190.2	1957.1	6.8	105.3
HCM LOS	F	F	A	F

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	1%	20%	0%	100%	0%
Vol Thru, %	0%	100%	0%	90%	80%	0%	0%	93%
Vol Right, %	0%	0%	100%	9%	0%	100%	0%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	139	101	181	847	1570	361	263	237
LT Vol	139	0	0	9	313	0	263	0
Through Vol	0	101	0	759	1257	0	0	220
RT Vol	0	0	181	79	0	361	0	17
Lane Flow Rate	174	126	226	1059	1963	451	329	296
Geometry Grp	6	6	6	6	6	6	6	6
Degree of Util (X)	0.572	0.398	0.67	3.554	6.154	1.315	1.078	0.926
Departure Headway (Hd)	2.453	1.897	1.12	16.164	16.876	15.979	15.871	15.248
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	1470	1900	3217	244	236	230	230	240
Service Time	0.153	-0.403	-1.18	13.864	14.576	13.679	13.571	12.948
HCM Lane V/C Ratio	0.118	0.066	0.07	4.34	8.318	1.961	1.43	1.233
HCM Control Delay, s/veh	8.4	5.8	6.1	1190.2	2358.9	209.9	125.6	82.7
HCM Lane LOS	A	A	A	F	F	F	F	F
HCM 95th-tile Q	3.8	2	5.8	75.1	140.9	15.9	10.7	8

6: Stoddard Wells Rd. & Johnson Rd.



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1410	3	13	845	2	29
Future Volume (vph)	1410	3	13	845	2	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	45		45			45
Link Distance (ft)	7616		549			661
Travel Time (s)	115.4		8.3			10.0
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	1171.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1410	3	13	845	2	29
Future Vol, veh/h	1410	3	13	845	2	29
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	67	67	67	67	67	67
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	2104	4	19	1261	3	43

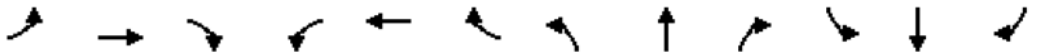
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	699	650	0	0	1281	0
Stage 1	650	-	-	-	-	-
Stage 2	49	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	~ 409	473	-	-	549	-
Stage 1	~ 523	-	-	-	-	-
Stage 2	~ 978	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 407	473	-	-	549	-
Mov Cap-2 Maneuver	~ 407	-	-	-	-	-
Stage 1	~ 523	-	-	-	-	-
Stage 2	~ 973	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	$ 1907.84	0	0.75
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	407	116	-
HCM Lane V/C Ratio	-	-	5.185	0.005	-
HCM Control Delay (s/veh)	-	-	$ 1907.8	11.6	0
HCM Lane LOS	-	-	F	B	A
HCM 95th %tile Q(veh)	-	-	216.4	0	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

7: Frontage Rd./I-15 NB Ramps & Stoddard Wells Rd.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	93	69	49	1484	61	4	79	39	889	0	20
Future Volume (vph)	5	93	69	49	1484	61	4	79	39	889	0	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		889			1144			979			330	
Travel Time (s)		13.5			17.3			22.3			7.5	
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	12514

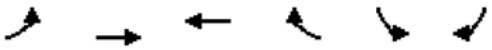
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	93	69	49	1484	61	4	79	39	889	0	20
Future Vol, veh/h	5	93	69	49	1484	61	4	79	39	889	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	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	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	7	137	101	72	2182	90	6	116	57	1307	0	29

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2272	0	0	238	0	0	2529	2618	188	2581	2624	2227
Stage 1	-	-	-	-	-	-	202	202	-	2371	2371	-
Stage 2	-	-	-	-	-	-	2326	2416	-	210	253	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	228	-	-	1341	-	-	19	~ 25	860	~ 17	24	55
Stage 1	-	-	-	-	-	-	804	738	-	~ 47	68	-
Stage 2	-	-	-	-	-	-	50	~ 65	-	~ 797	701	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	228	-	-	1341	-	-	8	~ 24	860	~ 16	23	55
Mov Cap-2 Maneuver	-	-	-	-	-	-	8	~ 24	-	~ 16	23	-
Stage 1	-	-	-	-	-	-	774	710	-	~ 47	68	-
Stage 2	-	-	-	-	-	-	24	~ 65	-	~ 599	675	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.64	0.24	$ 2358.55	$ 38119.68
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	32	50	-	-	~ 55	-	-	16
HCM Lane V/C Ratio	5.687	0.032	-	-	0.054	-	-	84.683
HCM Control Delay (s/veh)	$ 2358.6	21.3	0	-	7.8	0	-	$ 38119.7
HCM Lane LOS	F	C	A	-	A	A	-	F
HCM 95th %tile Q(veh)	21.6	0.1	-	-	0.2	-	-	168.1

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	6	36	54	1455	130	2
Future Volume (vph)	6	36	54	1455	130	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0	0	25
Storage Lanes	0			0	1	0
Taper Length (ft)	90				90	
Link Speed (mph)		45	45		45	
Link Distance (ft)		1552	889		1482	
Travel Time (s)		23.5	13.5		22.5	
Peak Hour Factor	0.58	0.58	0.58	0.58	0.58	0.58
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	25.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	36	54	1455	130	2
Future Vol, veh/h	6	36	54	1455	130	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	58	58	58	58	58	58
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	10	62	93	2509	224	3

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	93	0	-	0	1430	1347
Stage 1	-	-	-	-	1347	-
Stage 2	-	-	-	-	83	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1514	-	-	-	~ 150	187
Stage 1	-	-	-	-	245	-
Stage 2	-	-	-	-	946	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1514	-	-	-	~ 149	187
Mov Cap-2 Maneuver	-	-	-	-	~ 149	-
Stage 1	-	-	-	-	243	-
Stage 2	-	-	-	-	946	-

Approach	EB	WB	SB
HCM Control Delay, s/v	1.06	0	$ 322.07
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	257	-	-	-	149
HCM Lane V/C Ratio	0.007	-	-	-	1.525
HCM Control Delay (s/veh)	7.4	0	-	-	$ 322.1
HCM Lane LOS	A	A	-	-	F
HCM 95th %tile Q(veh)	0	-	-	-	15.4

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	132	1	1	1460	1	1
Future Volume (vph)	132	1	1	1460	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		45			45
Link Distance (ft)	263		1482			525
Travel Time (s)	6.0		22.5			8.0
Peak Hour Factor	0.56	0.56	0.56	0.56	0.56	0.56
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	20.3

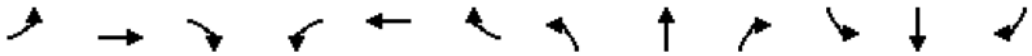
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	132	1	1	1460	1	1
Future Vol, veh/h	132	1	1	1460	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	56	56	56	56	56	56
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	236	2	2	2607	2	2

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1311	1305	0	0	2609	0
Stage 1	1305	-	-	-	-	-
Stage 2	5	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	~ 177	198	-	-	168	-
Stage 1	256	-	-	-	-	-
Stage 2	1023	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 175	198	-	-	168	-
Mov Cap-2 Maneuver	~ 175	-	-	-	-	-
Stage 1	256	-	-	-	-	-
Stage 2	1012	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/veh	242.95	0	13.35
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	175	168	-
HCM Lane V/C Ratio	-	-	1.355	0.011	-
HCM Control Delay (s/veh)	-	-	242.9	26.7	0
HCM Lane LOS	-	-	F	D	A
HCM 95th %tile Q(veh)	-	-	14.1	0	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	6	2	29	17	2	3	212	17	4	418	197
Future Volume (vph)	92	6	2	29	17	2	3	212	17	4	418	197
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1375			3330			1135			747	
Travel Time (s)		17.0			41.3			14.1			9.3	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	21.3
Intersection LOS	C

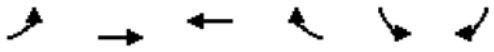
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	92	6	2	29	17	2	3	212	17	4	418	197
Future Vol, veh/h	92	6	2	29	17	2	3	212	17	4	418	197
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	99	6	2	31	18	2	3	228	18	4	449	212
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, s/veh	10.9	10.1	11.1	27.7
HCM LOS	B	B	B	D

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	1%	92%	60%	1%
Vol Thru, %	91%	6%	35%	68%
Vol Right, %	7%	2%	4%	32%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	232	100	48	619
LT Vol	3	92	29	4
Through Vol	212	6	17	418
RT Vol	17	2	2	197
Lane Flow Rate	249	108	52	666
Geometry Grp	1	1	1	1
Degree of Util (X)	0.36	0.189	0.092	0.85
Departure Headway (Hd)	5.188	6.337	6.416	4.597
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	694	566	557	792
Service Time	3.223	4.388	4.471	2.597
HCM Lane V/C Ratio	0.359	0.191	0.093	0.841
HCM Control Delay, s/veh	11.1	10.9	10.1	27.7
HCM Lane LOS	B	B	B	D
HCM 95th-tile Q	1.6	0.7	0.3	10.1

APPENDIX 5.2: OPENING YEAR CUMULATIVE (2027) WITH PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

This Page Intentionally Left Blank



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	45	36	13	1	1	17
Future Volume (vph)	45	36	13	1	1	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		55	55		45	
Link Distance (ft)		3330	1344		1769	
Travel Time (s)		41.3	16.7		26.8	
Peak Hour Factor	0.64	0.64	0.64	0.64	0.64	0.64
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

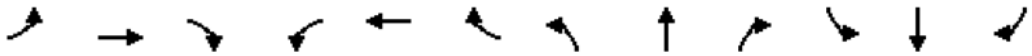
Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	45	36	13	1	1	17
Future Vol, veh/h	45	36	13	1	1	17
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	64	64	64	64	64	64
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	70	56	20	2	2	27

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	22	0	-	0	218	21
Stage 1	-	-	-	-	21	-
Stage 2	-	-	-	-	197	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1607	-	-	-	775	1062
Stage 1	-	-	-	-	1007	-
Stage 2	-	-	-	-	841	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1607	-	-	-	740	1062
Mov Cap-2 Maneuver	-	-	-	-	740	-
Stage 1	-	-	-	-	961	-
Stage 2	-	-	-	-	841	-

Approach	EB	WB	SB
HCM Control Delay, s/v	4.08	0	8.57
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1000	-	-	-	1037
HCM Lane V/C Ratio	0.044	-	-	-	0.027
HCM Control Delay (s/veh)	7.3	0	-	-	8.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1	1	1	1	1	1	21	1	1	6	1
Future Volume (vph)	1	1	1	1	1	1	1	21	1	1	6	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1354			321			1023			285	
Travel Time (s)		20.5			4.9			15.5			4.3	
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	1	1	1	1	1	21	1	1	6	1
Future Vol, veh/h	1	1	1	1	1	1	1	21	1	1	6	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	50	50	50	50	50	50	50	50	50
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	2	2	2	2	2	2	2	42	2	2	12	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	64	65	13	64	65	43	14	0	0	44	0	0
Stage 1	17	17	-	47	47	-	-	-	-	-	-	-
Stage 2	47	48	-	17	18	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	935	830	1073	935	830	1033	1617	-	-	1577	-	-
Stage 1	1008	885	-	972	860	-	-	-	-	-	-	-
Stage 2	972	859	-	1008	884	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	929	827	1073	929	827	1033	1617	-	-	1577	-	-
Mov Cap-2 Maneuver	929	827	-	929	827	-	-	-	-	-	-	-
Stage 1	1006	884	-	970	859	-	-	-	-	-	-	-
Stage 2	966	858	-	1002	883	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	8.89	8.93	0.31	0.91
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	78	-	-	932	922	219	-	-
HCM Lane V/C Ratio	0.001	-	-	0.006	0.007	0.001	-	-
HCM Control Delay (s/veh)	7.2	0	-	8.9	8.9	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	16	5	2	1	4	43
Future Volume (vph)	16	5	2	1	4	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			55	55	
Link Distance (ft)	2664			475	6664	
Travel Time (s)	60.5			5.9	82.6	
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	16	5	2	1	4	43
Future Vol, veh/h	16	5	2	1	4	43
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	71	71	71	71	71	71
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	23	7	3	1	6	61

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	43	36	66	0	-	0
Stage 1	36	-	-	-	-	-
Stage 2	7	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	973	1042	1548	-	-	-
Stage 1	992	-	-	-	-	-
Stage 2	1021	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	971	1042	1548	-	-	-
Mov Cap-2 Maneuver	971	-	-	-	-	-
Stage 1	990	-	-	-	-	-
Stage 2	1021	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.76	4.89	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1200	-	987	-	-
HCM Lane V/C Ratio	0.002	-	0.03	-	-
HCM Control Delay (s/veh)	7.3	0	8.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1128	265	65	391	103	13
Future Volume (vph)	1128	265	65	391	103	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	0		0	100
Storage Lanes		0	0		1	0
Taper Length (ft)			90		90	
Link Speed (mph)	45			45	55	
Link Distance (ft)	5327			1835	6664	
Travel Time (s)	80.7			27.8	82.6	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	132

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1128	265	65	391	103	13
Future Vol, veh/h	1128	265	65	391	103	13
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	76	76	76	76	76	76
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1484	349	86	514	136	17

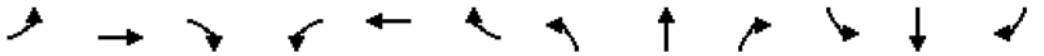
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1833	0	2344	1659
Stage 1	-	-	-	-	1659	-
Stage 2	-	-	-	-	686	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	337	-	~ 40	122
Stage 1	-	-	-	-	172	-
Stage 2	-	-	-	-	504	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	337	-	~ 26	122
Mov Cap-2 Maneuver	-	-	-	-	~ 26	-
Stage 1	-	-	-	-	172	-
Stage 2	-	-	-	-	325	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	2.75	$ 2224.75
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	29	-	-	241	-
HCM Lane V/C Ratio	5.333	-	-	0.254	-
HCM Control Delay (s/veh)	$ 2224.7	-	-	19.3	0
HCM Lane LOS	F	-	-	C	A
HCM 95th %tile Q(veh)	18.6	-	-	1	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

5: Dale Evans Pkwy. & Johnson Rd.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	1232	116	91	452	176	55	151	282	406	93	7
Future Volume (vph)	17	1232	116	91	452	176	55	151	282	406	93	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		165	100		0	325		0
Storage Lanes	0		0	0		1	1		1	1		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		45			45			55			55	
Link Distance (ft)		7616			5327			4005			1074	
Travel Time (s)		115.4			80.7			49.6			13.3	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	1038.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	1232	116	91	452	176	55	151	282	406	93	7
Future Vol, veh/h	17	1232	116	91	452	176	55	151	282	406	93	7
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	21	1521	143	112	558	217	68	186	348	501	115	9
Number of Lanes	0	1	0	0	1	1	1	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	3	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	2	2	1
HCM Control Delay, s/veh	1978.5	421.8	95.5	290.9
HCM LOS	F	F	F	F

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	1%	17%	0%	100%	0%
Vol Thru, %	0%	100%	0%	90%	83%	0%	0%	93%
Vol Right, %	0%	0%	100%	8%	0%	100%	0%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	55	151	282	1365	543	176	406	100
LT Vol	55	0	0	17	91	0	406	0
Through Vol	0	151	0	1232	452	0	0	93
RT Vol	0	0	282	116	0	176	0	7
Lane Flow Rate	68	186	348	1685	670	217	501	123
Geometry Grp	6	6	6	6	6	6	6	6
Degree of Util (X)	0.214	0.563	0.983	5.32	2.053	0.618	1.617	0.38
Departure Headway (Hd)	25.994	25.419	24.614	14.304	22.965	22.038	22.673	22.012
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	139	144	153	270	168	167	165	165
Service Time	23.694	23.119	22.314	12.004	20.665	19.738	20.373	19.712
HCM Lane V/C Ratio	0.489	1.292	2.275	6.241	3.988	1.299	3.036	0.745
HCM Control Delay, s/veh	35.6	56.7	127.9	1978.5	540.7	55	353.3	37.6
HCM Lane LOS	E	F	F	F	F	F	F	E
HCM 95th-tile Q	0.8	2.8	7.2	139.5	25.4	3.4	17.7	1.6

6: Stoddard Wells Rd. & Johnson Rd.



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	512	1	30	1364	1	55
Future Volume (vph)	512	1	30	1364	1	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	45		45			45
Link Distance (ft)	7616		549			661
Travel Time (s)	115.4		8.3			10.0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	116.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	512	1	30	1364	1	55
Future Vol, veh/h	512	1	30	1364	1	55
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	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	595	1	35	1586	1	64

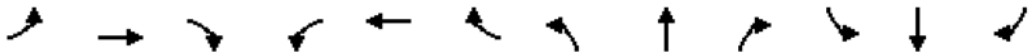
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	894	828	0	0	1621	0
Stage 1	828	-	-	-	-	-
Stage 2	66	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	~ 314	374	-	-	407	-
Stage 1	~ 433	-	-	-	-	-
Stage 2	962	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 313	374	-	-	407	-
Mov Cap-2 Maneuver	~ 313	-	-	-	-	-
Stage 1	~ 433	-	-	-	-	-
Stage 2	959	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	$ 446.33	0	0.25
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	313	32	-
HCM Lane V/C Ratio	-	-	1.904	0.003	-
HCM Control Delay (s/veh)	-	-	$ 446.3	13.9	0
HCM Lane LOS	-	-	F	B	A
HCM 95th %tile Q(veh)	-	-	40.9	0	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

7: Frontage Rd./I-15 NB Ramps & Stoddard Wells Rd.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	87	85	25	629	56	7	48	45	1401	0	23
Future Volume (vph)	10	87	85	25	629	56	7	48	45	1401	0	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		889			1144			979			330	
Travel Time (s)		13.5			17.3			22.3			7.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	1693.2

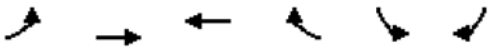
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	87	85	25	629	56	7	48	45	1401	0	23
Future Vol, veh/h	10	87	85	25	629	56	7	48	45	1401	0	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	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	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	10	91	89	26	655	58	7	50	47	1459	0	24

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	714	0	0	179	0	0	863	921	135	873	936	684
Stage 1	-	-	-	-	-	-	156	156	-	736	736	-
Stage 2	-	-	-	-	-	-	707	766	-	136	200	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	896	-	-	1409	-	-	277	272	919	~ 273	267	452
Stage 1	-	-	-	-	-	-	851	773	-	~ 414	428	-
Stage 2	-	-	-	-	-	-	429	415	-	~ 872	739	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	896	-	-	1409	-	-	251	261	919	~ 202	255	452
Mov Cap-2 Maneuver	-	-	-	-	-	-	251	261	-	~ 202	255	-
Stage 1	-	-	-	-	-	-	840	762	-	~ 401	415	-
Stage 2	-	-	-	-	-	-	394	402	-	~ 763	730	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.5	0.27	17.87	$ 2871.26
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	383	90	-	-	62	-	-	204
HCM Lane V/C Ratio	0.272	0.012	-	-	0.018	-	-	7.285
HCM Control Delay (s/veh)	17.9	9.1	0	-	7.6	0	-	$ 2871.3
HCM Lane LOS	C	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	1.1	0	-	-	0.1	-	-	163.4

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1	36	58	602	144	3
Future Volume (vph)	1	36	58	602	144	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0	0	25
Storage Lanes	0			0	1	0
Taper Length (ft)	90				90	
Link Speed (mph)		45	45		45	
Link Distance (ft)		1552	889		1482	
Travel Time (s)		23.5	13.5		22.5	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	36	58	602	144	3
Future Vol, veh/h	1	36	58	602	144	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	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, %	0	0	0	0	0	0
Mvmt Flow	1	43	69	717	171	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	69	0	-	0	473	427
Stage 1	-	-	-	-	427	-
Stage 2	-	-	-	-	45	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1545	-	-	-	554	632
Stage 1	-	-	-	-	662	-
Stage 2	-	-	-	-	982	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1545	-	-	-	553	632
Mov Cap-2 Maneuver	-	-	-	-	553	-
Stage 1	-	-	-	-	662	-
Stage 2	-	-	-	-	982	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.2	0	14.45
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	49	-	-	-	555
HCM Lane V/C Ratio	0.001	-	-	-	0.315
HCM Control Delay (s/veh)	7.3	0	-	-	14.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	1.3



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	145	1	1	602	1	2
Future Volume (vph)	145	1	1	602	1	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		45			45
Link Distance (ft)	263		1482			525
Travel Time (s)	6.0		22.5			8.0
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

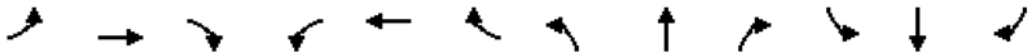
Intersection	
Int Delay, s/veh	2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	145	1	1	602	1	2
Future Vol, veh/h	145	1	1	602	1	2
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	79	79	79	79	79	79
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	184	1	1	762	1	3

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	387	382	0	0	763	0
Stage 1	382	-	-	-	-	-
Stage 2	5	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	620	669	-	-	858	-
Stage 1	694	-	-	-	-	-
Stage 2	1023	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	619	669	-	-	858	-
Mov Cap-2 Maneuver	619	-	-	-	-	-
Stage 1	694	-	-	-	-	-
Stage 2	1022	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	13.26	0	3.07
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	619	600	-
HCM Lane V/C Ratio	-	-	0.298	0.001	-
HCM Control Delay (s/veh)	-	-	13.3	9.2	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.2	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	169	29	2	12	6	10	6	345	36	25	109	58
Future Volume (vph)	169	29	2	12	6	10	6	345	36	25	109	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1375			3330			1135			747	
Travel Time (s)		17.0			41.3			14.1			9.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	12.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	169	29	2	12	6	10	6	345	36	25	109	58
Future Vol, veh/h	169	29	2	12	6	10	6	345	36	25	109	58
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	188	32	2	13	7	11	7	383	40	28	121	64
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, s/veh	11.9	9.2	14.8	10.3
HCM LOS	B	A	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	85%	43%	13%
Vol Thru, %	89%	15%	21%	57%
Vol Right, %	9%	1%	36%	30%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	387	200	28	192
LT Vol	6	169	12	25
Through Vol	345	29	6	109
RT Vol	36	2	10	58
Lane Flow Rate	430	222	31	213
Geometry Grp	1	1	1	1
Degree of Util (X)	0.589	0.353	0.05	0.302
Departure Headway (Hd)	4.934	5.723	5.833	5.091
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	735	629	612	706
Service Time	2.934	3.759	3.884	3.124
HCM Lane V/C Ratio	0.585	0.353	0.051	0.302
HCM Control Delay, s/veh	14.8	11.9	9.2	10.3
HCM Lane LOS	B	B	A	B
HCM 95th-tile Q	3.9	1.6	0.2	1.3

11: Dachshund Av. & Gustine Rd.



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1	5	18	1	17	29
Future Volume (vph)	1	5	18	1	17	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	45		45			45
Link Distance (ft)	1365		225			1301
Travel Time (s)	20.7		3.4			19.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	2.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	5	18	1	17	29
Future Vol, veh/h	1	5	18	1	17	29
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1	5	20	1	18	32

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	89	20	0	0	21	0
Stage 1	20	-	-	-	-	-
Stage 2	68	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	917	1064	-	-	1608	-
Stage 1	1008	-	-	-	-	-
Stage 2	959	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	906	1064	-	-	1608	-
Mov Cap-2 Maneuver	906	-	-	-	-	-
Stage 1	1008	-	-	-	-	-
Stage 2	948	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	8.5	0	2.68
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1034	665	-
HCM Lane V/C Ratio	-	-	0.006	0.011	-
HCM Control Delay (s/veh)	-	-	8.5	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	4	5	13	14	15	14
Future Volume (vph)	4	5	13	14	15	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		45			45
Link Distance (ft)	352		891			225
Travel Time (s)	8.0		13.5			3.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	5	13	14	15	14
Future Vol, veh/h	4	5	13	14	15	14
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	4	5	14	15	16	15

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	70	22	0	0	29	0
Stage 1	22	-	-	-	-	-
Stage 2	48	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	940	1061	-	-	1597	-
Stage 1	1006	-	-	-	-	-
Stage 2	980	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	930	1061	-	-	1597	-
Mov Cap-2 Maneuver	930	-	-	-	-	-
Stage 1	1006	-	-	-	-	-
Stage 2	970	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	8.64	0	3.76
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	999	931	-
HCM Lane V/C Ratio	-	-	0.01	0.01	-
HCM Control Delay (s/veh)	-	-	8.6	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

13: Dachshund Av. & Access 2



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	7	2	25	21	7	11
Future Volume (vph)	7	2	25	21	7	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		45			45
Link Distance (ft)	362		283			891
Travel Time (s)	8.2		4.3			13.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	2	25	21	7	11
Future Vol, veh/h	7	2	25	21	7	11
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	8	2	27	23	8	12

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	66	39	0	0	50	0
Stage 1	39	-	-	-	-	-
Stage 2	27	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	945	1039	-	-	1570	-
Stage 1	989	-	-	-	-	-
Stage 2	1001	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	940	1039	-	-	1570	-
Mov Cap-2 Maneuver	940	-	-	-	-	-
Stage 1	989	-	-	-	-	-
Stage 2	996	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	8.79	0	2.84
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	960	700	-
HCM Lane V/C Ratio	-	-	0.01	0.005	-
HCM Control Delay (s/veh)	-	-	8.8	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

14: Dakota Av./Dachshund Av. & Fresno Rd.



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1	1	46	1	1	18
Future Volume (vph)	1	1	46	1	1	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	45		45			45
Link Distance (ft)	1354		1769			283
Travel Time (s)	20.5		26.8			4.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	1	46	1	1	18
Future Vol, veh/h	1	1	46	1	1	18
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1	1	50	1	1	20

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	72	51	0	0	51	0
Stage 1	51	-	-	-	-	-
Stage 2	22	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	937	1023	-	-	1568	-
Stage 1	977	-	-	-	-	-
Stage 2	1006	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	936	1023	-	-	1568	-
Mov Cap-2 Maneuver	936	-	-	-	-	-
Stage 1	977	-	-	-	-	-
Stage 2	1005	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	8.69	0	0.38
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	978	95	-
HCM Lane V/C Ratio	-	-	0.002	0.001	-
HCM Control Delay (s/veh)	-	-	8.7	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	17	5	0	0	0
Future Volume (vph)	0	17	5	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	45			45	30	
Link Distance (ft)	1365			207	187	
Travel Time (s)	20.7			3.1	4.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	7.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	17	5	0	0	0
Future Vol, veh/h	0	17	5	0	0	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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	18	5	0	0	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	12	1	1	0	-	0
Stage 1	1	-	-	-	-	-
Stage 2	11	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	1013	1089	1635	-	-	-
Stage 1	1027	-	-	-	-	-
Stage 2	1017	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1009	1089	1635	-	-	-
Mov Cap-2 Maneuver	1009	-	-	-	-	-
Stage 1	1024	-	-	-	-	-
Stage 2	1017	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.36	7.21	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1635	-	1089	-	-
HCM Lane V/C Ratio	0.003	-	0.017	-	-
HCM Control Delay (s/veh)	7.2	0	8.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	4	1	5	1	3	14
Future Volume (vph)	4	1	5	1	3	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			45	45	
Link Distance (ft)	342			891	207	
Travel Time (s)	7.8			13.5	3.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	1	5	1	3	14
Future Vol, veh/h	4	1	5	1	3	14
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	4	1	5	1	3	15

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	23	11	18	0	-	0
Stage 1	11	-	-	-	-	-
Stage 2	12	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	999	1076	1611	-	-	-
Stage 1	1017	-	-	-	-	-
Stage 2	1016	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	995	1076	1611	-	-	-
Mov Cap-2 Maneuver	995	-	-	-	-	-
Stage 1	1014	-	-	-	-	-
Stage 2	1016	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.58	6.03	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1500	-	1010	-	-
HCM Lane V/C Ratio	0.003	-	0.005	-	-
HCM Control Delay (s/veh)	7.2	0	8.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1	5	16	5	1	3
Future Volume (vph)	1	5	16	5	1	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			45	45	
Link Distance (ft)	367			285	891	
Travel Time (s)	8.3			4.3	13.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

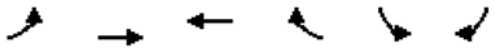
Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	5	16	5	1	3
Future Vol, veh/h	1	5	16	5	1	3
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1	5	17	5	1	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	43	3	4	0	-	0
Stage 1	3	-	-	-	-	-
Stage 2	40	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	973	1087	1630	-	-	-
Stage 1	1026	-	-	-	-	-
Stage 2	987	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	963	1087	1630	-	-	-
Mov Cap-2 Maneuver	963	-	-	-	-	-
Stage 1	1015	-	-	-	-	-
Stage 2	987	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.4	5.51	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1371	-	1064	-	-
HCM Lane V/C Ratio	0.011	-	0.006	-	-
HCM Control Delay (s/veh)	7.2	0	8.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	40	15	47	1	1	69
Future Volume (vph)	40	15	47	1	1	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		55	55		45	
Link Distance (ft)		3330	1344		1769	
Travel Time (s)		41.3	16.7		26.8	
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

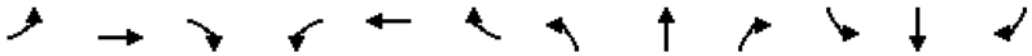
Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	40	15	47	1	1	69
Future Vol, veh/h	40	15	47	1	1	69
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	69	69	69	69	69	69
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	58	22	68	1	1	100

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	70	0	-	0	207	69
Stage 1	-	-	-	-	69	-
Stage 2	-	-	-	-	138	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1544	-	-	-	786	1000
Stage 1	-	-	-	-	959	-
Stage 2	-	-	-	-	894	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1544	-	-	-	757	1000
Mov Cap-2 Maneuver	-	-	-	-	757	-
Stage 1	-	-	-	-	923	-
Stage 2	-	-	-	-	894	-

Approach	EB	WB	SB
HCM Control Delay, s/v	5.4	0	9.03
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1309	-	-	-	995
HCM Lane V/C Ratio	0.038	-	-	-	0.102
HCM Control Delay (s/veh)	7.4	0	-	-	9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1	1	2	1	1	1	10	1	1	27	1
Future Volume (vph)	1	1	1	2	1	1	1	10	1	1	27	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1354			321			1023			285	
Travel Time (s)		20.5			4.9			15.5			4.3	
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	1	2	1	1	1	10	1	1	27	1
Future Vol, veh/h	1	1	1	2	1	1	1	10	1	1	27	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	50	50	50	50	50	50	50	50	50
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	2	2	2	4	2	2	2	20	2	2	54	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	84	85	55	84	85	21	56	0	0	22	0	0
Stage 1	59	59	-	25	25	-	-	-	-	-	-	-
Stage 2	25	26	-	59	60	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	908	809	1018	908	809	1062	1562	-	-	1607	-	-
Stage 1	958	850	-	998	878	-	-	-	-	-	-	-
Stage 2	998	878	-	958	849	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	901	807	1018	901	807	1062	1562	-	-	1607	-	-
Mov Cap-2 Maneuver	901	807	-	901	807	-	-	-	-	-	-	-
Stage 1	956	849	-	997	877	-	-	-	-	-	-	-
Stage 2	993	876	-	952	848	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	9.02	8.99	0.61	0.25
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	147	-	-	900	909	62	-	-
HCM Lane V/C Ratio	0.001	-	-	0.007	0.009	0.001	-	-
HCM Control Delay (s/veh)	7.3	0	-	9	9	7.2	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	71	1	2	1	3	42
Future Volume (vph)	71	1	2	1	3	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			55	55	
Link Distance (ft)	2664			475	6664	
Travel Time (s)	60.5			5.9	82.6	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

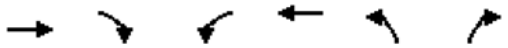
Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	71	1	2	1	3	42
Future Vol, veh/h	71	1	2	1	3	42
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	73	73	73	73	73	73
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	97	1	3	1	4	58

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	40	33	62	0	-	0
Stage 1	33	-	-	-	-	-
Stage 2	7	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	977	1046	1554	-	-	-
Stage 1	995	-	-	-	-	-
Stage 2	1021	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	975	1046	1554	-	-	-
Mov Cap-2 Maneuver	975	-	-	-	-	-
Stage 1	993	-	-	-	-	-
Stage 2	1021	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	9.1	4.88	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1200	-	976	-	-
HCM Lane V/C Ratio	0.002	-	0.101	-	-
HCM Control Delay (s/veh)	7.3	0	9.1	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	689	160	42	1026	322	52
Future Volume (vph)	689	160	42	1026	322	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	0		0	100
Storage Lanes		0	0		1	0
Taper Length (ft)			90		90	
Link Speed (mph)	45			45	55	
Link Distance (ft)	5327			1835	6664	
Travel Time (s)	80.7			27.8	82.6	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1419.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	689	160	42	1026	322	52
Future Vol, veh/h	689	160	42	1026	322	52
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	76	76	76	76	76	76
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	907	211	55	1350	424	68

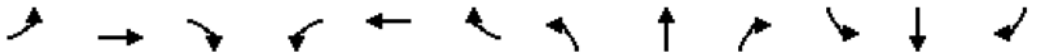
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1117	0	2472	1012
Stage 1	-	-	-	-	1012	-
Stage 2	-	-	-	-	1461	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	633	-	~ 34	293
Stage 1	-	-	-	-	~ 354	-
Stage 2	-	-	-	-	~ 215	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	633	-	~ 22	293
Mov Cap-2 Maneuver	-	-	-	-	~ 22	-
Stage 1	-	-	-	-	~ 354	-
Stage 2	-	-	-	-	~ 140	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.44	$ 8693.38
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	25	-	-	71	-
HCM Lane V/C Ratio	19.657	-	-	0.087	-
HCM Control Delay (s/veh)	$ 8693.4	-	-	11.2	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	61.4	-	-	0.3	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

5: Dale Evans Pkwy. & Johnson Rd.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	775	87	313	1297	361	159	111	181	263	224	17
Future Volume (vph)	9	775	87	313	1297	361	159	111	181	263	224	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		165	100		0	325		0
Storage Lanes	0		0	0		1	1		1	1		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		45			45			55			55	
Link Distance (ft)		7616			5327			4005			1074	
Travel Time (s)		115.4			80.7			49.6			13.3	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	1371.8
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	775	87	313	1297	361	159	111	181	263	224	17
Future Vol, veh/h	9	775	87	313	1297	361	159	111	181	263	224	17
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	11	969	109	391	1621	451	199	139	226	329	280	21
Number of Lanes	0	1	0	0	1	1	1	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	3	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	2	2	1
HCM Control Delay, s/veh	1260.8	2059	+	104.8
HCM LOS	F	F	-	F

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	1%	19%	0%	100%	0%
Vol Thru, %	0%	100%	0%	89%	81%	0%	0%	93%
Vol Right, %	0%	0%	100%	10%	0%	100%	0%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	159	111	181	871	1610	361	263	241
LT Vol	159	0	0	9	313	0	263	0
Through Vol	0	111	0	775	1297	0	0	224
RT Vol	0	0	181	87	0	361	0	17
Lane Flow Rate	199	139	226	1089	2013	451	329	301
Geometry Grp	6	6	6	6	6	6	6	6
Degree of Util (X)	-	-	-	3.709	6.403	1.336	1.091	0.954
Departure Headway (Hd)	-	-	-	16.667	17.205	16.307	14.408	13.783
Convergence, Y/N	-	-	-	Yes	Yes	Yes	Yes	Yes
Cap	-	-	-	229	242	226	256	265
Service Time	-	-	-	14.367	14.905	14.007	12.108	11.483
HCM Lane V/C Ratio	-	-	-	4.755	8.318	1.996	1.285	1.136
HCM Control Delay, s/veh	+	+	+	1260.8	2471.5	219.2	124.1	83.7
HCM Lane LOS	-	-	-	F	F	F	F	F
HCM 95th-tile Q	-	-	-	77	144.8	16.1	11.6	8.9

Notes
HCM 7th Edition AWSC methodology error - negative departure headway

6: Stoddard Wells Rd. & Johnson Rd.



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1470	3	13	869	2	29
Future Volume (vph)	1470	3	13	869	2	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	45		45			45
Link Distance (ft)	7616		549			661
Travel Time (s)	115.4		8.3			10.0
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	1276.1

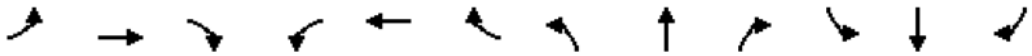
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1470	3	13	869	2	29
Future Vol, veh/h	1470	3	13	869	2	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	67	67	67	67	67	67
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	2194	4	19	1297	3	43

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	717	668	0	0	1316	0
Stage 1	668	-	-	-	-	-
Stage 2	49	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	~ 399	462	-	-	532	-
Stage 1	~ 513	-	-	-	-	-
Stage 2	~ 978	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 397	462	-	-	532	-
Mov Cap-2 Maneuver	~ 397	-	-	-	-	-
Stage 1	~ 513	-	-	-	-	-
Stage 2	~ 973	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	$ 2067.09	0	0.76
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	397	116	-
HCM Lane V/C Ratio	-	-	5.538	0.006	-
HCM Control Delay (s/veh)	-	-	$ 2067.1	11.8	0
HCM Lane LOS	-	-	F	B	A
HCM 95th %tile Q(veh)	-	-	228.8	0	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	93	69	49	1544	61	4	79	39	913	0	20
Future Volume (vph)	5	93	69	49	1544	61	4	79	39	913	0	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		889			1144			979			330	
Travel Time (s)		13.5			17.3			22.3			7.5	
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	14907.8

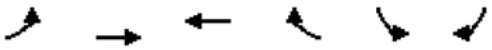
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	5	93	69	49	1544	61	4	79	39	913	0	20
Future Vol, veh/h	5	93	69	49	1544	61	4	79	39	913	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	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	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	7	137	101	72	2271	90	6	116	57	1343	0	29

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2360	0	0	238	0	0	2617	2707	188	2669	2713	2315
Stage 1	-	-	-	-	-	-	202	202	-	2460	2460	-
Stage 2	-	-	-	-	-	-	2415	2504	-	210	253	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	210	-	-	1341	-	-	16	~ 21	860	~ 15	21	49
Stage 1	-	-	-	-	-	-	804	738	-	~ 42	61	-
Stage 2	-	-	-	-	-	-	45	~ 58	-	~ 797	701	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	210	-	-	1341	-	-	6	~ 21	860	~ 13	20	49
Mov Cap-2 Maneuver	-	-	-	-	-	-	6	~ 21	-	~ 13	20	-
Stage 1	-	-	-	-	-	-	771	708	-	~ 42	61	-
Stage 2	-	-	-	-	-	-	18	~ 58	-	~ 596	673	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.68	0.23	$ 2831.17	$ 45582.89
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	27	50	-	-	~ 53	-	-	14
HCM Lane V/C Ratio	6.654	0.035	-	-	0.054	-	-	101.103
HCM Control Delay (s/veh)	$ 2831.2	22.7	0	-	7.8	0	-	$ 45582.9
HCM Lane LOS	F	C	A	-	A	A	-	F
HCM 95th %tile Q(veh)	22.1	0.1	-	-	0.2	-	-	172.8

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	6	36	54	1515	130	2
Future Volume (vph)	6	36	54	1515	130	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0	0	25
Storage Lanes	0			0	1	0
Taper Length (ft)	90				90	
Link Speed (mph)		45	45		45	
Link Distance (ft)		1552	889		1482	
Travel Time (s)		23.5	13.5		22.5	
Peak Hour Factor	0.58	0.58	0.58	0.58	0.58	0.58
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	28.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	36	54	1515	130	2
Future Vol, veh/h	6	36	54	1515	130	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	58	58	58	58	58	58
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	10	62	93	2612	224	3

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	93	0	-	0	1482	1399
Stage 1	-	-	-	-	1399	-
Stage 2	-	-	-	-	83	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1514	-	-	-	~ 139	174
Stage 1	-	-	-	-	231	-
Stage 2	-	-	-	-	946	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1514	-	-	-	~ 138	174
Mov Cap-2 Maneuver	-	-	-	-	~ 138	-
Stage 1	-	-	-	-	229	-
Stage 2	-	-	-	-	946	-

Approach	EB	WB	SB
HCM Control Delay, s/v	1.06	0	$ 374.69
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	257	-	-	-	139
HCM Lane V/C Ratio	0.007	-	-	-	1.64
HCM Control Delay (s/veh)	7.4	0	-	-	$ 374.7
HCM Lane LOS	A	A	-	-	F
HCM 95th %tile Q(veh)	0	-	-	-	16.3

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	132	1	1	1520	1	1
Future Volume (vph)	132	1	1	1520	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		45			45
Link Distance (ft)	263		1482			525
Travel Time (s)	6.0		22.5			8.0
Peak Hour Factor	0.56	0.56	0.56	0.56	0.56	0.56
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	23.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	132	1	1	1520	1	1
Future Vol, veh/h	132	1	1	1520	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	56	56	56	56	56	56
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	236	2	2	2714	2	2

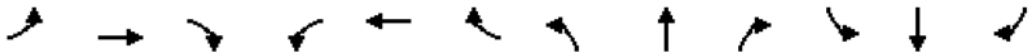
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1364	1359	0	0	2716	0
Stage 1	1359	-	-	-	-	-
Stage 2	5	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	~ 164	184	-	-	152	-
Stage 1	241	-	-	-	-	-
Stage 2	1023	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 162	184	-	-	152	-
Mov Cap-2 Maneuver	~ 162	-	-	-	-	-
Stage 1	241	-	-	-	-	-
Stage 2	1011	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/veh	$290.34	0	14.47
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	162	152	-
HCM Lane V/C Ratio	-	-	1.462	0.012	-
HCM Control Delay (s/veh)	-	-	290.3	28.9	0
HCM Lane LOS	-	-	F	D	A
HCM 95th %tile Q(veh)	-	-	15.2	0	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

10: Dale Evans Pkwy. & Corwin Rd.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	14	2	48	39	32	3	212	25	16	418	197
Future Volume (vph)	92	14	2	48	39	32	3	212	25	16	418	197
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1375			3330			1135			747	
Travel Time (s)		17.0			41.3			14.1			9.3	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	28.6
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	92	14	2	48	39	32	3	212	25	16	418	197
Future Vol, veh/h	92	14	2	48	39	32	3	212	25	16	418	197
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	99	15	2	52	42	34	3	228	27	17	449	212
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, s/veh	11.7	11.5	12.4	40.8
HCM LOS	B	B	B	E

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	1%	85%	40%	3%
Vol Thru, %	88%	13%	33%	66%
Vol Right, %	10%	2%	27%	31%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	240	108	119	631
LT Vol	3	92	48	16
Through Vol	212	14	39	418
RT Vol	25	2	32	197
Lane Flow Rate	258	116	128	678
Geometry Grp	1	1	1	1
Degree of Util (X)	0.402	0.217	0.23	0.931
Departure Headway (Hd)	5.611	6.734	6.468	4.94
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	637	530	551	733
Service Time	3.682	4.826	4.556	2.99
HCM Lane V/C Ratio	0.405	0.219	0.232	0.925
HCM Control Delay, s/veh	12.4	11.7	11.5	40.8
HCM Lane LOS	B	B	B	E
HCM 95th-tile Q	1.9	0.8	0.9	13.1

11: Dachshund Av. & Gustine Rd.



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1	21	51	1	8	38
Future Volume (vph)	1	21	51	1	8	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	45		45			45
Link Distance (ft)	1365		225			1301
Travel Time (s)	20.7		3.4			19.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	2.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	21	51	1	8	38
Future Vol, veh/h	1	21	51	1	8	38
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1	23	55	1	9	41

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	115	56	0	0	57	0
Stage 1	56	-	-	-	-	-
Stage 2	59	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	887	1016	-	-	1561	-
Stage 1	972	-	-	-	-	-
Stage 2	969	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	881	1016	-	-	1561	-
Mov Cap-2 Maneuver	881	-	-	-	-	-
Stage 1	972	-	-	-	-	-
Stage 2	963	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	8.65	0	1.27
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1009	313	-
HCM Lane V/C Ratio	-	-	0.024	0.006	-
HCM Control Delay (s/veh)	-	-	8.7	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	17	19	32	7	7	31
Future Volume (vph)	17	19	32	7	7	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		45			45
Link Distance (ft)	352		891			225
Travel Time (s)	8.0		13.5			3.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	3.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	17	19	32	7	7	31
Future Vol, veh/h	17	19	32	7	7	31
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	18	21	35	8	8	34

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	88	39	0	0	42	0
Stage 1	39	-	-	-	-	-
Stage 2	49	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	918	1039	-	-	1580	-
Stage 1	989	-	-	-	-	-
Stage 2	979	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	914	1039	-	-	1580	-
Mov Cap-2 Maneuver	914	-	-	-	-	-
Stage 1	989	-	-	-	-	-
Stage 2	974	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	8.84	0	1.34
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	976	332	-
HCM Lane V/C Ratio	-	-	0.04	0.005	-
HCM Control Delay (s/veh)	-	-	8.8	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

13: Dachshund Av. & Access 2



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	27	9	30	11	4	44
Future Volume (vph)	27	9	30	11	4	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		45			45
Link Distance (ft)	362		283			891
Travel Time (s)	8.2		4.3			13.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	2.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	27	9	30	11	4	44
Future Vol, veh/h	27	9	30	11	4	44
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	29	10	33	12	4	48

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	95	39	0	0	45	0
Stage 1	39	-	-	-	-	-
Stage 2	57	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	909	1039	-	-	1577	-
Stage 1	989	-	-	-	-	-
Stage 2	971	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	907	1039	-	-	1577	-
Mov Cap-2 Maneuver	907	-	-	-	-	-
Stage 1	989	-	-	-	-	-
Stage 2	968	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	9.01	0	0.61
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	937	150	-
HCM Lane V/C Ratio	-	-	0.042	0.003	-
HCM Control Delay (s/veh)	-	-	9	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

14: Dakota Av./Dachshund Av. & Fresno Rd.



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1	1	41	1	1	71
Future Volume (vph)	1	1	41	1	1	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	45		45			45
Link Distance (ft)	1354		1769			283
Travel Time (s)	20.5		26.8			4.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	1	41	1	1	71
Future Vol, veh/h	1	1	41	1	1	71
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1	1	45	1	1	77

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	124	45	0	0	46	0
Stage 1	45	-	-	-	-	-
Stage 2	79	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	875	1030	-	-	1575	-
Stage 1	983	-	-	-	-	-
Stage 2	949	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	875	1030	-	-	1575	-
Mov Cap-2 Maneuver	875	-	-	-	-	-
Stage 1	983	-	-	-	-	-
Stage 2	948	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	8.81	0	0.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	946	25	-
HCM Lane V/C Ratio	-	-	0.002	0.001	-
HCM Control Delay (s/veh)	-	-	8.8	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	8	21	0	0	0
Future Volume (vph)	0	8	21	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	45			45	30	
Link Distance (ft)	1365			207	165	
Travel Time (s)	20.7			3.1	3.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	7.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	8	21	0	0	0
Future Vol, veh/h	0	8	21	0	0	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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	9	23	0	0	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	47	1	1	0	-	0
Stage 1	1	-	-	-	-	-
Stage 2	46	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	968	1089	1635	-	-	-
Stage 1	1027	-	-	-	-	-
Stage 2	982	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	955	1089	1635	-	-	-
Mov Cap-2 Maneuver	955	-	-	-	-	-
Stage 1	1013	-	-	-	-	-
Stage 2	982	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.33	7.23	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1635	-	1089	-	-
HCM Lane V/C Ratio	0.014	-	0.008	-	-
HCM Control Delay (s/veh)	7.2	0	8.3	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	18	6	2	3	1	7
Future Volume (vph)	18	6	2	3	1	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			45	45	
Link Distance (ft)	342			891	207	
Travel Time (s)	7.8			13.5	3.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	18	6	2	3	1	7
Future Vol, veh/h	18	6	2	3	1	7
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	20	7	2	3	1	8

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	13	5	9	0	-	0
Stage 1	5	-	-	-	-	-
Stage 2	8	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	1012	1084	1625	-	-	-
Stage 1	1023	-	-	-	-	-
Stage 2	1021	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1011	1084	1625	-	-	-
Mov Cap-2 Maneuver	1011	-	-	-	-	-
Stage 1	1022	-	-	-	-	-
Stage 2	1021	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.59	2.89	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	720	-	1028	-	-
HCM Lane V/C Ratio	0.001	-	0.025	-	-
HCM Control Delay (s/veh)	7.2	0	8.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	3	21	8	2	6	1
Future Volume (vph)	3	21	8	2	6	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			45	45	
Link Distance (ft)	367			285	891	
Travel Time (s)	8.3			4.3	13.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	6.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	21	8	2	6	1
Future Vol, veh/h	3	21	8	2	6	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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	3	23	9	2	7	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	27	7	8	0	-	0
Stage 1	7	-	-	-	-	-
Stage 2	20	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	994	1081	1626	-	-	-
Stage 1	1021	-	-	-	-	-
Stage 2	1008	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	988	1081	1626	-	-	-
Mov Cap-2 Maneuver	988	-	-	-	-	-
Stage 1	1016	-	-	-	-	-
Stage 2	1008	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.45	5.78	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1440	-	1069	-	-
HCM Lane V/C Ratio	0.005	-	0.024	-	-
HCM Control Delay (s/veh)	7.2	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

APPENDIX 5.3: OPENING YEAR CUMULATIVE (2027) WITHOUT PROJECT CONDITIONS TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS

This Page Intentionally Left Blank

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

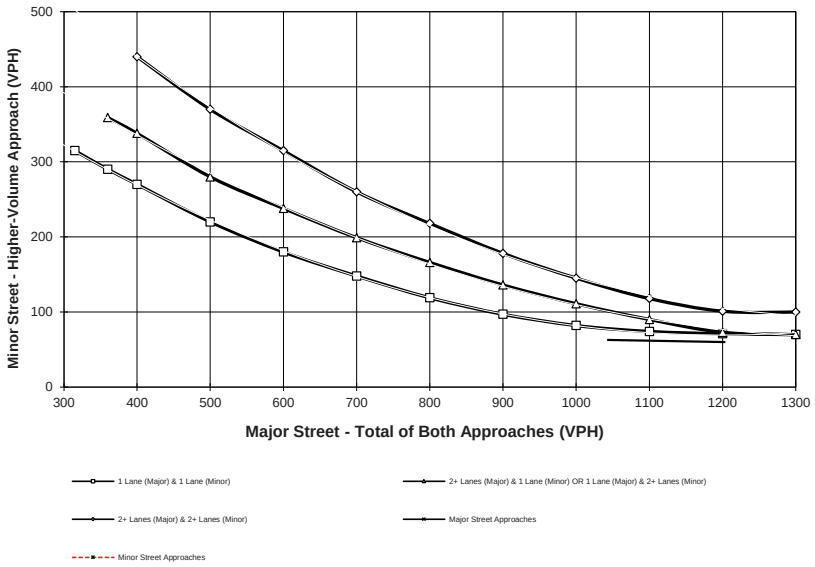
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAC AM PEAK HOUR WARRANTS**

Major Street Name = **Corwin Rd.**
Total of Both Approaches (VPH) = **34**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Dakota Av.**
High Volume Approach (VPH) = **8**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #1

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

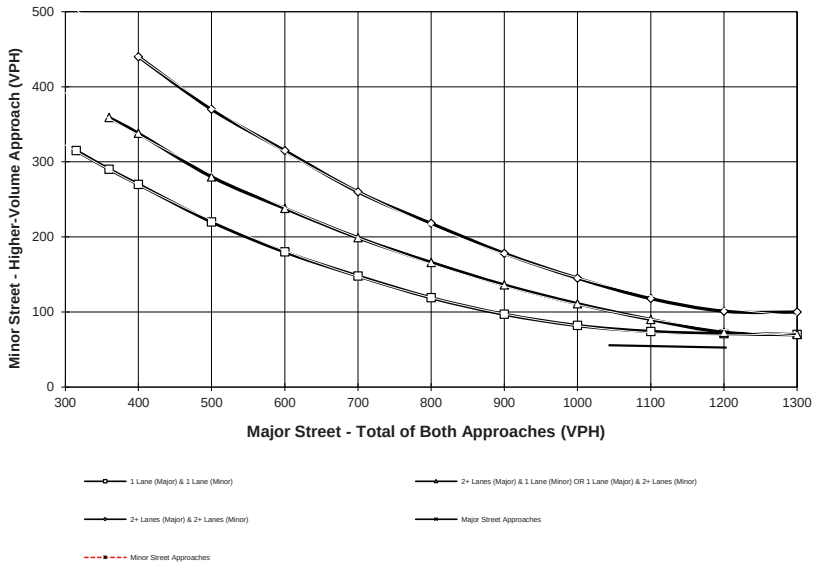
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAC PM PEAK HOUR WARRANTS**

Major Street Name = **Corwin Rd.**
Total of Both Approaches (VPH) = **49**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Dakota Av.**
High Volume Approach (VPH) = **27**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #1

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

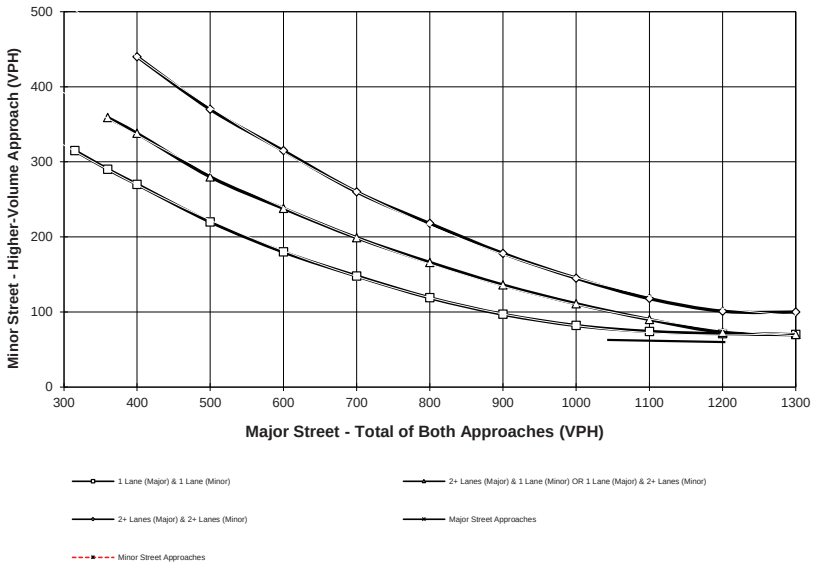
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAC AM PEAK HOUR WARRANTS**

Major Street Name = **Ramona Rd.**
Total of Both Approaches (VPH) = **2**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Fresno Rd.**
High Volume Approach (VPH) = **1**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #2

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Warrants\02 - EAC\02R_AM.xls\Fig 4C-4 (Rural Peak)

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

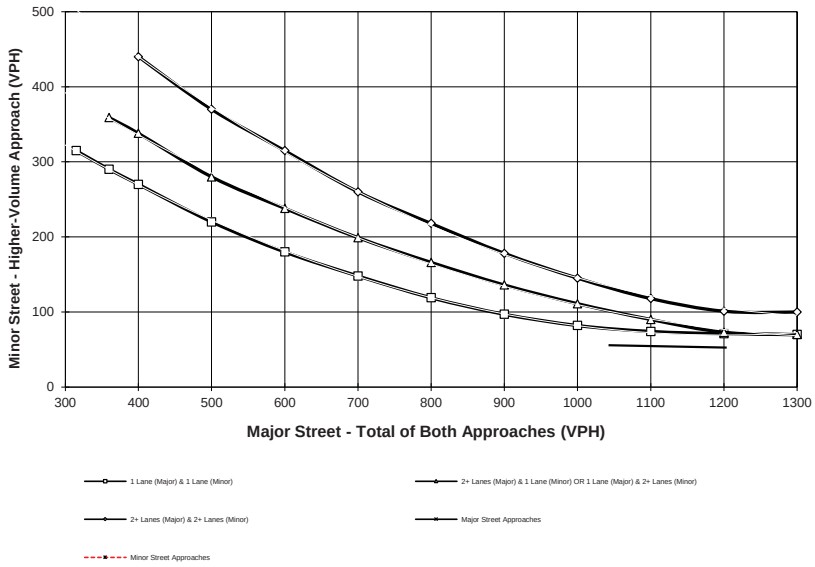
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAC PM PEAK HOUR WARRANTS**

Major Street Name = **Ramona Rd.**
Total of Both Approaches (VPH) = **2**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Fresno Rd.**
High Volume Approach (VPH) = **2**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #2

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Warrants\02 - EAC\02R_PM.xls\Fig 4C-4 (Rural Peak)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

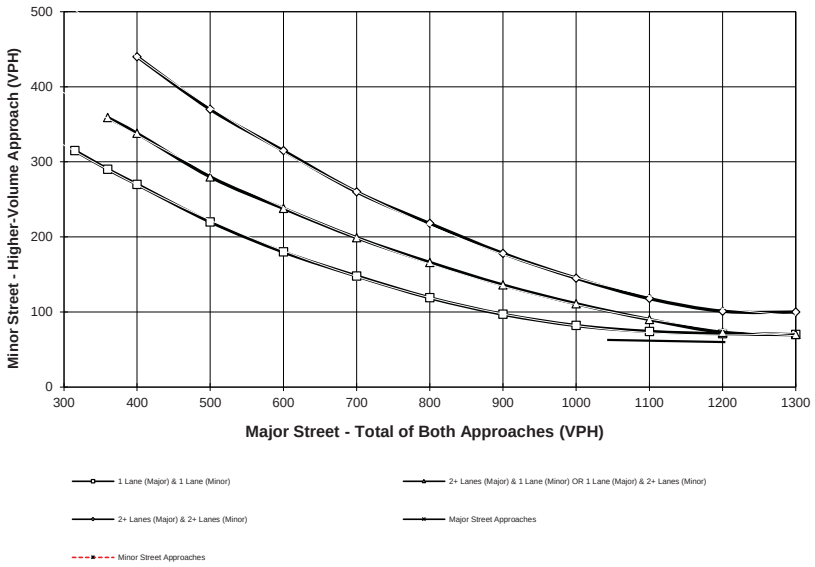
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAC AM PEAK HOUR WARRANTS**

Major Street Name = **Navajo Rd.**
Total of Both Approaches (VPH) = **11**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Altadena St.**
High Volume Approach (VPH) = **9**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #3

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

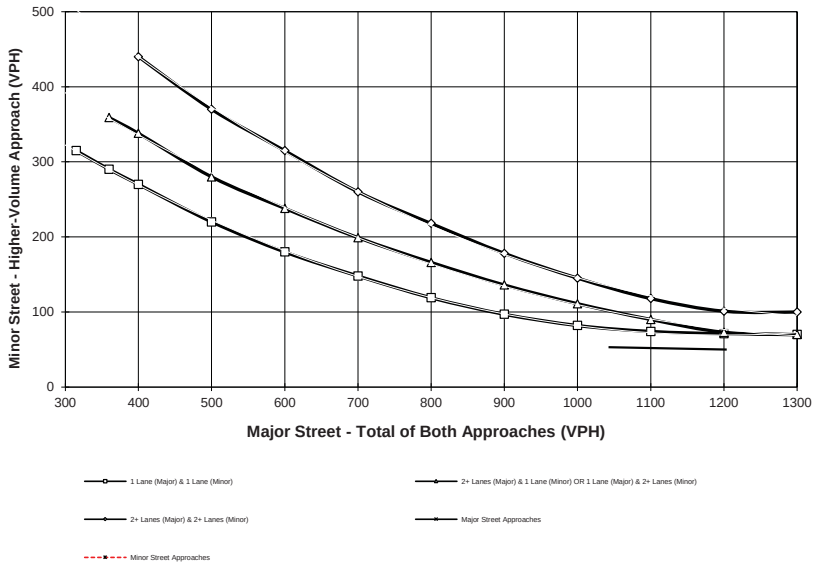
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAC PM PEAK HOUR WARRANTS**

Major Street Name = **Navajo Rd.**
Total of Both Approaches (VPH) = **29**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Altadena St.**
High Volume Approach (VPH) = **22**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #3

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

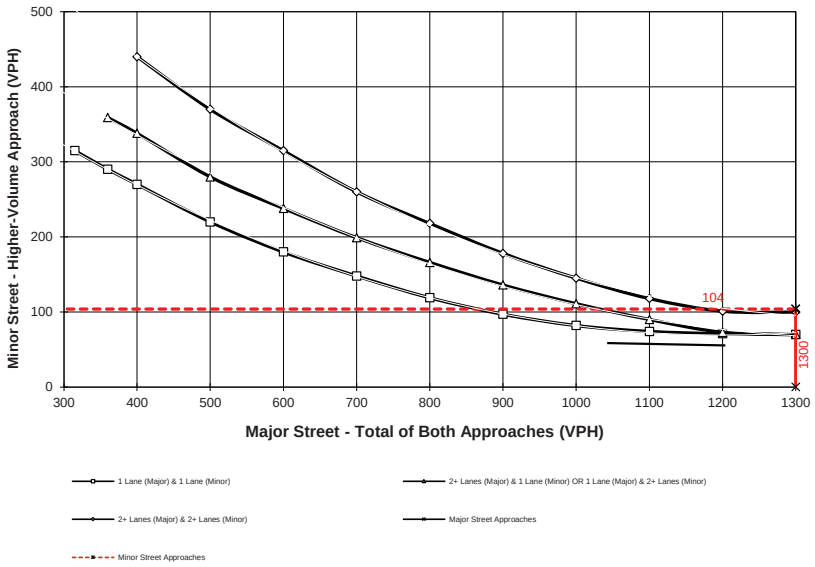
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAC AM PEAK HOUR WARRANTS**

Major Street Name = **Johnson Rd.**
Total of Both Approaches (VPH) = **2,041**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Navajo Rd.**
High Volume Approach (VPH) = **104**
Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #4

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

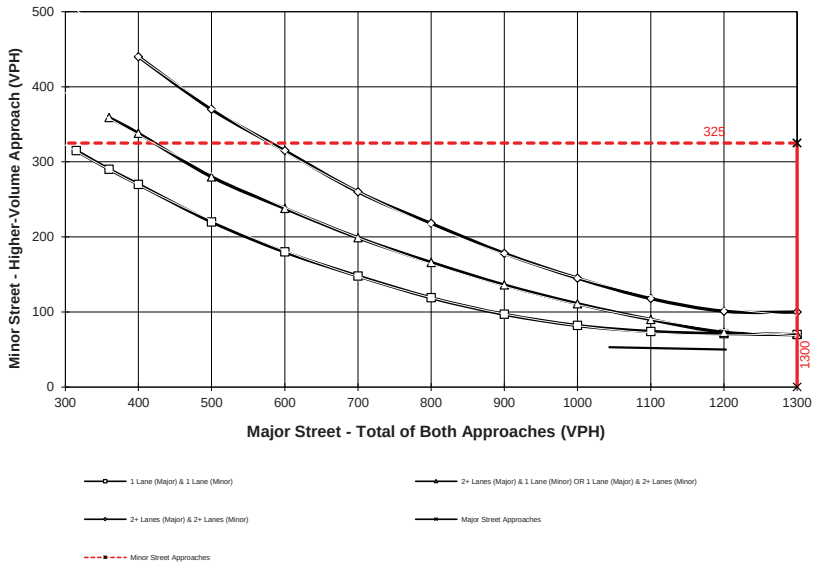
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAC PM PEAK HOUR WARRANTS**

Major Street Name = **Johnson Rd.**
Total of Both Approaches (VPH) = **1,984**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Navajo Rd.**
High Volume Approach (VPH) = **325**
Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #4

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

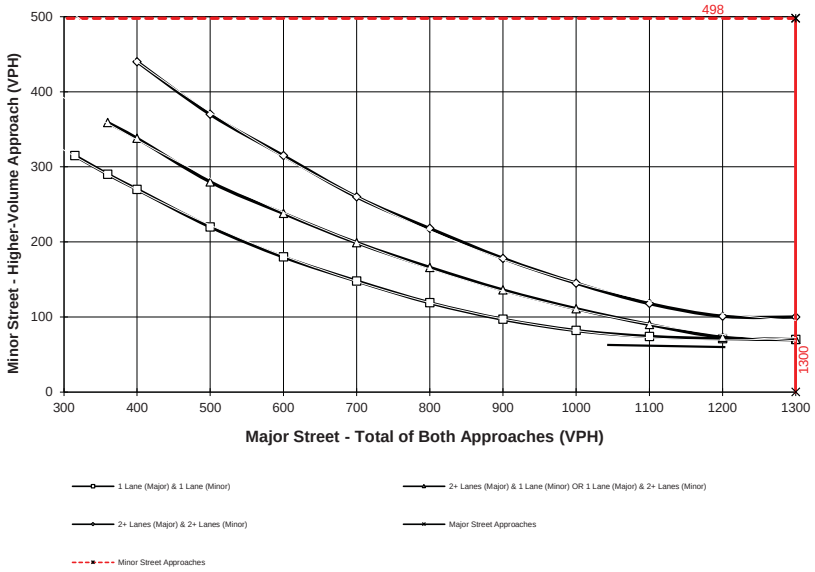
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAC AM PEAK HOUR WARRANTS**

Major Street Name = **Stoddard Wells Rd.** Total of Both Approaches (VPH) = **1,403**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Johnson Rd.** High Volume Approach (VPH) = **498**
Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #6

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Warrants\02 - EAC\06R_AM.xls\Fig 4C-4 (Rural Peak)

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

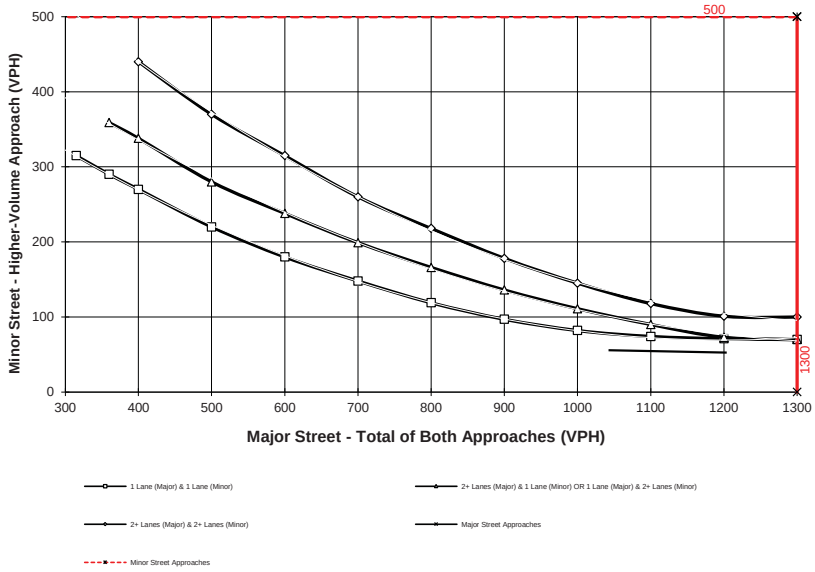
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAC PM PEAK HOUR WARRANTS**

Major Street Name = **Johnson Rd.** Total of Both Approaches (VPH) = **1,413**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Stoddard Wells Rd.** High Volume Approach (VPH) = **858**
Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #6

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Warrants\02 - EAC\06R_PM.xls\Fig 4C-4 (Rural Peak)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

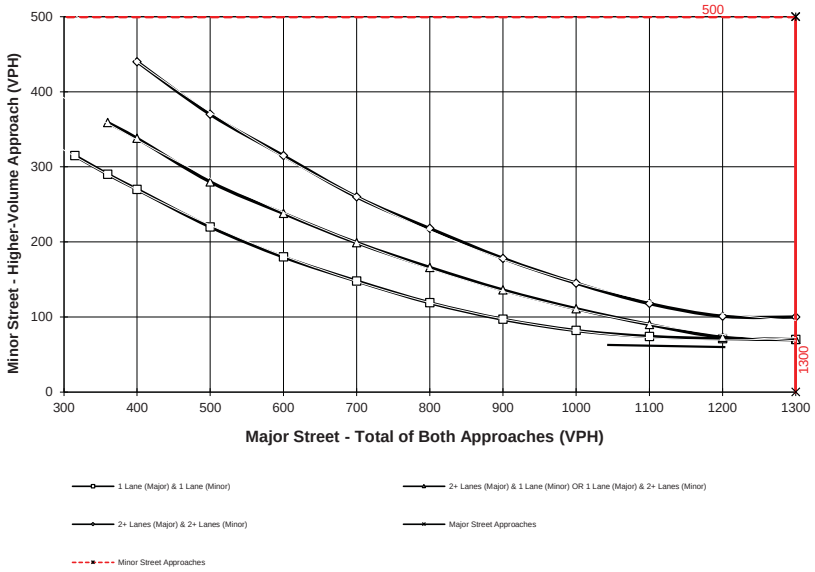
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAC AM PEAK HOUR WARRANTS**

Major Street Name = **I-15 NB Ramps - Outer Hwy. 15** Total of Both Approaches (VPH) = **1,477**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Stoddard Wells Rd.** High Volume Approach (VPH) = **695**
Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #7

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Warrants\02 - EAC\07R_AM.xls\Fig 4C-4 (Rural Peak)

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

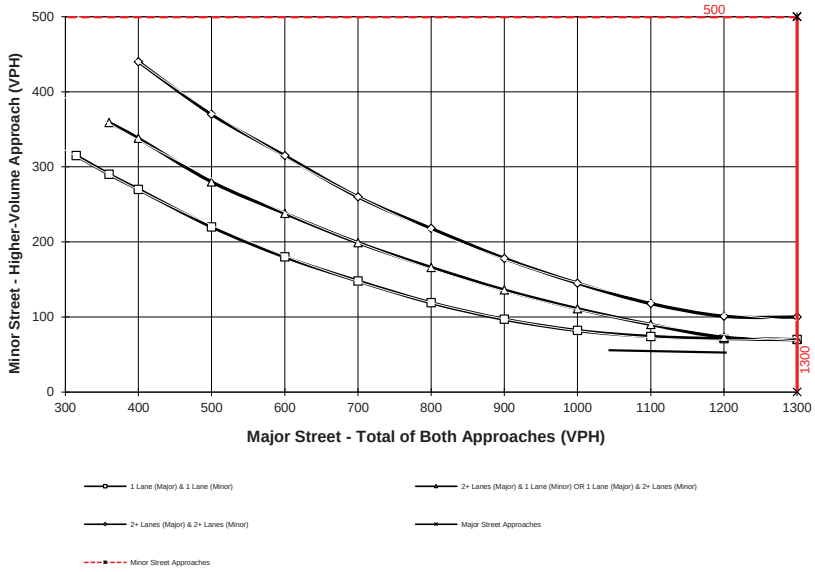
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAC PM PEAK HOUR WARRANTS**

Major Street Name = **Stoddard Wells Rd.** Total of Both Approaches (VPH) = **1,761**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **I-15 NB Ramps - Outer Hwy. 15** High Volume Approach (VPH) = **909**
Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #7

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Warrants\02 - EAC\07R_PM.xls\Fig 4C-4 (Rural Peak)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

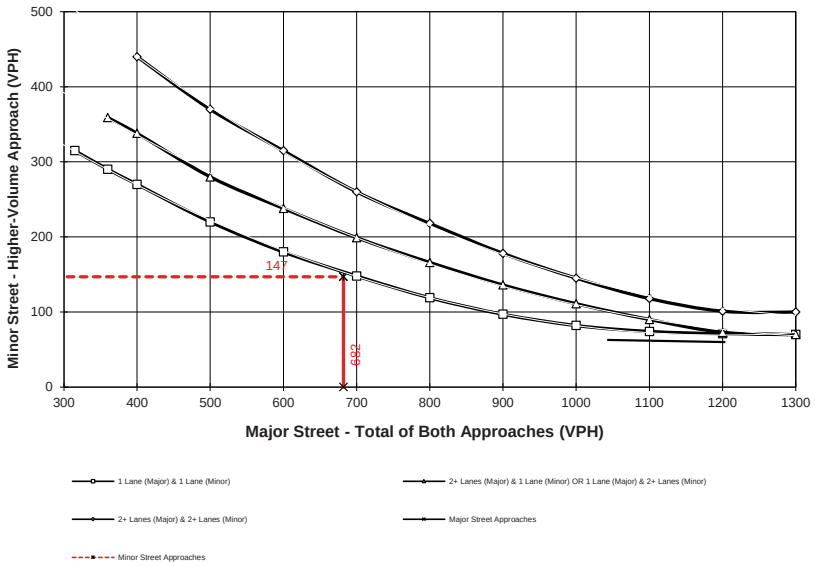
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAC AM PEAK HOUR WARRANTS**

Major Street Name = **Stoddard Wells Rd.** Total of Both Approaches (VPH) = **682**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Quarry Rd.** High Volume Approach (VPH) = **147**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #8

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Warrants\02 - EAC\08R_AM.xls\Fig 4C-4 (Rural Peak)

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

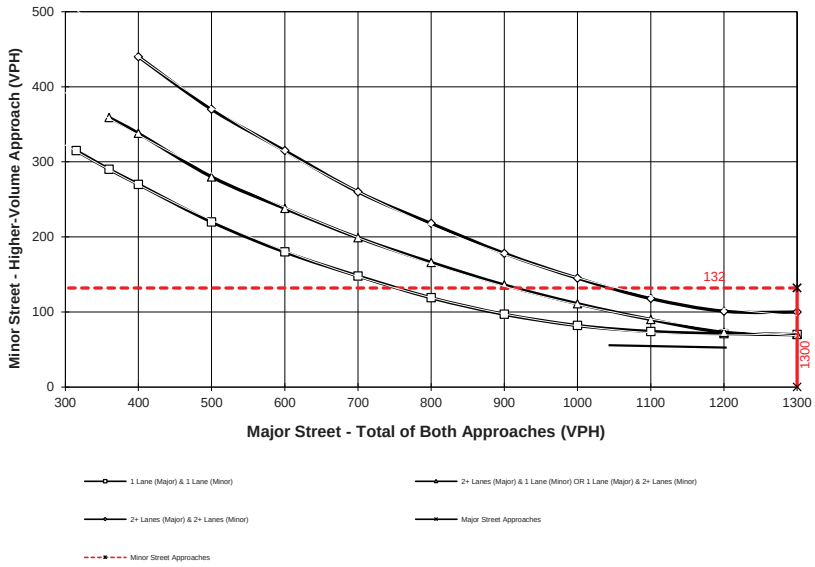
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAC PM PEAK HOUR WARRANTS**

Major Street Name = **Stoddard Wells Rd.** Total of Both Approaches (VPH) = **1,551**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Quarry Rd.** High Volume Approach (VPH) = **132**
Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #8

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Warrants\02 - EAC\08R_PM.xls\Fig 4C-4 (Rural Peak)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

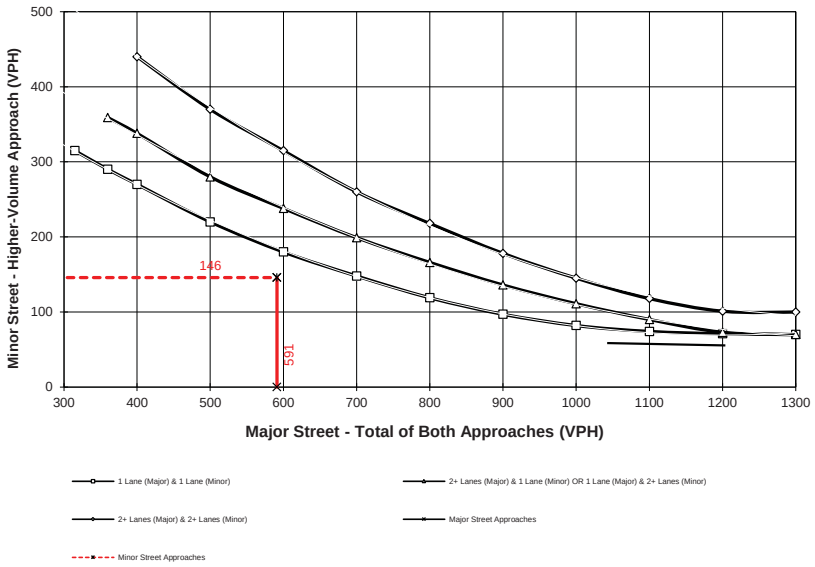
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAC AM PEAK HOUR WARRANTS**

Major Street Name = **Quarry Rd.** Total of Both Approaches (VPH) = **591**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **I-15 SB Ramps** High Volume Approach (VPH) = **146**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #9

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Warrants\02 - EAC\09R_AM.xls\Fig 4C-4 (Rural Peak)

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

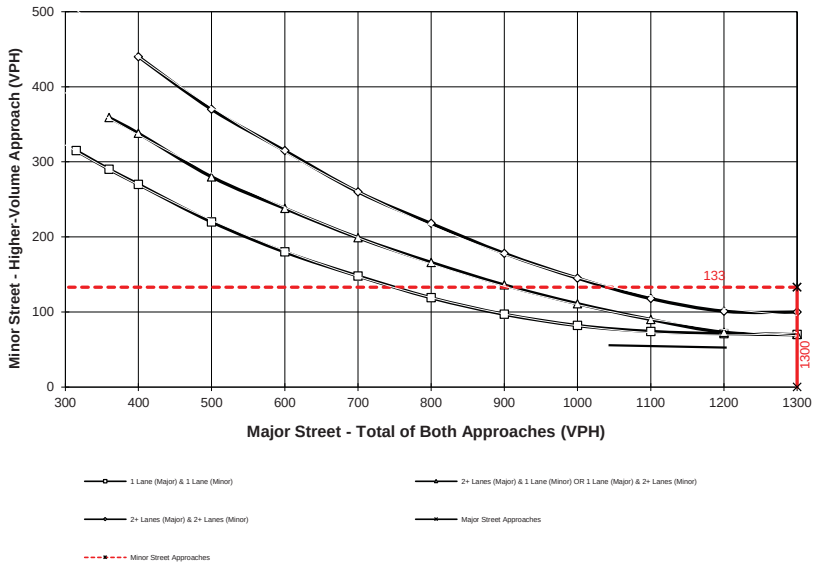
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAC PM PEAK HOUR WARRANTS**

Major Street Name = **Quarry Rd.** Total of Both Approaches (VPH) = **1,463**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **I-15 SB Ramps** High Volume Approach (VPH) = **133**
Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #9

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Warrants\02 - EAC\09R_PM.xls\Fig 4C-4 (Rural Peak)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

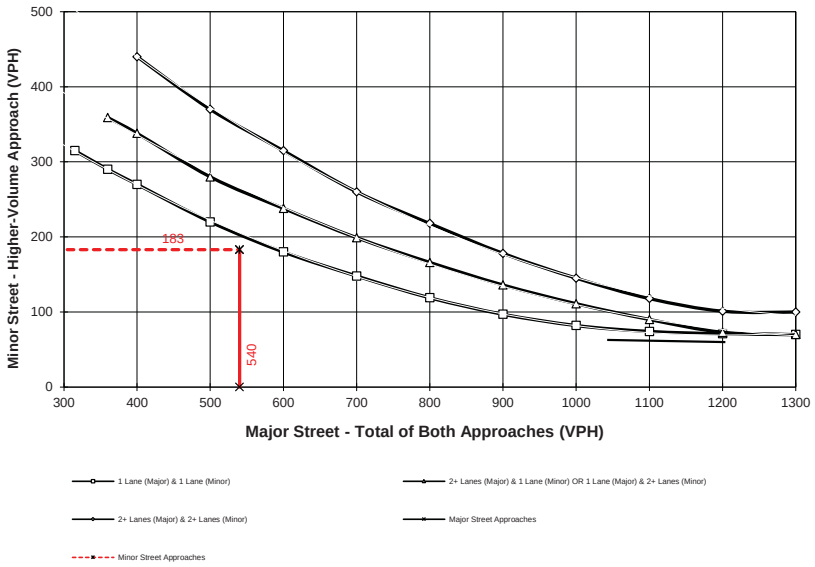
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAC AM PEAK HOUR WARRANTS**

Major Street Name = **Dale Evans Pkwy.** Total of Both Approaches (VPH) = **540**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Corwin Rd.** High Volume Approach (VPH) = **183**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #10

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Warrants\02 - EAC\10R_AM.xls\Fig 4C-4 (Rural Peak)

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

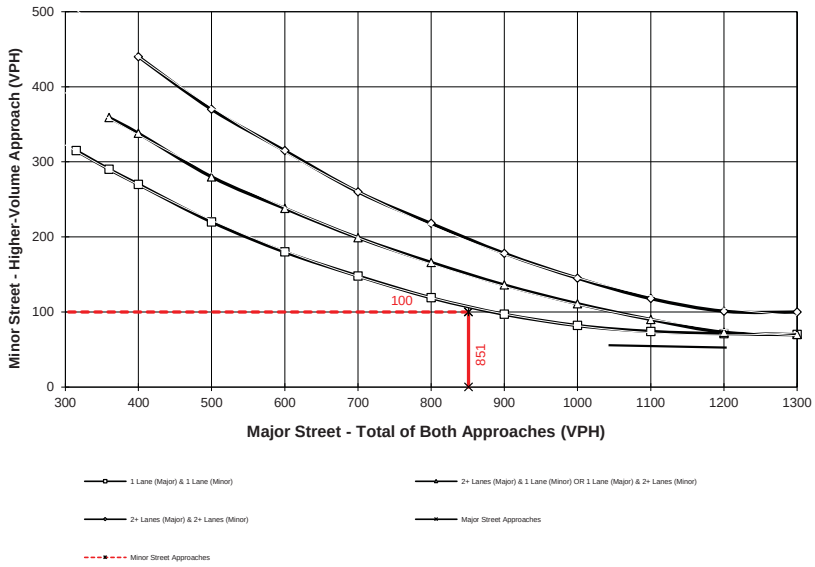
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAC PM PEAK HOUR WARRANTS**

Major Street Name = **Dale Evans Pkwy.** Total of Both Approaches (VPH) = **851**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Corwin Rd.** High Volume Approach (VPH) = **100**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #10

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Warrants\02 - EAC\10R_PM.xls\Fig 4C-4 (Rural Peak)

This Page Intentionally Left Blank

APPENDIX 5.4: OPENING YEAR CUMULATIVE (2027) WITH PROJECT CONDITIONS TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS

This Page Intentionally Left Blank

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

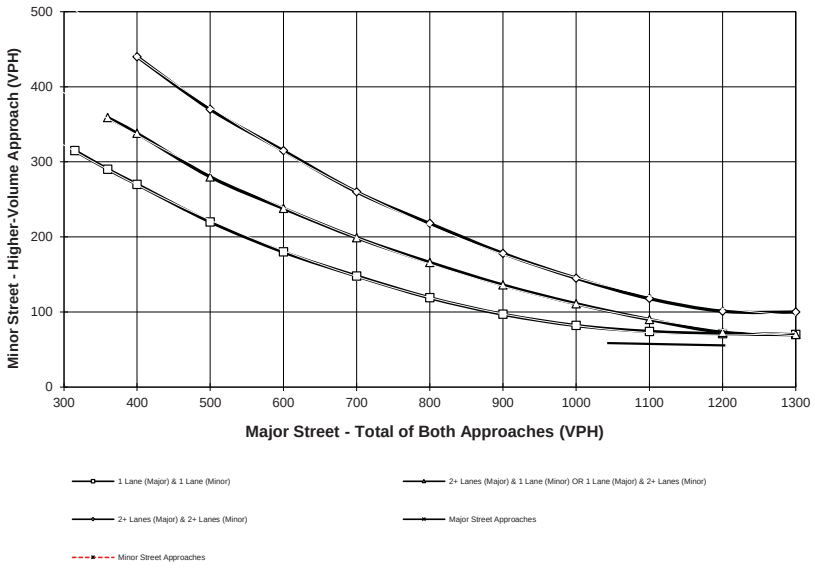
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAPC (2027) AM PEAK HOUR WARRANTS**

Major Street Name = **Corwin Rd.** Total of Both Approaches (VPH) = **95**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Dakota Av.** High Volume Approach (VPH) = **18**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #1

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

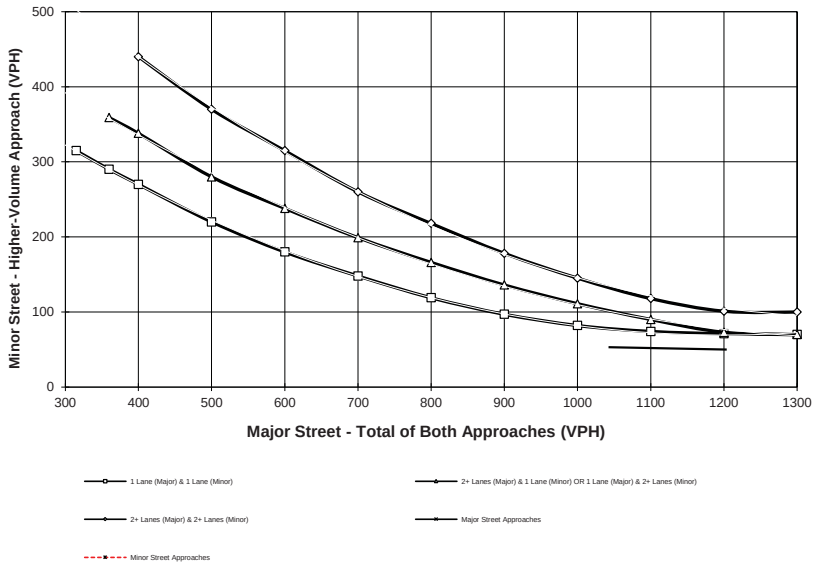
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAPC (2027) PM PEAK HOUR WARRANTS**

Major Street Name = **Corwin Rd.** Total of Both Approaches (VPH) = **103**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Dakota Av.** High Volume Approach (VPH) = **70**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #1

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

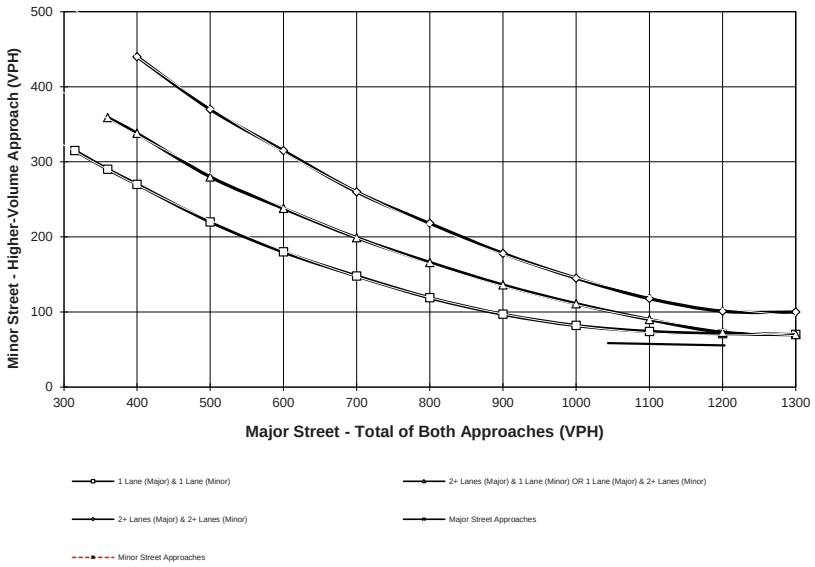
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAPC (2027) AM PEAK HOUR WARRANTS**

Major Street Name = **Ramona Rd.**
Total of Both Approaches (VPH) = **31**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Fresno Rd.**
High Volume Approach (VPH) = **3**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #2

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Warrants\03 - EAPC\02R_AM.xls\Fig 4C-4 (Rural Peak)

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

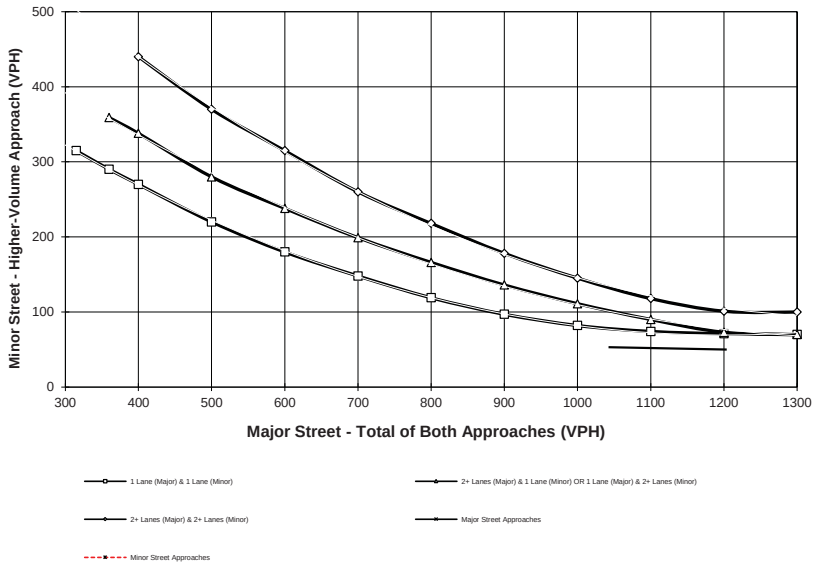
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAPC (2027) PM PEAK HOUR WARRANTS**

Major Street Name = **Ramona Rd.**
Total of Both Approaches (VPH) = **41**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Fresno Rd.**
High Volume Approach (VPH) = **4**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #2

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Warrants\03 - EAPC\02R_PM.xls\Fig 4C-4 (Rural Peak)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

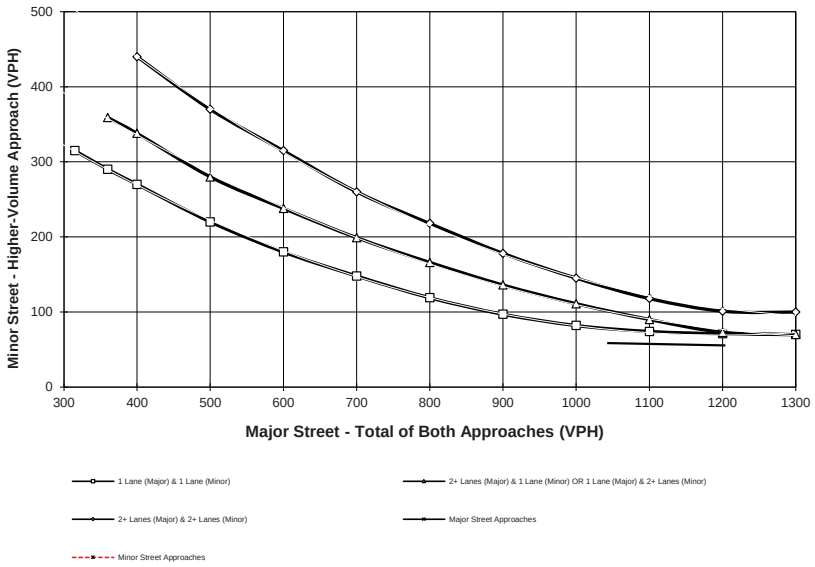
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAPC (2027) AM PEAK HOUR WARRANTS**

Major Street Name = **Navajo Rd.** Total of Both Approaches (VPH) = **50**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Altadena St.** High Volume Approach (VPH) = **21**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #3

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Warrants\03 - EAPC\03R_AM.xls\Fig 4C-4 (Rural Peak)

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

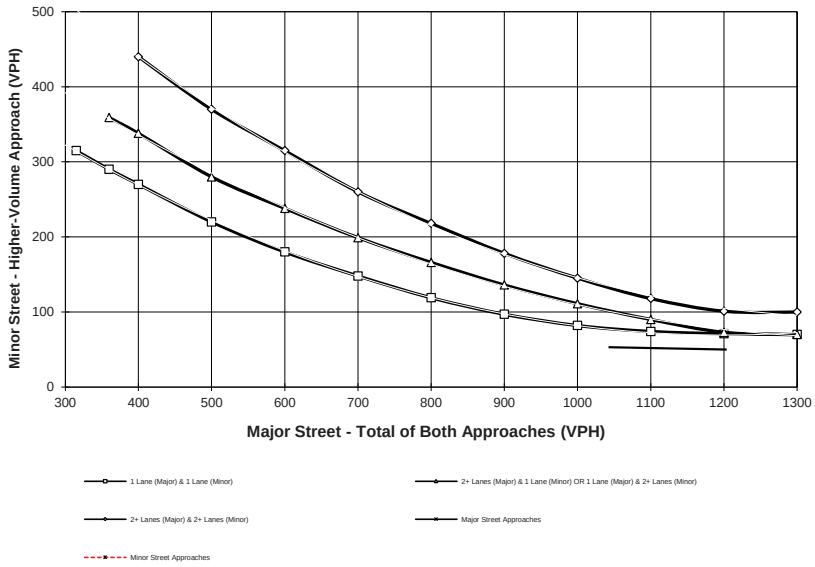
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAPC (2027) PM PEAK HOUR WARRANTS**

Major Street Name = **Altadena St.** Total of Both Approaches (VPH) = **72**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Navajo Rd.** High Volume Approach (VPH) = **45**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #3

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Warrants\03 - EAPC\03R_PM.xls\Fig 4C-4 (Rural Peak)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

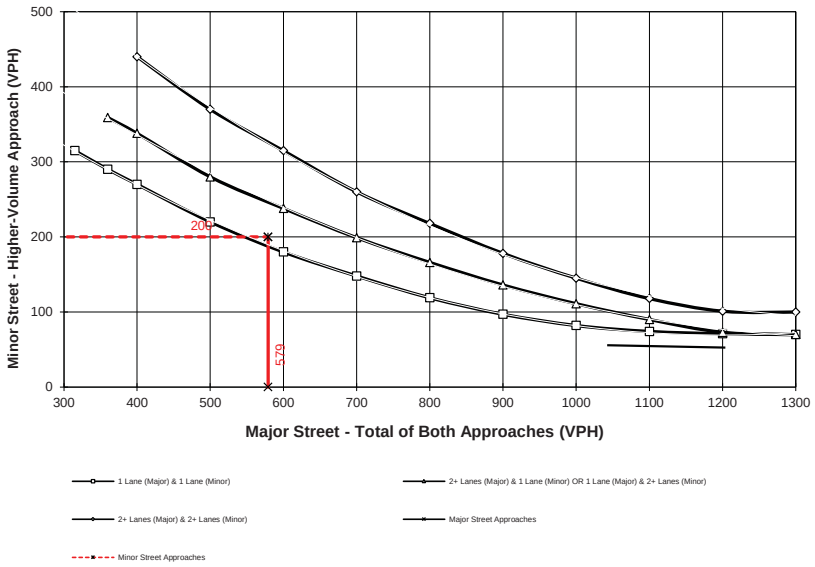
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAPC (2027) AM PEAK HOUR WARRANTS**

Major Street Name = **Dale Evans Pkwy.** Total of Both Approaches (VPH) = **579**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Corwin Rd.** High Volume Approach (VPH) = **200**
Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #10

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Warrants\03 - EAPC\10R_AM.xls\Fig 4C-4 (Rural Peak)

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

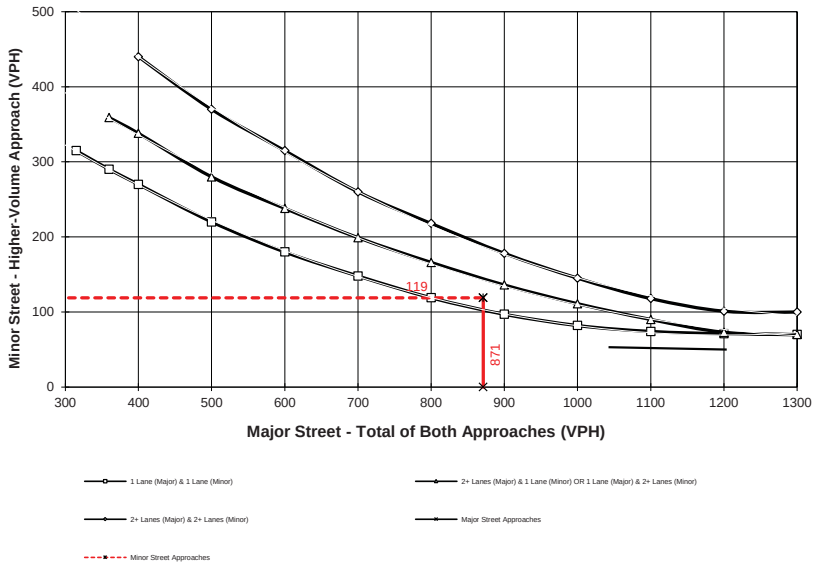
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAPC (2027) PM PEAK HOUR WARRANTS**

Major Street Name = **Dale Evans Pkwy.** Total of Both Approaches (VPH) = **871**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Corwin Rd.** High Volume Approach (VPH) = **119**
Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #10

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Warrants\03 - EAPC\10R_PM.xls\Fig 4C-4 (Rural Peak)

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)

DIST	CO	RTE	PM	TRAFFIC CONDITIONS	EAPC (2027)
				CALC JC	DATE 10/07/24
				CHK	DATE

Jurisdiction: **Town of Apple Valley**

Major Street: **Dachshund Av.** — Critical Approach Speed (Major) 45 mph

Minor Street: **Gustine Rd.** — Critical Approach Speed (Minor) 35 mph

Major Street Approach Lanes = **1** lane — Minor Street Approach Lanes **1** lane

Major Street Future ADT = **1,091** vpd — Minor Street Future ADT = **190** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); ……... [√]

or

In built up area of isolated community of < 10,000 population …….. [ ]

RURAL (R)

(Based on Estimated Average Daily Traffic - See Note)

URBAN / RURAL — XX

CONDITION A - Minimum Vehicular Volume

Satisfied / Not Satisfied — XX

Number of lanes for moving traffic on each approach

Major Street	Minor Street	Minimum Requirements ADT: Vehicles Per Day on Major Street (Total of Both Approaches) Urban	Rural	Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only) Urban	Rural
1 **1,091**	1 **190**	8,000	5,600	2,400	1,680
2 +	1	9,600	6,720	2,400	1,680
2 +	2 +	9,600	6,720	3,200	2,240
1	2 +	8,000	5,600	3,200	2,240

CONDITION B - Interruption of Continuous Traffic

Satisfied / Not Satisfied — XX

Number of lanes for moving traffic on each approach

Major Street	Minor Street	Vehicles Per Day on Major Street (Total of Both Approaches) Urban	Rural	Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only) Urban	Rural
1 **1,091**	1 **190**	12,000	8,400	1,200	850
2 +	1	14,400	10,080	1,200	850
2 +	2 +	14,400	10,080	1,600	1,120
1	2 +	12,000	8,400	1,600	1,120

Combination of CONDITIONS A + B

Satisfied / Not Satisfied — XX

No one condition satisfied, but following conditions fulfilled 80% of more ….. **A** 11% **B** 13%

2 CONDITIONS 80%

2 CONDITIONS 80%

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)

DIST	CO	RTE	PM	TRAFFIC CONDITIONS	EAPC (2027)
				CALC JC	DATE 10/07/24
				CHK	DATE

Jurisdiction: **Town of Apple Valley**

Major Street: **Dachshund Av.** — Critical Approach Speed (Major) 45 mph

Minor Street: **Access 1** — Critical Approach Speed (Minor) 35 mph

Major Street Approach Lanes = **1** lane — Minor Street Approach Lanes **1** lane

Major Street Future ADT = **888** vpd — Minor Street Future ADT = **321** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); ……... [√]

or

In built up area of isolated community of < 10,000 population …….. [ ]

RURAL (R)

(Based on Estimated Average Daily Traffic - See Note)

URBAN / RURAL — XX

CONDITION A - Minimum Vehicular Volume

Satisfied / Not Satisfied — XX

Number of lanes for moving traffic on each approach

Major Street	Minor Street	Minimum Requirements ADT: Vehicles Per Day on Major Street (Total of Both Approaches) Urban	Rural	Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only) Urban	Rural
1 **888**	1 **321**	8,000	5,600	2,400	1,680
2 +	1	9,600	6,720	2,400	1,680
2 +	2 +	9,600	6,720	3,200	2,240
1	2 +	8,000	5,600	3,200	2,240

CONDITION B - Interruption of Continuous Traffic

Satisfied / Not Satisfied — XX

Number of lanes for moving traffic on each approach

Major Street	Minor Street	Vehicles Per Day on Major Street (Total of Both Approaches) Urban	Rural	Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only) Urban	Rural
1 **888**	1 **321**	12,000	8,400	1,200	850
2 +	1	14,400	10,080	1,200	850
2 +	2 +	14,400	10,080	1,600	1,120
1	2 +	12,000	8,400	1,600	1,120

Combination of CONDITIONS A + B

Satisfied / Not Satisfied — XX

No one condition satisfied, but following conditions fulfilled 80% of more ….. **A** 16% **B** 11%

2 CONDITIONS 80%

2 CONDITIONS 80%

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)

DIST	CO	RTE	PM	TRAFFIC CONDITIONS	EAPC (2027)
				CALC JC	DATE 10/07/24
				CHK	DATE

Jurisdiction: **Town of Apple Valley**

Major Street: **Dachshund Av.** — Critical Approach Speed (Major) 45 mph

Minor Street: **Access 2** — Critical Approach Speed (Minor) 35 mph

Major Street Approach Lanes = **1** lane — Minor Street Approach Lanes **1** lane

Major Street Future ADT = **1,028** vpd — Minor Street Future ADT = **321** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); ……... [√]

or

In built up area of isolated community of < 10,000 population …….. [ ]

RURAL (R)

(Based on Estimated Average Daily Traffic - See Note)

URBAN / RURAL: XX

CONDITION A - Minimum Vehicular Volume

Satisfied / Not Satisfied: XX

Number of lanes for moving traffic on each approach

Major Street	Minor Street	Minimum Requirements ADT: Vehicles Per Day on Major Street (Total of Both Approaches) Urban	Rural	Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only) Urban	Rural
1 **1,028**	1 **321**	8,000	5,600	2,400	1,680
2 +	1	9,600	6,720	2,400	1,680
2 +	2 +	9,600	6,720	3,200	2,240
1	2 +	8,000	5,600	3,200	2,240

CONDITION B - Interruption of Continuous Traffic

Satisfied / Not Satisfied: XX

Number of lanes for moving traffic on each approach

Major Street	Minor Street	Vehicles Per Day on Major Street (Total of Both Approaches) Urban	Rural	Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only) Urban	Rural
1 **1,028**	1 **321**	12,000	8,400	1,200	850
2 +	1	14,400	10,080	1,200	850
2 +	2 +	14,400	10,080	1,600	1,120
1	2 +	12,000	8,400	1,600	1,120

Combination of CONDITIONS A + B

Satisfied / Not Satisfied: XX

No one condition satisfied, but following conditions fulfilled 80% of more ….. **A** 18% **B** 12%

2 CONDITIONS 80%

2 CONDITIONS 80%

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)

DIST	CO	RTE	PM	TRAFFIC CONDITIONS	EAPC (2027)
				CALC JC	DATE 10/07/24
Jurisdiction: **Town of Apple Valley**				CHK	DATE
Major Street: **Dachshund Av.**				Critical Approach Speed (Major)	45 mph
Minor Street: **Fresno Rd.**				Critical Approach Speed (Minor)	35 mph

Major Street Approach Lanes = **1** lane Minor Street Approach Lanes **1** lane

Major Street Future ADT = **1,181** vpd Minor Street Future ADT = **0** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); …….. √

or

In built up area of isolated community of < 10,000 population ……..

RURAL (R)

(Based on Estimated Average Daily Traffic - See Note)

URBAN RURAL
XX

CONDITION A - Minimum Vehicular Volume

Satisfied Not Satisfied
XX

Number of lanes for moving traffic on each approach

Major Street	Minor Street	Minimum Requirements ADT: Vehicles Per Day on Major Street (Total of Both Approaches) Urban	Rural	Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only) Urban	Rural
1 **1,181**	*1* **0**	8,000	5,600	2,400	1,680
2 +	*1*	9,600	6,720	2,400	1,680
2 +	*2* +	9,600	6,720	3,200	2,240
1	*2* +	8,000	5,600	3,200	2,240

CONDITION B - Interruption of Continuous Traffic

Satisfied Not Satisfied
XX

Number of lanes for moving traffic on each approach

Major Street	Minor Street	Vehicles Per Day on Major Street (Total of Both Approaches) Urban	Rural	Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only) Urban	Rural
1 **1,181**	*1* **0**	12,000	8,400	1,200	850
2 +	*1*	14,400	10,080	1,200	850
2 +	*2* +	14,400	10,080	1,600	1,120
1	*2* +	12,000	8,400	1,600	1,120

Combination of CONDITIONS A + B

Satisfied Not Satisfied
XX

No one condition satisfied, but following conditions fulfilled 80% of more ….. **A** 21% **B** 14%

2 CONDITIONS 80% 2 CONDITIONS 80%

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)

DIST	CO	RTE	PM	TRAFFIC CONDITIONS	EAPC (2027)
				CALC JC	DATE 10/07/24
				CHK	DATE

Jurisdiction: **Town of Apple Valley**

Major Street: **Ramona Rd.** — Critical Approach Speed (Major) 45 mph

Minor Street: **Gustine Rd.** — Critical Approach Speed (Minor) 35 mph

Major Street Approach Lanes = **1** lane — Minor Street Approach Lanes **1** lane

Major Street Future ADT = **190** vpd — Minor Street Future ADT = **190** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); ……... [√]

or **RURAL (R)**

In built up area of isolated community of < 10,000 population …….. [ ]

(Based on Estimated Average Daily Traffic - See Note)

URBAN / RURAL	Number of lanes for moving traffic on each approach: Major Street	Minor Street	Minimum Requirements ADT: Vehicles Per Day on Major Street (Total of Both Approaches) Urban	Rural	Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only) Urban	Rural
CONDITION A - Minimum Vehicular Volume						
Satisfied / Not Satisfied XX						
	1 **190**	*1* **190**	8,000	5,600	2,400	1,680
	2 +	*1*	9,600	6,720	2,400	1,680
	2 +	*2* +	9,600	6,720	3,200	2,240
	1	*2* +	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic						
Satisfied / Not Satisfied XX						
	1 **190**	*1* **190**	12,000	8,400	1,200	850
	2 +	*1*	14,400	10,080	1,200	850
	2 +	*2* +	14,400	10,080	1,600	1,120
	1	*2* +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B						
Satisfied / Not Satisfied XX			2 CONDITIONS 80%		2 CONDITIONS 80%	
No one condition satisfied, but following conditions fulfilled 80% of more …..	**A** 3%	**B** 2%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)

DIST	CO	RTE	PM	TRAFFIC CONDITIONS	EAPC (2027)
				CALC JC	DATE 10/07/24
				CHK	DATE

Jurisdiction: **Town of Apple Valley**

Major Street: **Ramona Rd.** — Critical Approach Speed (Major) 45 mph

Minor Street: **Access 3** — Critical Approach Speed (Minor) 35 mph

Major Street Approach Lanes = **1** lane — Minor Street Approach Lanes **1** lane

Major Street Future ADT = **273** vpd — Minor Street Future ADT = **213** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); ……... [√]

or **RURAL (R)**

In built up area of isolated community of < 10,000 population …….. [ ]

(Based on Estimated Average Daily Traffic - See Note)

URBAN	RURAL	Minimum Requirements ADT			
	XX				
CONDITION A - Minimum Vehicular Volume		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied	Not Satisfied XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **273**	*1* **213**	8,000	5,600	2,400	1,680
2 +	*1*	9,600	6,720	2,400	1,680
2 +	*2* +	9,600	6,720	3,200	2,240
1	*2* +	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied	Not Satisfied XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **273**	*1* **213**	12,000	8,400	1,200	850
2 +	*1*	14,400	10,080	1,200	850
2 +	*2* +	14,400	10,080	1,600	1,120
1	*2* +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B					
Satisfied	Not Satisfied XX	2 CONDITIONS 80%		2 CONDITIONS 80%	
No one condition satisfied, but following conditions fulfilled 80% of more …..	**A** 5% **B** 3%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)

DIST	CO	RTE	PM	TRAFFIC CONDITIONS	EAPC (2027)
				CALC JC	DATE 10/07/24
				CHK	DATE

Jurisdiction: **Town of Apple Valley**

Major Street: **Ramona Rd.** — Critical Approach Speed (Major) 45 mph

Minor Street: **Access 4** — Critical Approach Speed (Minor) 35 mph

Major Street Approach Lanes = **1** lane — Minor Street Approach Lanes **1** lane

Major Street Future ADT = **320** vpd — Minor Street Future ADT = **214** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); ……... [√]

or **RURAL (R)**

In built up area of isolated community of < 10,000 population …….. [ ]

(Based on Estimated Average Daily Traffic - See Note)

URBAN / RURAL: XX

CONDITION A - Minimum Vehicular Volume

Satisfied / Not Satisfied: XX

Number of lanes for moving traffic on each approach

Major Street	Minor Street	Minimum Requirements ADT: Vehicles Per Day on Major Street (Total of Both Approaches) Urban	Rural	Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only) Urban	Rural
1 **320**	*1* **214**	8,000	5,600	2,400	1,680
2 +	*1*	9,600	6,720	2,400	1,680
2 +	*2* +	9,600	6,720	3,200	2,240
1	*2* +	8,000	5,600	3,200	2,240

CONDITION B - Interruption of Continuous Traffic

Satisfied / Not Satisfied: XX

Number of lanes for moving traffic on each approach

Major Street	Minor Street	Vehicles Per Day on Major Street (Total of Both Approaches) Urban	Rural	Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only) Urban	Rural
1 **320**	*1* **214**	12,000	8,400	1,200	850
2 +	*1*	14,400	10,080	1,200	850
2 +	*2* +	14,400	10,080	1,600	1,120
1	*2* +	12,000	8,400	1,600	1,120

Combination of CONDITIONS A + B

Satisfied / Not Satisfied: XX

No one condition satisfied, but following conditions fulfilled 80% of more ….. **A** 6% **B** 4%

2 CONDITIONS 80% (Urban) — 2 CONDITIONS 80% (Rural)

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

This Page Intentionally Left Blank

APPENDIX 5.5: OPENING YEAR CUMULATIVE (2027) WITHOUT PROJECT CONDITIONS OFF-RAMP QUEUEING ANALYSIS WORKSHEETS

This Page Intentionally Left Blank

Intersection	
Int Delay, s/veh	1562

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	87	85	25	614	56	7	48	45	1354	0	23
Future Vol, veh/h	10	87	85	25	614	56	7	48	45	1354	0	23
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	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	10	91	89	26	640	58	7	50	47	1410	0	24

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	698	0	0	179	0	0	847	906	135	857	921	669
Stage 1	-	-	-	-	-	-	156	156	-	721	721	-
Stage 2	-	-	-	-	-	-	692	750	-	136	200	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	908	-	-	1409	-	-	284	278	919	~ 280	273	461
Stage 1	-	-	-	-	-	-	851	773	-	~ 422	435	-
Stage 2	-	-	-	-	-	-	438	422	-	~ 872	739	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	908	-	-	1409	-	-	258	266	919	~ 208	261	461
Mov Cap-2 Maneuver	-	-	-	-	-	-	258	266	-	~ 208	261	-
Stage 1	-	-	-	-	-	-	840	763	-	~ 409	422	-
Stage 2	-	-	-	-	-	-	402	409	-	~ 763	730	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.5	0.27	17.56	$ 2668.72
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	390	90	-	-	64	-	-	210
HCM Lane V/C Ratio	0.267	0.011	-	-	0.018	-	-	6.837
HCM Control Delay (s/veh)	17.6	9	0	-	7.6	0	-	$ 2668.7
HCM Lane LOS	C	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	1.1	0	-	-	0.1	-	-	156.5

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	145	1	1	587	1	2
Future Vol, veh/h	145	1	1	587	1	2
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	79	79	79	79	79	79
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	184	1	1	743	1	3

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	378	373	0	0	744	0
Stage 1	373	-	-	-	-	-
Stage 2	5	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	628	678	-	-	873	-
Stage 1	701	-	-	-	-	-
Stage 2	1023	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	627	678	-	-	873	-
Mov Cap-2 Maneuver	627	-	-	-	-	-
Stage 1	701	-	-	-	-	-
Stage 2	1022	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	13.12	0	3.04
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	627	600	-
HCM Lane V/C Ratio	-	-	0.295	0.001	-
HCM Control Delay (s/veh)	-	-	13.1	9.1	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.2	0	-

Intersection	
Int Delay, s/veh	12514

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	93	69	49	1484	61	4	79	39	889	0	20
Future Vol, veh/h	5	93	69	49	1484	61	4	79	39	889	0	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	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	7	137	101	72	2182	90	6	116	57	1307	0	29

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2272	0	0	238	0	0	2529	2618	188	2581	2624	2227
Stage 1	-	-	-	-	-	-	202	202	-	2371	2371	-
Stage 2	-	-	-	-	-	-	2326	2416	-	210	253	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	228	-	-	1341	-	-	19	~ 25	860	~ 17	24	55
Stage 1	-	-	-	-	-	-	804	738	-	~ 47	68	-
Stage 2	-	-	-	-	-	-	50	~ 65	-	~ 797	701	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	228	-	-	1341	-	-	8	~ 24	860	~ 16	23	55
Mov Cap-2 Maneuver	-	-	-	-	-	-	8	~ 24	-	~ 16	23	-
Stage 1	-	-	-	-	-	-	774	710	-	~ 47	68	-
Stage 2	-	-	-	-	-	-	24	~ 65	-	~ 599	675	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.64	0.24	$ 2358.55	$ 38119.68
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	32	50	-	-	~ 55	-	-	16
HCM Lane V/C Ratio	5.687	0.032	-	-	0.054	-	-	84.683
HCM Control Delay (s/veh)	$ 2358.6	21.3	0	-	7.8	0	-	$ 38119.7
HCM Lane LOS	F	C	A	-	A	A	-	F
HCM 95th %tile Q(veh)	21.6	0.1	-	-	0.2	-	-	168.1

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	20.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	132	1	1	1460	1	1
Future Vol, veh/h	132	1	1	1460	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	56	56	56	56	56	56
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	236	2	2	2607	2	2

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1311	1305	0	0	2609	0
Stage 1	1305	-	-	-	-	-
Stage 2	5	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	~ 177	198	-	-	168	-
Stage 1	256	-	-	-	-	-
Stage 2	1023	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 175	198	-	-	168	-
Mov Cap-2 Maneuver	~ 175	-	-	-	-	-
Stage 1	256	-	-	-	-	-
Stage 2	1012	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/veh	242.95	0	13.35
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	175	168	-
HCM Lane V/C Ratio	-	-	1.355	0.011	-
HCM Control Delay (s/veh)	-	-	242.9	26.7	0
HCM Lane LOS	-	-	F	D	A
HCM 95th %tile Q(veh)	-	-	14.1	0	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

APPENDIX 5.6: OPENING YEAR CUMULATIVE (2027) WITH PROJECT CONDITIONS OFF-RAMP QUEUEING ANALYSIS WORKSHEETS

This Page Intentionally Left Blank

Intersection	
Int Delay, s/veh	1693.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	87	85	25	629	56	7	48	45	1401	0	23
Future Vol, veh/h	10	87	85	25	629	56	7	48	45	1401	0	23
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	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	10	91	89	26	655	58	7	50	47	1459	0	24

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	714	0	0	179	0	0	863	921	135	873	936	684
Stage 1	-	-	-	-	-	-	156	156	-	736	736	-
Stage 2	-	-	-	-	-	-	707	766	-	136	200	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	896	-	-	1409	-	-	277	272	919	~ 273	267	452
Stage 1	-	-	-	-	-	-	851	773	-	~ 414	428	-
Stage 2	-	-	-	-	-	-	429	415	-	~ 872	739	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	896	-	-	1409	-	-	251	261	919	~ 202	255	452
Mov Cap-2 Maneuver	-	-	-	-	-	-	251	261	-	~ 202	255	-
Stage 1	-	-	-	-	-	-	840	762	-	~ 401	415	-
Stage 2	-	-	-	-	-	-	394	402	-	~ 763	730	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.5	0.27	17.87	$ 2871.26
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	383	90	-	-	62	-	-	204
HCM Lane V/C Ratio	0.272	0.012	-	-	0.018	-	-	7.285
HCM Control Delay (s/veh)	17.9	9.1	0	-	7.6	0	-	$ 2871.3
HCM Lane LOS	C	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	1.1	0	-	-	0.1	-	-	163.4

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	145	1	1	602	1	2
Future Vol, veh/h	145	1	1	602	1	2
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	79	79	79	79	79	79
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	184	1	1	762	1	3

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	387	382	0	0	763	0
Stage 1	382	-	-	-	-	-
Stage 2	5	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	620	669	-	-	858	-
Stage 1	694	-	-	-	-	-
Stage 2	1023	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	619	669	-	-	858	-
Mov Cap-2 Maneuver	619	-	-	-	-	-
Stage 1	694	-	-	-	-	-
Stage 2	1022	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	13.26	0	3.07
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	619	600	-
HCM Lane V/C Ratio	-	-	0.298	0.001	-
HCM Control Delay (s/veh)	-	-	13.3	9.2	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.2	0	-

Intersection	
Int Delay, s/veh	14907.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	93	69	49	1544	61	4	79	39	913	0	20
Future Vol, veh/h	5	93	69	49	1544	61	4	79	39	913	0	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	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	7	137	101	72	2271	90	6	116	57	1343	0	29

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2360	0	0	238	0	0	2617	2707	188	2669	2713	2315
Stage 1	-	-	-	-	-	-	202	202	-	2460	2460	-
Stage 2	-	-	-	-	-	-	2415	2504	-	210	253	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	210	-	-	1341	-	-	16	~ 21	860	~ 15	21	49
Stage 1	-	-	-	-	-	-	804	738	-	~ 42	61	-
Stage 2	-	-	-	-	-	-	45	~ 58	-	~ 797	701	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	210	-	-	1341	-	-	6	~ 21	860	~ 13	20	49
Mov Cap-2 Maneuver	-	-	-	-	-	-	6	~ 21	-	~ 13	20	-
Stage 1	-	-	-	-	-	-	771	708	-	~ 42	61	-
Stage 2	-	-	-	-	-	-	18	~ 58	-	~ 596	673	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.68	0.23	$ 2831.17	$ 45582.89
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	27	50	-	-	~ 53	-	-	14
HCM Lane V/C Ratio	6.654	0.035	-	-	0.054	-	-	101.103
HCM Control Delay (s/veh)	$ 2831.2	22.7	0	-	7.8	0	-	$ 45582.9
HCM Lane LOS	F	C	A	-	A	A	-	F
HCM 95th %tile Q(veh)	22.1	0.1	-	-	0.2	-	-	172.8

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	23.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	132	1	1	1520	1	1
Future Vol, veh/h	132	1	1	1520	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	56	56	56	56	56	56
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	236	2	2	2714	2	2

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1364	1359	0	0	2716	0
Stage 1	1359	-	-	-	-	-
Stage 2	5	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	~ 164	184	-	-	152	-
Stage 1	241	-	-	-	-	-
Stage 2	1023	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 162	184	-	-	152	-
Mov Cap-2 Maneuver	~ 162	-	-	-	-	-
Stage 1	241	-	-	-	-	-
Stage 2	1011	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/veh	$290.34	0	14.47
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	162	152	-
HCM Lane V/C Ratio	-	-	1.462	0.012	-
HCM Control Delay (s/veh)	-	-	290.3	28.9	0
HCM Lane LOS	-	-	F	D	A
HCM 95th %tile Q(veh)	-	-	15.2	0	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

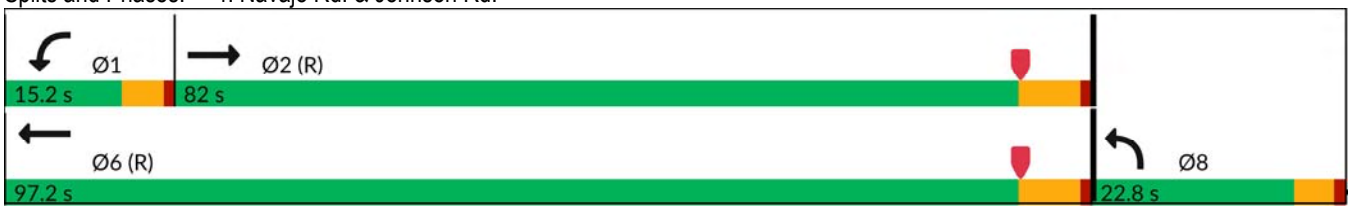
APPENDIX 5.7: OPENING YEAR CUMULATIVE (2027) WITH PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS WITH IMPROVEMENTS

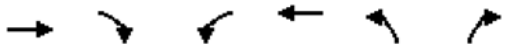
This Page Intentionally Left Blank

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1128	265	65	391	103	13
Future Volume (vph)	1128	265	65	391	103	13
Ideal Flow (vphpl)	1800	1800	1700	1800	1700	1800
Storage Length (ft)		0	150		200	0
Storage Lanes		0	1		1	0
Taper Length (ft)			90		90	
Right Turn on Red		Yes				Yes
Link Speed (mph)	45			45	55	
Link Distance (ft)	5327			1835	6664	
Travel Time (s)	80.7			27.8	82.6	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Shared Lane Traffic (%)						
Turn Type	NA		Prot	NA	Prot	
Protected Phases	2		1	6	8	
Permitted Phases						
Detector Phase	2		1	6	8	
Switch Phase						
Minimum Initial (s)	10.0		5.0	10.0	5.0	
Minimum Split (s)	24.5		9.6	24.5	22.6	
Total Split (s)	82.0		15.2	97.2	22.8	
Total Split (%)	68.3%		12.7%	81.0%	19.0%	
Maximum Green (s)	75.5		10.6	90.7	18.2	
Yellow Time (s)	5.5		3.6	5.5	3.6	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	6.5		4.6	6.5	4.6	
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		2.0	3.0	2.0	
Recall Mode	C-Max		None	C-Max	None	
Walk Time (s)	7.0			7.0	7.0	
Flash Don't Walk (s)	11.0			11.0	11.0	
Pedestrian Calls (#/hr)	10			10	10	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 14.7 (12%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	

Splits and Phases: 4: Navajo Rd. & Johnson Rd.





Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1128	265	65	391	103	13
Future Volume (veh/h)	1128	265	65	391	103	13
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1800	1800	1700	1800	1700	1800
Adj Flow Rate, veh/h	1484	217	86	514	146	0
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	2226	321	106	1522	200	94
Arrive On Green	0.74	0.74	0.07	0.85	0.06	0.00
Sat Flow, veh/h	3090	433	1619	1800	3238	1525
Grp Volume(v), veh/h	837	864	86	514	146	0
Grp Sat Flow(s),veh/h/ln	1710	1722	1619	1800	1619	1525
Q Serve(g_s), s	29.7	31.2	6.3	7.4	5.3	0.0
Cycle Q Clear(g_c), s	29.7	31.2	6.3	7.4	5.3	0.0
Prop In Lane		0.25	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1269	1278	106	1522	200	94
V/C Ratio(X)	0.66	0.68	0.81	0.34	0.73	0.00
Avail Cap(c_a), veh/h	1269	1278	143	1522	491	231
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	7.8	8.0	55.4	2.0	55.3	0.0
Incr Delay (d2), s/veh	0.2	0.3	16.5	0.6	1.9	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.4	8.9	3.0	1.4	2.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	8.1	8.3	71.9	2.6	57.2	0.0
LnGrp LOS	A	A	E	A	E	
Approach Vol, veh/h	1701			600	146	
Approach Delay, s/veh	8.2			12.5	57.2	
Approach LOS	A			B	E	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	12.4	95.6				108.0	12.0
Change Period (Y+Rc), s	4.6	6.5				6.5	4.6
Max Green Setting (Gmax), s	10.6	75.5				90.7	18.2
Max Q Clear Time (g_c+I1), s	8.3	33.2				9.4	7.3
Green Ext Time (p_c), s	0.0	17.3				3.3	0.2

Intersection Summary	
HCM 7th Control Delay, s/veh	12.2
HCM 7th LOS	B

Notes

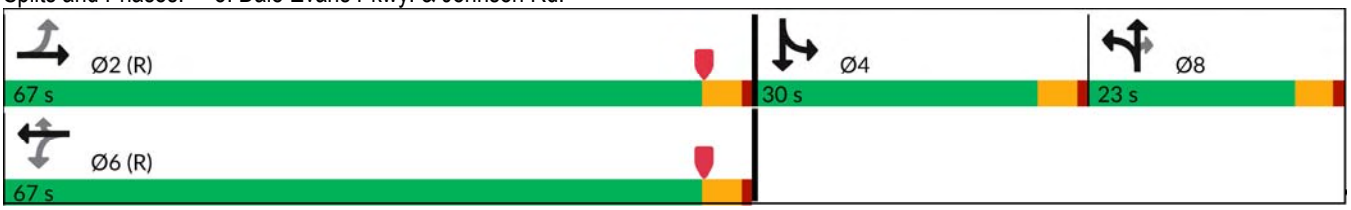
User approved volume balancing among the lanes for turning movement.

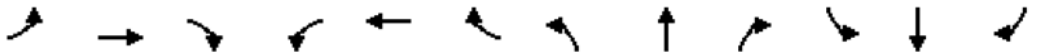
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	1232	116	91	452	176	55	151	282	406	93	7
Future Volume (vph)	17	1232	116	91	452	176	55	151	282	406	93	7
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Storage Length (ft)	150		0	300		165	100		150	325		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	90			120			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			45			55			55	
Link Distance (ft)		7616			5327			4005			1074	
Travel Time (s)		115.4			80.7			49.6			13.3	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases		2			6		8	8		4	4	
Permitted Phases	2			6		6			8			
Detector Phase	2	2		6	6	6	8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	22.5	22.5		22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	
Total Split (s)	67.0	67.0		67.0	67.0	67.0	23.0	23.0	23.0	30.0	30.0	
Total Split (%)	55.8%	55.8%		55.8%	55.8%	55.8%	19.2%	19.2%	19.2%	25.0%	25.0%	
Maximum Green (s)	62.5	62.5		62.5	62.5	62.5	18.5	18.5	18.5	25.5	25.5	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max	C-Max	Max	Max	Max	Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0	0	0	0	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated

Splits and Phases: 5: Dale Evans Pkwy. & Johnson Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	1232	116	91	452	176	55	151	282	406	93	7
Future Volume (veh/h)	17	1232	116	91	452	176	55	151	282	406	93	7
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	21	1521	81	112	558	118	68	186	175	501	115	9
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	388	1720	91	115	1781	794	250	527	235	344	683	53
Arrive On Green	0.78	0.78	0.78	0.78	0.78	0.78	0.23	0.31	0.23	0.43	0.32	0.32
Sat Flow, veh/h	693	3303	175	288	3420	1525	1619	3420	1525	1619	3216	249
Grp Volume(v), veh/h	21	785	817	112	558	118	68	186	175	501	61	63
Grp Sat Flow(s),veh/h/ln	693	1710	1768	288	1710	1525	1619	1710	1525	1619	1710	1755
Q Serve(g_s), s	1.1	38.6	39.6	22.9	5.7	2.3	4.1	5.1	12.8	25.5	3.1	3.1
Cycle Q Clear(g_c), s	6.8	38.6	39.6	62.5	5.7	2.3	4.1	5.1	12.8	25.5	3.1	3.1
Prop In Lane	1.00		0.10	1.00		1.00	1.00		1.00	1.00		0.14
Lane Grp Cap(c), veh/h	388	891	921	115	1781	794	250	527	235	344	363	373
V/C Ratio(X)	0.05	0.88	0.89	0.97	0.31	0.15	0.27	0.35	0.74	1.46	0.17	0.17
Avail Cap(c_a), veh/h	388	891	921	115	1781	794	250	527	235	344	363	373
HCM Platoon Ratio	1.50	1.50	1.50	1.50	1.50	1.50	1.50	2.00	1.50	2.00	1.50	1.50
Upstream Filter(I)	0.09	0.09	0.09	0.93	0.93	0.93	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	7.9	10.5	10.6	38.7	6.9	6.5	40.6	36.9	43.9	34.5	33.2	33.3
Incr Delay (d2), s/veh	0.0	1.3	1.4	74.0	0.4	0.4	2.7	1.8	19.1	220.8	1.0	1.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	5.9	6.2	5.5	1.8	0.8	1.7	2.1	5.5	27.8	1.3	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	7.9	11.8	12.0	112.7	7.3	6.9	43.3	38.7	63.0	255.3	34.2	34.2
LnGrp LOS	A	B	B	F	A	A	D	D	E	F	C	C
Approach Vol, veh/h		1623			788			429			625	
Approach Delay, s/veh		11.8			22.2			49.3			211.5	
Approach LOS		B			C			D			F	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		67.0		30.0		67.0		23.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		62.5		25.5		62.5		18.5				
Max Q Clear Time (g_c+I1), s		41.6		27.5		64.5		14.8				
Green Ext Time (p_c), s		11.3		0.0		0.0		0.6				

Intersection Summary												
HCM 7th Control Delay, s/veh			54.9									
HCM 7th LOS			D									

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	512	1	30	1364	1	55
Future Volume (vph)	512	1	30	1364	1	55
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800
Right Turn on Red		Yes		Yes		
Link Speed (mph)	45		45			45
Link Distance (ft)	7616		549			661
Travel Time (s)	115.4		8.3			10.0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Shared Lane Traffic (%)						
Turn Type	Prot		NA	pm+ov	Perm	NA
Protected Phases	8		2	8		6
Permitted Phases				2	6	
Detector Phase	8		2	8	6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	22.5		22.5	22.5	22.5	22.5
Total Split (s)	96.0		24.0	96.0	24.0	24.0
Total Split (%)	80.0%		20.0%	80.0%	20.0%	20.0%
Maximum Green (s)	91.5		19.5	91.5	19.5	19.5
Yellow Time (s)	3.5		3.5	3.5	3.5	3.5
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0		0.0
Total Lost Time (s)	4.5		4.5	4.5		4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		C-Max	None	C-Max	C-Max
Walk Time (s)	7.0		7.0	7.0	7.0	7.0
Flash Don't Walk (s)	11.0		11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0		0	0	0	0

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	

Splits and Phases: 6: Stoddard Wells Rd. & Johnson Rd.





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	512	1	30	1364	1	55
Future Volume (veh/h)	512	1	30	1364	1	55
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1700	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	596	0	35	772	1	64
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	688	324	1282	1411	36	1268
Arrive On Green	0.21	0.00	0.71	0.71	0.71	0.71
Sat Flow, veh/h	3238	1525	1800	1525	7	1780
Grp Volume(v), veh/h	596	0	35	772	65	0
Grp Sat Flow(s),veh/h/ln	1619	1525	1800	1525	1787	0
Q Serve(g_s), s	21.3	0.0	0.7	9.2	0.0	0.0
Cycle Q Clear(g_c), s	21.3	0.0	0.7	9.2	1.3	0.0
Prop In Lane	1.00	1.00		1.00	0.02	
Lane Grp Cap(c), veh/h	688	324	1282	1411	1303	0
V/C Ratio(X)	0.87	0.00	0.03	0.55	0.05	0.00
Avail Cap(c_a), veh/h	2469	1163	1282	1411	1303	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	45.6	0.0	5.1	0.7	5.1	0.0
Incr Delay (d2), s/veh	3.3	0.0	0.0	1.5	0.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.6	0.0	0.2	10.0	0.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	48.9	0.0	5.1	2.2	5.2	0.0
LnGrp LOS	D		A	A	A	
Approach Vol, veh/h	596		807			65
Approach Delay, s/veh	48.9		2.3			5.2
Approach LOS	D		A			A

Timer - Assigned Phs		2				6	8
Phs Duration (G+Y+Rc), s		90.0				90.0	30.0
Change Period (Y+Rc), s		4.5				4.5	4.5
Max Green Setting (Gmax), s		19.5				19.5	91.5
Max Q Clear Time (g_c+I1), s		11.2				3.3	23.3
Green Ext Time (p_c), s		2.3				0.2	2.2

Intersection Summary	
HCM 7th Control Delay, s/veh	21.4
HCM 7th LOS	C

Notes

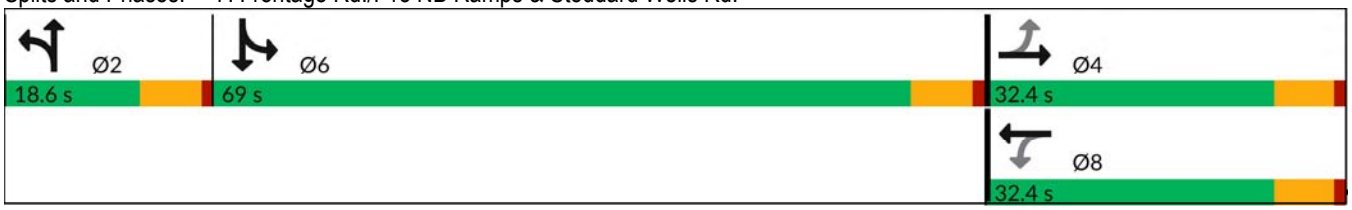
User approved volume balancing among the lanes for turning movement.

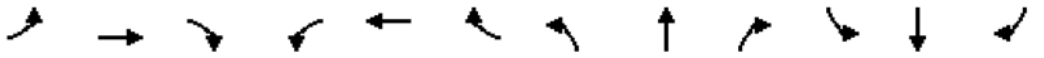
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	87	85	25	629	56	7	48	45	1401	0	23
Future Volume (vph)	10	87	85	25	629	56	7	48	45	1401	0	23
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1800	1800	1800	1700	1800	1800
Lane Width (ft)	12	14	14	12	14	14	12	14	14	13	14	14
Storage Length (ft)	150		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	90			90			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		889			1144			979			330	
Travel Time (s)		13.5			17.3			22.3			7.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Shared Lane Traffic (%)										49%		
Turn Type	Perm	NA		Perm	NA		Split	NA		Split	NA	
Protected Phases		4			8		2	2		6	6	
Permitted Phases	4			8								
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	24.5	24.5		24.5	24.5		16.5	16.5		16.5	16.5	
Total Split (s)	32.4	32.4		32.4	32.4		18.6	18.6		69.0	69.0	
Total Split (%)	27.0%	27.0%		27.0%	27.0%		15.5%	15.5%		57.5%	57.5%	
Maximum Green (s)	25.9	25.9		25.9	25.9		12.1	12.1		62.5	62.5	
Yellow Time (s)	5.5	5.5		5.5	5.5		5.5	5.5		5.5	5.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.5	6.5			6.5		6.5	6.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0							
Flash Don't Walk (s)	11.0	11.0		11.0	11.0							
Pedestrian Calls (#/hr)	10	10		10	10							

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 111.5
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Frontage Rd./I-15 NB Ramps & Stoddard Wells Rd.





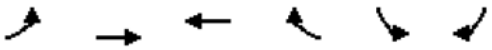
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	87	85	25	629	56	7	48	45	1401	0	23
Future Volume (veh/h)	10	87	85	25	629	56	7	48	45	1401	0	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.04	1.04	1.00	1.04	1.04	1.00	1.04	1.04	1.04	1.04	1.04
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1872	1872	1700	1872	1872	1800	1872	1872	1768	1872	1872
Adj Flow Rate, veh/h	10	91	47	26	655	32	7	50	26	1481	0	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	124	266	138	272	807	39	15	110	57	1463	813	0
Arrive On Green	0.23	0.34	0.23	0.34	0.46	0.34	0.10	0.15	0.10	0.87	0.00	0.00
Sat Flow, veh/h	686	1163	601	1137	3522	172	149	1063	553	3368	1872	0
Grp Volume(v), veh/h	10	0	138	26	344	343	83	0	0	1481	0	0
Grp Sat Flow(s),veh/h/ln	686	0	1764	1137	1853	1841	1765	0	0	1684	1872	0
Q Serve(g_s), s	1.2	0.0	5.1	1.5	13.4	13.5	3.6	0.0	0.0	36.3	0.0	0.0
Cycle Q Clear(g_c), s	15.7	0.0	5.1	7.0	13.4	13.5	3.6	0.0	0.0	36.3	0.0	0.0
Prop In Lane	1.00		0.34	1.00		0.09	0.08		0.31	1.00		0.00
Lane Grp Cap(c), veh/h	124	0	404	272	425	422	182	0	0	1463	813	0
V/C Ratio(X)	0.08	0.00	0.34	0.10	0.81	0.81	0.46	0.00	0.00	1.01	0.00	0.00
Avail Cap(c_a), veh/h	179	0	546	364	574	570	255	0	0	2517	1399	0
HCM Platoon Ratio	1.00	1.50	1.00	1.50	2.00	1.50	1.00	1.50	1.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	37.9	0.0	24.2	25.6	21.1	21.5	34.0	0.0	0.0	5.5	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.5	0.2	6.3	6.4	1.8	0.0	0.0	17.1	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	2.0	0.4	4.7	4.8	1.6	0.0	0.0	5.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	38.2	0.0	24.7	25.7	27.4	28.0	35.8	0.0	0.0	22.6	0.0	0.0
LnGrp LOS	D		C	C	C	C	D			F		
Approach Vol, veh/h		148			713			83			1481	
Approach Delay, s/veh		25.6			27.6			35.8			22.6	
Approach LOS		C			C			D			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		15.1		25.3		47.4		25.3				
Change Period (Y+Rc), s		6.5		6.5		6.5		6.5				
Max Green Setting (Gmax), s		12.1		25.9		62.5		25.9				
Max Q Clear Time (g_c+I1), s		5.6		17.7		38.3		15.5				
Green Ext Time (p_c), s		0.2		0.4		7.2		2.9				

Intersection Summary												
HCM 7th Control Delay, s/veh			24.7									
HCM 7th LOS			C									

Notes

User approved volume balancing among the lanes for turning movement.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1	36	58	602	144	3
Future Volume (vph)	1	36	58	602	144	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0	0	25
Storage Lanes	0			1	1	0
Taper Length (ft)	90				90	
Link Speed (mph)		45	45		45	
Link Distance (ft)		1552	889		1482	
Travel Time (s)		23.5	13.5		22.5	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	36	58	602	144	3
Future Vol, veh/h	1	36	58	602	144	3
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	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1	43	69	717	171	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	786	0	-	0	114	69
Stage 1	-	-	-	-	69	-
Stage 2	-	-	-	-	45	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	842	-	-	-	887	1000
Stage 1	-	-	-	-	959	-
Stage 2	-	-	-	-	982	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	842	-	-	-	886	1000
Mov Cap-2 Maneuver	-	-	-	-	886	-
Stage 1	-	-	-	-	957	-
Stage 2	-	-	-	-	982	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.25	0	10.05
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	49	-	-	-	888
HCM Lane V/C Ratio	0.001	-	-	-	0.197
HCM Control Delay (s/veh)	9.3	0	-	-	10
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.7



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	145	1	1	602	1	2
Future Volume (vph)	145	1	1	602	1	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		300	0	
Storage Lanes	1	0		1	0	
Taper Length (ft)	90				90	
Link Speed (mph)	30		45			45
Link Distance (ft)	263		1482			525
Travel Time (s)	6.0		22.5			8.0
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	145	1	1	602	1	2
Future Vol, veh/h	145	1	1	602	1	2
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	-	-	300	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	184	1	1	762	1	3

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	6	1	0	0	763	0
Stage 1	1	-	-	-	-	-
Stage 2	5	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	1020	1089	-	-	858	-
Stage 1	1027	-	-	-	-	-
Stage 2	1023	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	1019	1089	-	-	858	-
Mov Cap-2 Maneuver	1019	-	-	-	-	-
Stage 1	1027	-	-	-	-	-
Stage 2	1022	-	-	-	-	-

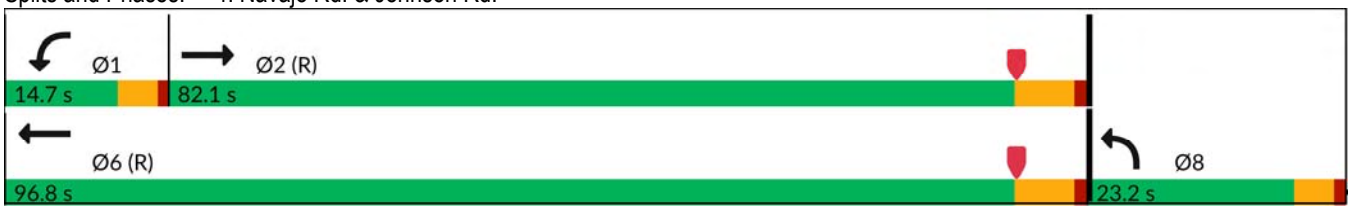
Approach	WB	NB	SB
HCM Control Delay, s/v	9.31	0	3.07
HCM LOS	A		

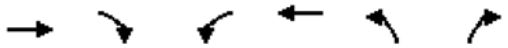
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1019	600	-
HCM Lane V/C Ratio	-	-	0.181	0.001	-
HCM Control Delay (s/veh)	-	-	9.3	9.2	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.7	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	689	160	42	1026	322	52
Future Volume (vph)	689	160	42	1026	322	52
Ideal Flow (vphpl)	1800	1800	1700	1800	1700	1800
Storage Length (ft)		0	150		200	0
Storage Lanes		0	1		1	0
Taper Length (ft)			90		90	
Right Turn on Red		Yes				Yes
Link Speed (mph)	45			45	55	
Link Distance (ft)	5327			1835	6664	
Travel Time (s)	80.7			27.8	82.6	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Shared Lane Traffic (%)						
Turn Type	NA		Prot	NA	Prot	
Protected Phases	2		1	6	8	
Permitted Phases						
Detector Phase	2		1	6	8	
Switch Phase						
Minimum Initial (s)	10.0		5.0	10.0	5.0	
Minimum Split (s)	24.5		9.6	24.5	22.6	
Total Split (s)	82.1		14.7	96.8	23.2	
Total Split (%)	68.4%		12.3%	80.7%	19.3%	
Maximum Green (s)	75.6		10.1	90.3	18.6	
Yellow Time (s)	5.5		3.6	5.5	3.6	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	6.5		4.6	6.5	4.6	
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		2.0	3.0	2.0	
Recall Mode	C-Max		None	C-Max	None	
Walk Time (s)	7.0			7.0	7.0	
Flash Don't Walk (s)	11.0			11.0	11.0	
Pedestrian Calls (#/hr)	10			10	10	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 14.7 (12%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	

Splits and Phases: 4: Navajo Rd. & Johnson Rd.





Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	689	160	42	1026	322	52
Future Volume (veh/h)	689	160	42	1026	322	52
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1800	1800	1700	1800	1700	1800
Adj Flow Rate, veh/h	907	145	55	1350	487	0
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	1984	317	69	1355	502	236
Arrive On Green	0.67	0.67	0.04	0.75	0.16	0.00
Sat Flow, veh/h	3043	472	1619	1800	3238	1525
Grp Volume(v), veh/h	525	527	55	1350	487	0
Grp Sat Flow(s),veh/h/ln	1710	1715	1619	1800	1619	1525
Q Serve(g_s), s	17.5	17.5	4.0	89.1	17.9	0.0
Cycle Q Clear(g_c), s	17.5	17.5	4.0	89.1	17.9	0.0
Prop In Lane		0.28	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1149	1152	69	1355	502	236
V/C Ratio(X)	0.46	0.46	0.80	1.00	0.97	0.00
Avail Cap(c_a), veh/h	1149	1152	136	1355	502	236
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	9.3	9.3	57.0	14.7	50.4	0.0
Incr Delay (d2), s/veh	0.1	0.1	7.8	23.7	32.4	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	5.6	1.8	34.2	9.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	9.4	9.4	64.8	38.4	82.8	0.0
LnGrp LOS	A	A	E	D	F	
Approach Vol, veh/h	1052			1405	487	
Approach Delay, s/veh	9.4			39.4	82.8	
Approach LOS	A			D	F	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	9.7	87.1				96.8	23.2
Change Period (Y+Rc), s	4.6	6.5				6.5	4.6
Max Green Setting (Gmax), s	10.1	75.6				90.3	18.6
Max Q Clear Time (g_c+I1), s	6.0	19.5				91.1	19.9
Green Ext Time (p_c), s	0.0	7.7				0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	35.9
HCM 7th LOS	D

Notes

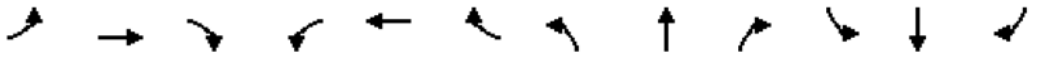
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	775	87	313	1297	361	159	111	181	263	224	17
Future Volume (vph)	9	775	87	313	1297	361	159	111	181	263	224	17
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Storage Length (ft)	150		0	300		165	100		150	325		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	90			120			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			45			55			55	
Link Distance (ft)		7616			5327			4005			1074	
Travel Time (s)		115.4			80.7			49.6			13.3	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6			8			
Detector Phase	5	2		1	6	6	3	8	8	7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	9.5	22.5		9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	
Total Split (s)	9.5	40.5		31.0	62.0	62.0	23.8	22.5	22.5	26.0	24.7	
Total Split (%)	7.9%	33.8%		25.8%	51.7%	51.7%	19.8%	18.8%	18.8%	21.7%	20.6%	
Maximum Green (s)	5.0	36.0		26.5	57.5	57.5	19.3	18.0	18.0	21.5	20.2	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lag	Lead	Lead	Lag	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	Max	Max	None	Max	
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	
Flash Don't Walk (s)		11.0			11.0	11.0		11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0			0	0		0	0		0	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 31 (26%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	

Splits and Phases: 5: Dale Evans Pkwy. & Johnson Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	775	87	313	1297	361	159	111	181	263	224	17
Future Volume (veh/h)	9	775	87	313	1297	361	159	111	181	263	224	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	11	969	59	391	1621	264	199	139	132	329	280	21
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	21	982	60	358	1738	775	260	513	229	290	543	40
Arrive On Green	0.01	0.45	0.30	0.22	0.76	0.51	0.16	0.22	0.15	0.18	0.25	0.17
Sat Flow, veh/h	1619	3275	199	1619	3420	1525	1619	3420	1525	1619	3226	240
Grp Volume(v), veh/h	11	506	522	391	1621	264	199	139	132	329	148	153
Grp Sat Flow(s),veh/h/ln	1619	1710	1764	1619	1710	1525	1619	1710	1525	1619	1710	1757
Q Serve(g_s), s	0.8	35.1	35.1	26.5	46.8	6.0	14.1	4.0	6.3	21.5	8.9	9.1
Cycle Q Clear(g_c), s	0.8	35.1	35.1	26.5	46.8	6.0	14.1	4.0	6.3	21.5	8.9	9.1
Prop In Lane	1.00		0.11	1.00		1.00	1.00		1.00	1.00		0.14
Lane Grp Cap(c), veh/h	21	513	529	358	1738	775	260	513	229	290	288	296
V/C Ratio(X)	0.53	0.99	0.99	1.09	0.93	0.34	0.76	0.27	0.58	1.13	0.51	0.52
Avail Cap(c_a), veh/h	67	513	529	358	1738	775	260	513	229	290	288	296
HCM Platoon Ratio	1.00	1.50	1.00	1.00	1.50	1.00	1.00	1.50	1.00	1.00	1.50	1.00
Upstream Filter(I)	0.42	0.42	0.42	0.09	0.09	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.9	32.8	33.8	46.8	12.6	4.1	48.2	41.1	20.2	49.2	40.6	41.3
Incr Delay (d2), s/veh	8.6	22.7	22.3	46.9	1.2	0.1	12.6	1.3	10.2	94.1	6.4	6.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	15.0	15.8	14.9	7.6	3.5	6.3	1.7	4.0	15.8	3.9	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	67.5	55.4	56.1	93.6	13.8	4.2	60.8	42.4	30.4	143.3	47.0	47.7
LnGrp LOS	E	E	E	F	B	A	E	D	C	F	D	D
Approach Vol, veh/h		1039			2276			470			630	
Approach Delay, s/veh		55.9			26.4			46.8			97.5	
Approach LOS		E			C			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	31.0	40.5	23.8	24.7	6.0	65.5	26.0	22.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	26.5	36.0	19.3	20.2	5.0	57.5	21.5	18.0
Max Q Clear Time (g_c+I1), s	28.5	37.1	16.1	11.1	2.8	48.8	23.5	8.3
Green Ext Time (p_c), s	0.0	0.0	0.1	0.9	0.0	6.6	0.0	0.7

Intersection Summary	
HCM 7th Control Delay, s/veh	45.7
HCM 7th LOS	D

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1470	3	13	869	2	29
Future Volume (vph)	1470	3	13	869	2	29
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800
Right Turn on Red		Yes		Yes		
Link Speed (mph)	45		45			45
Link Distance (ft)	7616		549			661
Travel Time (s)	115.4		8.3			10.0
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67
Shared Lane Traffic (%)						
Turn Type	Prot		NA	pm+ov	Perm	NA
Protected Phases	8		2	8		6
Permitted Phases				2	6	
Detector Phase	8		2	8	6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	22.5		22.5	22.5	22.5	22.5
Total Split (s)	94.0		26.0	94.0	26.0	26.0
Total Split (%)	78.3%		21.7%	78.3%	21.7%	21.7%
Maximum Green (s)	89.5		21.5	89.5	21.5	21.5
Yellow Time (s)	3.5		3.5	3.5	3.5	3.5
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0		0.0
Total Lost Time (s)	4.5		4.5	4.5		4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		C-Max	None	C-Max	C-Max
Walk Time (s)	7.0		7.0	7.0	7.0	7.0
Flash Don't Walk (s)	11.0		11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0		0	0	0	0

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	

Splits and Phases: 6: Stoddard Wells Rd. & Johnson Rd.





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	1470	3	13	869	2	29
Future Volume (veh/h)	1470	3	13	869	2	29
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1700	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	2198	0	19	849	3	43
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	2290	1079	392	1411	40	368
Arrive On Green	0.71	0.00	0.22	0.22	0.22	0.22
Sat Flow, veh/h	3238	1525	1800	1525	37	1691
Grp Volume(v), veh/h	2198	0	19	849	46	0
Grp Sat Flow(s),veh/h/ln	1619	1525	1800	1525	1728	0
Q Serve(g_s), s	74.2	0.0	1.0	11.3	0.0	0.0
Cycle Q Clear(g_c), s	74.2	0.0	1.0	11.3	2.5	0.0
Prop In Lane	1.00	1.00		1.00	0.07	
Lane Grp Cap(c), veh/h	2290	1079	392	1411	408	0
V/C Ratio(X)	0.96	0.00	0.05	0.60	0.11	0.00
Avail Cap(c_a), veh/h	2415	1138	392	1411	408	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.39	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	16.0	0.0	37.1	0.8	37.7	0.0
Incr Delay (d2), s/veh	4.9	0.0	0.2	1.9	0.6	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	22.8	0.0	0.5	26.0	1.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	20.9	0.0	37.3	2.7	38.2	0.0
LnGrp LOS	C		D	A	D	
Approach Vol, veh/h	2198		868			46
Approach Delay, s/veh	20.9		3.4			38.2
Approach LOS	C		A			D

Timer - Assigned Phs		2				6	8
Phs Duration (G+Y+Rc), s		30.6				30.6	89.4
Change Period (Y+Rc), s		4.5				4.5	4.5
Max Green Setting (Gmax), s		21.5				21.5	89.5
Max Q Clear Time (g_c+I1), s		13.3				4.5	76.2
Green Ext Time (p_c), s		2.5				0.1	8.7

Intersection Summary	
HCM 7th Control Delay, s/veh	16.3
HCM 7th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

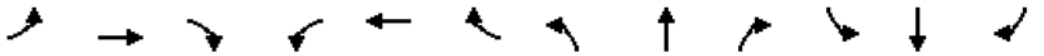
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	93	69	49	1544	61	4	79	39	913	0	20
Future Volume (vph)	5	93	69	49	1544	61	4	79	39	913	0	20
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1800	1800	1800	1700	1800	1800
Lane Width (ft)	12	14	14	12	14	14	12	14	14	13	14	14
Storage Length (ft)	150		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	90			90			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		889			1144			979			330	
Travel Time (s)		13.5			17.3			22.3			7.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)										49%		
Turn Type	Perm	NA		Perm	NA		Split	NA		Split	NA	
Protected Phases		4			8		2	2		6	6	
Permitted Phases	4			8								
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	24.5	24.5		24.5	24.5		16.5	16.5		16.5	16.5	
Total Split (s)	59.0	59.0		59.0	59.0		17.6	17.6		43.4	43.4	
Total Split (%)	49.2%	49.2%		49.2%	49.2%		14.7%	14.7%		36.2%	36.2%	
Maximum Green (s)	52.5	52.5		52.5	52.5		11.1	11.1		36.9	36.9	
Yellow Time (s)	5.5	5.5		5.5	5.5		5.5	5.5		5.5	5.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.5	6.5			6.5		6.5	6.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0							
Flash Don't Walk (s)	11.0	11.0		11.0	11.0							
Pedestrian Calls (#/hr)	10	10		10	10							

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 119.8
Natural Cycle: 130
Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Frontage Rd./I-15 NB Ramps & Stoddard Wells Rd.





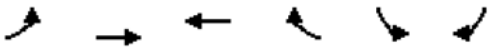
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	93	69	49	1544	61	4	79	39	913	0	20
Future Volume (veh/h)	5	93	69	49	1544	61	4	79	39	913	0	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.04	1.04	1.00	1.04	1.04	1.00	1.04	1.04	1.04	1.04	1.04
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1872	1872	1700	1872	1872	1800	1872	1872	1768	1872	1872
Adj Flow Rate, veh/h	5	101	37	53	1678	33	4	86	20	1009	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	61	581	213	528	1618	32	5	117	27	1038	577	0
Arrive On Green	0.44	0.67	0.44	0.67	0.89	0.67	0.08	0.12	0.08	0.62	0.00	0.00
Sat Flow, veh/h	259	1307	479	1137	3641	71	66	1415	329	3368	1872	0
Grp Volume(v), veh/h	5	0	138	53	852	859	110	0	0	1009	0	0
Grp Sat Flow(s),veh/h/ln	259	0	1786	1137	1853	1859	1809	0	0	1684	1872	0
Q Serve(g_s), s	0.0	0.0	4.0	2.3	52.5	52.5	6.9	0.0	0.0	33.9	0.0	0.0
Cycle Q Clear(g_c), s	52.5	0.0	4.0	6.3	52.5	52.5	6.9	0.0	0.0	33.9	0.0	0.0
Prop In Lane	1.00		0.27	1.00		0.04	0.04		0.18	1.00		0.00
Lane Grp Cap(c), veh/h	61	0	794	528	824	826	149	0	0	1038	577	0
V/C Ratio(X)	0.08	0.00	0.17	0.10	1.03	1.04	0.74	0.00	0.00	0.97	0.00	0.00
Avail Cap(c_a), veh/h	61	0	794	528	824	826	170	0	0	1052	585	0
HCM Platoon Ratio	1.00	1.50	1.00	1.50	2.00	1.50	1.00	1.50	1.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	59.1	0.0	13.7	12.8	6.6	7.1	51.1	0.0	0.0	22.2	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	0.1	0.1	40.7	41.9	13.6	0.0	0.0	21.2	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	1.5	0.5	12.0	12.5	3.6	0.0	0.0	11.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	59.6	0.0	13.8	12.9	47.3	49.0	64.7	0.0	0.0	43.4	0.0	0.0
LnGrp LOS	E		B	B	F	F	E			D		
Approach Vol, veh/h		143			1764			110			1009	
Approach Delay, s/veh		15.4			47.1			64.7			43.4	
Approach LOS		B			D			E			D	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		16.2		59.0		42.9		59.0				
Change Period (Y+Rc), s		6.5		6.5		6.5		6.5				
Max Green Setting (Gmax), s		11.1		52.5		36.9		52.5				
Max Q Clear Time (g_c+I1), s		8.9		54.5		35.9		54.5				
Green Ext Time (p_c), s		0.1		0.0		0.5		0.0				

Intersection Summary												
HCM 7th Control Delay, s/veh			45.0									
HCM 7th LOS			D									

Notes

User approved volume balancing among the lanes for turning movement.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	6	36	54	1515	130	2
Future Volume (vph)	6	36	54	1515	130	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0	0	25
Storage Lanes	0			1	1	0
Taper Length (ft)	90				90	
Link Speed (mph)		45	45		45	
Link Distance (ft)		1552	889		1482	
Travel Time (s)		23.5	13.5		22.5	
Peak Hour Factor	0.58	0.58	0.58	0.58	0.58	0.58
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	36	54	1515	130	2
Future Vol, veh/h	6	36	54	1515	130	2
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	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	58	58	58	58	58	58
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	10	62	93	2612	224	3

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	2705	0	-	0	176	93
Stage 1	-	-	-	-	93	-
Stage 2	-	-	-	-	83	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	154	-	-	-	819	970
Stage 1	-	-	-	-	936	-
Stage 2	-	-	-	-	946	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	154	-	-	-	761	970
Mov Cap-2 Maneuver	-	-	-	-	761	-
Stage 1	-	-	-	-	870	-
Stage 2	-	-	-	-	946	-

Approach	EB	WB	SB
HCM Control Delay, s/v	4.3	0	11.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	148	-	-	-	764
HCM Lane V/C Ratio	0.067	-	-	-	0.298
HCM Control Delay (s/veh)	30.1	0	-	-	11.7
HCM Lane LOS	D	A	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	1.2



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	132	1	1	1520	1	1
Future Volume (vph)	132	1	1	1520	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		300	0	
Storage Lanes	1	0		1	0	
Taper Length (ft)	90				90	
Link Speed (mph)	30		45			45
Link Distance (ft)	263		1482			525
Travel Time (s)	6.0		22.5			8.0
Peak Hour Factor	0.56	0.56	0.56	0.56	0.56	0.56
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	132	1	1	1520	1	1
Future Vol, veh/h	132	1	1	1520	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	-	-	300	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	56	56	56	56	56	56
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	236	2	2	2714	2	2

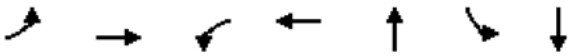
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	7	2	0	0	2716	0
Stage 1	2	-	-	-	-	-
Stage 2	5	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	1019	1088	-	-	152	-
Stage 1	1027	-	-	-	-	-
Stage 2	1023	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	1007	1088	-	-	152	-
Mov Cap-2 Maneuver	1007	-	-	-	-	-
Stage 1	1027	-	-	-	-	-
Stage 2	1011	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	9.67	0	14.47
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1008	152	-
HCM Lane V/C Ratio	-	-	0.236	0.012	-
HCM Control Delay (s/veh)	-	-	9.7	28.9	0
HCM Lane LOS	-	-	A	D	A
HCM 95th %tile Q(veh)	-	-	0.9	0	-

APPENDIX 5.8: OPENING YEAR CUMULATIVE (2027) WITH PROJECT CONDITIONS OFF-RAMP QUEUEING ANALYSIS S WORKSHEETS WITH IMPROVEMENTS

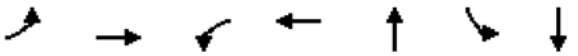
This Page Intentionally Left Blank



Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	10	180	26	713	104	744	739
v/c Ratio	0.17	0.43	0.13	0.87	0.51	0.89	0.77
Control Delay (s/veh)	46.0	34.7	39.5	54.8	47.1	39.2	25.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	46.0	34.7	39.5	54.8	47.1	39.2	25.8
Queue Length 50th (ft)	6	94	16	264	56	473	377
Queue Length 95th (ft)	24	167	43	#365	115	#750	556
Internal Link Dist (ft)		809		1064	899		250
Turn Bay Length (ft)	150		150				
Base Capacity (vph)	66	447	224	890	222	938	1064
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.40	0.12	0.80	0.47	0.79	0.69

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	5	176	53	1744	132	506	508
v/c Ratio	0.09	0.22	0.11	1.05	0.73	1.00	0.82
Control Delay (s/veh)	24.8	16.8	20.9	70.4	70.7	80.9	43.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	24.8	16.8	20.9	70.4	70.7	80.9	43.7
Queue Length 50th (ft)	2	63	24	~745	89	394	309
Queue Length 95th (ft)	12	111	51	#881	#184	#625	#486
Internal Link Dist (ft)		809		1064	899		250
Turn Bay Length (ft)	150		150				
Base Capacity (vph)	56	809	473	1658	183	508	618
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.22	0.11	1.05	0.72	1.00	0.82

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Intersection: 7: Frontage Rd./I-15 NB Ramps & Stoddard Wells Rd.

Movement	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	TR	L	T	TR	LTR	L	LTR
Maximum Queue (ft)	33	162	163	438	494	99	292	292
Average Queue (ft)	7	90	32	335	385	58	284	260
95th Queue (ft)	29	174	122	523	588	107	324	358
Link Distance (ft)		816		1106	1106	931	277	277
Upstream Blk Time (%)							22	12
Queuing Penalty (veh)							0	0
Storage Bay Dist (ft)	150		150					
Storage Blk Time (%)		2		44				
Queuing Penalty (veh)		0		12				

Intersection: 9: Quarry Rd. & I-15 SB Ramps

Movement	WB	NB	SB
Directions Served	LR	R	LT
Maximum Queue (ft)	48	4	5
Average Queue (ft)	34	1	1
95th Queue (ft)	55	6	8
Link Distance (ft)	222		503
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		300	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Frontage Rd./I-15 NB Ramps & Stoddard Wells Rd.

Movement	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	TR	L	T	TR	LTR	L	LTR
Maximum Queue (ft)	9	64	240	1121	1121	190	292	292
Average Queue (ft)	3	21	86	1114	1118	106	288	272
95th Queue (ft)	14	77	269	1163	1144	183	309	329
Link Distance (ft)		816		1106	1106	931	277	277
Upstream Blk Time (%)				82	79		34	24
Queuing Penalty (veh)				0	0		0	0
Storage Bay Dist (ft)	150		150					
Storage Blk Time (%)		1		76				
Queuing Penalty (veh)		0		40				

Intersection: 9: Quarry Rd. & I-15 SB Ramps

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	117	11
Average Queue (ft)	73	6
95th Queue (ft)	199	27
Link Distance (ft)	222	503
Upstream Blk Time (%)	17	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Appendix 2

"Lecangs Dakota Warehouse," CalEEMod, Version 2022.1,

prepared by

Terra Nova Planning & Research, Inc.

October 14, 2024.

Lecangs Dakota Warehouse Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

1.2. Land Use Types

1.3. User-Selected Emission Reduction Measures by Emissions Sector

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

2.2. Construction Emissions by Year, Unmitigated

2.4. Operations Emissions Compared Against Thresholds

2.5. Operations Emissions by Sector, Unmitigated

3. Construction Emissions Details

3.1. Site Preparation (2025) - Unmitigated

3.3. Grading (2025) - Unmitigated

3.5. Building Construction (2025) - Unmitigated

3.7. Building Construction (2026) - Unmitigated

3.9. Paving (2026) - Unmitigated

3.11. Architectural Coating (2026) - Unmitigated

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

4.3. Area Emissions by Source

4.3.1. Unmitigated

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

5. Activity Data

5.1. Construction Schedule

5.2. Off-Road Equipment

5.2.1. Unmitigated

5.3. Construction Vehicles

5.3.1. Unmitigated

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

5.6.2. Construction Earthmoving Control Strategies

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

5.9. Operational Mobile Sources

5.9.1. Unmitigated

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

5.10.3. Landscape Equipment

5.11. Operational Energy Consumption

5.11.1. Unmitigated

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

5.13. Operational Waste Generation

5.13.1. Unmitigated

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Lecangs Dakota Warehouse
Construction Start Date	6/3/2025
Operational Year	2027
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	5.00
Precipitation (days)	12.4
Location	34.576988371627436, -117.19640661894633
County	San Bernardino-Mojave Desert
City	Apple Valley
Air District	Mojave Desert AQMD
Air Basin	Mojave Desert
TAZ	5160
EDFZ	10
Electric Utility	Southern California Edison
Gas Utility	Southwest Gas Corp.
App Version	2022.1.1.28

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Unrefrigerated Warehouse-No Rail	571	1000sqft	13.0	570,752	262,531	—	—	Warehouse only

Industrial Park	56.4	1000sqft	1.30	56,448	0.00	—	—	Office spaces
Parking Lot	823	1000sqft	18.9	0.00	0.00	—	—	All hardscape and landscape are

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	4.15	31.9	45.7	0.07	9.26	5.25	11,099	0.33	0.61	11,310
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	50.2	15.6	31.7	0.05	5.46	1.63	9,747	0.27	0.62	9,935
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	10.3	10.4	21.1	0.03	3.26	1.00	6,217	0.11	0.39	6,343
Annual (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	1.88	1.89	3.84	0.01	0.60	0.18	1,029	0.02	0.06	1,050
Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—
Threshold	137	137	548	137	82.0	65.0	—	—	—	548,000
Unmit.	No	No	No	No	No	No	—	—	—	No
Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—
Threshold	137	137	548	137	82.0	65.0	—	—	—	548,000
Unmit.	No	No	No	No	No	No	—	—	—	No

Exceeds (Annual)	—	—	—	—	—	—	—	—	—	—
Threshold	25.0	25.0	100	25.0	15.0	12.0	—	—	—	100,000
Unmit.	No	No	No	No	No	No	—	—	—	No

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—
2025	3.41	31.9	36.4	0.07	9.26	5.25	9,515	0.28	0.59	9,720
2026	4.15	21.4	45.7	0.06	5.26	1.78	11,099	0.33	0.61	11,310
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—
2025	2.42	15.4	29.2	0.05	4.80	1.49	9,077	0.27	0.59	9,260
2026	50.2	15.6	31.7	0.05	5.46	1.63	9,747	0.17	0.62	9,935
Average Daily	—	—	—	—	—	—	—	—	—	—
2025	1.18	9.45	12.8	0.02	2.37	1.00	3,567	0.11	0.19	3,629
2026	10.3	10.4	21.1	0.03	3.26	1.00	6,217	0.11	0.39	6,343
Annual	—	—	—	—	—	—	—	—	—	—
2025	0.22	1.72	2.34	< 0.005	0.43	0.18	591	0.02	0.03	601
2026	1.88	1.89	3.84	0.01	0.60	0.18	1,029	0.02	0.06	1,050

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	22.6	47.7	79.2	0.57	25.8	7.57	65,905	33.8	6.75	68,932

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	17.8	47.9	39.5	0.52	24.7	7.23	61,032	33.8	6.39	63,799
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	20.0	48.6	55.7	0.53	24.5	7.20	61,327	33.8	6.40	64,156
Annual (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	3.65	8.86	10.2	0.10	4.47	1.31	10,153	5.59	1.06	10,622
Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—
Threshold	137	137	548	137	82.0	65.0	—	—	—	548,000
Unmit.	No	No	No	No	No	No	—	—	—	No
Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—
Threshold	137	137	548	137	82.0	65.0	—	—	—	548,000
Unmit.	No	No	No	No	No	No	—	—	—	No
Exceeds (Annual)	—	—	—	—	—	—	—	—	—	—
Threshold	25.0	25.0	100	25.0	15.0	12.0	—	—	—	100,000
Unmit.	No	No	No	No	No	No	—	—	—	No

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Mobile	3.61	44.1	49.1	0.55	25.5	7.28	57,330	0.32	6.67	59,483
Area	18.8	0.23	27.3	< 0.005	0.05	0.04	112	< 0.005	< 0.005	113
Energy	0.18	3.33	2.80	0.02	0.25	0.25	8,092	0.74	0.06	8,127
Water	—	—	—	—	—	—	44.7	0.03	0.02	51.1

Waste	—	—	—	—	—	—	327	32.7	0.00	1,144
Refrig.	—	—	—	—	—	—	—	—	—	14.7
Total	22.6	47.7	79.2	0.57	25.8	7.57	65,905	33.8	6.75	68,932
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Mobile	3.22	44.6	36.7	0.50	24.4	6.97	52,569	0.31	6.32	54,463
Area	14.3	—	—	—	—	—	—	—	—	—
Energy	0.18	3.33	2.80	0.02	0.25	0.25	8,092	0.74	0.06	8,127
Water	—	—	—	—	—	—	44.7	0.03	0.02	51.1
Waste	—	—	—	—	—	—	327	32.7	0.00	1,144
Refrig.	—	—	—	—	—	—	—	—	—	14.7
Total	17.8	47.9	39.5	0.52	24.7	7.23	61,032	33.8	6.39	63,799
Average Daily	—	—	—	—	—	—	—	—	—	—
Mobile	3.26	45.1	39.4	0.51	24.2	6.93	52,809	0.32	6.32	54,764
Area	16.6	0.11	13.5	< 0.005	0.02	0.02	55.3	< 0.005	< 0.005	55.5
Energy	0.18	3.33	2.80	0.02	0.25	0.25	8,092	0.74	0.06	8,127
Water	—	—	—	—	—	—	44.7	0.03	0.02	51.1
Waste	—	—	—	—	—	—	327	32.7	0.00	1,144
Refrig.	—	—	—	—	—	—	—	—	—	14.7
Total	20.0	48.6	55.7	0.53	24.5	7.20	61,327	33.8	6.40	64,156
Annual	—	—	—	—	—	—	—	—	—	—
Mobile	0.60	8.23	7.20	0.09	4.42	1.26	8,743	0.05	1.05	9,067
Area	3.02	0.02	2.45	< 0.005	< 0.005	< 0.005	9.16	< 0.005	< 0.005	9.19
Energy	0.03	0.61	0.51	< 0.005	0.05	0.05	1,340	0.12	0.01	1,345
Water	—	—	—	—	—	—	7.40	0.01	< 0.005	8.46
Waste	—	—	—	—	—	—	54.1	5.41	0.00	189
Refrig.	—	—	—	—	—	—	—	—	—	2.43
Total	3.65	8.86	10.2	0.10	4.47	1.31	10,153	5.59	1.06	10,622

3. Construction Emissions Details

3.1. Site Preparation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.31	31.6	30.2	0.05	1.37	1.26	5,295	0.21	0.04	5,314
Dust From Material Movement	—	—	—	—	7.67	3.94	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	1.91	1.82	< 0.005	0.08	0.08	319	0.01	< 0.005	320
Dust From Material Movement	—	—	—	—	0.46	0.24	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.35	0.33	< 0.005	0.02	0.01	52.8	< 0.005	< 0.005	53.0
Dust From Material Movement	—	—	—	—	0.08	0.04	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.08	1.45	0.00	0.23	0.05	255	0.01	0.01	259
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	0.01	0.07	0.00	0.01	< 0.005	14.0	< 0.005	< 0.005	14.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	< 0.005	< 0.005	2.32	< 0.005	< 0.005	2.35
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.20	29.7	28.3	0.06	1.23	1.14	6,599	0.27	0.05	6,622
Dust From Material Movement	—	—	—	—	3.60	1.43	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.39	3.58	3.41	0.01	0.15	0.14	795	0.03	0.01	798
Dust From Material Movement	—	—	—	—	0.43	0.17	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.65	0.62	< 0.005	0.03	0.02	132	0.01	< 0.005	132
Dust From Material Movement	—	—	—	—	0.08	0.03	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	1.66	0.00	0.26	0.06	292	0.01	0.01	296
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.04	2.17	0.48	0.01	0.55	0.17	1,938	< 0.005	0.31	2,035
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.15	0.00	0.03	0.01	32.0	< 0.005	< 0.005	32.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.28	0.06	< 0.005	0.07	0.02	234	< 0.005	0.04	245
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.03	0.00	0.01	< 0.005	5.31	< 0.005	< 0.005	5.38
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.05	0.01	< 0.005	0.01	< 0.005	38.7	< 0.005	0.01	40.6

3.5. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.13	10.4	13.0	0.02	0.43	0.40	2,398	0.10	0.02	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.13	10.4	13.0	0.02	0.43	0.40	2,398	0.10	0.02	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.27	2.47	3.09	0.01	0.10	0.09	568	0.02	< 0.005	570
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.45	0.56	< 0.005	0.02	0.02	94.0	< 0.005	< 0.005	94.3
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	1.44	1.28	21.9	0.00	3.44	0.81	3,843	0.15	0.13	3,899
Vendor	0.13	3.33	1.45	0.03	0.93	0.29	3,275	0.01	0.44	3,414
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Worker	1.18	1.40	14.7	0.00	3.44	0.81	3,401	0.17	0.13	3,445
Vendor	0.12	3.52	1.48	0.03	0.93	0.29	3,278	0.01	0.44	3,409

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	0.28	0.36	3.89	0.00	0.81	0.19	829	0.04	0.03	841
Vendor	0.03	0.83	0.35	0.01	0.22	0.07	776	< 0.005	0.10	808
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.07	0.71	0.00	0.15	0.03	137	0.01	0.01	139
Vendor	0.01	0.15	0.06	< 0.005	0.04	0.01	128	< 0.005	0.02	134
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.07	9.85	13.0	0.02	0.38	0.35	2,397	0.10	0.02	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.07	9.85	13.0	0.02	0.38	0.35	2,397	0.10	0.02	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.70	6.46	8.50	0.02	0.25	0.23	1,572	0.06	0.01	1,577
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.13	1.18	1.55	< 0.005	0.05	0.04	260	0.01	< 0.005	261
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	1.26	1.16	20.3	0.00	3.44	0.81	3,766	0.15	0.13	3,822
Vendor	0.13	3.20	1.35	0.03	0.93	0.29	3,211	0.01	0.44	3,350
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Worker	1.12	1.28	13.5	0.00	3.44	0.81	3,335	0.05	0.13	3,375
Vendor	0.12	3.40	1.40	0.03	0.93	0.29	3,214	0.01	0.44	3,345
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	0.74	0.91	10.0	0.00	2.24	0.52	2,251	0.04	0.09	2,281
Vendor	0.08	2.21	0.91	0.02	0.60	0.19	2,106	< 0.005	0.29	2,194
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.17	1.83	0.00	0.41	0.10	373	0.01	0.01	378
Vendor	0.01	0.40	0.17	< 0.005	0.11	0.03	349	< 0.005	0.05	363
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Paving (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.76	7.12	9.94	0.01	0.32	0.29	1,511	0.06	0.01	1,516
Paving	0.86	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.59	0.82	< 0.005	0.03	0.02	124	0.01	< 0.005	125
Paving	0.07	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.11	0.15	< 0.005	< 0.005	< 0.005	20.6	< 0.005	< 0.005	20.6
Paving	0.01	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	1.16	0.00	0.20	0.05	214	0.01	0.01	218
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.07	0.00	0.02	< 0.005	16.1	< 0.005	< 0.005	16.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	< 0.005	< 0.005	2.66	< 0.005	< 0.005	2.70
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Architectural Coating (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.86	1.13	< 0.005	0.02	0.02	134	0.01	< 0.005	134
Architectural Coatings	47.5	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.15	0.20	< 0.005	< 0.005	< 0.005	24.1	< 0.005	< 0.005	24.2
Architectural Coatings	8.59	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	0.04	< 0.005	< 0.005	< 0.005	4.00	< 0.005	< 0.005	4.01
Architectural Coatings	1.57	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—

Worker	0.22	0.26	2.71	0.00	0.69	0.16	667	0.01	0.03	675
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.05	0.55	0.00	0.12	0.03	124	< 0.005	< 0.005	126
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.10	0.00	0.02	0.01	20.6	< 0.005	< 0.005	20.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	1.09	40.5	12.2	0.42	14.7	4.51	43,698	0.11	6.09	45,633
Industrial Park	2.53	3.64	36.9	0.13	10.8	2.77	13,632	0.21	0.58	13,850
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	3.61	44.1	49.1	0.55	25.5	7.28	57,330	0.32	6.67	59,483
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—

Unrefrigerated Warehouse-No Rail	1.03	42.6	12.2	0.42	14.7	4.51	43,713	0.11	6.10	45,538
Industrial Park	2.19	1.98	24.4	0.09	9.70	2.47	8,855	0.21	0.22	8,925
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	3.22	44.6	36.7	0.50	24.4	6.97	52,569	0.31	6.32	54,463
Annual	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	0.19	7.86	2.22	0.08	2.67	0.82	7,236	0.02	1.01	7,546
Industrial Park	0.40	0.38	4.98	0.02	1.75	0.45	1,507	0.03	0.04	1,521
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.60	8.23	7.20	0.09	4.42	1.26	8,743	0.05	1.05	9,067

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	2,500	0.24	0.03	2,515
Industrial Park	—	—	—	—	—	—	934	0.09	0.01	940
Parking Lot	—	—	—	—	—	—	683	0.07	0.01	687
Total	—	—	—	—	—	—	4,118	0.39	0.05	4,142
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	2,500	0.24	0.03	2,515

Industrial Park	—	—	—	—	—	—	934	0.09	0.01	940
Parking Lot	—	—	—	—	—	—	683	0.07	0.01	687
Total	—	—	—	—	—	—	4,118	0.39	0.05	4,142
Annual	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	414	0.04	< 0.005	416
Industrial Park	—	—	—	—	—	—	155	0.01	< 0.005	156
Parking Lot	—	—	—	—	—	—	113	0.01	< 0.005	114
Total	—	—	—	—	—	—	682	0.06	0.01	686

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	0.16	2.91	2.45	0.02	0.22	0.22	3,477	0.31	0.01	3,487
Industrial Park	0.02	0.42	0.35	< 0.005	0.03	0.03	496	0.04	< 0.005	498
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.18	3.33	2.80	0.02	0.25	0.25	3,974	0.35	0.01	3,985
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	0.16	2.91	2.45	0.02	0.22	0.22	3,477	0.31	0.01	3,487
Industrial Park	0.02	0.42	0.35	< 0.005	0.03	0.03	496	0.04	< 0.005	498
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.18	3.33	2.80	0.02	0.25	0.25	3,974	0.35	0.01	3,985
Annual	—	—	—	—	—	—	—	—	—	—

Unrefrigerated Warehouse-No Rail	0.03	0.53	0.45	< 0.005	0.04	0.04	576	0.05	< 0.005	577
Industrial Park	< 0.005	0.08	0.06	< 0.005	0.01	0.01	82.2	0.01	< 0.005	82.4
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.03	0.61	0.51	< 0.005	0.05	0.05	658	0.06	< 0.005	660

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Consumer Products	13.5	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.86	—	—	—	—	—	—	—	—	—
Landscape Equipment	4.48	0.23	27.3	< 0.005	0.05	0.04	112	< 0.005	< 0.005	113
Total	18.8	0.23	27.3	< 0.005	0.05	0.04	112	< 0.005	< 0.005	113
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Consumer Products	13.5	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.86	—	—	—	—	—	—	—	—	—
Total	14.3	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Consumer Products	2.46	—	—	—	—	—	—	—	—	—

Architectural Coatings	0.16	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.40	0.02	2.45	< 0.005	< 0.005	< 0.005	9.16	< 0.005	< 0.005	9.19
Total	3.02	0.02	2.45	< 0.005	< 0.005	< 0.005	9.16	< 0.005	< 0.005	9.19

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	29.7	0.02	0.01	32.9
Industrial Park	—	—	—	—	—	—	15.0	0.02	0.01	18.2
Parking Lot	—	—	—	—	—	—	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	44.7	0.03	0.02	51.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	29.7	0.02	0.01	32.9
Industrial Park	—	—	—	—	—	—	15.0	0.02	0.01	18.2
Parking Lot	—	—	—	—	—	—	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	44.7	0.03	0.02	51.1
Annual	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	4.92	< 0.005	< 0.005	5.45
Industrial Park	—	—	—	—	—	—	2.48	< 0.005	< 0.005	3.01

Parking Lot	—	—	—	—	—	—	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	7.40	0.01	< 0.005	8.46

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	289	28.9	0.00	1,012
Industrial Park	—	—	—	—	—	—	37.7	3.77	0.00	132
Parking Lot	—	—	—	—	—	—	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	327	32.7	0.00	1,144
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	289	28.9	0.00	1,012
Industrial Park	—	—	—	—	—	—	37.7	3.77	0.00	132
Parking Lot	—	—	—	—	—	—	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	327	32.7	0.00	1,144
Annual	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	47.9	4.78	0.00	167
Industrial Park	—	—	—	—	—	—	6.25	0.62	0.00	21.9
Parking Lot	—	—	—	—	—	—	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	54.1	5.41	0.00	189

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	14.7
Total	—	—	—	—	—	—	—	—	—	14.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	14.7
Total	—	—	—	—	—	—	—	—	—	14.7
Annual	—	—	—	—	—	—	—	—	—	—
Industrial Park	—	—	—	—	—	—	—	—	—	2.43
Total	—	—	—	—	—	—	—	—	—	2.43

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—

Avoided	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	6/1/2025	7/1/2025	5.00	22.0	—
Grading	Grading	7/2/2025	9/1/2025	5.00	44.0	—
Building Construction	Building Construction	9/2/2025	12/1/2026	5.00	326	—
Paving	Paving	8/1/2026	9/11/2026	5.00	30.0	—
Architectural Coating	Architectural Coating	10/1/2026	12/31/2026	5.00	66.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38

Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	—	10.2	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	—	10.2	HHDT,MHDT
Grading	Hauling	28.4	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	263	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	103	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	18.5	LDA,LDT1,LDT2
Paving	Vendor	—	10.2	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	52.7	18.5	LDA,LDT1,LDT2

Architectural Coating	Vendor	—	10.2	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	0.00	0.00	940,800	313,600	49,345

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	0.00	0.00	60.0	0.00	—
Grading	0.00	10,000	309	0.00	—
Paving	0.00	0.00	0.00	0.00	18.9

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt

Unrefrigerated Warehouse-No Rail	0.00	0%
Industrial Park	0.00	0%
Parking Lot	18.9	52%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	349	0.03	< 0.005
2026	0.00	346	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Unrefrigerated Warehouse-No Rail	401	401	401	146,452	16,050	16,050	16,050	5,858,084
Industrial Park	934	931	931	340,694	13,948	13,906	13,906	5,086,679
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	940,800	313,600	49,345

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Unrefrigerated Warehouse-No Rail	2,636,134	346	0.0330	0.0040	10,850,383
Industrial Park	985,124	346	0.0330	0.0040	1,548,934
Parking Lot	720,434	346	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Unrefrigerated Warehouse-No Rail	1,940,442	3,724,476
Industrial Park	1,974,697	0.00
Parking Lot	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Unrefrigerated Warehouse-No Rail	537	—

Industrial Park	70.0	—
Parking Lot	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Industrial Park	Other commercial A/C and heat pumps	R-410A	2,088	0.30	4.00	4.00	18.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	34.1	annual days of extreme heat
Extreme Precipitation	0.90	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.80	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	5	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	5	1	1	4
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	1	1	1	2

Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	80.0
AQ-PM	7.52
AQ-DPM	21.9
Drinking Water	34.9
Lead Risk Housing	27.7
Pesticides	0.00
Toxic Releases	37.1
Traffic	59.7
Effect Indicators	—
CleanUp Sites	52.1
Groundwater	44.8
Haz Waste Facilities/Generators	16.6
Impaired Water Bodies	51.2
Solid Waste	84.7

Sensitive Population	—
Asthma	88.0
Cardio-vascular	89.5
Low Birth Weights	91.9
Socioeconomic Factor Indicators	—
Education	26.9
Housing	11.6
Linguistic	—
Poverty	52.5
Unemployment	90.6

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	44.97626075
Employed	30.46323624
Median HI	35.0442705
Education	—
Bachelor's or higher	42.93596818
High school enrollment	100
Preschool enrollment	39.79212113
Transportation	—
Auto Access	85.40998332
Active commuting	24.00872578
Social	—
2-parent households	51.18696266
Voting	75.34967278

Neighborhood	—
Alcohol availability	88.37418196
Park access	16.65597331
Retail density	8.469138971
Supermarket access	2.399589375
Tree canopy	0.71859361
Housing	—
Homeownership	62.60746824
Housing habitability	64.39112024
Low-inc homeowner severe housing cost burden	17.8108559
Low-inc renter severe housing cost burden	77.19748492
Uncrowded housing	68.66418581
Health Outcomes	—
Insured adults	64.22430386
Arthritis	4.4
Asthma ER Admissions	7.6
High Blood Pressure	8.9
Cancer (excluding skin)	9.1
Asthma	30.0
Coronary Heart Disease	6.8
Chronic Obstructive Pulmonary Disease	13.3
Diagnosed Diabetes	35.6
Life Expectancy at Birth	34.2
Cognitively Disabled	41.3
Physically Disabled	11.3
Heart Attack ER Admissions	2.7
Mental Health Not Good	48.5
Chronic Kidney Disease	20.1

Obesity	46.5
Pedestrian Injuries	48.3
Physical Health Not Good	39.9
Stroke	15.1
Health Risk Behaviors	—
Binge Drinking	57.0
Current Smoker	46.7
No Leisure Time for Physical Activity	58.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	58.1
Elderly	16.8
English Speaking	81.5
Foreign-born	11.0
Outdoor Workers	47.0
Climate Change Adaptive Capacity	—
Impervious Surface Cover	90.2
Traffic Density	37.9
Traffic Access	23.0
Other Indices	—
Hardship	32.7
Other Decision Support	—
2016 Voting	75.3

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	65.0

Healthy Places Index Score for Project Location (b)	46.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Dimensions are derived from the Project site plan and WQMP exhibit. Warehouse size is 627,00 - 56,448 (office space, Industrial Park). Warehouse has a landscape area of 262,531 sf (curbed landscaping 201,664 + basin 60,857) Parking lot includes all on & off-site hardscape (822,600).
Construction: Construction Phases	Construction duration is estimated to be almost 18 months from June 2026 through December 2027.
Construction: Paving	Of the total hardscape (822,600sf, 18.88 acres), 52% is asphalt and 48% is cement.
Operations: Fleet Mix	Fleet mix based on Moreno Valley Trade Center (Warehouse Scenario) Air Quality, GHG, & HRA Evaluation prepared by UXR (October 2020).
Operations: Vehicle Data	Number of trucks per day is estimated to be 401. Divide this by the warehouse area 570.752 = 0.7 trip rate. Number of pass. vehicles per day is estimated to be 934. Divides this by the office space area 56.448 = 16.55 trip rate. Based on TA Scope by Urban CrossRoads.
Construction: Dust From Material Movement	The site is anticipated to be balanced, although there could be 10,000 c.y. of materials exported.

Operations: Water and Waste Water	Office water demand for indoor use is based on AWWA Commercial and Industrial end uses of water: 35 gal/sf/year. Warehouse water demand for indoor use is based on US EIA 2012 commercial buildings energy consumption survey: 3.4 gal/sf/year. Outdoor water demand is based on the Town's MAWA equation: Area (SF) x ETo x ETAF x 0.62.

Appendix B
Biological Resources Assessment Report
(Available on the Town website for review)

BIOLOGICAL RESOURCES ASSESSMENT

DAKOTA AND FRESNO ROAD PROJECT

TOWN OF APPLE VALLEY,
SAN BERNARDINO COUNTY, CALIFORNIA



Prepared for:

Terra Nova Planning and Research
42635 Melanie Place, Suite 101
Palm Desert, CA 92211
Nicole Criste, Principal
(760) 341-4800

Prepared by:

WSP USA Environment & Infrastructure Inc.
862 E Hospitality Ln #350
San Bernardino, CA 92408
Dale Hameister, Senior Biologist
(831) 238-0676

6 September 2024

TABLE OF CONTENTS

PAGE

1.0 INTRODUCTION 1

2.0 PROJECT BACKGROUND/SITE DESCRIPTION 1
2.1 Federal 1
2.2 State of California 3
2.3 Multiple-Species Habitat/Natural Community Conservation Plan 6

3.0 METHODS 6
3.1 Literature Review 6
3.2 Biological Resources and Habitat Assessment 7
3.3 Jurisdictional Waters and Wetlands 7
3.4 Wildlife Corridors 7

4.0 RESULTS 8
4.1 Critical Habitat 8
4.2 Soils 8
4.3 Wetlands and Jurisdictional Drainages 8
4.4 Vegetation Communities 8
4.5 Wildlife 9
4.6 Special Status Biological Resources 9
4.6.1 Special Status Plant Species 20
4.6.2 Special Status Vegetation Communities 20
4.6.3 Special Status Wildlife 20
4.6.3.1 Insects 20
4.6.3.2 Reptiles 21
4.6.3.3 Birds 22
4.6.3.4 Mammals 23
4.7 Wildlife Corridors 24

5.0 DISCUSSION AND RECOMMENDATIONS 24

6.0 LITERATURE CITED AND REFERENCES 25

Asteraceae Sunflower Family 34

Zygophyllaceae Caltrop Family 34

Poaceae Grass Family 35

Leporidae Rabbit and Hare Family 35

TABLE OF TABLES

Table 1. Special Status Plant Species Potential for Occurrence 10
Table 2. Special Status Vegetation Community Potential for Occurrence 13
Table 3. Special Status Animals 15

TABLE OF APPENDICES

Appendix A Maps and Figures
Appendix B Site Photographs
Appendix C Plant and Vertebrate Species Lists
Appendix D USFWS IPaC Report

1.0 INTRODUCTION

WSP USA Environment & Infrastructure Inc. (WSP USA) was contracted by Terra Nova Planning and Research to conduct a biological resources assessment for a proposed warehouse development (project) on a 39-acre site, located north of Fresno Road, south of Gustine Street, and east of Dakota Road, in the town of Apple Valley, San Bernardino County, California. This document presents the regulatory framework, methods, results and conclusions for the biological resources assessment.

2.0 PROJECT BACKGROUND/SITE DESCRIPTION

The project is entirely within the town of Apple Valley, San Bernardino County, California. The site is generally located north of Fresno Road, south of Gustine Street, and east of Dakota Road (Figure 1). It is located primarily on the 7.5-minute Apple Valley North, Calif. United States Geological Survey (USGS) topographic quadrangle (Figure 2). It is in Section 28 of Township 6 North and Range 3 West. Project topography is relatively flat at elevations ranging from approximately 2977 to 2996 feet (907-913 meters). The project consists of one (1) parcel totaling approximately 39-acres that will be developed as a warehouse facility.

1.0 REGULATORY FRAMEWORK

2.1 Federal

Endangered Species Act (ESA) – The United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service are the designated federal agencies accountable for administering the ESA. ESA defines species as "endangered" or "threatened" and provides regulatory protection at the federal level.

- Section 9 of the ESA prohibits the "take" of listed (i.e., endangered or threatened) species. The ESA definition of take is "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct." Recognizing that take cannot always be avoided, Section 10(a) includes provisions for take that is incidental to, but not the purpose of, otherwise lawful activities. Specifically, Section 10(a) (1) (A) permits (authorized take permits) are issued for scientific purposes. Section 10(a) (1) (B) permits (incidental take permits) are issued for the incidental take of listed species that does not jeopardize the species.

- Section 7 (a) (2) requires federal agencies to evaluate a proposed project with respect to listed or proposed listed, species and their respective critical habitat (if applicable). Federal agencies must employ programs for the conservation of listed species and are prohibited from authorizing, funding, or carrying out any action that would jeopardize a listed species or destroy or modify its critical habitat. Critical habitat is a term defined and used in the ESA. It is specific geographic areas that contain features essential to the conservation of an endangered or threatened species and that may require special management and protection. Critical habitat may also include areas that are not currently occupied by the species but will be needed for its recovery (USFWS 2021a).

- Section 10(a)(1)(B) of the ESA provides for partnerships with non-federal parties to conserve the ecosystems upon which listed species depend, ultimately contributing to their recovery. These Habitat Conservation Plans (HCPs) are planning documents required as part of an application for an incidental take permit. They describe the anticipated effects of the proposed taking; how those impacts will be minimized or mitigated; and how the HCP is to be funded. HCPs can apply to both listed and non-listed species, including those that are candidates or have been proposed for listing. Conserving species before they are in danger of extinction or are likely to become so can also provide early benefits and prevent the need for listing (USFWS 2021b). The Western Riverside County Multiple Species Conservation Plan (see Riverside County section below) is an HCP, but the District is not a signatory to the plan or a participant.

As defined by the ESA, "individuals, organizations, states, local governments, and other non-federal entities are affected by the designation of critical habitat only if their actions occur on federal lands, require a federal permit, license, or other authorization, or involve federal funding.

Migratory Bird Treaty Act (MBTA) – Treaties signed by the U.S., Great Britain, Mexico, Japan, and the republics of the former Soviet Union make it unlawful to pursue, capture, kill, and/or possess, or attempt to engage in any such conduct to any migratory bird, nest, egg or parts thereof listed in this document. As with the ESA, the MBTA also allows the Secretary of the Interior to grant permits for the incidental take of these protected migratory bird species. Impacts include direct disturbance to/destruction of nests, eggs, and birds as well as indirect effects such as loud construction noises (e.g., drilling, operation of heavy equipment, etc. in excess of 60 dB over an hours at the nest site) and increased site activities (e.g., moving vehicles, use of guard dogs, presence of personnel) in close proximity to active nests.

Section 404 of the Clean Water Act (CWA) – This section of the CWA, administered by the U.S. Army Corps of Engineers (USACE), regulates the discharge of dredged and fill material into Waters of the United States (WUS). The USACE has created a series of nationwide permits that authorize certain activities within WUS provided that the

proposed activity does not exceed the impact threshold for each of the permits, takes steps to avoid impacts to wetlands where practicable, minimize potential impacts to wetlands, and provide compensation for any remaining, unavoidable impacts through activities to restore or create wetlands. For projects that exceed the threshold for nationwide permits, individual permits under Section 404 can be issued.

National Environmental Policy Act (NEPA) – If all or a portion of a proposed project fall under the jurisdiction of a federal agency (such as USACE). NEPA establishes certain criteria that must be adhered to for any project that is "financed, assisted, conducted or approved by a federal agency. The federal lead agency is required to "determine whether the proposed action will significantly affect the quality of the human environment."

2.2 State of California

California Endangered Species Act (CESA) – This legislation is similar to the federal ESA; however, it is administered by the California Department of Fish and Wildlife (CDFW). The CDFW is authorized to enter a "memorandum of understanding" with individuals, public agencies, and other institutions to import, export, take, or possess state-listed species for scientific, educational, or management purposes. The CESA prohibits the take of state-listed species except as otherwise provided in state law. Unlike the federal ESA, the CESA applies the take prohibitions to species currently petitioned for state-listing status (candidate species). State lead agencies are required to consult with the CDFW to ensure that actions are not likely to jeopardize the continued existence of any state-listed species or result in the destruction or degradation of occupied habitat.

Section 2081 of the State Fish and Game Code – Under Section 2081 of the California Fish and Game Code, the CDFW authorizes individuals or public agencies to import, export, take, or possess state endangered, threatened, or candidate species in California through permits or memoranda of understanding. These acts, which are otherwise prohibited, may be authorized through permits or "memoranda of understanding" if (1) the take is incidental to otherwise lawful activities, (2) impacts of the take are minimized and fully mitigated, (3) the permit is consistent with regulations adopted in accordance with any recovery plan for the species in question, and (4) the applicant ensures suitable funding to implement the measures required by the CDFW. The CDFW shall make this determination based on the best scientific information available and shall include consideration of the species' capability to survive and reproduce.

California Environmental Quality Act (CEQA) – The basic goal of the CEQA is to retain a high-quality environment now and in the future. The specific goals are for California's public agencies to:

- Identify the significant environmental effects of their actions; and, either
- Avoid those significant environmental effects, where feasible; or

- Mitigate those significant environmental effects, where feasible.

The CEQA applies to "projects" proposed to be undertaken or requiring approval by state and/or local governmental agencies. Projects are activities which have the potential to have a physical impact on the environment and may include the enactment of zoning ordinances, the issuance of conditional use permits and the approval of tentative subdivision maps. Where a project requires approvals from more than one public agency, the CEQA requires one of these public agencies to serve as the "lead agency."

A "lead agency" must complete the environmental review process required by the CEQA. The most basic steps of the environmental review process are:

- Determine if the activity is a "project" subject to the CEQA;
- Determine if the "project" is exempt from the CEQA;
- Perform an Initial Study to identify the environmental impacts of the project and determine whether the identified impacts are "significant". Based on its findings of "significance", the lead agency prepares one of the following environmental review documents:
  - Negative Declaration if it finds no "significant" impacts;
  - Mitigated Negative Declaration if it finds "significant" impacts but revises the project to avoid or mitigate those significant impacts;
  - Environmental Impact Report (EIR) if it finds "significant" impacts.

While there is no ironclad definition of "significance", Article 5 of the State CEQA Guidelines provides criteria to lead agencies in determining whether a project may have significant effects.

The purpose of an EIR is to provide state and local agencies and the general public with detailed information on the potentially significant environmental effects which a proposed project is likely to have and to provide ways in which those effects may be minimized and indicate alternatives to the project.

Sections of the State Fish and Game Code pertaining to the protection of birds – Section 3503 makes it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3505.5 makes it unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds-of-prey, i.e.: owls, hawks, eagles, etc.) or to take, possess, or destroy the nest or eggs of any bird-of-prey. Section 3513 makes it unlawful to take or possess any migratory nongame bird as designated in the MBTA.

The Native Plant Protection Act (NPPA) – The NPPA includes measures to preserve, protect, and enhance rare and endangered native plant species. Definitions for “rare and endangered” are different from those contained in the CESA. However, the list of

species afforded protection in accordance with the NPPA includes those listed as rare and endangered under the CESA. The NPPA provides limitations on take as follows: "no person will import into this state, or take, possess, or sell within this state" any rare or endangered native plants, except in accordance with the provisions outlined in CESA. If a landowner is notified by the CDFW, pursuant to section 1903.5 that a rare or endangered plant species is growing on their property, the landowner shall notify the CDFW at least 10 days prior to the changing of land uses to allow the CDFW to salvage the plants.

Natural Community Conservation Planning (NCCP) Program – The NCCP program, which is managed by the CDFW, is intended to conserve multiple species and their associated habitats, while also providing for compatible use of private lands. Through local planning, the NCCP planning process is designed to provide protection for wildlife and natural habitats before the environment becomes so fragmented or degraded by development and other factors that species listing are required under the CESA. Instead of conserving small, often isolated "islands" of habitat for just one listed species, agencies, local jurisdictions, and/or other interested parties have an opportunity through the NCCP to work cooperatively to develop plans that consider broad areas of land for conservation that would provide habitat for many species. Partners enroll in the programs and, by mutual consent, areas considered to have high conservation priorities or values are set aside and protected from development. Partners may also agree to study, monitor, and develop management plans for these high value "reserve" areas. The NCCP provides an avenue for fostering economic growth by allowing approved development in areas with lower conservation value.

Sections 1600-1603 of the State Fish and Game Code – The California Fish and Game Code, pursuant to Sections 1600 through 1603, regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake that supports fish or wildlife resources. Under state code, a stream is defined as a body of water that flows at least periodically, or intermittently, through a bed or channel with hydro geomorphology distinct top-of-embankment to top-of-embankment limits, that may or may not support fish or other aquatic biota. Included in this definition are watercourses with surface or subsurface flows that support, or have supported in the past, riparian vegetation. Specifically, Section 1601 governs public projects, while Section 1603 governs private discretionary actions. The CDFW requires that public and private interests apply for a "Streambed Alteration Agreement" for any project that may impact a streambed or wetland. The CDFW has maintained a "no net loss" policy regarding impacts to streams and waterways and requires replacement of lost habitats of at least a 1:1 ratio.

Regional Water Quality Control Board – The Regional Water Quality Control Board (RWQCB) regulates activities pursuant to Section 401(a)(1) of the CWA. Section 401 of the CWA specifies that certification from the state is required for any applicant requesting a federal license or permit to conduct any activity including, but not limited

to, the construction or operation of facilities that may result in any discharge into navigable waters. Through the Porter Cologne Water Quality Control Act, the RWQCB asserts jurisdiction over Waters of the State of California (WSC) which are generally the same as WUS but may also include isolated waterbodies. The Porter Cologne Act defines WSC as "surface water or ground water, including saline waters, within the boundaries of the state".

2.3 Multiple-Species Habitat/Natural Community Conservation Plan

The Town of Apple Valley (Town) and San Bernardino County (County) are working in coordination with the Bureau of Land Management (BLM), USFWS, and CDFW to prepare a "Multi-Species Habitat Conservation Plan/Natural Community Conservation Plan" (MSHCP/NCCP). The goal is to achieve consistent and complimentary conservation planning goals between the MSHCP/NCCP and state and federal land use plans to achieve conservation benefits at a landscape level. The MSHCP/NCCP will safeguard features and areas that warrant protection; plus ensure that future development within the Town and surrounding County lands in the Town's sphere of influence is compliant with the ESA and CESA. The MSHCP/NCCP will guide the Town's and County's conservation efforts in the MSHCP/NCCP area, allowing for the preservation of open space and protection of threatened and endangered species (Town of Apple Valley 2022a). The MSHCP/NCCP Planning Area includes 46,948 acres within the Town's incorporated limits and an additional 122,921 acres within the Town's sphere of influence for a total of 169,869 acres (Town of Apple Valley 2023b).

Besides creating environmental benefits, an approved MSHCP/NCCP will also provide permitting advantages to the Town and County by streamlining the environmental permitting process. The process established under the MSHCP/NCCP will increase control over local land use decisions and establish a one-stop shop for environmental permitting.

3.0 METHODS

3.1 Literature Review

A literature review and record search was conducted to identify occurrences of special status
biological resources in the project vicinity. The review included:

- A report from the CDFW's California Natural Diversity Data Base (CNDDB) for a five-mile radius around the project site (CDFW 2024a).

- The USFWS (2024a) Environmental Conservation Online System (ECOS) including critical habitat mapping and an Information for Planning and Consultation (IPaC) report (Appendix D).

• The California Native Plant Society (CNPS) Rare Plant Inventory (CNPS 2024) including records from the following USGS 7.5-minute topographic quadrangles which are within five miles of the project: *Apple Valley North, Fairview Valley, Stoddard Well, Turtle Valley, Helendale, and Victorville*, Calif. (Appendix C). Note that CDFW has changed the name of "CNPS List" or "CNPS Ranks" to "California Rare Plant Rank" (CRPR) to reduce confusion over the fact that rank assignments are the product of a collaborative effort between CNPS and CDFW and not solely a CNPS assignment (CDFW 2022c).

• Consortium of California Herbaria (2022) plant specimens.

• Aerial photographs, and

• Pertinent documents from the WSP USA library and project files (e.g., other biological surveys
from the general vicinity) and the collective knowledge of WSP USA biologists.

Prior to the field visit, a literature review was conducted of the environmental and regulatory setting for the Biological Study Area (BSA). The literature review provides a baseline from which to evaluate the biological resources potentially occurring within the BSA, and within the local and regional vicinity.

3.2 Biological Resources and Habitat Assessment

The field reconnaissance assessment of the project's BSA was conducted on 3 July 2024 by WSP USA senior wildlife biologist Dale Hameister and biologist Emily Urquidi. Representative photographs are included in Appendix B. The entire BSA was assessed on foot and with binoculars. All flora and fauna detected (e.g., through direct observation, vocalizations, presence of scat, tracks, and/or bones) within the BSA during the assessment were recorded in field notes and are included in Appendix C.

3.3 Jurisdictional Waters and Wetlands

A jurisdictional assessment was also conducted on 3 July 2024 within the BSA by WSP USA senior biologist Dale Hameister.

3.4 Wildlife Corridors

The ability of the BSA to act as a wildlife corridor was assessed. Wildlife corridors link together areas of suitable habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. Corridors mitigate the effects of habitat fragmentation by (1) allowing animals to move between remaining habitats. Wildlife movement usually fall into one of three categories: (1) dispersal (e.g., juvenile animals from natal areas, individuals extending range distributions); (2) seasonal migration; and

(3) movements related to home range activities (foraging for food or water, defending territories, searching for mates, breeding areas, or cover).

4.0 RESULTS

The literature review and field assessment revealed the following information about critical habitat, wetlands, soils, vegetation, and special status species in the BSA.

4.1 Critical Habitat

No federally designated critical habitat is present in the BSA. Critical habitat for desert tortoise is located approximately 15 miles northeast of the project site.

4.2 Soils

The BSA contains one (1) soil mapping unit, Helendale-Bryman loamy sands (Figure 3) (USGS 2024).

The Helendale series consists of very deep, well drained soils that formed in alluvium from granitoid rocks. Helendale soils are on fan piedmonts, fan remnants, alluvial fans and terraces. Slopes range from 0 to 15 percent. The mean annual precipitation is about 125 millimeters (5 inches) and the mean annual temperature is about 17°C (62.5°F).

4.3 Wetlands and Jurisdictional Drainages

There were a few portions of the project site with remnant riverine features mapped within the project site in the National Wetland Inventory. These features contain some areas of bare soil that could appear to be washes from an aerial view.

During the field assessment, it was determined that no ordinary high water marks (OHWM) or evidence of any recent flows were observed. There were no signs of OHWM or clearly defined bed and bank features within any of the potential wash features identified during the literature review. Soil pits were dug at several locations and indicated that there were no observable differences in soil profile or texture. There was no difference in surface soil texture or sorting. No wetland indicator or hydric plants were observed associated with the features.

These features did not contain riparian vegetation or hydric soils, did not show evidence of periodic or episodic flow, and do not have a defined bed and bank. The features were determined to be upland erosional features and did not meet the requirements to be considered WUS, WSC, or CDFW jurisdictional. These features were evaluated and determine to be non-jurisdictional in an otherwise upland area.

4.4 Vegetation Communities

The BSA contains one native vegetation community, creosote bush scrub (Holland 1986). (Appendix A - Figure 4).

The dominate shrub present is creosote bush (*Larrea tridentata*). Other native shrub species include Nevada ephedra (*Ephedra nevadensis*), rubber rabbit bush (*Ericameria nauseosa*), and Anderson thornbush (*Lycium andersonii*). Non-native annual species observed include red brome (*Bromus rubens*), red stemmed filaree (*Erodium cicutarium*), old han schismus (*Schismus barbatus*), and cheatgrass (*Bromus tectorum*).

4.5 Wildlife

Wildlife encountered during the field assessment included species common to inland southern California deserts. Vertebrate wildlife observed include Brewer's sparrow (*Spizella breweri)*, Great Basin whiptail (*Aspidoscelis tigris tigris*), and black-tailed jackrabbit (*Lepus californicus*). A complete list of the flora and fauna observed during the field assessment is included in Appendix C.

4.6 Special Status Biological Resources

Plant or animal taxa may be designated as having "special status" by the various regulatory agencies (i.e., CDFW, USFWS) and/or conservation organizations (i.e., CNPS) due to declining populations, vulnerability to habitat change or loss, or because of restricted/limited distributions. Some species have been listed as "threatened" or "endangered" and/or are a candidate for listing by the USFWS and/or the CDFW and are thus protected by the federal and state ESAs respectively. In addition to plants and animals, some vegetation communities have also received special status designations by the CDFW due to incremental loss and fragmentation resulting from development. Impacts to any special status biological resources can be considered significant under the CEQA.

The literature review and field visits identified a total of 30 special status biological resources that are known from the general vicinity of the BSA. Tables 1 through 3 provide a complete list of these resources, their conservation status, habitat associations and occurrence potential. Species which do not occur at the BSA elevations, or which only occur in aquatic habitats were excluded.

Table 1. Special Status Plant Species Potential for Occurrence

Scientific Name	Common Name	Status[1]			Habitat (for plants includes elevational range in meters & blooming period)	Occurrence Probability[2]
		Federal	State	Other		
Androsace elongata ssp *acuta*	California androsace	None	S3S4	CRPR 4.2	Chaparral, cismontane woodland, coastal scrub, meadows and seeps, pinyon and juniper woodland, valley and foothill grassland. 150-1305 meters (m). Blooms (B): March-June.	Absent Suitable habitat not present.
Canbya candida	white pygmy poppy	None	S3S4	CRPR 4.2, MSHCP /NCCP	Joshua tree "woodland", Mojavean desert scrub, pinyon and juniper woodland on granitic, gravelly, sandy soils. 600-1460 m. B: March-June.	Moderate Suitable habitat present, but nearest records approximately four miles southwest
Cymopterus deserticola	desert cymopterus	None	None	CRPR 1B.2, MSHCP /NCCP	Joshua tree woodland and Mojavean desert scrub in sandy areas. 630-1500 m. B: March - May.	Moderate Suitable habitat present, nearest record is over four miles to the south-southwest.
Diplacus (Mimulus) mohavensis	Mojave monkeyflower	None	None	CRPR 1B.2, MSHCP /NCCP	Joshua tree woodland and Mojavean desert scrub. Most often in washes; sometimes in gravely and sandy areas. 6001200 m. B: April - June.	Moderate Suitable habitat present, nearest record approximately four miles to the northeast.
Eremothera boothii ssp *boothii*	Booth's evening primrose	None	S3	CRPR 2B.3, MSHCP /NCCP	Joshua tree "woodland", pinyon and juniper woodland. 815-2400 m. B: April-September.	Absent Site below elevational range of subspecies. Town of Apple Valley region far outside of expected geographic range of ssp. *boothii* (Jepson Flora Project 2024)
Eriophyllum mohavense	Barstow woolly sunflower	None	S2	CRPR 1B.2, MSHCP /NCCP	Chenopod scrub, Mojavean desert scrub, playas. 500-960 m. B: March-May.	Moderate Suitable habitat present, nearest records is

Scientific Name	Common Name	Status[1]			Habitat (for plants includes elevational range in meters & blooming period)	Occurrence Probability[2]
		Federal	State	Other		
						approximately 4 miles northeast
Lycium torreyi	Torrey's boxthorn	None	S3	CRPR 4.2	Mojavean & Sonoran Desert scrub in rocky, sandy places; streambanks, washes. -50-1220 m. B: (January-February) March-June (September-November).	Absent Although there are CNPS records for *L. torreyi* in the Apple Valley North and Victorville quadrangles, CNPS also states "plants in California outside vicinity of Colorado River are likely misidentifications."
Mentzelia eremophila	solitary blazing star	None	S3S4	CRPR 4.2	Mojavean desert scrub. 700-1220 m. B: March-May.	Moderate Suitable habitat present, no occurrences within 5 miles of the project site.
Pediomelum castoreum	Beaver Dam breadroot	None	S2	CRPR 1B.2, MSHCP /NCCP	Joshua tree "woodland", Mojavean desert scrub on roadsides, in sandy places, and in washes. 610-1525 m. B: April-May.	Moderate Suitable habitat present. No records in immediate project area, but occurrences in all surrounding directions.
Sclerocactus polyancistrus	Mojave fishhook cactus	None	S3	CRPR 4.2	Great Basin scrub, Joshua tree "woodland", Mojavean desert scrub usually on carbonate soils. 640-2320 m. B: April-July.	Absent Suitable habitat present, no records in immediate project area or withing 5 miles, but this small cactus was not seen during assessment.
Scutellaria bolanderi ssp. austromontana	southern mountains skullcap	None	S3	CRPR 1B.2, MSHCP /NCCP	Mesic areas in chaparral, cismontane woodland, lower montane coniferous forest. 425-2000 m. June-August.	Absent Suitable habitat not present.

Scientific Name	Common Name	Status[1]			Habitat (for plants includes elevational range in meters & blooming period)	Occurrence Probability[2]
		Federal	State	Other		
Symphyotrichum defoliatum	San Bernardino aster	None	S2	CRPR 1B.2, MSHCP /NCCP	Streambanks in cismontane woodland, coastal scrub, lower montane coniferous forest, marshes and swamps, meadows and seeps, valley and foothill grassland. 2-2040 m. B: July-November.	Absent Suitable habitat not present.
Yucca brevifolia	western Joshua tree	None	SCT	CRPR None	Mojavean desert scrub, Joshua tree "woodland." 750 -2,100 m, but individuals slightly lower or higher. B: January - May, rarely as early as November (CDFW 2022c).	Absent Not observed on site

KEY TO TABLE 1

Definitions of occurrence probability:

Occurs: Observed on the site by WSP biologists or recorded on-site by other qualified biologists.

High: Observed in similar habitat in region by qualified biologists, or habitat on the site is a type often utilized by the species and the site is within the known range of the species.

Moderate: Reported sightings in surrounding region, or site is within the known range of the species and habitat on the site is a type occasionally used by the species.

Low: Site is within the known range of the species but habitat on the site is rarely occupied by the species.

Absent: A focused study failed to detect the species, or, no suitable habitat is present.

Unknown: Distribution and habitat use has not been clearly determined.

Federal designation: = F

State designation: = C

State rankings are a reflection of the overall condition of an element throughout its California range. The number after the decimal point (if any) represents a threat designation attached to the rank:

S1 = Critically Imperiled. Less than (<) 6 Element Occurrences (EOs) OR < 1,000 individuals OR < 2,000 acres
- S1.1 = very threatened
- S1.2 = threatened
- S1.3 = no current threats known

S2 = Imperiled. 6-20 EOs OR 1,000-3,000 individuals OR 2,000-10,000 acres
- S2.1 = very threatened
- S2.2 = threatened
- S2.3 = no current threats known

S3 = Vulnerable. 21-80 EOs OR 3,000-10,000 individuals OR 10,000-50,000 acres
- S3.1 = very threatened
- S3.2 = threatened
- S3.3 = no current threats known

S4 = Apparently Secure. Uncommon but not rare in the state; some cause for long-term concern.

S5 = Secure. Common, widespread, and abundant in the state.

SH = All known California sites are historical, not extant

SX = Presumed extinct

California Native Plant Society (CNPS) California Rare Plant Rank (CRPR) designations:

Primary CRPR Categories
1A: Plants Presumed Extirpated in California and Either Rare or Extinct Elsewhere
1B: Plants Rare, Threatened, or Endangered in California and Elsewhere
2A: Plants Presumed Extirpated in California, But Common Elsewhere
2B: Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
3: Plants About Which More Information is Needed - A Review List
4: Plants of Limited Distribution - A Watch List
Subdivisions within Categories
0.1: Seriously threatened in California
0.2: Moderately threatened in California
0.3: Not very threatened in California

Table 2. Special Status Vegetation Community Potential for Occurrence

Community	Status	Habitat	BSA Occurrence Probability
Southern Cottonwood Willow Riparian Forest	F: None C: S3.2	This vegetation community occurs along streams and rivers, occupying relatively broad drainages and floodplains. It consists of trees that are generally greater than 20 feet high. Dominated by mature winter deciduous trees, including Fremont's cottonwood (*Populus fremontii* ssp. *fremontii*) and several species of tree willows (*Salix* spp.), this community often has a dense understory of shrubby willows, mule fat, and mugwort (*Artemisia douglasiana*). The dominant species require moist, bare mineral soil for germination and establishment, an environment that is provided after flood waters recede.	Absent

KEY TO TABLE 2

Definitions of occurrence probability:
Occurs: Observed on the site by WSP USA biologists or recorded on-site by other qualified biologists.
High: Observed in similar habitat in region by qualified biologists, or habitat on the site is a type often utilized by the species and the site is within the known range of the species.
Moderate: Reported sightings in surrounding region, or site is within the known range of the species and habitat on the site is a type occasionally used by the species.
Low: Site is within the known range of the species but habitat on the site is rarely occupied by the species.
Absent: A focused study failed to detect the species, or, no suitable habitat is present.
Unknown: Distribution and habitat use has not been clearly determined.

Federal designation: = F

State designation: = C

State rankings are a reflection of the overall condition of an element throughout its California range. The number after the decimal point (if any) represents a threat designation attached to the rank:
S1 = Critically Imperiled. Less than (<) 6 EOsOR < 1,000 individuals OR < 2,000 acres
S1.1 = very threatened
S1.2 = threatened
S1.3 = no current threats known
S2 = Imperiled. 6-20 EOs OR 1,000-3,000 individuals OR 2,000-10,000 acres
S2.1 = very threatened
S2.2 = threatened
S2.3 = no current threats known

S3 = Vulnerable. 21-80 EOs OR 3,000-10,000 individuals OR 10,000-50,000 acres
- S3.1 = very threatened
- S3.2 = threatened
- S3.3 = no current threats known

S4 = Apparently Secure. Uncommon but not rare in the state; some cause for long-term concern.
S5 = Secure. Common, widespread, and abundant in the state.
SH = All known California sites are historical, not extant

Table 3. Special Status Animals

Scientific Name	Common Name	Status[1]			Habitat	Occurrence Probability[2]
		Federal	State	Other		
Invertebrates						
Bombus crotchii	Crotch Bumblebee	None	S1S2	Not applicable (N/A)	Open grassland & scrub habitats. Occurs primarily in California, in coastal slope areas, western desert, great valley, and adjacent foothills.	Low Nectar sources are scarce. Area is highly disturbed, and site consists mainly of non-native vegetation. Closest siting was within 4 miles and was made in 1944.
Danaus plexippus	Monarch Butterfly	FC	S2S3	N/A	Western winter roost sites primarily occur along the coast from northern Mendocino to Baja California, Mexico, located in wind protected tree groves (*Eucalyptus* species, Monterey pine (*Pinus radiata*), cypress), with nectar and water sources nearby. During breeding season, adults widespread but scarce in the desert. Larvae require milkweed.	Low Seldom seen in the desert, no milkweed detected.
Fish						
Siphateles bicolor mohavensis	Mohave tui chub	FE	SE	MSHCP /NCCP	Found in the Mojave river as well as drainage and sewer systems with year-round water.	Absent No year-round water available

Scientific Name	Common Name	Status[1]			Habitat	Occurrence Probability[2]
		Federal	State	Other		
Reptiles						
Gopherus agassizii	desert tortoise	FT	ST, S2S3	MSHCP /NCCP	Prefers Joshua tree, desert wash & scrub, especially creosote bush habitats; but in most desert habitats. Large wildflower blooms preferred. Burrows & nests require friable soil.	Absent Suitable habitat is limited due to disturbance, no sign was observed on site. There are records within 5 miles of the area from 1990.
Birds						
Aquila chrysaetos	golden eagle	MBTA, BGEPA, BCC	S3, WL, FP, FGC	MSHCP /NCCP	Mountainous/hilly areas with cliffs and open fields required for habitat. Jackrabbits are primary food source.	Low No nesting habitat on site. Could potentially nest on rocky peaks in the general area and forage on site. Not found during assessment.
Athene cunicularia	burrowing owl	MBTA, BCC	SC, S3, FGC	MSHCP /NCCP	Open, dry grasslands, deserts & scrublands with low-growing vegetation. Depends on burrowing mammals.	Absent No suitable burrows or sign were observed during the survey. Habitat is very limited. Closest observation was made within 1 mile of the site in 2007.

Scientific Name	Common Name	Status[1]			Habitat	Occurrence Probability[2]
		Federal	State	Other		
Buteo swainsoni	Swainson's hawk	MBTA, BCC	SE, S3, FGC	MSHCP /NCCP	Open plains, grasslands, dry grasslands. Migrates through Mojave Desert.	Low No nesting habitat on site. Could potentially nest in the general area and forage on site. May also occur during migration. Not found during July visit. Closest siting was within 4 miles of the site and was observed in 1932.
Calypte costae	Costa's hummingbird	MBTA, BCC	S4, FGC	N/A	Primary habitats desert wash; edges of desert & valley foothill riparian; coastal, desert, & desert succulent scrub; palm oasis; & low elevation chaparral.	Moderate Nesting and foraging habitat present.
Falco mexicanus	prairie falcon	MBTA, BCC	SC, S3, FGC	MSHCP /NCCP	Breeding sites located on cliffs, but forages far afield.	Low No nesting habitat on site. Could potentially nest on rocky peaks in the general area and forage on site. Not found during July visit.
Gymnogyps californianus	California condor	FE, MBTA	SE, FGC	N/A	Forages widely for carrion. Ledges and cliffs are used as roost and nest sites.	Absent Identified only by the IPaC report. Although capable of very long foraging flights from breeding and nesting areas, all members of the

Scientific Name	Common Name	Status[1]			Habitat	Occurrence Probability[2]
		Federal	State	Other		
						population are closely monitored. There is no nesting habitat on site and condors rarely, if ever, visit this area.
Lanius ludovicianus	loggerhead shrike	MBTA, BCC	SSC, S4, FGC	MSHCP /NCCP	Found in open habitats with widely spaced vegetation.	Moderate Not found during site visit. Suitable nesting habitat present.
Spinus lawrencei	Lawrence's goldfinch	MBTA, BCC	None	N/A	Pine forests, chaparral typically but breeds in other habitats. Can be found in dry open land in migration.	Absent Identified only by the IPaC report. Project lacks breeding and typical foraging habitat.
Toxostoma redivivum	California thrasher	BCC	N/A	N/A	Chaparral & foothill habitats. Sometimes well vegetated deserts.	Absent No suitable habitat. Identified only by the IPaC report.
Toxostoma lecontei	Le Conte's thrasher	MBTA, BCC	S3, FGC	MSHCP /NCCP	Desert: open washes, scrub; commonly nests in a dense, spiny shrub or cactus.	Low Not found during assessment. Suitable nesting habitat present.
Mammals						
Vulpes macrotis arsipus	desert kit fox	None	FGC	MSHCP /NCCP	Annual grasslands or open areas with scattered brush, shrubs, & scrub. Dens in open, level areas with loose textured, soils (CDFW 2016b)	Absent No evidence of dens was observed.

Scientific Name	Common Name	Status[1]			Habitat	Occurrence Probability[2]
		Federal	State	Other		
Xerospermophilus mohavensis	Mojave ground squirrel	None	ST	MSHCP /NCCP	Suitable habitat is sandy and gravelly soils. Burrows found at the base of shrubs.	Absent Site within historic range of species. however, not in or near current known range of species (Leitner 2008).

KEY TO TABLE 3

Definitions of occurrence probability:

Occurs: Observed on the site by WSP USA biologists or recorded on-site by other qualified biologists.

High: Observed in similar habitat in region by qualified biologists, or habitat on the site is a type often utilized by the species and the site is within the known range of the species.

Moderate: Reported sightings in surrounding region, or site is within the known range of the species and habitat on the site is a type occasionally used by the species.

Low: Site is within the known range of the species but habitat on the site is rarely occupied by the species.

Absent: A focused study failed to detect the species, or, no suitable habitat is present.

Unknown: Distribution and habitat use has not been clearly determined.

Federal designation =F

State designation =C

CDFW state rankings are a reflection of the overall condition of an element throughout its California range. The number after the decimal point represents a threat designation attached to the rank:

S1 = Critically Imperiled. Less than (<) 6 EOs OR < 1,000 individuals OR < 2,000 acres
- S1.1 = very threatened
- S1.2 = threatened
- S1.3 = no current threats known

S2 = Imperiled. 6-20 EOs OR 1,000-3,000 individuals OR 2,000-10,000 acres
- S2.1 = very threatened
- S2.2 = threatened
- S2.3 = no current threats known

S3 = Vulnerable. 21-80 EOs OR 3,000-10,000 individuals OR 10,000-50,000 acres
- S3.1 = very threatened
- S3.2 = threatened
- S3.3 = no current threats known

S4 = Apparently Secure. Uncommon but not rare in the state; some cause for long-term concern.

S5 = Secure. Common, widespread, and abundant in the state.

SH = All known California sites are historical, not extant

4.6.1 Special Status Plant Species

Thirteen special status plant species are known from the project area (Table 2). Five are not expected to occur either due to a lack of habitat or because they were not detected during the reconnaissance survey. These include: California androsace, Booth's evening-primrose, Torrey's boxthorn, southern mountains skullcap, and San Bernardino aster. As shown on Table 2, habitat for the remaining eight plant species is present on-site. These include: white pygmy poppy, desert cymopterus, Mojave monkeyflower, Barstow woolly sunflower, solitary blazing star, beaver dam breadroot, and Mojave fish-hook cactus. These species were not found during the assessment; however, this is not proof of absence. Most do not bloom in July. However, the site is highly disturbed, and the groundcover is dominated by non-native grasses. None of these species are federally or state listed as endangered or threatened. Impacts to these species, if present, would not likely be considered significant under the CEQA to the overall population. Also, white pygmy-poppy, desert cymopterus, Mojave monkeyflower, Barstow woolly sunflower, and beaver dam breadroot are proposed for coverage under the MSHCP/NCCP. For these reasons, additional surveys are not recommended.

4.6.2 Special Status Vegetation Communities

One special status vegetation community, southern cottonwood willow riparian forest is known from the general project area, but it does not occur in the BSA (Table 2). The closest area of this riparian habitat is along the Mojave River approximately 6 miles west of the site. Vegetation communities are not state or federally listed as threatened or endangered.

4.6.3 Special Status Wildlife

16 species of special status wildlife /species have been recorded from the BSA, as identified by the literature search and/or field surveys.

4.6.3.1 Insects

The literature review identified two special status insects from the project area (Table 3): the monarch butterfly (federal candidate for ESA listing, identified only by IPaC) and Crotch bumblebee (state ranked as critically imperiled to imperiled). There is a low probability that these insects could occur on site.

Monarchs are not expected to winter in the project area, but a few individual adults may forage in the warmer months. The main threat to the species would be impacts to milkweed, the larval foodplant. No milkweeds have been found on site.

The CNDDB reported an occurrence of Crotch bumblebee ~3 miles north of the project site. This species nests underground and overwinters in soil or under leaf litter/debris. Visits many flowering plants including, but not limited to, *Fabaceae*, *Apocynaceae*, *Asteraceae*, *Lamiaceae*, *Boraginaceae*, and *Hydrophyllaceae*. Genera include, but are

not limited to, *Antirrhinum*, *Asclepias*, *Chaenactis*, *Clarkia*, *Dendromecon, Eschscholzia, Eriogonum, Lupinus, Medicago, Phacelia*, and *Salvia*. The flight period or this species occurs from late February to late October. These bees require flowering plants for nectar and potential nest sites, both of which occur on site, albeit in low abundance. The project site is highly disturbed and mainly consists of nonnative vegetation, so it is unlikely the bumblebees will nest on site. Crotch's bumblebees have been observed nectaring on creosote flowers but likely require more diverse nectar sources.

It is recommended that pre-construction surveys by qualified biologists survey for bumblebee nests (if any) for avoidance. Any bumblebee nest should be avoided. If unavoidable, and determined to be occupied by Crotch bumblebees, the CDFW should be consulted for guidance and potential incidental take permits, if impacts cannot be avoided.

4.6.3.2 Reptiles

The literature search identified desert tortoise as being of potential occurrence (Table 3). The Mojave population segment of the desert tortoise is listed as federally threatened by USFWS and state listed as endangered by CDFW. The Mojave population segment includes all tortoises occurring west and north of the Colorado River. The desert tortoise is most common in desert scrub, desert wash, and Joshua tree habitats in a variety of terrain types, including alluvial fans, valleys, rocky hillsides, and washes. They require friable soil for burrow and nest construction. Burrows are typically found at the base of shrubs, in the interspaces between shrubs, and occasionally in caliche soil bank areas or underneath boulders/rocks. They are herbivores and feed on a variety of plants including annual herbs and perennial grasses.

Tortoise activity is greatest during the spring and early summer, and to a lesser extent during the fall; however, tortoises can be active at any time of the year during appropriate weather conditions. Although tortoises hibernate during the winter and typically emerge in late February or early March, hatchlings and juveniles can be fairly active during the winter months. Adults will also emerge from their burrows to drink if water resources have been limited during the previous activity season and/or winter precipitation has provided standing water. Their activity is usually much reduced during hot summer months, but they may be active following summer rains or if temperatures are moderate (Boarman 2003).

Threats to desert tortoises include loss or degradation of habitat, vandalism, poaching, intentional killing, predation on young tortoises by the common raven (*Corvus corax*) and other predators (e.g. kit fox, snakes, etc.), and disease (e.g. *Mycoplasmosis*). Off-road vehicles, military training maneuvers, mining, and livestock grazing also affect tortoise habitat by collapsing burrows, eroding soils, reducing availability of food plants, eliminating shrubs which would provide shade for tortoises and support for their burrows, and ultimately results in surface disturbance that promotes conditions more

conducive to invasion by exotic plant species, which provide less nutritional value to tortoises than the native species that were replaced. Human activities, including garbage dumping, landfills, roads, increased nesting opportunities, irrigation, and increased vehicle use have led to increased numbers of common ravens in California deserts. Ultimately, the increased predation on young tortoises by common ravens reduces recruitment in breeding populations (Boarman 2003).

Tortoises are most often detected by their scats and burrows. Tortoises themselves can sometimes be detected in burrows by shining a light inside the burrow. Other tortoise sign includes carcasses, or fragments thereof, courtship rings, and drinking depressions. Presence of sign is an indication that tortoises either occur, or have recently occurred, at a particular location. Sign can be detected at any time of the year and always indicates suitable habitat, if not occupied habitat.

The vegetation community occurring on the project site (creosote bush scrub) is a habitat typically utilized by desert tortoises. There is no desert tortoise critical habitat designated on the project site, and no desert tortoises or their sign were detected during the reconnaissance or focused survey. However, the CNDDB reports two occurrences within a 5-mile radius, including records within five miles or less to the southwest.

Desert tortoises cannot be taken (harmed, harassed) under state and federal law. This report and any recommended mitigation measures do not constitute authorization for incidental take of the desert tortoise. If desert tortoise is detected on site, consultation with the USFWS and CDFW may be required. Since desert tortoise is proposed for coverage under the MSHCP/NCCP, the Town may also need to be notified if they are detected on-site.

No desert tortoises or desert tortoise sign were observed while on site during the assessment. Habitat is limited due to existing disturbance. The closest observation was within 3 miles of the site and was made in 1990. Therefore, it is likely this species is absent from the project site.

4.6.3.3 Birds

As shown on Table 3, several special status bird species occur or may occur on site (golden eagle, burrowing owl, Swainson's hawk, Costa's hummingbird, prairie falcon, loggerhead shrike, Le Conte's thrasher). Most of these are also proposed for coverage under the MSHCP/NCCP (golden eagle, burrowing owl, Swainson's hawk, prairie falcon, loggerhead shrike, and Le Conte's thrasher). Those that do not have nesting habitat on-site (golden eagle, Swainson's hawk, prairie falcon) should simply be avoided if temporarily present. The remaining special status species which could potentially nest

onsite (Costa's hummingbird, loggerhead shrike, Le Conte's thrasher) will be protected by the recommendations in Section 6.0 below.

The burrowing owl is uniquely vulnerable to ground disturbing activities since it both nests and roosts underground. Therefore, additional actions must be taken to protect against impacts to this species which would result in take. In addition to protection under the MBTA and FGC, the burrowing owl is also federally designated as a Bird of Conservation Concern and state designated as a Species of Concern. It occurs in open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation (Haug et al. 2011). In southern California, burrowing owls are not only found in undisturbed natural areas, but also fallow agricultural fields, margins of active agricultural areas, livestock farms, airports, and vacant lots. It is a subterranean nester, typically utilizing pre-existing burrows or burrow surrogates (e.g. ground squirrel burrows, kit fox burrows, drain pipes, culverts, etc.). Burrowing owl occupied burrows and areas can be recognized by sign which includes tracks, molted feathers, cast pellets, prey remains, eggshell fragments, whitewash, nest burrow decoration materials (e.g., paper, foil, plastic items, livestock or other animal manure, etc.) (CDFG 2012). The species is active both day and night and may be seen perching conspicuously on fence posts or standing at the entrance of their burrows.

Analyses of regional patterns for breeding populations of burrowing owls have detected declines both locally in their central and southern coastal breeding areas, and statewide where the species has experienced breeding range retraction. Threat factors affecting burrowing owl populations include habitat loss, degradation and modification, and eradication of ground squirrels resulting in a loss of suitable burrows required by burrowing owls for nesting, protection from predators, and shelter. Conservation for burrowing owls may include but may not be limited to protecting remaining breeding pairs or providing for population expansion, protecting, and enhancing breeding and essential habitat, and amending or augmenting land use plans to stabilize populations and other specific actions to avoid the need to list the species pursuant to the ESA or CESA (CDFG 2012).

No burrowing owls or burrowing owl sign were observed during the assessment. The closest observation was within a mile of the project site and was made in 2007. Even though this occurrence was close to the project site, no suitable burrows were observed onsite. Therefore, no further surveys are necessary for this species.

4.6.3.4 Mammals

The literature review identified two special status / protected mammals from the project area: the Mohave ground squirrel and the desert kit fox (Table 3).

The Mohave ground squirrel, however, is considered to be extirpated from the project area (Leitner 2008). Therefore, we do not recommend any further action for Mohave ground squirrel.

The desert kit fox is a fur-bearing mammal regulated under the FGC but is not generally considered a special status species. The draft MSHCP/NCCP, however, treats it as a proposed covered species. No kit fox or kit fox sign were observed during the reconnaissance survey. If a potentially active den is to be impacted, the CDFW and/or Town should be consulted on mitigation measures that they will require, if any.

4.7 Wildlife Corridors

The BSA does not act as a wildlife corridor. The BSA contains the same habitat as all surrounding parcels, with the exception of Quarry Road to the north which does not create a barrier to wildlife movement.

5.0 DISCUSSION AND RECOMMENDATIONS

One special status insect, Crotch's bumble bee may occur on-site. With limited habitat and high amounts of disturbance, it is unlikely this species will nest onsite. To avoid impacts to this species, it is recommended to assess the project site for suitable nectar resources during the spring and determine if protocol surveys are recommended.

Nesting birds, including special status species, may occur on-site. To avoid impacts to protected species, a nesting bird clearance survey should be conducted prior to clearing of vegetation.

The desert kit fox could forage on-site, but no dens are currently present on-site. To avoid impacts to this species it is recommended to not disturb any active burrows that could contain kits (young foxes). Kits are usually present in the springtime. If a potentially active den is to be impacted, the CDFW and/or Town should be consulted on mitigation measures that they will require, if any.

No jurisdictional drainages were observed onsite and no permits from USACE, CDFW, or RWQCB are required.

6.0 LITERATURE CITED AND REFERENCES

California Bird Records Committee. 2024. Official California Checklist. Accessed online at: http://californiabirds.org/ca_list.asp

California Consortium of Herbaria. 2024.

California Department of Fish and Game (CDFG). 2012. Staff Report on Burrowing Owl Mitigation.

California Department of Fish and Wildlife (CDFW). 2024a. California Natural Diversity Database (CNDDB) RareFind 5 records of sensitive elements. Accessed online at: https://www.wildlife.ca.gov/Data/CNDDB/Maps-and-Data

CDFW. 2024b. Special Animals List. September. Accessed online at: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109406&inline

CDFW. 2016a. Complete List of Amphibian, Reptile, Bird and Mammal Species in California. May. Accessed online at: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=87155&inline

CDFW. 2016b. California's Wildlife. Accessed online at: https://wildlife.ca.gov/Data/CWHR/Life-History-and-Range

CDFW. 2024c. Western Joshua Tree. Accessed online at: https://wildlife.ca.gov/Conservation/Environmental-Review/WJT

California Legislative Information. 2021. Fish and Game Code of California. http://leginfo.legislature.ca.gov/faces/codesTOCSelected.xhtml?tocCode=FGC&tocTitle=+Fish+and+Game+Code+-+FGC

California Native Plant Society (CNPS). 2024. Inventory of Rare and Endangered Plants of California (online edition, v9-01 0.0). Accessed online at: https://www.rareplants.cnps.org

Fleishman, E., L. Kats, J. Lovich, B. Pavlik, and B. Riddle. 2016. Science advisory committee guidance on development and implementation of a habitat conservation plan / natural community conservation plan for Apple Valley, California. April. Accessed online at: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=128238&inline

Holland, R.F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. Calif. Fish Game, Sacramento.

Jepson Flora Project. 2024. *Jepson eFlora.* Accessed online at: http://ucjeps.berkeley.edu/IJM.html

United States Department of Agriculture (USDA). 2023. PLANTS Database. Accessed online at: https://plants.sc.egov.usda.gov/home

USDA. 2024. Web Soil Survey. Accessed online at: http://websoilsurvey.nrcs.usda.gov/app/

United States Fish and Wildlife Service (USFWS). 2021. Bird Laws and Treaties. Accessed online at: http://www.fws.gov/migratorybirds/RegulationsandPolicies.html

USFWS. 2021a. Listing and Critical Habitat, Critical Habitat, Frequently Asked Questions. Accessed online at: https://www.fws.gov/endangered/what-we-do/critical-habitats-faq.html

USFWS. 2024a. ECOS IPaC report.

USFWS. 2024b. Habitat Conservation Plans: Overview. Accessed online at: https://www.fws.gov/endangered/what-we-do/hcp-overview.html

USFWS. 2024c. National Wetlands Inventory. Accessed online at: https://www.fws.gov/wetlands/

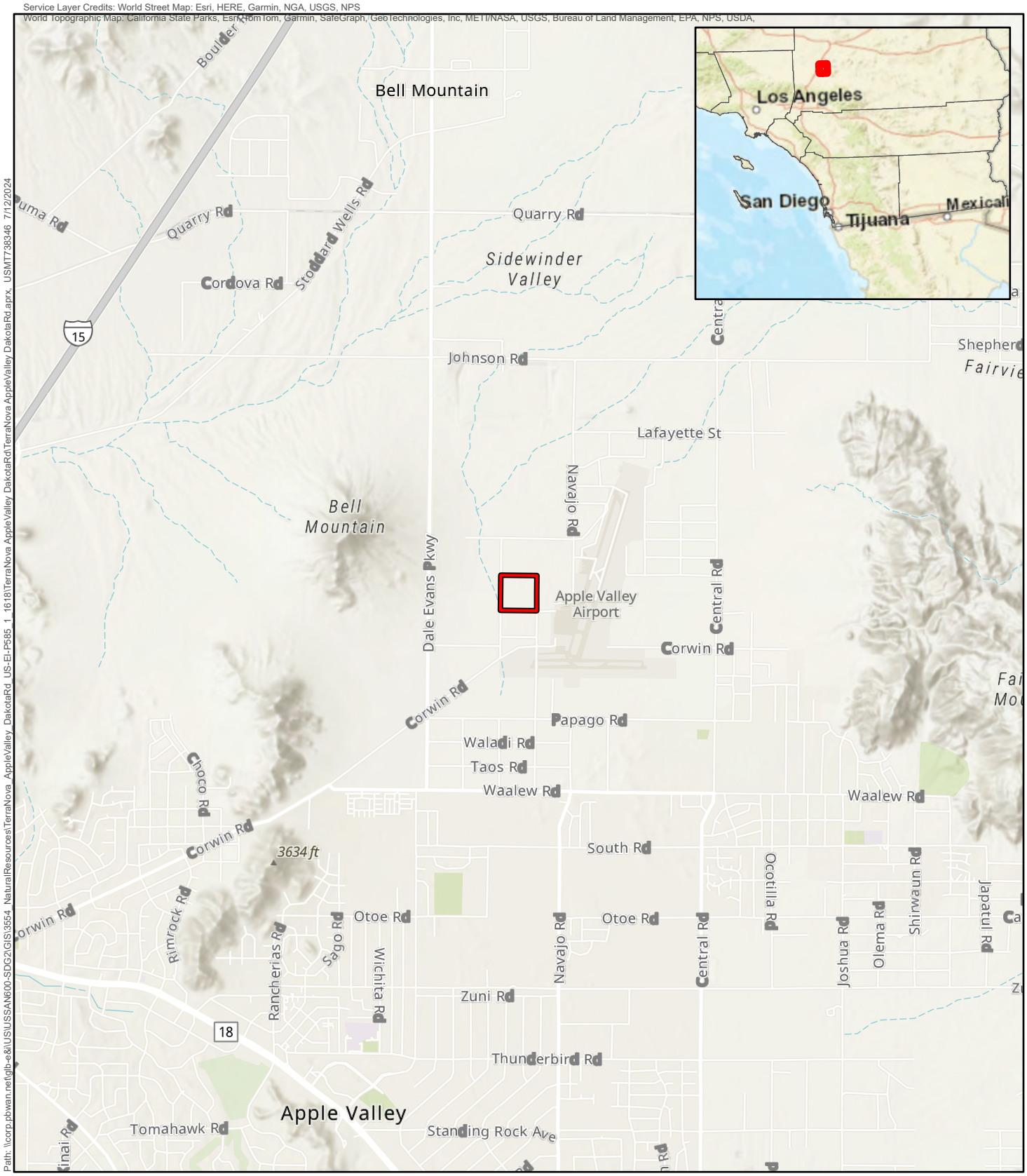
USFWS. 2024d. Critical Habitat Portal. Accessed online at: http://ecos.fws.gov/crithab/.

USFWS. 2013. Habitat types. Accessed online at: https://www.fws.gov/refuge/san_diego/wildlife_and_habitat/Habitat_Types.html

Xerces Society for Invertebrate Conservation, The, Defenders of Wildlife, Center for Food Safety. 2018. A Petition to The State of California Fish and Game Commission to List the Crotch bumble bee (*Bombus crotchii*), Franklin's bumble bee (*Bombus franklini*), Suckley cuckoo bumble bee (*Bombus suckleyi*), and western bumble bee (*Bombus occidentalis occidentalis*) as Endangered under the California Endangered Species Act. October. Accessed online at: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=161902

APPENDIX A

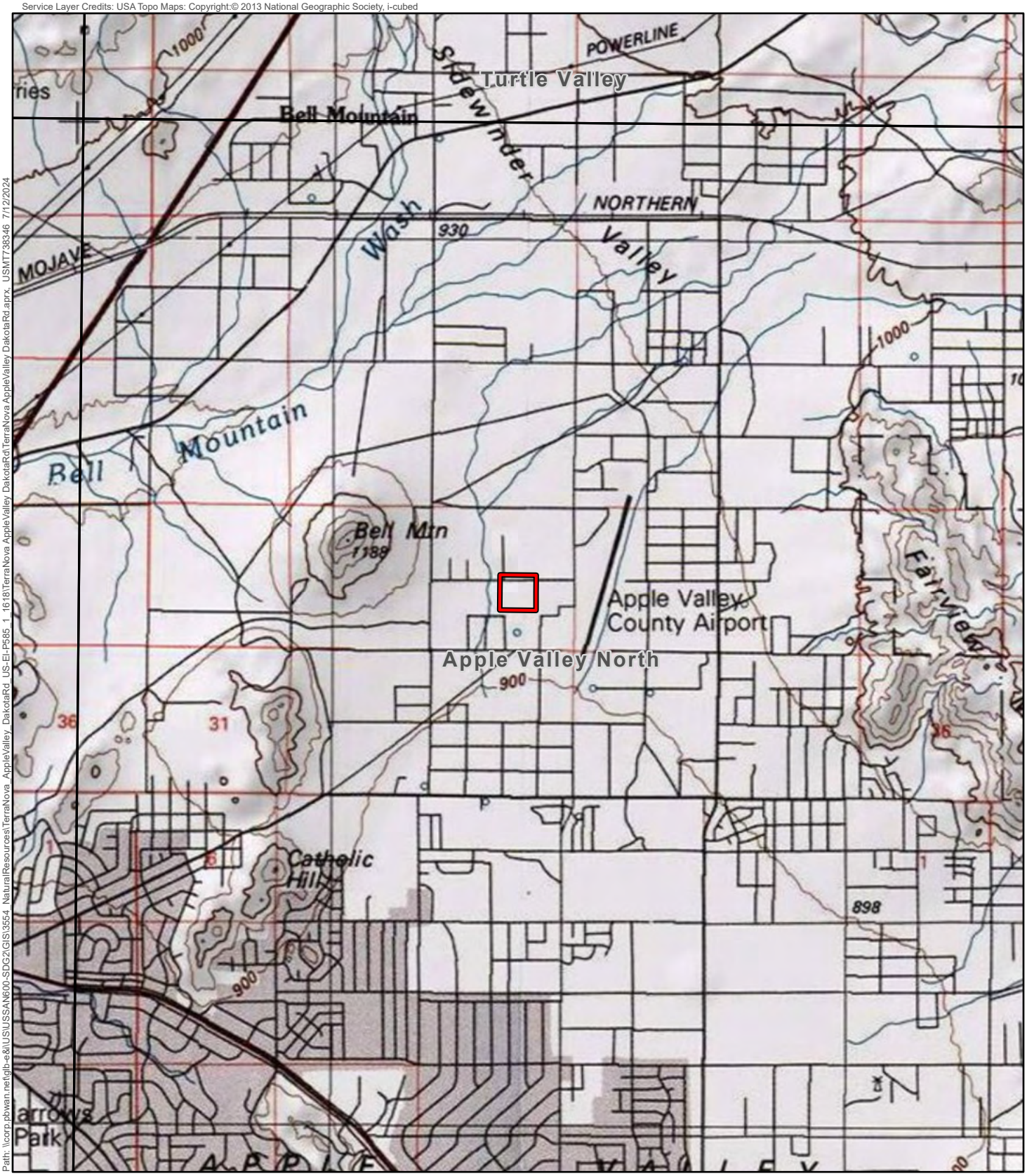
Maps and Figures



Project Area

FIGURE 1

Project Location
BRAR
Terra Nova Dakota Road Project
Apple Valley, CA



Project Area

FIGURE 2

USGS 7.5' Topo Quad: Apple Valley
BRAR
Terra Nova Dakota Road Project
Apple Valley, CA

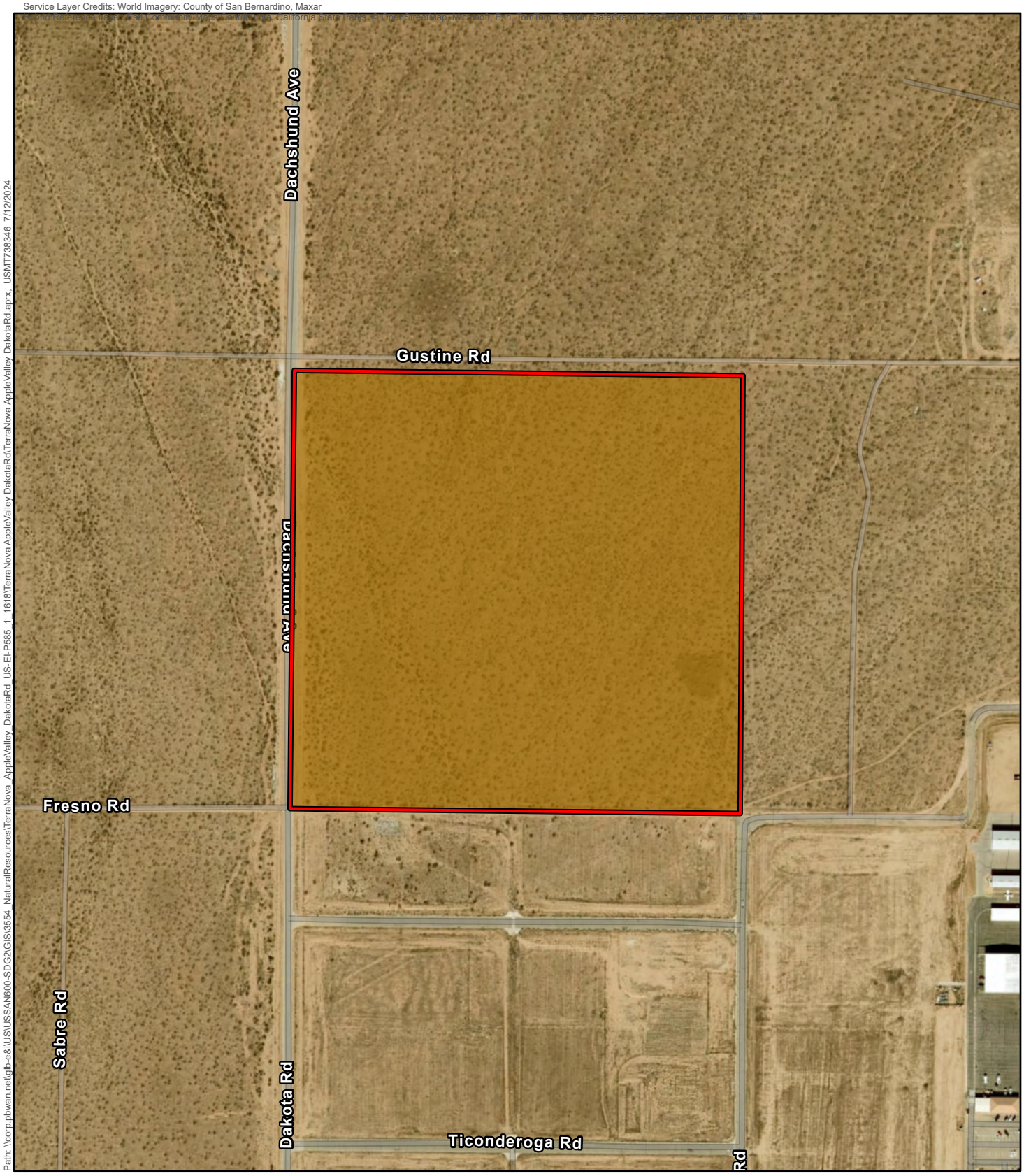


FIGURE 3

Soils
BRAR
Terra Nova Dakota Road Project
Apple Valley, CA



Project Area

Creosote Bush Scrub

FIGURE 4

Vegetation Communities
BRAR
Terra Nova Dakota Road Project
Apple Valley, CA

APPENDIX B

SITE PHOTOGRAPHS

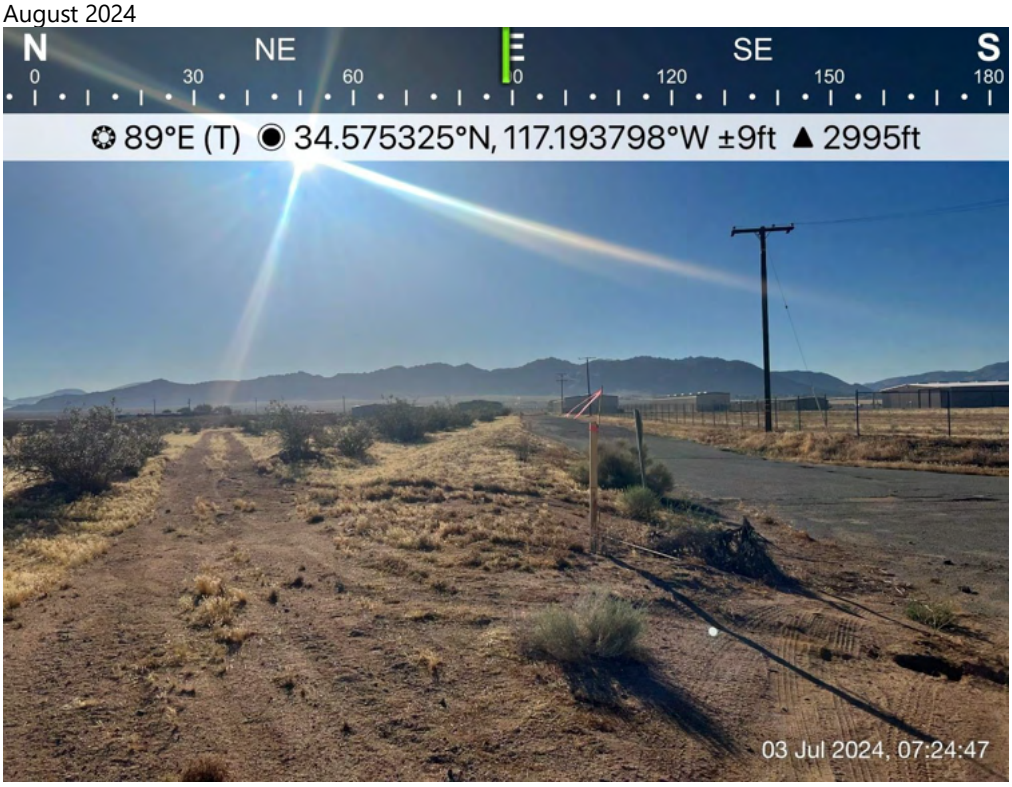


Photo1: Looking east towards developed land. Photo was taken from the east side of Fresno Road.

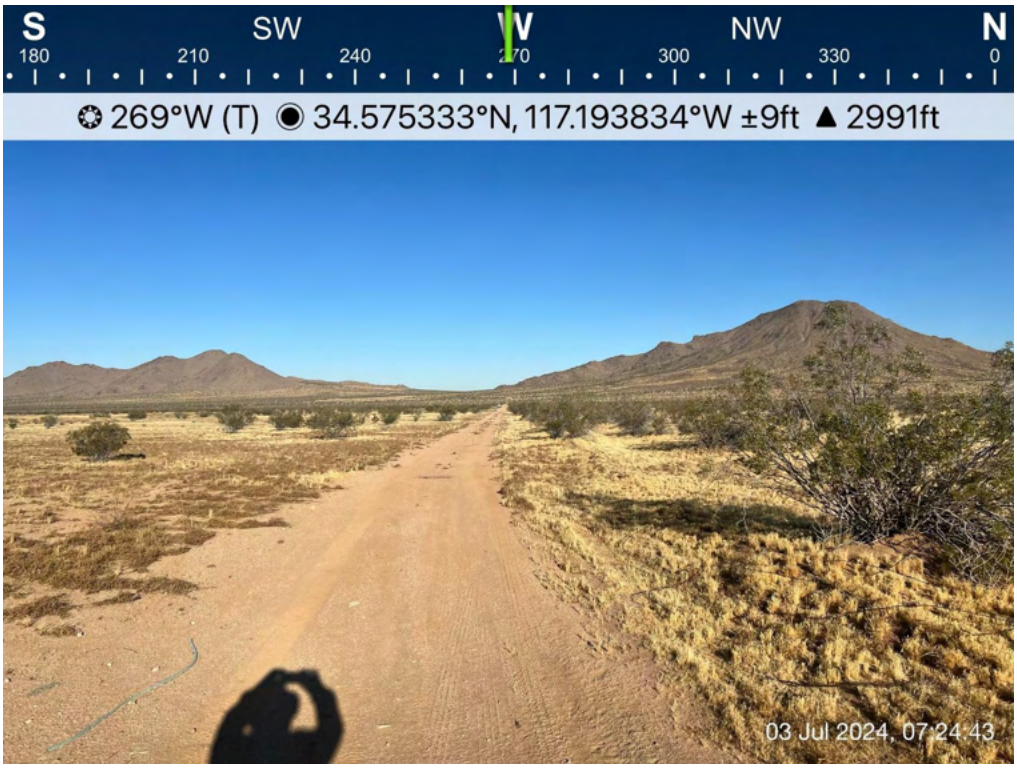


Photo 2: Looking west towards Dakota Road. Photo was taken from the east side of Fresno Road.

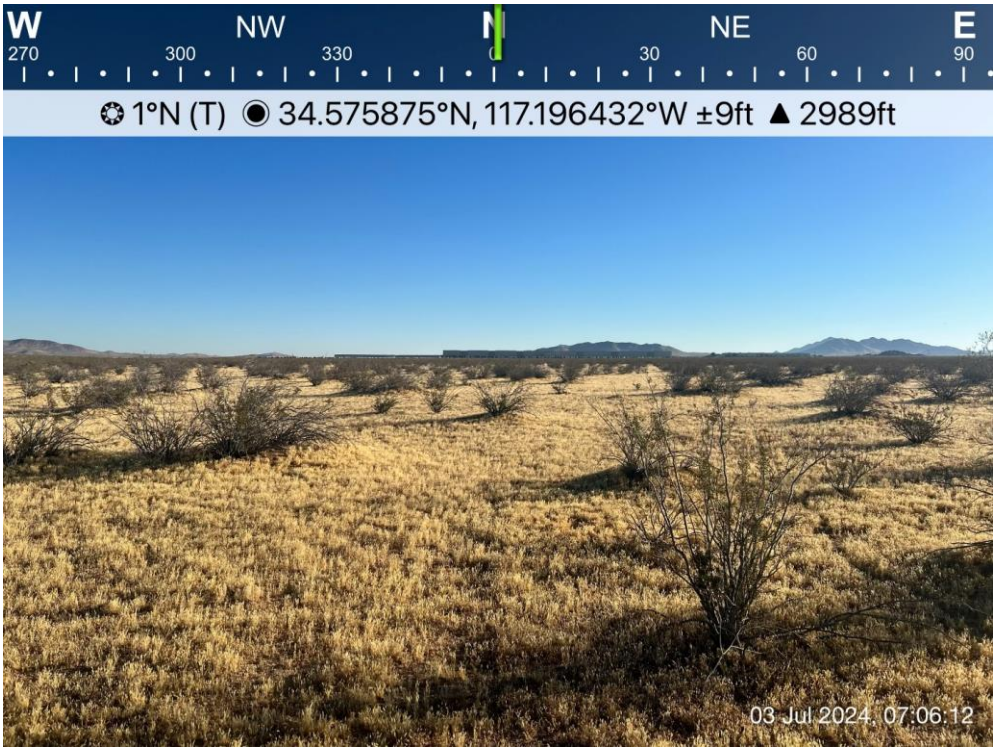


Photo 3: Looking north showing creosote scrub habitat and dominance of non-native grasses.

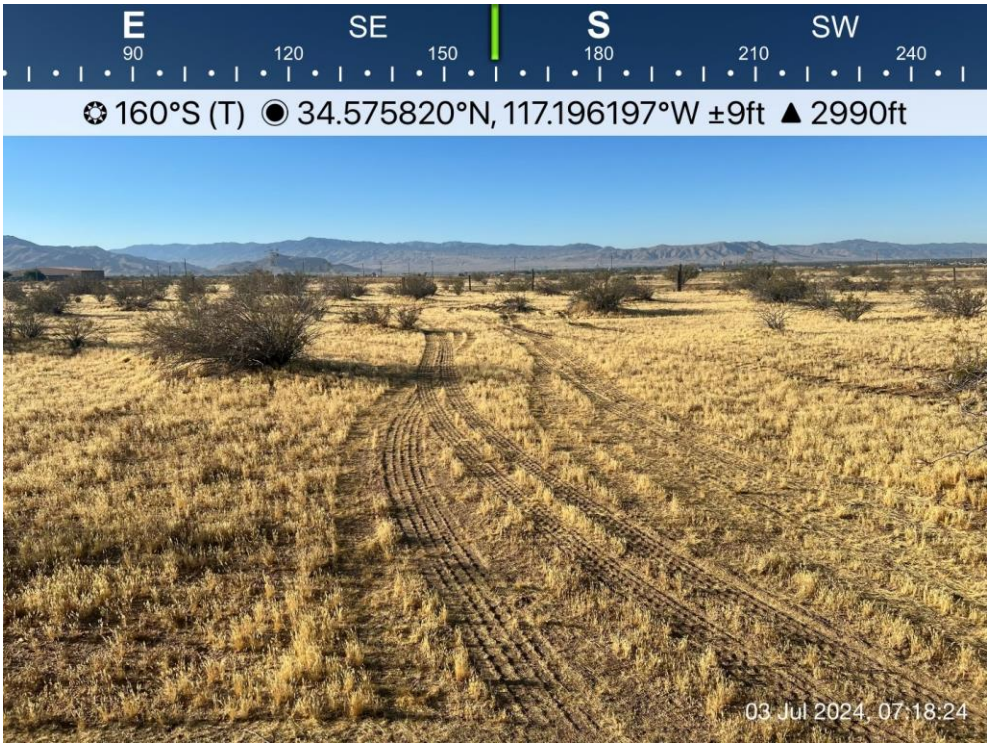


Photo 4: Signs of off-roading and disturbance observed throughout the site.



Photo 5: Trash and debris dumped on site.

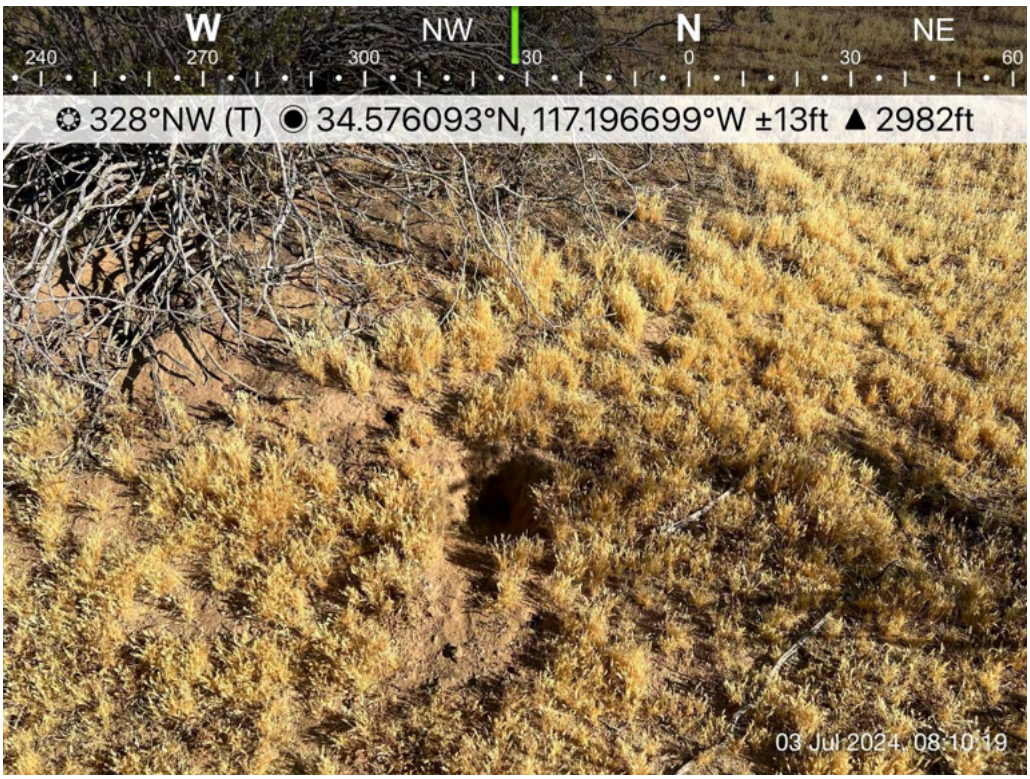


Figure 6. Showing burrow onsite that is not suitable for burrowing owl.

APPENDIX C

PLANT AND VERTEBRATE SPECIES LISTS

PLANT SPECIES OBSERVED

EUDICOTS (EUDICOTIDAE)

Asteraceae Sunflower Family

Ambrosia acanthicarpa	annual bur-sage
Cirsium occidentale	cobweb thistle
Ericameria nauseosa	rubber rabbitbrush

Brassicaceae Mustard Family

*Hirschfeldia incana**	shortpod mustard
*Lepidium latifolium**	perennial pepperweed

Cactaceae Cactus Family

Cylindropuntia ramosissima	branched pencil cholla

Commelinaceae Spurge Family

Croton setiger	doveweed

Ephedraceae Ephedra Family

Ephedra nevadensis	Nevada ephedra

Euphorbiaceae Spurge Family

*Euphorbia maculatum**	No common nam

Geraniaceae Legume Family

*Erodium cicutarium** *red stemmed stork bill (check this)*

Malvaceae Mallow Family

Sphaeralcea ambigua	desert globemallow

Onagraceae Primrose Family

Camissonia claviformis	brown eyed primrose

Polemoniaceae Phlox Family

Eriastrum sapphirinum.	sapphire woollystar

Solanaceae Nightshade Family

Lycium andersonii	Anderson boxthorn

Zygophyllaceae Caltrop Family
Larrea tridentata Creosote bush

MONOCOTS (MONOCOTYLEDONAE)

Poaceae Grass Family
*Bromus rubens** red brome
*Bromus tectorum** cheatgress
*Schismus barbatus** old han schismus

VERTEBRATE WILDLIFE DETECTED

CLASS REPTILIA REPTILES

Squamata (Lizards and Snakes)

Teiidae Lacertoidean Lizards Family
Aspidoscelis tigris tigris great basin whiptail

CLASS AVES BIRDS

Passerellidae New World Sparrows Family
Spizella breweri Brewer's sparrow

CLASS MAMMALIA MAMMALS

Leporidae Rabbit and Hare Family
Lepus californicus black-tailed jackrabbit

KEY
* = non-native species
** = special-status species
cf. = compares favorably with
sp. = plant identified to genus only

These lists report only plants and animals observed on the site by this study. Other species may have been overlooked or undetectable due to their growing season (plants) or their activity patterns and/or subterranean habitats (animals). Plant species of uncertain identity were collected for later identification by University of California, Riverside Herbarium Collections Manager Andrew Sanders. Plant nomenclature and systematics follows the Jepson Flora Project (2024) and/or United States Department of Agriculture, Natural Resources Conservation Service (2024). Nomenclature and taxonomy for fauna follows California Bird Records Committee (2024) for avifauna and California Department of Fish and Wildlife (2016a) for herpetofauna and mammals.

APPENDIX D

USFWS IPaC REPORT

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: 07/22/2024 18:05:31 UTC
Project Code: 2024-0119558
Project Name: DAKOTA AND FRESNO ROAD PROJECT

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 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 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/service/esa-section-7-consultation

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/program/migratory-bird-permit/what-we-do.

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/library/collections/threats-birds.

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/partner/council-conservation-migratory-birds.

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: 2024-0119558
Project Name: DAKOTA AND FRESNO ROAD PROJECT
Project Type: Commercial Development
Project Description: A warehouse development on a 39-acre site, located north of Fresno Road, south of Gustine Street, and east of Dakota Road, in the town of Apple Valley, San Bernardino County, California.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@34.577168,-117.19585080291682,14z



Counties: San Bernardino County, California

ENDANGERED SPECIES ACT SPECIES

There is a total of 3 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.

---

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.

REPTILES

NAME	STATUS
Desert Tortoise *Gopherus agassizii*	Threatened

Population: Wherever found, except AZ south and east of Colorado R., and Mexico
There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/4481

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.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency:	WSP USA
Name:	Dale Hameister
Address:	WSP USA Environment & Infrastructure Inc
Address Line 2:	862 E Hospitality Ln #350
City:	San Bernardino
State:	CA
Zip:	92408
Email	dale.hameister@wsp.com
Phone:	8312380676

Appendix C
Jurisdictional Assessment of Wetlands and Waters
((Available on the Town website for review)

August 2, 2024

Nicole Criste, Principal
Terra Nova Planning and Research
42635 Melanie Place, Suite 101
Palm Desert, CA 92211

Subject: Jurisdictional Assessment of Wetlands and Waters Dakota Road Project, Town of Apple Valley, California

WSP USA Environment & Infrastructure Inc. (WSP USA) conducted a Jurisdictional assessment for aquatic resources for the proposed project on a 39-acre site, located north of Fresno Road, south of Gustine Street, and east of Dakota Road, in the town of Apple Valley, San Bernardino County, California.

1.0 PROJECT LOCATION

The project is entirely within the Town of Apple Valley, San Bernardino County, California (Figure 1). It is located primarily on the 7.5-minute Town of Apple Valley North, Calif. United States Geological Survey (USGS) quadrangle (Figure 2). It is in Township 6 North, Range 3 West, Section 28. Project topography is level overall at elevations ranging from approximately 2977 to 2996 feet (907-913 meters). The project consists of one (1) parcel totalling approximately 39-acres, located north of Fresno Road, south of Gustine Street, and east of Dakota Road, in the town of Apple Valley, San Bernardino County, California.

2.0 ENVIORNMENTAL SETTING

The average rainfall for the area is 5.52 inches per year (Western Regional Climate Center, 2024). Weather data was recorded in the adjacent city of Victorville.

The project site is generally located within the South Lahontan hydrological region (USGS). It is more specifically located within the Upper Mohave hydrologic area within the Mohave hydrologic unit (Hydrologic Unit Code 18090208) (Appendix A – Figure 3).

3.0 REGULATORY FRAMEWORK

3.1 U.S. Army Corps of Engineers

The USACE regulates the discharge of dredged or fill material in Waters of the United States (WUS) pursuant to Section 404 of the Clean Water Act (CWA).

3.1.1 Waters of the U.S.

Categories of Jurisdictional Waters

Under the final rule, the following waters are jurisdictional:

(1) Waters which are: (i) **traditional navigable waters** (TNWs), *i.e.*, all waters currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; (ii) **territorial seas**; or (iii) **interstate waters**, including interstate wetlands.

(2) **Impoundments** of waters otherwise defined as WUS under this definition, other than impoundments of waters identified under paragraph (5).

(3) **Tributaries** of waters identified in (1) or (2) of this section that:

i. Are relatively permanent, standing or continuously flowing; or

ii. Either alone or in combination with similarly situated waters in the region, significantly affect the chemical, physical, or biological integrity of waters identified in paragraph (1).

- *Tributary is not defined in the regulatory text, but the preamble clarifies that this category includes rivers, streams, lakes, ponds, and impoundments, regardless of their flow regime, that flow directly or indirectly through another water or waters to a TNW, territorial sea, or interstate water.*
- *Tributaries can be natural, modified, or constructed waters and thus, can include ditches and canals.*

(4) **Wetlands adjacent** to:

i. Waters identified in (1); or relatively permanent, standing, or continuously flowing bodies of water identified in (2) or (3)(i) and with a continuous surface connection to those waters;

ii. Waters identified in (2) or (3) when the wetlands either alone or in combination with similarly situated waters in the region, significantly affect the chemical, physical, or biological integrity of waters identified in paragraph (1).

- *Adjacent is defined as "bordering, contiguous, or neighboring." Wetlands separated from other WUS by man-made dikes or barriers, natural river berms, beach dunes, and the like are adjacent wetlands. Shallow subsurface hydrologic connections can establish adjacency.*
- *The preamble says that in a substantial number of cases, adjacent wetlands abut other WUS and that, on the whole, nationwide, adjacent wetlands are within a few hundred feet from other WUS. In arid areas, adjacent wetlands are likely to be much closer than a few hundred feet, but*

in larger floodplains and riparian areas where rainfall is higher, wetlands can be a few hundred feet away and still be "adjacent."

(5) **Intrastate lakes and ponds, streams, or wetlands** not identified in paragraphs (1) through (4) that:

i. Are relatively permanent, standing or continuously flowing bodies of water with a continuous surface connection to the waters identified in paragraph (1) or (3)(i) of this section; or

ii. That either alone or in combination with similarly situated waters in the region, significantly affect the chemical, physical, or biological integrity of waters identified in paragraph (1).

- *This is the former (a)(3) "other waters" category. As in the proposed rule, the preamble to the final rule again acknowledges that the agencies have not asserted jurisdiction over (a)(3) waters since 2003. And because this category was not discussed in the 2008* Rapanos *Guidance, the application of the relatively permanent and significant nexus tests to this category represents a clear expansion of the pre-2015 regulatory regime.*
- *The preamble commits both Environmental Protection Agency (EPA) and U.S. Army of Corps of Engineers (USACE) headquarters to review all draft AJDs for waters assessed under (a)(5) based on the significant nexus standard.*

Relatively permanent standard

- The final rule does not define or quantify what constitutes "relatively permanent" flow. The preamble merely says relatively permanent includes features that have flowing or standing water year-round or continuously during certain times of the year.

- The Agencies are no longer using the term "seasonal" and appear to be backing away from the "typically three months" language in the 2008 *Rapnanos* Guidance. Moreover, the preamble could be interpreted to say that "relatively permanent" means flow for more than a short duration in direct response to precipitation, *i.e.*, anything more than ephemeral flow. The preamble suggests that multiple storm events in succession could be enough to create relatively permanent flow.

  The Agencies interpret "continuous surface connection" to be a physical connection requirement, which does not require a continuous surface water connection. Even linear features (e.g., pipes, swales, ditches) can satisfy the physical connection requirement regardless of how often they carry flow. The preamble does not make it clear whether jurisdiction is dependent on the length/distance of a linear physical connection between an adjacent wetland and a relatively permanent WUS.

Significantly affect (significant nexus) standard

The final rule defines "significantly affect" to mean "a material influence on the chemical, physical, or biological integrity of waters identified in paragraph (a)(1) of this section. To determine whether waters, either alone or in combination with similarly situated waters in the region, have a material influence on the chemical, physical, or biological integrity of waters identified in paragraph (a)(1) of this section," the Agencies will assess the following functions and factors:

o Functions

- Contribution of flow
- Trapping, transformation, filtering, and transport of materials (including nutrients, sediment, and other pollutants)
- Retention and attenuation of floodwaters and runoff
- Modulation of temperature in waters identified in paragraph (a)(1) of this section
- Provision of habitat and food resources for aquatic species located in waters identified in paragraph (a)(1) of this section

o Factors

- The distance from a water identified in paragraph (a)(1) of this section
- Hydrologic factors, such as the frequency, duration, magnitude, timing, and rate of hydrologic connections, including shallow subsurface flow
- The size, density, or number of waters that have been determined to be similarly situated
- Landscape position and geomorphology
- Climatological variables such as temperature, rainfall, and snowpack

Exclusions

The final rule codifies many more exclusions than the proposed rule (and the 1986 regulations). Most of the exclusions resemble those in the 2015 Rule:

- Waste treatment systems, including treatment ponds or lagoons, designed to meet the requirements of the Clean Water Act (CWA).

- *The preamble clarifies that Wastewater Treatment Systems (WTS) constructed prior to the enactment of the CWA can still be excluded and that WTS are not limited to manmade bodies of water consistent with longstanding practice.*

  Prior converted cropland designated by United States Department of Agriculture (USDA). The exclusion would cease upon a change of use, which means that the area is no longer available for the production of agricultural commodities. For CWA purposes, the final authority regarding CWA jurisdiction remains with EPA.

    - *The preamble implies, but does not clearly state, that lands remain excluded as prior converted cropland even if they change to a non-agricultural use so long as wetland characteristics do not return.*

- Ditches (including roadside ditches) excavated wholly in and draining only dry land and that do not carry a relatively permanent flow of water.

    - *Excluded ditches would not become jurisdictional solely by virtue of connecting to a downstream WUS or because wetland characteristics develop within the confines of the ditch.*

- Artificially irrigated areas that would revert to dry land if the irrigation ceased.

- Artificial lakes or ponds created by excavating or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing.

    - *The preamble says this exclusion applies only to lakes/ponds that satisfy the terms of the exclusion, so apparently other types of ponds (e.g., log cleaning ponds) would not qualify.*

- Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating or diking dry land to retain water for primarily aesthetic reasons.

- Waterfilled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of WUS.

iii. Swales and erosional features (*e.g.*, gullies, small washes) characterized by low volume, infrequent, or short duration flow

Supreme Court Decisions

Solid Waste Agency of Northern Cook County

On January 9, 2001, the Supreme Court of the United States issued a decision on Solid Waste Agency of Northern Cook County v. USACE, et al. with respect to whether the USACE could assert jurisdiction over isolated waters. The Solid Waste Agency of North Cook County (SWANCC) ruling stated that the USACE does not have jurisdiction over "non-navigable, isolated, intrastate" waters.

Rapanos/Carabell

In the Supreme Court cases of Rapanos v. United States and Carabell v. United States (herein referred to as Rapanos), the court attempted to clarify the extent of USACE jurisdiction under the CWA. The nine Supreme Court justices issued five separate opinions (one plurality opinion, two concurring opinions, and two dissenting opinions) with no single opinion commanding a majority of the Court. In light of the Rapanos decision, the USACE will assert jurisdiction over a TNW, wetlands adjacent to TNWs, non-navigable tributaries of TNWs that are a relatively permanent waterway (RPW) where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months) and wetlands that directly abut such tributaries. The USACE will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with a TNW: non-navigable tributaries that are not relatively permanent, wetlands adjacent to non-navigable tributaries that are not RPWs, and wetlands adjacent to but that do not directly abut a non-navigable RPW.

Flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary indicate whether they significantly affect the chemical, physical and biological integrity of downstream TNWs. Analysis of potentially jurisdictional streams includes consideration of hydrologic and ecologic factors. The consideration of hydrological factors includes volume, duration, and frequency of flow, proximity to TNWs, size of watershed, average annual rainfall, and average annual winter snowpack. The consideration of ecological factors also includes the ability for tributaries to carry pollutants and flood waters to a TNW, the ability of a tributary to provide aquatic habitat that supports a TNW, the ability of wetlands to trap and filter pollutants or store flood waters, and maintenance of water quality.

Sackett v. EPA Supreme Court

Sackett began backfilling an Idaho lot with dirt to build a home. The EPA informed Sackett that the property contained wetlands and that the backfilling violated the CWA, which prohibits discharging pollutants into "WUS," 33 U.S.C. 1362(7). The EPA ordered Sackett to

restore the site, threatening penalties of over $40,000 per day. The EPA classified the Sacket wetlands as "WUS" because they were near a ditch that fed into a creek, which fed into Priest Lake, a navigable, intrastate lake. The Ninth Circuit affirmed summary judgment in favor of the EPA.

The Supreme Court reversed. CWA jurisdiction over an adjacent wetland requires that the adjacent body of water constitutes WUS (a relatively permanent body of water connected to traditional interstate navigable waters) and a continuous surface connection between the wetland and that water, making it difficult to determine where the 'water' ends and the 'wetland' begins."

The Court reviewed the history of judicial interpretation of "WUS" and enforcement by federal agencies, which argued that the significant-nexus test was sufficient to establish jurisdiction over "adjacent" wetlands. Under that test, nearly all waters and wetlands are potentially susceptible to regulation, "putting a staggering array of landowners at risk of criminal prosecution for such mundane activities as moving dirt." The CWA's use of "waters" encompasses only relatively permanent, standing, or continuously flowing bodies, ordinarily called streams, oceans, rivers, and lakes. Wetlands qualify as "WUS" only if "indistinguishable from WUS," having a continuous surface connection to bodies that are WUS in their own right, with no clear demarcation between waters and wetlands.

On August 29, 2023, the EPA and USACE announced a final rule amending the 2023 definition of "WUS" to conform with the recent Supreme Court decision in Sackett v. EPA. The ruling removes the significant nexus test and confirms that only drainages with relatively permanent flows will fall under USACE jurisdiction.

3.2 Regional Water Quality Control Board

The Regional Water Quality Control Board (RWQCB) regulates activities pursuant to Section 401(a)(1) of the CWA. Section 401 of the CWA specifies that certification from the state is required for any applicant requesting a federal license or permit including a Section 404 permit. Through the Porter Cologne Water Quality Control Act, the RWQCB asserts jurisdiction over Waters of the State of California (WSC) which is generally the same as WUS but may also include waters not in federal jurisdiction.

The State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State was adopted in April 2020 and put into effect statewide on May 28, 2020 (State Water Resources Control Board, 2020).

The Water Boards define an area as wetland as follows:

An area is wetland if, under normal circumstances, (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.

The Water Code defines WSC broadly to include "any surface water or groundwater, including saline waters, within the boundaries of the state." WSC include all WUS but also includes waters not in federal jurisdiction.

The following wetlands are WSC:

1. Natural wetlands,
2. Wetlands created by modification of a surface water of the state, and
3. Artificial wetlands that meet any of the following criteria:
    a. Approved by an agency as compensatory mitigation for impacts to other WSC, except where the approving agency explicitly identifies the mitigation as being of limited duration;
    b. Specifically identified in a water quality control plan as a wetland or other WSC;
    c. Resulted from historic human activity, is not subject to ongoing operation and maintenance, and has become a relatively permanent part of the natural landscape; or
    d. Greater than or equal to one acre in size, unless the artificial wetland was constructed, and is currently used and maintained, primarily for one or more of the following purposes (i.e., the following artificial wetlands are not WSC unless they also satisfy the criteria set forth in 2, 3a, or 3b):
        i. Industrial or municipal wastewater treatment or disposal,
        ii. Settling of sediment,
        iii. Detention, retention, infiltration, or treatment of stormwater runoff and other pollutants or runoff subject to regulation under a municipal, construction, or industrial stormwater permitting program,
        iv. Treatment of surface waters,
        v. Agricultural crop irrigation or stock watering,
        vi. Fire suppression,
        vii. Industrial processing or cooling,
        viii. Active surface mining – even if the site is managed for interim wetlands functions and values,
        ix. Log storage,
        x. Treatment, storage, or distribution of recycled water, or
        xi. Maximizing groundwater recharge (this does not include wetlands that have incidental groundwater recharge benefits); or
        xii. Fields flooded for rice growing.

All artificial wetlands that are less than an acre in size and do not satisfy the criteria set forth in 2, 3.a, 3.b, or 3.c are not WSC.

3.3 California Department of Fish and Wildlife

The California Department of Fish and Wildlife (CDFW) regulates water resources under Section 1600-1616 of the California Fish and Game Code. Section 1602 states:

"An entity may not 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 (CDFW, 2015)."

Evaluation of CDFW jurisdiction followed guidance in the Fish and Game Code and A Review of Stream Processes and Forms in Dryland Watersheds. In general, under 1602 of the Fish and Game Code, CDFW jurisdiction extends to the maximum extent or expression of a stream on the landscape (CDFW, 2010). It has been the practice of CDFW to define a stream as "a body of water that flows perennially or episodically and that is defined by the area in a channel which water currently flows, or has flowed over a given course during the historic hydrologic course regime, and where the width of its course can reasonably be identified by physical or biological indicators" (Brady and Vyverberg, 2013). Thus, a channel is not defined by a specific flow event, nor by the path of surface water as this path might vary seasonally. Rather, it is CDFW's practice to define the channel based on the topography or elevations of land that confine the water to a definite course when the waters of a creek rise to their highest point.

3.0 METHODS

Prior to conducting fieldwork, the following literature and materials were reviewed:

- Aerial photographs of the project vicinity.
- USGS topographic maps (Figure 2, Appendix A) to determine mapped water features.
- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) database (Figure 3, Appendix A).
- USDA soil mapping data (Figure 4, Appendix A).

Field surveys were conducted on 3 July 2024 by WSP USA Senior Biologist Dale Hameister and Biologist Emily Urquidi. Field surveys included identifying potential jurisdictional wetlands and/or WUS/WSC within the project area by walking the property within the areas to be impacted. The presence of potentially jurisdictional waters were identified within the project area by presence of ordinary high water mark (OHWM) (Lichvar and McColley, 2008; Cutis and Lichvar, 2010), defined bed and bank, and riparian communities associated with the drainage channel observed within the project area. Data was collected on width and depth of federal and state jurisdiction with Global Positioning System (GPS) using Trimble GeoXT.

Potential wetland features were visually examined for hydrophytic plants, hydric soils, and wetland hydrology (USACE 1987 and 2008). Soil pits were dug within the bottom of potential features, and within adjacent uplands to identify changes in soil texture.

The Geographic Information System (GIS) data collected in the field will be overlaid onto aerial photographs to identify project related impacts. Representative site photographs were taken during the field investigation and are included in Appendix B.

The USDA Natural Resources Conservation Service on-line Web Soil Survey (USDA 2024) was consulted to determine the soil types mapped within the project area.

The USFWS maintains the NWI to identify wetlands and deepwater habitat including descriptions based on the Cowardin Classification System (Cowardin et. al., 1979).

4.0 RESULTS

The dominate shrub present is creosote bush (*Larrea tridentata*). Other native shrub species include Nevada ephedra (*Ephedra nevadensis*), rubber rabbit bush (*Ericameria nauseosa*), and Anderson thornbush (*Lycium andersonii*). Non-native annual species observed include red brome (*Bromus rubens*), red stemmed filaree (*Erodium cicutarium*), old han schismus (*Schismus barbatus*), and cheatgrass (*Bromus tectorum*).

Soils mapped within the project area consisted of Helendale-Byman loamy sands.

The Helendale series consists of very deep, well drained soils that formed in alluvium from granitoid rocks. Helendale soils are on fan piedmonts, fan remnants, alluvial fans and terraces. Slopes range from 0 to 15 percent. The mean annual precipitation is about 125 millimeters (5 inches) and the mean annual temperature is about 17˚C (62.5˚F).

There are two riverine features mapped within the project site in the NWI. These features are areas of bare soil and appear to be washes from an aerial view.

After field investigation, no OHWM or evidence of any recent flows were observed. Soil pits were dug at several locations and indicated that there were no observable differences in soil profile or texture from the upland slopes and the bottom of the hill contour and no indicators of hydric soils. There was no difference in surface soil texture or sorting. No wetland indicator or hydric plants were observed associated with the features. In several locations, annual grasses were growing in the bottom of the features which also indicates a lack of flow.

These features did not contain riparian vegetation or hydric soils, did not show evidence of periodic or episodic flow, and do not have a defined bed and bank. The features were determined to be erosional features and did not meet the requirements to be considered WUS, WSC, or CDFW jurisdictional. These features were evaluated and determine to be non-jurisdictional in an otherwise upland area.

No potential federally regulated wetlands were identified within the impact areas based on lack of hydric soil wetland hydrology indicators (USACE 1987 and 2008).

5.0 REFERENCES

Army Corps of Engineers (ACOE). 1987. Wetlands Delineation Manual, Technical Report Y-8. U.S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi. 100 pp. + append.

ACOE. 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region. September.

Brady and Vyverberg, Methods to Describe and Delineate Episodic Stream Processes on Arid Landscapes for Permitting Utility-scale Solar Power Plants 2013

CDFW. Fish and Game Code. 2010.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Department of the Interior.

Curtis, K.E., and R.W. Lichvar. 2010. Updated Datasheet for the Identification of the Ordinary High Water Mark in the Arid West Region of the Western United States. U.S. Army Corps of Engineers Wetland Regulatory Assistance Program. July 2010.

Lichvar R.W., and S.M. McColley. 2008. A Field Guide to the Identification of the Ordinary High Water Mark in the Arid West Region of the Western United States. A Delineation Manual. Lichvar and McColley. U.S. Army Corps of Engineers. August

National Resource Conservation Service Field Office Technical Guide (FOTG), https://efotg.sc.egov.usda.gov/

USACE. Corps Wetland Delineation Manual – Arid West, 1987.

USACE, Final Rule, Waters of the US, 2023.

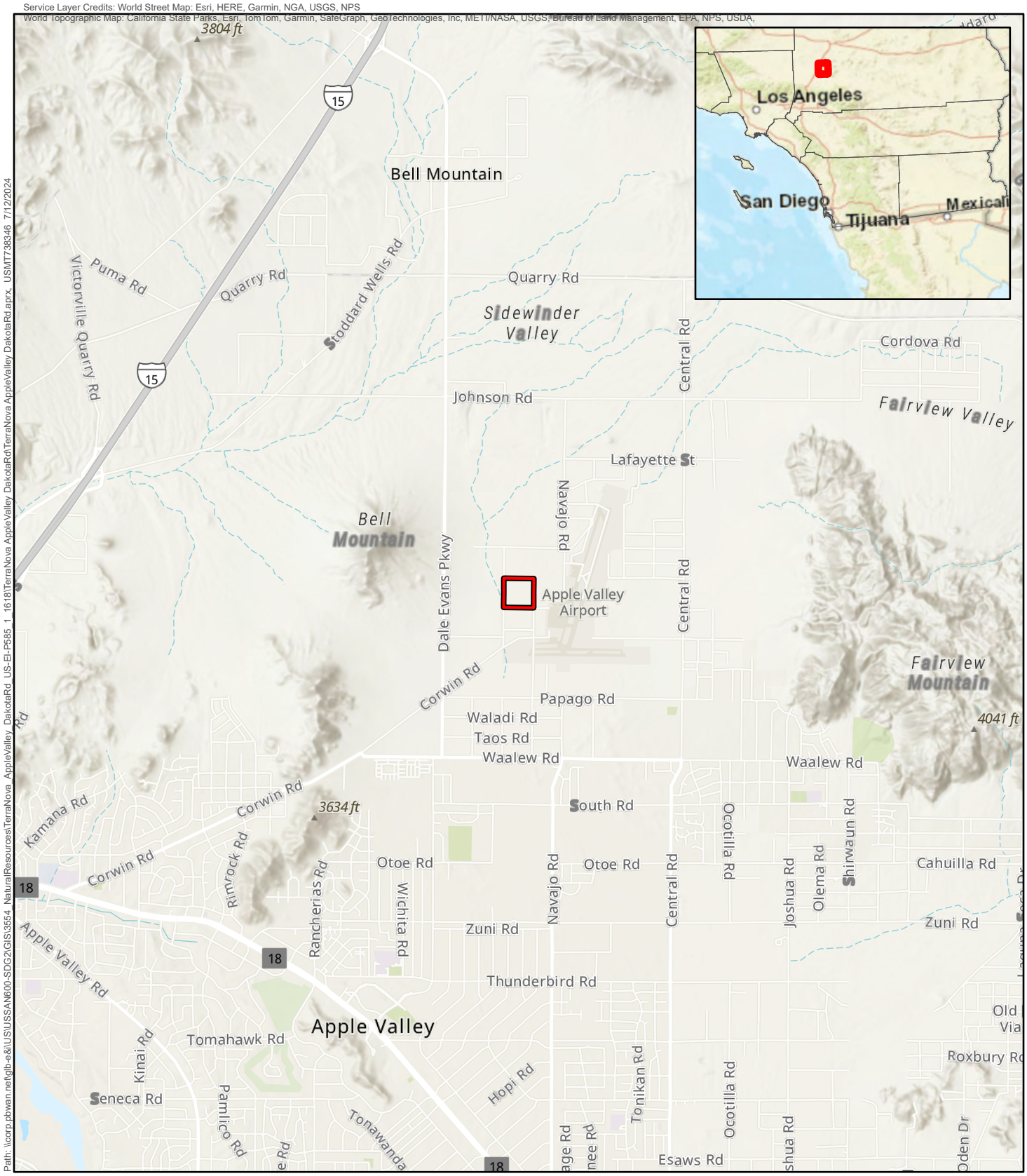
U.S. Department of Agriculture (USDA). 2024. Web Soil Survey. USDA Natural Resources Conservation Service. https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx

U.S. Fish and Wildlife Service (USFWS). 2024. National Wetlands Inventory Mapper. From: http://www.fws.gov/wetlands/Data/Mapper.html. Accessed September 2023.

Western Regional Climate Center. Date.

Appendix A

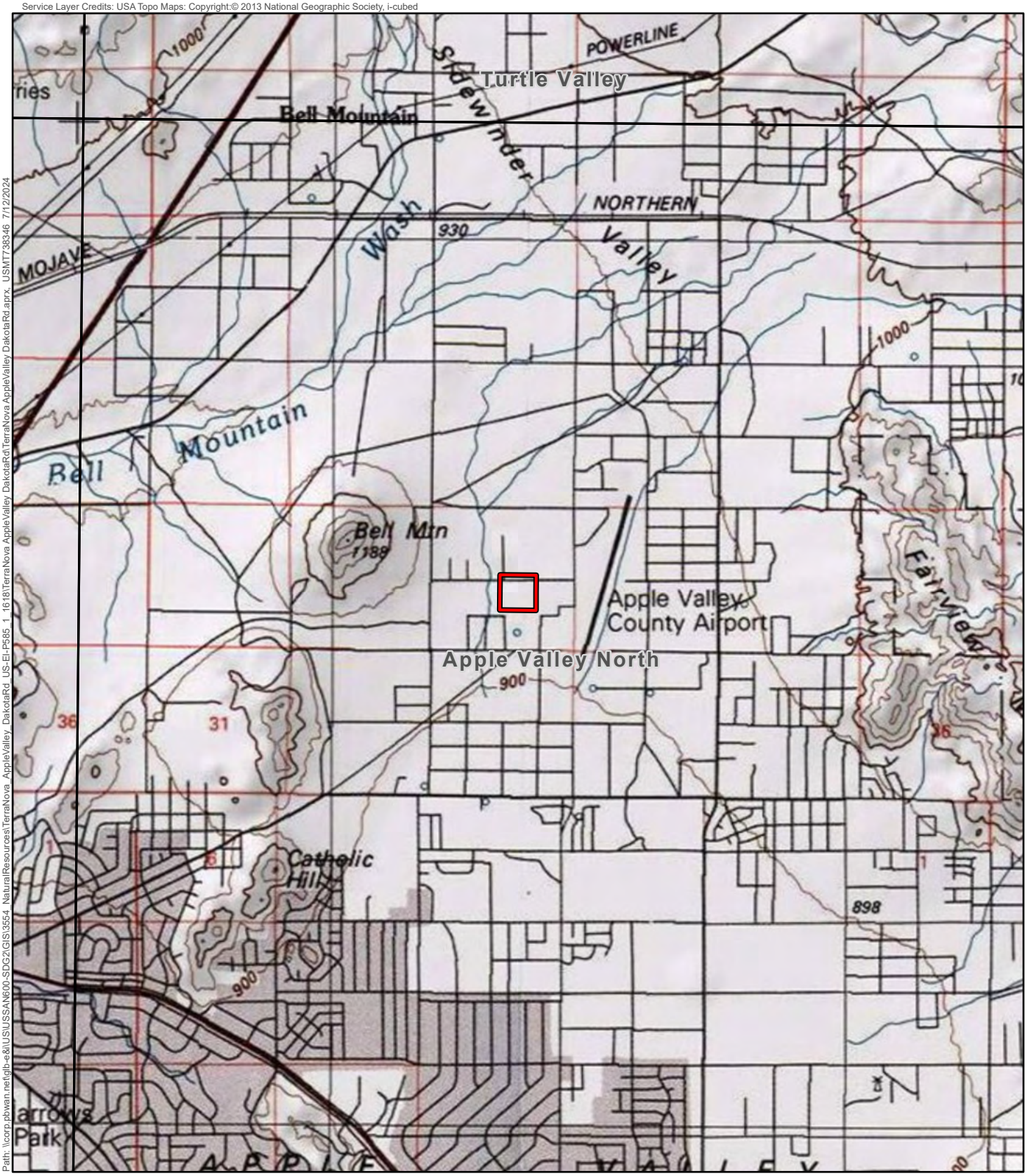
Figures



Project Area

FIGURE 1

Project Region
Jurisdictional Assessment
Terra Nova Dakota Road Project
Apple Valley, CA



Project Area

FIGURE 2

USGS 7.5' Topo Quad: Apple Valley
Jurisdictional Assessment
Terra Nova Dakota Road Project
Apple Valley, CA



1 inch =6 miles
0 2.5 5 Miles

Project Area
Reservoir
LakePond
Playa
SwampMarsh
Connector
CanalDitch
Pipeline
StreamRiver
ArtificialPath

FIGURE 3

Hydrology
Jurisdictional Assessment
Terra Nova Dakota Road Project
Apple Valley, CA

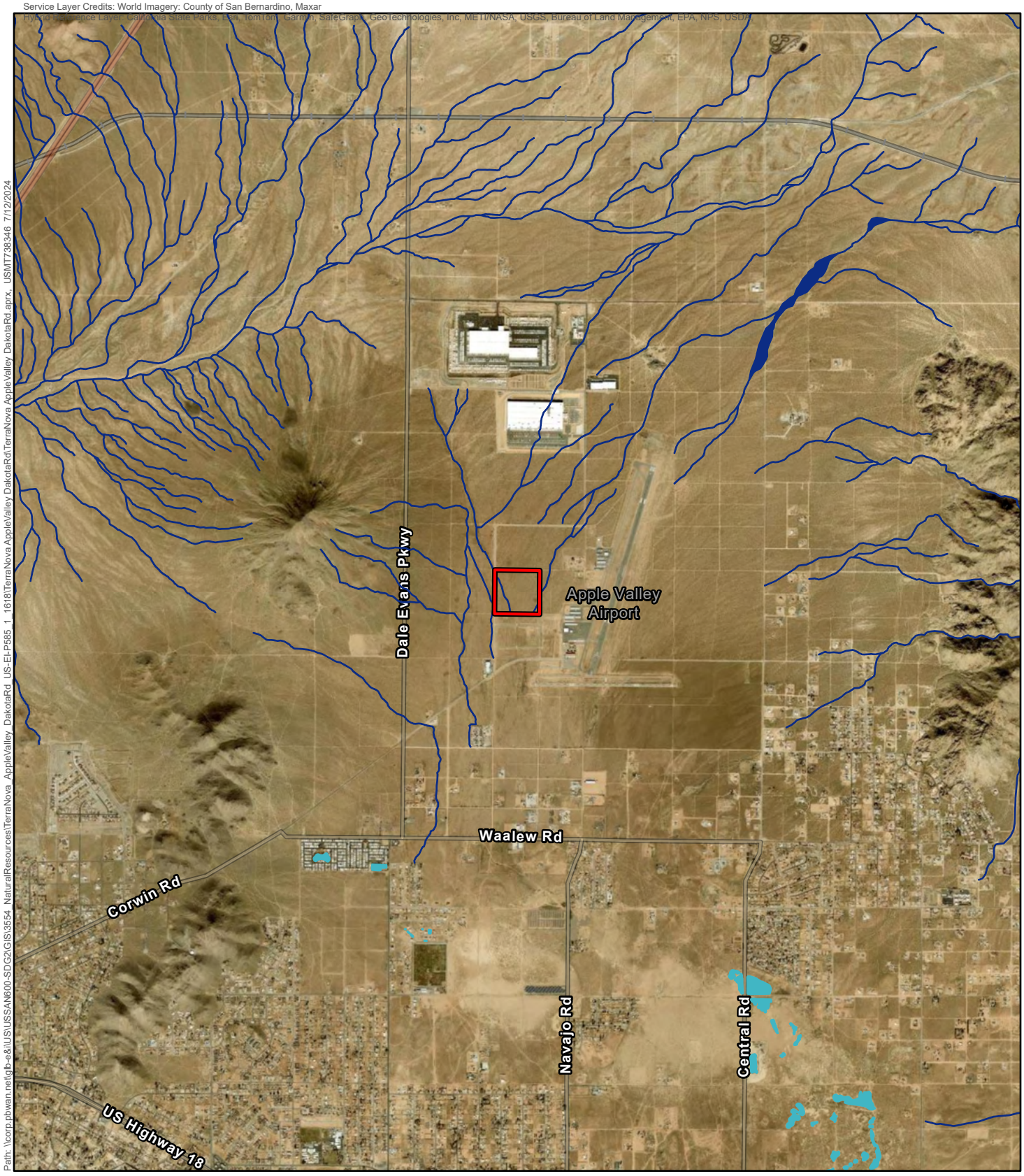


FIGURE 4

NWI
Jurisdictional Assessment
Terra Nova Dakota Road Project
Apple Valley, CA

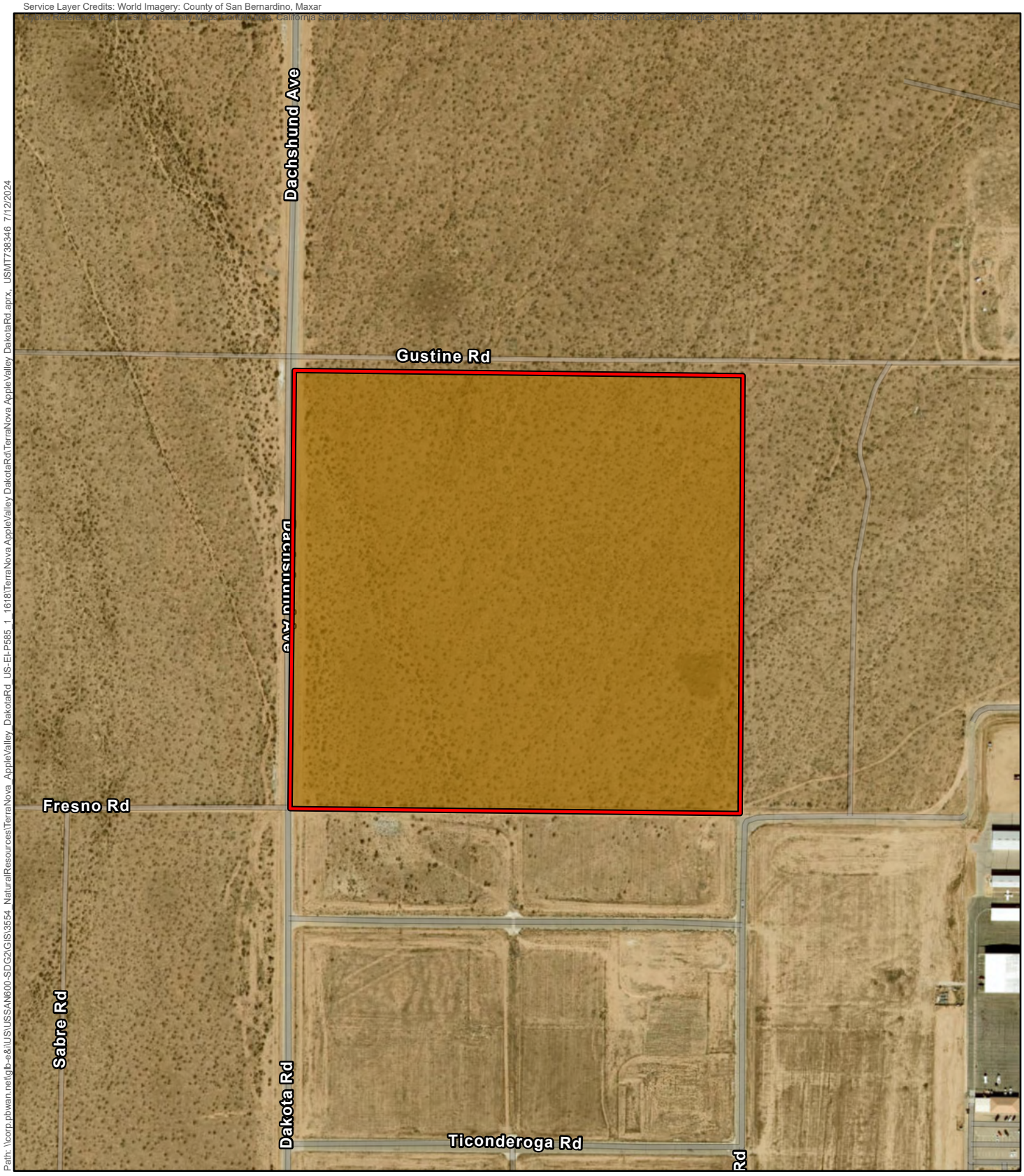
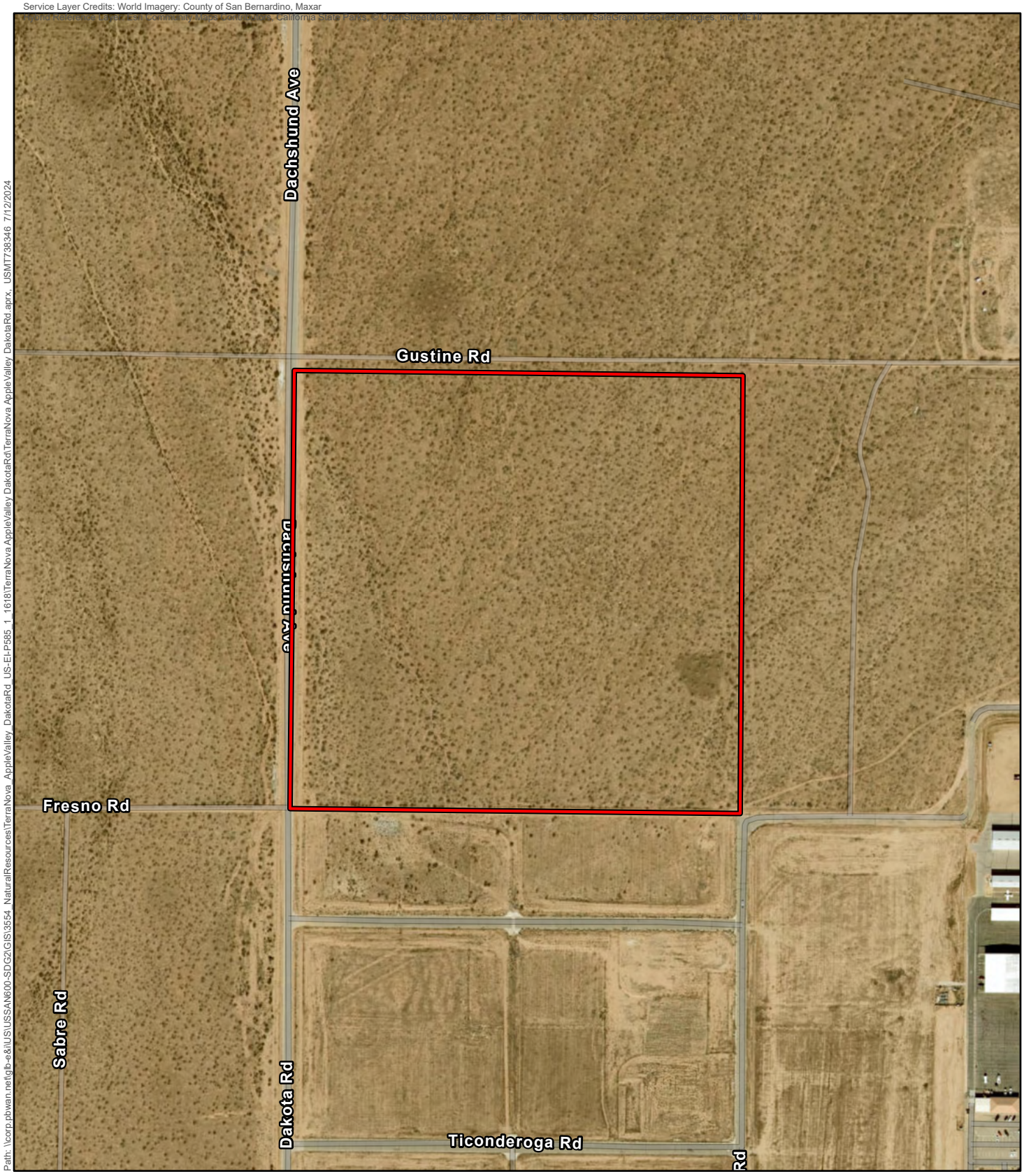


FIGURE 5

Soils
Jurisdictional Assessment
Terra Nova Dakota Road Project
Apple Valley, CA



Project Area

FIGURE 6

JD
Jurisdictional Assessment
Terra Nova Dakota Road Project
Apple Valley, CA

Appendix B

Site Photographs

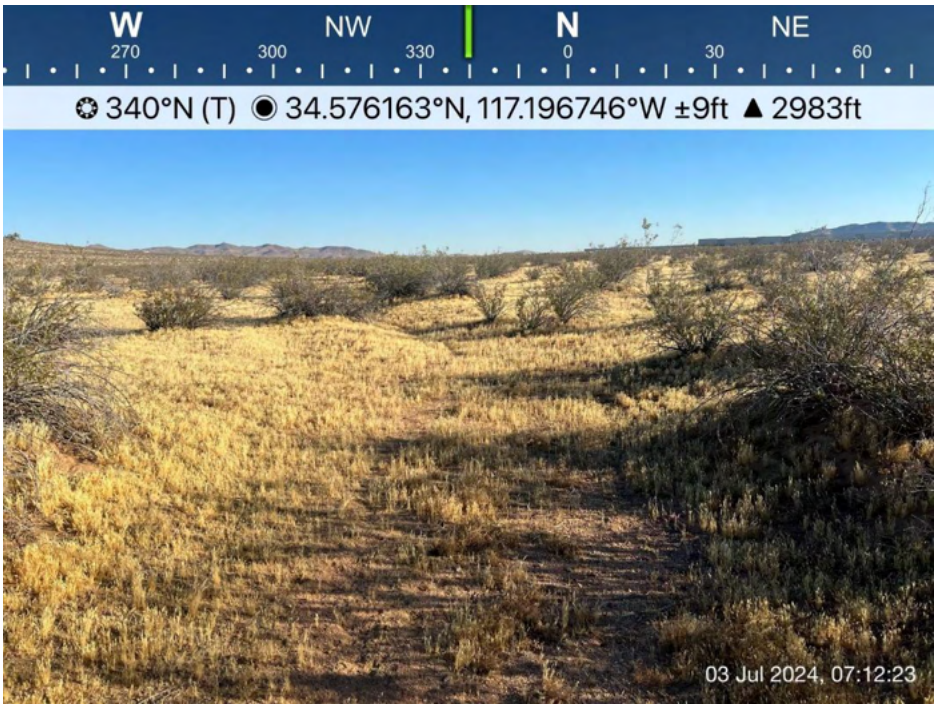


Photo 1: Looking north at potential feature mapped in the NWI. Note lack of OHWM with grasses growing across the feature.



Photo 1: Looking south at potential feature mapped in the NWI. Note lack of OHWM with grasses growing across the feature.

Appendix D
Historical/Archaeological Resources Study
((Available on the Town website for review)

HISTORICAL/ARCHAEOLOGICAL RESOURCES SURVEY

ASSESSOR'S PARCEL NUMBER 0463-372-21

Town of Apple Valley
San Bernardino County, California

For Submittal to:

Planning Division
Town of Apple Valley
14955 Dale Evans Parkway
Apple Valley, California 92307

Prepared for:

Terra Nova Planning and Research, Inc.
42635 Melanie Place, Suite 101
Palm Desert, CA 92211

Prepared by:

CRM TECH
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324

Bai "Tom" Tang, Principal Investigator
Michael Hogan, Principal Investigator

September 7, 2024
CRM TECH Contract No. 4147

Title: Historical/Archaeological Resources Survey: Assessor's Parcel Number 0463-372-21, Town of Apple Valley, San Bernardino County, California

Author(s): Bai "Tom" Tang, Principal Investigator
Nicole Raslich, Report Writer/Archaeologist
Hunter O'Donnell, Crew Chief/Archaeologist

Consulting Firm: CRM TECH
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324
(909) 824-6400

Date: September 7, 2024

For Submittal to: Planning Division
Town of Apple Valley
14955 Dale Evans Parkway
Apple Valley, California 92307
(760) 240-7000

Prepared for: Nicole Sauviat Christe, Vice President
Terra Nova Planning and Research, Inc
42635 Melanie Place, Suite 101
Palm Desert, CA 92211
(760) 341-4800

USGS Quadrangle: Apple Valley North, Calif., 7.5' quadrangle (Section 28, T6N R3W, San Bernardino Baseline and Meridian)

Project Size: Approximately 39 acres

Keywords: Victor Valley, Southern Mojave Desert region; Site 4147-1H*: historic-period refuse deposit; Isolate 4047-2*: isolated prehistoric lithic artifact; no "historical resources" under CEQA

* Temporary designations, pending assignment of permanent identification numbers in the California Historical Resources Inventory

EXECUTIVE SUMMARY

Between May and September 2024, at the request of Terra Nova Planning and Research, Inc., CRM TECH performed a cultural resources study on approximately 39 acres of undeveloped land in the northern portion of the Town of Apple Valley, San Bernardino County, California. The subject property of the study, Assessor's Parcel Number 0463-372-21, is located on the east side of Dakota Road between Gustine Road and Fresno Road, in the northwest quarter of the southeast quarter of Section 28, Township 6 North, Range 3 West, San Bernardino Baseline and Meridian.

The study is part of the environmental review process for the proposed construction of a warehouse on the property. The Town of Apple Valley, as the lead agency for the project, required the study in compliance with the California Environmental Quality Act (CEQA). The purpose of the study is to provide the Town with the necessary information and analysis to determine whether the proposed project would cause substantial adverse changes to any "historical resources," as defined by CEQA, that may exist in or around the project area.

In order to identify such resources, CRM TECH conducted a historical/archaeological resources records search, initiated a Native American Sacred Lands File search, pursued historical background research, and carried out an intensive-level field survey. During the field survey, a group of historic-period refuse deposits and an isolated prehistoric lithic artifact were discovered in the project area and recorded under the temporary designations of Site 4147-1H and Isolate 4147-2, respectively, pending assignment of permanent identification numbers in the California Historical Resources Inventory, but neither appears to meet the definition of a "historical resource" under CEQA provisions. No other features or artifacts of prehistoric or historical origin were identified within the project boundaries.

Based on these findings, CRM TECH recommends to the Town of Apple Valley a finding of *No Impact* regarding "historical resources." No further cultural resources investigation is recommended for the project unless construction plans undergo such changes as to include areas not covered by this study. However, if buried cultural materials are encountered during any earth-moving operations associated with the project, all work within 50 feet of the discovery should be halted or diverted until a qualified archaeologist can evaluate the nature and significance of the finds.

TABLE OF CONTENTS

EXECUTIVE SUMMARY i
INTRODUCTION 1
SETTING 4
Current Natural Setting 4
Cultural Setting 5
Prehistoric Context 5
Ethnohistoric Context 5
Historic Context 6
RESEARCH METHODS 8
Records Search 8
Sacred Lands File Search 9
Historical Research 9
Field Survey 9
RESULTS AND FINDINGS 9
Records Search 9
Sacred Lands File Search 11
Historical Research 11
Field Survey 13
MANAGEMENT CONSIDERATIONS 13
Definition 13
Resource Evaluation 14
Site 4147-1H 14
Isolate 4147-2 14
Conclusion and Recommendations 15
REFERENCES 15
APPENDIX 1: Personnel Qualifications 18
APPENDIX 2: Sacred Lands File Search Results 23
APPENDIX 2: California Historical Resources Inventory Record Forms 26

LIST OF FIGURES

Figure 1. Project vicinity 1
Figure 2. Project location 2
Figure 3. Recent satellite image of the project area 3
Figure 4. Overview of the current natural setting of the project area 4
Figure 5. Previous cultural resources surveys in the vicinity 10
Figure 6. The project area and vicinity in 1855-1857 12
Figure 7. The project area and vicinity in 1920-1932 12
Figure 8. The project area and vicinity in 1952-1957 13

INTRODUCTION

Between May and September 2024, at the request of Terra Nova Planning and Research, Inc., CRM TECH performed a cultural resources study on approximately 39 acres of undeveloped land in the northern portion of the Town of Apple Valley, San Bernardino County, California (Fig. 1). The subject property of the study, Assessor's Parcel Number 0463-372-21, is located on the east side of Dakota Road between Gustine Road and Fresno Road, in the northwest quarter of the southeast quarter of Section 28, Township 6 North, Range 3 West, San Bernardino Baseline and Meridian (Figs. 2, 3).

The study is part of the environmental review process for the proposed construction of a warehouse on the property. The Town of Apple Valley, as the lead agency for the project, required the study in compliance with the California Environmental Quality Act (CEQA; PRC §21000, et seq.). The purpose of the study is to provide the Town with the necessary information and analysis to determine whether the proposed project would cause substantial adverse changes to any "historical resources," as defined by CEQA, that may exist in or around the project area.

In order to identify such resources, CRM TECH conducted a historical/archaeological resources records search, initiated a Native American Sacred Lands File search, pursued historical background research, and carried out an intensive-level field survey. The following report is a complete account of the methods, results, and conclusion of the study. Personnel who participated in the study are named in the appropriate sections below, and their qualifications are provided in Appendix 1.

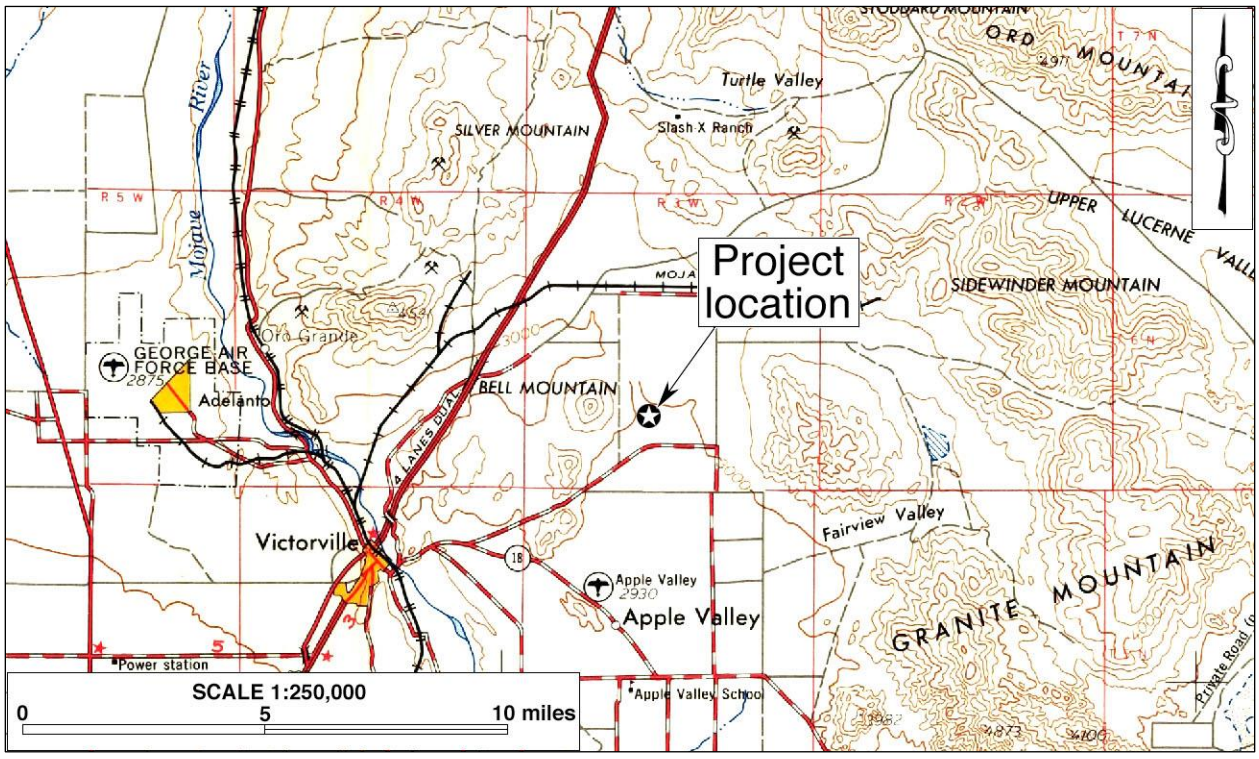


Figure 1. Project vicinity. (Based on USGS San Bernardino, Calif., 120'x60' quadrangle [USGS 1969])

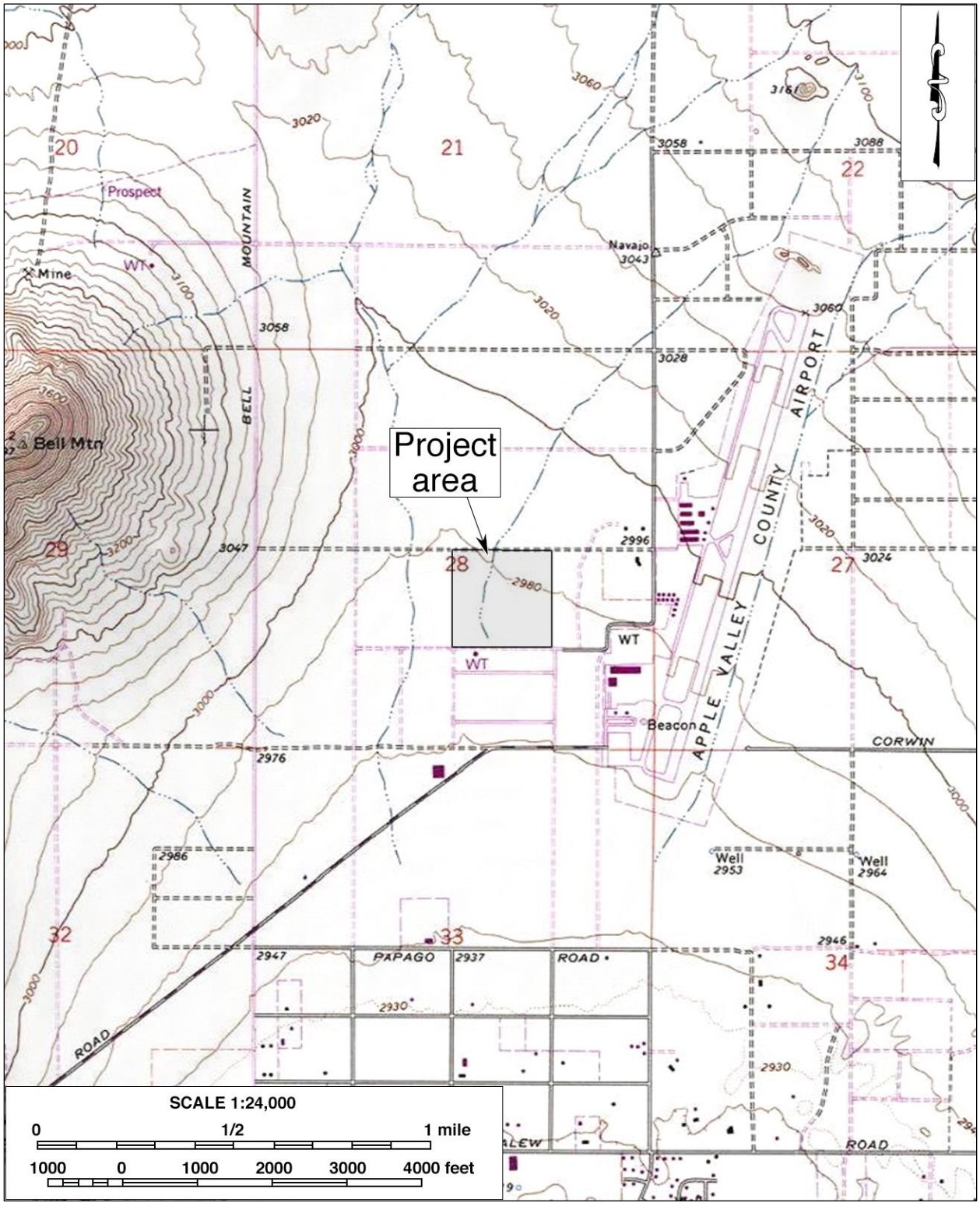


Figure 2. Project location. (Based on USGS Apple Valley North, Calif., 7.5' quadrangle [USGS 1993])

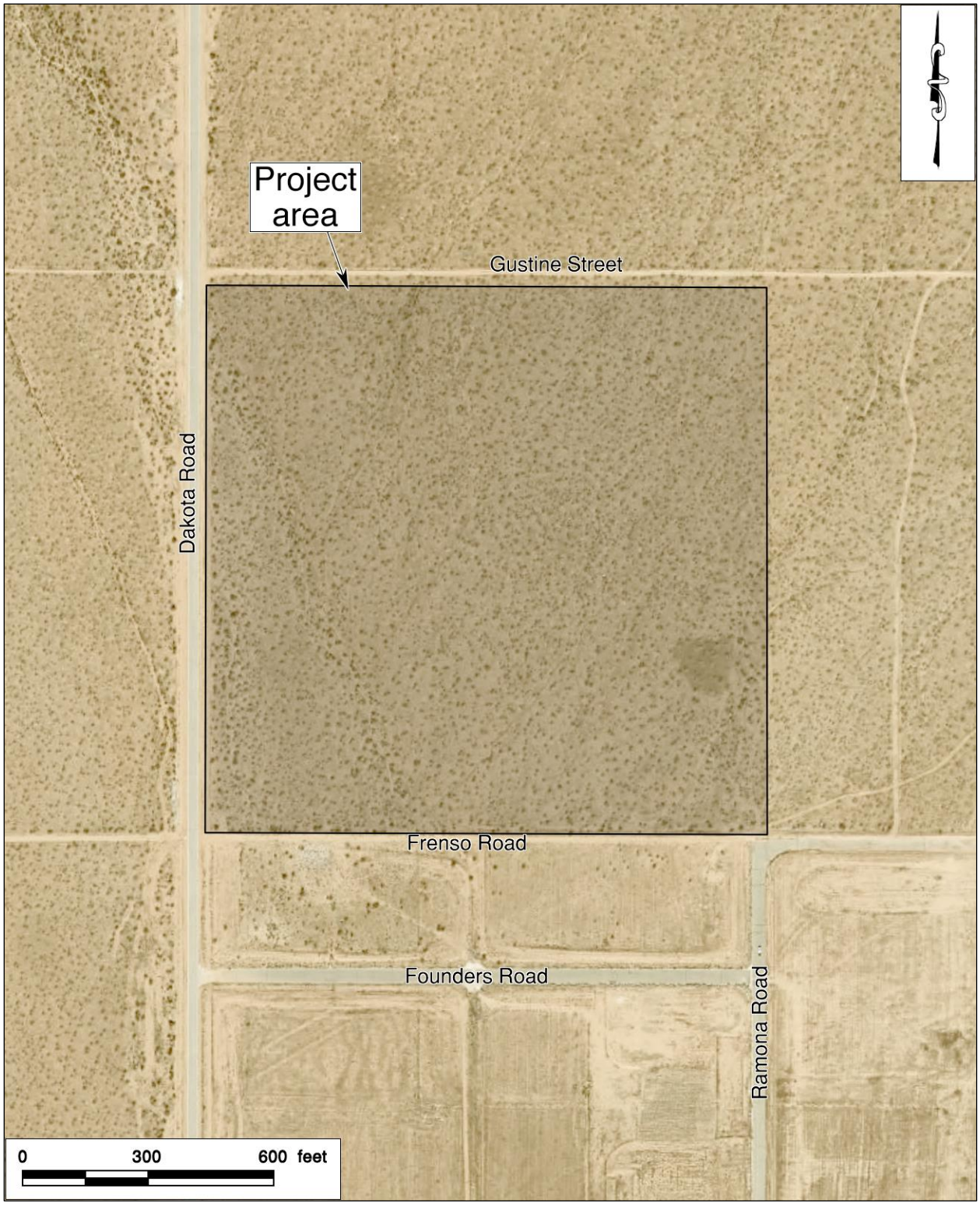


Figure 3. Recent satellite image of the project area. (Based on Google Earth imagery)

SETTING

CURRENT NATURAL SETTING

The Town of Apple Valley is situated in the western Victor Valley, on the southern rim of the Mojave Desert and immediately north of the San Bernardino-San Gabriel mountain ranges. The climate and environment of the area are typical of the high desert region, so-called because of its higher elevation than the Colorado Desert to the southeast. The climate is marked by extremes in temperature and aridity, with summer highs reaching well over 110ºF and winter lows dipping below freezing. Average annual precipitation is less than five inches.

The project area consists of a square-shaped parcel of open desert land bounded by Gustine Street on the north, Fresno Road on the south, Dakota Road on the west, and other parcels of vacant land on the east (Fig. 3). The location lies approximately a half-mile to the east of an isolated knoll known as Bell Mountain (Fig. 2). The property retains much of its natural character, as does most of the surrounding land (Figs. 3, 4). The terrain in the project area is relatively level, with elevations ranging between 2,975 feet and 2,995 feet above sea level. Two shallow drainages cross the property in a southwest-northeast direction. The vegetation is represented by the Creosote Scrub Plant Community, featuring creosote bushes, beaver tail cactus, and small grasses and shrubs. Surface soils consist of fine to coarse, yellowish brown alluvial sand mixed with small rocks and gravel. The ground surface on parts of the property has been disturbed in the past by off-road use, refuse dumping, and excavations by relic hunters.



Figure 4. Overview of the current natural setting of the project area, view to the northeast. (Photograph taken on July 17, 2024) .

CULTURAL SETTING

Prehistoric Context

To better understand the progress of Native American cultures prior to European contact, archaeologists devised chronological frameworks based on artifacts and site types that date back some 12,000 years. Currently, the chronology most frequently applied in the Mojave Desert divides the region's prehistory into five periods marked by changes in archaeological remains, reflecting the various ways Native people adapted to their surroundings. As presented by Hall (2000) these periods included Lake Mojave (ca. 8000-5500 B.C.); Pinto (ca. 5500-2500 B.C.); Newberry (ca. 1500 B.C.-500 A.D.); Saratoga (ca. 500-1200 A.D.); and Tecopa (ca. 1200-1770s A.D.).

According to Hall (*ibid*.:14), it was small mobile groups of hunters and gatherers who inhabited the Mojave Desert during the Lake Mojave Period. Their material culture is represented by the Great Basin Stemmed points and flaked stone crescents. These small, highly mobile groups continued to inhabit the region during the Pinto Period, which saw an increased reliance on ground foods, small and large game animals, and the collection of vegetal resources, suggesting that "subsistence patterns were those of broad-based foragers" (*ibid*.:15). Artifact types found in association with this period include the Pinto points and *Olivella* sp. spire-lopped beads (*ibid*.). Distinct cultural changes occurred during the Newberry Period in comparison to the earlier periods, involving small residential groups moving between select localities and long-distance trade (Hall 2000:16). Typical artifacts are the Elko and Gypsum Contracting Stem points and Split Oval beads.

The last two periods, Saratoga and Tecopa, are characterized by seasonal group settlements near accessible food resources and the intensification of the exploitation of plant foods, as evidenced by groundstone artifacts (*ibid*.:16). Hall (*ibid*.) states that "late prehistoric foraging patterns were more restricted in geographic routine and range, a consequence of increasing population density" and other variables. Saratoga Period artifact types include Rose Spring and Eastgate points as well as Anasazi grayware pottery. Artifacts from the Tecopa Period include Desert Side-notched and Cottonwood Triangular points, buffware and brownware pottery, and beads of the Thin Lipped, Tiny Saucer, Cupped, Cylinder, steatite, and glass types (*ibid*.).

Depending on the natural environment in which they were located, native groups adopted different types of subsistence economy, although they were all based on gathering, hunting, and/or fishing. As a result, ancient occupation sites in valleys and foothills often contain portable mortars and pestles along with large projectile points, suggesting a reliance on fleshy nut foods and larger game animals. Sites found in the more arid inland areas in southern California, such as the Victor Valley, often contain fragments of flat slab metates and plano-convex scrapers along with projectile points, suggesting a reliance on seed resources, plant pulp, and smaller game animals.

Ethnohistoric Context

The Victor Valley region is a part of the homeland of the Serrano people, which is centered in the San Bernardino Mountains but also includes part of the San Gabriel Mountains, much of the San Bernardino Valley, and the southern portion of the Mojave Desert, reaching as far as the Cady, Bullion, Sheep Hole, and Coxcomb Mountains to the east, the Twentynine Palms area to the north,

and possibly the southern edge of Kern County to the west. The name "Serrano" was derived from a Spanish term meaning "mountaineer" or "highlander." The basic written sources on Serrano culture are Kroeber (1925), Strong (1929), and Bean and Smith (1978). The following ethnographic discussion of the Serrano people is based mainly on these sources.

Prior to European contact, Serrano subsistence was defined by the surrounding landscape and primarily based on the gathering of wild and cultivated foods and hunting, exploiting nearly all the resources available. Their long-term settlements were located mostly on elevated terraces, hills, and finger ridges near reliable sources of water, especially in foothills and along major rivers. Loosely organized into exogamous clans led by hereditary heads, the clans were in turn affiliated with one of two exogamous moieties, the Wildcat (*Tukutam*) or the Coyote (*Wahiiam*). The exact nature of the clans, their structure, function, and number are not known, except that each clan was the largest autonomous political and landholding unit. The core of the unit was the patrilineage, although women retained their own lineage names after marriage. There was no pan-tribal political union among the clans.

The Serrano had a variety of technological skills that they used to acquire food, shelter, and clothing as well as to create ornaments and decorations. Common tools included manos and metates, mortars and pestles, hammerstones, fire drills, awls, arrow straighteners, and stone knives and scrapers. These lithic tools were made from locally sourced material as well as materials procured through trade or travel. They also used wood, horn, and bone spoons and stirrers; baskets for winnowing, leaching, grinding, transporting, parching, storing, and cooking; and pottery vessels for carrying water, storage, cooking, and serving food and drink. Much of this material cultural, elaborately decorated, does not survive in the archaeological record. As usual, the main items found archaeologically relate to subsistence activities.

Although contact with Europeans may have occurred as early as 1771 or 1772, Spanish influence on Serrano lifeways was minimal until the 1810s, when a mission *asistencia* was established on the southern edge of Serrano territory. Between then and the end of the mission era in 1834, most of the Serrano in the western portion of their traditional territory were removed to the nearby missions. In the eastern portion, a series of punitive expeditions in 1866-1870 resulted in the death or displacement of almost all remaining Serrano population in the San Bernardino Mountains. Today, most Serrano descendants are affiliated with the Yuhaaviatam of San Manuel Nation (formerly known as the San Manuel Band of Mission Indians), the Morongo Band of Mission Indians, or the Serrano Nation of Indians.

Historic Context

The first European visitor known to have arrived in the present-day Victor Valley area was the famed Spanish explorer Francisco Garcés, who traveled through the valley in 1776, shortly after the beginning of Spanish colonization of Alta California in 1769 (Beck and Haase 1974:15). The earliest Euroamerican settlements appeared in the Victor Valley as early as 1860 (Peirson 1970:128). Despite these "early starts," due to its harsh environment, development in the arid high desert country of southern California was slow and limited for much of the historic period, and the Victor Valley remained only sparsely populated until the second half of the 20th century.

Garcés traveled through the Victor Valley along an ancient Indian trading route known today as the Mojave Trail (Beck and Haase 1974:15). In the early 1830s, part of this trail was incorporated into the Old Spanish Trail, an important pack-train road that extended between southern California and Santa Fe, New Mexico (Warren 2004). Some 20 years later, when the historic wagon road known as the Mormon Trail or Salt Lake Trail was established between Utah and southern California, it followed essentially the same route across the Mojave Desert (NPS 2001:5). Since then, the Victor Valley has served as transportation hub that includes legendary U.S. Route 66 during the early and mid-20th century, and finally by today's Interstate Highway 15.

Although cattle ranchers are known to have grazed their herds along the Mojave River as early as the 1850s, the first settler to establish long-term residency in what is now Apple Valley is generally considered to be Silas Cox, a young Mormon cowboy who began using the area as a winter pasture for his family's cattle in 1860 (O'Rourke 2004:9). The next year, a small gold rush in the San Bernardino Mountains brought about an important transportation route from the Holcombe Valley across the southernmost portion of Apple Valley, commonly referred to as Van Dusen Road or Coxey Road. The road connected with the Cajon Pass Toll Road, built around the same time by San Bernardino pioneer John Brown, Sr. (Robinson 1989:51-52; Thompson n.d.:4).

Around 1870, Brown and his sons established a cattle ranch, later known as Rancho Verde, on the southwestern edge of present-day Apple Valley (Thompson n.d.:1-2). This first permanent settlement in the area was followed by John J. Atkinson's homestead near the Upper Mojave Narrows and A. Frank McKenney and Jesse W. Taylor's supply station further downstream on the newly blazed Stoddard Wells Road, a shortcut on the original Salt Lake Trail (*ibid*.:2). In 1871-1878, when George M. Wheeler surveyed and mapped a large portion of the western United States, John Brown's ranch and McKenney and Taylor's station, identified then as "Huntington's," were the only settlements noted (*ibid*.; Wheeler 1878).

With the completion of the Santa Fe Railway in the 1880s, settlement activities began in earnest in the Victor Valley and reached a peak in the 1910s. In 1895, the Appleton Land and Water Company was organized to develop a valley-wide irrigation system and expansive apple orchards on the east side of the Mojave River (O'Rourke 2004:12). With the eventual success of the apple orchards, early settlers undertook a coordinated effort to enhance the image of the area through the creation of the Apple Valley Improvement Association in 1910 (*ibid*.:13). Ursula Poates, a dedicated promoter for the area who was given the title "Mayoress of Apple Valley" in 1911, is widely credited with coining the name of the town (*ibid.:*12; Lovato 2007:14). By 1914, there were at least 14 notable ranches in the Apple Valley area, clustered mostly along the Mojave River, although the population in Apple Valley in the early 1920s stood at only 50 residents (Ryon 1964; O'Rourke 2004:14, 15).

The economic blow of the Great Depression was somewhat softened in Apple Valley by the town's emergence as a relatively close getaway spot for the rich and famous of Hollywood, while the open landscape and climate also provided an attractive setting for film production (O'Rourke 2004:18-19). Many properties in Apple Valley were converted into guest ranches and rural retreats, ushering in a tourism heyday that began in the 1940s and lasted roughly a decade. After World War II, the dude ranch industry began to decline as city dwellers' vacation options broadened, most notably through the rapid ascension of Las Vegas as a tourist destination and through increased air travel (Thompson 2001:13).

In 1945, Long Beach oilmen Newton T. Bass and Bernard J. "Bud" Westlund acquired 25,000 acres of land in the area and set about developing and marketing thousands of residences and commercial properties as Apple Valley Ranchos (Ryon 1964; O'Rourke 2004:37-38). Over the next decades, Apple Valley continued to grow and establish police and fire stations, schools, and hospitals. True to Bass and Westlund's original vision for a modern Apple Valley Ranchos, the growth of the town has been largely driven by residential and commercial development. In 1988, the Town of Apple Valley was incorporated with a population of 41,000. After further boundary expansion in recent decades, the population in 2020 stood around 77,000 (USCB n.d.).

Closer to the project location, the Bell Mountain area is remembered today as the site of a settlement founded in the early 20th century by African Americans seeking to establish a rural community away from the racial violence and discrimination of the era, including the common use of restrictive housing practices. The settlers had largely come from the southern United States via Los Angeles, with approximately 25% of them born into antebellum slavery (Thornton 2018). From the community's inception the membership included prominent African American "socialites, entrepreneurs, and civic and religious leaders" as well as railroad workers, firefighters, brick masons, and at least one former "Buffalo Solder" (*ibid.*). In total, 254 African Americans filed 353 land claims near Bell Mountain, and 95 of them were able to obtain title to more than 22,000 acres of land (*ibid.*).

In 1920, the U.S. census revealed that African Americans made up 6% of the population in the Victor Precinct while they held 79% of the land patents in the Bell Mountain settlement (Thornton 2018). A school district was established for the settlement in 1912, with 28 students in attendance, but the district was disbanded in 1919 when only five students remained (*ibid.*). A post office established in 1953 would also be discontinued by 1956 (*ibid.*). The population in the Bell Mountain settlement declined rapidly during the postwar era as the barriers of residential segregation began to break down and the younger generations moved away for better opportunities. By the end of the 1960s, the Bell Mountain African American community all but disappeared except for a few remaining residences and residents (*ibid.*).

RESEARCH METHODS

RECORDS SEARCH

On July 1, 2024, CRM TECH archaeologist Nina Gallardo conducted the historical/archaeological resources records search at the South Central Coastal Information Center (SCCIC). Located on the campus of California State University, Fullerton, the SCCIC is the designated cultural resource records repository for the County of San Bernardino. During the records search, Gallardo examined digitized maps and records on file at the SCCIC for previously identified cultural resources and existing cultural resources reports within a one-mile radius of the project area. Previously identified cultural resources include properties designated as California Historical Landmarks, Points of Historical Interest, or San Bernardino County Landmarks, as well as those listed in the National Register of Historic Places, the California Register of Historical Resources, or the California Historical Resources Inventory.

SACRED LANDS FILE SEARCH

On June 20, 2024, CRM TECH submitted a written request to the State of California Native American Heritage Commission (NAHC) for a records search in the commission's Sacred Lands File. The NAHC is the State of California's trustee agency for the protection of "tribal cultural resources," as defined by California Public Resources Code §21074 and is tasked with identifying and cataloging properties of Native American cultural value, including places of special religious, spiritual, or social significance and known graves and cemeteries throughout the state. The response from the NAHC is summarized in the sections below and attached to this report in Appendix 2.

HISTORICAL RESEARCH

Historical background research for this study was conducted by CRM TECH archaeologist Hunter O'Donnell. Sources consulted during the research included published literature in local and regional history, archival records of the U.S. Bureau of Land Management (BLM), historical maps and aerial/ satellite photographs of the Apple Valley area, and contemporary newspaper accounts pertaining to the project vicinity. Among the maps consulted for this study were U.S. General Land Office (GLO) land survey plat maps dated 1857 and U.S. Geological Survey (USGS) topographic maps dated 1934-1993, which are available at the websites of the BLM and the USGS. The aerial and satellite photographs, taken in 1952-2022, are available at the Nationwide Environmental Title Research (NETR) Online website and through the Google Earth software. The newspaper articles are collected at various online databases such as newspapers.com and ancestry.com.

FIELD SURVEY

On July 17, 2024, Hunter O'Donnell, as the crew chief, and CRM TECH archaeologist Noah Powell carried out the intensive-level field survey of the project area. The survey was completed on foot by walking a series of parallel north-south transects at 15-meter (approximately 50-foot) intervals. In this way, the ground surface in the entire project area was systematically and carefully examined for any evidence of human activities dating to the prehistoric or historic period (i.e., 50 years ago or older). Ground visibility ranged from approximately 80% in the western portion of the project area to around 50% in much of the eastern portion due to the dense growth of low grasses.

RESULTS AND FINDINGS

RECORDS SEARCH

According to SCCIC records, the only previous cultural resources study that included the current project area was a large-scale overview completed in 2007 for the North Apple Valley Specific Plan, which covered a total of 7.75 square miles and did not include an intensive-level field survey of the entire area (Tang et al. 2007). Within the one-mile scope of the records search, eight additional studies completed between 1987 and 2011 on various tracts of land and linear features were reported to the SCCIC (Fig. 5). As a result of these and similar studies, 18 cultural resources have been identified and recorded, as listed in Table 1.

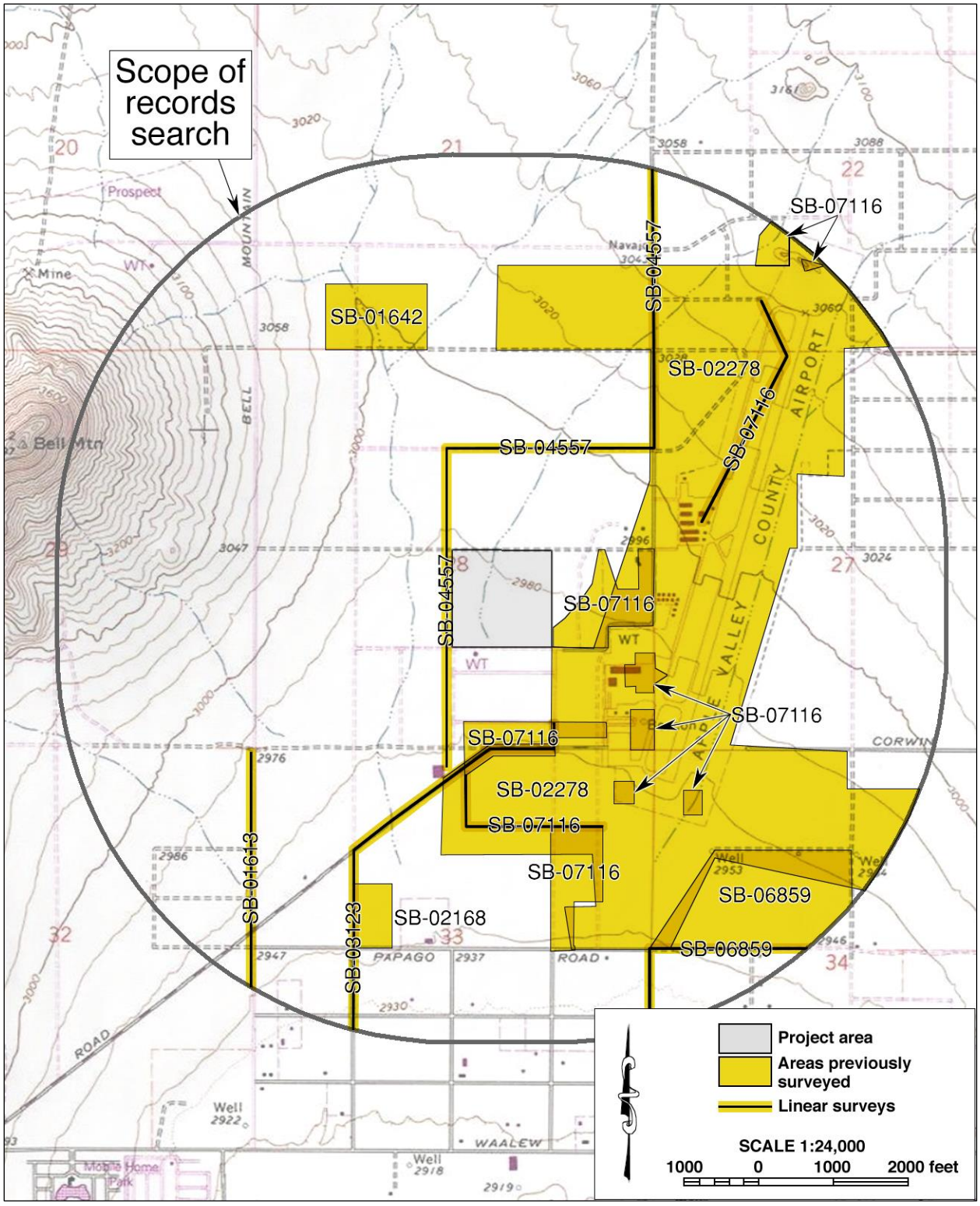


Figure 5. Previous cultural resources surveys in the vicinity of the project area, listed by SCCIC file number. The large-scale overview study completed in 2007 is not mapped, nor are the locations of known historical/archaeological resources as a protective measure.

Table 1. Previously Recorded Cultural Resources within the Scope of the Records Search			
Site No.	**Trinomial**	**Recorded by/Date**	**Description**
36-006838	CA-SBR-6838H	Sundberg & Des'Autels, 1990	Single course of arranged rocks
36-006839	CA-SBR-6839H	Sanka 2006	Wood-lined pit
36-006840	CA-SBR-6840H	Sundberg & Des'Autels, 1990	Square wood-lined depression
36-006841	CA-SBR-6841H	Sundberg & Des'Autels, 1990	Refuse dump
36-006842	CA-SBR-6842H	Sanka 2006	Refuse scatter
36-006843	CA-SBR-6343H	Sundberg & Des'Autels, 1990	Refuse scatter
36-010860	CA-SBR-10860	Dice 2002	Prehistoric lithic scatter
36-012855		Sanka 2006	Isolate: metal bucket
36-012856		Sanka 2006	Isolate: can
36-012857		Sanka 2006	Isolate: can
36-024894	CA-SBR-15932H	Cisneros & Covert 2011	Refuse scatter
36-024895	CA-SBR-15933H	Cisneros & Covert 2011	Refuse scatter
36-024896	CA-SBR-15934H	Cisneros & Covert 2011	Refuse scatter
36-024897	CA-SBR-15935H	Cisneros & Covert 2011	Refuse scatter
36-026808		Chmiel. et al. 2011	Isolate: prehistoric lithic flake
36-031810		Davison 2018	Isolate: prehistoric lithic flake
36-061206		Sundberg & Des'Autels, 1990	Isolate: prehistoric lithic flake
36-061207		Sundberg & Des'Autels, 1990	Isolate: prehistoric lithic flake

Five of these known cultural resources were of prehistoric (i.e., Native American) origin, including a lithic scatter found about a half-mile to the northeast of the project location and four isolates (i.e., localities with fewer than three artifacts), all of them single lithic flakes. The other 13 cultural resources dated to the historic period and consisted mostly of refuse items and possible structural remains. Closest to the project area among these 13 were a wood-lined pit and a wood-lined depression recorded near the Apple Valley Airport, about a quarter-mile east of the project area. Since none of these known cultural resources were found in the immediate vicinity of the project area, they require no further consideration in this study.

SACRED LANDS FILE SEARCH

In response to CRM TECH's inquiry, the NAHC reports in a letter dated July 8, 2024, that the Sacred Lands File identified no Native American cultural resources in the project vicinity. Noting that the absence of specific information does not necessarily indicate the absence of such resources, however, the NAHC recommended that local Native American groups be consulted for further information and provided a referral list of potential tribal contacts. The NAHC's reply is attached to this report as Appendix 2 for reference by the Town of Apple Valley in future government-to-government consultations with the pertinent tribal groups, if necessary.

HISTORICAL RESEARCH

Archival sources indicate that the project area was part of a homestead claim patented to Minnie B. Connell, widow of John A. Connell, on June 11, 1918, which covered a total of 80 acres in the north half of the southeast quarter of Section 28 (BLM n.d.). Prior to that, however, the project area was included in another claim filed by an African American member of the Bell Mountain community between 1908 and 1910 (Thornton 2018:109). John A. Connell (1881-1916), formerly of Los Angeles, was one of the white settlers in the area known for repeatedly contesting land claims by

their African American neighbors, having filed four such contests within two years around 1913 (*Los Angeles Times* 1914; Thornton 2018:190).

At the time, it was common for the GLO to decide land claim contests on the basis of witness testimonies rather than official investigations in the field to confirm a claimant's progress in satisfying legal requirements to obtain title. This practice allowed for unscrupulous behavior that could be partnered with racial discrimination to seize land from African American claimants and make them available to white settlers. In the end, the four contests filed by Connell were all ruled in his favor, and he subsequently took over the claims on two of the properties while the other two were taken over by other white homesteaders (Thornton 2018:497).

It is likely that the homestead claim including the project area was one of those involved in John Connell's contests, but sources offer no definitive proof to establish that connection. Similarly, it is likely but unconfirmed that the Connells, who were described only as residents of the Victorville area, may have resided in the project area or on the adjacent 40 acres to the east prior to John Connell's death in 1916 (*Los Angeles Evening Post-Record* 1913; *Los Angeles Times* 1914; 1916). If they—or she—did, the occupancy was short-lived, since historical maps from the 1920s-1930s and the 1950s show no building or other human-made features anywhere on the 80-acre homestead (Figs. 6-8). By the 1950s-1960s, the desert landscape in the project area retained no signs of any settlement or development activities in the past (NETR Online 1952-1969). Since then, the entire project area has remained undeveloped and largely unused to the present time (NETR Online 1969-2022; Google Earth 1994-2024).

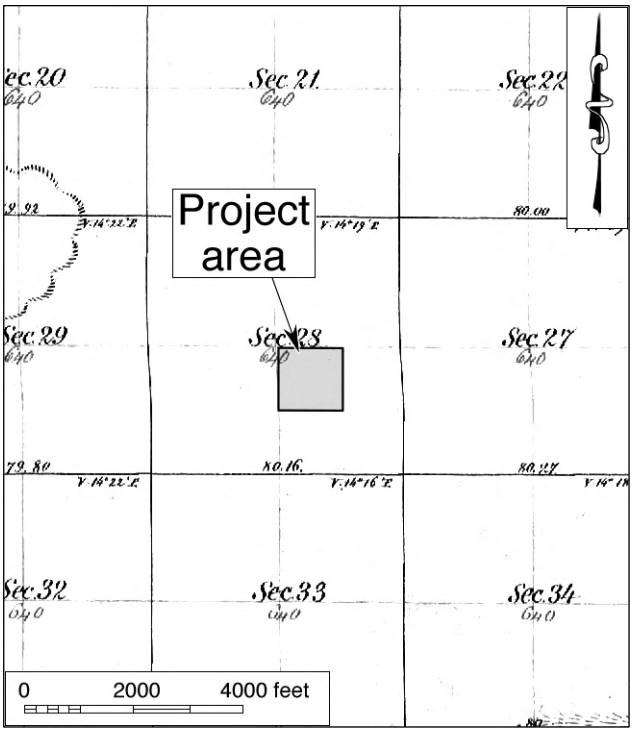


Figure 6. The project area and vicinity in 1855-1857. (Source: GLO 1857)

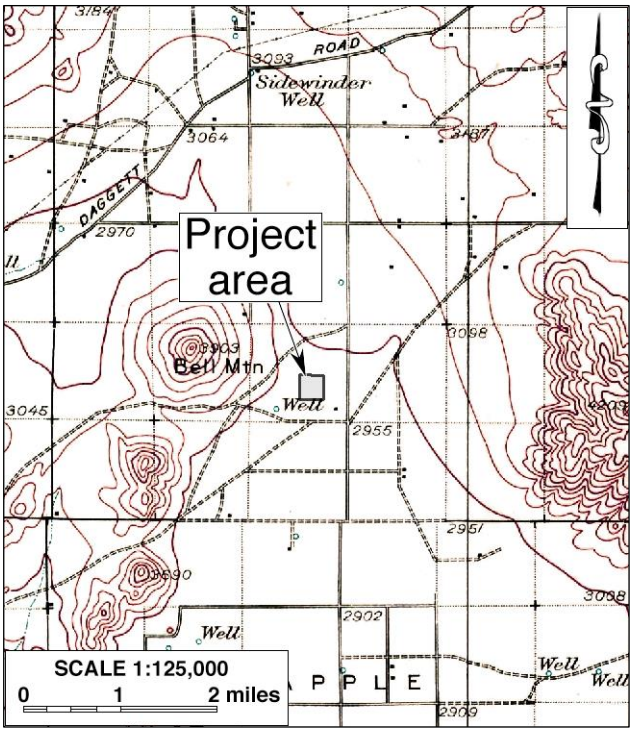


Figure 7. The project area and vicinity in 1920-1932. (Source: USGS 1934)

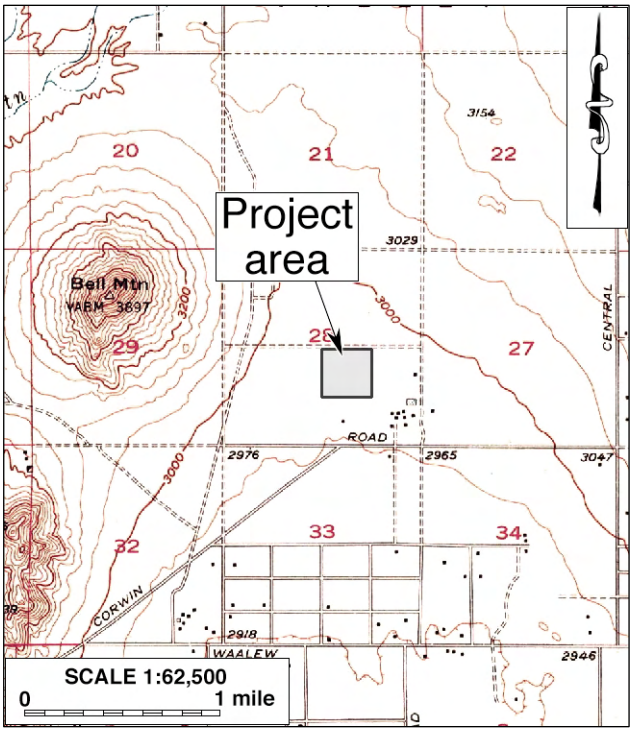


Figure 8. The project area and vicinity in 1952-1957. (Source: USGS 1957)

FIELD SURVEY

During the field survey, a group of historic-period refuse deposits and an isolated prehistoric lithic artifact were discovered in the project area and recorded under the temporary designations of Site 4147-1H and Isolate 4147-2, respectively, pending assignment of permanent identification numbers in the California Historical Resources Inventory by the SCCIC. Details about these archaeological resources, including photographs and location maps, are presented in the standard record forms attached to this report as Appendix 3, and a brief description of each is presented below. No other potential "historical resources" were encountered during the survey.

Site 4147-1H consists of six apparently looted refuse deposits, a location with test shovel looting pits and lumbered wood, and a surficial refuse scatter that may have been a result of the looting activity. Artifacts observed at the site include porcelain fragments, shards of glass bottles and jars of various colors, lumber fragments, metal cans (including hole-in-top and bi-metal cans), and other metal fragments. A Hero Glass Company bottle from the 1890s suggests that the refuse deposits date to the late 19th or the early 20th century, consistent to the timeframe of John and Minnie Connell's homestead claim and the prior claim by the unnamed member of the Bell Mountain African American settlement. Isolate 4147-2 represents a large lithic tool made of basalt, which was evidently used as either a hammerstone or a chopper.

MANAGEMENT CONSIDERATIONS

DEFINITION

CEQA establishes 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" (PRC §21084.1). "Substantial adverse change," according to PRC §5020.1(q), "means demolition, destruction, relocation, or alteration such that the significance of a historical resource would be impaired." As defined by PRC §5020.1(q), "'historical resource' includes, but is not limited to, any object, building, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California."

More specifically, CEQA guidelines state that the term "historical resources" applies to any such resources listed in or determined to be eligible for listing in the California Register of Historical

Resources, included in a local register of historical resources, or determined to be historically significant by the lead agency (Title 14 CCR §15064.5(a)(1)-(3)). Regarding the proper criteria of historical significance, CEQA guidelines mandate that "generally a resource shall be considered by the lead agency to be 'historically significant' if the resource meets the criteria for listing on the California Register of Historical Resources" (Title 14 CCR §15064.5(a)(3)). A resource may be listed in the California Register if it meets any of the following criteria:

(1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
(2) Is associated with the lives of persons important in our past.
(3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
(4) Has yielded, or may be likely to yield, information important in prehistory or history (PRC §5024.1(c)).

RESOURCE EVALUATION

In summary of the research results presented above, a group of historic-era refuse deposits and a prehistoric lithic artifact, designated temporarily as Site 4147-1H and Isolate 4147-2, were found and recorded within the project area during this study. No other potential "historical resources" were encountered throughout the course of the study. The qualifications of Site 4147-1H and Isolate 4147-2 as "historical resources," as defined above, are discussed below.

Site 4147-1H

The refuse deposits at Site 4147-1H evidently date to the early 20th century, a time when an African American settlement was forming around Bell Mountain. Ownership history of the property suggests a potential connection with that important episode in local history and with a notable figure in that episode, namely John A. Connell. However, neither of these connections can be positively established on the basis of available sources, nor would Connell qualify as a person of recognized historic significance. The nondescript refuse items found at the site, by nature, do not demonstrate a unique, special, or particularly close association with the history of the Bell Mountain settlement, nor do they hold the promise for any important historical/archaeological data, especially in the looted and disturbed condition today. Based on these considerations, Site 4147-1H does not appear to meet any of the criteria for listing in the California Register of Historical Resources and thus does not qualify as a "historical resource."

Isolate 4147-2

Isolate 4147-2 consists of a single prehistoric lithic tool made of basalt, either a hammerstone or a chopper. According to guidelines set forth by the California Office of Historic Preservation, isolates like this, with fewer than three artifacts at each locality, by definition do not qualify as archaeological sites due to the lack of depositional and contextual integrity. As such, Isolate 4147-2 does not constitute a potential "historical resource" and requires no further consideration in the CEQA compliance process.

CONCLUSION AND RECOMMENDATIONS

In conclusion, Site 4147-1H and Isolate 4147-2 were the only cultural resources identified within or adjacent to the project area, and neither of them constitutes a "historical resource" for CEQA-compliance purposes. Therefore, CRM TECH presents the following recommendations to the Town of Apple Valley:

- No "historical resources" are known to be present within or adjacent to the project area, and thus the project as currently proposed will not cause a substantial adverse change to any known "historical resource."
- No further cultural resources investigation will be necessary for the project unless construction plans undergo such changes as to include areas not covered by this study.
- If buried cultural materials are discovered inadvertently during earth-moving operations associated with the project, all work within 50 feet of the discovery should be halted or diverted until a qualified archaeologist can evaluate the nature and significance of the finds.

REFERENCES

Bean, Lowell John, and Charles R. Smith
1978 Serrano. In *Handbook of North American Indians*, Vol. 8: *California*, edited by Robert F. Heizer; pp. 570-574. Smithsonian Institution, Washington, D.C.

Beck, Warren A., and Ynez D. Haase
1974 *Historical Atlas of California*. University of Oklahoma Press, Norman, Oklahoma.

BLM (Bureau of Land Management, U.S. Department of the Interior)
n.d. The Official Federal Land Records Site. http://www.glorecords.blm.gov.

GLO (General Land Office, U.S. Department of the Interior)
1857 Plat Map: Township No. 6 North Range No. 3 West, SBBM; surveyed in 1855-1857.

Google Earth
1994-2024 Aerial photographs of the project vicinity; taken in 1994, 1995, 2003, 2005, 2006, 2009, 2013, 2015-2018, 2020, 2022, 2023, and 2024. Available through the Google Earth software.

Hall, M.C.
2000 Archaeological Survey of 2472 Acres in Adjacent Portions of Lava, Lead Mountain, and Cleghorn Pass Training Areas, Marine Corps Air Ground Combat Center, Twentynine Palms, California (Volume I). Report prepared by the Archaeological Research Unit, University of California, Riverside, for the United States Marine Corps Natural Resources and Environmental Affairs Division.

Kroeber, Alfred L.
1925 *Handbook of the Indians of California*. Bureau of American Ethnology Bulletin 78. Government Printing Office, Washington, D.C.

Los Angeles Evening Post-Record, The
1913 Marriage Licenses. December 26:8.

Los Angeles Times, The
1914 Negro Colony Loses. October 8:17.
1916 Obituaries. July 30:12.

Lovato, Michelle
2007 *Images of America: Apple Valley*. Arcadia Publishing, San Francisco and Chicago.
NETR (Nationwide Environmental Title Research) Online
1952-2022 Aerial photographs of the project vicinity; taken in 1952, 1959, 1968, 1969, 1984, 1994, 2005, 2009, 2010, 2012, 2014, 2016, 2018, 2020, and 2022. http://www.historicaerials.com.
NPS (National Park Service, U.S. Department of the Interior)
2001 National Historic Trail Feasibility Study and Environmental Assessment: Old Spanish Trail, New Mexico, Colorado, Utah, Arizona, Nevada, California. National Park Service, U.S. Department of the Interior, Washington, D.C.
O'Rourke, Kate
2004 *The Story of Apple Valley.* The Lewis Center for Educational Research/Apple Valley Chamber of Commerce, Apple Valley.
Robinson, John W.
1989 *The San Bernardinos: The Mountain Country from Cajon Pass to Oak Glen: Two Centuries on Changing Use*. Big Santa Ana Historical Society, Arcadia, California.
Peirson, Erma
1970 *The Mojave River and Its Valley*. The Arthur H. Clarke Company, Glendale, California.
Ryon, Art
1964 *The Apple Valley Story*. Supplement to the *Los Angeles Times*.
Strong, William Duncan
1929 *Aboriginal Society in Southern California*. University of California Publications in American Archaeology and Ethnology, Vol. 26. Reprinted by Malki Museum Press, Banning, California, 1972.
Tang, Bai "Tom," Michael Hogan, Josh Smallwood, and Laura Hensley Shaker
2007 Cultural Resources Technical Report: North Apple Valley Specific Plan and EIR, Town of Apple Valley, San Bernardino County, California. On file, South Central Coastal Information Center, California State University, Fullerton.
Thompson, Richard D.
2001 Margaret E. (Peg) Mendel Interview with Richard D. Thompson. On file, Local History Room, Victor Valley College Library, Victorville.
n.d. The Brown Ranch: Predecessor of the Rancho Verde. http://mojavehistory.com/brownranch.html.
Thornton, Jennifer
2018 Remembering Bell Mountain: African American Landownership and Leisure in California's High Desert during the Jim Crow Era. Ph.D. dissertation, University of California, Riverside.
USCB (United States Census Bureau, U.S. Department of Commerce)
n.d. QuickFacts: Town of Apple Valley, California. https://www.census.gov/quickfacts/table/PST045215/0606434.
USGS (United States Geological Survey, U.S. Department of the Interior)
1934 Map: Barstow, Calif. (30', 1:125,000); surveyed in 1920 and 1932.
1957 Map: Apple Valley, Calif. (15', 1:62,500); aerial photographs taken in 1952, field checked in 1957.
1969 Map: San Bernardino, Calif. (120'x60', 1:250,000); 1958 edition revised.
1993 Map: Apple Valley North, Calif. (7.5', 1:24,000); 1970 edition photorevised in 1989.

Warren, Elizabeth von Till
2004 The Old Spanish National Historic Trail. http://oldspanishtrail.org/our-history.
Wheeler, George M.
1878 Southern California, Atlas Sheet No. 73; surveyed in 1871-1878. U.S. Government Printing Office, Washington, D.C.

APPENDIX 1:
PERSONNEL QUALIFICATIONS

PRINCIPAL INVESTIGATOR/HISTORIAN
Bai "Tom" Tang, M.A.

Education

1988-1993	Graduate Program in Public History/Historic Preservation, University of California, Riverside.
1987	M.A., American History, Yale University, New Haven, Connecticut.
1982	B.A., History, Northwestern University, Xi'an, China.
2000	"Introduction to Section 106 Review," presented by the Advisory Council on Historic Preservation and the University of Nevada, Reno.
1994	"Assessing the Significance of Historic Archaeological Sites," presented by the Historic Preservation Program, University of Nevada, Reno.

Professional Experience

2002-	Principal Investigator, CRM TECH, Riverside/Colton, California.
1993-2002	Project Historian/Architectural Historian, CRM TECH, Riverside, California.
1993-1997	Project Historian, Greenwood and Associates, Pacific Palisades, California.
1991-1993	Project Historian, Archaeological Research Unit, University of California, Riverside.
1990	Intern Researcher, California State Office of Historic Preservation, Sacramento.
1990-1992	Teaching Assistant, History of Modern World, University of California, Riverside.
1988-1993	Research Assistant, American Social History, University of California, Riverside.
1985-1988	Research Assistant, Modern Chinese History, Yale University.
1985-1986	Teaching Assistant, Modern Chinese History, Yale University.
1982-1985	Lecturer, History, Xi'an Foreign Languages Institute, Xi'an, China.

Cultural Resources Management Reports

Preliminary Analyses and Recommendations Regarding California's Cultural Resources Inventory System (with Special Reference to Condition 14 of NPS 1990 Program Review Report). California State Office of Historic Preservation working paper, Sacramento, September 1990.

Numerous cultural resources management reports with the Archaeological Research Unit, Greenwood and Associates, and CRM TECH, since October 1991.

PRINCIPAL INVESTIGATOR/ARCHAEOLOGIST
Michael Hogan, Ph.D., RPA (Registered Professional Archaeologist)

Education

1991	Ph.D., Anthropology, University of California, Riverside.
1981	B.S., Anthropology, University of California, Riverside; with honors.
1980-1981	Education Abroad Program, Lima, Peru.
2002	"Section 106—National Historic Preservation Act: Federal Law at the Local Level," UCLA Extension Course #888.
2002	"Recognizing Historic Artifacts," workshop presented by Richard Norwood, Historical Archaeologist.
2002	"Wending Your Way through the Regulatory Maze," symposium presented by the Association of Environmental Professionals.
1992	"Southern California Ceramics Workshop," presented by Jerry Schaefer.
1992	"Historic Artifact Workshop," presented by Anne Duffield-Stoll.

Professional Experience

2002-	Principal Investigator, CRM TECH, Riverside/Colton, California.
1999-2002	Project Archaeologist/Field Director, CRM TECH, Riverside, California.
1996-1998	Project Director and Ethnographer, Statistical Research, Inc., Redlands, California.
1992-1998	Assistant Research Anthropologist, University of California, Riverside.
1992-1995	Project Director, Archaeological Research Unit, U.C. Riverside.
1993-1994	Adjunct Professor, Riverside Community College, Mt. San Jacinto College, U.C. Riverside, Chapman University, and San Bernardino Valley College.
1991-1992	Crew Chief, Archaeological Research Unit, U.C. Riverside.
1984-1998	Project Director, Field Director, Crew Chief, and Archaeological Technician for various southern California cultural resources management firms.

Research Interests

Cultural Resource Management, Southern Californian Archaeology, Settlement and Exchange Patterns, Specialization and Stratification, Culture Change, Native American Culture, Cultural Diversity.

Cultural Resources Management Reports

Principal investigator for, author or co-author of, and contributor to numerous cultural resources management study reports since 1986.

Memberships

Society for American Archaeology; Society for California Archaeology; Pacific Coast Archaeological Society; Coachella Valley Archaeological Society.

PROJECT ARCHAEOLOGIST/REPORT WRITER
Nicole A. Raslich, M.A.

Education

2017-	Ph.D. candidate, Michigan State University, East Lansing.
2011	M.A., Anthropology, Michigan State University, East Lansing.
2005	B.A., Natural History of Biology and Anthropology, University of Michigan, Flint.
2022	Adult First Aid/CPR/AED Certification, American Red Cross.
2019	Grant and Research Proposal Writing for Archaeologists; SAA Online Seminar.
2014	Bruker Industries Tracer S1800 pXRF Training; presented by Dr. Bruce Kaiser, Bruker Scientific.
2013	Introduction to ArcGIS, Michigan State University, East Lansing.

Professional Experience

2022-	Project Archaeologist/Report Writer, CRM TECH, Colton, California.
2022	Archaeological Technician, Agua Caliente Band of Cahuilla Indians, Palm Springs, California.
2008-2021	Archaeological Consultant, Saginaw Chippewa Indian Tribe of Michigan.
2019	Archaeologist, Sault Tribe of Chippewa Indians and Little Traverse Bay Band of Odawa Indians
2018	Teaching Assistant, Michigan State University, East Lansing.
2017	Adjunct Professor, University of Michigan, Flint.
2015-2016	Graduate Fellow, Michigan State University Campus Archaeology Program, East Lansing.
2015	Archaeologist, Michigan State University, Illinois State Museum, and Dickson Mounds Museum.
2013-2015	Curation Research Assistant, Michigan State University Museum, East Lansing.
2008-2014	Research Assistant, Intellectual Property Issues in Cultural Heritage, Simon Frasier University, British Columbia, Canada.
2009-2012	Editorial Assistant/Copy Editor, *American Antiquity*.
2009-2011	Archaeologist/Crew Chief, Saginaw Chippewa Indian Tribe of Michigan.

Publications

2017	Preliminary Results of a Handheld X-Ray Fluorescence (pXRF) Analysis on a Marble Head Sarcophagus Sculpture from the Collection of the Kresge Art Center, Michigan State University. Submitted to Jon M. Frey, Department of Art, Art History, and Design. Michigan State University, East Lansing.
2016	Preserving Sacred Sites: Arctic Indigenous Peoples as Cultural Heritage Rights Holders (L. Heinämäki, T.M. Herrmann, and N.A. Raslich). University of Lapland Printing Centre, Rovaniemi, Finland.

PROJECT ARCHAEOLOGIST/FIELD CREW CHIEF
Hunter C. O'Donnell, B.A.

Education

2016-	M.A. Program, Applied Archaeology, California State University, San Bernardino.
2015	B.A. (*cum laude*), Anthropology, California State University, San Bernardino.
2012	A.A., Social and Behavioral Sciences, Mt. San Antonio College, Walnut, California.
2011	A.A., Natural Sciences and Mathematics, Mt. San Antonio College, Walnut, California.
2014	Archaeological Field School, Santa Rosa Mountains; supervised by Bill Sapp of the United States Forest Service and Daniel McCarthy of the San Manuel Band of Mission Indians.

Professional Experience

2022-	Field Crew Chief, CRM TECH, Colton, California.
2017-	Project Archaeologist, CRM TECH, Colton, California.
2016-2018	Graduate Research Assistant, Applied Archaeology, California State University, San Bernardino.
2016-2017	Cultural Intern, Cultural Department, Pechanga Band of Luiseño Indians, Temecula, California.
2015	Archaeological Intern, U.S. Bureau of Land Management, Barstow, California.
2015	Peer Research Consultant: African Archaeology, California State University, San Bernardino.

PROJECT ARCHAEOLOGIST
Noah S. Powell, B.A.

Education

2023-	M.A. Program, Anthropology, University of Oklahoma (completion expected in 2025).
2023	B.A., Anthropology (*cum laude*), University of California, Los Angeles.

Professional Experience

2024-	Project Archaeologist, CRM TECH, Colton, California.
2023-2024	Graduate Teaching Assistant, Anthropology and Political Science, University of Oklahoma.
2023	Archaeologist, Upper Gunnison Basin, CO, 5GN1 Quartzite Quarry OSL RSD Project University of Innsbruck, Austria.
2022	First Peoples of the Rocky Mountains Archaeological Field School, University of Wyoming.
2021	Fort San Juan Archaeological Field School, Warren Wilson College, Swannanoa, North Carolina

Conference Presentations

2024	New Approaches in Optical Dating of Archaeological Rock Surfaces: A Gunnison Basin Case Study on Lithic Surface Artifacts. Poster Presentation. Rocky Mountain Anthropological Conference, Laramie, Wyoming.

PROJECT ARCHAEOLOGIST/NATIVE AMERICAN LIAISON
Nina Gallardo, B.A.

Education

2004	B.A., Anthropology/Law and Society, University of California, Riverside.

Professional Experience

2004-	Project Archaeologist, CRM TECH, Riverside/Colton, California.

Cultural Resources Management Reports

Co-author of and contributor to numerous cultural resources management reports since 2004.

APPENDIX 2

SACRED LANDS FILE SEARCH RESULTS

STATE OF CALIFORNIA — Gavin Newsom, Governor

NATIVE AMERICAN HERITAGE COMMISSION

CHAIRPERSON
Reginald Pagaling
Chumash

VICE-CHAIRPERSON
Buffy McQuillen
Yokayo Pomo, Yuki, Nomlaki

SECRETARY
Sara Dutschke
Miwok

PARLIAMENTARIAN
Wayne Nelson
Luiseño

COMMISSIONER
Isaac Bojorquez
Ohlone-Costanoan

COMMISSIONER
Stanley Rodriguez
Kumeyaay

COMMISSIONER
Laurena Bolden
Serrano

COMMISSIONER
Reid Milanovich
Cahuilla

COMMISSIONER
Bennae Calac
Pauma-Yuima Band of Luiseño Indians

EXECUTIVE SECRETARY
Raymond C. Hitchcock
Miwok, Nisenan

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov

July 8, 2024

Nina Gallardo
CRM TECH

Via Email to: *ngallardo@crmtech.us*

Re: Proposed Warehouse Project on Assessor's Parcel Number 0463-372-21 (CRM TECH No. 4147) Project, San Berardino County

To Whom It May Concern:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: Murphy.Donahue@NAHC.ca.gov

Sincerely,

Murphy Donahue

Murphy Donahue
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Native American Contact List
San Bernardino County
7/8/2024

County	Tribe Name	Fed (F) Non-Fed (N)	Contact Person	Contact Address	Phone #	Fax #	Email Address	Cultural Affiliation	Counties
San Bernardino	Kern Valley Indian Community	N	Brandy Kendricks, Tribal Member Monitor	30741 Foxridge Court Tehachapi, CA, 93561	(661) 821-1733		krazykendricks@hotmail.com	Kawaiisu Tubatulabal	Inyo,Kern,Los Angeles,San Bernardino,Tulare
	Kern Valley Indian Community	N	Robert Robinson, Chairperson	P.O. Box 1010 Lake Isabella, CA, 93240	(760) 378-2915		bbutterbredt@gmail.com	Kawaiisu Tubatulabal	Inyo,Kern,Los Angeles,San Bernardino,Tulare
	Morongo Band of Mission Indians	F	Ann Brierty, THPO	12700 Pumarra Road Banning, CA, 92220	(951) 755-5259	(951) 572-6004	abrierty@morongo-nsn.gov	Cahuilla Serrano	Imperial,Kern,Los Angeles,Riverside,San Bernardino,San Diego
	Morongo Band of Mission Indians	F	Robert Martin, Chairperson	12700 Pumarra Road Banning, CA, 92220	(951) 755-5110	(951) 755-5177	abrierty@morongo-nsn.gov	Cahuilla Serrano	Imperial,Kern,Los Angeles,Riverside,San Bernardino,San Diego
	Quechan Tribe of the Fort Yuma Reservation	F	Jordan Joaquin, President, Quechan Tribal Council	P.O.Box 1899 Yuma, AZ, 85366	(760) 919-3600		executivesecretary@quechantribe.com	Quechan	Imperial,Kern,Los Angeles,Riverside,San Bernardino,San Diego
	Quechan Tribe of the Fort Yuma Reservation	F	Jill McCormick, Historic Preservation Officer	P.O. Box 1899 Yuma, AZ, 85366	(928) 261-0254		historicpreservation@quechantribe.com	Quechan	Imperial,Kern,Los Angeles,Riverside,San Bernardino,San Diego
	Quechan Tribe of the Fort Yuma Reservation	F	Manfred Scott, Acting Chairman - Kwaaymii Laguna Cultural Committee	P.O. Box 1899 Yuma, AZ, 85366	(928) 210-8739		culturalcommittee@quechantribe.com	Quechan	Imperial,Kern,Los Angeles,Riverside,San Bernardino,San Diego
	San Fernando Band of Mission Indians	N	Donna Yocum, Chairperson	P.O. Box 221838 Newhall, CA, 91322	(503) 539-0933	(503) 574-3308	dyocum@sfbmi.org	Kitanemuk Vanyume Tataviam	Kern,Los Angeles,San Bernardino,Ventura
	San Manuel Band of Mission Indians	F	Alexandra McCleary, Senior Manager of Cultural Resources Management	26569 Community Center Drive Highland, CA, 92346	(909) 633-0054		alexandra.mccleary@sanmanuel-nsn.gov	Serrano	Kern,Los Angeles,Riverside,San Bernardino
	Serrano Nation of Mission Indians	N	Mark Cochrane, Co-Chairperson	P. O. Box 343 Patton, CA, 92369	(909) 578-2598		serranonation1@gmail.com	Serrano	Kern,Los Angeles,Riverside,San Bernardino
	Serrano Nation of Mission Indians	N	Wayne Walker, Co-Chairperson	P. O. Box 343 Patton, CA, 92369	(253) 370-0167		serranonation1@gmail.com	Serrano	Kern,Los Angeles,Riverside,San Bernardino
	Twenty-Nine Palms Band of Mission Indians	F	Sarah OBrien, Tribal Archivist	46-200 Harrison Place Coachella, CA, 92236	(760) 863-2460		sobrien@29palmsbomi-nsn.gov	Chemehuevi	Imperial,Inyo,Riverside,San Bernardino
	Twenty-Nine Palms Band of Mission Indians	F	Nicolas Garza, Cultural Resources Specialist	46-200 Harrison Place Coachella, CA, 92236	(760) 863-2486		nicolas.garza@29palmsbomi-nsn.gov	Chemehuevi	Imperial,Inyo,Riverside,San Bernardino
	Twenty-Nine Palms Band of Mission Indians	F	Christopher Nicosia, Cultural Resources Manager/THPO Manager	46-200 Harrison Place Coachella, CA, 92236	(760) 863-3972		christopher.nicosia@29palmsbomi-nsn.gov	Chemehuevi	Imperial,Inyo,Riverside,San Bernardino

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Warehouse Project on Assessor's Parcel Number 0463-372-21 (CRM TECH No. 4147) Project, San Bernardino County.

Record: PROJ-2024-003383
Report Type: List of Tribes
Counties: San Bernardino
NAHC Group: All

APPENDIX 3

CALIFORNIA HISTORICAL RESOURCES INVENTORY RECORD FORMS

CONFIDENTIAL
(Available for review upon request by qualified professionals)

Appendix E
Geotechnical Investigation Report
(Available on the Town website for review)



GEOTECHNICAL INVESTIGATION REPORT

PROPOSED WAREHOUSE, APN: 0463-372-21
Southeast Corner of Gustine Street & Dachshund Avenue
Apple Valley, CA 92307

Prepared for Terra Nova Planning & Research
Submitted by Merrell Johnson Geotechnical, Inc.
July 26, 2024
Project No. 24082P1

MERRELL JOHNSON

MERRELL JOHNSON
12277 Apple Valley Rd. #291, Apple Valley, CA 92308
760 240 8000 | www.merrelljohnson.com

July 26, 2024

Attn: Nicole Sauviat Criste
Terra Nova Planning & Research
42635 Melanie Place, Ste 101
Palm Desert, CA 92211

Re: Geotechnical Investigation Report | Proposed Warehouse, APN: 0463-372-21 | SE Corner of Gustine Street & Dachshund Avenue, Apple Valley, CA 92307 | MJG Project No. 24082P1

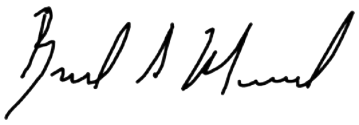
Ms. Criste:

This letter transmits Merrell Johnson Geotechnical's (MJG) Geotechnical Investigation Report for the Proposed Warehouse building. The investigation was planned and performed based on the proposed project development illustrated on the Conceptual Grading Plan prepared by Merrell Johnson.

We trust that the enclosed information will be useful for the design and construction phases of this project. If you have any questions, please do not hesitate to contact our firm.

Sincerely,

Merrell Johnson Companies





Brad S. Merrell, P.E., President
Merrell Johnson Geotechnical, Inc.
R.C.E. 49423

CONTENTS

Introduction 1

Project Description 1
Scope of Services 1

Field Exploration and Laboratory Testing 1

Field Exploration 1
Laboratory Testing 2

Site and Subsurface Conditions 2

Site Conditions 2
Subsurface Conditions 2
Expansion Potential 3
Geologic Setting 3
CBC Ground Motion Analysis 3
Groundwater 4
Faulting 5

Conclusions and Recommendations 6

Earthwork 6
Compacted Fill Placement 6
Imported Soils 6
Shallow Foundation and Building Slab-On-Grade Support 6
Lateral Loading 7
Building Floor Slabs 7
Surface Drainage 8
Concrete and Flexible Asphalt Concrete Pavement Subgrade Preparation 8
Flexible Pavement Structural Sections 9
On-site Flexible Pavement 9
Off-Site Flexible Pavement for Cardova and Dachshund Avenue 10

Portland Cement Concrete Pavements and Flatwork 10
Utility Excavations 11
Corrosivity 11
Limitations 11

APPENDICES

Appendix A	Figures
Figure 1	Site Vicinity Map
Figure 2	Satellite Image of the Project Site
Figure 3	Conceptual Grading Plan / Boring Plot Plan
Appendix B	Exploratory Logs
Appendix C	Laboratory Testing

INTRODUCTION

Project Description

This report presents the results of the geotechnical investigation Merrell Johnson Geotechnical (MJG) performed for the new warehouse planned for the 40-acre parcel located on the southeast corner of Gustine Street and Dachshund Avenue, Apple Valley, CA. The location of the proposed development is shown on the Site Vicinity Map, Google Earth Site Image, and Conceptual Grading Plan, included with this report as Appendix A, Figures 1-3.

The proposed warehouse will occupy a plan area of 627,200 square feet (SF). Proposed site improvements will include truck loading docks, truck trailer parking, automobile parking, driveways, underground stormwater chambers, a retention basin, utilities, and other ancillary site improvements.

Proposed off-site improvements will include installing utilities, widening Dachshund Avenue from Gustine Street to Fresno Road, and paving Fresno Road from Dachshund Avenue to Ramona Road.

Scope of Services

The scope of work for this project consisted of field exploration, laboratory testing, engineering analyses, and preparation of this report. The results of the field exploration and laboratory test programs were analyzed to develop conclusions and recommendations regarding:

- Subsurface conditions underlying areas to be developed
- Site preparation and grading
- Excavation conditions
- Foundation support for the new structure along with soils engineering criteria for foundation design
- Support for slab-on-grade floors
- Concrete and flexible pavement structural sections for parking and driveway/fire lanes
- Flexible pavement structural sections for off-site street improvements

FIELD EXPLORATION AND LABORATORY TESTING

Field Exploration

Subsurface conditions were explored by drilling eleven (11), 8-inch-diameter, test borings. Five (5) test borings were drilled within the building limits of the proposed warehouse, one (1) to a depth of 50 feet and four (4) to a depth of 25 feet. The 50-foot-deep test boring was also used to evaluate the soil liquefaction potential.

Outside the limits of the proposed warehouse: one (1) 10-foot-deep test boring was drilled within the proposed underground stormwater chambers/parking lot; four (4) 5-foot-deep test borings, two (2) within the parking areas and two (2) for the offsite road improvements; one (1) three-foot-deep test boring within the proposed location of the retention basin.

The locations of the test borings are shown on Conceptual Grading Plan, Figure 3 in Appendix A. The borings were logged by an MJG representative, who also collected samples of the materials encountered for examination and laboratory testing. Bulk samples were collected from drill cuttings. Relatively undisturbed samples were obtained by driving a 2.5-inch inside diameter

modified California sampler with a 140-pound hammer falling 30 inches. Blow counts required to drive the sampler each 6 inches of an 18-inch (or less) drive are noted on the boring logs as “N” value.

Standard Penetration Tests (SPTs) were performed at selected depths by driving a 1.4-inch inside diameter sampler 18 inches with a 140-pound hammer falling 30 inches. The blow counts required to drive the sampler each 6 inches of the drive are noted on the boring logs as “N” value. Disturbed samples were collected from the SPT sampler at the time of driving.

The logs of the test borings are in Appendix B. Soils are described according to the Unified Soil Classification System explained in Appendix B.

Laboratory Testing

The laboratory program included the following tests:

- ASTM D422 - Grain Size Analysis
- ASTM D1557 - Maximum Density
- ASTM D2937 - In-Place Moisture Content and Dry Density
- ASTM D4829 - Expansion Index of Soil
- ASTM D2419 - Sand Equivalent
- ASTM D2844 / CT 301 - Resistance R-value
- ASTM D2435 / CT-219 - Consolidation of Soils
- ASTM D3080 - Direct Shear
- ASTM G51 / CT643, CT417, CT422 - Corrosion Potential

The results of the laboratory tests are summarized in Appendix C.

SITE AND SUBSURFACE CONDITIONS

Site Conditions

The 40-acre site is located on the southeast corner of Gustine Street and Dachshund Avenue. The property is undeveloped and covered with creosote bushes and sparce desert vegetation. A shallow drainage travels diagonally through the western portion of the site. From this drainage, the ground surface ascends towards the northwest at an approximate inclination of 1.0 percent.

The site is bound on the north, east, south, and west by Gustine Street, Ramona Road, Fresno Road, and Dachshund Avenue, respectively. Only Dachshund Avenue is paved with asphalt concrete. The remaining three (3) streets are unpaved dirt roads.

Subsurface Conditions

The site is blanketed by medium dense to very dense silty sand (SM) with traces of caliche to a depth of about 40 feet. The silty sand is underlain by a dense poorly graded sand with silt and (SP-SM) to the depths explored (50’).

Expansion Potential

Results of an expansion index test (ASTM D4829) performed on a near-surface soil sample from Boring No. 1, within the limits of the proposed warehouse, exhibited an expansion index of 0, which corresponds to a very low expansion potential.

Geologic Setting

The subject site is located within a natural geomorphic province in southern California known as the Mojave Desert. This province consists of a broad interior region of isolated mountain ranges separated by expanses of desert plains and is characterized by the numerous interior enclosed drainages and playas. The Mojave Desert is in large, bounded structurally on the southwest by the San Andreas Fault and on the northwest by the Garlock Faults, and is ill-defined along the east where the structural patterns resemble the Basin and Range Province to the north and east. This province exhibits interior drainage, including the Mojave River, which has its source in the San Bernardino Mountains and would extend into Death Valley if there was enough water.

The geologic units of this region generally consist of three main divisions being: 1) Crystalline rocks of pre-Tertiary age; 2) sediments and volcanic rocks of Tertiary age; and 3) sediments and basalt flows of Quaternary age. Regionally, the site is located along a large alluvial plain, locally underlain by Quaternary-age alluvium and older that has been derived predominantly as outwash from the adjacent highlands to the north and east along Sidewinder Valley. These sediments are believed to be less than 500± feet locally (Subsurface Surveys, 1990).

Locally as mapped by Hernandez and Tan (2007), the subject site is shown to be underlain by late Pleistocene-age older alluvium. These deposits are generally described as being comprised of a fine- to medium-grained sand and fine to medium gravel of inactive fans.

CBC Ground Motion Analysis

Included for this study was an assessment of the seismic ground motion parameters of the subject site with respect to the most recently adopted 2022 California Building Code (CBC) and ASCE/SEI Standard 7-16 (ASCE, 2016) as partially summarized and tabulated below. Geographically, the proposed construction area is centrally located at Latitude 34.57709 and Longitude -117.19590.

TABLE 1: SUMMARY OF SEISMIC DESIGN PARAMETERS	
Factor or Coefficient	***Value***
S_s	1.036
S_1	0.397
F_a	1.085
F_v	N/A
S_{MS}	1.125
S_{M1}	N/A
S_{DS}	0.75
S_{D1}	N/A
T_L	12
PGA	0.445
PGA_M	0.514
F_{PGA}	1.155
I_e	1
C_V	1.307

Site Classification (CBC 1613.3.2) – Based on the presence of mapped Quaternary age alluvial deposits underlying the site and the absence of site-specific shear-wave data, the design Site Class is *estimated* to be **"D."** This Class is defined as having the upper 100 feet (30 meters) of the subsurface being underlain by "Stiff Soil" with average shear-wave velocities of 600 to 1,200 feet/second (180 to 360 meters/second). In accordance with the CBC, the proposed warehouse is considered a Risk Category II structure.

Groundwater

The study area lies within the Upper Mojave River Groundwater Basin of Southern California. The Mojave River Basin is part of the Mojave Desert region and is bordered by the San Bernardino and San Gabriel Mountains to the south and extends to Afton Canyon to the northeast, with Lucerne Valley and Antelope Valleys bordering the east and west, respectively. The Mojave River, which is located to the west, is the principal source of water recharge to the basin, which originates from the junctions of Deep Creek and West Fork Mojave River at the northern foot of the San Bernardino Mountains. Other sources of recharge include other lesser river tributaries from the San Bernardino and San Gabriel Mountains, the adjacent highlands to the north and east, as well as deep percolation from rainwater and other artificial means.

The water-bearing deposits are principally unconsolidated and partially consolidated continental sedimentary deposits that form two aquifers (Stamos and Predmore, 1995), the upper one being shallow alluvium (200± feet thick, within 1± mile of the Mojave River), with the regional aquifer underlying most of the basin at depth. The regional aquifer is comprised of unconsolidated older alluvium and fan deposits of Pleistocene to Tertiary age, and partly consolidated to consolidated sediments of Tertiary age. These deposits are as much as 1,000 feet thick in some places and their permeability generally decreases with depth.

Based on groundwater data provided by the California Department of Water Resources (2024), the closest measured well is approximately 700 feet to the south (State Well No. 06N03W28R001S), which had a historic high groundwater level of 125.7 feet in 1948.

Faulting

There are at least thirty-five major "potentially active/active" (late Quaternary) faults that are within a 100-kilometer (62 mile) radius of the site as shown on Figure 1 below (site shown as small dot in middle).

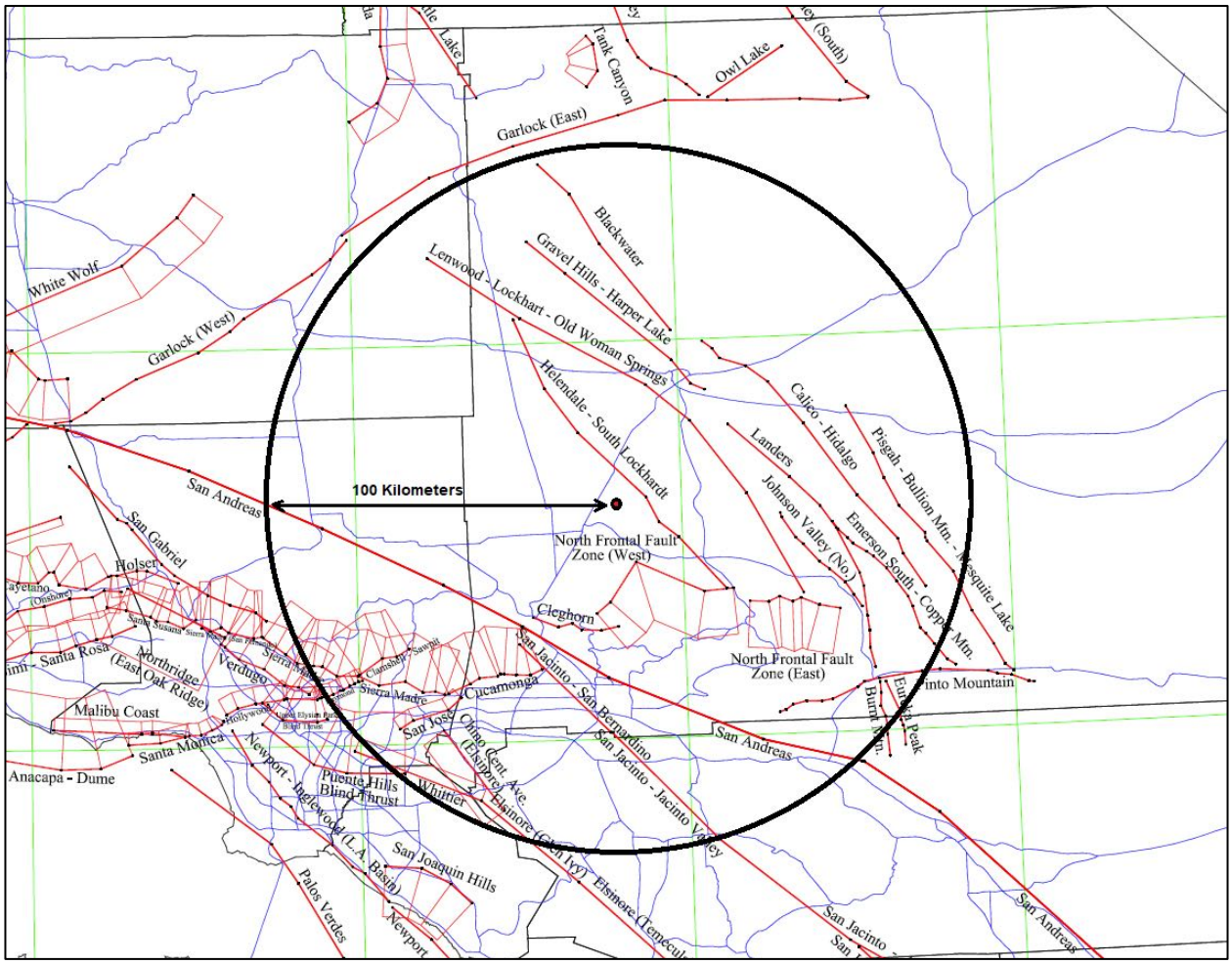


FIGURE 1: Regional Fault Map showing 100 km radius (from CGS 2002 California Fault Model)

Of these, there are no active faults known to traverse the site based on published literature. In addition, the subject site is not located within a State of California “Alquist-Priolo Earthquake Fault Zone” for surface fault rupture hazards (CGS, 2018).

The nearest mapped “active” fault zoned by the State of California is for the Helendale-South Lockhart Fault, located approximately 3± miles to the northeast. The Helendale-South Lockhart Fault is a right-lateral, strike-slip fault, being approximately 97 kilometers in length, with an associated slip-rate of 0.6 ±0.4 mm/year (C.D.M.G., 1996 and Cao, et al., 2003).

CONCLUSIONS AND RECOMMENDATIONS

The existing surface soils are medium dense to a depth of about 3 feet. Below 3 feet, the native soils are generally dense and are considered adequate for support of the new facilities.

The site is not within an Alquist Priolo Earthquake Fault Zone. The soils are medium dense to dense, and groundwater is deep below this site. The liquefaction potential consequently is very low. The potential for dynamically induced settlement of the granular soils is also very low. In addition, the soils have a very low potential for expansion due to changes in moisture content.

The potential for encountering groundwater within the anticipated relatively shallow excavations is minimal. There is a potential for minor amounts of water to enter open excavations because of direct rainfall and runoff.

Earthwork

At the time of MJG's investigation, the site was covered with creosote bushes and sparce desert vegetation. Any debris, vegetation, and other deleterious materials should be stripped and removed from the site prior to grading work. Organic materials should be disposed of off-site in accordance with the owner's instructions. Roots should be removed to a depth of 6 inches below foundation and pavement subgrade elevations.

Areas to receive fill should be scarified to a depth of 12 inches, brought to within 2 percentage points of optimum moisture content, and compacted to a minimum of 95% relative compaction based on the ASTM D1557 laboratory test method. All references to optimum moisture content and relative compaction in this report are based on this test method.

Compacted Fill Placement

Fill should be placed in 8-inch-thick loose lifts, moisture conditioned to within 2 percentage points above or below optimum moisture content and compacted to a minimum of 95% relative compaction.

Imported Soils

Imported soils, if needed, should consist of predominantly granular material with an expansion index less than 20 when tested in accordance with ASTM D4829, and should have a minimum R-value of 40. Imported material should be inspected and approved by an MJG representative prior to being brought to the site.

Shallow Foundation and Building Slab-On-Grade Support

The existing soils below and within 5 feet of the proposed warehouse building should be over-excavated to a depth of at least 3 feet below the existing ground surface or 12 inches below the proposed footing base grade, whichever depth is greater. The bottom of the over-excavation should be scarified to a depth of at least 6 inches, moistened to within 2 percent of the optimum moisture content, and compacted to a relative compaction of at least 95 percent (ASTM D1557).

Fill should be placed in 8-inch-thick loose lifts, moisture conditioned to within 2 percentage points above or below optimum moisture content and compacted to a minimum of 95% relative compaction.

The planned structures can be supported on shallow spread footings with bottom levels in the compacted fill at a minimum depth of 18 inches below the lowest adjacent finished grade.

A minimum width of 18 inches is recommended for continuous footings. Isolated footings should be at least 24 inches wide. Footings can be designed for an allowable bearing pressure of 3,000 pounds per square foot (psf) for dead plus long-term live loads. This value can be increased by ⅓ when considering the total of all loads, including wind or seismic forces.

Total post-construction settlement is estimated to be approximately ¾ inch. Post-construction differential settlements are anticipated to be ½ inch or less between isolated footings, and between the middle and end of a continuous footing.

Continuous (strip) foundations should be reinforced with a minimum of #5 deformed reinforcing bars at the top and bottom of the footings.

Spread footing reinforcement should be designed by the structural engineer for punching shear and bending. As a minimum, the spread footings should be reinforced with a #5 deformed reinforcing bars, spaced 18 inches on center each way and placed 3 inches above the bottom of the spread footing.

All grade beam reinforcement should be designed and specified by the building's designer/structural engineer.

Foundations should be reinforced as necessary to reduce the potential for distress caused by differential foundation movement. The use of joints at openings or other discontinuities in masonry walls is recommended.

Footing excavations should be observed by an MJG representative to check bearing materials and cleaning.

Lateral Loading

Resistance to lateral loads will be provided by passive earth pressure against the faces of footings and other structural elements below grade, and by friction along the bases of footings and slabs. Passive earth pressure can be taken as 350 pounds per square foot (psf) per foot of depth. Base friction can be taken as 0.35 times the actual dead load. Base friction and passive earth pressure can be combined without reduction. Retaining structures free to rotate at the top should be designed for an active equivalent fluid pressure of 35 psf per foot of height, plus any additional building or equipment surcharge. MJG should be notified if retaining walls greater than 10 feet in height, restrained walls, or tieback walls are planned so that geotechnical recommendations specific to wall conditions can be developed.

Building Floor Slabs

During grading operations, the building pad soils should be compacted to a relative compaction of at least 95 percent (ASTM D1557). Prior to placing the slab-on-grade concrete, the final pad surfaces should be proof-rolled to provide a smooth, dense surface upon which to place the concrete.

A 15-mil vapor retarder membrane, conforming to ASTM E1745 and installed per ASTM E1643, should be placed beneath concrete slabs-on-grade covered with moisture sensitive or impervious floor coverings, or where the slab will support equipment or materials 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.

Reinforcing for slabs-on-grade should be designed by the project structural engineer based on anticipated storage and forklift loads. A modulus of subgrade reaction of 150 pounds per cubic inch (pci) can be used. Reinforcing should extend down into the footings. Concrete construction (i.e. jointing, etc.) should be in conformance with the American Concrete Institute Manual of Concrete Practice Design and Construction Standards.

The project's designer should be responsible for the slabs-on-grade recommendations based on the anticipated floor loading requirements. Minimum reinforcing for 6-inch-thick slabs-on-grade should consist of at least #4 deformed reinforcing bars at 18 inches on center each way placed at mid-height in the slab.

Where the project's structural engineer's reinforcement recommendations exceed MJG's above minimum slab reinforcement recommendations, the structural engineer's recommendations should be followed.

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 waterproof, 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.

Surface Drainage

It is important that water be kept a minimum of 5 feet from structures and slabs. No ponding adjacent to buildings and structures should be allowed. Final surfaces should have a positive 2 percent minimum slope away from structures.

Retaining walls should be designed to resist hydrostatic pressures or be provided with a back-drain, weep holes or other drainage facilities. If a basement or underground structure is constructed, a subsurface drainage system is recommended.

Concrete and Flexible Asphalt Concrete Pavement Subgrade Preparation

The existing soils below the proposed concrete and asphalt concrete pavement areas should be over-excavated to a depth of at least 12 inches below the existing ground surface or finish grade, whichever depth is greater. The soils exposed on the bottoms of the over-excavations should be scarified to a depth of at least 12 inches, moistened to within 2 percent of the optimum moisture content and compacted to a relative compaction of at least 95 percent (ASTM D1557). The over-excavated soils and any additional fill required to prepare the finish subgrade should be placed in maximum 8-inch-thick lifts, each lift moistened to within 2 percent of the optimum moisture content and compacted to a relative compaction of at least 95 percent.

Flexible Pavement Structural Sections

New flexible pavement structural sections were determined following California Department of Transportation (Caltrans) procedures.

ON-SITE FLEXIBLE PAVEMENT

On-site flexible pavement for automobiles and light trucks are planned for the east and west sides of the project site. MJG's review of the Conceptual Site Plan indicates that most of the heavy truck driveways, trailer parking areas, and loading docks will be located on the north and south sides of the warehouse and paved with rigid portland cement concrete pavement. The automobile and truck trailer parking areas will be connected by on-site access driveways.

Four (4) test borings were drilled around the perimeter of the proposed warehouse. Sieve analyses (ASTM D422, D1140 & D2487) were performed from soil samples collected in each of these borings. The soil sample containing the largest percentage of fines (soil fraction passing the #200 sieve) and the lowest sand equivalent value was selected and tested for R-value (ASTM D2844).

The most critical soil sample was collected in Boring No. 5. The sieve analysis, sand equivalent, and R-value test data are summarized in Table 2 below.

TABLE 2: ON-SITE SIEVE, SAND EQUIVALENT, AND R-VALUE TEST RESULTS

Boring No.	***% Fines*** *ASTM D422/D1140*	***Sand Equivalent*** *ASTM D2419*	***R-Value*** *ASTM D2844*
B-3	33.7	23	-
B-5	36.2	17	28
B-6	31.6	-	-
B-8	32.8	-	37

Based on the above soil test data, the most critical R-value of 33 was used to calculate the recommended on-site flexible pavement sections for the project. In addition, the Traffic Indexes for the flexible pavement areas was selected as follows:

- Automobiles and light truck traffic: TI = 5
- Heavy truck traffic: TI = 8

Recommended on-site flexible pavement structural sections are listed in Table 3 below.

TABLE 3: ON-SITE FLEXIBLE PAVEMENT STRUCTURAL SECTIONS

Pavement Area	***Traffic Index***	***Asphalt Concrete (inches)***	***Base Course (inches)***
Autos & Light Truck Traffic	5	4.0	4.0
Heavy Truck Traffic	8	6.0	6.0

OFF-SITE FLEXIBLE PAVEMENT FOR CARDOVA AND DACHSHUND AVENUE

Off-site flexible pavement is proposed for Fresno Road and Dachshund Avenue adjacent to the subject warehouse site. Two (2) test borings (B-7 and B-9) were drilled for these streets. Samples from the two test borings were collected and tested for R-value (ASTM D2844). The R-value test data are summarized in Table 4 below.

TABLE 4: OFF-SITE ROADWAY R-VALUE TEST RESULTS

Boring No.	***Roadway***	***R-value ASTM D2844***
B-7	Fresno Road	41
B-9	Dachshund Avenue	34

Based on the above soil test data, R-values of 41 and 34 were used to calculate the recommended off-site flexible pavement sections for Fresno Road and Dachshund Avenue, respectfully. The Traffic Index used to calculate the roadway pavement sections was:

- Automobiles and Heavy truck traffic: TI = 9

Recommended off-site flexible pavement structural sections for Fresno Road and Dachshund Avenue are presented in Table 5 below.

TABLE 5: OFF-SITE FLEXIBLE PAVEMENT STRUCTURAL SECTIONS

Roadway	***Traffic Index***	***Asphalt Concrete (inches)***	***Base Course (inches)***
Fresno Road	9	6.0	8.0
Dachshund Avenue	9	6.0	10.0

Alternative pavement sections can also be considered. Merrell Johnson should review the design pavement sections if traffic loads will be different from those currently anticipated.

PORTLAND CEMENT CONCRETE PAVEMENTS AND FLATWORK

The subgrade surface beneath rigid (portland cement concrete) pavements should be proof-rolled with a smooth-wheel roller to form a dense, uniform surface. Any pumping or yielding areas should be excavated and replaced with compacted fill.

Rigid pavements to support automobile and light truck traffic should be a minimum of 6 inches thick and reinforced with a minimum of #4 deformed reinforcing bars spaced 12 inches on center each way. Joints should be provided at intervals of no more than 12 feet. Smooth dowels should be provided across pavement joints.

Rigid pavement to support heavy truck traffic should be a minimum of 8 inches thick and reinforced with #4 deformed reinforcing bars spaced 12 inches of center each way. Joints should be provided at intervals of no more than 12 feet. Smooth dowels should be provided across pavement joints.

Pedestrian walkways and other lightly loaded concrete flatwork areas should be proof rolled as described above. The flatwork in these areas should have a minimum thickness of 4 inches and be provided with doweled joints at no more than 12-foot intervals. Minimum reinforcement

should consist of 6 x 6 W1.4/1.4 welded wire fabric supported mid height in the slab by concrete blocks or dobies. Positioning the wire fabric by lifting after concrete placement should not be allowed.

UTILITY EXCAVATIONS

Excavations for this project will require sloping sidewalls or shoring. Excavations should be made in accordance with California Administrative Code, Title 8, Industrial Relations, Chapter 4, Division of Industrial Safety, Subchapter 4, Construction Safety Orders, Article 6. Temporary excavations should be shored or sloped in accordance with Cal OSHA requirements. On-site soils can be considered Type C for purposes of excavation design.

In general, temporary excavations in on-site soils should be sloped no steeper than 1.5 horizontal to 1 vertical for excavations up to 20 feet in depth. Compound excavations with vertical sides in lower portions should be properly shielded to a minimum height of 18 inches above the top of the vertical side, with the upper portion having a maximum slope of 1.5 horizontal to 1 vertical. A Registered Professional Engineer should design slopes or benching for excavations greater than 20 feet in depth.

Temporary excavation slopes should be inspected twice daily by the contractor's competent person before personnel are allowed to enter the excavation. If sloughing, raveling or other evidence for slope instability is noted, corrective measures should be implemented.

Temporary shoring will be required for those excavations where temporary cut slopes as described above are not feasible. Cantilever shoring, and shoring with 1 level of bracing, can be designed to resist an equivalent fluid pressure of 30 psf per foot of depth. For shoring with multiple levels of bracing, a uniform lateral pressure equal to 25H in psf, where H is the height of shoring in feet, should be used. The recommended soil pressure applies to level soil conditions behind the shoring. Where a combination of sloped embankment and shoring is used, the soil pressure will be greater and should be evaluated for actual conditions.

In addition to the above recommended lateral earth pressures, a minimum uniform lateral pressure of 125 psf should be incorporated in the design of the upper 10 feet of shoring when normal traffic is permitted within 10 feet of the shoring. The design of temporary shoring should also include the surcharge loads from delivery and construction equipment, as appropriate.

CORROSIVITY

Laboratory test results indicate that site soils have a low potential for corrosion with respect to reinforced concrete and ferrous metals. Nevertheless, Type II modified or Type V cement is recommended for use in concrete in contact with the ground. Foundations should be designed with continuous reinforcing steel top and bottom. Reinforcing steel should maintain minimum clearances specified by applicable codes and good construction practice.

LIMITATIONS

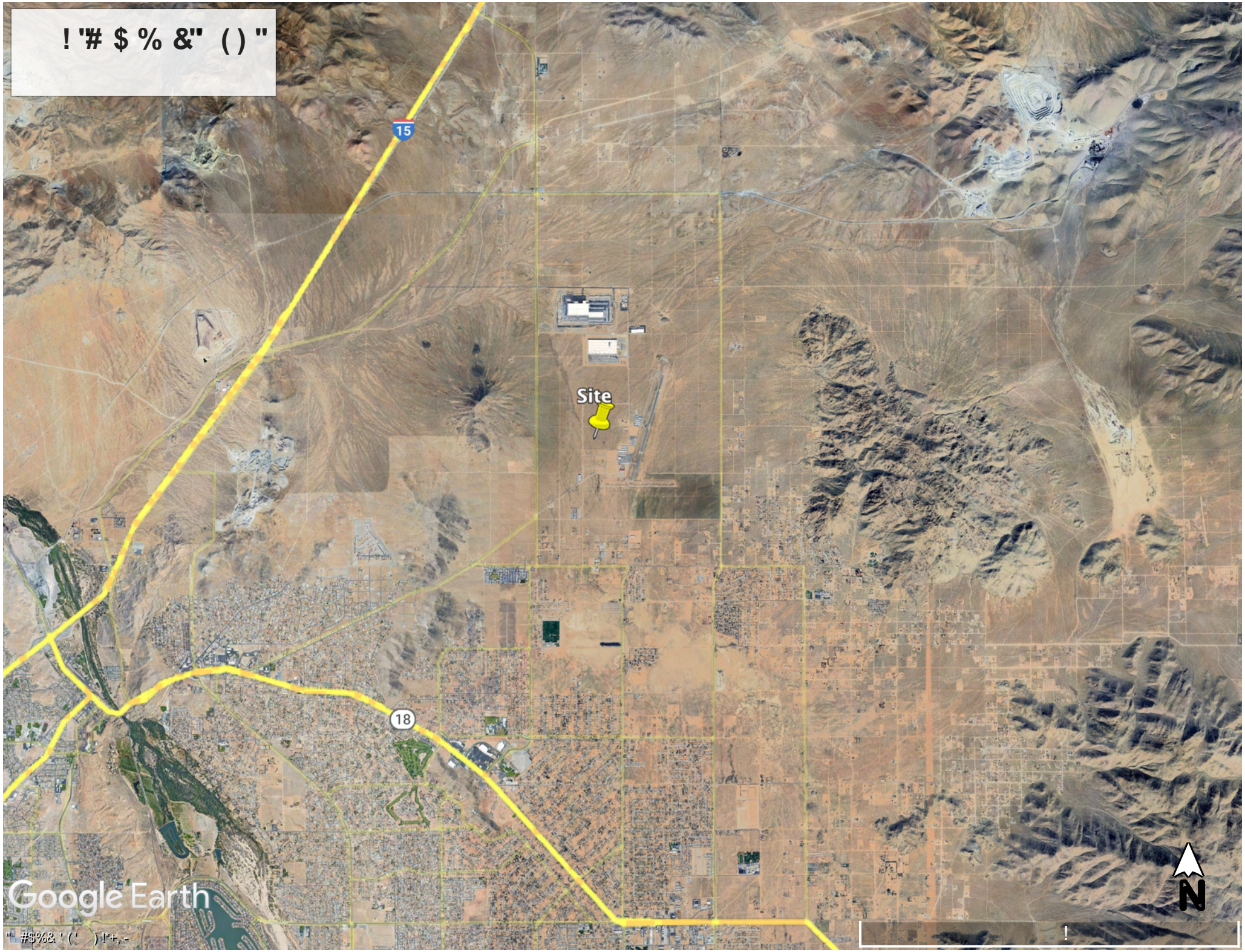
The recommendations in this report are based on results of the field exploration and laboratory test programs, combined with interpolation and extrapolation of subsurface conditions between and beyond boring locations. The nature and extent of variations in these conditions may not become evident until construction. If variations are encountered during construction, MJG should be notified so these variations can be reviewed and the recommendations in this report

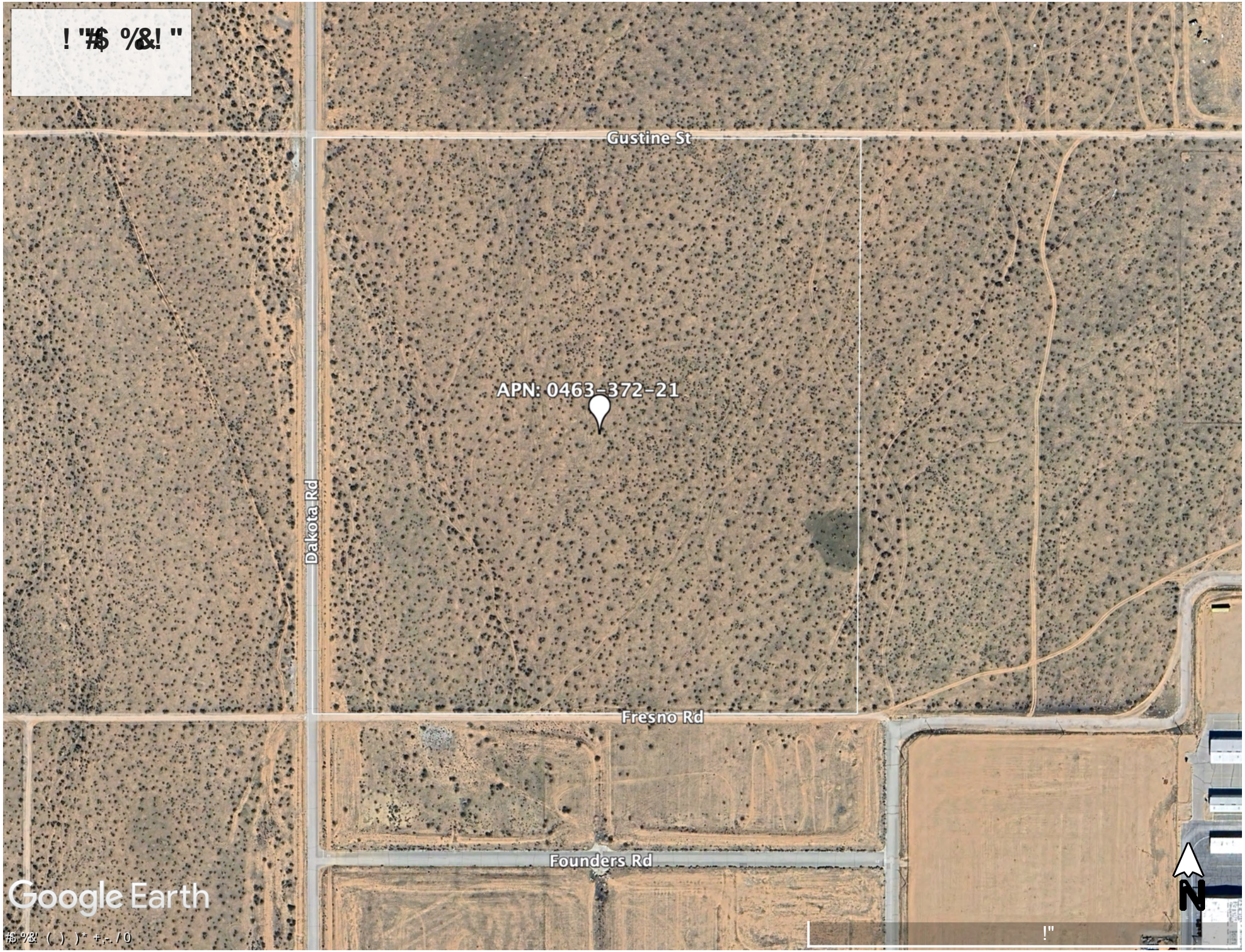
modified if necessary. If changes in the nature, design or location of the structures are planned, these changes should be reviewed by MJG so that modifications to the recommendations in this report can be made if needed.

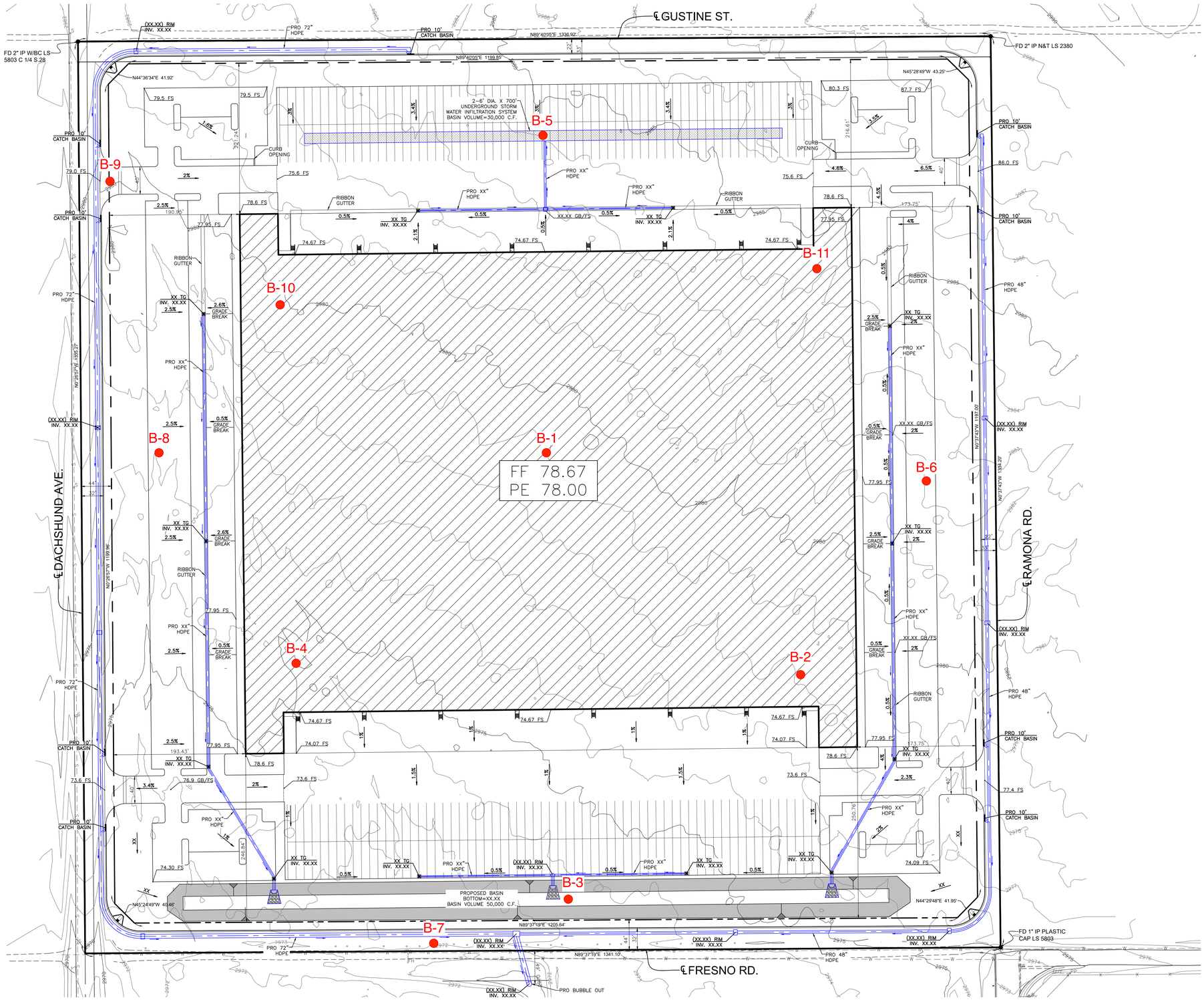
Our professional services have been performed using the degree of care and skill ordinarily exercised under similar circumstances by reputable engineering consultants practicing in this or similar localities. No other warranty, express or implied, is made as to the professional advice or data included in this report. This report has not been prepared for use by other parties and may not contain sufficient information for purposes of other parties or other uses.

APPENDIX A

Figure 1 – Site Vicinity Map
Figure 2 – Satellite Image of the Project Site
Figure 3 – Conceptual Grading Plan / Boring Plot Plan


! '# $ % &" ( ) "
15
Site
18
Google Earth
N
!


Gustine St
APN: 0463-372-21
Dakota Rd
Fresno Rd
Founders Rd
Google Earth
N



811 Know what's below. Call before you dig.

SURVEY MONUMENTATION:

ALL SURVEY MONUMENTS AND MARKERS SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROTECT IN PLACE UNTIL SURVEYOR HAS TIED OUT LOCATIONS FOR REPLACEMENT PURSUANT TO BUSINESS AND PROFESSIONS CODE SECTION 8700 TO 8805 (LAND SURVEYOR'S ACT).

UNDERGROUND UTILITIES:

THE LOCATIONS AND EXISTENCE OF UNDERGROUND UTILITIES ARE NOT GUARANTEED. THESE DRAWINGS WERE PREPARED BASED ON SURFACE DATA AND AVAILABLE RECORD INFORMATION AND IT IS POSSIBLE THAT ADDITIONAL UNDERGROUND UTILITIES COULD BE PRESENT THAT ARE NOT SHOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF THE LOCATION AND DEPTH OF EXISTING UNDERGROUND UTILITIES AND SHALL PERFORM POTHOLING AS NECESSARY AT ALL CROSSINGS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TAKING ALL PRECAUTIONS NECESSARY TO PROTECT ALL EXISTING UTILITIES AND STRUCTURES FROM DAMAGE DURING THE COURSE OF THE WORK, AND SHALL BE RESPONSIBLE FOR REPAIRING OR REPLACING ANY UTILITIES OR STRUCTURES DAMAGED DURING THE COURSE OF THE WORK.

BENCHMARK

DESCRIPTION: CSM BENCHMARK 1-23

LOCATION:
1.0 MILES SOUTH ALONG CENTRAL ROAD FROM THE INTERSECTION OF CENTRAL ROAD AND QUARRY ROAD, 166 FEET EAST OF CENTERLINE CENTRAL ROAD, 33 FEET NORTH OF CENTERLINE JOHNSON ROAD, 16 FEET NORTH OF POWER POLE NO. 63127 CEPCO, 0.60 FEET ABOVE GROUND, 6.00 FEET SOUTH OF A WITNESS POST (11/01/70 ORIGINAL DESCRIPTION)

ELEVATION: 3156.94 DATUM:

BASIS OF BEARINGS

CALIFORNIA STATE PLANE COORDINATE SYSTEM ZONE V NAD83

DATE	DELTA	REVISION DESCRIPTION	APPROVAL DATE	APPROVAL BY

MERRELL JOHNSON

MERRELL JOHNSON ENGINEERING, INC.
22221 U.S. HIGHWAY 18, APPLE VALLEY, CA 92307
760 240 8000 | MERRELLJOHNSON.COM

CONCEPTUAL GRADING PLAN

DASCHSHUND & GUSTINE WHEARHOUSE

DRAWN BY: EKJ
DATE: 07/15/24

JOB NO. 4171.001

SHEET 1 OF 1

C:\Users\ekjohnson.MERRELLJOHNSON\Documents\Projects\4171.001 Terra Nova - APN 0463-372-21 Weareouse\Grading\4171.001 Grading 19 July 2024.dwg — 4171.001 - Merrell Johnson Companies

APPENDIX B

Exploratory Logs

Soil Classification Key

Unified Soil Classification System (USCS) and Particle Size Limits

Project Number:	24082P1
Project Title:	Warehouse, Gustine Street & Dachshund Avenue
Project Location:	Apple Valley, CA
Client:	Terra Nova Planing & Research, Inc.

Report Date:	06/27/24
Sheet:	1 of 1
Appendix:	B
Permit No:	
Client Project No:	
Other:	
DSA File No:	
DSA Application No:	
DSA LEA No:	

Unified Soil Classification System (USCS)

Coarse Grained Soils More Than 50% Is Larger Than No. 200 Sieve	Gravel and Gravelly Soils More Than 50% Retained on No. 4 Sieve	Clean Gravels Little Or No Fines	GW		Well-graded gravels, gravel-sand mixtures, little or no fines
			GP		Poorly-graded gravels, gravel-sand mixtures, little or no fines
		Gravels w/ Fines Appreciable Amount	GM		Silty gravels, gravel-sand-silt mixtures
			GC		Clayey gravels, gravel-sand-clay mixtures
	Sand and Sandy Soils More Than 50% Passing No. 4 Sieve	Clean Sand Little Or No Fines	SW		Well-graded sands, gravelly sands, little or no fines
			SP		Poorly-graded sands, gravelly sands, little or no fines
		Sands w/ Fines Appreciable Amount	SM		Silty-sands, sand-silt mixtures
			SC		Clayey sands, sand-clay mixtures
Fine Grained Soils More Than 50% Is Smaller Than No. 200 Sieve	Silts and Clays Liquid Limit Less Than 50		ML		Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
			CL		Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
			OL		Organic silts and organic silty clays of low placticity
	Silts and Clays Liquid Limit Greater Than 50		MH		Inorganic silts, micaceous or diatomaceous fine sand or silty soils
			CH		Inorganic clays of high plasticity, fat clays
			OH		Organic clays of medium to high plasticity, organic silts
	Highly Organic Soils		PT		Peat, humus, swamp soils with high organic contents

Particle Size Limits

Divison	Silt or Clay	Sand			Gravel		Cobbles	Boulders
		Fine	Medium	Coarse	Fine	Coarse		
U.S. Sieve		No. 200	No. 40	No. 10	No. 4	3/4"	3"	12"
Grain (mm)		0.075	0.420	2.00	4.76	19.1	76.2	305

Soils possessing characteristics of two classifications are designated by group symbol combination. Soils may be classified initially using the visual manual procedure prior to laboratory test.

Merrell Johnson®

engineering | surveying | testing | inspection

Merrell Engineering Company, Inc. | 22221 US Highway 18, Apple Valley, Ca. 92308 t)760.256.2068 f)760.256.0418 w)www.merrelljohnson.com

Exploratory Log

ASTM D5434, D1452, D1586, D1587, D2488 (USCS), D3550

Project Number:	24082P1
Project Title:	Warehouse, Gustine Street & Dachshund Avenue
Project Location:	Apple Valley, CA
Client:	Terra Nova Planing & Research, Inc.

Report Date:	06/27/24
Sheet:	1 of 2
Appendix:	B
Permit No:	
Client Project No:	
USA Ticket No:	
DSA File No:	
DSA Application No:	
DSA LEA No:	

Location No:	B1	**Start Date/Time:**	6/27/24 0835	**End Date/Time:**	6/27/24 1015

Conducted By:	J. Albornoz	**Excavation Type:**	Auger Hole	**Elevation:**	2979
Operator:	V. Zermeno	**Dimensions:**	8" x 50'	**Groundwater:**	Not Encountered
Equipment Type:	GT-16 HSA	**Advance Assist:**	None	**Recent Weather:**	Clear
Drive Weight (lb)**:**	140	**Field Tests:**	D3550	**Sampler Insertion:**	Driven
Drive Drop (in)**:**	30	**Shoring Type:**	None	**Preservation:**	D4220

Depth (ft)	'N' Value	Sample (1)	Moisture (%)	Density (pcf)	Class (USCS)	Graphic	Description / Comments	Lab Tests (2)
0					SM		Light Brown, Dry, Dense, Silty Sand	
	5, 8, 26		2.4	109.1			Bulk Sample at 0' to 5' - JDA06272401 Tube at 1' - JDA06272402	MD, DS, CR, EI TD
	40, 50 (5")		4.8	107.0			Tube at 3' - JDA06272403 (One Tube Recovered) Very Dense	TD
5	35 50 (4")		8.6	112.6			Tube at 5' - JDA06272404 Caliche Present	TD
10	20, 50 (6")		3.9	113.5			Tube at 10' - JDA06272405	TD, DS
15	28, 38, 42						SPT at 15'	
20	25, 50 (4")						SPT at 20'	
25	25, 50 (3")						SPT at 25'	

Comments: "N" Values based on 2.5" diameter modified California Tube Sampler (ASTM D3550) or SPT (ASTM D1586) as noted on log. Some boulder/rock encountered during drilling operations. Partial caving of hole observed.

(1) =Bulk =Driven

(2) **DS** =Direct Shear **EI** =Expansion Index **SA** =Sieve Analysis **CR** =Corrosion **MD** =Max Density **RV** =R-Value **AL** =Atterberg Limits **SE** =Sand Equivalent **CN** =Consolidation **TD** =Tube Density

Merrell Johnson. engineering | surveying | testing | inspection

Merrell Engineering Company, Inc. | 22221 US Highway 18, Apple Valley, Ca. 92308 t)760.256.2068 f)760.256.0418 w)www.merrelljohnson.com

Exploratory Log

ASTM D5434, D1452, D1586, D1587, D2488 (USCS), D3550

Report Date:	06/27/24
Sheet:	2 of 2
Appendix:	B
Permit No:	
Client Project No:	
USA Ticket No:	
DSA File No:	
DSA Application No:	
DSA LEA No:	

Project Number:	24082P1
Project Title:	Warehouse, Gustine Street & Dachshund Avenue
Project Location:	Apple Valley, CA
Client:	Terra Nova Planing & Research, Inc.

Location No:	B1 (Cont.)	**Start Date/Time:**	6/27/24 0835	**End Date/Time:**	6/27/24 1015

Conducted By:	J. Albornoz	**Excavation Type:**	Auger Hole	**Elevation:**	2979
Operator:	V. Zermeno	**Dimensions:**	8" x 50'	**Groundwater:**	Not Encountered
Equipment Type:	GT-16 HSA	**Advance Assist:**	None	**Recent Weather:**	Clear
Drive Weight (lb)**:**	140	**Field Tests:**	D3550	**Sampler Insertion:**	Driven
Drive Drop (in)**:**	30	**Shoring Type:**	None	**Preservation:**	D4220

Depth (ft)	'N' Value	Sample (1)	Moisture (%)	Density (pcf)	Class (USCS)	Graphic	Description / Comments	Lab Tests (2)
30	21, 35, 36				SM		SPT at 30'	
35								
40	13, 17, 20				SPSM		SPT at 40' Light Brown, Moist, Dense, Poorly Graded Sand with Silt	
45								
50	17, 39 50 (4")						SPT at 50' Very Dense *Drilling Terminated at Approximately 50'* Groundwater Not Encountered	

Comments: "N" Values based on 2.5" diameter modified California Tube Sampler (ASTM D3550) or SPT (ASTM D1586) as noted on log. Some boulder/rock encountered during drilling operations. Partial caving of hole observed.

(1) =Bulk =Driven

(2) **DS** =Direct Shear **EI** =Expansion Index **SA** =Sieve Analysis **CR** =Corrosion **MD** =Max Density **RV** =R-Value **AL** =Atterberg Limits **SE** =Sand Equivalent **CN** =Consolidation **TD** =Tube Density

Merrell Johnson. engineering | surveying | testing | inspection

Merrell Engineering Company, Inc. | 22221 US Highway 18, Apple Valley, Ca. 92308 t)760.256.2068 f)760.256.0418 w)www.merrelljohnson.com

Exploratory Log

ASTM D5434, D1452, D1586, D1587, D2488 (USCS), D3550

Project Number:	24082P1
Project Title:	Warehouse, Gustine Street & Dachshund Avenue
Project Location:	Apple Valley, CA
Client:	Terra Nova Planing & Research, Inc.

Report Date:	06/27/24
Sheet:	1 of 1
Appendix:	B
Permit No:	
Client Project No:	
USA Ticket No:	
DSA File No:	
DSA Application No:	
DSA LEA No:	

Location No:	B2	**Start Date/Time:**	06/27/24 1035	**End Date/Time:**	6/27/24 1135

Conducted By:	J. Albornoz	**Excavation Type:**	Auger Hole	**Elevation:**	2978
Operator:	V. Zermeno	**Dimensions:**	8" x 25'	**Groundwater:**	Not Encountered
Equipment Type:	GT-16 HSA	**Advance Assist:**	None	**Recent Weather:**	Clear
Drive Weight (lb)**:**	140	**Field Tests:**	D3550	**Sampler Insertion:**	Driven
Drive Drop (in)**:**	30	**Shoring Type:**	None	**Preservation:**	D4220

Depth (ft)	'N' Value	Sample (1)	Moisture (%)	Density (pcf)	Class (USCS)	Graphic	Description / Comments	Lab Tests (2)
0					SM		Light Brown, Dry, Medium Dense, Silty Sand	
	4, 5,						Bulk Sample at 0' to 5' - JDA06272406	SA, MD
	10		2.2	106.2			Tube at 1' - JDA06272407	TD
	50 (6")		2.6	108.3			Tube at 3' - JDA06272408 (One Tube Recovered)	TD
							Very Dense	
5	50 (6")		7.6	113.1			Tube at 5' - JDA06272409 (One Tube recovered)	TD
10	24, 24,		2.6	114.3	SPSM		Tube at 10' - JDA06272410	TD, CN
	50 (6")						Orangish Brown, Dry, Poorly Graded Sand with Sit	
15	50 (6")		3.1	111.1	SM		Tube at 15' - JDA06272411	TD
							Light Brown, Dry, Very Dense, Silty Sand	
20	26,						SPT at 20'	
	50 (5")							
25	33,						SPT at 25'	
	50(6")						*Drilling Terminated at Approximately 25'*	
							Groundwater Not Encountered	

Comments: "N" Values based on 2.5" diameter modified California Tube Sampler (ASTM D3550) or SPT (ASTM D1586) as noted on log. Some boulder/rock encountered during drilling operations. Partial caving of hole observed.

(1) =Bulk =Driven

(2) **DS** =Direct Shear **EI** =Expansion Index **SA** =Sieve Analysis **CR** =Corrosion **MD** =Max Density **RV** =R-Value **AL** =Atterberg Limits **SE** =Sand Equivalent **CN** =Consolidation **TD** =Tube Density

Merrell Johnson. engineering | surveying | testing | inspection

Merrell Engineering Company, Inc. | 22221 US Highway 18, Apple Valley, Ca. 92308 t)760.256.2068 f)760.256.0418 w)www.merrelljohnson.com

Exploratory Log

ASTM D5434, D1452, D1586, D1587, D2488 (USCS), D3550

Report Date:	06/27/24
Sheet:	1 of 1
Appendix:	B
Permit No:	
Client Project No:	
USA Ticket No:	
DSA File No:	
DSA Application No:	
DSA LEA No:	

Project Number:	24082P1
Project Title:	Warehouse, Gustine Street & Dachshund Avenue
Project Location:	Apple Valley, CA
Client:	Terra Nova Planing & Research, Inc.

Location No:	B3	**Start Date/Time:**	6/27/24 1155	**End Date/Time:**	6/27/24 1200

Conducted By:	J. Albornoz	**Excavation Type:**	Auger Hole	**Elevation:**	2974
Operator:	V. Zermeno	**Dimensions:**	8" x 3'	**Groundwater:**	Not Encountered
Equipment Type:	GT-16 HSA	**Advance Assist:**	None	**Recent Weather:**	Clear
Drive Weight (lb)**:**	140	**Field Tests:**	D3550	**Sampler Insertion:**	Driven
Drive Drop (in)**:**	30	**Shoring Type:**	None	**Preservation:**	D4220

Depth (ft)	'N' Value	Sample (1)	Moisture (%)	Density (pcf)	Class (USCS)	Graphic	Description / Comments	Lab Tests (2)
0					SM		Light Brown, Dry, Silty Sand Bulk Sample 0' to 3' - JDA06272412 *Drilling Terminated at Approximately 3'* Groundwater Not Encountered	SA, SE
5								
10								
15								
20								
25								

Comments: "N" Values based on 2.5" diameter modified California Tube Sampler (ASTM D3550) or SPT (ASTM D1586) as noted on log. Some boulder/rock encountered during drilling operations. Partial caving of hole observed.

(1) =Bulk =Driven

(2) **DS** =Direct Shear **EI** =Expansion Index **SA** =Sieve Analysis **CR** =Corrosion **MD** =Max Density **RV** =R-Value **AL** =Atterberg Limits **SE** =Sand Equivalent **CN** =Consolidation **TD** =Tube Density

Merrell Johnson®

engineering | surveying | testing | inspection

Merrell Engineering Company, Inc. | 22221 US Highway 18, Apple Valley, Ca. 92308 t)760.256.2068 f)760.256.0418 w)www.merrelljohnson.com

Exploratory Log

ASTM D5434, D1452, D1586, D1587, D2488 (USCS), D3550

Report Date:	06/27/24
Sheet:	1 of 1
Appendix:	B
Permit No:	
Client Project No:	
USA Ticket No:	
DSA File No:	
DSA Application No:	
DSA LEA No:	

Project Number:	24082P1
Project Title:	Warehouse, Gustine Street & Dachshund Avenue
Project Location:	Apple Valley, CA
Client:	Terra Nova Planing & Research, Inc.

Location No:	B4	**Start Date/Time:**	6/27/24 1215	**End Date/Time:**	6/27/24 1300

Conducted By:	J. Albornoz	**Excavation Type:**	Auger Hole	**Elevation:**	2975
Operator:	V. Zermeno	**Dimensions:**	8" x25'	**Groundwater:**	Not Encountered
Equipment Type:	GT-16 HSA	**Advance Assist:**	None	**Recent Weather:**	Clear
Drive Weight (lb)**:**	140	**Field Tests:**	D3550	**Sampler Insertion:**	Driven
Drive Drop (in)**:**	30	**Shoring Type:**	None	**Preservation:**	D4220

Depth (ft)	'N' Value	Sample (1)	Moisture (%)	Density (pcf)	Class (USCS)	Graphic	Description / Comments	Lab Tests (2)
0					SM		Light Brown, Dry, Medium Dense, Silty Sand	
	3, 5, 7						Bulk Sample at 0' to 5' - JDA06272413	MD
			2.4	109.4			Tube at 1' - JDA06272414	TD
	7, 17, 13		2.0	108.0			Tube at 3' - JDA06272415 Dense	TD
5	12, 22, 50 (5")		2.6	116.8			Tube at 5' - JDA06272416 Caliche Present, Very Dense	TD, DS
10	50 (5")		5.0	114.9			Tube at 10' - JDA06272417 (One Tube Recovered)	TD
15	50 (6")		3.2	116.3			Tube at 15' - JDA06272418 (One Tube Recovered)	TD
20	9, 14, 44						SPT at 20'	
25	16, 12, 12						SPT at 25' *Drilling Terminated at Approximately 25'* Groundwater Not Encountered	

Comments: "N" Values based on 2.5" diameter modified California Tube Sampler (ASTM D3550) or SPT (ASTM D1586) as noted on log. Some boulder/rock encountered during drilling operations. Partial caving of hole observed.

(1) =Bulk =Driven

(2) **DS** =Direct Shear **EI** =Expansion Index **SA** =Sieve Analysis **CR** =Corrosion **MD** =Max Density **RV** =R-Value **AL** =Atterberg Limits **SE** =Sand Equivalent **CN** =Consolidation **TD** =Tube Density

Merrell Johnson. engineering | surveying | testing | inspection

Merrell Engineering Company, Inc. | 22221 US Highway 18, Apple Valley, Ca. 92308 t)760.256.2068 f)760.256.0418 w)www.merrelljohnson.com

Exploratory Log

ASTM D5434, D1452, D1586, D1587, D2488 (USCS), D3550

Report Date:	06/27/24
Sheet:	1 of 1
Appendix:	B
Permit No:	
Client Project No:	
USA Ticket No:	
DSA File No:	
DSA Application No:	
DSA LEA No:	

Project Number:	24082P1
Project Title:	Warehouse, Gustine Street & Dachshund Avenue
Project Location:	Apple Valley, CA
Client:	Terra Nova Planing & Research, Inc.

Location No:	B5	**Start Date/Time:**	6/27/24 1430	**End Date/Time:**	6/27/24 1445

Conducted By:	J. Albornoz	**Excavation Type:**	Auger Hole	**Elevation:**	2984
Operator:	V. Zermeno	**Dimensions:**	8" x 10'	**Groundwater:**	Not Encountered
Equipment Type:	GT-16 HSA	**Advance Assist:**	None	**Recent Weather:**	Clear
Drive Weight (lb)**:**	140	**Field Tests:**	D3550	**Sampler Insertion:**	Driven
Drive Drop (in)**:**	30	**Shoring Type:**	None	**Preservation:**	D4220

Depth (ft)	'N' Value	Sample (1)	Moisture (%)	Density (pcf)	Class (USCS)	Graphic	Description / Comments	Lab Tests (2)
0					SM		Light Brown, Dry, Silty Sand	
5							Bulk Sample at 5' to 10' - JDA06272419	SA, SE, RV
10							*Drilling Terminated at Approximately 10'* Groundwater Not Encountered	
15								
20								
25								

Comments: "N" Values based on 2.5" diameter modified California Tube Sampler (ASTM D3550) or SPT (ASTM D1586) as noted on log. Some boulder/rock encountered during drilling operations. Partial caving of hole observed.

(1) =Bulk =Driven

(2) **DS** =Direct Shear **EI** =Expansion Index **SA** =Sieve Analysis **CR** =Corrosion **MD** =Max Density **RV** =R-Value **AL** =Atterberg Limits **SE** =Sand Equivalent **CN** =Consolidation **TD** =Tube Density

Merrell Johnson® engineering | surveying | testing | inspection

Merrell Engineering Company, Inc. | 22221 US Highway 18, Apple Valley, Ca. 92308 t)760.256.2068 f)760.256.0418 w)www.merrelljohnson.com

Exploratory Log

ASTM D5434, D1452, D1586, D1587, D2488 (USCS), D3550

Report Date:	06/27/24
Sheet:	1 of 1
Appendix:	B
Permit No:	
Client Project No:	
USA Ticket No:	
DSA File No:	
DSA Application No:	
DSA LEA No:	

Project Number:	24082P1
Project Title:	Warehouse, Gustine Street & Dachshund Avenue
Project Location:	Apple Valley, CA
Client:	Terra Nova Planing & Research, Inc.

Location No:	B6	**Start Date/Time:**	6/27/24 1455	**End Date/Time:**	6/27/2024 1500

Conducted By:	J. Albornoz	**Excavation Type:**	Auger Hole	**Elevation:**	2982
Operator:	V. Zermeno	**Dimensions:**	8" x 5'	**Groundwater:**	Not Encountered
Equipment Type:	GT-16 HSA	**Advance Assist:**	None	**Recent Weather:**	Clear
Drive Weight (lb)**:**	140	**Field Tests:**	D3550	**Sampler Insertion:**	Driven
Drive Drop (in)**:**	30	**Shoring Type:**	None	**Preservation:**	D4220

Depth (ft)	'N' Value	Sample (1)	Moisture (%)	Density (pcf)	Class (USCS)	Graphic	Description / Comments	Lab Tests (2)
0					SM		Light Brown, Dry, Silty Sand Bulk Sample at 0' to 5' - JDA06272420	SA
5							*Drilling Terminated at Approximately 5'* Groundwater Not Encountered	
10								
15								
20								
25								

Comments: "N" Values based on 2.5" diameter modified California Tube Sampler (ASTM D3550) or SPT (ASTM D1586) as noted on log. Some boulder/rock encountered during drilling operations. Partial caving of hole observed.

(1) =Bulk =Driven

(2) **DS** =Direct Shear **EI** =Expansion Index **SA** =Sieve Analysis **CR** =Corrosion **MD** =Max Density **RV** =R-Value **AL** =Atterberg Limits **SE** =Sand Equivalent **CN** =Consolidation **TD** =Tube Density

Merrell Johnson®

engineering | surveying | testing | inspection

Merrell Engineering Company, Inc. | 22221 US Highway 18, Apple Valley, Ca. 92308 t)760.256.2068 f)760.256.0418 w)www.merrelljohnson.com

Exploratory Log

ASTM D5434, D1452, D1586, D1587, D2488 (USCS), D3550

Report Date:	06/27/24
Sheet:	1 of 1
Appendix:	B
Permit No:	
Client Project No:	
USA Ticket No:	
DSA File No:	
DSA Application No:	
DSA LEA No:	

Project Number:	24082P1
Project Title:	Warehouse, Gustine Street & Dachshund Avenue
Project Location:	Apple Valley, CA
Client:	Terra Nova Planing & Research, Inc.

Location No:	B7	**Start Date/Time:**	6/27/24 1510	**End Date/Time:**	6/27/24 1515

Conducted By:	J. Albornoz	**Excavation Type:**	Auger Hole	**Elevation:**	2972
Operator:	V. Zermeno	**Dimensions:**	8" x 5'	**Groundwater:**	Not Encountered
Equipment Type:	GT-16 HSA	**Advance Assist:**	None	**Recent Weather:**	Clear
Drive Weight (lb)**:**	140	**Field Tests:**	D3550	**Sampler Insertion:**	Driven
Drive Drop (in)**:**	30	**Shoring Type:**	None	**Preservation:**	D4220

Depth (ft)	'N' Value	Sample (1)	Moisture (%)	Density (pcf)	Class (USCS)	Graphic	Description / Comments	Lab Tests (2)
0					SM		Light Brown, Dry, Silty Sand Bulk Sample 0' to 5' - JDA06272421	RV
5							*Drilling Terminated at Approximately 5'* Groundwater Not Encountered	
10								
15								
20								
25								

Comments: "N" Values based on 2.5" diameter modified California Tube Sampler (ASTM D3550) or SPT (ASTM D1586) as noted on log. Some boulder/rock encountered during drilling operations. Partial caving of hole observed.

(1) =Bulk =Driven

(2) **DS** =Direct Shear **EI** =Expansion Index **SA** =Sieve Analysis **CR** =Corrosion **MD** =Max Density **RV** =R-Value **AL** =Atterberg Limits **SE** =Sand Equivalent **CN** =Consolidation **TD** =Tube Density

Merrell Johnson®

engineering | surveying | testing | inspection

Merrell Engineering Company, Inc. | 22221 US Highway 18, Apple Valley, Ca. 92308 t)760.256.2068 f)760.256.0418 w)www.merrelljohnson.com

Exploratory Log

ASTM D5434, D1452, D1586, D1587, D2488 (USCS), D3550

Report Date:	06/27/24
Sheet:	1 of 1
Appendix:	B
Permit No:	
Client Project No:	
USA Ticket No:	
DSA File No:	
DSA Application No:	
DSA LEA No:	

Project Number:	24082P1
Project Title:	Warehouse, Gustine Street & Dachshund Avenue
Project Location:	Apple Valley, CA
Client:	Terra Nova Planing & Research, Inc.

Location No:	B8	**Start Date/Time:**	6/27/24 1525	**End Date/Time:**	6/27/24 1530

Conducted By:	J. Albornoz	**Excavation Type:**	Auger Hole	**Elevation:**	2977
Operator:	V. Zermeno	**Dimensions:**	8" x 5'	**Groundwater:**	Not Encountered
Equipment Type:	GT-16 HSA	**Advance Assist:**	None	**Recent Weather:**	Clear
Drive Weight (lb)**:**	140	**Field Tests:**	D3550	**Sampler Insertion:**	Driven
Drive Drop (in)**:**	30	**Shoring Type:**	None	**Preservation:**	D4220

Depth (ft)	'N' Value	Sample (1)	Moisture (%)	Density (pcf)	Class (USCS)	Graphic	Description / Comments	Lab Tests (2)
0					SM		Light Brown, Dry, Silty Sand Bulk Sample at 0' to 5' - JDA06272422	SA
5							Groundwater Not Encountered	
10								
15								
20								
25								

Comments: "N" Values based on 2.5" diameter modified California Tube Sampler (ASTM D3550) or SPT (ASTM D1586) as noted on log. Some boulder/rock encountered during drilling operations. Partial caving of hole observed.

(1) =Bulk =Driven

(2) **DS** =Direct Shear **EI** =Expansion Index **SA** =Sieve Analysis **CR** =Corrosion **MD** =Max Density **RV** =R-Value **AL** =Atterberg Limits **SE** =Sand Equivalent **CN** =Consolidation **TD** =Tube Density

Merrell Johnson®

engineering | surveying | testing | inspection

Merrell Engineering Company, Inc. | 22221 US Highway 18, Apple Valley, Ca. 92308 t)760.256.2068 f)760.256.0418 w)www.merrelljohnson.com

Exploratory Log

ASTM D5434, D1452, D1586, D1587, D2488 (USCS), D3550

Report Date:	06/27/24
Sheet:	1 of 1
Appendix:	B
Permit No:	
Client Project No:	
USA Ticket No:	
DSA File No:	
DSA Application No:	
DSA LEA No:	

Project Number:	24082P1
Project Title:	Warehouse, Gustine Street & Dachshund Avenue
Project Location:	Apple Valley, CA
Client:	Terra Nova Planing & Research, Inc.

Location No:	B9	**Start Date/Time:**	6/27/24 1540	**End Date/Time:**	6/27/24 1545

Conducted By:	J. Albornoz	**Excavation Type:**	Auger Hole	**Elevation:**	2980
Operator:	V. Zermeno	**Dimensions:**	8" x 5'	**Groundwater:**	Not Encountered
Equipment Type:	GT-16 HSA	**Advance Assist:**	None	**Recent Weather:**	Clear
Drive Weight (lb)**:**	140	**Field Tests:**	D3550	**Sampler Insertion:**	Driven
Drive Drop (in)**:**	30	**Shoring Type:**	None	**Preservation:**	D4220

Depth (ft)	'N' Value	Sample (1)	Moisture (%)	Density (pcf)	Class (USCS)	Graphic	Description / Comments	Lab Tests (2)
0					SM		Light Brown, Dry, Silty Sand Bulk Sample at 0' to 5' - JDA06272423	RV
5							*Drilling Terminated at Approximately 5'* Groundwater Not Encountered	
10								
15								
20								
25								

Comments: "N" Values based on 2.5" diameter modified California Tube Sampler (ASTM D3550) or SPT (ASTM D1586) as noted on log. Some boulder/rock encountered during drilling operations. Partial caving of hole observed.

(1) =Bulk =Driven

(2) **DS** =Direct Shear **EI** =Expansion Index **SA** =Sieve Analysis **CR** =Corrosion **MD** =Max Density **RV** =R-Value **AL** =Atterberg Limits **SE** =Sand Equivalent **CN** =Consolidation **TD** =Tube Density

Merrell Johnson®

engineering | surveying | testing | inspection

Merrell Engineering Company, Inc. | 22221 US Highway 18, Apple Valley, Ca. 92308 t)760.256.2068 f)760.256.0418 w)www.merrelljohnson.com

Exploratory Log

ASTM D5434, D1452, D1586, D1587, D2488 (USCS), D3550

Report Date:	06/28/24
Sheet:	1 of 1
Appendix:	B
Permit No:	
Client Project No:	
USA Ticket No:	
DSA File No:	
DSA Application No:	
DSA LEA No:	

Project Number:	24082P1
Project Title:	Warehouse, Gustine Street & Dachshund Avenue
Project Location:	Apple Valley, CA
Client:	Terra Nova Planing & Research, Inc.

Location No:	B10	**Start Date/Time:**	6/28/24 0900	**End Date/Time:**	6/28/24 1000

Conducted By:	J. Albornoz	**Excavation Type:**	Auger Hole	**Elevation:**	2980
Operator:	V. Zermeno	**Dimensions:**	8" x 25'	**Groundwater:**	Not Encountered
Equipment Type:	GT-16 HSA	**Advance Assist:**	None	**Recent Weather:**	Clear
Drive Weight (lb)**:**	140	**Field Tests:**	D3550	**Sampler Insertion:**	Driven
Drive Drop (in)**:**	30	**Shoring Type:**	None	**Preservation:**	D4220

Depth (ft)	'N' Value	Sample (1)	Moisture (%)	Density (pcf)	Class (USCS)	Graphic	Description / Comments	Lab Tests (2)
0							Light Brownn, Dry, Medium Dense, Silty Sand	
	4, 7, 21	Bulk					Bulk Sample at 0' to 5' - JDA06282401	CR
		Tube	3.5	104.0			Tube Sample at 1' - JDA06282402	TD
	7, 20, 24	Tube	3.1	117.2			Tube Sample at 3' - JDA06282403	TD
							Dense	
5	32, 50 (4")	Tube	2.5	117.4			Tube Sample at 5' - JDA06282404 (One Tube Recovered)	TD
							Very Dense	
10	50 (5")	Tube	1.7	115.0			Tube Sample at 10' - JDA06282405 (One Tube Recovered)	TD
15	14, 20, 28	Tube					Tube Sample at 15' - JDA06282406	CN
20	26, 50 (6")						SPT at 20'	
25	11, 21, 39						SPT at 25'	
							Drilling Terminated at Approximately 25'	
							Groundwater Not Encountered	

Comments: "N" Values based on 2.5" diameter modified California Tube Sampler (ASTM D3550) or SPT (ASTM D1586) as noted on log. Some boulder/rock encountered during drilling operations. Partial caving of hole observed.

(1) Bulk, Driven

(2) **DS** =Direct Shear; **EI** =Expansion Index; **SA** =Sieve Analysis; **CR** =Corrosion; **MD** =Max Density; **RV** =R-Value; **AL** =Atterberg Limits; **SE** =Sand Equivalent; **CN** =Consolidation; **TD** =Tube Density

Merrell Johnson. engineering | surveying | testing | inspection

Merrell Engineering Company, Inc. | 22221 US Highway 18, Apple Valley, Ca. 92308 t)760.256.2068 f)760.256.0418 w)www.merrelljohnson.com

Exploratory Log

ASTM D5434, D1452, D1586, D1587, D2488 (USCS), D3550

Report Date:	06/28/24
Sheet:	1 of 1
Appendix:	B
Permit No:	
Client Project No:	
USA Ticket No:	
DSA File No:	
DSA Application No:	
DSA LEA No:	

Project Number:	24082P1
Project Title:	Warehouse, Gustine Street & Dachshund Avenue
Project Location:	Apple Valley, CA
Client:	Terra Nova Planing & Research, Inc.

Location No:	B11	**Start Date/Time:**	6/28/2024 1015	**End Date/Time:**	6/28/24 1115

Conducted By:	J. Albornoz	**Excavation Type:**	Auger Hole	**Elevation:**	2984
Operator:	V. Zermeno	**Dimensions:**	8" x 25'	**Groundwater:**	Not Enncountered
Equipment Type:	GT-16 HSA	**Advance Assist:**	None	**Recent Weather:**	Clear
Drive Weight (lb)**:**	140	**Field Tests:**	D3550	**Sampler Insertion:**	Driven
Drive Drop (in)**:**	30	**Shoring Type:**	None	**Preservation:**	D4220

Depth (ft)	'N' Value	Sample (1)	Moisture (%)	Density (pcf)	Class (USCS)	Graphic	Description / Comments	Lab Tests (2)
0							Light Brown, Dry, Medium Dense, Silty Sand	
	8, 7, 8	■	1.8	110.3			Tube Sample at 1' - JDA06282407	TD
	32, 44, 50 (5")	■	3.8	110.5			Tube Sample at 3' - JDA06282408	TD
5	30, 50 (5")	■	7.3	114.9			Tube Sample at 5' - JDA06282409	TD
10	20, 40, 50 (4")	■	2.8	113.5			Tube Sample at 10' - JDA06282410	TD, CN
15	50 (3")	■	5.1	116.6			Tube at 15' - JDA06282411 (One Tube Recovered)	TD
20	36, 50 (3")						SPT at 20'	
25	50 (6")						SPT at 25' *Drilling Terminated at Approximately 25'* Groundwater Not Encountered	

Comments: "N" Values based on 2.5" diameter modified California Tube Sampler (ASTM D3550) or SPT (ASTM D1586) as noted on log. Some boulder/rock encountered during drilling operations. Partial caving of hole observed.

(1) ▒ =Bulk ■ =Driven

(2) **DS** =Direct Shear **EI** =Expansion Index **SA** =Sieve Analysis **CR** =Corrosion **MD** =Max Density **RV** =R-Value **AL** =Atterberg Limits **SE** =Sand Equivalent **CN** =Consolidation **TD** =Tube Density

Merrell Johnson. engineering | surveying | testing | inspection

Merrell Engineering Company, Inc. | 22221 US Highway 18, Apple Valley, Ca. 92308 t)760.256.2068 f)760.256.0418 w)www.merrelljohnson.com

APPENDIX C

Laboratory Testing

Particle-Size Analysis of Soil

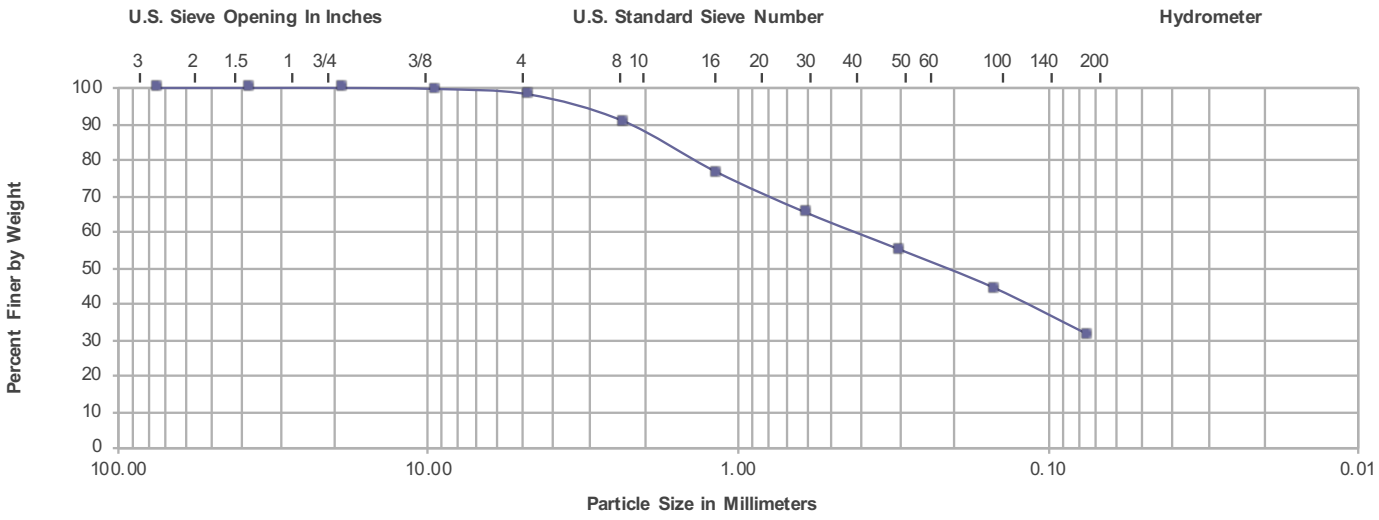
D422, D1140, D2487

Report Date:
Sheet: 1 of 1
Appendix: C
Permit No:
Client Project No:
Other:
DSA File No:
DSA Application No:
DSA LEA No:

Project Number: 24082P1
Project Title: Warehouse, Gustine Street and Dachshund Aveune
Project Location: Apple Valley, CA
Client: Terra Nova Planning & Research, Inc.

Sample ID: JDA06272406 **Gravel** (%): 1.8% **Sand** (%): 66.5% **Fines** (%): 31.7%

Classification, ASTM D2487: (SM) Silty sand
Sample Origin: Boring Two at 0' to 5'
Laboratory Remarks:



C_u	C_c	Moisture	D_{100}	D_{60}	D_{30}	D_{10}	LL	PL	PI	SG	FM	SE
NA	NA	1.8%	7.216	0.445	0.000	0.000	ND	ND	ND	ND	ND	ND

Method / Procudure Used: D422, D1140
Size of Initial Dry Mass (g): 466.6
Determination of Dry Mass: D2216
Particles; Shape, Hardness: ND
Dispersion Device/Period: Manual/2 hr
Type & Amount of Agent: Defloc. & 1.0
Laboratory Comments:

The Material ☐ Was ☐ Was Not Sampled & tested in accordance with the reqs. of the DSA approved documents.
The Material Tested ☐ Met ☐ Did Not Meet The requirements of the DSA approved documents.
cc: Project Architect, Structural Engineer, Project Inspector, DSA Regional Office, School District

MerrellJohnson. engineering | surveying | testing | inspection

Merrell Engineering Company, Inc. | 22221 US Highway 18, Apple Valley, Ca. 92308 t)760.256.2068 f)760.256.0418 w)www.merrelljohnson.com

Particle-Size Analysis of Soil

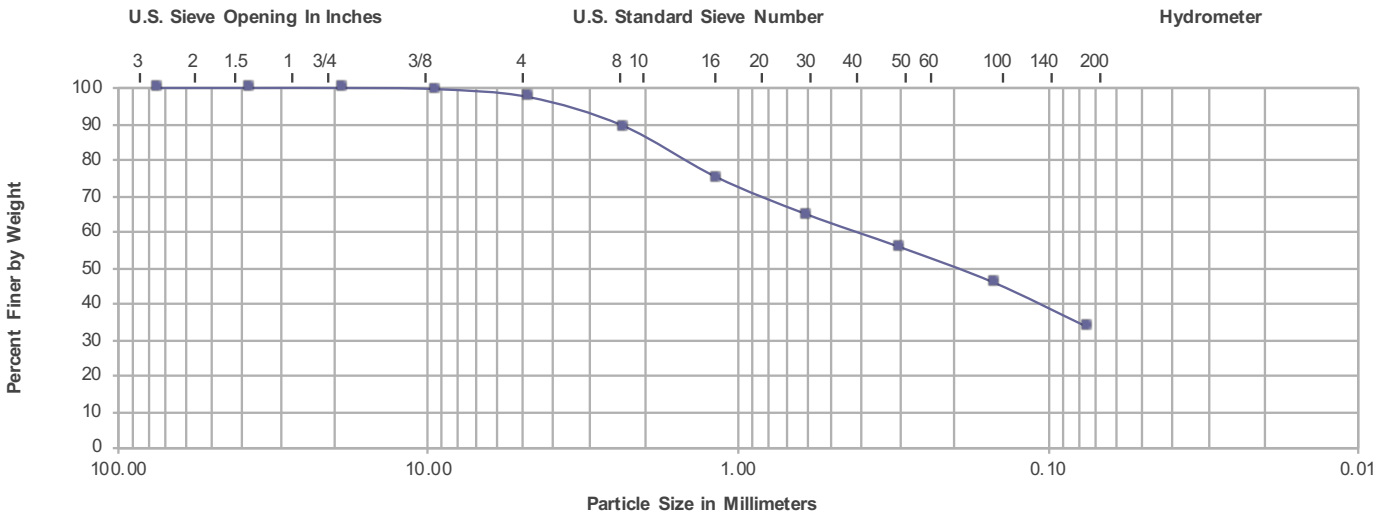
D422, D1140, D2487

Report Date:
Sheet: 1 of 1
Appendix: C
Permit No:
Client Project No:
Other:
DSA File No:
DSA Application No:
DSA LEA No:

Project Number: 24082P1
Project Title: Warehouse, Gustine Street and Dachshund Aveune
Project Location: Apple Valley, CA
Client: Terra Nova Planning & Research, Inc.

Sample ID: JDA06272412 **Gravel (%):** 2.5% **Sand (%):** 63.8% **Fines (%):** 33.7%

Classification, ASTM D2487: (SM) Silty sand
Sample Origin: Boring Three at 0' to 3'
Laboratory Remarks:



C_u	C_c	Moisture	D_{100}	D_{60}	D_{30}	D_{10}	LL	PL	PI	SG	FM	SE
NA	NA	2.3%	8.037	0.439	0.000	0.000	ND	ND	ND	ND	ND	ND

Method / Procudure Used: D422, D1140
Size of Initial Dry Mass (g): 498.8
Determination of Dry Mass: D2216
Particles; Shape, Hardness: ND
Dispersion Device/Period: Manual/2 hr
Type & Amount of Agent: Defloc. & 1.0
Laboratory Comments:

The Material ☐ Was ☐ Was Not Sampled & tested in accordance with the reqs. of the DSA approved documents.
The Material Tested ☐ Met ☐ Did Not Meet The requirements of the DSA approved documents.
cc: Project Architect, Structural Engineer, Project Inspector, DSA Regional Office, School District

MerrellJohnson. engineering | surveying | testing | inspection

Merrell Engineering Company, Inc. | 22221 US Highway 18, Apple Valley, Ca. 92308 t)760.256.2068 f)760.256.0418 w)www.merrelljohnson.com

Particle-Size Analysis of Soil

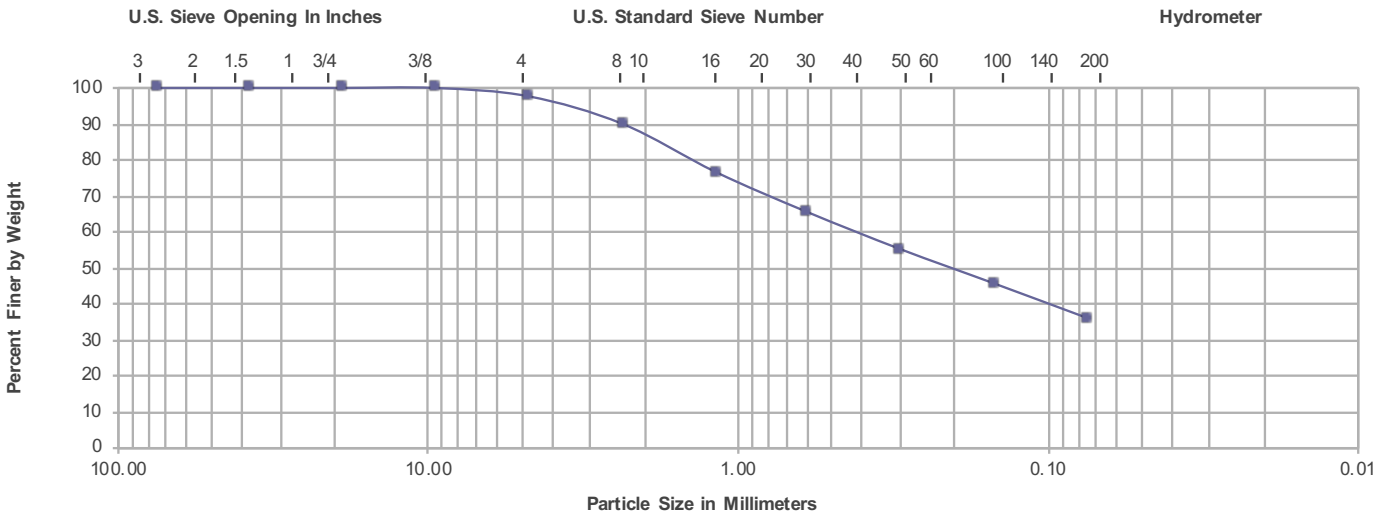
D422, D1140, D2487

Report Date:
Sheet: 1 of 1
Appendix: C
Permit No:
Client Project No:
Other:
DSA File No:
DSA Application No:
DSA LEA No:

Project Number: 24082P1
Project Title: Warehouse, Gustine Street and Dachshund Aveune
Project Location: Apple Valley, CA
Client: Terra Nova Planning & Research, Inc.

Sample ID: JDA06272419 **Gravel** (%): 2.3% **Sand** (%): 61.5% **Fines** (%): 36.2%

Classification, ASTM D2487: (SM) Silty sand
Sample Origin: Boring Five at 5' to 10'
Laboratory Remarks:



C_u	C_c	Moisture	D_{100}	D_{60}	D_{30}	D_{10}	LL	PL	PI	SG	FM	SE
NA	NA	5.6%	7.449	0.438	0.000	0.000	ND	ND	ND	ND	ND	ND

Method / Procudure Used: D422, D1140
Size of Initial Dry Mass (g): 522.4
Determination of Dry Mass: D2216
Particles; Shape, Hardness: ND
Dispersion Device/Period: Manual/2 hr
Type & Amount of Agent: Defloc. & 1.0
Laboratory Comments:

The Material ☐ Was ☐ Was Not Sampled & tested in accordance with the reqs. of the DSA approved documents.
The Material Tested ☐ Met ☐ Did Not Meet The requirements of the DSA approved documents.

cc: Project Architect, Structural Engineer, Project Inspector, DSA Regional Office, School District

MerrellJohnson. engineering | surveying | testing | inspection

Merrell Engineering Company, Inc. | 22221 US Highway 18, Apple Valley, Ca. 92308 t)760.256.2068 f)760.256.0418 w)www.merrelljohnson.com

Particle-Size Analysis of Soil

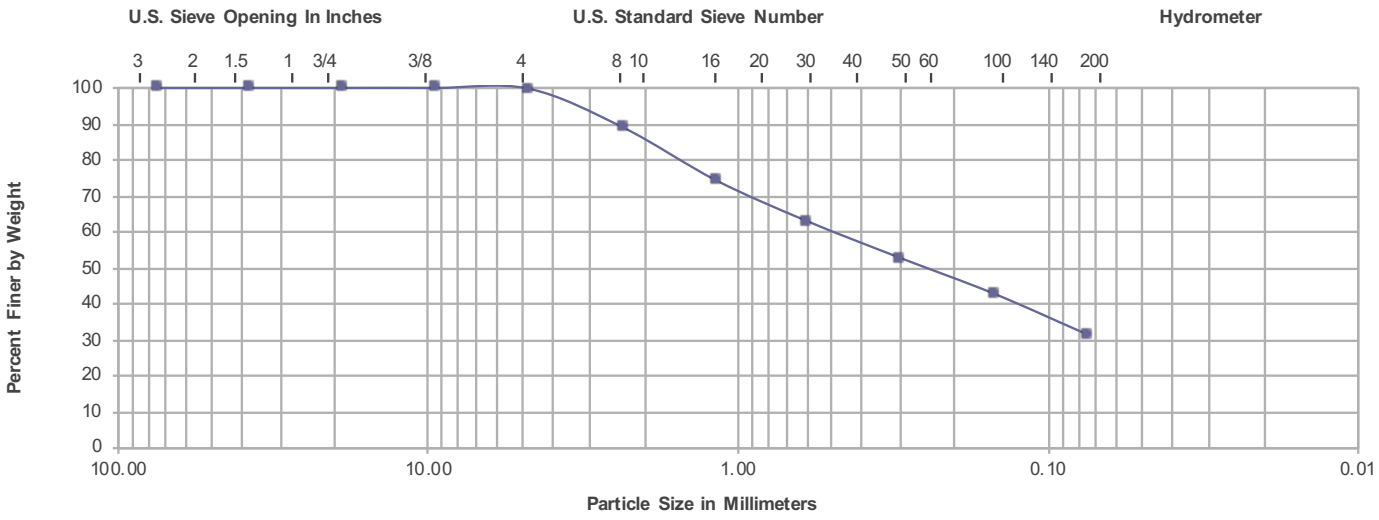
D422, D1140, D2487

Report Date:	
Sheet:	1 of 1
Appendix:	C
Permit No:	
Client Project No:	
Other:	
DSA File No:	
DSA Application No:	
DSA LEA No:	

Project Number:	24082P1
Project Title:	Warehouse, Gustine Street and Dachshund Aveune
Project Location:	Apple Valley, CA
Client:	Terra Nova Planning & Research, Inc.

Sample ID: JDA06272420 **Gravel** (%): 0.2% **Sand** (%): 68.2% **Fines** (%): 31.6%

Classification, ASTM D2487:	(SM) Silty sand
Sample Origin:	Boring Six at 0' to 5'
Laboratory Remarks:	



C_u	C_c	Moisture	D_{100}	D_{60}	D_{30}	D_{10}	LL	PL	PI	SG	FM	SE
NA	NA	2.3%	4.791	0.511	0.000	0.000	ND	ND	ND	ND	ND	ND

Method / Procudure Used:	D422, D1140
Size of Initial Dry Mass (g):	591.4
Determination of Dry Mass:	D2216
Particles; Shape, Hardness:	ND
Dispersion Device/Period:	Manual/2 hr
Type & Amount of Agent:	Defloc. & 1.0
Laboratory Comments:	

The Material ☐ Was ☐ Was Not Sampled & tested in accordance with the reqs. of the DSA approved documents.
The Material Tested ☐ Met ☐ Did Not Meet The requirements of the DSA approved documents.

cc: Project Architect, Structural Engineer, Project Inspector, DSA Regional Office, School District

MerrellJohnson. engineering | surveying | testing | inspection

Merrell Engineering Company, Inc. | 22221 US Highway 18, Apple Valley, Ca. 92308 t)760.256.2068 f)760.256.0418 w)www.merrelljohnson.com

Particle-Size Analysis of Soil

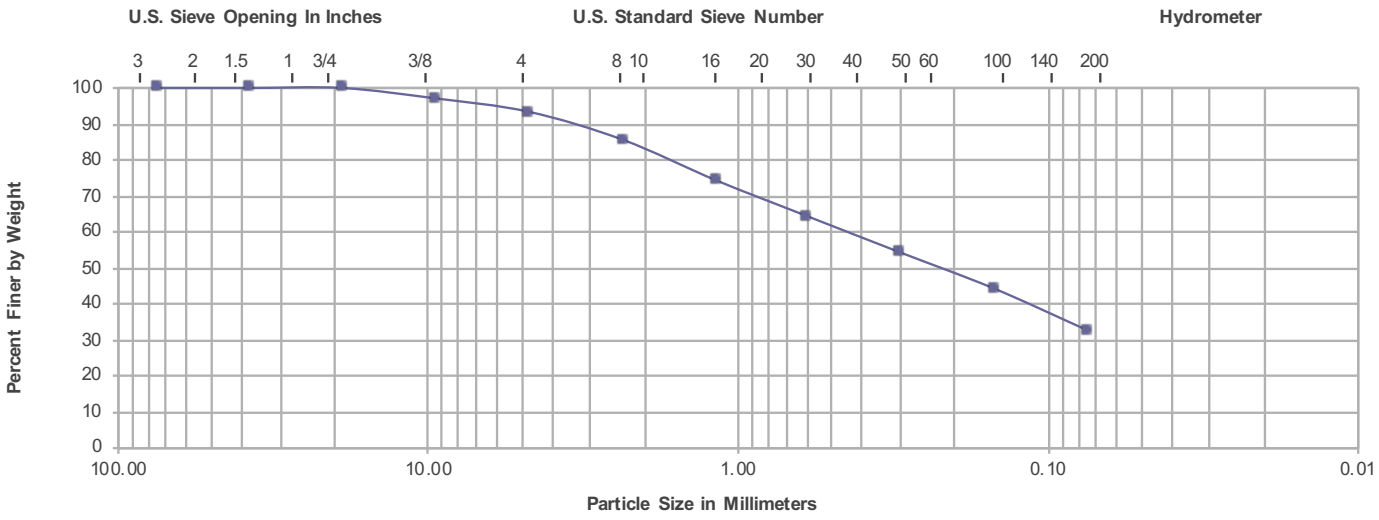
D422, D1140, D2487

Report Date:	
Sheet:	1 of 1
Appendix:	C
Permit No:	
Client Project No:	
Other:	
DSA File No:	
DSA Application No:	
DSA LEA No:	

Project Number:	24082P1
Project Title:	Warehouse, Gustine Street and Dachshund Aveune
Project Location:	Apple Valley, CA
Client:	Terra Nova Planning & Research, Inc.

Sample ID: JDA06272422 **Gravel** (%): 6.6% **Sand** (%): 60.6% **Fines** (%): 32.8%

Classification, ASTM D2487: (SM) Silty sand
Sample Origin: Boring Eight at 0' to 5'
Laboratory Remarks:



C_u	C_c	Moisture	D_{100}	D_{60}	D_{30}	D_{10}	LL	PL	PI	SG	FM	SE
NA	NA	3.9%	15.708	0.469	0.000	0.000	ND	ND	ND	ND	ND	ND

Method / Procudure Used:	D422, D1140
Size of Initial Dry Mass (g):	499.0
Determination of Dry Mass:	D2216
Particles; Shape, Hardness:	ND
Dispersion Device/Period:	Manual/2 hr
Type & Amount of Agent:	Defloc. & 1.0
Laboratory Comments:	

The Material ☐ Was ☐ Was Not Sampled & tested in accordance with the reqs. of the DSA approved documents.
The Material Tested ☐ Met ☐ Did Not Meet The requirements of the DSA approved documents.
cc: Project Architect, Structural Engineer, Project Inspector, DSA Regional Office, School District

MerrellJohnson. engineering | surveying | testing | inspection

Merrell Engineering Company, Inc. | 22221 US Highway 18, Apple Valley, Ca. 92308 t)760.256.2068 f)760.256.0418 w)www.merrelljohnson.com

Laboratory Compaction Characteristics

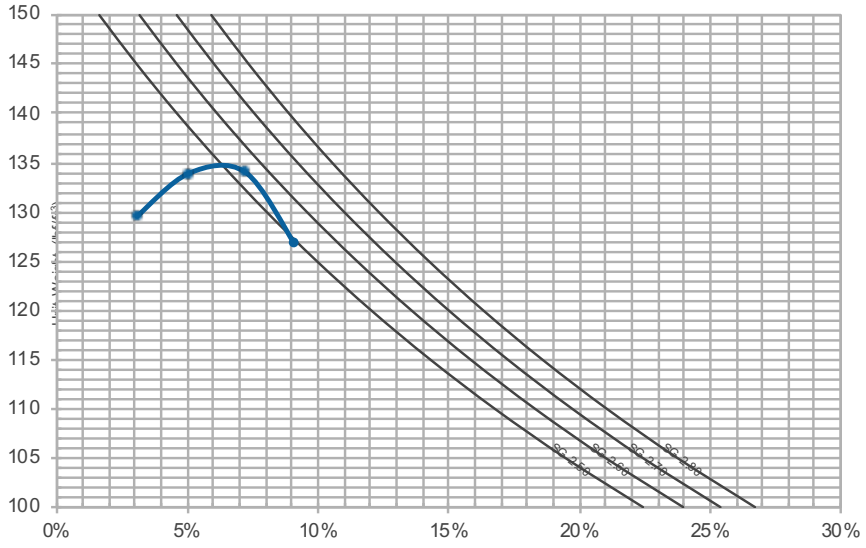
ASTM D1557, D2488

Project Number:	24082P1
Project Title:	Warehouse, Gustine Street and Dachshund Aveune
Project Location:	Apple Valley, CA
Client:	Terra Nova Planning & Research, Inc.

Report Date:	
Sheet:	*of*
Attachment:	
Permit No.:	
Client Project No.:	
Other:	
DSA File No.:	
DSA Application No.:	
DSA LEA No.:	

Sample ID: JDA06272401 **Maximum Dry Unit Weight** (lbf/ft³): 134.9 **Optimum Moisture Content** (%): 6.4

Classification, ASTM D2488: (SM) Silty sand
Sample Origin: Boring One at 0' to 5'
Laboratory Remarks:



Tested By:	EJM
Received Moisture:	1.1%
Preparation:	Wet
Specific Gravity:	
SG Method:	
Start Weight (lb):	37.8
Retained on 3/4" (lb):	0.0
Retained on 3/8" (lb):	0.2
Retained on No. 4 (lb):	1.0
Retained on 3/4" (%):	
Retained on 3/8" (%):	0.5%
Retained on No. 4 (%):	2.6%
Oversize Correction:	
Mold Volume Factor:	29.94
Tare Weight (lb):	4.35
Rammer Used:	Mechanical
Method Used:	☑ A ☐ B ☐ C

Weight of Soil and Tare (lb):	8.81	9.05	9.15	8.97
Wet Weight (g):	302.6	307.5	314.2	308.7
Dry Weight (g):	293.6	292.7	293.1	283.0
Moisture Content (%):	3.1%	5.1%	7.2%	9.1%
Dry Unit Weight (flb/ft³):	129.6	133.9	134.1	126.8

The Material ☐ Was ☐ Was Not Sampled & tested in accordance with the reqs. of the DSA approved documents.
The Material Tested ☐ Met ☐ Did Not Meet The requirements of the DSA approved documents.
cc: Project Architect, Structural Engineer, Project Inspector, DSA Regional Office, School District

Reviewed By (Signature)

Jeremy Beissner / Laboratory Manager
Name / Title

t)760.256.2068 f)760.256.0418 w)www.merrelljohnson.com

Laboratory Compaction Characteristics

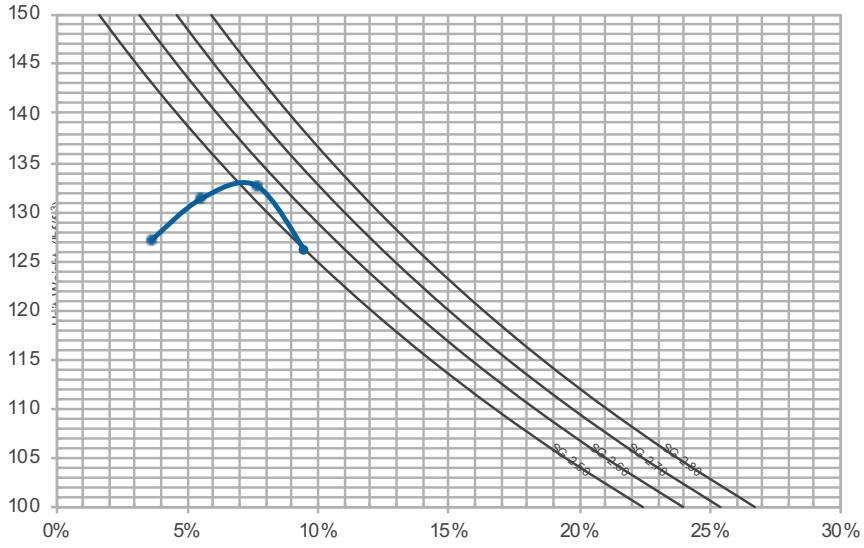
ASTM D1557, D2488

Report Date:
Sheet: *of*
Attachment:
Permit No.:
Client Project No.:
Other:
DSA File No.:
DSA Application No.:
DSA LEA No.:

Project Number: 24082P1
Project Title: Warehouse, Gustine Street and Dachshund Aveune
Project Location: Apple Valley, CA
Client: Terra Nova Planning & Research, Inc.

Sample ID: JDA06272406 **Maximum Dry Unit Weight** (lbf/ft³): 133.1 **Optimum Moisture Content** (%): 7.2

Classification, ASTM D2488: (SM) Silty sand
Sample Origin: Boring Two at 0' to 5'
Laboratory Remarks:



Tested By: EJM
Received Moisture: 1.6%
Preparation: Wet
Specific Gravity:
SG Method:

Start Weight (lb): 39.5
Retained on 3/4" (lb): 0.0
Retained on 3/8" (lb): 0.1
Retained on No. 4 (lb): 0.8
Retained on 3/4" (%):
Retained on 3/8" (%): 0.3%
Retained on No. 4 (%): 2.0%
Oversize Correction:

Mold Volume Factor: 29.94
Tare Weight (lb): 4.35
Rammer Used: Mechanical

Method Used: ☑ A ☐ B ☐ C

Weight of Soil and Tare (lb):	8.75	8.98	9.12	8.96
Wet Weight (g):	306.5	305.5	305.2	307.9
Dry Weight (g):	295.8	289.5	283.6	281.2
Moisture Content (%):	3.6%	5.5%	7.6%	9.5%
Dry Unit Weight (flb/ft³):	127.1	131.4	132.7	126.1

The Material ☐ Was ☐ Was Not Sampled & tested in accordance with the reqs. of the DSA approved documents.
The Material Tested ☐ Met ☐ Did Not Meet The requirements of the DSA approved documents.
cc: Project Architect, Structural Engineer, Project Inspector, DSA Regional Office, School District

Reviewed By (Signature)

Jeremy Beissner / Laboratory Manager
Name / Title

Merrell Johnson COMPANIES
concept to completion
ENGINEERING | SURVEYING | TESTING | INSPECTION

t)760.256.2068 f)760.256.0418 w)www.merrelljohnson.com

Laboratory Compaction Characteristics

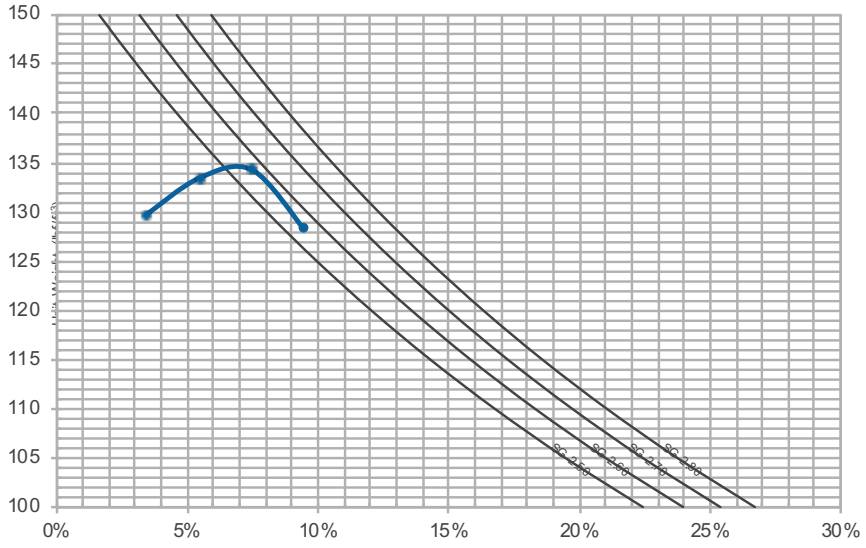
ASTM D1557, D2488

Project Number:	24082P1
Project Title:	Warehouse, Gustine Street and Dachshund Aveune
Project Location:	Apple Valley, CA
Client:	Terra Nova Planning & Research, Inc.

Report Date:
Sheet: *of*
Attachment:
Permit No.:
Client Project No.:
Other:
DSA File No.:
DSA Application No.:
DSA LEA No.:

Sample ID: JDA06272413 **Maximum Dry Unit Weight** (lbf/ft^3)**:** 134.7 **Optimum Moisture Content** (%)**:** 7.1

Classification, ASTM D2488: (SM) Silty sand
Sample Origin: Boring Four at 0' to 5'
Laboratory Remarks:



Tested By:	EJM
Received Moisture:	1.4%
Preparation:	Wet
Specific Gravity:	
SG Method:	
Start Weight (lb)**:**	37.5
Retained on 3/4" (lb)**:**	0.0
Retained on 3/8" (lb)**:**	0.3
Retained on No. 4 (lb)**:**	1.6
Retained on 3/4" (%)**:**	
Retained on 3/8" (%)**:**	0.8%
Retained on No. 4 (%)**:**	4.3%
Oversize Correction:	
Mold Volume Factor:	29.94
Tare Weight (lb)**:**	4.35
Rammer Used:	Mechanical

Method Used: [✓] A [ ] B [ ] C

Weight of Soil and Tare (lb)**:**	8.83	9.05	9.17	9.04
Wet Weight (g)**:**	303.2	313.7	304.1	309.6
Dry Weight (g)**:**	293.2	297.5	283.0	282.9
Moisture Content (%)**:**	3.4%	5.4%	7.5%	9.4%
Dry Unit Weight (flb/ft^3)**:**	129.7	133.5	134.3	128.3

The Material [ ] Was [ ] Was Not Sampled & tested in accordance with the reqs. of the DSA approved documents.
The Material Tested [ ] Met [ ] Did Not Meet The requirements of the DSA approved documents.
cc: Project Architect, Structural Engineer, Project Inspector, DSA Regional Office, School District

Reviewed By (Signature)

Jeremy Beissner / Laboratory Manager
Name / Title

Merrell Johnson COMPANIES

concept to completion
ENGINEERING | SURVEYING | TESTING | INSPECTION

MEC-031 MD 12/12

t)760.256.2068 f)760.256.0418 w)www.merrelljohnson.com

Expansion Index

ASTM D4829

Project Number:	24082P1
Project Title:	Warehouse, Gustine Street and Dachshund Aveune
Project Location:	Apple Valley, CA.
Client:	Terra Nova Planning & Research, Inc.

Report Date:
Sheet: 1 *of* 1
Attachment:
Permit No.:
Client Project No.:
Other:
DSA File No.:
DSA Application No.:
DSA LEA No.:

Sample ID: JDA06272401 ☐ **General Compliance** ☐ **Non-Compliance** ☐ **Not Specified**

Classification, ASTM D2487:	(SM) Silty sand
Sample Origin:	Boring One at 0' to 5'
Laboratory Remarks:	
Tested By:	JJB
Method/Procedure:	ASTM D4829

Expansion Index

Value: 0

Expansion Index	Potention Expansion
0 - 20	Very Low
21 - 50	Low
51 - 90	Medium
91 - 130	High
> 130	Very High

The Material ☐ Was ☐ Was Not Sampled & tested in accordance with the reqs. of the DSA approved documents.
The Material Tested ☐ Met ☐ Did Not Meet The requirements of the DSA approved documents.
cc: Project Architect, Structural Engineer, Project Inspector, DSA Regional Office, School District

Reviewed By (Signature)

Jeremy Beissner / Laboratory Manager
Name / Title

Sand Equivalent of Soils and Fine Aggregate

ASTM D2419

Report Date:
Sheet: *of*
Attachment:
Permit No.:
Client Project No.:
Other:
DSA File No.:
DSA Application No.:
DSA LEA No.:

Project Number: 24082P1
Project Title: Warehouse, Gustine Street and Dachshund Aveune
Project Location: Apple Valley, CA
Client: Terra Nova Planning & Research, Inc.

Sample ID: JDA06272412 ☐ **General Compliance** ☐ **Non-Compliance** ☐ **Not Specified**

Desription: (SM) Silty sand
Sample Origin: Boring Three at 0' to 3'
Laboratory Remarks:

Tested By: JJB
Mechanical/Manual Shaker: Mechanical

Sand Equivalent Value	Minimum Value Allowable
23	

Ammount/Value Allowable Based On:

The Material ☐ Was ☐ Was Not Sampled & tested in accordance with the reqs. of the DSA approved documents.
The Material Tested ☐ Met ☐ Did Not Meet The requirements of the DSA approved documents.

cc: Project Architect, Structural Engineer, Project Inspector, DSA Regional Office, School District

Reviewed By (Signature)

Jeremy Beissner/ Laboratory Manager
Name / Title

t)760.256.2068 f)760.256.0418 w)www.merrelljohnson.com

Sand Equivalent of Soils and Fine Aggregate

ASTM D2419

Report Date:
Sheet: *of*
Attachment:
Permit No.:
Client Project No.:
Other:
DSA File No.:
DSA Application No.:
DSA LEA No.:

Project Number: 24082P1
Project Title: Warehouse, Gustine Street and Dachshund Aveune
Project Location: Apple Valley, CA
Client: Terra Nova Planning & Research, Inc.

Sample ID: JDA06272419 ☐ **General Compliance** ☐ **Non-Compliance** ☐ **Not Specified**

Desription: (SM) Silty sand
Sample Origin: Boring Five at 5' to 10'
Laboratory Remarks:

Tested By: JJB
Mechanical/Manual Shaker: Mechanical

Sand Equivalent Value	Minimum Value Allowable
17	

Ammount/Value Allowable Based On:

The Material ☐ Was ☐ Was Not Sampled & tested in accordance with the reqs. of the DSA approved documents.
The Material Tested ☐ Met ☐ Did Not Meet The requirements of the DSA approved documents.
cc: Project Architect, Structural Engineer, Project Inspector, DSA Regional Office, School District

Reviewed By (Signature)

Jeremy Beissner/ Laboratory Manager
Name / Title

t)760.256.2068 f)760.256.0418 w)www.merrelljohnson.com

R-Value and Expansion Pressure of Compacted Soils

ASTM D2844

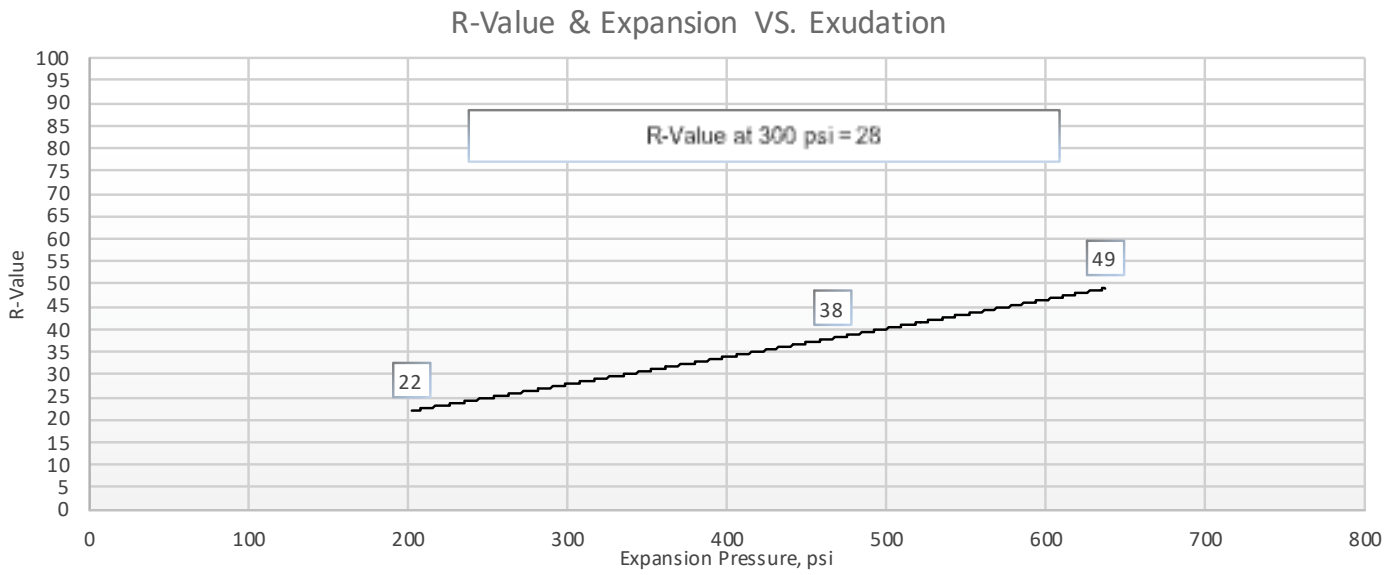
Project Number:	24082P1
Project Title:	Warehouse, Gustine Street and Dachshund Aveune
Project Location:	Apple Valley, CA
Client:	Terra Nova Planning & Research, Inc.

Report Date:	
Sheet:	1 *of* 1
Appendix:	C
Permit No.:	
Client Project No.:	
Other:	
DSA File No.:	
DSA Application No.:	
DSA LEA No.:	

Sample ID: JDA06272419 ☐ **General Compliance** ☐ **Non-Compliance** ☐ **Not Specified**

Desription, D2847:	(SM) Silty sand
Sample Origin:	Boring Five at 5' to 10'
Tested By:	JJB
Value Allowable Based On:	

Briguette Number:	1	2	3
Moisture Content (%):	7.3	8.5	9.2
Dry Density (pcf):	135.6	136.0	130.1
Exudation Pressure (psi):	637	466	202
Expansion Pressure (psf):	0.0000	0.0015	0.0110
R-Value:	49	38	22



The Material ☐ Was ☐ Was Not Sampled & tested in accordance with the reqs. of the DSA approved documents.
The Material Tested ☐ Met ☐ Did Not Meet The requirements of the DSA approved documents.

cc: Project Architect, Structural Engineer, Project Inspector, DSA Regional Office, School District

Reviewed By (Signature)

Jeremy Beissner / Laboratory Manager
Name / Title

Merrell Johnson COMPANIES

concept to completion
ENGINEERING | SURVEYING | TESTING | INSPECTION

t)760.256.2068 f)760.256.0418 w)www.merrelljohnson.com

R-Value and Expansion Pressure of Compacted Soils

ASTM D2844

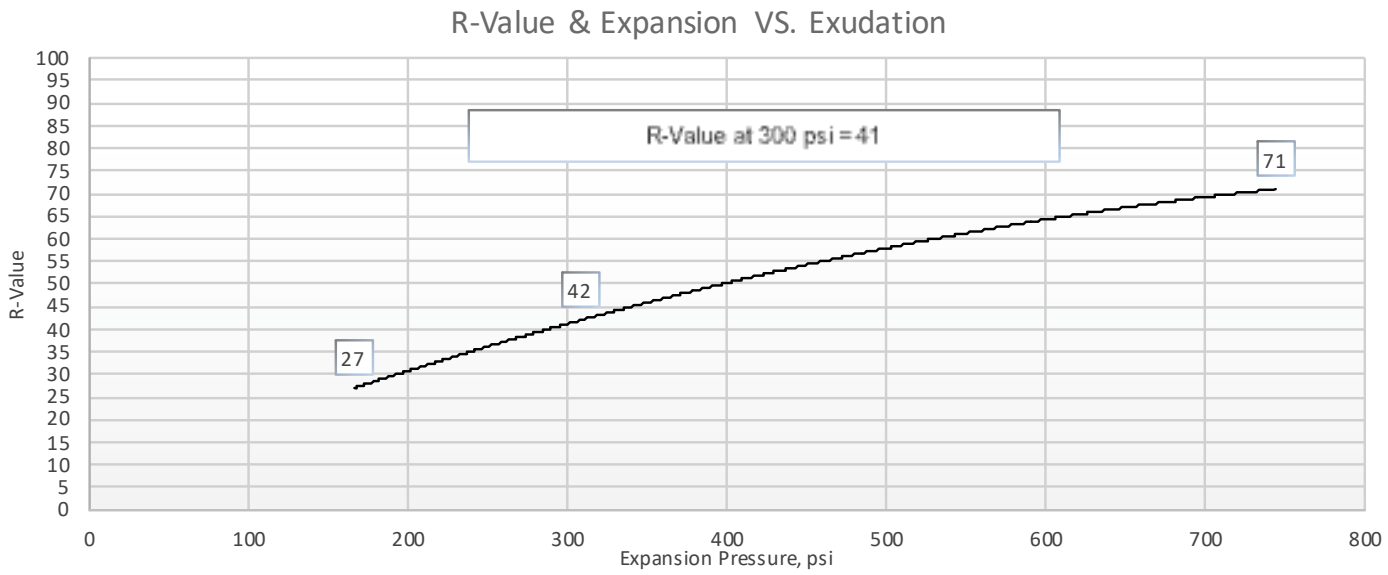
Project Number:	24082P1
Project Title:	Warehouse, Gustine Street and Dachshund Aveune
Project Location:	Apple Valley, CA
Client:	Terra Nova Planning & Research, Inc.

Report Date:	
Sheet:	1 *of* 1
Appendix:	C
Permit No.:	
Client Project No.:	
Other:	
DSA File No.:	
DSA Application No.:	
DSA LEA No.:	

Sample ID: JDA06272421 ☐ **General Compliance** ☐ **Non-Compliance** ☐ **Not Specified**

Desription, D2847:	(SM) Silty sand
Sample Origin:	Boring Seven at 0' to 5'
Tested By:	EJM
Value Allowable Based On:	

Briguette Number:	1	2	3
Moisture Content (%):	7.8	8.4	9.4
Dry Density (pcf):	133.7	134.1	137.4
Exudation Pressure (psi):	744	308	166
Expansion Pressure (psf):	0.0100	0.0000	0.0000
R-Value:	71	42	27



The Material ☐ Was ☐ Was Not Sampled & tested in accordance with the reqs. of the DSA approved documents.
The Material Tested ☐ Met ☐ Did Not Meet The requirements of the DSA approved documents.

cc: Project Architect, Structural Engineer, Project Inspector, DSA Regional Office, School District

Reviewed By (Signature)

Jeremy Beissner / Laboratory Manager
Name / Title

R-Value and Expansion Pressure of Compacted Soils

ASTM D2844

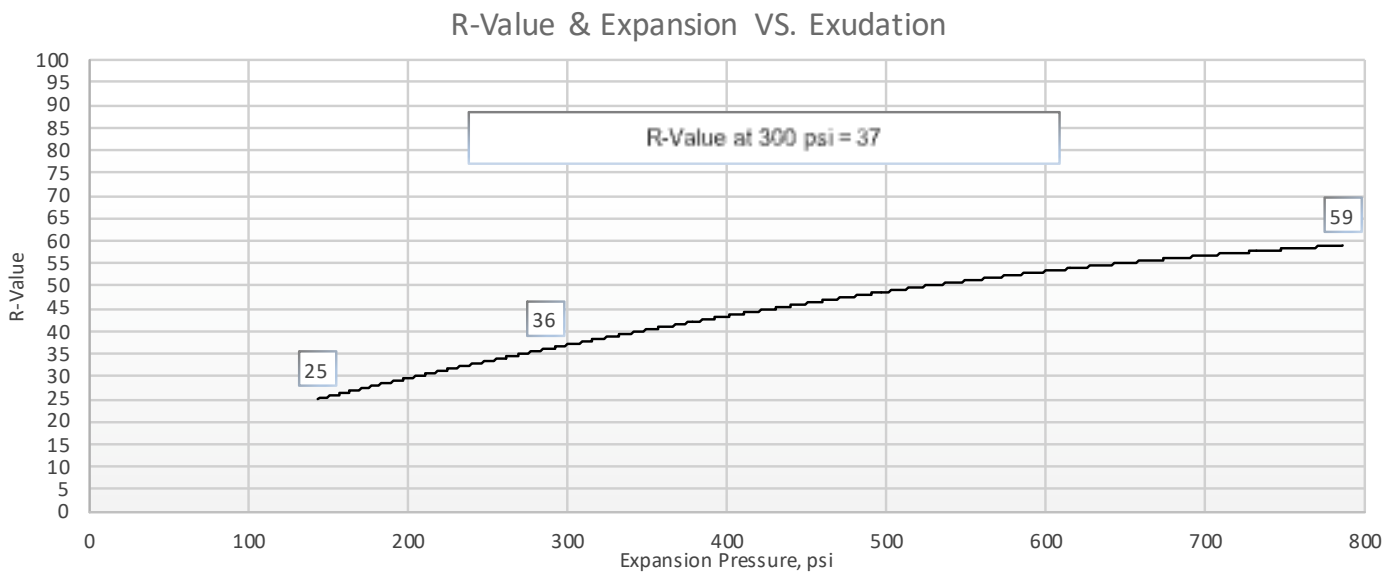
Project Number:	24082P1
Project Title:	Warehouse, Gustine Street and Dachshund Aveune
Project Location:	Apple Valley, CA
Client:	Terra Nova Planning & Research, Inc.

Report Date:	
Sheet:	1 *of* 1
Appendix:	C
Permit No.:	
Client Project No.:	
Other:	
DSA File No.:	
DSA Application No.:	
DSA LEA No.:	

Sample ID: JDA06272422 ☐ **General Compliance** ☐ **Non-Compliance** ☐ **Not Specified**

Desription, D2847:	(SM) Silty sand
Sample Origin:	Boring Eight at 0' to 5'
Tested By:	EJM
Value Allowable Based On:	

Briguette Number:	1	2	3
Moisture Content (%):	9.2	10.3	11.5
Dry Density (pcf):	131.9	130.2	129.3
Exudation Pressure (psi):	786	286	143
Expansion Pressure (psf):	0.0027	0.0000	0.0000
R-Value:	59	36	25



The Material ☐ Was ☐ Was Not Sampled & tested in accordance with the reqs. of the DSA approved documents.
The Material Tested ☐ Met ☐ Did Not Meet The requirements of the DSA approved documents.

cc: Project Architect, Structural Engineer, Project Inspector, DSA Regional Office, School District

Reviewed By (Signature)

Jeremy Beissner / Laboratory Manager
Name / Title

R-Value and Expansion Pressure of Compacted Soils

ASTM D2844

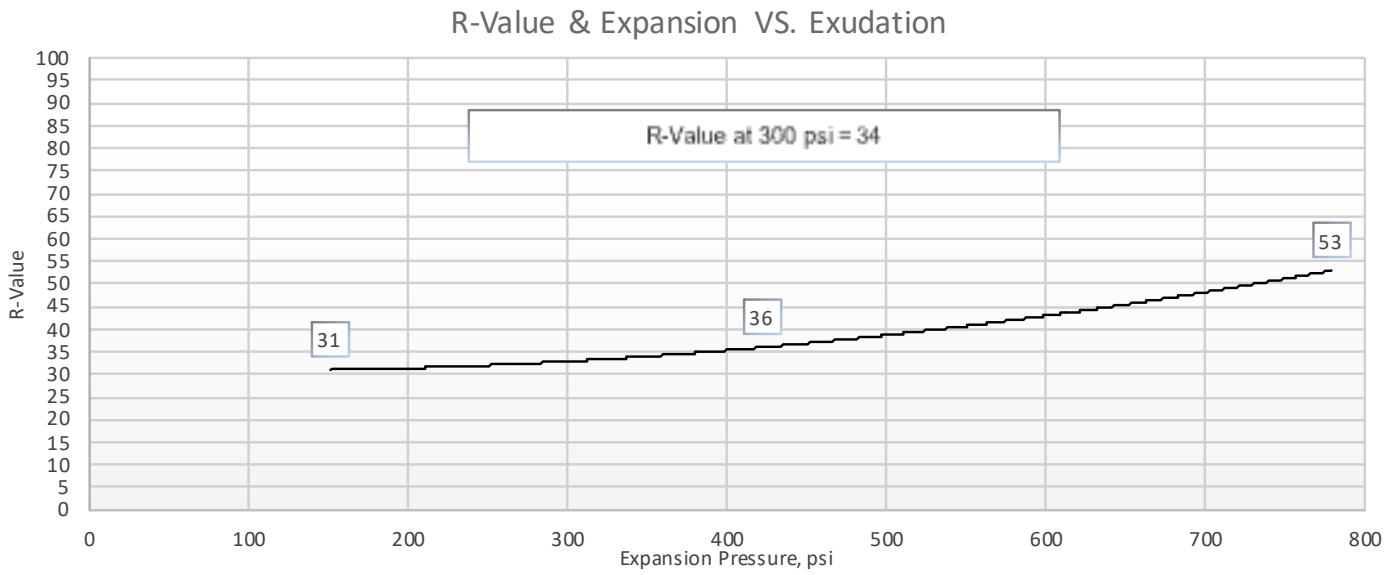
Project Number:	24082P1
Project Title:	Warehouse, Gustine Street and Dachshund Aveune
Project Location:	Apple Valley, CA
Client:	Terra Nova Planning & Research, Inc.

Report Date:	
Sheet:	1 *of* 1
Appendix:	C
Permit No.:	
Client Project No.:	
Other:	
DSA File No.:	
DSA Application No.:	
DSA LEA No.:	

Sample ID: JDA06272423 ☐ **General Compliance** ☐ **Non-Compliance** ☐ **Not Specified**

Desription, D2847:	(SM) Silty sand
Sample Origin:	Boring Nine at 0' ot 5'
Tested By:	JJB
Value Allowable Based On:	

Briguette Number:	1	2	3
Moisture Content (%):	8.3	8.8	7.3
Dry Density (pcf):	134.4	135.7	128.6
Exudation Pressure (psi):	779	422	151
Expansion Pressure (psf):	0.0000	0.0019	0.0000
R-Value:	53	36	31



The Material ☐ Was ☐ Was Not Sampled & tested in accordance with the reqs. of the DSA approved documents.
The Material Tested ☐ Met ☐ Did Not Meet The requirements of the DSA approved documents.

cc: Project Architect, Structural Engineer, Project Inspector, DSA Regional Office, School District

Reviewed By (Signature)

Jeremy Beissner / Laboratory Manager
Name / Title

Merrell Johnson COMPANIES

concept to completion
ENGINEERING | SURVEYING | TESTING | INSPECTION

t)760.256.2068 f)760.256.0418 w)www.merrelljohnson.com

Direct Shear Test of Soils

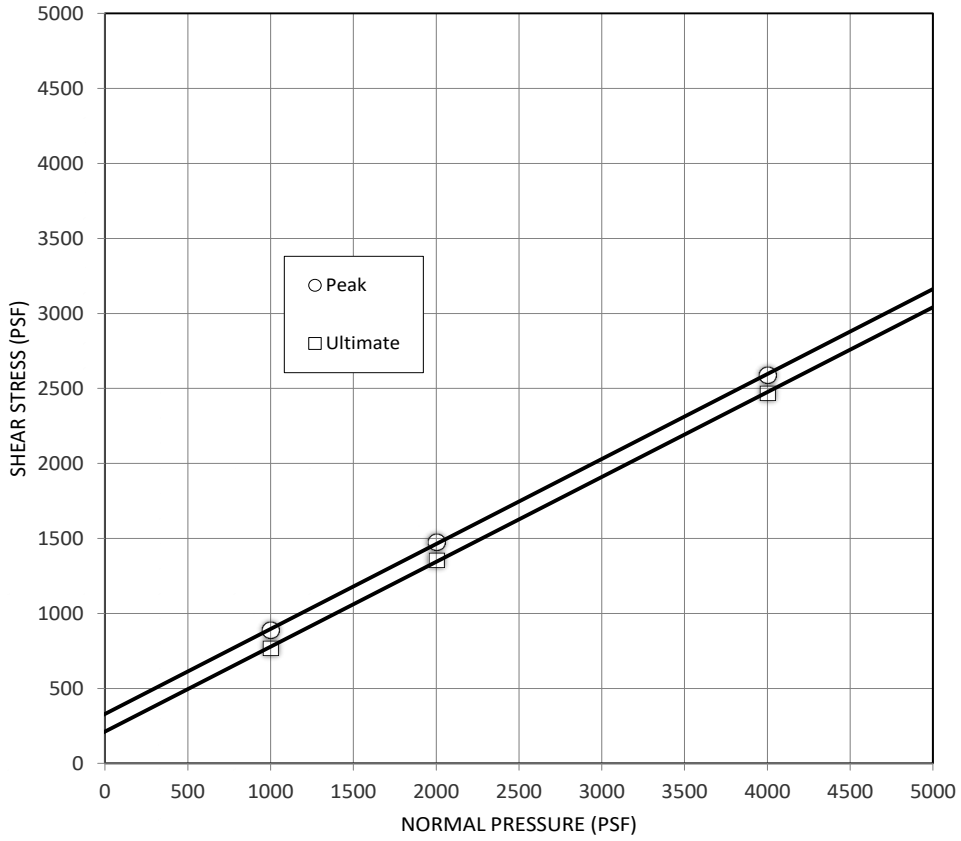
ASTM D3080

Project Number:	24082P1
Project Title:	Warehouse, Gustine Street and Dachshund Aveune
Project Location:	Apple Valley, CA
Client:	Terra Nova Planning & Research, Inc.

Report Date:	
Sheet:	1 of 1
Appendix:	C
Permit No:	
Client Project No:	
Other:	
DSA File No:	
DSA Application No:	
DSA LEA No:	

Sample ID: JDA06272401 **Angle of Internal Friction** (°)**:** 30 **Peak Cohesion** (psf)**:** 330 **Ultimate Cohesion** (psf)**:** 212

Classification, ASTM D2488: (SM) Silty sand
Sample Origin: Boring One at 0' to 5'
Laboratory Remarks: Sample remolded to 95 % maximum relative density 134.9 (lbf/ft3) and optimum moisture 6.4



The Material ☐ Was ☐ Was Not Sampled & tested in accordance with the reqs. of the DSA approved documents.
The Material Tested ☐ Met ☐ Did Not Meet The requirements of the DSA approved documents.

cc: Project Architect, Structural Engineer, Project Inspector, DSA Regional Office, School District

Reviewd By (Signature)

Jeremy Beissner/ Laboratory Manager
Name / Title

MerrellJohnson. engineering | surveying | testing | inspection

Merrell Engineering Company, Inc. | 22221 US Highway 18, Apple Valley, Ca. 92308 t)760.256.2068 f)760.256.0418 w)www.merrelljohnson.com

Direct Shear Test of Soils

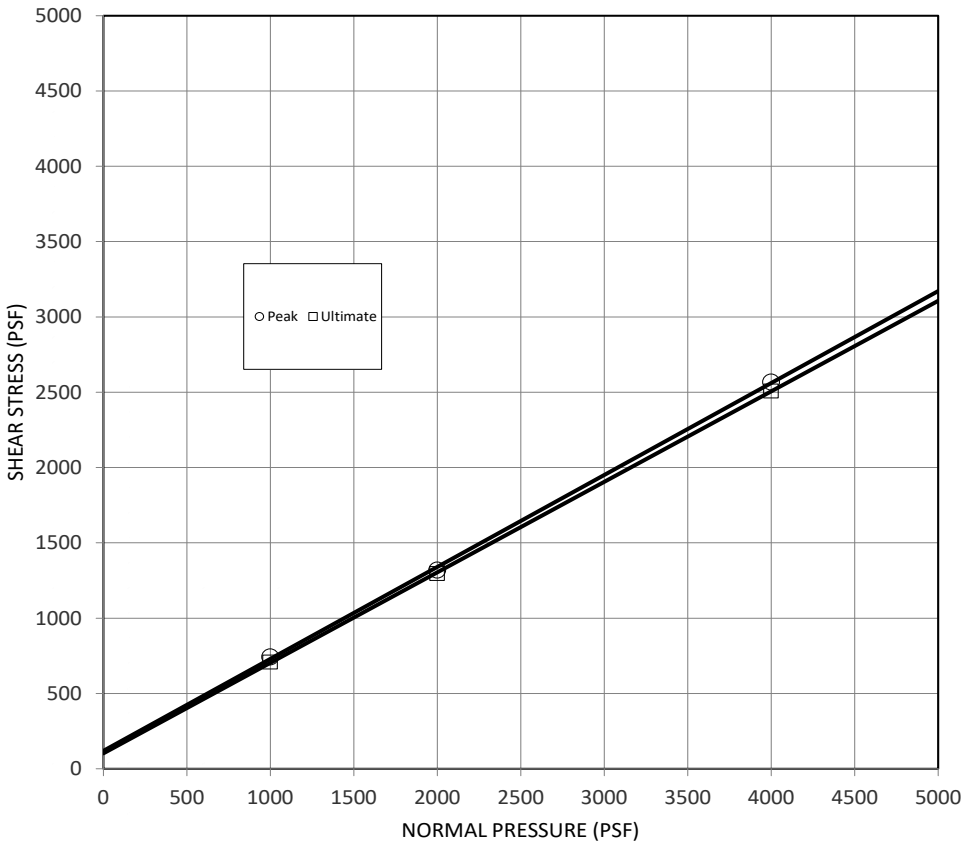
ASTM D3080

Project Number:	24082P1
Project Title:	Warehouse, Gustine Street and Dachshund Aveune
Project Location:	Apple Valley, CA
Client:	Terra Nova Planning & Research, Inc.

Report Date:	
Sheet:	1 of 1
Appendix:	C
Permit No:	
Client Project No:	
Other:	
DSA File No:	
DSA Application No:	
DSA LEA No:	

Sample ID: JDA06272405 **Angle of Internal Friction** (°)**:** 31 **Peak Cohesion** (psf)**:** 120 **Ultimate Cohesion** (psf)**:** 102

Classification, ASTM D2488:	(SM) Silty sand
Sample Origin:	Boring One at 10'
Laboratory Remarks:	Sample obtained via drive tube per ASTM D3550



The Material ☐ Was ☐ Was Not Sampled & tested in accordance with the reqs. of the DSA approved documents.
The Material Tested ☐ Met ☐ Did Not Meet The requirements of the DSA approved documents.

cc: Project Architect, Structural Engineer, Project Inspector, DSA Regional Office, School District

Reviewd By (Signature)

Jeremy Beissner/ Laboratory Manager
Name / Title

MerrellJohnson. engineering | surveying | testing | inspection

Merrell Engineering Company, Inc. | 22221 US Highway 18, Apple Valley, Ca. 92308 t)760.256.2068 f)760.256.0418 w)www.merrelljohnson.com

Direct Shear Test of Soils

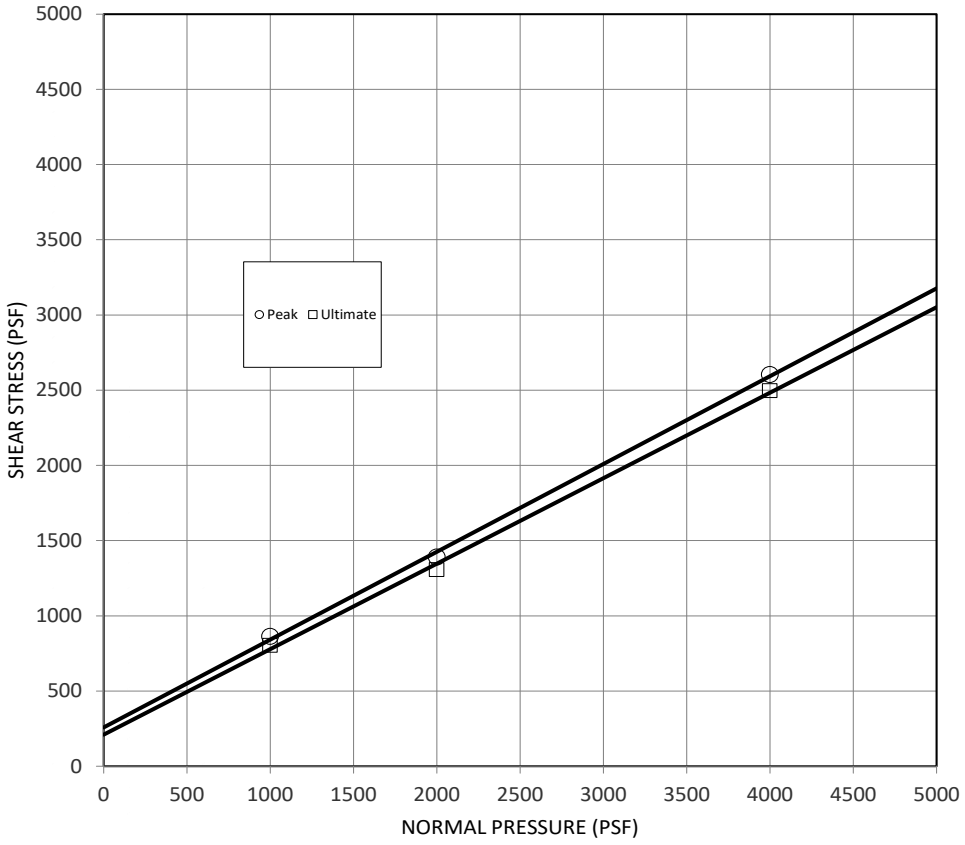
ASTM D3080

Project Number:	24082P1
Project Title:	Warehouse, Gustine Street and Dachshund Aveune
Project Location:	Apple Valley, CA
Client:	Terra Nova Planning & Research, Inc.

Report Date:	
Sheet:	1 of 1
Appendix:	C
Permit No:	
Client Project No:	
Other:	
DSA File No:	
DSA Application No:	
DSA LEA No:	

Sample ID: JDA06272416 **Angle of Internal Friction** (°)**:** 30 **Peak Cohesion** (psf)**:** 258 **Ultimate Cohesion** (psf)**:** 210

Classification, ASTM D2488: (SM) Silty sand
Sample Origin: Boring Four at 5'
Laboratory Remarks: Sample obtained via drive tube per ASTM D3550



The Material ☐ Was ☐ Was Not Sampled & tested in accordance with the reqs. of the DSA approved documents.
The Material Tested ☐ Met ☐ Did Not Meet The requirements of the DSA approved documents.

cc: Project Architect, Structural Engineer, Project Inspector, DSA Regional Office, School District

Reviewd By (Signature)

Jeremy Beissner/ Laboratory Manager
Name / Title

MerrellJohnson. engineering | surveying | testing | inspection

Merrell Engineering Company, Inc. | 22221 US Highway 18, Apple Valley, Ca. 92308 t)760.256.2068 f)760.256.0418 w)www.merrelljohnson.com

Consolidation Properties of Soils

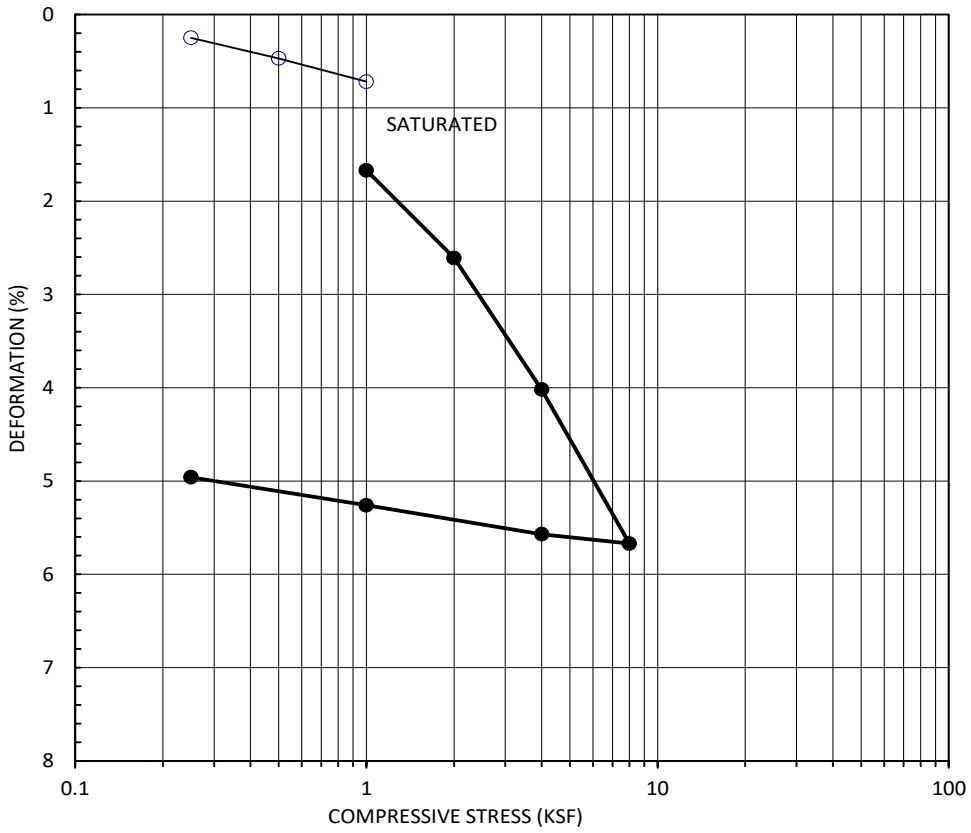
ASTM D2435

Project Number:	24082P1
Project Title:	Warehouse, Gustine Street and Dachshund Aveune
Project Location:	Apple Valley, CA
Client:	Terra Nova Planning & Research, Inc.

Report Date:	
Sheet:	1 of 1
Appendix:	C
Permit No:	
Client Project No:	
Other:	
DSA File No:	
DSA Application No:	
DSA LEA No:	

Sample ID: JDA06272410 **Initial Moisture Content** (%)**:** 5.9 **Initial Dry Density** (pcf)**:** 114.6 **Initial Void Ratio:** 0.470

Classification, ASTM D2488:	(SM) Silty sand
Sample Origin:	Boring Two at 10'
Laboratory Remarks:	Sample obtained via drive tube per ASTM D3550



The Material ☐ Was ☐ Was Not Sampled & tested in accordance with the reqs. of the DSA approved documents.
The Material Tested ☐ Met ☐ Did Not Meet The requirements of the DSA approved documents.

cc: Project Architect, Structural Engineer, Project Inspector, DSA Regional Office, School District

Reviewd By (Signature)

Jeremy Beissner/ Laboratory Manager
Name / Title

MerrellJohnson. engineering | surveying | testing | inspection

Merrell Engineering Company, Inc. | 22221 US Highway 18, Apple Valley, Ca. 92308 t)760.256.2068 f)760.256.0418 w)www.merrelljohnson.com

Consolidation Properties of Soils

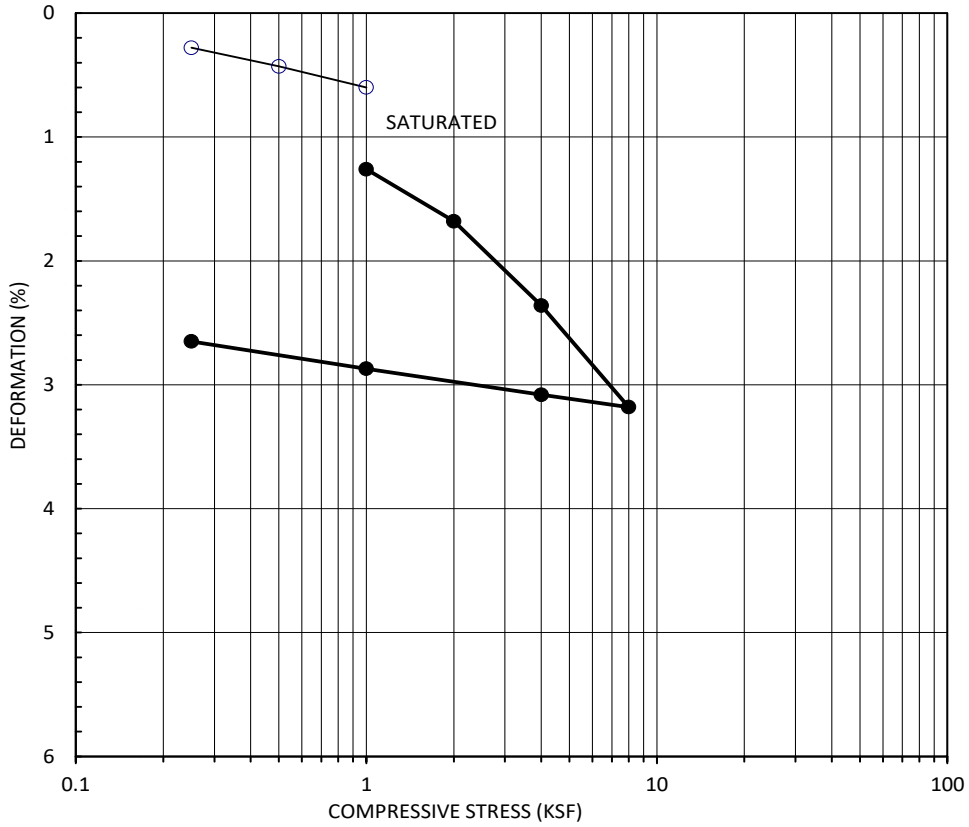
ASTM D2435

Project Number:	24082P1
Project Title:	Warehouse, Gustine Street and Dachshund Aveune
Project Location:	Apple Valley, CA
Client:	Terra Nova Planning & Research, Inc.

Report Date:	
Sheet:	1 of 1
Appendix:	C
Permit No:	
Client Project No:	
Other:	
DSA File No:	
DSA Application No:	
DSA LEA No:	

Sample ID: JDA06282406 **Initial Moisture Content** (%)**:** 1.1 **Initial Dry Density** (pcf)**:** 124.2 **Initial Void Ratio:** 0.356

Classification, ASTM D2488:	(SM) Silty sand
Sample Origin:	Boring Ten at 15'
Laboratory Remarks:	Sample obtained via drive tube per ASTM D3550



The Material ☐ Was ☐ Was Not Sampled & tested in accordance with the reqs. of the DSA approved documents.
The Material Tested ☐ Met ☐ Did Not Meet The requirements of the DSA approved documents.

cc: Project Architect, Structural Engineer, Project Inspector, DSA Regional Office, School District

Reviewd By (Signature)

Jeremy Beissner/ Laboratory Manager
Name / Title

MerrellJohnson. engineering | surveying | testing | inspection

Merrell Engineering Company, Inc. | 22221 US Highway 18, Apple Valley, Ca. 92308 t)760.256.2068 f)760.256.0418 w)www.merrelljohnson.com

Consolidation Properties of Soils

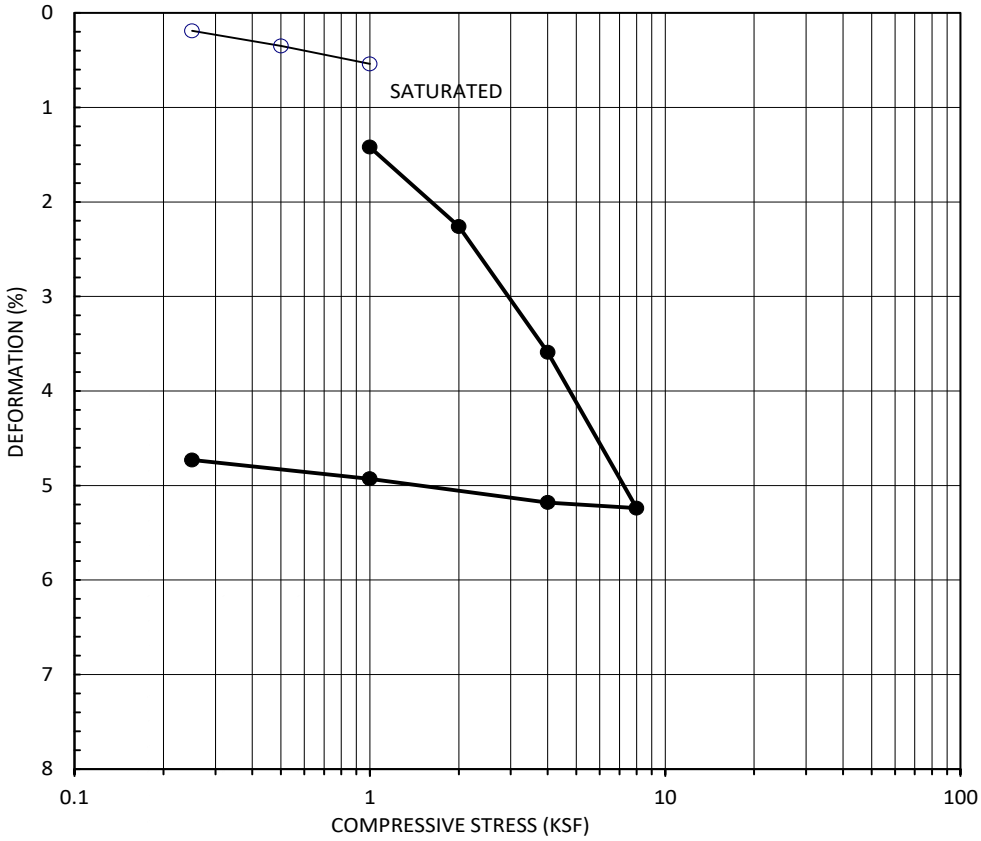
ASTM D2435

Report Date:
Sheet: 1 of 1
Appendix: C
Permit No:
Client Project No:
Other:
DSA File No:
DSA Application No:
DSA LEA No:

Project Number: 24082P1
Project Title: Warehouse, Gustine Street and Dachshund Aveune
Project Location: Apple Valley, CA
Client: Terra Nova Planning & Research, Inc.

Sample ID: JDA06282410 **Initial Moisture Content** (%)**:** 2.7 **Initial Dry Density** (pcf)**:** 114.4 **Initial Void Ratio:** 0.473

Classification, ASTM D2488: (SM) Silty sand
Sample Origin: Boring Eleven at 10'
Laboratory Remarks: Sample obtained via drive tube per ASTM D3550



The Material ☐ Was ☐ Was Not Sampled & tested in accordance with the reqs. of the DSA approved documents.
The Material Tested ☐ Met ☐ Did Not Meet The requirements of the DSA approved documents.
cc: Project Architect, Structural Engineer, Project Inspector, DSA Regional Office, School District

Reviewd By (Signature)

Jeremy Beissner/ Laboratory Manager
Name / Title

MerrellJohnson. engineering | surveying | testing | inspection

Merrell Engineering Company, Inc. | 22221 US Highway 18, Apple Valley, Ca. 92308 t)760.256.2068 f)760.256.0418 w)www.merrelljohnson.com

Corrosion Potential

CT 643, 422, 417, 643

Report Date:
Sheet: 1 of 1
Appendix: C
Permit No:
Client Project No:
Other:
DSA File No:
DSA Application No:
DSA LEA No:

Project Number: 24082P1
Project Title: Warehouse, Gustine Street and Dachshund Aveune
Project Location: Apple Valley, CA
Client: Terra Nova Planning & Research, Inc.

Sample ID: JDA06272401

Classification, ASTM D2487: (SM) Silty sand
Sample Origin: Boring One at 0' to 5'
Laboratory Remarks:

Analysis	Result	Units	Test Method
Minimum Resistivity	5,600	ohm-cm	CT 643
Chloride Content	135	ppm	CT 422
Sulfate Content	0.001	%	CT 417
pH	7.97	pH units	CT 643

The Material ☐ Was ☐ Was Not Sampled & tested in accordance with the reqs. of the DSA approved documents.
The Material Tested ☐ Met ☐ Did Not Meet The requirements of the DSA approved documents.
cc: Project Architect, Structural Engineer, Project Inspector, DSA Regional Office, School District

Reviewd By (Signature)

Jeremy Beissner/ Laboratory Manager
Name / Title

Merrell Johnson. engineering | surveying | testing | inspection

Merrell Engineering Company, Inc. | 22221 US Highway 18, Apple Valley, Ca. 92308 t)760.256.2068 f)760.256.0418 w)www.merrelljohnson.com

Corrosion Potential

CT 643, 422, 417, 643

Report Date:
Sheet: 1 of 1
Appendix: C
Permit No:
Client Project No:
Other:
DSA File No:
DSA Application No:
DSA LEA No:

Project Number: 24082P1
Project Title: Warehouse, Gustine Street and Dachshund Aveune
Project Location: Apple Valley, CA
Client: Terra Nova Planning & Research, Inc.

Sample ID: JDA06282401

Classification, ASTM D2487: (SM) Silty sand
Sample Origin: Boring Ten at 0' to 5'
Laboratory Remarks:

Analysis	Result	Units	Test Method
Minimum Resistivity	6,700	ohm-cm	CT 643
Chloride Content	165	ppm	CT 422
Sulfate Content	0.001	%	CT 417
pH	7.82	pH units	CT 643

The Material ☐ Was ☐ Was Not Sampled & tested in accordance with the reqs. of the DSA approved documents.
The Material Tested ☐ Met ☐ Did Not Meet The requirements of the DSA approved documents.
cc: Project Architect, Structural Engineer, Project Inspector, DSA Regional Office, School District

Reviewd By (Signature)

Jeremy Beissner/ Laboratory Manager
Name / Title

Merrell Johnson. engineering | surveying | testing | inspection

Merrell Engineering Company, Inc. | 22221 US Highway 18, Apple Valley, Ca. 92308 t)760.256.2068 f)760.256.0418 w)www.merrelljohnson.com

MERRELL JOHNSON

12277 Apple Valley Rd. #291, Apple Valley, CA 92308
760-256-2068 | www.merrelljohnson.com

Appendix F
Phase 1 Environmental Site Assessment
(Available on the Town website for review)

PARTNER
Engineering and Science, Inc.

More Than Just Assessments.
Solutions.



PHASE I ENVIRONMENTAL SITE ASSESSMENT REPORT

APN: 0463-372-21-0000
APN: 0463-372-21-0000
Apple Valley, California 92307

Report Date
December 26, 2023

Partner Project No.
23-430676.1

Prepared for:
Loctek Inc.
6475 Las Positas Road
Livermore, California 944551

Building Science | Environmental Consulting | Construction & Development | Energy & Sustainability

PARTNER

December 26, 2023

Ms. Lori Wu
Loctek Inc.
6475 Las Positas Road
Livermore, California 944551

Subject: Phase I Environmental Site Assessment
APN: 0463-372-21-0000
Apple Valley, California 92307
Partner Project No. 23-430676.1

Dear Ms. Wu:

Partner Engineering and Science, Inc. (Partner) is pleased to provide this Phase I Environmental Site Assessment (Phase I ESA) report of the abovementioned address (the "subject property"). This assessment was performed in conformance with the scope and limitations as detailed in the ASTM Practice E1527-21 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process and Client Agreement.

This assessment included a site reconnaissance as well as research and interviews with representatives of the public, property ownership, site manager, and regulatory agencies. An assessment was made, conclusions stated, and recommendations outlined.

We appreciate your trust in Partner and the opportunity to provide environmental services to you. If you have any questions concerning this report, or if we can assist you in any other matter, please contact me at 310-765-7242

Sincerely,

DRAFT
Arcie Propster
Relationship Manager

EXECUTIVE SUMMARY

Partner Engineering and Science, Inc. (Partner) has performed a Phase I Environmental Site Assessment (ESA) in accordance with the scope of work and limitations of ASTM Practice E1527-21, the Environmental Protection Agency Standards and Practices for All Appropriate Inquiries (AAI) (40 CFR Part 312) and set forth by Loctek Inc. for the property located at APN: 0463-372-21-0000 in Apple Valley, San Bernardino, California (the "subject property"). The Phase I Environmental Site Assessment is designed to provide Loctek Inc. with an assessment concerning environmental conditions (limited to those issues identified in the report) as they exist at the subject property.

Property Description

The subject property is located on the east side of Dakota Road, the north side of Fresno Road, and the south side of Gustine Street within a Undeveloped area of San Bernardino. Please refer to the table below for a further description of the subject property:

Subject Property Data	
Address(es):	APN: 0463-372-21-0000, Apple Valley, California
Property Use:	Unimproved Land
Land Acreage (Ac):	39.1 Ac
Parcel Number:	0463-372-21-0000
Site Assessment Performed By:	Nathaniel Grondin of Partner
Site Assessment Conducted On:	December 14, 2023
Regulatory Radius Report Date:	December 08, 2023
Lien Search Date:	N/A
Report Date:	December 26, 2023
FOIAs Date:	December 2023

The subject property consists of 39.1 acres of unimproved desert land. No operations are currently conducted at the subject property. No improvements were observed during Partner's site reconnaissance.

According to available historical sources, the subject property has consisted of undeveloped land from at least 1948 to the present day. The subject property has historically consisted of unimproved land. No current or former tenants were identified.

The adjoining properties are tabulated below:

Adjoining Properties	
North:	Gustine Street followed by unimproved land
East:	Unimproved land
South:	Fresno Road followed by unimproved land
West:	Dakota Road followed by unimproved land
Southeast:	Fresno Road followed by the Apple Valley Airport

Based on topographic map interpretation and a previous subsurface investigation conducted on a nearby property, the physical setting features of the subject property identify the terrain as sloping to the southwest with the depth to groundwater in the vicinity of the subject property inferred to be approximately 115 to 200 feet below ground surface (bgs). Groundwater is inferred to flow toward the southwest.

Findings and Opinions

Recognized Environmental Condition

A recognized environmental condition (REC) refers to the presence of hazardous substances or petroleum products in, on, or at the subject property due to a release to the environment; the likely presence of hazardous substances or petroleum products in, on, or at the subject property due to a release or likely release to the environment; or the presence of hazardous substances or petroleum products in, on, or at the subject property under conditions that pose a material threat of a future release to the environment.

- Partner did not identify any RECs during the course of this assessment.

Controlled Recognized Environmental Condition

A controlled recognized environmental condition (CREC) refers to a REC affecting the subject property that has been addressed to the satisfaction of the applicable regulatory authority or authorities with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, activity and use limitations or other property use limitations).

- Partner did not identify any CRECs during the course of this assessment.

Historical Recognized Environmental Condition

A historical recognized environmental condition (HREC) refers to a previous release of hazardous substances or petroleum products affecting the subject property that has been addressed to the satisfaction of the applicable regulatory authority or authorities and meeting unrestricted use criteria established by the applicable regulatory authority or authorities without subjecting the subject property to any controls (for example, activity and use limitations or other property use limitations).

- Partner did not identify any HRECs during the course of this assessment.

Business Environmental Risk

A Business Environmental Risk (BER) is a risk which can have a material environmental or environmentally driven impact on the business associated with the current or planned use of commercial real estate, not necessarily related to those environmental issues required to be investigated in this practice.

- Partner did not identify any BERs during the course of this assessment.

Significant Data Gaps

No significant data gaps affecting the ability of the Environmental Professional to identify a REC were encountered during this assessment.

Conclusions and Recommendations

Partner has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527-21 of APN: 0463-372-21-0000 in Apple Valley, San Bernardino, California (the "subject property"). Any exceptions to, or deletions from, this practice are described in Section 1.5 of this report.

This assessment has revealed no evidence of RECs, CRECs, HRECs, or BERs in connection with the subject property. Based on the conclusions of this assessment, Partner recommends no further investigation of the subject property at this time.

TABLE OF CONTENTS

1.0 INTRODUCTION 1
1.1 Purpose 1
1.2 Scope of Work 1
1.3 Limitations 2
1.4 User Reliance 2
1.5 Limiting Conditions 3
2.0 SITE DESCRIPTION 4
2.1 Site Location and Legal Description 4
2.2 Current Property Use 4
2.3 Current Use of Adjoining Properties 4
2.4 Physical Setting Sources 4
2.4.1 Topography 4
2.4.2 Hydrology 5
2.4.3 Geology/Soils 5
2.4.4 Flood Zone Information 5
3.0 HISTORICAL INFORMATION 6
3.1 Aerial Photograph Review 6
3.2 Fire Insurance Maps 7
3.3 City Directories 7
3.4 Historical Topographic Maps 7
4.0 REGULATORY RECORDS REVIEW 9
4.1 Regulatory Agencies 9
4.2 Mapped Database Records Search 11
4.2.1 Regulatory Database Summary 12
4.2.2 Subject Property Listings 13
4.2.3 Adjoining Property Listings 13
4.2.4 Surrounding Area Listings of Concern to Subject Property 14
4.2.5 Unplottable Listings 14
5.0 USER PROVIDED INFORMATION AND INTERVIEWS 15
5.1 Interviews 15
5.1.1 Interview with Owner 15
5.1.2 Interview with Report User 15
5.1.3 Interview with Key Site Manager 16
5.1.4 Interviews with Past Owners, Operators and Occupants 16
5.2 User Provided Information 16
5.2.1 Title Records, Environmental Liens, and AULs 16
5.2.2 Specialized Knowledge 16
5.2.3 Actual Knowledge of the User 16
5.2.4 Valuation Reduction for Environmental Issues 16
5.2.5 Commonly Known or Reasonably Ascertainable Information 16
5.2.6 Previous Reports and Other Provided Documentation 16
6.0 SITE RECONNAISSANCE 17
6.1 General Site Characteristics 17
6.1.1 Solid Waste Disposal 17
6.1.2 Sewage Discharge and Disposal 17
6.1.3 Stormwater and Surface Water Drainage 17
6.1.4 Source of Heating and Cooling 17
6.1.5 Wells and Cisterns 17

PARTNER

6.1.6 Wastewater 17
6.1.7 Septic Systems 17
6.1.8 Additional Site Observations 17
6.2 Potential Environmental Hazards 17
6.2.1 Hazardous Substances and Petroleum Products Used or Stored at the Site 17
6.2.2 Aboveground & Underground Hazardous Substance or Petroleum Product Storage Tanks (ASTs/USTs) 18
6.2.3 Evidence of Releases 18
6.2.4 Polychlorinated Biphenyls (PCBs) 18
6.2.5 Strong, Pungent or Noxious Odors 18
6.2.6 Pools of Liquid 18
6.2.7 Drains, Sumps and Clarifiers 18
6.2.8 Pits, Ponds and Lagoons 18
6.2.9 Stressed Vegetation 18
6.2.10 Additional Potential Environmental Hazards 18
6.3 Non-ASTM Services 18
6.3.1 Asbestos-Containing Materials (ACMs) 18
6.3.2 Lead-Based Paint (LBP) 18
6.3.3 Radon 19
6.3.4 Lead in Drinking Water 19
6.3.5 Mold 19
6.3.6 Wetlands 19
6.4 Adjoining Property Reconnaissance 20
6.4.1 Hazardous Substances and Petroleum Products Used or Stored at the Site 20
6.4.2 ASTs/USTs for Hazardous Substances or Petroleum Products 20
6.4.3 Evidence of Releases 20
6.4.4 PCBs 20
6.4.5 Strong, Pungent, or Noxious Odors 20
6.4.6 Pools of Liquid 20
6.4.7 Drains, Sumps, and Clarifiers 20
6.4.8 Pits, Ponds, and Lagoons 20
6.4.9 Stressed Vegetation 20
6.4.10 Additional Potential Environmental Hazards 20
7.0 VAPOR ENCROACHMENT CONDITIONS 21
8.0 FINDINGS AND CONCLUSIONS 22
9.0 SIGNATURES OF ENVIRONMENTAL PROFESSIONALS 23
10.0 REFERENCES 24

FIGURES

Figure 1: Site Location Map
Figure 2: Site Plan
Figure 3: Topographic Map

APPENDICES

Appendix A: Site Photographs
Appendix B: Historical/Regulatory Documentation
Appendix C: Regulatory Database Report
Appendix D: Qualifications

1.0 INTRODUCTION

Partner Engineering and Science, Inc. (Partner) has performed a Phase I Environmental Site Assessment (ESA) in conformance with the scope and limitations of ASTM Practice E1527-21 and the Environmental Protection Agency Standards and Practices for All Appropriate Inquiries (AAI) (40 CFR Part 312) for the property located at APN: 0463-372-21-0000 in Apple Valley, San Bernardino, California (the "subject property"). Any exceptions to, or deletions from, this scope of work are described in the report.

1.1 Purpose

The purpose of this ESA is to identify existing or potential Recognized Environmental Conditions (as defined by ASTM Standard E1527-21) affecting the subject property that: 1) constitute or result in a material violation or a potential material violation of any applicable environmental law; 2) impose any material constraints on the operation of the subject property or require a material change in the use thereof; 3) require clean-up, remedial action or other response with respect to Hazardous Substances or Petroleum Products on or affecting the subject property under any applicable environmental law; 4) may affect the value of the subject property; and 5) may require specific actions to be performed with regard to such conditions and circumstances. The information contained in the ESA Report will be used by Client to: 1) evaluate its legal and financial liabilities for transactions related to foreclosure, purchase, sale, loan origination, loan workout or seller financing; 2) evaluate the subject property's overall development potential, the associated market value and the impact of applicable laws that restrict financial and other types of assistance for the future development of the subject property; and/or 3) determine whether specific actions are required to be performed prior to the foreclosure, purchase, sale, loan origination, loan workout or seller financing of the subject property.

This ESA was performed to permit the User to satisfy one of the requirements to qualify for the innocent landowner, contiguous property owner, or bona fide prospective purchaser limitations on scope of Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (42 U.S.C. §9601) liability (hereinafter, the "landowner liability protections," or "LLPs"). ASTM Standard E1527-21 constitutes "all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial or customary practice" as defined at 42 U.S.C. §9601(35)(B).

1.2 Scope of Work

The scope of work for this ESA is in accordance with and to the extent necessary to achieve the goal of the requirements set forth in the ASTM Standard E1527-21. This assessment included: 1) a property and adjoining site reconnaissance; 2) interviews with key personnel; 3) a review of historical sources; 4) a review of regulatory agency records; and 5) a review of a regulatory database report provided by a third-party vendor. Partner contacted local agencies, such as environmental health departments, fire departments and building departments to obtain readily ascertainable information to determine any current and/or former hazardous substances usage, storage and/or releases of hazardous substances on the subject property. Additionally, Partner researched readily available information on the presence of activity and use limitations (AULs) at these agencies. As defined by ASTM E1527-21, AULs include both legal (that is, institutional) and physical (that is, engineering) controls that may include legal or physical restrictions or limitations on the use of, or access to, a site or facility: 1) to reduce or eliminate potential exposure to hazardous substances or petroleum products in the soil, soil vapor, groundwater, or surface water on the subject property; or 2) to prevent activities that could interfere with the effectiveness of a response action, in order to ensure maintenance of a condition of no significant risk to public health or the environment. These legal or physical restrictions, which may include institutional and/or engineering controls (IC/ECs), are intended to prevent adverse impacts to individuals or populations that may be exposed to hazardous substances and petroleum products in the soil, soil vapor, groundwater, and/or surface water on a property.

If requested by Client, this report may also include the identification, discussion of, and/or limited sampling of asbestos-containing materials (ACMs), lead-based paint (LBP), mold, and/or radon.

1.3 Limitations

Partner warrants that the findings and conclusions contained herein were accomplished in accordance with the methodologies set forth in the Scope of Work. These methodologies are described as representing good commercial and customary practice for conducting an ESA of a property for the purpose of identifying recognized environmental conditions. There is a possibility that even with the proper application of these methodologies there may exist on the subject property conditions that could not be identified within the scope of the assessment or which were not reasonably identifiable from the available information. Partner believes that the information obtained from the record review and the interviews concerning the subject property is reliable. However, Partner cannot and does not warrant or guarantee that the information provided by these other sources is accurate or complete. The conclusions and findings set forth in this report are strictly limited in time and scope to the date of the evaluations. The conclusions presented in the report are based solely on the services described therein, and not on scientific tasks or procedures beyond the scope of agreed-upon services or the time and budgeting restraints imposed by the Client. No other warranties are implied or expressed.

Some of the information provided in this report is based upon personal interviews, and research of available documents, records, and maps held by the appropriate government and private agencies. This report is subject to the limitations of historical documentation, availability, and accuracy of pertinent records, and the personal recollections of those persons contacted.

This practice does not address requirements of any state or local laws or of any federal laws other than the all appropriate inquiry provisions of the LLPs. Further, this report does not intend to address all of the compliance and safety concerns, if any, associated with the subject property.

Environmental concerns, which are beyond the scope of a Phase I ESA as defined by ASTM include the following: ACMs, LBP, radon, and lead in drinking water. These issues may affect environmental risk at the subject property and may warrant discussion and/or assessment; however, are considered non-scope issues. If specifically requested by the Client, these non-scope issues are discussed in Section 6.3.

1.4 User Reliance

Loctek Inc. (herein referred to as Client) engaged Partner to perform this assessment in accordance with an agreement governing the nature, scope and purpose of the work as well as other matters critical to the engagement. All reports, both verbal and written, are for the sole use and benefit of Client. Either verbally or in writing, third parties may come into possession of this report or all or part of the information generated as a result of this work. In the absence of a written agreement with Partner granting such rights, no third parties shall have rights of recourse or recovery whatsoever under any course of action against Partner, its officers, employees, vendors, successors or assigns. Any such unauthorized user shall be responsible to protect, indemnify and hold Partner, Client and their respective officers, employees, vendors, successors and assigns harmless from any and all claims, damages, losses, liabilities, expenses (including reasonable attorneys' fees) and costs attributable to such Use. Unauthorized use of this report shall constitute acceptance of and commitment to these responsibilities, which shall be irrevocable and shall apply regardless of the cause of action or legal theory pled or asserted. Additional legal penalties may apply.

This report has been completed under specific Terms and Conditions relating to scope, relying parties, limitations of liability, indemnification, dispute resolution, and other factors relevant to any reliance on this report. Any parties relying on this report do so having accepted the Terms and Conditions for which this report was completed. A copy of Partner's standard Terms and Conditions can be found at http://www.partneresi.com/terms-and-conditions.php.

1.5 Limiting Conditions

The findings and conclusions contain all the limitations inherent in these methodologies that are referred to in ASTM Practice E1527-21.

Specific limitations and exceptions to this ESA are more specifically set forth below:

The performance of this ESA was not limited in any way. Partner was granted full and complete access to the subject property.

2.0 SITE DESCRIPTION

2.1 Site Location and Legal Description

The subject property at APN: 0463-372-21-0000 in Apple Valley, California is located on the east side of Dakota Road, the north side of Fresno Road, and the south side of Gustine Street. According to the San Bernardino County Assessor, the subject property is legally described as NW 1/4 SE 1/4 SEC 28 TP 6N R 3W EX ST. According to San Bernardino County Recorder, ownership is currently vested in DEAGUIAR FAMILY TRUST since 2021.

Please refer to Figure 1: Site Location Map, Figure 2: Site Plan, Figure 3: Topographic Map, and Appendix A: Site Photographs for the location and site characteristics of the subject property.

2.2 Current Property Use

The subject property consists of 39.1 acres of unimproved desert land. No operations are currently conducted at the subject property. No improvements were observed during Partner's site reconnaissance.

The subject property is designated for "SP' for specific plan development by the City of Apple Valley.

The subject property was not identified in the regulatory database report of Section 4.2.

2.3 Current Use of Adjoining Properties

The subject property is located within undeveloped area of San Bernardino. During the vicinity reconnaissance, Partner observed the land uses on adjoining properties as defined in ASTM Practice E1527-21 as any real property or properties the border of which is contiguous or partially contiguous with that of the property, or that would be contiguous or partially contiguous with that of the property but for a street, road, or other public thoroughfare separating them. The adjoining properties are tabulated below:

Adjoining Properties	
North:	Gustine Street followed by unimproved land
East:	Unimproved land
South:	Fresno Road followed by unimproved land
West:	Dakota Road followed by unimproved land
Southeast:	Fresno Road followed by the Apple Valley Airport

The adjoining property to the southeast was identified as a Leaking Underground Storage Tank (LUST), Delisted Storage Tank (Delisted TNK), San Bernardino County Certified Unified Program Agency (SANBEN CUPA), Historical Hazardous Substance Storage Information Database (HHSS), Toxic Pollutant Emissions Facilities (EMISSIONS), California Environmental Reporting System Tanks(CERS TANK), Historical Hazardous Substance Storage Container Information- Facility Summary (HIST TANK), Resource Conservation and Recovery Act Non Generator (RCRA NON GEN), Statewide Environmental Evaluation and Planning System Underground Storage Tank (SWEEPS UST), and PFAS Industry Sectors (PFAS IND) site in the regulatory database report of Section 4.2.

2.4 Physical Setting Sources

2.4.1 Topography

The 2021 United States Geological Survey (USGS) Apple Valley North, California Quadrangle 7.5-minute series topographic map was reviewed for this ESA. According to the contour lines on the topographic map, the subject property is located at approximately 2980 feet above mean sea level (MSL). The contour lines in the area of the subject property indicate the area is sloping gently towards the southwest.

A copy of the most recent topographic map is included as Figure 3 of this report.

2.4.2 Hydrology

While under natural and undisturbed conditions shallow groundwater flow most frequently follows the topography of the land surface, natural or man-made features can affect flow direction, and the presumed flow may not match the actual flow directions at the subject property and vicinity. Topographic map interpretation suggests the direction of groundwater flow in the vicinity of the subject property is inferred to be toward the southwest.

According to a previous subsurface investigation conducted on a nearby property, the depth to groundwater in the vicinity of the subject property inferred to be approximately 115 to 200 feet bgs.

The nearest surface water in the vicinity of the subject property is (the) Bell Mountain Wash located approximately 2.75 miles northwest of the subject property. No settling ponds, lagoons, surface impoundments, wetlands or natural catch basins were observed at the subject property during this assessment.

According to available information, a public water system operated by the Liberty Utilities serves the subject property vicinity. The source of public water for the Town of Apple Valley is groundwater obtained from approximately 18 deep groundwater wells located throughout Apple Valley. The wells draw water from the Alto Subunit of the Mojave groundwater basin.

2.4.3 Geology/Soils

The subject property is located in the lower desert area of San Bernardino County. The lower desert is part of the Mojave Desert Geologic Province. Mojave Desert is a broad interior region of isolated mountain ranges separated by expanses of desert plains with interior enclosed drainage and playas. The desert is traversed by several major faults identified and running as the Garlock (southern boundaries of the Sierra Nevada) running northwest-southeast and the San Andreas Fault, east-west tread in alignment with the Transverse Ranges. The northern boundary of the Mojave is separated from the prominent Basin and Range by the eastern expansion of the Garlock Fault line.

Based on information obtained from the United States Department of Agriculture (USDA) Natural Resources Conservation Service Web Soil Survey online database, the subject property is mapped as Helendale-Bryman loamy sands. The Helendale-Bryman series consists of very deep and well drained soils that formed in linear, side slope, and backslope alluvial fan remnants derived from granite sources. The typical Helendale-Bryman profile is loamy sand at 0 to 6 inches, sandy loam at 6 to 30 inches, sandy loam at 30 to 66 inches, and loamy sand, sandy loam at 66 to 99 inches. Slopes range from 2 to 5 percent.

2.4.4 Flood Zone Information

Partner performed a review of the Flood Insurance Rate Map, published by the Federal Emergency Management Agency. According to Community Panel Number 06071C5830H, dated August 28, 2008, the subject property appears to be located in Zone D; which are unstudied areas where flood hazards are undetermined, but flooding is possible. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.

A copy of the reviewed flood map is included in Appendix B of this report.

3.0 HISTORICAL INFORMATION

Partner obtained historical use information about the subject property from a variety of sources. A chronological listing of the historical data found is summarized in the table below:

Historical Use Information		
Years	**Resource**	**Description/Use**
1948-Present	Aerial Photographs, Topographic Maps	Unimproved Land

The subject property has historically consisted of unimproved land. No current or former tenants were identified.

No potential environmental concerns were identified in association with the current or former use of the subject property.

3.1 Aerial Photograph Review

Partner obtained available aerial photographs of the subject property and surrounding area from Environmental Risk Information Services (ERIS) on December 08, 2023. The inferred uses of the subject property and adjoining properties as interpreted from the aerial photographs in Appendix B are tabulated below:

Date:	***1948***	***Scale:***	***1"=500'***
Subject Property:	Appears to be unimproved land		
North:	Appears to be unimproved land		
East:	Appears to be unimproved land		
Southeast:	Appears to be unimproved land with agricultural land and farm related outbuildings present further to the southeast.		
South:	Appears to be unimproved land		
West:	Appears to be unimproved land		

Date:	***1952, 1959, 1968***	***Scale:***	***1"=500'***
Subject Property:	No significant changes visible		
North:	Appears to be unimproved land across a road		
East:	No significant changes visible		
Southeast:	No significant changes visible		
South:	Appears to be developed with agricultural land. By 1959, a water tower appears to be present near the southern subject property boundary		
West:	No significant changes visible		

Date:	***1973, 1984***	***Scale:***	***1"=500'***
Subject Property:	No significant changes visible		
North:	No significant changes visible		
East:	No significant changes visible		
Southeast:	Appears to be developed with the Apple Valley Airport across a dirt road		
South:	Appears to be vacant with the exception of the water tower		

Date:	1973, 1984	Scale:	1"=500'
West:	No significant changes visible		

Date:	1994, 2002, 2005	Scale:	1"=500'
Subject Property:	No significant changes visible		
North:	No significant changes visible		
East:	No significant changes visible		
Southeast:	No significant changes visible		
South:	Appears to be graded land. The water tower is still visible		
West:	No significant changes visible		

Date:	2009, 2012, 2014, 2016, 2018, 2020, 2022	Scale:	1"=500'
Subject Property:	No significant changes visible		
North:	No significant changes visible		
East:	No significant changes visible		
Southeast:	No significant changes visible		
South:	No significant changes visible		
West:	No significant changes visible except that a paved road is present running from north to south along the western subject property boundary		

Copies of select aerial photographs are included in Appendix B of this report.

3.2 Fire Insurance Maps

Partner reviewed the collection of Fire insurance maps (FIMS) from ERIS on December 08, 2023. FIM coverage was not available for the subject property.

A copy of the no coverage letter is included in Appendix B of this report.

3.3 City Directories

Partner reviewed historical city directories obtained from ERIS on December 08, 2023 for past names and businesses that were listed for the subject property and adjoining properties. City directories were not identified for the subject property and vicinity.

No listings were identified for the subject property.

Based on the city directory review, no environmentally sensitive listings were identified for the adjoining property addresses.

Copies of reviewed city directories are included in Appendix B of this report.

3.4 Historical Topographic Maps

Partner reviewed historical topographic maps obtained from ERIS on December 08, 2023. The following inferred uses of the subject property and adjoining properties interpreted from topographic maps in Appendix B and are tabulated below:

Date:	1957
Subject Property:	Depicted as unimproved land
North:	Depicted as unimproved land across an unpaved road
East:	Depicted as unimproved land
Southeast:	Depicted as unimproved land
South:	Depicted as unimproved land
West:	Depicted as unimproved land

Date:	1970, 1978
Subject Property:	Depicted as unimproved land. An intermittent stream is depicted bisecting the central portion of the subject property
North:	No significant changes depicted
East:	No significant changes depicted. The Apple Valley County Airport is depicted further to the east
Southeast:	Appears to be developed as part of the Apple Valley County Airport.
South:	No significant changes depicted
West:	No significant changes depicted

Date:	1993
Subject Property:	No significant changes depicted
North:	No significant changes depicted
East:	No significant changes depicted
Southeast:	No significant changes depicted
South:	Depicted as developed with a water tank across an unpaved road
West:	No significant changes depicted

Date:	2015, 2018, 2021
Subject Property:	Improvements, with the exception of roadways and waterbodies, are not depicted
North:	Improvements, with the exception of roadways and waterbodies, are not depicted
East:	Improvements, with the exception of roadways and waterbodies, are not depicted
Southeast:	No significant changes depicted
South:	Improvements, with the exception of roadways and waterbodies, are not depicted
West:	Improvements, with the exception of roadways and waterbodies, are not depicted

Copies of reviewed topographic maps are included in Appendix B of this report.

4.0 REGULATORY RECORDS REVIEW

4.1 Regulatory Agencies

State Department

Regulatory Agency Data	
Name of Agency:	California Environmental Protection Agency (Cal/EPA)
Point of Contact:	https://siteportal.calepa.ca.gov/nsite/map/results
Agency Address:	1001 I Street, Sacramento, California 95814
Agency Phone Number:	(916) 255-1136
Date of Contact:	December 08, 2023
Method of Communication:	Online Research
Summary of Communication: No records regarding hazardous substance use, storage or releases, or the presence of USTs and AULs on the subject property were on file with the Cal/EPA.	

Fire Department

Regulatory Agency Data	
Name of Agency:	San Bernardino County Fire Protection District (SBCFPD)-Hazardous Materials Division (HMD)
Point of Contact:	Christina Rivera
Agency Address:	620 South E Street, San Bernardino, California 92415
Agency Phone Number:	(909) 386-8401
Date of Contact:	December 15, 2023
Method of Communication:	Email
Summary of Communication: No records regarding hazardous substance use, storage or releases, or the presence of USTs and AULs on the subject property were on file with the SBCFPD-HMD.	

Building Department

Regulatory Agency Data	
Name of Agency:	Apple Valley Building Department (AVBD)
Point of Contact:	Records Management
Agency Address:	14955 Dale Evans Parkway, Apple Valley, California 92307
Agency Phone Number:	(760) 240-7000
Date of Contact:	December 11, 2023
Method of Communication:	Online Research
Summary of Communication: No building permit records were identified for the subject property.	

Planning Department

Regulatory Agency Data	
Name of Agency:	Apple Valley Building Department (AVBD)
Point of Contact:	http://www.applevalley.org/services/planning-division
Agency Address:	14955 Dale Evans Parkway, Apple Valley, California 92307
Agency Phone Number:	(760) 240-7000
Date of Contact:	December 11, 2023
Method of Communication:	Online Research
Summary of Communication: According to records reviewed, the subject property is zoned for planned development by the Town of Apple Valley.	

Oil & Gas Exploration

Regulatory Agency Data	
Name of Agency:	California Geologic Energy Management Division (CalGEM) Southern District
Point of Contact:	https://maps.conservation.ca.gov/doggr/wellfinder/#openModal
Agency Address:	3780 Kilroy Airport Way, Suite 400, Long Beach, California 90806
Agency Phone Number:	(562) 637-4400
Date of Contact:	December 11, 2023
Method of Communication:	Online Research
Summary of Communication: According to DOGGR, no oil or gas wells are located on or adjoining to the subject property.	

Assessor's Office

Regulatory Agency Data	
Name of Agency:	San Bernardino County Assessor (SBCA)
Point of Contact:	http://www.sbcounty.gov/assessor/pims
Agency Address:	385 North Arrowhead Avenue, San Bernardino, California 92415
Agency Phone Number:	(888) 818-8988
Date of Contact:	December 11, 2023
Method of Communication:	Online Research
Summary of Communication: According to records reviewed, the subject property is identified by Assessor Parcel Number (APN) 0463-372-21-0000. The subject property is currently owned by Deaguiar Family Trust since 2021.	

Air Pollution Control Agency

Regulatory Agency Data	
Name of Agency:	Mojave Desert Air Quality Management District (MDAQMD)
Point of Contact:	Records Admin
Agency Address:	14306 Park Avenue, Victorville, California 92392
Agency Phone Number:	(760) 245-1661,
Date of Contact:	December 11, 2023
Method of Communication:	Online Research
Summary of Communication: No Permits to Operate (PTO), Notices of Violation (NOV), or Notices to Comply (NTC) or the presence of AULs, dry cleaning machines, or USTs were on file for the subject property with the AQMD.	

Regional Water Quality Agency

Regulatory Agency Data	
Name of Agency:	State Water Resources Control Board (SWRCB) Lahontan Regional Water Quality Control Board (RWQCB)
Point of Contact:	https://geotracker.waterboards.ca.gov
Agency Address:	15095 Amargosa Road, Building 2, Suite 210, Victorville, California 92394
Agency Phone Number:	(760) 241-6583
Date of Contact:	December 11, 2023
Method of Communication:	Online Research
Summary of Communication: No records regarding hazardous substance use, storage or releases, or the presence of USTs and AULs on the subject property were on file with the RWQCB.	

Department of Toxic Substances Control

Regulatory Agency Data	
Name of Agency:	California Department of Toxic Substances Control (DTSC)
Point of Contact:	https://hwts.dtsc.ca.gov/ https://www.envirostor.dtsc.ca.gov/public/
Agency Address:	5796 Corporate Avenue, Cypress, California 90630
Agency Phone Number:	(877) 786-9427
Date of Contact:	December 14, 2023
Method of Communication:	Online Research
Summary of Communication: No records regarding hazardous substance use, storage or releases, or the presence of USTs and AULs on the subject property were on file with the DTSC.	

Copies of pertinent documents are included in Appendix B of this report.

4.2 Mapped Database Records Search

The regulatory database report provided by ERIS documents the listing of sites identified on federal, state, county, city, and tribal (when applicable) standard source environmental databases within the approximate minimum search distance (AMSD) specified by ASTM Practice E1527-21. The data from these sources are

updated as these data are released and integrated into one database. The information contained in this report was compiled from publicly available sources.

The environmental database information is used to identify environmental concerns in connection with the subject property. The listings also serve to identify the known indications of the storage, use, generation, disposal, or release of hazardous substance at the subject property and the potential for contaminants to migrate onto the subject property from off-site sources in groundwater or soil in the form of liquids or vapor.

Using the ASTM definition of migration, Partner considers the migration of hazardous substances or petroleum products in any form onto the subject property during the evaluation of each site listed on the radius report, which includes solid, liquid, and vapor.

4.2.1 Regulatory Database Summary

The following table lists the sites as categorized by the regulatory database within the prescribed AMSD. The locations of the sites are plotted utilizing a geographic information system, which geocodes the site addresses. The accuracy of the geocoded locations is approximately +/-300 feet.

Database Report Data				
Database	AMSD Radius (mile)	Listings Identified		
		Subject Property	Adjoining Properties	Surrounding Area Sites of Concern
Federal NPL	1.00	N	N	N
Delisted NPL Site	0.50	N	N	N
Federal SEMS Site	0.50	N	N	N
Federal SEMS-ARCHIVE	0.50	N	N	N
Federal RCRA CORRACTS Facility	1.00	N	N	N
Federal RCRA TSDF Facility	0.50	N	N	N
Federal RCRA Generators Site (LQG, SQG, VSQG, CESQG)	Subject and Adjoining	N	Y	N
Federal IC/EC Registries	Subject Property	N	N	N
Federal ERNS Site	Subject Property	N	N	N
State/Tribal Equivalent NPL	1.00	N	N	N
State/Tribal Equivalent CERCLIS	1.00	N	N	N
State/Tribal Landfill/Solid Waste Disposal Site	0.50	N	N	N
State/Tribal Leaking Storage Tank Site (LUST/LPST)	0.50	N	Y	N
State/Tribal Registered Storage Tank Sites (UST/AST)	Subject and Adjoining	N	Y	N
State/Tribal IC/EC Registries	Subject and Adjoining	N	N	N
State/Tribal Voluntary Cleanup Sites (VCP)	0.50	N	N	N
State/Tribal Spills	0.25	N	N	N
Federal Brownfield Sites	0.50	N	N	N

Database Report Data				
Database	AMSD Radius (mile)	Listings Identified		
		Subject Property	Adjoining Properties	Surrounding Area Sites of Concern
State Brownfield Sites	0.50	N	N	N
Miscellaneous	Varies	N	Y	N

4.2.2 Subject Property Listings

The subject property is not identified in the regulatory database report.

4.2.3 Adjoining Property Listings

The adjoining property to the southeast was identified as a Leaking Underground Storage Tank (LUST), Delisted Storage Tank (Delisted TNK), San Bernardino County Certified Unified Program Agency (SANBEN CUPA), Historical Hazardous Substance Storage Information Database (HHSS), Toxic Pollutant Emissions Facilities (EMISSIONS), California Environmental Reporting System Tanks(CERS TANK), Historical Hazardous Substance Storage Container Information- Facility Summary (HIST TANK), Resource Conservation and Recovery Act Non Generator (RCRA NON GEN), Statewide Environmental Evaluation and Planning System Underground Storage Tank (SWEEPS UST), and PFAS Industry Sectors (PFAS IND) in the regulatory database report, as discussed below:

Adjoining Property Database Listing	
Property Name:	Aztec Aviation, Inc / Apple Valley Airport / SBCO - Apple Valley Airport / Mag Aviation Fuel APV / SBCO Department of Airports / Aztec Aviation Company / Aztec Aviation CO/AV Airport
Address:	21600 Corwin Road
Direction:	East-southeast
Hydrological Gradient:	Up-Gradient, Cross-Gradient
Database Listing:	DELISTED TNK, SANBERN CUPA, LUST, HHSS, EMISSIONS, CERS TANK, HIST TANK, RCRA NON GEN, SWEEPS UST, PFAS IND
Status:	Closed
Discussion:	Apple Valley Airport is listed on the SanBern CUPA and CERS Tank database as an active permitted hazardous material handler, small quantity hazardous waste generator, industrial facility with stormwater permits, and an aboveground petroleum storage site. A UST Sweeps, HHSS, and HIST Tank database listing identify Apple Valley Airport with four registered USTs from as early as 1970. The registered 1970 UST inventory includes two 12,000-gallon aviation gasoline tanks, one 12,000-gallon jet aviation gasoline tank, and one 4,000-gallon regular unleaded gasoline tank. The four aforementioned tanks are identified as inactive on the regulatory database. Mag Aviation Fuel is listed on the RCRA-NonGen database as a non-generator in 2013. No violations were noted on the RCRA database. The EMISSIONS database lists Mag Aviation Fuel and SBCO-Apple Valley Airport as South Coast AQMD permitted facilities generating total organic hydrocarbon gases, reactive organic gases, carbon monoxide emissions, oxides of nitrogen, oxides of Sulphur, and particulate matter between 2013 and 2019. Aztec is listed on the SanBern CUPA database as an inactive hazardous material handler (associated to UST), inactive hazardous waste generator (associated to UST), and with three inactive USTs. Aztec is listed on the UST Sweeps database with three

	active tanks including two 12,000-gallon aviation gasoline tanks and one 12,000-gallon jet aviation gasoline tank. Aztec is listed with one inactive 1,000-gallon aviation gasoline tank which was reportedly removed in 1992. The LUST and CERS database identify Aztec with a release of aviation gasoline, benzene, toluene, ethylbenzene, and xylenes (BTEX) which reportedly impacted soil only. The release was encountered during dispenser and piping upgrades in July 2004. Groundwater was not encountered and was estimated to be approximately 115 to 200 feet bgs. Partner reviewed available SBCFD-HMD records which state that one UST was removed from this facility on August 14, 2004. Highest concentrations of TPH and BTEX were near dispensers D-1, D-2, and piping junction P-1. In order to determine the vertical and lateral impact, conformation soil samples were collected at five-foot intervals up to 35-feet bgs. No additional TPH, BTEX, or MTBE concentrations were detected. Lead was detected in two samples at 6.9 and 8.3 milligrams per kilograms (mg/kg), below the California Human Health Screening Level for residential soils of 150 mg/kg. As a result the SBCFD-HMD issued a Remedial Action Completion Certification letter to Aztec Aviation on October 15, 2010. Based on the continued regulatory permitted oversight, regulatory status, depth to groundwater, and inferred direction of groundwater flow, this site is not expected to represent a significant environmental concern.

Based on the findings, vapor migration is not considered an environmental concern at this time.

4.2.4 Surrounding Area Listings of Concern to Subject Property

No sites of concern are identified in the regulatory database report.

Based on the findings, vapor migration is not considered an environmental concern at this time.

4.2.5 Unplottable Listings

No unplottable listings of concern are identified in the regulatory database report.

A copy of the regulatory database report is included in Appendix C of this report.

5.0 USER PROVIDED INFORMATION AND INTERVIEWS

In order to qualify for one of the *Landowner Liability Protections (LLPs)* offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2001 (the *Brownfields Amendments*), the *User* must conduct the following inquiries required by 40 CFR 312.25, 312.28, 312.29, 312.30, and 312.31. The *User* should provide the following information to the *environmental professional*. Failure to provide this information could result in a determination that *all appropriate inquiries* is not complete. The *User* is asked to provide information or knowledge of the following:

- Review Title and Judicial Records for Environmental Liens and AULs
- Specialized Knowledge or Experience of the User
- Actual Knowledge of the User
- Reason for Significantly Lower Purchase Price
- Commonly Known or *Reasonably Ascertainable* information
- Degree of Obviousness
- Reason for Preparation of this Phase I ESA

Fulfillment of these user responsibilities is key to qualification for the identified defenses to CERCLA liability. Partner requested our Client to provide information to satisfy User Responsibilities as identified in Section 6 of the ASTM guidance.

Pursuant to ASTM Practice E1527-21, Partner requested the following site information from Loctek Inc. (User of this report).

User Responsibilities		
Item	**Provided By User**	**Not Provided By User**
AAI User Questionnaire		X
Title Records, Environmental Liens, and AULs		X
Specialized Knowledge		X
Actual Knowledge		X
Valuation Reduction for Environmental Issues		X
Identification of Key Site Manager	Section 5.2.3	
Reason for Performing Phase 1 ESA	Section 1.1	
Prior Environmental Reports		X
Other		X

5.1 Interviews

5.1.1 Interview with Owner

The owner of the subject property was not available to be interviewed at the time of the assessment.

5.1.2 Interview with Report User

Please refer to Section 5.2 below for information requested from the Report User. The information requested was not received prior to the issuance of this report. Because the Report User (Client) is a lender, it is understood that the Report User would not have knowledge of the property that would significantly impact our ability to satisfy the objectives of this assessment. The lack of this information is not considered to represent a significant data gap.

5.1.3 Interview with Key Site Manager

A key site manager was not provided to be interviewed at the time of this assessment.

5.1.4 Interviews with Past Owners, Operators and Occupants

Interviews with past owners, operators, and occupants were not conducted since information regarding the potential for contamination at the subject property was obtained from other sources.

5.2 User Provided Information

5.2.1 Title Records, Environmental Liens, and AULs

Partner was not provided with title records or environmental lien and AUL information for review as part of this assessment.

5.2.2 Specialized Knowledge

No specialized knowledge of environmental conditions associated with the subject property was provided by the User at the time of the assessment.

5.2.3 Actual Knowledge of the User

No actual knowledge of any environmental lien or AULs encumbering the subject property or in connection with the subject property was provided by the User at the time of the assessment.

5.2.4 Valuation Reduction for Environmental Issues

No knowledge of valuation reductions associated with the subject property was provided by the User at the time of the assessment.

5.2.5 Commonly Known or Reasonably Ascertainable Information

The User did not provide information that is commonly known or reasonably ascertainable within the local community about the subject property at the time of the assessment.

5.2.6 Previous Reports and Other Provided Documentation

No previous reports or other pertinent documentation was provided to Partner for review during the course of this assessment.

6.0 SITE RECONNAISSANCE

The weather at the time of the site visit was sunny and clear. Refer to Section 1.5 for limitations encountered during the field reconnaissance and Sections 2.1 and 2.2 for subject property operations. The table below provides the site assessment details:

Site Assessment Data	
Site Assessment Performed By:	Nathaniel Grondin
Site Assessment Conducted On:	December 14, 2023

Partner was unaccompanied during the site reconnaissance.

No potential environmental concerns were identified during the onsite reconnaissance.

6.1 General Site Characteristics

6.1.1 Solid Waste Disposal

Solid waste is not currently generated onsite. No evidence of illegal dumping of solid waste was observed during the Partner site reconnaissance.

6.1.2 Sewage Discharge and Disposal

No wastewater treatment facilities were observed or reported on the subject property. No septic systems were observed or reported on the subject property.

6.1.3 Stormwater and Surface Water Drainage

Stormwater is removed from the property primarily due to ground infiltration. No drywells were identified on the subject property.

6.1.4 Source of Heating and Cooling

Based on the lack of onsite structures, no heating or cooling sources were observed onsite.

6.1.5 Wells and Cisterns

No aboveground evidence of wells or cisterns was observed during the site reconnaissance.

6.1.6 Wastewater

Domestic wastewater is not generated at the subject property. No industrial processes are currently performed at the subject property.

6.1.7 Septic Systems

No septic systems were observed or reported on the subject property.

6.1.8 Additional Site Observations

No additional general site characteristics were observed during the site reconnaissance.

6.2 Potential Environmental Hazards

6.2.1 Hazardous Substances and Petroleum Products Used or Stored at the Site

No hazardous substances or petroleum products were observed on the subject property during the site reconnaissance.

6.2.2 Aboveground & Underground Hazardous Substance or Petroleum Product Storage Tanks (ASTs/USTs)

No evidence of current or former ASTs or USTs was observed during the site reconnaissance.

6.2.3 Evidence of Releases

No spills, stains, or other indications that a surficial release has occurred at the subject property were observed.

6.2.4 Polychlorinated Biphenyls (PCBs)

No potential PCB-containing equipment (transformers, oil-filled switches, hoists, lifts, dock levelers, hydraulic elevators, etc.) was observed on the subject property during Partner's reconnaissance.

6.2.5 Strong, Pungent or Noxious Odors

No strong, pungent or noxious odors were evident during the site reconnaissance.

6.2.6 Pools of Liquid

No pools of liquid were observed on the subject property during the site reconnaissance.

6.2.7 Drains, Sumps and Clarifiers

No drains, sumps, or clarifiers, other than those associated with storm water removal, were observed on the subject property during the site reconnaissance.

6.2.8 Pits, Ponds and Lagoons

No pits, ponds, or lagoons were observed on the subject property.

6.2.9 Stressed Vegetation

No stressed vegetation was observed on the subject property.

6.2.10 Additional Potential Environmental Hazards

No additional environmental hazards, including landfill activities or radiological hazards, were observed.

6.3 Non-ASTM Services

6.3.1 Asbestos-Containing Materials (ACMs)

Asbestos is the name given to a number of naturally occurring, fibrous silicate minerals mined for their useful properties such as thermal insulation, chemical and thermal stability, and high tensile strength. The Occupational Safety and Health Administration (OSHA) regulation 29 CFR 1926.1101 requires certain construction materials to be presumed to contain asbestos, for purposes of this regulation. All thermal system insulation (TSI), surfacing material, and asphalt/vinyl flooring that are present in a building that have not been appropriately tested are "presumed asbestos-containing material" (PACM).

Based on the lack of onsite structures, ACMs were not considered within the scope of this assessment.

6.3.2 Lead-Based Paint (LBP)

Lead is a highly toxic metal that affects virtually every system of the body. LBP is defined as any paint, varnish, stain, or other applied coating that has 1 mg/cm2 (or 5,000 µg/g or 0.5% by weight) or more of lead. Congress passed the Residential Lead-Based Paint Hazard Reduction Act of 1992, also known as "Title X," to protect families from exposure to lead from paint, dust, and soil. Under Section 1017 of Title X, intact LBP on most walls and ceilings is not considered a "hazard," although the condition of the paint should be monitored and maintained to ensure that it does not become deteriorated. Further, Section 1018

of this law directed the Housing and Urban Development (HUD) and the US EPA to require the disclosure of known information on LBP and LBP hazards before the sale or lease of most housing built before 1978.

Due to the lack of onsite structures, LBP was not considered within the scope of this assessment.

6.3.3 Radon

Radon is a colorless, odorless, naturally occurring, radioactive, inert, gaseous element formed by radioactive decay of radium (Ra) atoms. The US EPA has prepared a map to assist National, State, and local organizations to target their resources and to implement radon-resistant building codes. The map divides the country into three Radon Zones, according to the table below:

EPA Radon Zones		
EPA Zones	**Average Predicted Radon Levels**	**Potential**
Zone 1	Exceed 4.0 pCi/L	Highest
Zone 2	Between 2.0 and 4.0 pCi/L	Moderate
Zone 3	Less than 2.0 pCi/L	Low

It is important to note that the EPA has found homes with elevated levels of radon in all three zones, and the US EPA recommends site-specific testing in order to determine radon levels at a specific location. However, the map does give a valuable indication of the propensity of radon gas accumulation in structures.

Review of the US EPA Map of Radon Zones places the subject property in Zone 2. Based upon the radon zone classification, radon is not considered an environmental concern.

6.3.4 Lead in Drinking Water

According to available information, a public water system operated by the Liberty Utilities serves the subject property vicinity. The source of public water for the Town of Apple Valley is groundwater obtained from approximately 18 deep groundwater wells located throughout Apple Valley. The wells draw water from the Alto Subunit of the Mojave groundwater basin According to the 2022 Annual Water Quality Report, water supplied to the subject property is in compliance with all State and Federal regulations pertaining to drinking water standards, including lead and copper. Water sampling was not conducted to verify water quality.

6.3.5 Mold

Molds are microscopic organisms found virtually everywhere, indoors and outdoors. Mold will grow and multiply under the right conditions, needing only sufficient moisture (e.g.in the form of very high humidity, condensation, or water from a leaking pipe, etc.) and organic material (e.g., ceiling tile, drywall, paper, or natural fiber carpet padding).

Based on the lack of onsite structures, mold growth and water damage were not considered within the scope of this assessment.

6.3.6 Wetlands

The subject property does not appear to be a designated wetland area; however, two riverine habitats appear to bisect the western and southeastern portions. No settling ponds, lagoons, surface impoundments, wetlands or natural catch basins were observed at the subject property during this assessment. Based on information obtained from the United States Fish and Wildlife Service; however, a comprehensive wetlands survey would be required in order to formally determine actual wetlands on the subject property. No settling ponds, lagoons, surface impoundments, wetlands or natural catch basins were observed at the subject property during this assessment.

6.4 Adjoining Property Reconnaissance

The adjoining property reconnaissance consisted of observing the adjoining properties from the subject property premises.

6.4.1 Hazardous Substances and Petroleum Products Used or Stored at the Site

No hazardous substances or petroleum products were observed on adjoining properties during the limited adjoining property reconnaissance.

6.4.2 ASTs/USTs for Hazardous Substances or Petroleum Products

No ASTs or USTs for hazardous substances/petroleum products were observed on adjoining properties during the limited adjoining property reconnaissance.

6.4.3 Evidence of Releases

No evidence of a release was observed on adjoining properties during the limited adjoining property reconnaissance.

6.4.4 PCBs

No PCB containing materials were observed on adjoining properties during the limited adjoining property reconnaissance.

6.4.5 Strong, Pungent, or Noxious Odors

No strong, pungent, or noxious odors were observed on adjoining properties during the limited adjoining property reconnaissance.

6.4.6 Pools of Liquid

No pools of liquid were observed on adjoining properties during the limited adjoining property reconnaissance.

6.4.7 Drains, Sumps, and Clarifiers

No drains, sumps, or clarifiers were observed on adjoining properties during the limited adjoining property reconnaissance.

6.4.8 Pits, Ponds, and Lagoons

No pits, ponds, or lagoons were observed on adjoining properties during the limited adjoining property reconnaissance.

6.4.9 Stressed Vegetation

No stressed vegetation was observed on adjoining properties during the limited adjoining property reconnaissance.

6.4.10 Additional Potential Environmental Hazards

No additional environmental hazards were observed on adjoining properties during the limited adjoining property reconnaissance.

7.0 VAPOR ENCROACHMENT CONDITIONS

Partner conducted a limited non-intrusive vapor screening on the subject property to identify, to the extent feasible, the potential for vapor encroachment conditions (VECs) in connection with the subject property. This included consideration of chemicals of concern (COC) that may migrate as vapors into the subsurface of the subject property as a result of contaminated soil and groundwater on or near the property.

This screening utilized readily available data sources previously discussed in this Phase I ESA that includes:

- the physical setting of the subject property (Section 2.4),
- standard historical sources for the subject property, adjoining, and surrounding area (Section 3.0),
- known or potentially contaminated sites as identified from information from regulatory agencies and sites on Federal, State, tribal and local databases (Section 4.0), and
- information from the site reconnaissance (Section 6.0) of the subject property and observations of the surrounding properties.

The results of our data collection, reconnaissance, and analysis are tabulated below:

Potential for Vapor Encroachment to Impact the Subject Property	
Area of Concern	***Likely or Known VEC to Subject Property***
Subject Property Existing Operations or Conditions	None identified that impact the subject property.
Historical Uses of the Subject Property	None identified that impact the subject property.
Adjoining Property Operations or Existing Conditions	None identified that impact the subject property.
Historical Uses of Adjoining Properties or Nearby Properties	None identified that impact the subject property.
Regulatory Review of sites identified on Federal, State, tribal and Local Environmental Databases which were located in the AMSD	None identified that impact the subject property.

Based on the findings of the limited non-intrusive vapor screening, vapor intrusion is unlikely to be an issue of concern in connection with the existing structures on the subject property. As such, no further assessment is recommended.

8.0 FINDINGS AND CONCLUSIONS

Findings and Opinions

Recognized Environmental Condition

A recognized environmental condition (REC) refers to the presence of hazardous substances or petroleum products in, on, or at the subject property due to a release to the environment; the likely presence of hazardous substances or petroleum products in, on, or at the subject property due to a release or likely release to the environment; or the presence of hazardous substances or petroleum products in, on, or at the subject property under conditions that pose a material threat of a future release to the environment.

- Partner did not identify any RECs during the course of this assessment.

Controlled Recognized Environmental Condition

A controlled recognized environmental condition (CREC) refers to a REC affecting the subject property that has been addressed to the satisfaction of the applicable regulatory authority or authorities with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, activity and use limitations or other property use limitations).

- Partner did not identify any CRECs during the course of this assessment.

Historical Recognized Environmental Condition

A historical recognized environmental condition (HREC) refers to a previous release of hazardous substances or petroleum products affecting the subject property that has been addressed to the satisfaction of the applicable regulatory authority or authorities and meeting unrestricted use criteria established by the applicable regulatory authority or authorities without subjecting the subject property to any controls (for example, activity and use limitations or other property use limitations).

- Partner did not identify any HRECs during the course of this assessment.

Business Environmental Risk

A Business Environmental Risk (BER) is a risk which can have a material environmental or environmentally driven impact on the business associated with the current or planned use of commercial real estate, not necessarily related to those environmental issues required to be investigated in this practice.

- Partner did not identify any BERs during the course of this assessment.

Significant Data Gaps

No significant data gaps affecting the ability of the Environmental Professional to identify a REC were encountered during this assessment.

Conclusions and Recommendations

Partner has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527-21 of APN: 0463-372-21-0000 in Apple Valley, San Bernardino, California (the "subject property"). Any exceptions to, or deletions from, this practice are described in Section 1.5 of this report.

This assessment has revealed no evidence of RECs, CRECs, HRECs, or BERs in connection with the subject property. Based on the conclusions of this assessment, Partner recommends no further investigation of the subject property at this time.

9.0 SIGNATURES OF ENVIRONMENTAL PROFESSIONALS

Partner has performed a Phase I Environmental Site Assessment of the property located at APN: 0463-372-21-0000 in Apple Valley, San Bernardino, California in conformance with the scope and limitations of the protocol and the limitations stated earlier in this report. Exceptions to or deletions from this protocol are discussed earlier in this report.

By signing below, Partner declares that, to the best of our professional knowledge and belief, we meet the definition of *Environmental Professional* as defined in §312.10 of 40 CFR §312. Partner has the specific qualifications based on education, training, and experience to assess a *property* of the nature, history, and setting of the subject *property*. Partner has developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Prepared By:

DRAFT
Nathaniel Grondin
Environmental Professional

Reviewed By:

DRAFT
Lyly Churchill, MA
Project Manager

10.0 REFERENCES

Reference Documents

American Society for Testing and Materials, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, ASTM Designation: E1527-21.

Environmental Risk Information Services (ERIS), Radius Report, December 2023

Federal Emergency Management Agency, Federal Insurance Administration, National Flood Insurance Program, Flood Insurance Map, accessed via internet, December 2023

United States Department of Agriculture, Natural Resources Conservation Service, Web Soil Survey, accessed via the internet, December 2023

United States Environmental Protection Agency, EPA Map of Radon Zones (Document EPA-402-R-93-071), accessed via the internet, December 2023

United States Fish and Wildlife Service, National Wetlands Inventory, accessed via the internet, December 2023

United States Geological Survey, accessed via the Internet, December 2023

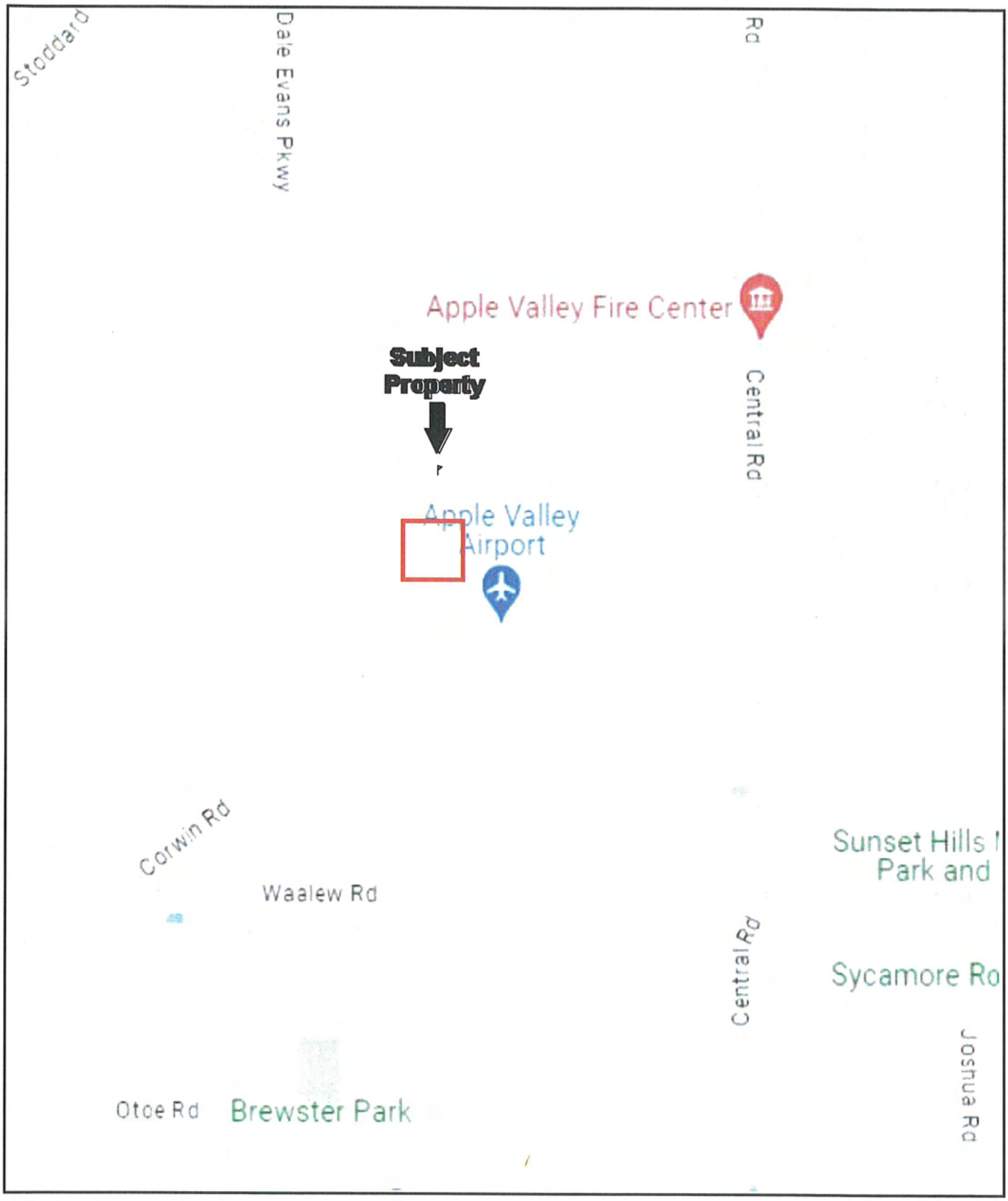
United States Geological Survey Topographic Map 2021, 7.5-minute series, accessed via internet, December 2023

FIGURES

1: Site Location Map

2: Site Plan

3: Topographic Map



N

Drawing Not To Scale

KEY:
Subject Property

FIGURE 1: SITE LOCATION MAP
Project No. 23-430676.1

PARTNER

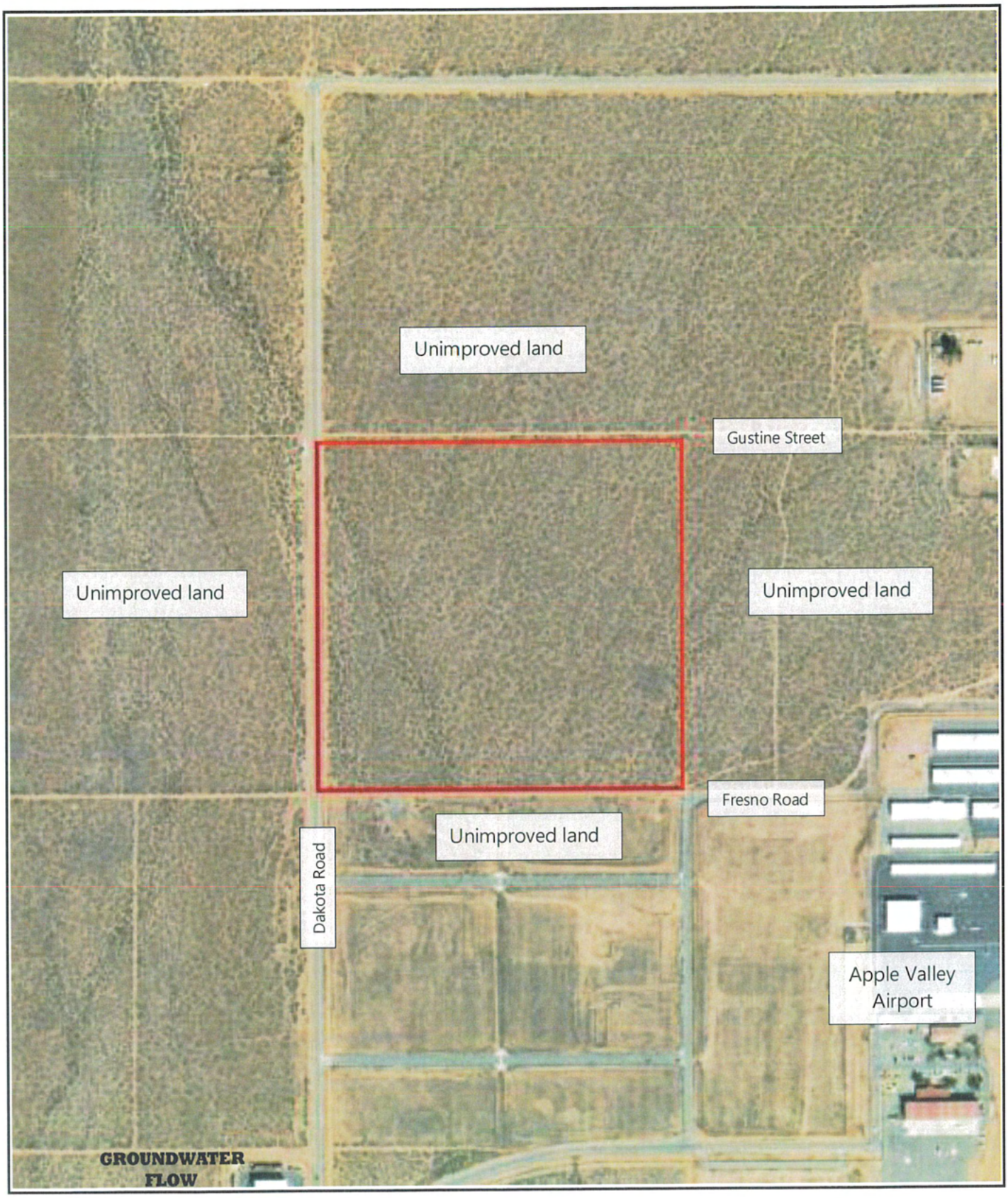
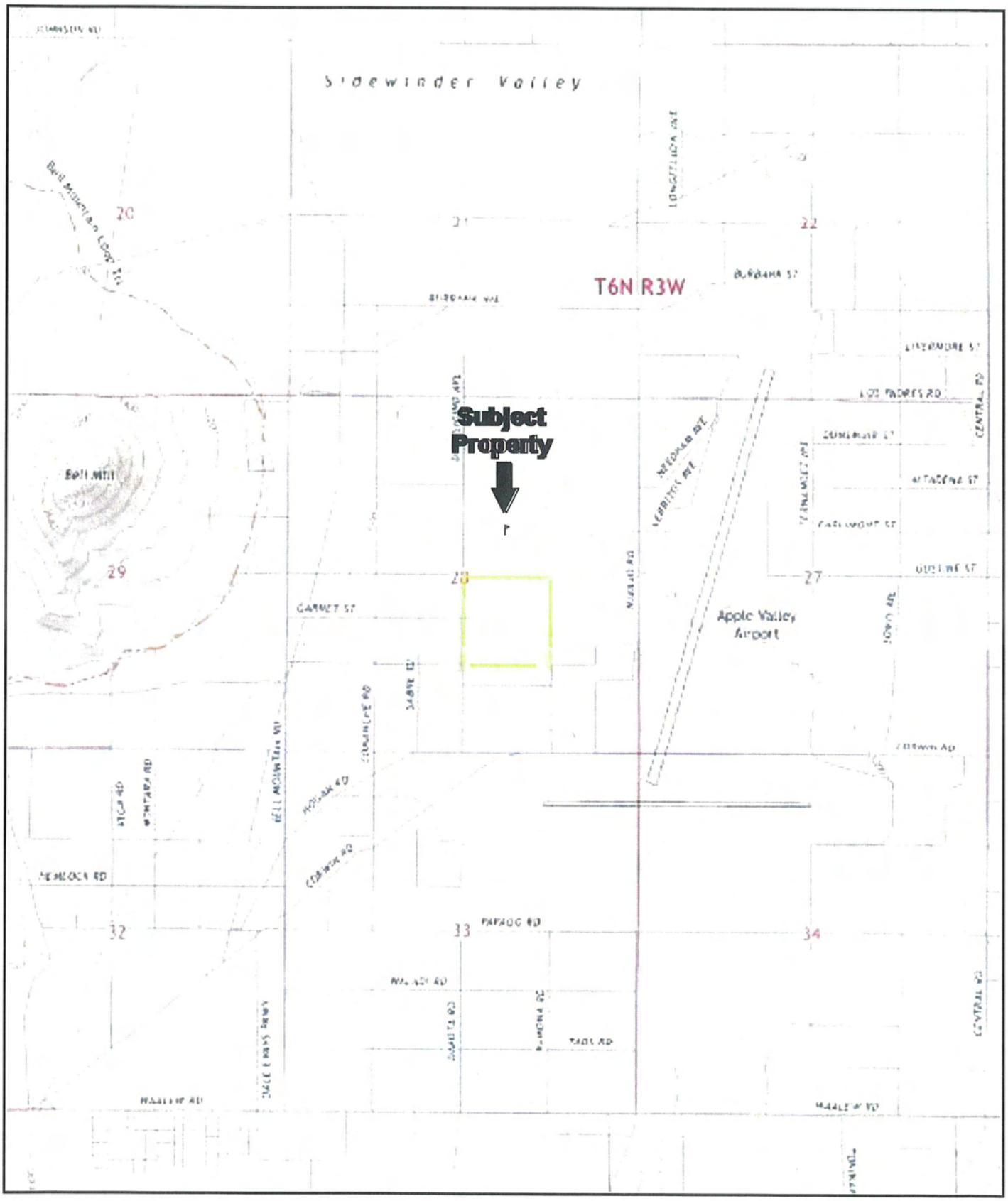


FIGURE 2: SITE PLAN
Project No. 23-430676.1

PARTNER



N

USGS 7.5-Minute *Apple Valley North, California* Quadrangle
Created: 2021

KEY:
Subject Property

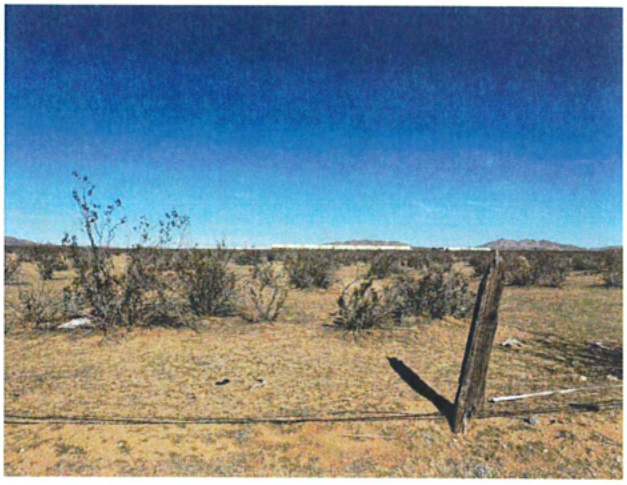
FIGURE 3: TOPOGRAPHIC MAP
Project No. 23-430676.1

PARTNER

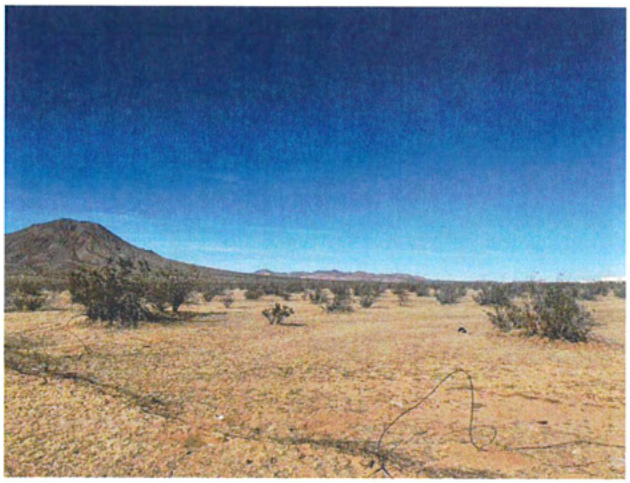
APPENDIX A: SITE PHOTOGRAPHS



1. Southern property boundary view to the east



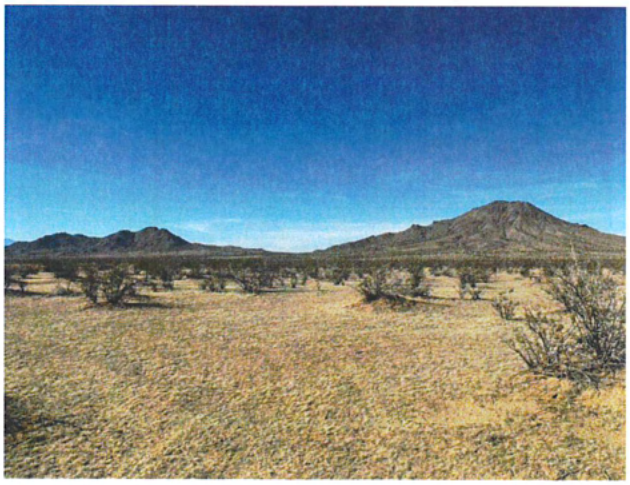
2. Central portion of the subject property view to the north



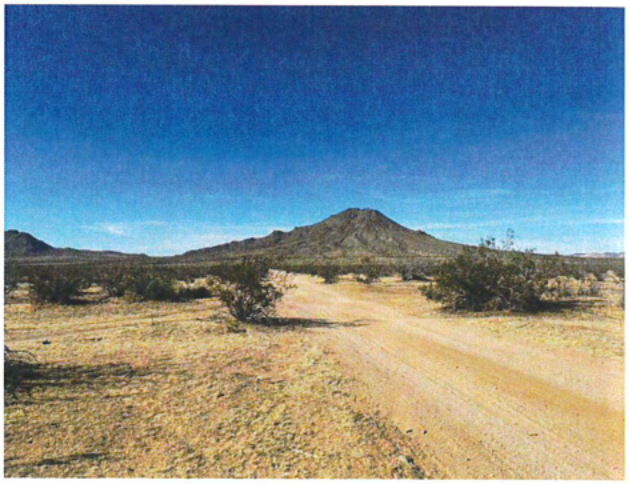
3. Southeastern portion of the subject property view to the northwest



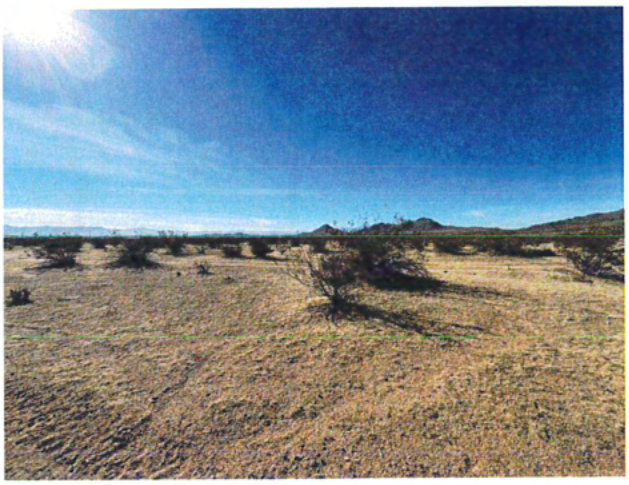
4. Eastern boundary of the subject property view to the north



5. Central portion of the subject property view to the west



6. Northern boundary of the subject property view to the west



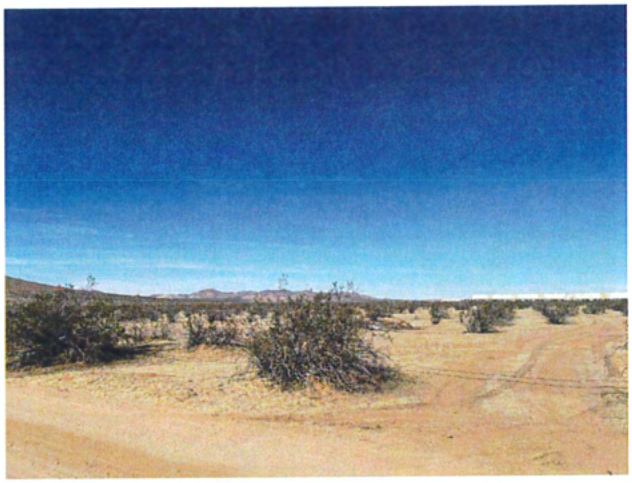
7. Central portion of the subject property view to the south



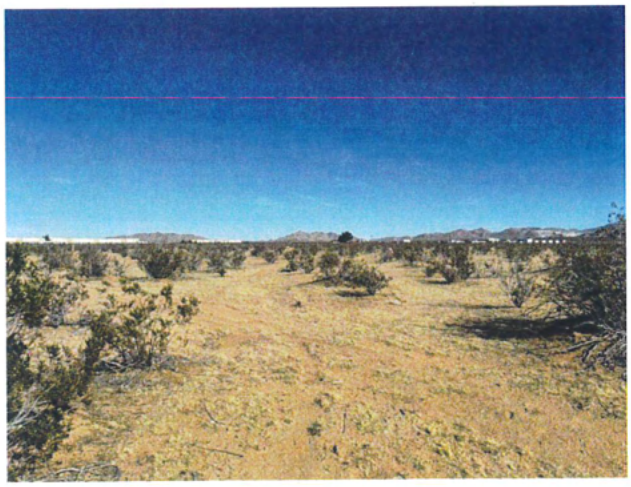
8. Debris pile on the north central portion of the subject property



9. Western boundary of the subject property view to the south



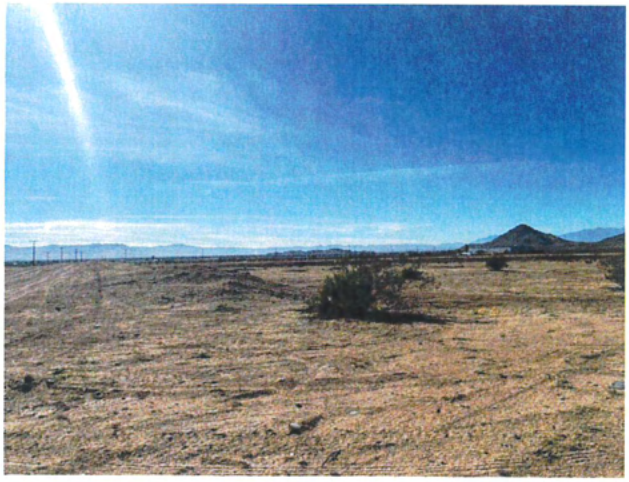
10. Adjoining property to the north of the subject property



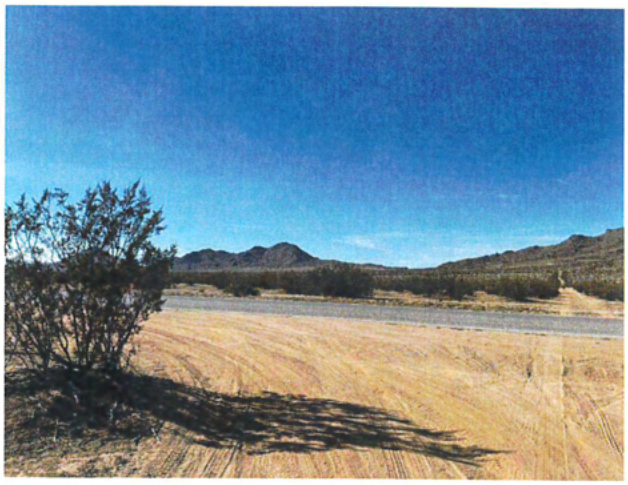
11. Adjoining property to the east of the subject property



12. Adjoining property to the south/southeast of the subject property



13. Adjoining property to the south of the subject property



14. Adjoining property to the west of the subject property

APPENDIX B: HISTORICAL/REGULATORY DOCUMENTATION

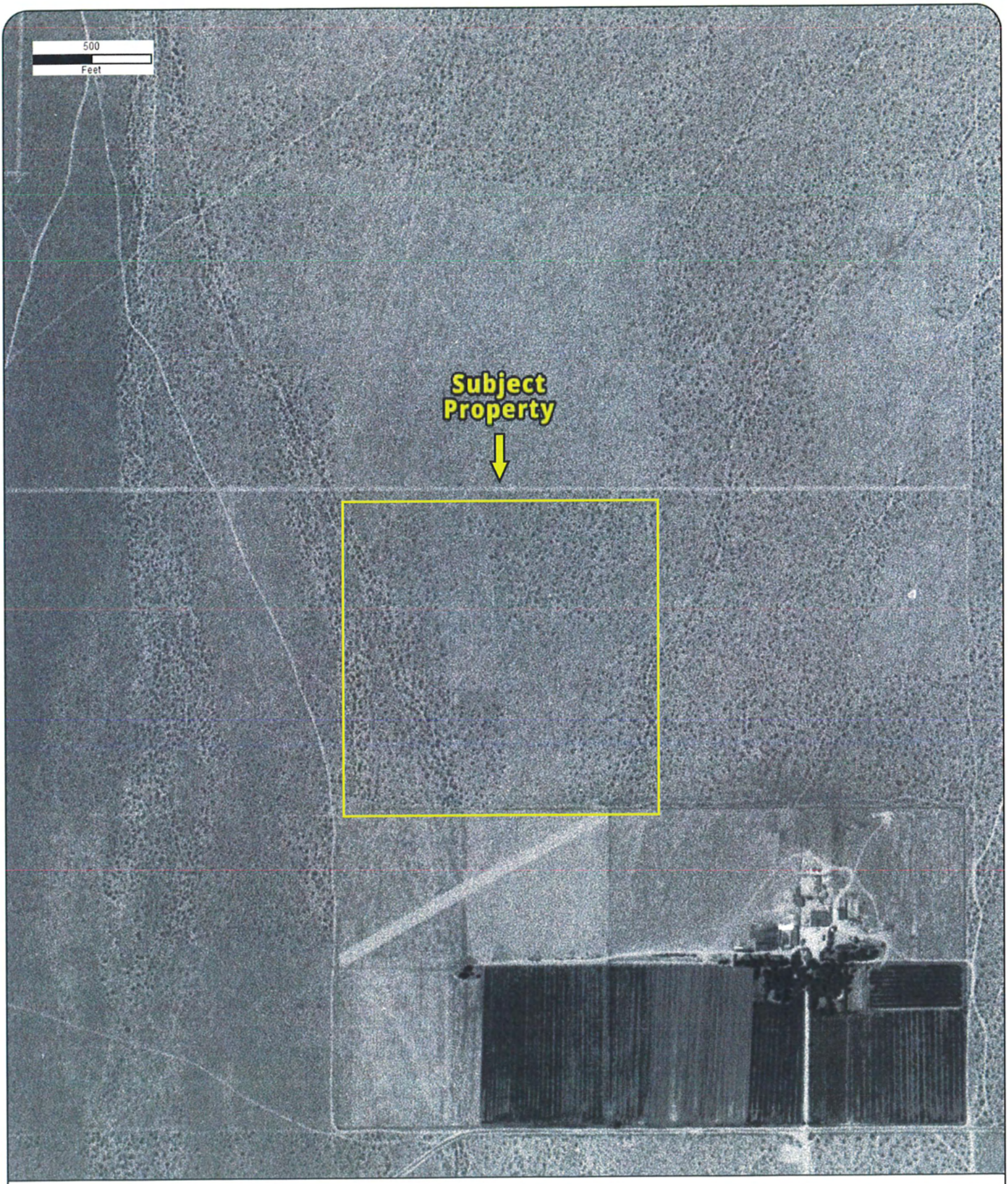


Year: 1948
Source: USAF
Scale: 1" = 500'
Comment: Best Copy Available

Address: APN: 0463-372-21-0000, APPLE VALLEY, CA
Approx Center: -117.19589186,34.5770938

Order No: 23120700365

PARTNER

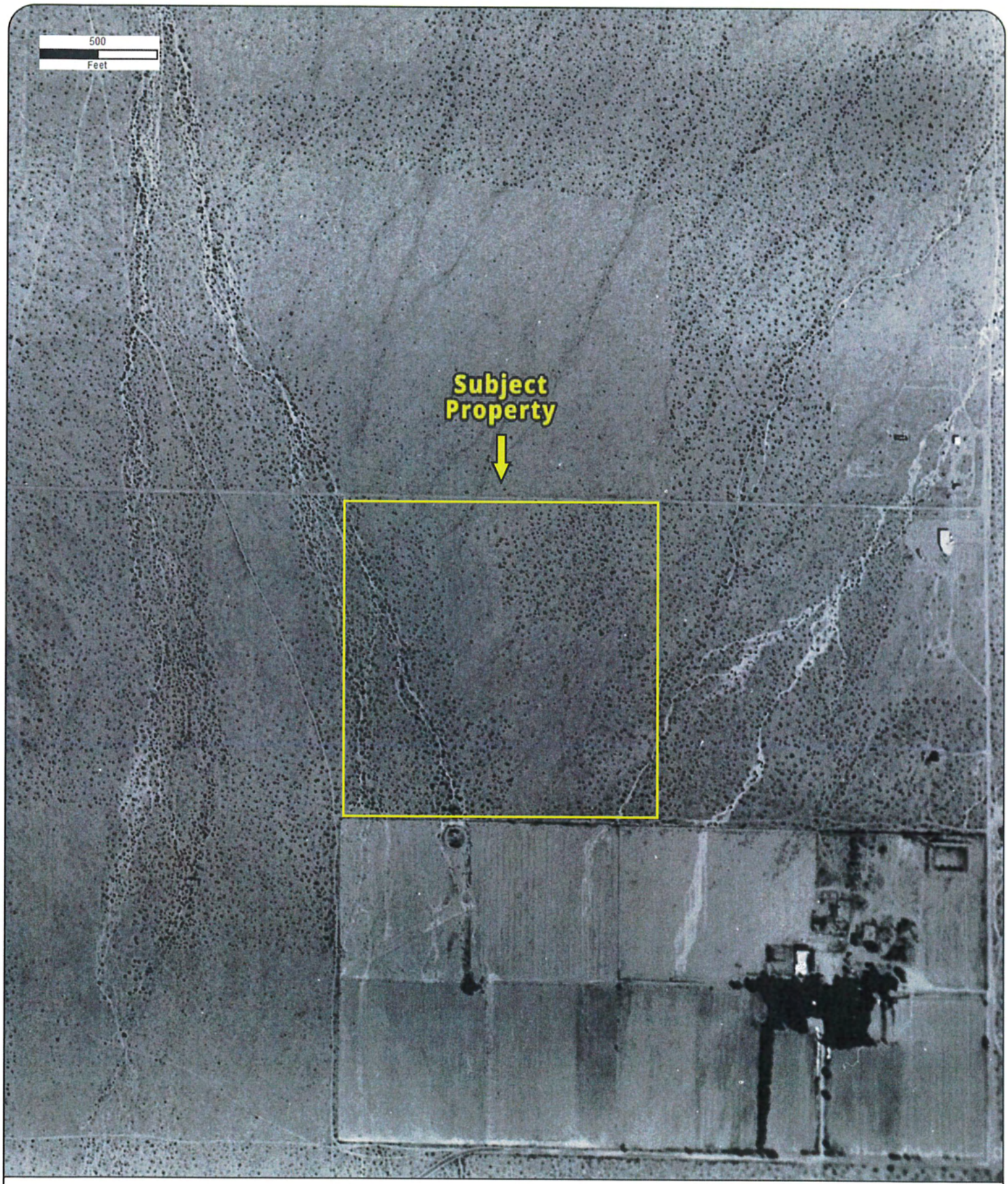


Year: 1952
Source: USGS
Scale: 1" = 500'
Comment:

Address: APN: 0463-372-21-0000, APPLE VALLEY, CA
Approx Center: -117.19589186,34.5770938

Order No: 23120700365

PARTNER

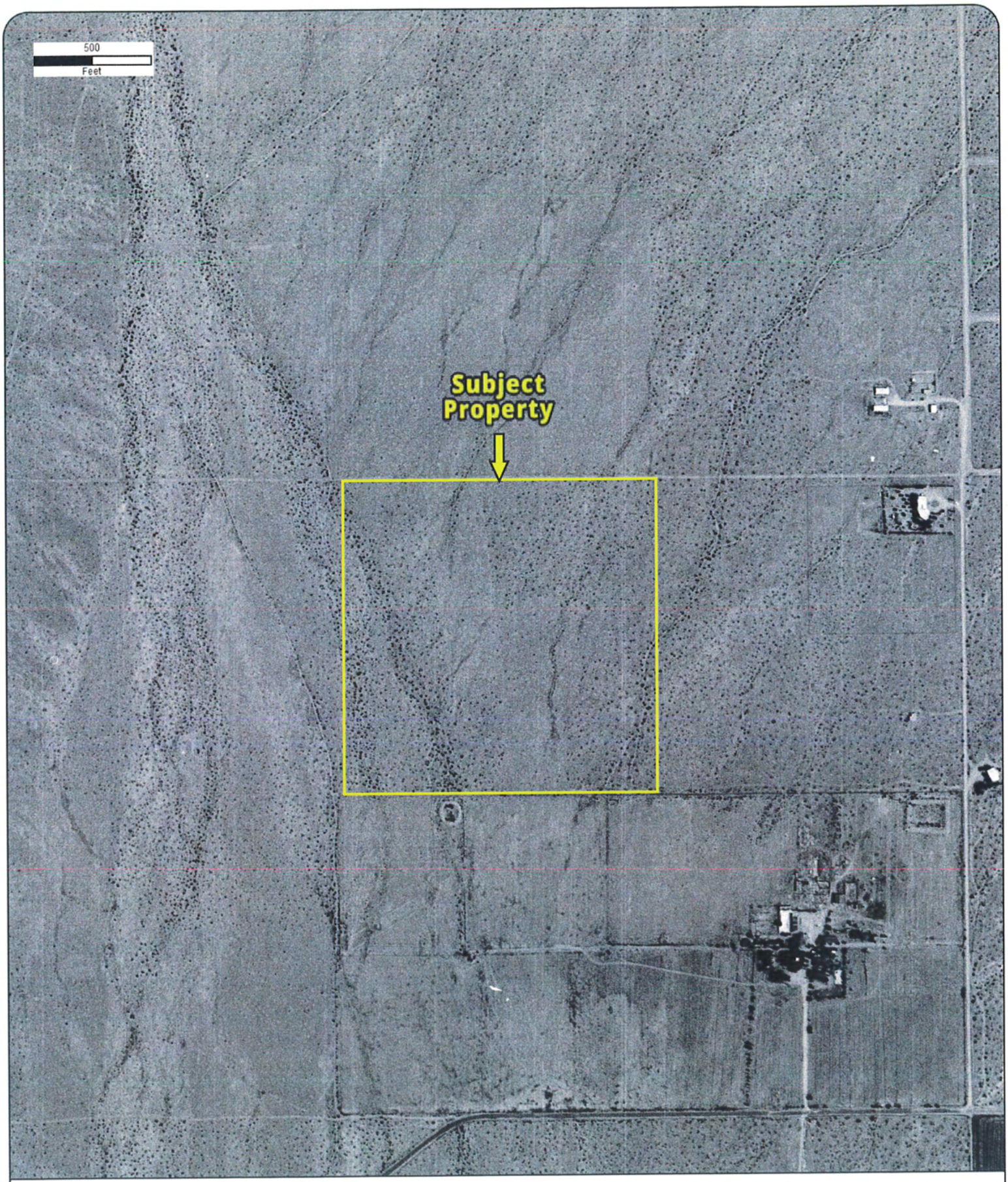


Year: 1959
Source: ASCS
Scale: 1" = 500'
Comment:

Address: APN: 0463-372-21-0000, APPLE VALLEY, CA
Approx Center: -117.19589186,34.5770938

Order No: 23120700365

PARTNER



Year: 1968
Source: USGS
Scale: 1" = 500'
Comment:

Address: APN: 0463-372-21-0000, APPLE VALLEY, CA
Approx Center: -117.19589186,34.5770938

Order No: 23120700365

PARTNER

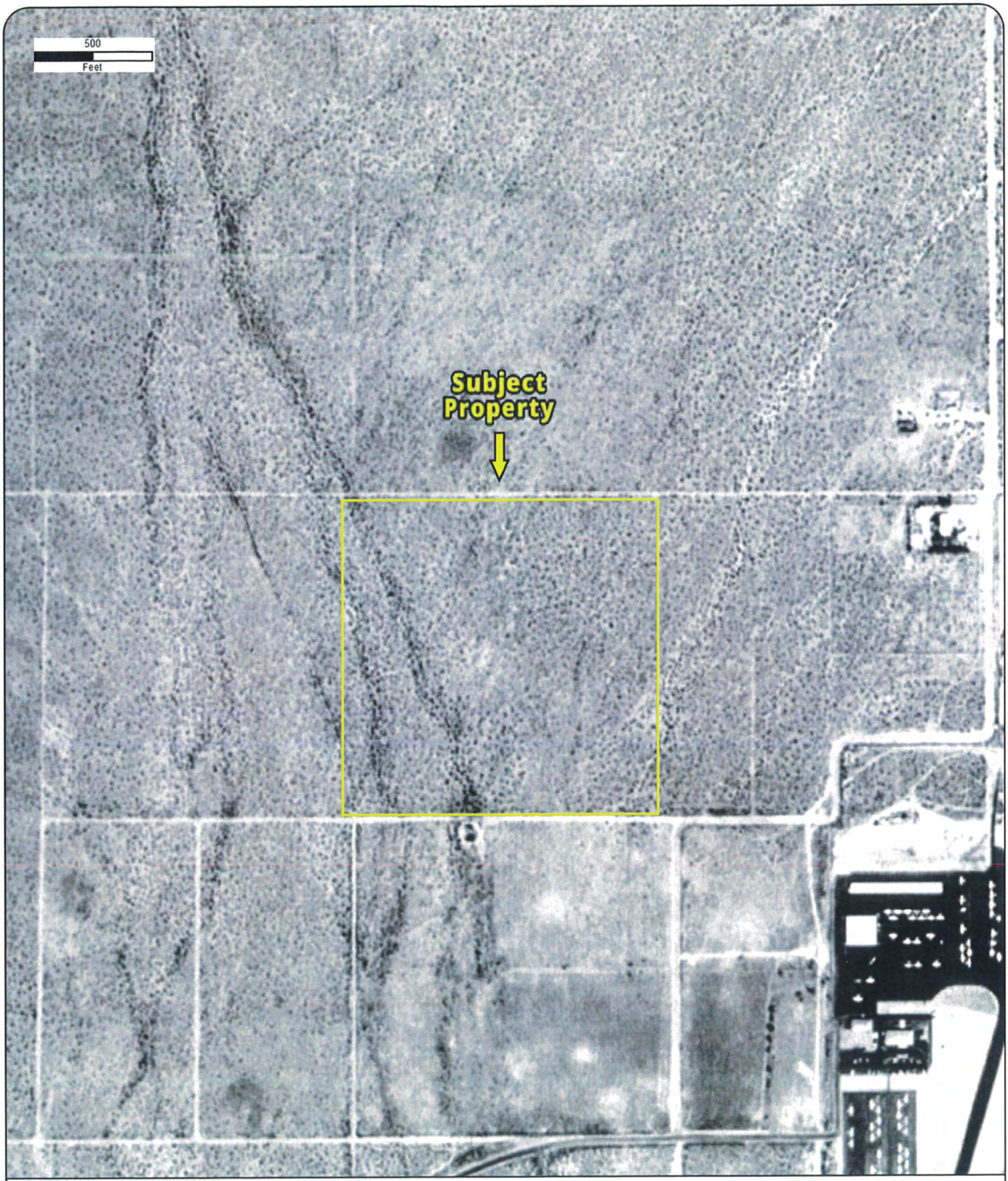


Year: 1973
Source: NASA
Scale: 1" = 500'
Comment:

Address: APN: 0463-372-21-0000, APPLE VALLEY, CA
Approx Center: -117.19589186,34.5770938

Order No: 23120700365

PARTNER



Year: 1984
Source: USGS
Scale: 1" = 500'
Comment:

Address: APN: 0463-372-21-0000, APPLE VALLEY, CA
Approx Center: -117.19589186,34.5770938

Order No: 23120700365

PARTNER



Year: 1994
Source: USGS
Scale: 1" = 500'
Comment:

Address: APN: 0463-372-21-0000, APPLE VALLEY, CA
Approx Center: -117.19589186,34.5770938

Order No: 23120700365

PARTNER

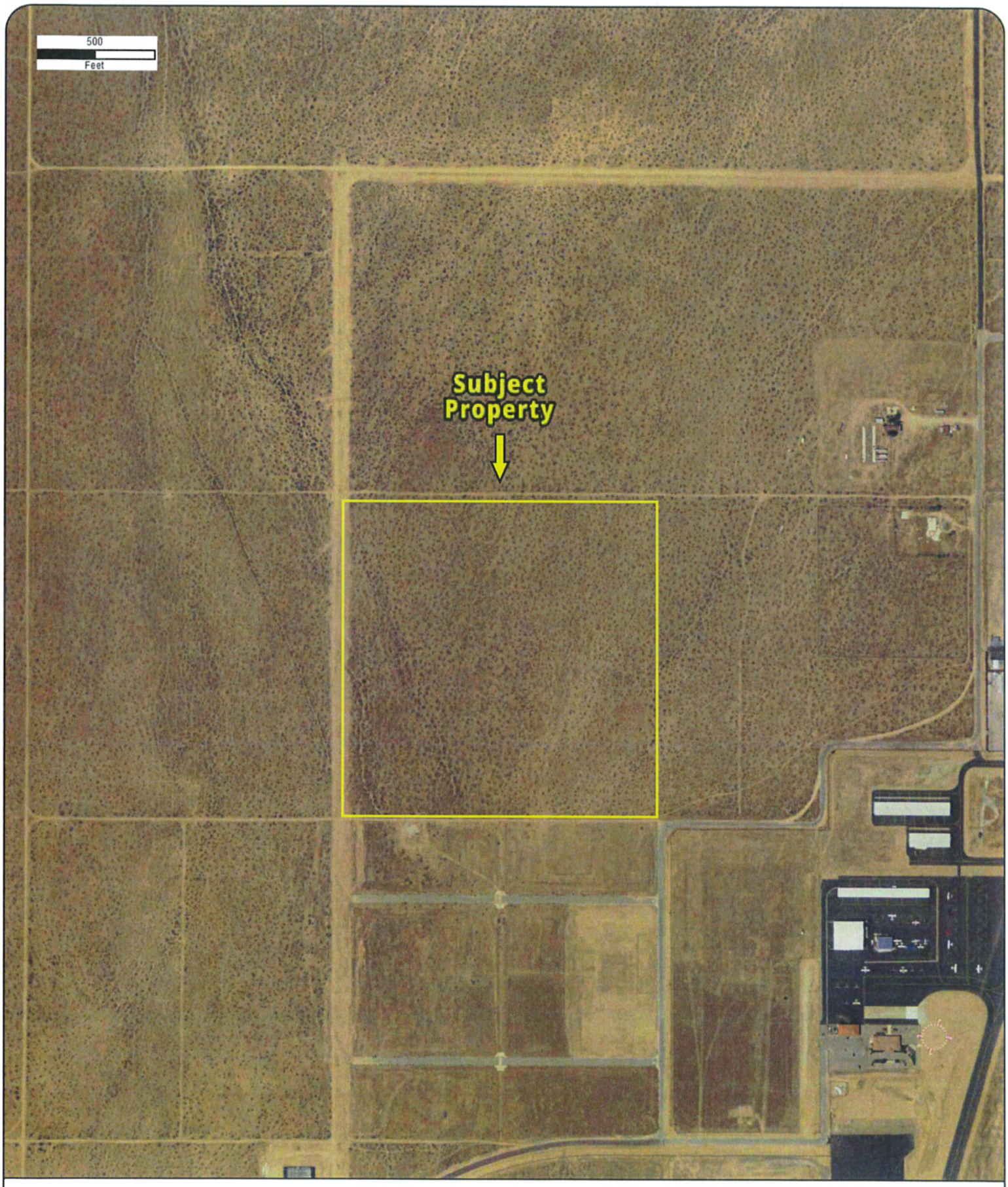


Year: 2002
Source: USGS
Scale: 1" = 500'
Comment:

Address: APN: 0463-372-21-0000, APPLE VALLEY, CA
Approx Center: -117.19589186,34.5770938

Order No: 23120700365

PARTNER

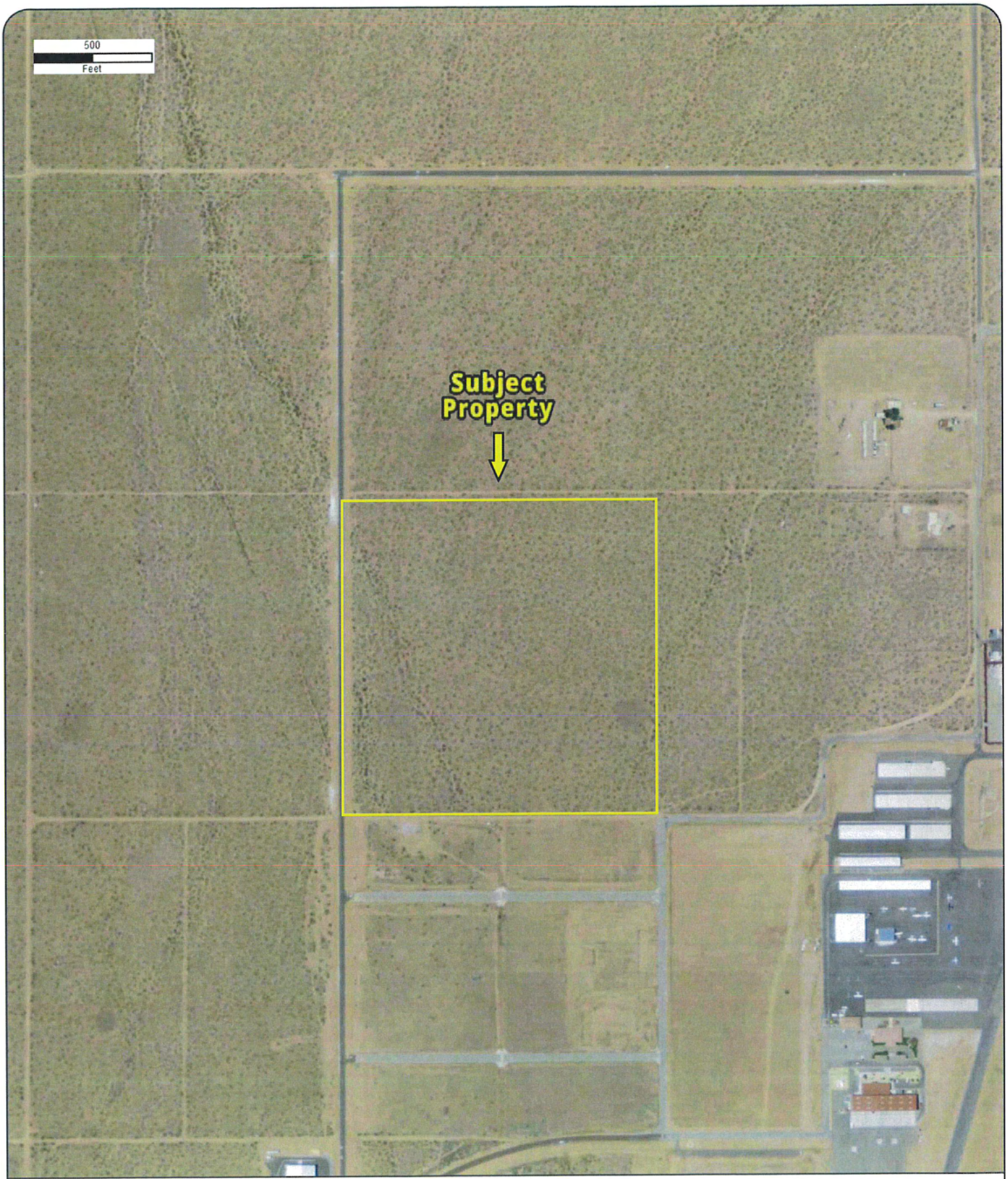


Year: 2005
Source: USDA
Scale: 1" = 500'
Comment:

Address: APN: 0463-372-21-0000, APPLE VALLEY, CA
Approx Center: -117.19589186,34.5770938

Order No: 23120700365

PARTNER



Year: 2009
Source: USDA
Scale: 1" = 500'
Comment:

Address: APN: 0463-372-21-0000, APPLE VALLEY, CA
Approx Center: -117.19589186,34.5770938

Order No: 23120700365

PARTNER

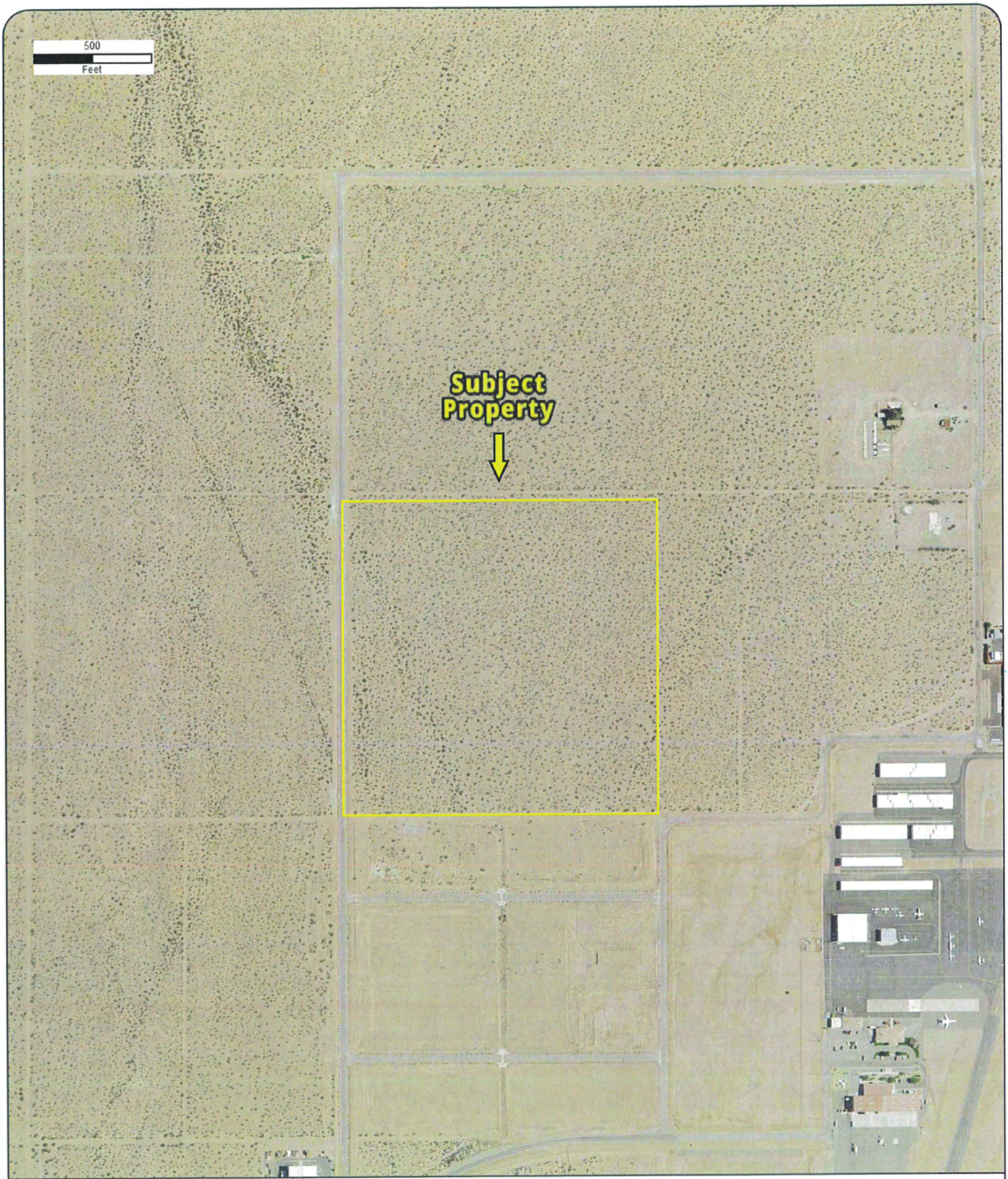


Year: 2012
Source: USDA
Scale: 1" = 500'
Comment:

Address: APN: 0463-372-21-0000, APPLE VALLEY, CA
Approx Center: -117.19589186,34.5770938

Order No: 23120700365

PARTNER

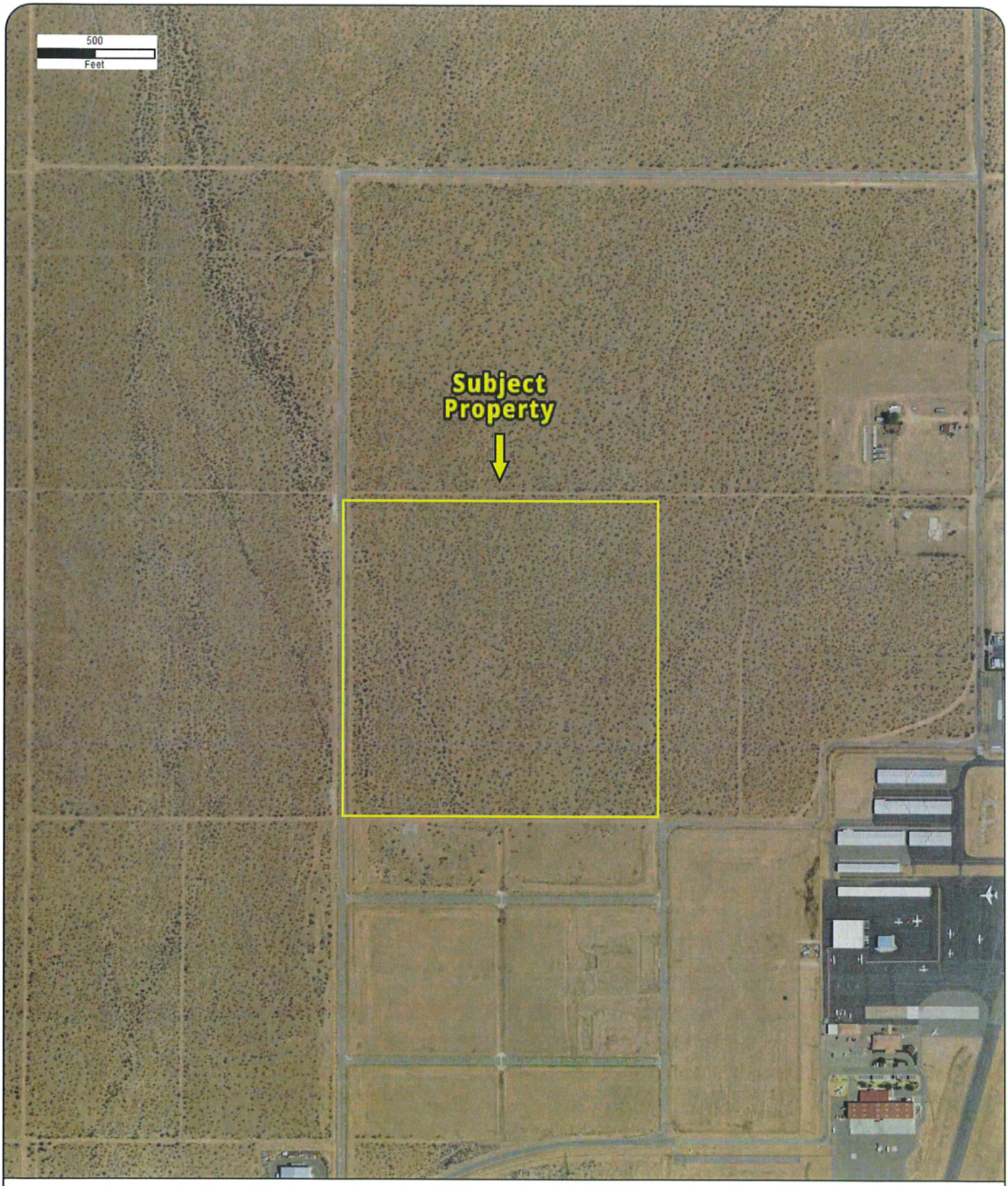


Year: 2014
Source: USDA
Scale: 1" = 500'
Comment:

Address: APN: 0463-372-21-0000, APPLE VALLEY, CA
Approx Center: -117.19589186,34.5770938

Order No: 23120700365

PARTNER

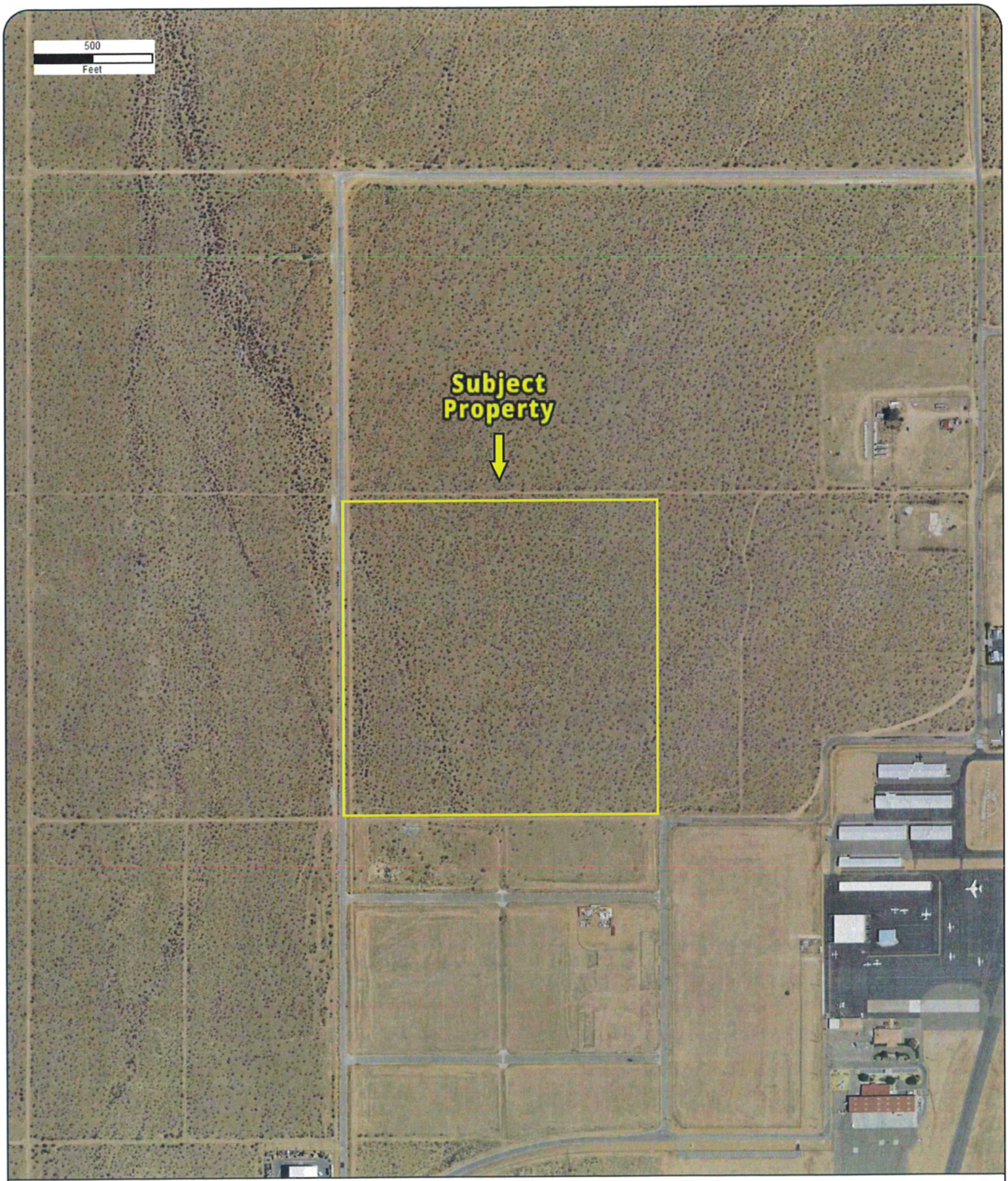


Year: 2016
Source: USDA
Scale: 1" = 500'
Comment:

Address: APN: 0463-372-21-0000, APPLE VALLEY, CA
Approx Center: -117.19589186,34.5770938

Order No: 23120700365

PARTNER

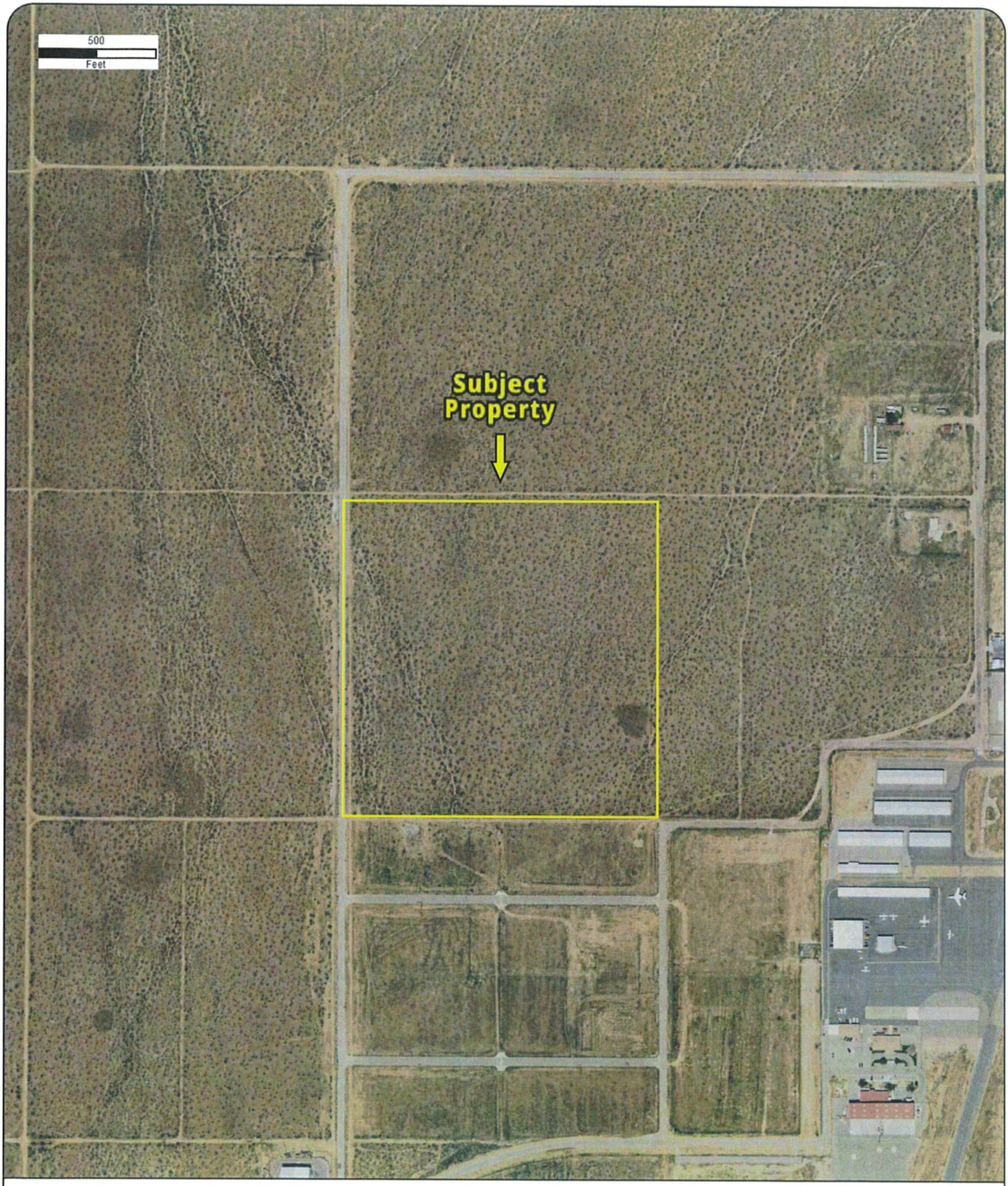


Year: 2018
Source: USDA
Scale: 1" = 500'
Comment:

Address: APN: 0463-372-21-0000, APPLE VALLEY, CA
Approx Center: -117.19589186,34.5770938

Order No: 23120700365

PARTNER

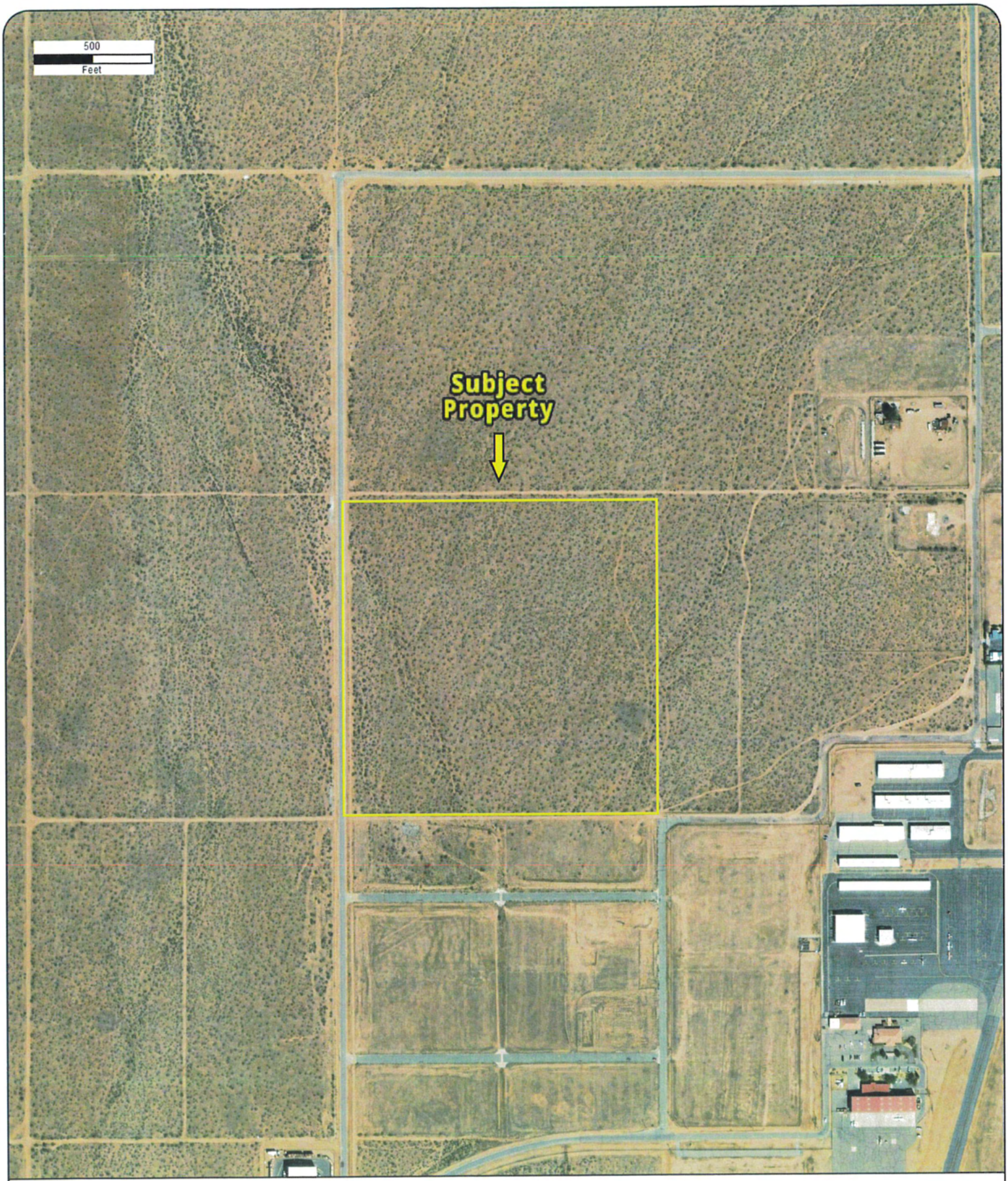


Year: 2020
Source: USDA
Scale: 1" = 500'
Comment:

Address: APN: 0463-372-21-0000, APPLE VALLEY, CA
Approx Center: -117.19589186,34.5770938

Order No: 23120700365

PARTNER



Year: 2022
Source: MAXAR
Scale: 1" = 500'
Comment:

Address: APN: 0463-372-21-0000, APPLE VALLEY, CA
Approx Center: -117.19589186,34.5770938

Order No: 23120700365

PARTNER

ERIS

FIRE INSURANCE MAPS

Project Property:	APN: 0463-372-21-0000 APN: 0463-372-21-0000 APPLE VALLEY CA 92307
Project No:	23-430676.1
Requested By:	Partner Engineering and Science, Inc.
Order No:	23120700365
Date Completed:	December 07, 2023

Please note that no information was found for your site or adjacent properties.

Environmental Risk Information Services
A division of Glacier Media Inc.
1.866.517.5204 | info@erisinfo.com | erisinfo.com

ERIS

CITY DIRECTORY

Project Property:	*APN: 0463-372-21-0000*
	APN: 0463-372-21-0000
	APPLE VALLEY,CA 92307
Project No:	*23-430676.1*
Requested By:	*Partner Engineering and Science, Inc.*
Order No:	*23120700365*
Date Completed:	*December 13, 2023*

Environmental Risk Information Services
A division of Glacier Media Inc.
1.866.517.5204 | info@erisinfo.com | erisinfo.com

December 13, 2023
RE: CITY DIRECTORY RESEARCH
APN: 0463-372-21-0000
APPLE VALLEY,CA 92307

Thank you for contacting ERIS for an City Directory Search for the site described above. Our staff has conducted a reverse listing City Directory search to determine prior occupants of the subject site and adjacent properties. We have provided the nearest addresses(s) when adjacent addresses are not listed. If we have searched a range of addresses, all addresses in that range found in the Directory are included.

Note: Reverse Listing Directories generally are focused on more highly developed areas. Newly developed areas may be covered in the more recent years, but the older directories will tend to cover only the "central" parts of the city. To complete the search, we have either utilized the ACPL, Library of Congress, State Archives, and/or a regional library or history center as well as multiple digitized directories. These do not claim to be a complete collection of all reverse listing city directories produced.

ERIS has made every effort to provide accurate and complete information but shall not be held liable for missing, incomplete or inaccurate information. To complete this search we used the general range(s) below to search for relevant findings. If you believe there are additional addresses or streets that require searching please contact us at 866-517-5204.

Search Criteria:
15600-END of Dakota Rd
ALL of Fresno Rd
ALL of Gustine St
Search Notes:

Search Results Summary

Date	Source	Comment
2022	DIGITAL BUSINESS DIRECTORY	
2020	DIGITAL BUSINESS DIRECTORY	
2016	DIGITAL BUSINESS DIRECTORY	
2012	DIGITAL BUSINESS DIRECTORY	
2008	DIGITAL BUSINESS DIRECTORY	
2003	DIGITAL BUSINESS DIRECTORY	
2001	HAINES	
1996	HAINES	
1990	HAINES	
1987	HAINES	
1982	HAINES	
1977	HAINES	
1971	HAINES	
1964	LUSKEYS	

2022 DAKOTA RD

SOURCE: DIGITAL BUSINESS DIRECTORY

15595 **SHEILA ANDERSON**...*RESIDENTIAL*
15620 **LORI VALDEZ**...*RESIDENTIAL*
15620 **ROBERT MACK**...*RESIDENTIAL*

2022 FRESNO RD

SOURCE: DIGITAL BUSINESS DIRECTORY

NO LISTING FOUND

2022 GUSTINE ST

SOURCE: DIGITAL BUSINESS DIRECTORY

22425 **CARY ADABIE**...*RESIDENTIAL*
22473 **BARBARA SHILLING**...*RESIDENTIAL*
22473 **DOUGLAS SHILLING**...*RESIDENTIAL*

2020 DAKOTA RD

SOURCE: DIGITAL BUSINESS DIRECTORY

15595 **SHEILA ANDERSON**...*RESIDENTIAL*
15620 **LORI MACK**...*RESIDENTIAL*
15620 **LORI VALDEZ**...*RESIDENTIAL*

2020 FRESNO RD

SOURCE: DIGITAL BUSINESS DIRECTORY

NO LISTING FOUND

2020 GUSTINE ST

SOURCE: DIGITAL BUSINESS DIRECTORY

22425 **CARY ADABIE**...*RESIDENTIAL*
22473 **AMBER SHILLING**...*RESIDENTIAL*

2016 DAKOTA RD

SOURCE: DIGITAL BUSINESS DIRECTORY

15595 SHEILA ANDERSON...*RESIDENTIAL*
15620 LORI MACK...*RESIDENTIAL*
15620 LORI VALDEZ...*RESIDENTIAL*
15620 ROBERT MACK...*RESIDENTIAL*

2016 FRESNO RD

SOURCE: DIGITAL BUSINESS DIRECTORY

NO LISTING FOUND

2016 GUSTINE ST

SOURCE: DIGITAL BUSINESS DIRECTORY

22425 **CARY ADABIE**...*RESIDENTIAL*

2012 DAKOTA RD

SOURCE: DIGITAL BUSINESS DIRECTORY

15620 **DONNIE MOORE**...*RESIDENTIAL*
15620 **LORI MACK**...*RESIDENTIAL*

2012 FRESNO RD

SOURCE: DIGITAL BUSINESS DIRECTORY

NO LISTING FOUND

2012 GUSTINE ST

SOURCE: DIGITAL BUSINESS DIRECTORY

NO LISTING FOUND

2008 DAKOTA RD

SOURCE: DIGITAL BUSINESS DIRECTORY

NO LISTING FOUND

2008 FRESNO RD

SOURCE: DIGITAL BUSINESS DIRECTORY

NO LISTING FOUND

2008 GUSTINE ST

SOURCE: DIGITAL BUSINESS DIRECTORY

NO LISTING FOUND

2003 DAKOTA RD

SOURCE: DIGITAL BUSINESS DIRECTORY

NO LISTING FOUND

2003 FRESNO RD

SOURCE: DIGITAL BUSINESS DIRECTORY

NO LISTING FOUND

2003 GUSTINE ST

SOURCE: DIGITAL BUSINESS DIRECTORY

NO LISTING FOUND

2001 DAKOTA RD

SOURCE: HAINES

RANGE NOT LISTED

2001 FRESNO RD

SOURCE: HAINES

STREET NOT LISTED

2001 GUSTINE ST
SOURCE: HAINES

STREET NOT LISTED

1996 DAKOTA RD
SOURCE: HAINES

RANGE NOT LISTED

1996 FRESNO RD

SOURCE: HAINES

STREET NOT LISTED

1996 GUSTINE ST

SOURCE: HAINES

STREET NOT LISTED

1990 DAKOTA RD

SOURCE: HAINES

15570 SCHWARTZ ROBERT
15620 GIBSON CALVIN T

1990 FRESNO RD

SOURCE: HAINES

STREET NOT LISTED

1990 GUSTINE ST

SOURCE: HAINES

STREET NOT LISTED

1987 DAKOTA RD

SOURCE: HAINES

15595 HAYS JACK
15620 ASHTON MICHAEL E

1987 FRESNO RD

SOURCE: HAINES

STREET NOT LISTED

1987 GUSTINE ST

SOURCE: HAINES

STREET NOT LISTED

1982 DAKOTA RD

SOURCE: HAINES

RANGE NOT LISTED

1982 FRESNO RD

SOURCE: HAINES

STREET NOT LISTED

1982 GUSTINE ST
SOURCE: HAINES

STREET NOT LISTED

1977 DAKOTA RD
SOURCE: HAINES

RANGE NOT LISTED

1977 FRESNO RD

SOURCE: HAINES

STREET NOT LISTED

1977 GUSTINE ST

SOURCE: HAINES

STREET NOT LISTED

1971 DAKOTA RD

SOURCE: HAINES

RANGE NOT LISTED

1971 FRESNO RD

SOURCE: HAINES

STREET NOT LISTED

1971 GUSTINE ST
SOURCE: HAINES

STREET NOT LISTED

1964 DAKOTA RD
SOURCE: LUSKEYS

RANGE NOT LISTED

1964 FRESNO RD

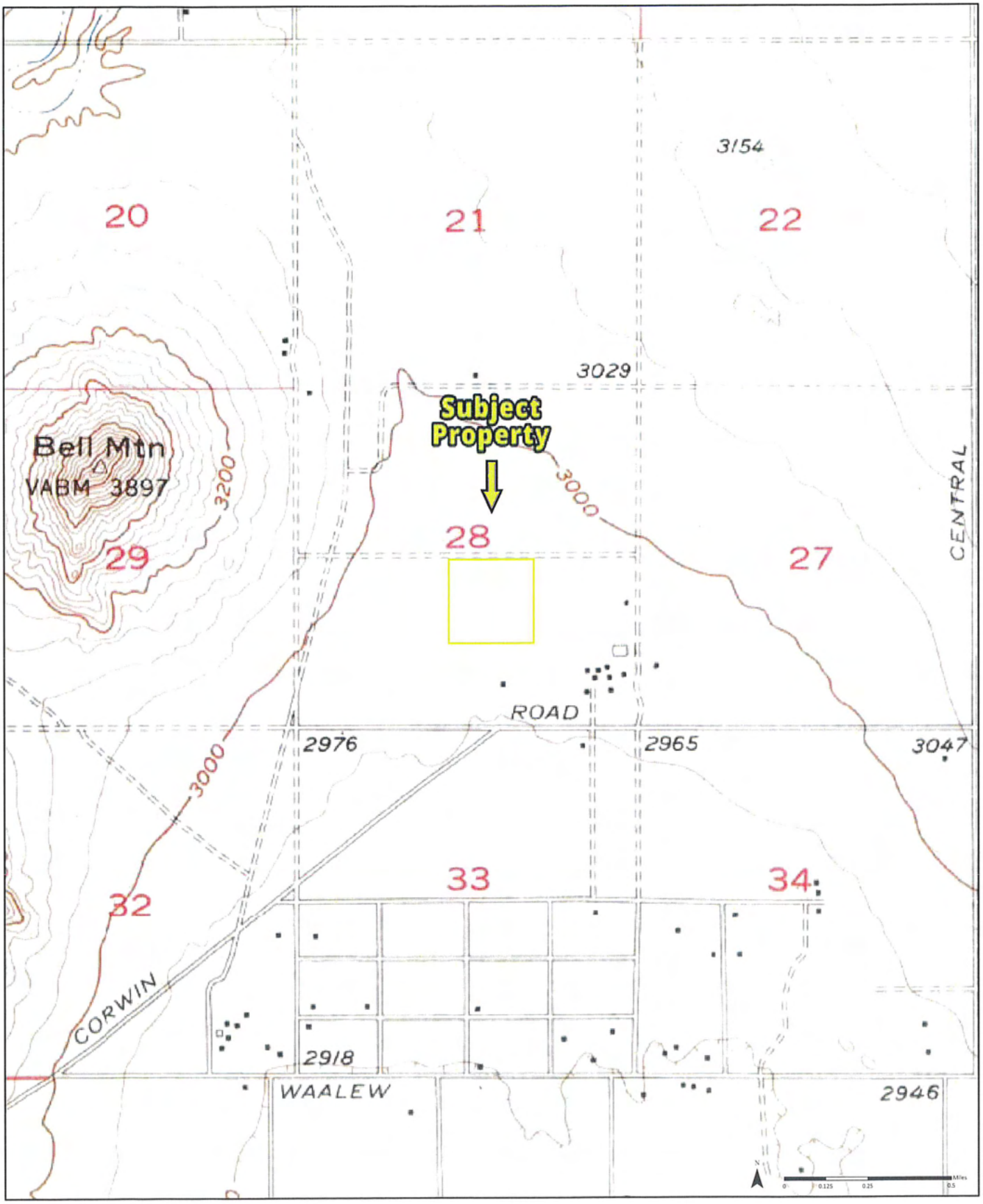
SOURCE: LUSKEYS

STREET NOT LISTED

1964 GUSTINE ST

SOURCE: LUSKEYS

STREET NOT LISTED



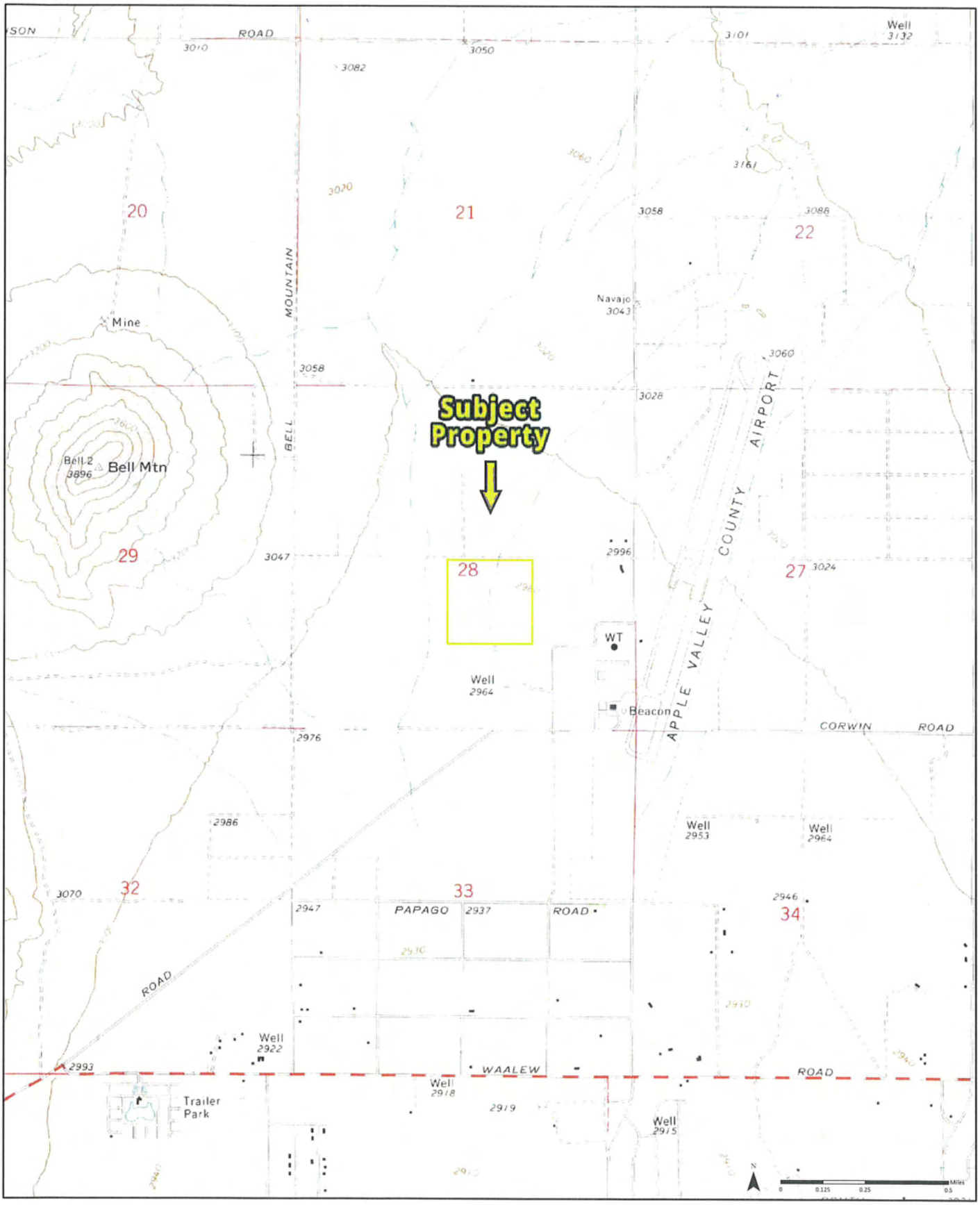
1957 (1-1957) *Aerial Photo Year: 1952*

Quadrangle(s): Apple Valley, CA(1-1957)

Order No. 23120700365

Source: USGS 15 Minute Topographic Map

PARTNER



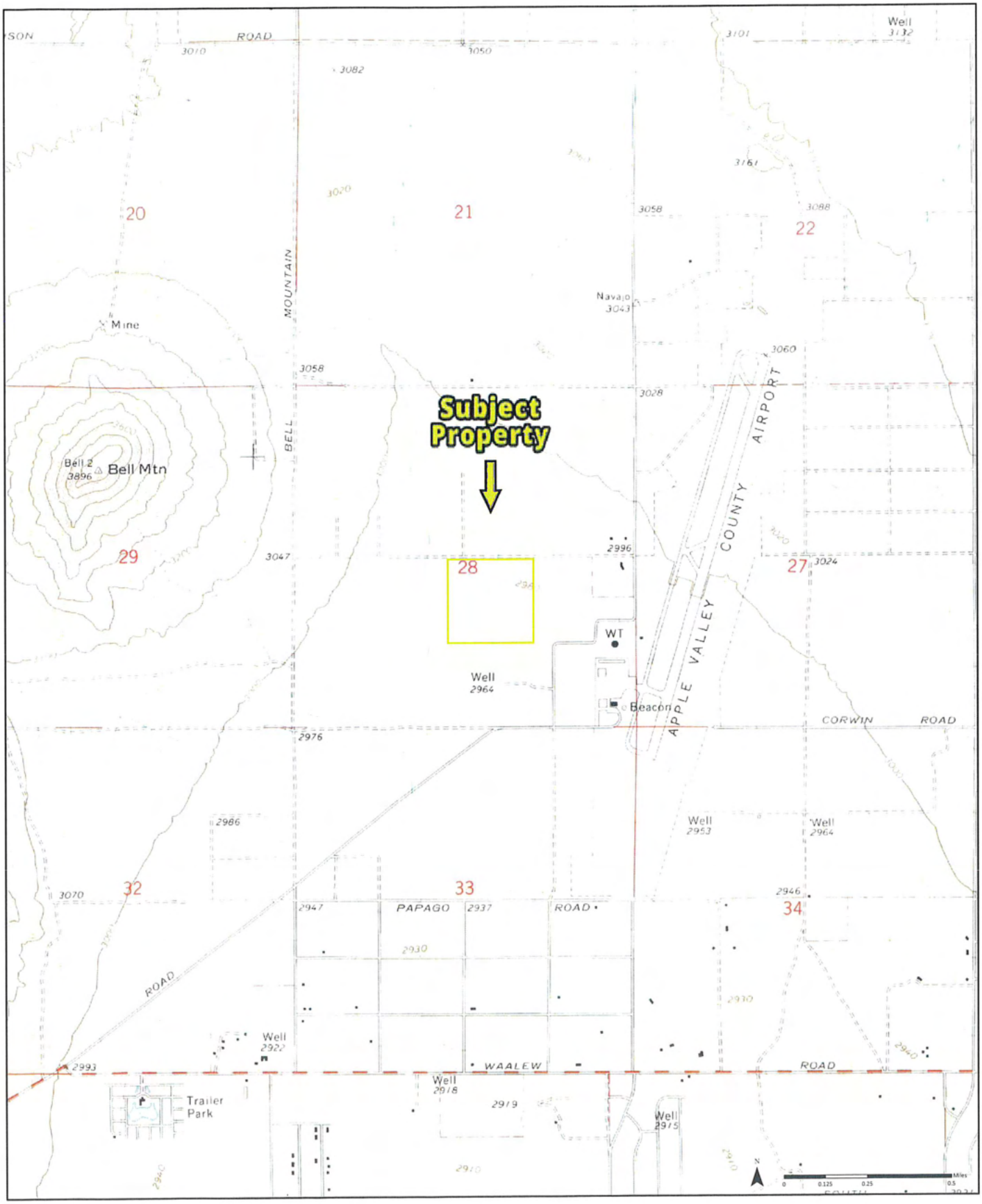
1970 (1-1970) *Aerial Photo Year: 1969*

Quadrangle(s): Apple Valley North, CA(1-1970)

Order No. 23120700365

Source: USGS 7.5 Minute Topographic Map

PARTNER



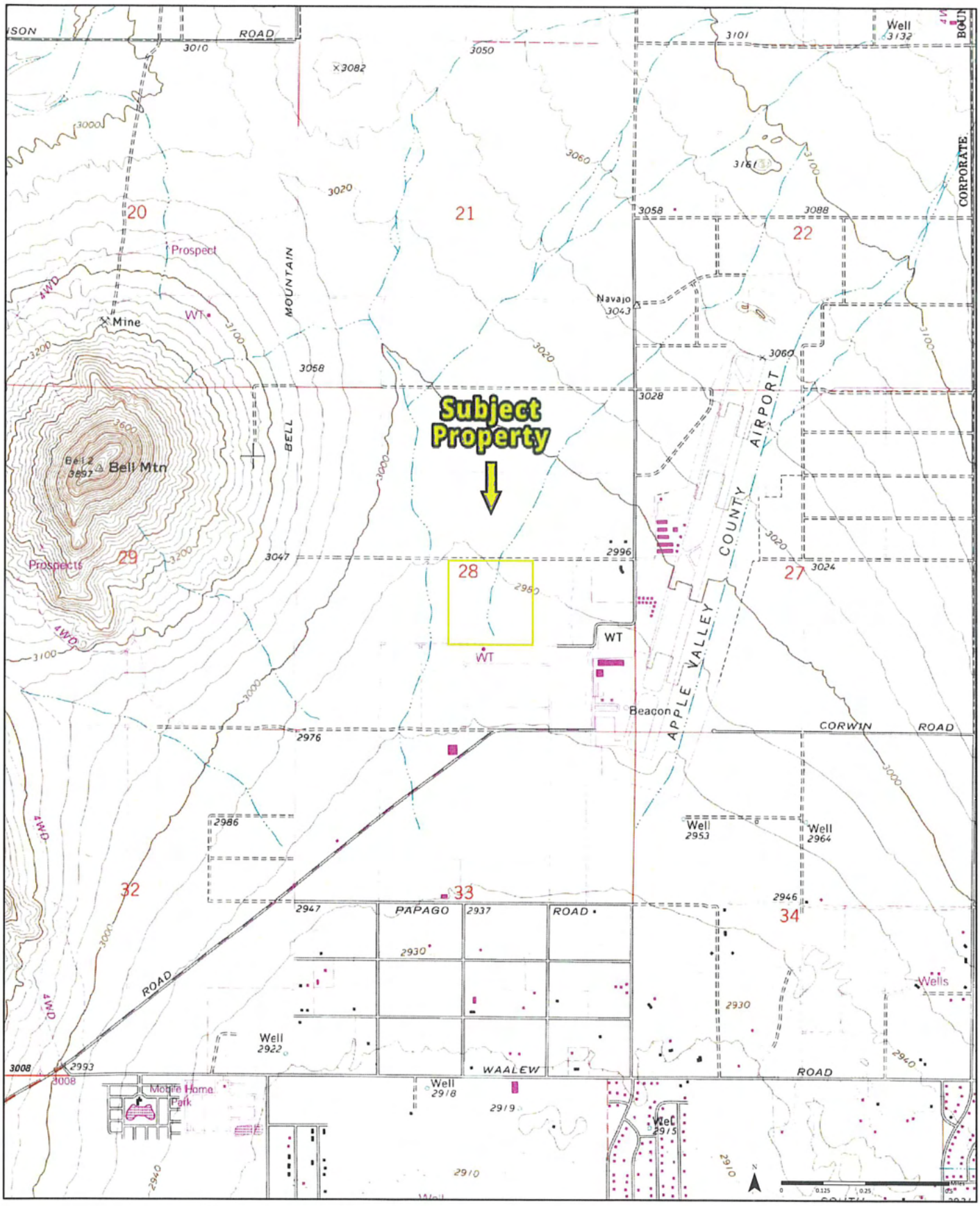
1978 (1-1978)
Aerial Photo Year: 1969

Quadrangle(s): Apple Valley North, CA(1-1978)

Order No. 23120700365

Source: USGS 7.5 Minute Topographic Map

PARTNER



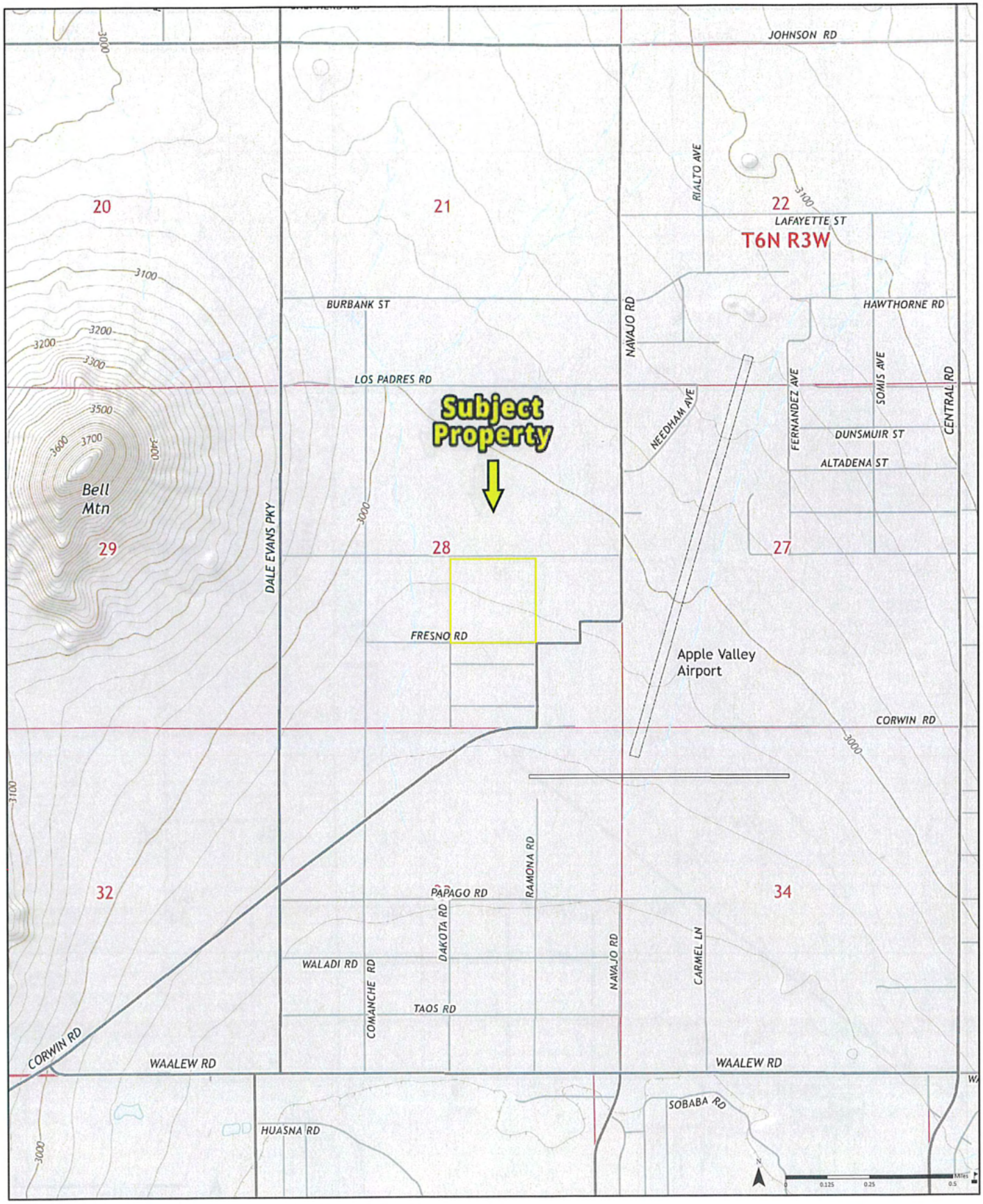
1993 (1-1993)
Aerial Photo Year: 1989
Photo Revision Year: 1993

Quadrangle(s): Apple Valley North, CA(1-1993)

Order No. 23120700365

Source: USGS 7.5 Minute Topographic Map

PARTNER



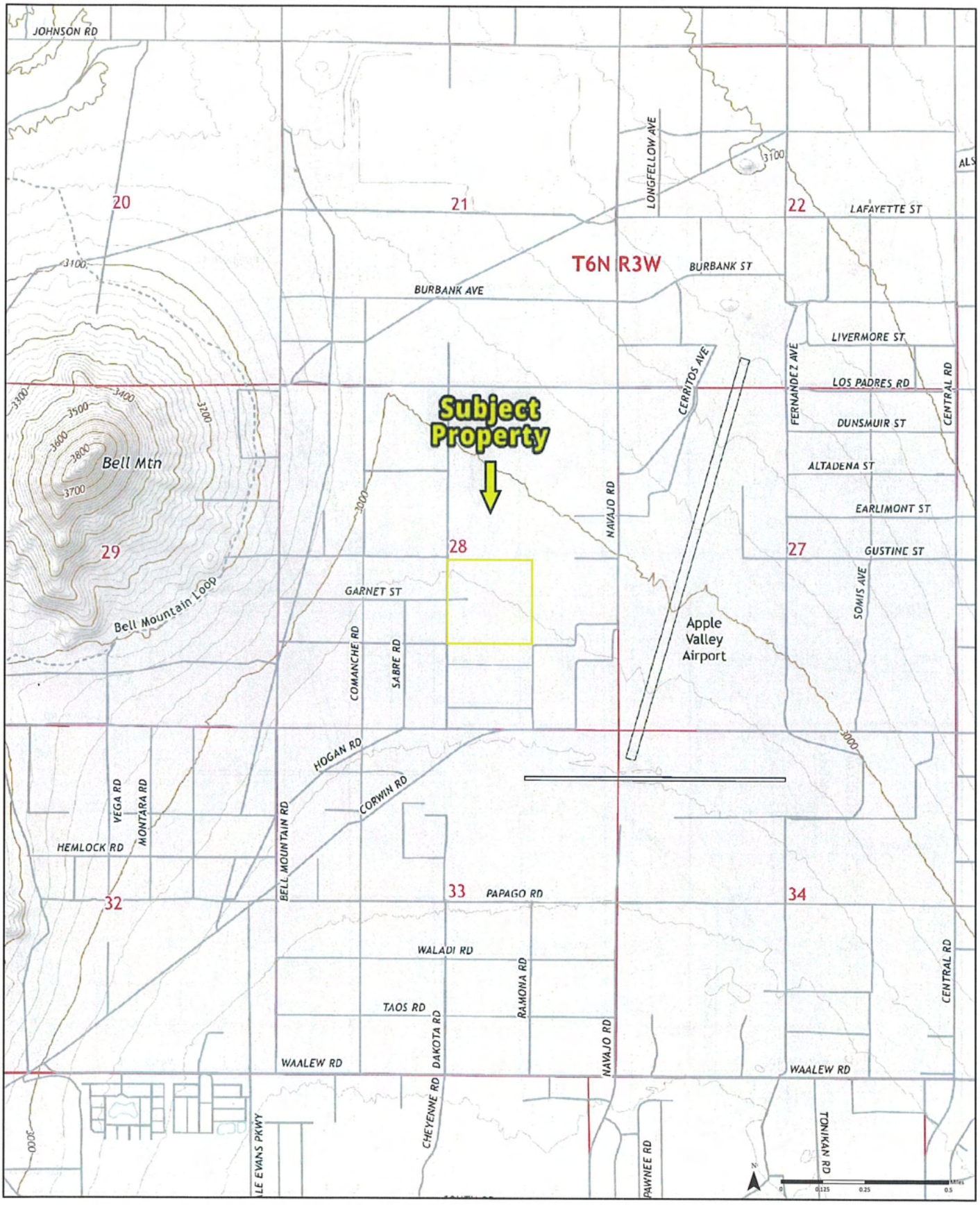
2015

Quadrangle(s): Apple Valley North, CA

Order No. 23120700365

Source: USGS 7.5 Minute Topographic Map

PARTNER



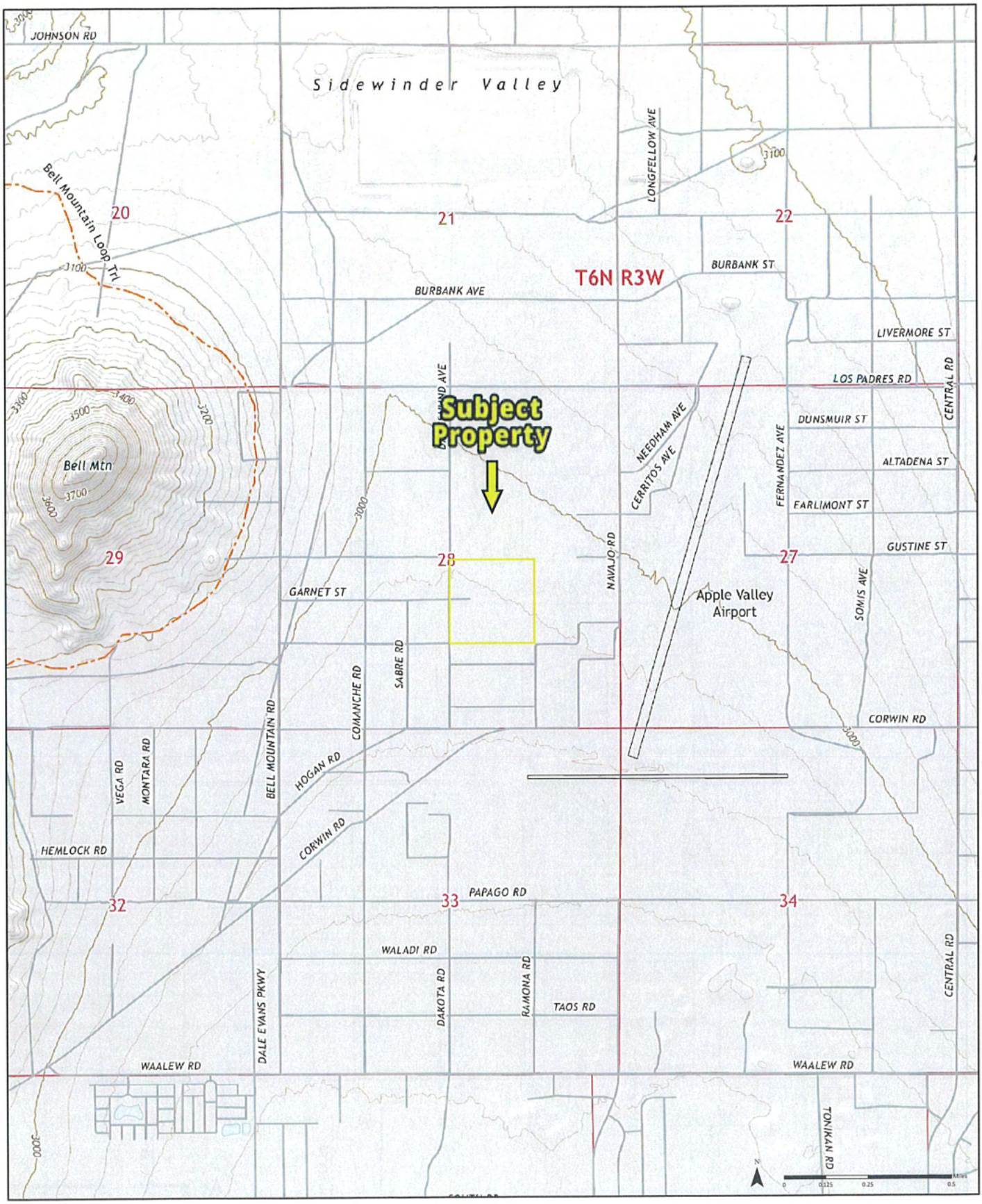
2018

Quadrangle(s): Apple Valley North, CA

Order No. 23120700365

Source: USGS 7.5 Minute Topographic Map

PARTNER



2021

Quadrangle(s): Apple Valley North, CA

Order No. 23120700365

Source: USGS 7.5 Minute Topographic Map

PARTNER

National Flood Hazard Layer FIRMette

FEMA



0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 12/21/2023 at 6:15 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

APPENDIX C: REGULATORY DATABASE REPORT

ERIS

DATABASE REPORT

Project Property:	*APN: 0463-372-21-0000* *APN: 0463-372-21-0000* *APPLE VALLEY CA 92307*
Project No:	*23-430676.1*
Report Type:	*Database Report*
Order No:	*23120700365*
Requested by:	*Partner Engineering and Science, Inc.*
Date Completed:	*December 8, 2023*

Environmental Risk Information Services
A division of Glacier Media Inc.
1.866.517.5204 | info@erisinfo.com | erisinfo.com

Table of Contents

Table of Contents....2
Executive Summary....3
Executive Summary: Report Summary....4
Executive Summary: Site Report Summary - Project Property....9
Executive Summary: Site Report Summary - Surrounding Properties....10
Executive Summary: Summary by Data Source....12
Map....16
Aerial....19
Topographic Map....20
Detail Report....21
Unplottable Summary....47
Unplottable Report....48
Appendix: Database Descriptions....50
Definitions....68

Notice: IMPORTANT LIMITATIONS and YOUR LIABILITY

Reliance on information in Report: This report DOES NOT replace a full Phase I Environmental Site Assessment but is solely intended to be used as database review of environmental records.

License for use of information in Report: No page of this report can be used without this cover page, this notice and the project property identifier. The information in Report(s) may not be modified or re-sold.

Your Liability for misuse: Using this Service and/or its reports in a manner contrary to this Notice or your agreement will be in breach of copyright and contract and ERIS may obtain damages for such mis-use, including damages caused to third parties, and gives ERIS the right to terminate your account, rescind your license to any previous reports and to bar you from future use of the Service.

No warranty of Accuracy or Liability for ERIS: The information contained in this report has been produced by ERIS Information Inc. ("ERIS") using various sources of information, including information provided by Federal and State government departments. The report applies only to the address and up to the date specified on the cover of this report, and any alterations or deviation from this description will require a new report. This report and the data contained herein does not purport to be and does not constitute a guarantee of the accuracy of the information contained herein and does not constitute a legal opinion nor medical advice. Although ERIS has endeavored to present you with information that is accurate, ERIS disclaims, any and all liability for any errors, omissions, or inaccuracies in such information and data, whether attributable to inadvertence, negligence or otherwise, and for any consequences arising therefrom. Liability on the part of ERIS is limited to the monetary value paid for this report.

Trademark and Copyright: You may not use the ERIS trademarks or attribute any work to ERIS other than as outlined above. This Service and Report (s) are protected by copyright owned by ERIS Information Inc. Copyright in data used in the Service or Report(s) (the "Data") is owned by ERIS or its licensors. The Service, Report(s) and Data may not be copied or reproduced in whole or in any substantial part without prior written consent of ERIS.

Executive Summary

Property Information:

Project Property:		*APN: 0463-372-21-0000* *APN: 0463-372-21-0000 APPLE VALLEY CA 92307*
Project No:		*23-430676.1*
Coordinates:		
	Latitude:	*34.5008311*
	Longitude:	*-117.1858759*
	UTM Northing:	*3,826,163.44*
	UTM Easting:	*482,033.05*
	UTM Zone:	*UTM Zone 11S*
Elevation:		*2,980 FT*

Order Information:

Order No:	*23120700365*
Date Requested:	*December 7, 2023*
Requested by:	*Partner Engineering and Science, Inc.*
Report Type:	*Database Report*

Historicals/Products:

Aerial Photographs	*Historical Aerials (with Project Boundaries)*
City Directory Search	*Smart CD Search*
ERIS Xplorer	*ERIS Xplorer*
Excel Add-On	*Excel Add-On*
Fire Insurance Maps	*US Fire Insurance Maps*
Physical Setting Report (PSR)	*Physical Setting Report (PSR)*
Topographic Map	*Topographic Maps*
Vapor Screening Tool	*Vapor Screening Tool*

Executive Summary: Report Summary

Database	Searched	Search Radius	Project Property	Within 0.12mi	0.125mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
Standard Environmental Records								
Federal								
NPL	Y	1	0	0	0	0	0	0
PROPOSED NPL	Y	1	0	0	0	0	0	0
DELETED NPL	Y	0.5	0	0	0	0	-	0
SEMS	Y	0.5	0	0	0	0	-	0
SEMS ARCHIVE	Y	0.5	0	0	0	0	-	0
ODI	Y	0.5	0	0	0	0	-	0
CERCLIS	Y	0.5	0	0	0	0	-	0
IODI	Y	0.5	0	0	0	0	-	0
CERCLIS NFRAP	Y	0.5	0	0	0	0	-	0
CERCLIS LIENS	Y	PO	0	-	-	-	-	0
RCRA CORRACTS	Y	1	0	0	0	0	0	0
RCRA TSD	Y	0.5	0	0	0	0	-	0
RCRA LQG	Y	0.25	0	0	0	-	-	0
RCRA SQG	Y	0.25	0	0	0	-	-	0
RCRA VSQG	Y	0.25	0	0	0	-	-	0
RCRA NON GEN	Y	0.25	0	0	1	-	-	1
RCRA CONTROLS	Y	0.5	0	0	0	0	-	0
FED ENG	Y	0.5	0	0	0	0	-	0
FED INST	Y	0.5	0	0	0	0	-	0
LUCIS	Y	0.5	0	0	0	0	-	0
NPL IC	Y	0.5	0	0	0	0	-	0
ERNS 1982 TO 1986	Y	PO	0	-	-	-	-	0
ERNS 1987 TO 1989	Y	PO	0	-	-	-	-	0
ERNS	Y	PO	0	-	-	-	-	0
FED BROWNFIELDS	Y	0.5	0	0	0	0	-	0
FEMA UST	Y	0.25	0	0	0	-	-	0
FRP	Y	0.25	0	0	0	-	-	0

Database	Searched	Search Radius	Project Property	Within 0.12mi	0.125mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
DELISTED FRP	Y	0.25	0	0	0	-	-	0
HIST GAS STATIONS	Y	0.25	0	0	0	-	-	0
REFN	Y	0.25	0	0	0	-	-	0
BULK TERMINAL	Y	0.25	0	0	0	-	-	0
SEMS LIEN	Y	PO	0	-	-	-	-	0
SUPERFUND ROD	Y	1	0	0	0	0	0	0
DOE FUSRAP	Y	1	0	0	0	0	0	0
State								
RESPONSE	Y	1	0	0	0	0	0	0
ENVIROSTOR	Y	1	0	0	0	0	1	1
DELISTED ENVS	Y	1	0	0	0	0	0	0
SWF/LF	Y	0.5	0	0	0	0	-	0
SWRCB SWF	Y	0.5	0	0	0	0	-	0
WMUD	Y	0.5	0	0	0	0	-	0
HWP	Y	1	0	0	0	0	0	0
SWAT	Y	0.5	0	0	0	0	-	0
C&D DEBRIS RECY	Y	0.5	0	0	0	0	-	0
RECYCLING	Y	0.5	0	0	0	0	-	0
PROCESSORS	Y	0.5	0	0	0	0	-	0
CONTAINER RECY	Y	0.5	0	0	0	0	-	0
LDS	Y	0.5	0	0	0	0	-	0
LUST	Y	0.5	0	0	1	0	-	1
DELISTED LST	Y	0.5	0	0	0	0	-	0
UST	Y	0.25	0	0	0	-	-	0
UST CLOSURE	Y	0.5	0	0	0	0	-	0
HHSS	Y	0.25	0	0	1	-	-	1
UST SWEEPS	Y	0.25	0	0	3	-	-	3
AST	Y	0.25	0	0	0	-	-	0
AST SWRCB	Y	0.25	0	0	0	-	-	0
TANK OIL GAS	Y	0.25	0	0	0	-	-	0
DELISTED TNK	Y	0.25	0	0	1	-	-	1
CERS TANK	Y	0.25	0	0	1	-	-	1
DELISTED CTNK	Y	0.25	0	0	0	-	-	0
HIST TANK	Y	0.25	0	0	1	-	-	1

Database	Searched	Search Radius	Project Property	Within 0.12mi	0.125mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
LUR	Y	0.5	0	0	0	0	-	0
CALSITES	Y	0.5	0	0	0	0	-	0
HLUR	Y	0.5	0	0	0	0	-	0
DEED	Y	0.5	0	0	0	0	-	0
VCP	Y	0.5	0	0	0	0	-	0
CLEANUP SITES	Y	0.5	0	0	0	0	-	0
DELISTED CLEANUP	Y	0.5	0	0	0	0	-	0
DELISTED COUNTY	Y	0.25	0	0	0	-	-	0
Tribal								
INDIAN LUST	Y	0.5	0	0	0	0	-	0
INDIAN UST	Y	0.25	0	0	0	-	-	0
DELISTED INDIAN LST	Y	0.5	0	0	0	0	-	0
DELISTED INDIAN UST	Y	0.25	0	0	0	-	-	0
County								
SANBERN CUPA	Y	0.25	0	0	**2**	-	-	**2**
Additional Environmental Records								
Federal								
FINDS/FRS	Y	PO	0	-	-	-	-	0
TRIS	Y	PO	0	-	-	-	-	0
PFAS NPL	Y	0.5	0	0	0	0	-	0
PFAS FED SITES	Y	0.5	0	0	0	0	-	0
PFAS SSEHRI	Y	0.5	0	0	0	0	-	0
ERNS PFAS	Y	0.5	0	0	0	0	-	0
PFAS NPDES	Y	0.5	0	0	0	0	-	0
PFAS TRI	Y	0.5	0	0	0	0	-	0
PFAS WATER	Y	0.5	0	0	0	0	-	0
PFAS TSCA	Y	0.5	0	0	0	0	-	0
PFAS E-MANIFEST	Y	0.5	0	0	0	0	-	0
PFAS IND	Y	0.5	0	0	0	**1**	-	**1**
HMIRS	Y	0.125	0	0	-	-	-	0
NCDL	Y	0.125	0	0	-	-	-	0
TSCA	Y	0.125	0	0	-	-	-	0
HIST TSCA	Y	0.125	0	0	-	-	-	0
FTTS ADMIN	Y	PO	0	-	-	-	-	0

Database	Searched	Search Radius	Project Property	Within 0.12mi	0.125mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
FTTS INSP	Y	PO	0	-	-	-	-	0
PRP	Y	PO	0	-	-	-	-	0
SCRD DRYCLEANER	Y	0.5	0	0	0	0	-	0
ICIS	Y	PO	0	-	-	-	-	0
FED DRYCLEANERS	Y	0.25	0	0	0	-	-	0
DELISTED FED DRY	Y	0.25	0	0	0	-	-	0
FUDS	Y	1	0	0	0	0	1	1
FUDS MRS	Y	1	0	0	0	1	0	1
FORMER NIKE	Y	1	0	0	0	0	0	0
PIPELINE INCIDENT	Y	PO	0	-	-	-	-	0
MLTS	Y	PO	0	-	-	-	-	0
HIST MLTS	Y	PO	0	-	-	-	-	0
MINES	Y	0.25	0	0	0	-	-	0
SMCRA	Y	1	0	0	0	0	0	0
MRDS	Y	1	0	0	0	0	0	0
LM SITES	Y	1	0	0	0	0	0	0
ALT FUELS	Y	0.25	0	0	0	-	-	0
CONSENT DECREES	Y	0.25	0	0	0	-	-	0
AFS	Y	PO	0	-	-	-	-	0
SSTS	Y	0.25	0	0	0	-	-	0
PCBT	Y	0.5	0	0	0	0	-	0
PCB	Y	0.5	0	0	0	0	-	0
State								
PFAS SAMPLING	Y	0.5	0	0	0	0	-	0
DRYCLEANERS	Y	0.25	0	0	0	-	-	0
DELISTED DRYCLEANERS	Y	0.25	0	0	0	-	-	0
DRYC GRANT	Y	0.25	0	0	0	-	-	0
PFAS GT CLEANUPS	Y	0.5	0	0	0	0	-	0
PFAS GW	Y	0.5	0	0	0	0	-	0
PFAS INVEST	Y	0.5	0	0	0	0	-	0
HWSS CLEANUP	Y	0.5	0	0	0	0	-	0
TOXIC PITS	Y	1	0	0	0	0	0	0
DTSC HWF	Y	0.5	0	0	0	0	-	0
INSP COMP ENF	Y	1	0	0	0	0	0	0
SCH	Y	1	0	0	0	0	0	0

Database	Searched	Search Radius	Project Property	Within 0.12mi	0.125mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
CHMIRS	Y	PO	0	-	-	-	-	0
HIST CHMIRS	Y	PO	0	-	-	-	-	0
HAZNET	Y	PO	0	-	-	-	-	0
HAZ GEN	Y	PO	0	-	-	-	-	0
HAZ TSD	Y	0.5	0	0	0	0	-	0
HIST MANIFEST	Y	PO	0	-	-	-	-	0
HW TRANSPORT	Y	0.125	0	0	-	-	-	0
WASTE TIRE	Y	PO	0	-	-	-	-	0
MEDICAL WASTE	Y	0.25	0	0	0	-	-	0
HIST CORTESE	Y	0.5	0	0	0	0	-	0
CDO/CAO	Y	0.5	0	0	0	0	-	0
CERS HAZ	Y	0.125	0	0	-	-	-	0
DELISTED HAZ	Y	0.5	0	0	0	0	-	0
GEOTRACKER	Y	0.125	0	0	-	-	-	0
MINE	Y	1	0	0	0	0	0	0
LIEN	Y	PO	0	-	-	-	-	0
WASTE DISCHG	Y	0.25	0	0	0	-	-	0
EMISSIONS	Y	0.25	0	0	**3**	-	-	**3**
CDL	Y	0.125	0	0	-	-	-	0
Tribal	***No Tribal additional environmental record sources available for this State.***							
County								
MED WST SANBERN	Y	0.25	0	0	0	-	-	0
Total:			0	0	**14**	**2**	**2**	**18**

** PO – Property Only*
** 'Property and adjoining properties' database search radii are set at 0.25 miles.*

Executive Summary: Site Report Summary - Project Property

Map Key	DB	Company/Site Name	Address	Direction	Distance (mi/ft)	Elev Diff (ft)	Page Number

No records found in the selected databases for the project property.

Executive Summary: Site Report Summary - Surrounding Properties

Map Key	DB	Company/Site Name	Address	Direction	Distance (mi/ft)	Elev Diff (ft)	Page Number
1	DELISTED TNK	AZTEC AVIATION CO/AV APRT	21600 CORWIN RD APPLE VALLEY CA 92307	ESE	0.23 / 1,188.54	-4	21
2	SANBERN CUPA	APPLE VALLEY AIRPORT	21600 Corwin Rd Apple Valley CA 92307	SE	0.24 / 1,260.36	-10	21
2	SANBERN CUPA	AZTEC AVIATION CO/AV APRT	21600 CORWIN RD APPLE VALLEY CA 92307	SE	0.24 / 1,260.36	-10	21
2	LUST	AZTEC AVIATION COMPANY	21600 CORWIN ROAD APPLE VALLEY CA 92307	SE	0.24 / 1,260.36	-10	22
			Global ID I Status Date I Status: T0607188383 I 10/15/2010 I COMPLETED - CASE CLOSED				
2	HHSS	APPLE VALLEY AIRPORT	21600 CORWIN ROAD APPLE VALLEY CA 92307	SE	0.24 / 1,260.36	-10	27
2	EMISSIONS	MAG AVIATION FUEL - APPLE VALLEY AIRPORT	21600 CORWIN RD. APPLE VALLEY CA 92307	SE	0.24 / 1,260.36	-10	27
2	EMISSIONS	SBCO DEPARTMENT OF AIRPORTS	21600 CORWIN RD APPLE VALLEY CA 92307	SE	0.24 / 1,260.36	-10	28
2	CERS TANK	APPLE VALLEY AIRPORT	21600 CORWIN RD APPLE VALLEY CA 92307	SE	0.24 / 1,260.36	-10	29
			Site ID: 92664				
2	HIST TANK	APPLE VALLEY AIRPORT	21600 CORWIN ROAD APPLE VALLEY CA	SE	0.24 / 1,260.36	-10	38
2	RCRA NON GEN	MAG AVIATION FUEL APV	21600 CORWIN RD APPLE VALLEY CA 92307	SE	0.24 / 1,260.36	-10	39
			EPA Handler ID: CAL000387447				
2	EMISSIONS	SBCO - APPLE VALLEY AIRPORT	21600 CORWIN RD, SUITE 13 APPLE VALLEY CA 92307	SE	0.24 / 1,260.36	-10	40
2	UST SWEEPS	APPLE VALLEY AIRPORT	21600 CORWIN RD APPLE VALLEY CA	SE	0.24 / 1,260.36	-10	41
			C C I Status: I36-000-14066 I INACTIVE ***Tank ID:*** 000004, 000003, 000001, 000002				

Map Key	DB	Company/Site Name	Address	Direction	Distance (mi/ft)	Elev Diff (ft)	Page Number
2	UST SWEEPS	AZTEC AVIATION, INC	21600 CORWIN RD APPLE VALLEY CA ***C C I Status:*** A36-000-16434 I ACTIVE ***Tank ID:*** 000290, 000390, 000190	SE	0.24 / 1,260.36	-10	42
2	UST SWEEPS	AZTEC AVIATION, INC	21600 CORWIN RD APPLE VALLEY CA ***C C I Status:*** I36-000-16434 I INACTIVE ***Tank ID:*** 000001	SE	0.24 / 1,260.36	-10	43
3	PFAS IND	APPLE VALLEY AIRPORT	APPLE VALLEY CA	SSE	0.25 / 1,325.17	-16	43
4	FUDS MRS	VICTORVILLE PBR NO 1	CA	NNW	0.29 / 1,548.18	14	44
5	FUDS	VICTORVILLE PBR NO 1	APPLE VALLEY CA ***FUDS Property No:*** J09CA0675	NNE	0.51 / 2,697.02	39	44
6	ENVIROSTOR	VICTORVILLE PBR NO 1	8 MILES NORTHEAST OF VICTORVILLE VICTORVILLE CA 92392 ***Estor/EPA ID I Cleanup Status:*** 80000405 I INACTIVE - ACTION REQUIRED AS OF 8/15/2018	N	0.88 / 4,649.25	55	45

Executive Summary: Summary by Data Source

Standard

Federal

RCRA NON GEN - RCRA Non-Generators

A search of the RCRA NON GEN database, dated Oct 2, 2023 has found that there are 1 RCRA NON GEN site(s) within approximately 0.25miles of the project property.

Lower Elevation	Address	Direction	Distance (mi/ft)	Map Key
MAG AVIATION FUEL APV	21600 CORWIN RD APPLE VALLEY CA 92307	SE	0.24 / 1,260.36	2
	***EPA Handler ID**: CAL000387447*			

State

ENVIROSTOR - EnviroStor Database

A search of the ENVIROSTOR database, dated Oct 23, 2023 has found that there are 1 ENVIROSTOR site(s) within approximately 1.00miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
VICTORVILLE PBR NO 1	8 MILES NORTHEAST OF VICTORVILLE VICTORVILLE CA 92392	N	0.88 / 4,649.25	6
	***Estor/EPA ID I Cleanup Status**: 80000405 I INACTIVE - ACTION REQUIRED AS OF 8/15/2018*			

LUST - Leaking Underground Fuel Tank Reports

A search of the LUST database, dated Jul 13, 2023 has found that there are 1 LUST site(s) within approximately 0.50miles of the project property.

Lower Elevation	Address	Direction	Distance (mi/ft)	Map Key
AZTEC AVIATION COMPANY	21600 CORWIN ROAD APPLE VALLEY CA 92307	SE	0.24 / 1,260.36	2
	***Global ID I Status Date I Status**: T0607188383 I 10/15/2010 I COMPLETED - CASE CLOSED*			

HHSS - Historical Hazardous Substance Storage Information Database

A search of the HHSS database, dated Aug 27, 2015 has found that there are 1 HHSS site(s) within approximately 0.25miles of the project property.

Lower Elevation	Address	Direction	Distance (mi/ft)	Map Key
APPLE VALLEY AIRPORT	21600 CORWIN ROAD APPLE VALLEY CA 92307	SE	0.24 / 1,260.36	2

UST SWEEPS - Statewide Environmental Evaluation and Planning System

A search of the UST SWEEPS database, dated Oct 1, 1994 has found that there are 3 UST SWEEPS site(s) within approximately 0.25

miles of the project property.

Lower Elevation	Address	Direction	Distance (mi/ft)	Map Key
APPLE VALLEY AIRPORT	21600 CORWIN RD APPLE VALLEY CA	SE	0.24 / 1,260.36	2
	***C C I Status**: I36-000-14066 I INACTIVE* ***Tank ID**: 000004, 000003, 000001, 000002*			
AZTEC AVIATION, INC	21600 CORWIN RD APPLE VALLEY CA	SE	0.24 / 1,260.36	2
	***C C I Status**: I36-000-16434 I INACTIVE* ***Tank ID**: 000001*			
AZTEC AVIATION, INC	21600 CORWIN RD APPLE VALLEY CA	SE	0.24 / 1,260.36	2
	***C C I Status**: A36-000-16434 I ACTIVE* ***Tank ID**: 000290, 000390, 000190*			

DELISTED TNK - Delisted Storage Tanks

A search of the DELISTED TNK database, dated Nov 27, 2023 has found that there are 1 DELISTED TNK site(s) within approximately 0.25miles of the project property.

Lower Elevation	Address	Direction	Distance (mi/ft)	Map Key
AZTEC AVIATION CO/AV APRT	21600 CORWIN RD APPLE VALLEY CA 92307	ESE	0.23 / 1,188.54	1

CERS TANK - California Environmental Reporting System (CERS) Tanks

A search of the CERS TANK database, dated Oct 16, 2023 has found that there are 1 CERS TANK site(s) within approximately 0.25 miles of the project property.

Lower Elevation	Address	Direction	Distance (mi/ft)	Map Key
APPLE VALLEY AIRPORT	21600 CORWIN RD APPLE VALLEY CA 92307	SE	0.24 / 1,260.36	2
	***Site ID**: 92664*			

HIST TANK - Historical Hazardous Substance Storage Container Information - Facility Summary

A search of the HIST TANK database, dated May 27, 1988 has found that there are 1 HIST TANK site(s) within approximately 0.25 miles of the project property.

Lower Elevation	Address	Direction	Distance (mi/ft)	Map Key
APPLE VALLEY AIRPORT	21600 CORWIN ROAD APPLE VALLEY CA	SE	0.24 / 1,260.36	2

County

SANBERN CUPA - San Bernardino County - CUPA List

A search of the SANBERN CUPA database, dated Nov 28, 2023 has found that there are 2 SANBERN CUPA site(s) within approximately 0.25miles of the project property.

Lower Elevation	Address	Direction	Distance (mi/ft)	Map Key
AZTEC AVIATION CO/AV APRT	21600 CORWIN RD APPLE VALLEY CA 92307	SE	0.24 / 1,260.36	2
APPLE VALLEY AIRPORT	21600 Corwin Rd Apple Valley CA 92307	SE	0.24 / 1,260.36	2

Non Standard

Federal

PFAS IND - PFAS Industry Sectors

A search of the PFAS IND database, dated Jul 3, 2023 has found that there are 1 PFAS IND site(s) within approximately 0.50miles of the project property.

Lower Elevation	Address	Direction	Distance (mi/ft)	Map Key
APPLE VALLEY AIRPORT	APPLE VALLEY CA	SSE	0.25 / 1,325.17	3

FUDS - Formerly Used Defense Sites

A search of the FUDS database, dated May 15, 2023 has found that there are 1 FUDS site(s) within approximately 1.00miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
VICTORVILLE PBR NO 1	APPLE VALLEY CA ***FUDS Property No**: J09CA0675*	NNE	0.51 / 2,697.02	5

FUDS MRS - FUDS Munitions Response Sites

A search of the FUDS MRS database, dated May 15, 2023 has found that there are 1 FUDS MRS site(s) within approximately 1.00 miles of the project property.

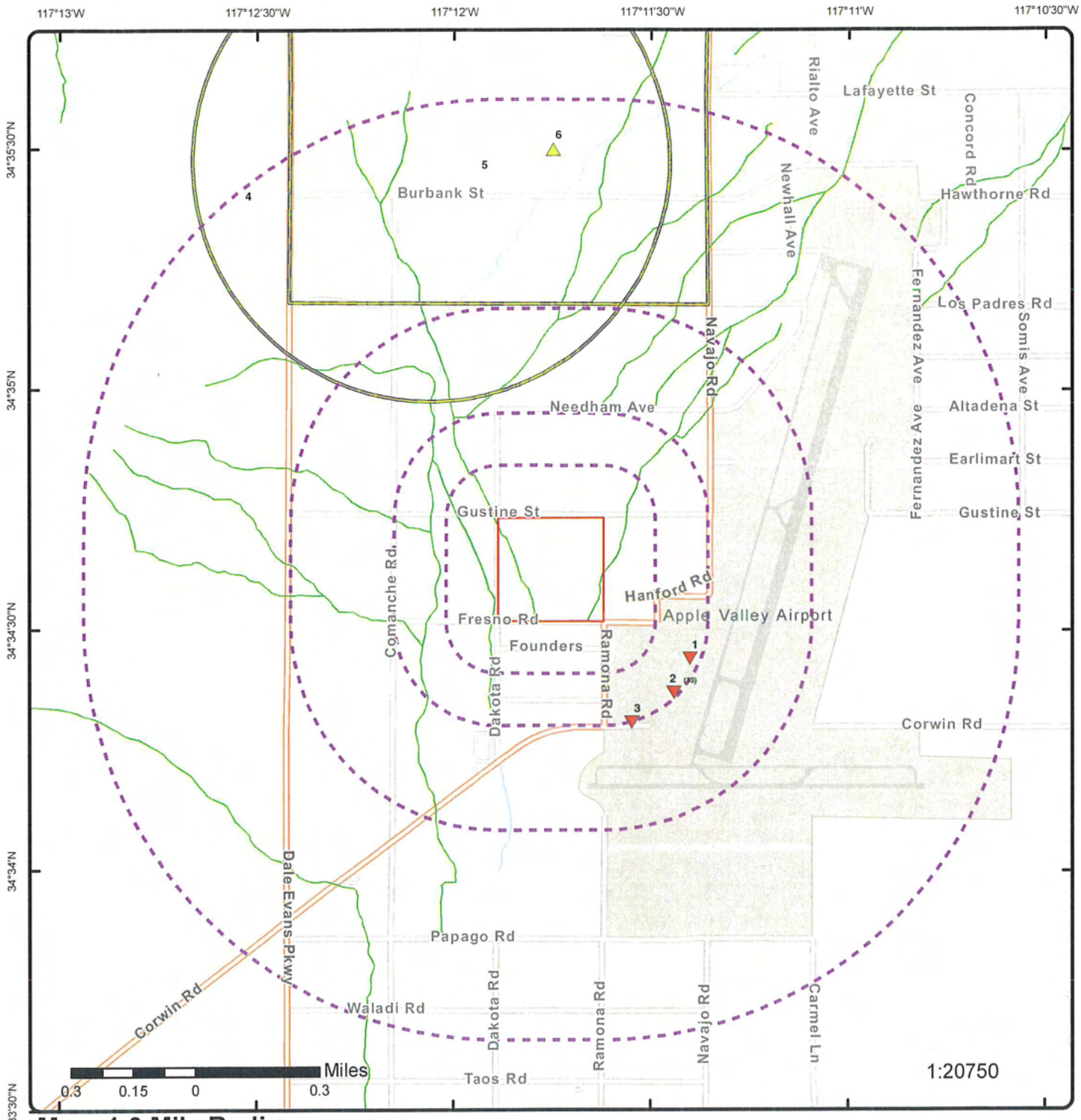
Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
VICTORVILLE PBR NO 1	CA	NNW	0.29 / 1,548.18	4

State

EMISSIONS - Toxic Pollutant Emissions Facilities

A search of the EMISSIONS database, dated Dec 31, 2020 has found that there are 3 EMISSIONS site(s) within approximately 0.25 miles of the project property.

Lower Elevation	Address	Direction	Distance (mi/ft)	Map Key
SBCO - APPLE VALLEY AIRPORT	21600 CORWIN RD, SUITE 13 APPLE VALLEY CA 92307	SE	0.24 / 1,260.36	2
MAG AVIATION FUEL - APPLE VALLEY AIRPORT	21600 CORWIN RD. APPLE VALLEY CA 92307	SE	0.24 / 1,260.36	2
SBCO DEPARTMENT OF AIRPORTS	21600 CORWIN RD APPLE VALLEY CA 92307	SE	0.24 / 1,260.36	2



Map: 1.0 Mile Radius

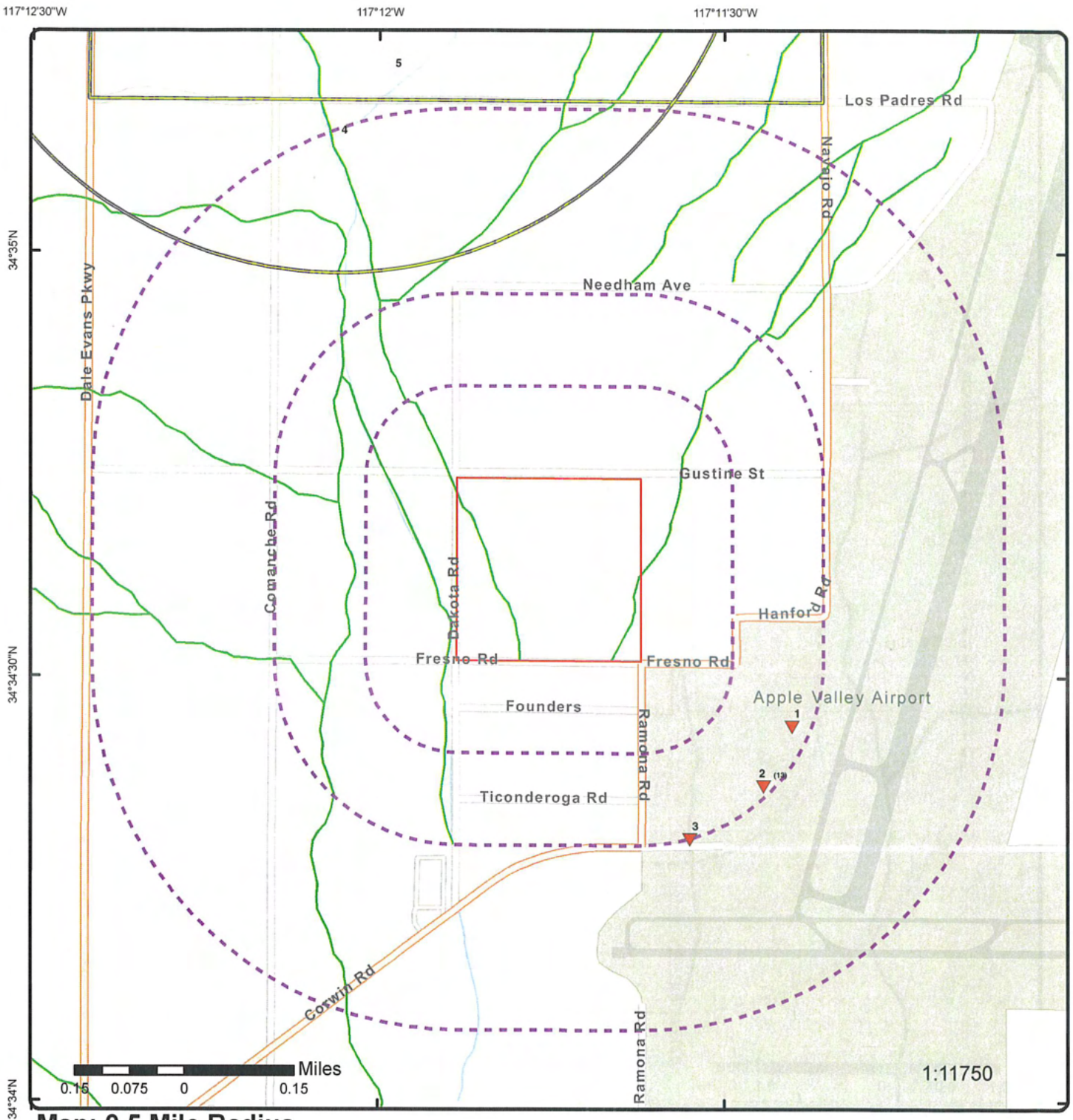
Order Number: 23120700365

Address: APN: 0463-372-21-0000, APPLE VALLEY, CA

- Project Property
- Buffer Outline
- Sites with Higher Elevation
- Sites with Same Elevation
- Sites with Lower Elevation
- Sites with Unknown Elevation
- Areas with Higher Elevation
- Areas with Same Elevation
- Areas with Lower Elevation
- Areas with Unknown Elevation
- Freeways; Highways
- Traffic Circle; Ramp
- Major & Minor Arterial
- Traffic Circle; Ramp
- Local Road
- Rail
- State
- Country
- National Wetland
- Indian Reserve Land
- Plume
- 100 Year Flood Zone
- 500 Year Flood Zone
- FWS Special Designation Areas
- National Priorities List (Active, Delisted, Proposed, Institutional Control)

Source: © 2021 ESRI StreetMap Premium

© ERIS Information Inc.



Map: 0.5 Mile Radius

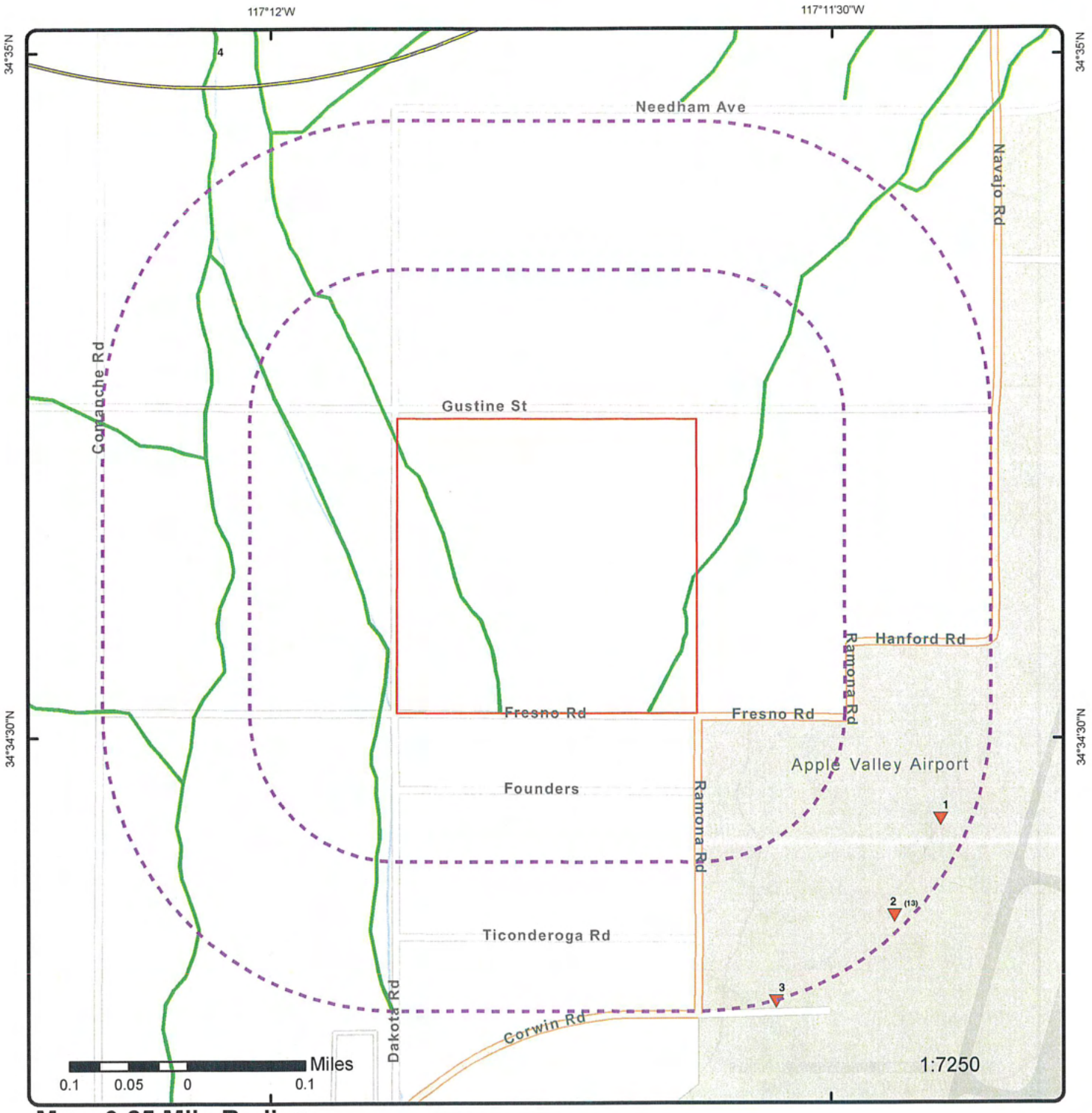
Order Number: 23120700365

Address: APN: 0463-372-21-0000, APPLE VALLEY, CA

- Project Property
- Buffer Outline
- Sites with Higher Elevation
- Sites with Same Elevation
- Sites with Lower Elevation
- Sites with Unknown Elevation
- Areas with Higher Elevation
- Areas with Same Elevation
- Areas with Lower Elevation
- Areas with Unknown Elevation
- Freeways; Highways
- Traffic Circle; Ramp
- Major & Minor Arterial
- Traffic Circle; Ramp
- Local Road
- Rail
- State
- Country
- National Wetland
- Indian Reserve Land
- Plume
- 100 Year Flood Zone
- 500 Year Flood Zone
- FWS Special Designation Areas
- National Priorities List (Active, Delisted, Proposed, Institutional Control)

Source: © 2021 ESRI StreetMap Premium

© ERIS Information Inc.



Map: 0.25 Mile Radius

Order Number: 23120700365

Address: APN: 0463-372-21-0000, APPLE VALLEY, CA

- Project Property
- Buffer Outline
- Sites with Higher Elevation
- Sites with Same Elevation
- Sites with Lower Elevation
- Sites with Unknown Elevation
- Areas with Higher Elevation
- Areas with Same Elevation
- Areas with Lower Elevation
- Areas with Unknown Elevation
- Freeways; Highways
- Traffic Circle; Ramp
- Major & Minor Arterial
- Traffic Circle; Ramp
- Local Road
- Rail
- State
- Country
- National Wetland
- Indian Reserve Land
- Plume
- 100 Year Flood Zone
- 500 Year Flood Zone
- FWS Special Designation Areas
- National Priorities List (Active, Delisted, Proposed, Institutional Control)

Source: © 2021 ESRI StreetMap Premium

© ERIS Information Inc.



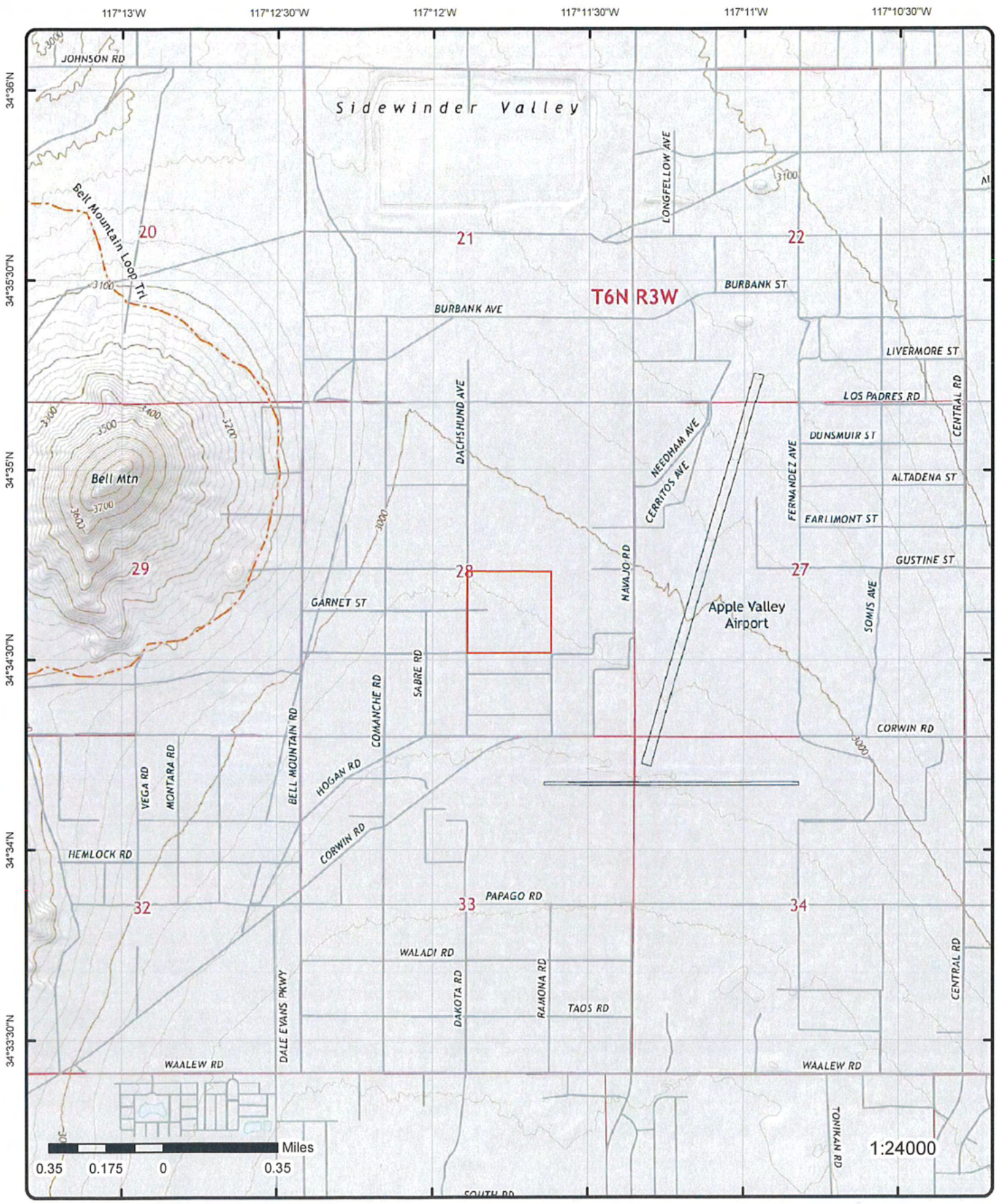
Aerial Year: 2023

Order Number: 23120700365

Address: APN: 0463-372-21-0000, APPLE VALLEY, CA

Source: ESRI World Imagery

© ERIS Information Inc.



Topographic Map

Year: 2021

Order Number: 23120700365

Address: APN: 0463-372-21-0000, CA

Quadrangle(s): Apple Valley North CA

Source: USGS Topographic Map

© ERIS Information Inc.

Detail Report

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
1	1 of1	ESE	0.23 / 1,188.54	2,976.75 / -4	AZTEC AVIATION CO/AV APRT 21600 CORWIN RD APPLE VALLEY CA 92307	DELISTED TNK

Delisted Storage Tanks

Facility ID: 88016400
Latitude: 34.574007
Longitude: -117.190033
Permitting Agency: SAN BERNARDINO COUNTY
County: San Bernardino
Original Source: UST
Record Date: 30-JAN-2017

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
2	1 of13	SE	0.24 / 1,260.36	2,970.68 / -10	APPLE VALLEY AIRPORT 21600 Corwin Rd Apple Valley CA 92307	SANBERN CUPA

Facility ID: FA0002239
Owner Info: County Of San Bernardino
Mailing Care of:
Mailing Address 1: 21600 Corwin Rd
Mailing Address 2:
Mailing City: Apple Valley
Mailing State: CA
Mailing Zip: 92307

Detail(s)

Permit ID: PT0030817
Status: ACTIVE
Program Element Code: 4032
Permit Desc: APSA 10,001-100,000 GAL FAC CAPACITY
To: 12/31/2023

Permit ID: PT0007268
Status: ACTIVE
Program Element Code: 4243
Permit Desc: HAZARDOUS MATERIALS 4-10 CHEMICALS
To: 12/31/2023

Permit ID: PT0007267
Status: ACTIVE
Program Element Code: 4453
Permit Desc: SMALL QUANTITY GENERATOR
To: 12/31/2023

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
2	2 of13	SE	0.24 / 1,260.36	2,970.68 / -10	AZTEC AVIATION CO/AV APRT 21600 CORWIN RD APPLE VALLEY CA 92307	SANBERN CUPA

Facility ID: FA0001266
Owner Info: AZTEC AVIATION CO/AV APRT
Mailing Care of: KARA NIELSEN
Mailing Address 1: PO BOX 2206
Mailing Address 2:
Mailing City: LANCASTER

Mailing State: CA
Mailing Zip: 93539

Detail(s)

Permit ID: PT0003897
Status: INACTIVE
Program Element Code: 4260
Permit Desc: HAZMAT HANDLER, UST ONLY - PER YEAR
To: 10/31/2012

Permit ID: PT0011063
Status: INACTIVE
Program Element Code: 4104
Permit Desc: REGULAR UST ANNUAL INSPECTION (PER TANK)
To: 10/31/2005

Permit ID: PT0023585
Status: INACTIVE
Program Element Code: 4460
Permit Desc: WASTE INCIDENTAL UST OPERATION ONLY -PER YEAR
To: 10/31/2012

Permit ID: PT0011062
Status: INACTIVE
Program Element Code: 4104
Permit Desc: REGULAR UST ANNUAL INSPECTION (PER TANK)
To: 10/31/2011

Permit ID: PT0011061
Status: INACTIVE
Program Element Code: 4104
Permit Desc: REGULAR UST ANNUAL INSPECTION (PER TANK)
To: 10/31/2011

2	3 of13	SE	0.24 / 1,260.36	2,970.68 / -10	**AZTEC AVIATION COMPANY** **21600 CORWIN ROAD** **APPLE VALLEY CA 92307**	LUST

Global ID: T0607188383
Status Date: 10/15/2010
Case Type: LUST CLEANUP SITE
Oil Field:
Oil Field Operator:
Status: COMPLETED - CASE CLOSED

Census Tract: 6071012101
Match Key: T0607188383
County: SAN BERNARDINO
Latitude: 34.571671
Longitude: -117.192642
RWQCB Region:

LUST Cleanup Sites from GeoTracker Cleanup Sites Data Download - Facilities Detail

CUF Case: NO
Lead Agency: SAN BERNARDINO COUNTY
Case Worker: JC
Local Agency: SAN BERNARDINO COUNTY
RB Case No: 6B3601046T
Local Case No: 2006003
File Location: Local Agency
Potential COC: Aviation
Potential Media of Concern: Soil
Begin Date: 7/25/2004
How Discovered: UST System Modification
How Discovered Description:
Stop Method: Replace product piping
Stop Description:
Calwater Watershed Name: Mojave - Upper Mojave (628.20)
DWR GW Subbasin Name: Upper Mojave River Valley (6-042)
Disadvantaged Community:
CalEnvScreen Score:

Coordinate Source:	Google Geocode
Discharge Cause:	Unknown
Discharge Source:	Piping
EPA Region:	9
Leak Reported Dt:	2006-03-28 00:00:00
Military DoD Site:	No
No Further Action Dt:	2010-10-15 00:00:00
Qty Rlsd Gallons:	
Facility Project Sub Type:	
Calenviroscreen 3 Score:	66-70%
Calenviroscreen 4 Score:	60-65%
Site History:	

A site investigation was conducted during the week on March 15, 2010. Preliminary soil boring results are non detect (ND) for all analytes.

LUST Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Contacts

Contact Type:	Regional Board Caseworker
Contact Name:	BRIAN GREY
Organization Name:	LAHONTAN RWQCB (REGION 6T)
Address:	2501 LAKE TAHOE BOULEVARD
City:	SOUTH LAKE TAHOE
Email:	bgrey@waterboards.ca.gov
Phone No:	

Contact Type:	Local Agency Caseworker - Primary Caseworker
Contact Name:	JACKSON CRUTSINGER
Organization Name:	SAN BERNARDINO COUNTY
Address:	620 SOUTH E STREET
City:	SAN BERNARDINO
Email:	jcrutsinger@sbcfire.org
Phone No:	

LUST Cleanup Sites from GeoTracker Cleanup Sites Data Download - Status History

Status:	Completed - Case Closed
Status Date:	10/15/2010

Status:	Open - Site Assessment
Status Date:	5/22/2006

Status:	Open - Case Begin Date
Status Date:	7/25/2004

LUST Sites from GeoTracker Search - Regulatory Profile

Site Facility Name:	AZTEC AVIATION COMPANY
Site Facility Type:	LUST CLEANUP SITE
Cleanup Status:	COMPLETED - CASE CLOSED
Address:	21600 CORWIN ROAD
City:	APPLE VALLEY
Zip:	92307
County:	SAN BERNARDINO
Report Link:	https://geotracker.waterboards.ca.gov/profile_report?global_id=T0607188383
Cleanup Status Detail:	COMPLETED - CASE CLOSED AS OF 10/15/2010
Project Status:	
Cleanup History Link:	https://geotracker.waterboards.ca.gov/profile_report_include?global_id=T0607188383&tabname=regulatoryhistory
Potential COC:	AVIATION
Potential Media of Concern:	SOIL
File Location:	LOCAL AGENCY
User Defined Beneficial Use:	
Designated Beneficial Use:	MUN, AGR, IND, FRSH, AQUA
DWR GW Sub Basin:	Upper Mojave River Valley (6-042)
Calwater Watershed Name:	Mojave - Upper Mojave (628.20)
Post Closure Site Management:	

Future Land Use: INDUSTRIAL
Cleanup Oversight Agencies: SAN BERNARDINO COUNTY (LEAD) - CASE #: 2006003
CASEWORKER: JACKSON CRUTSINGER
LAHONTAN RWQCB (REGION 6V) - CASE #: 6B3601046T
CUF Claim No:
CUF Priority Assig:
CUF Amount Paid:
WDR Place Type:
WDR File No:
WDR Order No:
Project Oversight Agencies:
Facility Type:
Composting Method:
Grndwtr Monitoring Frequency:
Designated Beneficial Use Desc: Municipal and Domestic Supply, Agricultural Supply, Industrial Service Supply, Freshwater Replenishment, AQUA
Site History:

A site investigation was conducted during the week on March 15, 2010. Preliminary soil boring results are non detect (ND) for all analytes.

LUST Sites from GeoTracker Search - Cleanup Status History

Status: Completed - Case Closed
Date : 10/15/2010

Status: Open - Site Assessment
Date : 5/22/2006

Status: Open - Case Begin Date
Date : 7/25/2004

Sites from GeoTracker Search - Regulatory Activities (as of May 25, 2023)

Action Type: Other Regulatory Actions
Action: Closure/No Further Action Letter
Action Date: 10/15/2010
Received Issue Date: 10/15/2010
Doc Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0607188383&enforcement_id=6067017&temptable=ENFORCEMENT
Title Description Comments:

RACC/Case Closure Summary 2

Action Type: Other Regulatory Actions
Action: Closure/No Further Action Letter
Action Date: 10/15/2010
Received Issue Date: 10/15/2010
Doc Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0607188383&enforcement_id=6067015&temptable=ENFORCEMENT
Title Description Comments:

RACC/Case Closure Summary

Action Type: Other Regulatory Actions
Action: Staff Letter
Action Date: 8/11/2010
Received Issue Date: 8/11/2010
Doc Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0607188383&enforcement_id=6062890&temptable=ENFORCEMENT
Title Description Comments:

Transition Letter 2

Action Type: Other Regulatory Actions

Action: Staff Letter
Action Date: 8/6/2010
Received Issue Date: 8/6/2010
Doc Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0607188383&enforcement_id=6062885&temptable=ENFORCEMENT
Title Description Comments:

Transition Letter

Action Type: Response Requested - Other
Action: Other Report / Document
Action Date: 7/13/2010
Received Issue Date: 7/13/2010
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T0607188383&doc_id=5695224
Title Description Comments:

LOR Case Closure Evaluation

Action Type: Enforcement/Orders
Action: Notice to Comply
Action Date: 6/23/2010
Received Issue Date: 6/23/2010
Doc Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0607188383&enforcement_id=6056388&temptable=ENFORCEMENT
Title Description Comments:

GeoTracker Requirements

Action Type: Other Regulatory Actions
Action: Staff Letter
Action Date: 6/22/2010
Received Issue Date: 6/22/2010
Doc Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0607188383&enforcement_id=6056392&temptable=ENFORCEMENT
Title Description Comments:

Landowner Requirements

Action Type: Enforcement/Orders
Action: Notice to Comply
Action Date: 7/27/2009
Received Issue Date: 7/27/2009
Doc Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0607188383&enforcement_id=6023643&temptable=ENFORCEMENT
Title Description Comments:

Enforcement Action Letter

Action Type: Enforcement/Orders
Action: Notice to Comply
Action Date: 3/24/2009
Received Issue Date: 3/24/2009
Doc Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0607188383&enforcement_id=6037743&temptable=ENFORCEMENT
Title Description Comments:

Enforcement Action Letter

Action Type: Leak Action
Action: Leak Reported
Action Date: 3/28/2006
Received Issue Date:
Doc Link:
Title Description Comments:

Action Type: Leak Action
Action: Leak Discovery
Action Date: 7/25/2004
Received Issue Date:
Doc Link:
Title Description Comments:

Sites from GeoTracker Search - Site Maps (as of May 25, 2023)

Submitted: 8/19/2010
Submitted By: HAMID R. ASSADI (AUTH_RP)
Title: B-3 (B-3)
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/1378426969/T0607188383.PDF

Submitted: 8/19/2010
Submitted By: HAMID R. ASSADI (AUTH_RP)
Title: B-1 (B-1)
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/1440011560/T0607188383.PDF

Submitted: 8/19/2010
Submitted By: HAMID R. ASSADI (AUTH_RP)
Title: B-2 (B-2)
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/4474000334/T0607188383.PDF

Submitted: 8/19/2010
Submitted By: HAMID R. ASSADI (AUTH_RP)
Title: B-5 (B-5)
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/8979310035/T0607188383.PDF

Submitted: 8/19/2010
Submitted By: HAMID R. ASSADI (AUTH_RP)
Title: GEO_MAP
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_map/2241326868/T0607188383.PDF

Submitted: 8/19/2010
Submitted By: HAMID R. ASSADI (AUTH_RP)
Title: B-4 (B-4)
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/5637475550/T0607188383.PDF

Submitted: 8/19/2010
Submitted By: HAMID R. ASSADI (AUTH_RP)
Title: B-6 (B-6)
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/7779397547/T0607188383.PDF

Sites from GeoTracker Search - Documents (as of May 25, 2023)

Document Type: Site Documents ***Document Date:*** 10/15/2010
Type: CLOSURE/NO FURTHER ACTION LETTER ***Submitted:***
Submitted By: JACKSON CRUTSINGER (REGULATOR)
Title: RACC/CASE CLOSURE SUMMARY
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0607188383&enforcement_id=6067015

Document Type: Site Documents ***Document Date:*** 10/15/2010
Type: CLOSURE/NO FURTHER ACTION LETTER ***Submitted:***
Submitted By: JACKSON CRUTSINGER (REGULATOR)
Title: RACC/CASE CLOSURE SUMMARY 2
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0607188383&enforcement_id=6067017

Document Type: Site Documents ***Document Date:*** 8/19/2010
Type: SITE INVESTIGATION ***Submitted:***
Submitted By: HAMID R. ASSADI (AUTH_RP)
Title: ADDITIONAL SUBSURFACE SOIL INVESTIGATION APRIL 2010
Title Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3961508512/T0607188383.PDF

Document Type: Site Documents ***Document Date:*** 8/11/2010

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Type: STAFF LETTER **Submitted:**
Submitted By: JACKSON CRUTSINGER (REGULATOR)
Title: TRANSITION LETTER 2
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0607188383&enforcement_id=6062890

Document Type: Site Documents **Document Date:** 8/6/2010
Type: STAFF LETTER **Submitted:**
Submitted By: JACKSON CRUTSINGER (REGULATOR)
Title: TRANSITION LETTER
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0607188383&enforcement_id=6062885

Document Type: Site Documents **Document Date:** 7/13/2010
Type: OTHER REPORT / DOCUMENT **Submitted:**
Submitted By: JACKSON CRUTSINGER (REGULATOR)
Title: LOR CASE CLOSURE EVALUATION
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0607188383&document_id=5695224

Document Type: Site Documents **Document Date:** 6/23/2010
Type: NOTICE TO COMPLY **Submitted:**
Submitted By: JACKSON CRUTSINGER (REGULATOR)
Title: GEOTRACKER REQUIREMENTS
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0607188383&enforcement_id=6056388

Document Type: Site Documents **Document Date:** 6/22/2010
Type: STAFF LETTER **Submitted:**
Submitted By: JACKSON CRUTSINGER (REGULATOR)
Title: LANDOWNER REQUIREMENTS
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0607188383&enforcement_id=6056392

Document Type: Site Documents **Document Date:** 7/27/2009
Type: NOTICE TO COMPLY **Submitted:**
Submitted By: (REGULATOR)
Title: ENFORCEMENT ACTION LETTER
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0607188383&enforcement_id=6023643

Document Type: Site Documents **Document Date:** 3/24/2009
Type: NOTICE TO COMPLY **Submitted:**
Submitted By: JACKSON CRUTSINGER (REGULATOR)
Title: ENFORCEMENT ACTION LETTER
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0607188383&enforcement_id=6037743

2	4 of13	SE	0.24 / 1,260.36	2,970.68 / -10	**APPLE VALLEY AIRPORT** **21600 CORWIN ROAD** **APPLE VALLEY CA 92307**	**HHSS**

County: San Bernardino
Tank Details Microfiche: http://geotracker.waterboards.ca.gov/ustpdfs/pdf/00029cf9.pdf

---

2	5 of13	SE	0.24 / 1,260.36	2,970.68 / -10	**MAG AVIATION FUEL - APPLE VALLEY AIRPORT** **21600 CORWIN RD.** **APPLE VALLEY CA 92307**	**EMISSIONS**

2014 Criteria Data

Facility ID:	164103461	**CERR Code:**	
Facility SIC Code:	5541	**TOGT:**	0
CO:	36	**ROGT:**	0
Air Basin:	MD	**COT:**	
District:	MOJ	**NOXT:**	
COID:	SBD	**SOXT:**	
DISN:	MOJAVE DESERT AQMD	**PMT:**	
CHAPIS:		**PM10T:**	

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

2014 Toxic Data

Facility ID:	164103461	*COID:*	SBD
Facility SIC Code:	5541	*DISN:*	MOJAVE DESERT AQMD
CO:	36	*CHAPIS:*	
Air Basin:	MD	*CERR Code:*	
District:	MOJ		
TS:			
Health Risk Asmt:			
Non-Cancer Chronic Haz Ind:			
Non-Cancer Acute Haz Ind:			

2015 Criteria Data

Facility ID:	164103461	*CERR Code:*	
Facility SIC Code:	5541	*TOGT:*	0
CO:	36	*ROGT:*	0
Air Basin:	MD	*COT:*	
District:	MOJ	*NOXT:*	
COID:	SBD	*SOXT:*	
DISN:	MOJAVE DESERT AQMD	*PMT:*	
CHAPIS:		*PM10T:*	

2015 Toxic Data

Facility ID:	164103461	*COID:*	SBD
Facility SIC Code:	5541	*DISN:*	MOJAVE DESERT AQMD
CO:	36	*CHAPIS:*	
Air Basin:	MD	*CERR Code:*	
District:	MOJ		
TS:			
Health Risk Asmt:	0		
Non-Cancer Chronic Haz Ind:			
Non-Cancer Acute Haz Ind:			

2016 Criteria Data

Facility ID:	164103461	*CERR CODE:*	
Facility SIC Code:	5541	*TOGT:*	0
CO:	36	*ROGT:*	0
Air Basin:	MD	*COT:*	
District:	MOJ	*NOXT:*	
COID:	SBD	*SOXT:*	
DISN:	MOJAVE DESERT AQMD	*PMT:*	
CHAPIS:		*PM10T:*	

2016 Toxic Data

Facility ID:	164103461	*TS:*	
Facility SIC Code:	5541	*HRA:*	0
CERR CODE:		*CH Index:*	
COID:	SBD	*AH Index:*	
CO:	36	*Air Basin:*	MD
DISN:	MOJAVE DESERT AQMD	*District:*	MOJ
CHAPIS:			

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
2	*6 of13*	*SE*	*0.24 / 1,260.36*	*2,970.68 / -10*	*SBCO DEPARTMENT OF AIRPORTS* *21600 CORWIN RD* *APPLE VALLEY CA 92307*	*EMISSIONS*

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

2013 Criteria Data

Facility ID:	99202711	**CERR Code:**	
Facility SIC Code:	9621	**TOGT:**	.00033464802199115573084737659854189076 1324
CO:	36	**ROGT:**	.00028
Air Basin:	MD	**COT:**	
District:	MOJ	**NOXT:**	.0157
COID:	SBD	**SOXT:**	
DISN:	MOJAVE DESERT AQMD	**PMT:**	.00025132479508196721311475409836065573 7705
CHAPIS:		**PM10T:**	.000245293

2013 Toxic Data

Facility ID:	99202711	**COID:**	SBD
Facility SIC Code:	9621	**DISN:**	MOJAVE DESERT AQMD
CO:	36	**CHAPIS:**	
Air Basin:	MD	**CERR Code:**	
District:	MOJ		
TS:	.01		
Health Risk Asmt:			
Non-Cancer Chronic Haz Ind:			
Non-Cancer Acute Haz Ind:			

2	7 of13	SE	0.24 / 1,260.36	2,970.68 / -10	**APPLE VALLEY AIRPORT** **21600 CORWIN RD** **APPLE VALLEY CA 92307**	**CERS TANK**

Site ID:	92664
Latitude:	34.576300
Longitude:	-117.188900

Regulated Programs

EI ID:	10451005
EI Description:	Chemical Storage Facilities
EI ID:	10451005
EI Description:	Aboveground Petroleum Storage
EI ID:	206053
EI Description:	Industrial Facility Storm Water
EI ID:	10451005
EI Description:	Hazardous Waste Generator

Violations

Violation Date:	04/24/2019	**Violation Source:**	CERS
Violation Program:	HW	**Violation Division:**	San Bernardino County Fire Department
Citation:	22 CCR 12 66262.34(f) - California Code of Regulations, Title 22, Chapter 12, Section(s) 66262.34(f)		
Violation Notes:			

Returned to compliance on 04/24/2019. OBSERVATION: OBSERVED USED OIL TANK AND USED DRAINED OIL FILTERS NOT PROPERLY LABELED. CORRECTIVE ACTION: CONTAINER AND TANK WERE PROPERLY LABELED DURING INSPECTION. VIOLATION WAS CORRECTED, NO FURTHER ACTION.

Violation Description:

Failure to properly label hazardous waste accumulation containers and portable tanks with the following requirements: "Hazardous Waste", name and address of the generator, physical and chemical characteristics of the Hazardous Waste, and starting accumulation date.

Violations

Violation Date: 04/24/2019 ***Violation Source:*** CERS
Violation Program: APSA ***Violation Division:*** San Bernardino County Fire Department
Citation: HSC 6.67 25270.4.5(a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5(a)
Violation Notes:

CORRECTIVE ACTION: SUBMIT STATEMENT INDICATING ANNUAL SPCC TRAINING INCLUDES CONTENTS OF YOUR SPCC PLAN. SUBMIT COPY OF COMPLETED TRAINING RECORD FORM AS INDICATED IN SECTION 6.1 OF YOUR 2013 SPCC PLAN. SUBMIT A SIGNED CERTIFICATE OF COMPLIANCE WITHIN 30 DAYS.

Violation Description:

Failure to conduct spill prevention briefing for oil-handling personnel at least once a year to assure adequate understanding of the SPCC Plan.

Violations

Violation Date: 03/30/2022 ***Violation Source:*** CERS
Violation Program: HMRRP ***Violation Division:*** San Bernardino County Fire Department
Citation: HSC 6.95 25508(a)(3) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(3)
Violation Notes:

Returned to compliance on 03/30/2023. OBSERVATION: The site map currently in CERS does not show the emergency evacuation staging area, locations of emergency response equipment, hazardous material storage areas, and any storm/sewer drains on the property. CORRECTIVE ACTION: Submit a signed statement that an updated site map has been submitted into CERS.

Violation Description:

Failure to complete and electronically submit a site map with all required content.

Violations

Violation Date: 03/30/2022 ***Violation Source:*** CERS
Violation Program: APSA ***Violation Division:*** San Bernardino County Fire Department
Citation: HSC 6.67 25270.4.5(a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5(a)
Violation Notes:

OBSERVATION: Annual spill prevention briefings are not being conducted. CORRECTIVE ACTION: Submit a sign in sheet or other documentation showing that employees have received annual spill prevention briefings.

Violation Description:

Failure to conduct spill prevention briefing for oil-handling personnel at least once a year to assure adequate understanding of the SPCC Plan.

Violations

Violation Date: 04/24/2019 ***Violation Source:*** CERS
Violation Program: HMRRP ***Violation Division:*** San Bernardino County Fire Department
Citation: HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)
Violation Notes:

Returned to compliance on 03/30/2023. OBSERVATION: OBSERVED INVENTORY NOT IDENTIFIED ON CERS INCLUDING HAZARDOUS WASTE ABSORBENT, DIESEL FUEL AND USED DRAINED OIL FILTERS. UPDATE USED OIL QUANTITY. CORRECTIVE ACTION: UPDATE CERS TO REFLECT CURRENT INVENTORY. SUBMIT A SIGNED CERTIFICATE OF COMPLIANCE WITHIN 30 DAYS.

Violation Description:

Failure to complete and electronically submit hazardous material inventory information for all reportable hazardous materials on site at or above reportable quantities.

Violations

Violation Date: 03/30/2022 ***Violation Source:*** CERS
Violation Program: HW ***Violation Division:*** San Bernardino County Fire Department
Citation: 40 CFR 1 265.31 - U.S. Code of Federal Regulations, Title 40, Chapter 1, Section(s) 265.31
Violation Notes:

Returned to compliance on 05/06/2022. OBSERVATION: Observed buildup of oil spillage in the containment of the 55-gallon drum of used oil and oily absorbent in the containment berm around the drum and tank of used oil. CORRECTIVE ACTION: Submit a photograph showing that the oil and absorbent buildup in the containment areas have been cleaned up and the waste absorbent placed into an appropriately closed and labeled container.

Violation Description:

Failure to maintain and operate the facility to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.

Violations

Violation Date: 04/24/2019 ***Violation Source:*** CERS
Violation Program: APSA ***Violation Division:*** San Bernardino County Fire Department
Citation: HSC 6.67 25270.4.5(a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5(a)
Violation Notes:

CORRECTIVE ACTION: SUBMIT STATEMENT INDICATING ANNUAL SPCC TRAINING INCLUDES CONTENTS OF YOUR SPCC PLAN. SUBMIT COPY OF COMPLETED TRAINING RECORD FORM AS INDICATED IN SECTION 6.1 OF YOUR 2013 SPCC PLAN. SUBMIT A SIGNED CERTIFICATE OF COMPLIANCE WITHIN 30 DAYS.

Violation Description:

Failure to provide the following training to all oil-handling personnel:

1. Operation and maintenance of equipment to prevent discharges.

2. Discharge procedure protocols.

3. Applicable pollution control laws, rules, and regulations.

4. General facility operations.

5. Contents of the SPCC Plan.

Violations

Violation Date: 03/30/2022 ***Violation Source:*** CERS
Violation Program: HW ***Violation Division:*** San Bernardino County Fire Department
Citation: HSC 6.5 25250.22 - California Health and Safety Code, Chapter 6.5, Section(s) 25250.22
Violation Notes:

OBSERVATION: Observed two unlabeled 55-gallon drums of drained used oil filters on site for more than two years. CORRECTIVE ACTION: Submit a copy of a waste manifest showing the removal of the drained used oil filters on site along with a photograph showing that the new drums have been properly labeled.

Violation Description:

Failure to properly manage used oil and/or fuel filters in accordance with the requirements.

Violations

Violation Date: 04/24/2019 ***Violation Source:*** CERS
Violation Program: HMRRP ***Violation Division:*** San Bernardino County Fire Department
Citation: HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)
Violation Notes:

Returned to compliance on 01/20/2020. OBSERVATION: OBSERVED LAST CERS SUBMITTAL COMPLETED ON 2/20/18 AND IS PAST DUE. SOME

HAZARDOUS MATERIALS INVENTORY OBSERVED ONSITE WAS NOT INCLUDED IN YOUR CERS SUBMITTAL. CORRECTIVE ACTION: UPDATE CERS TO REFLECT CURRENT INFORMATION AND INVENTORY. ENSURE CERS IS REVIEWED AND CERTIFIED ANNUALLY. SUBMIT A SIGNED CERTIFICATE OF COMPLIANCE WITHIN 30 DAYS.

Violation Description:

Failure to annually review and electronically certify that the business plan is complete and accurate on or before the annual due date.

Violations

Violation Date: 03/30/2022 ***Violation Source:*** CERS
Violation Program: APSA ***Violation Division:*** San Bernardino County Fire Department
Citation: HSC 6.67 25270.4.5(a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5(a)
Violation Notes:

OBSERVATION: Monthly and annual tank integrity inspections are not being conducted per STI SP001 standards as described in the facility's SPCC plan on the used oil tank. CORRECTIVE ACTION: Submit copies of completed monthly and annual tank inspection checklists.

Violation Description:

Failure to test or inspect each aboveground container for integrity based on industry standards as discussed in the SPCC Plan:
1. On a regular schedule.
2. After making material repairs.
3. Use non-destructive testing.
4. Inspect each container's supports, foundations, and outside for signs of deterioration, discharges, or accumulation of oil inside diked areas.

Violations

Violation Date: 03/30/2022 ***Violation Source:*** CERS
Violation Program: HW ***Violation Division:*** San Bernardino County Fire Department
Citation: 22 CCR 12 66262.34(f) - California Code of Regulations, Title 22, Chapter 12, Section(s) 66262.34(f)
Violation Notes:

Returned to compliance on 05/06/2022. OBSERVATION: Observed a 55-gallon drum of used oil missing a complete hazardous waste label. CORRECTIVE ACTION: Submit a photograph showing that the drum of used oil has been properly labeled.

Violation Description:

Failure to properly label hazardous waste accumulation containers and portable tanks with the following requirements: "Hazardous Waste", name and address of the generator, physical and chemical characteristics of the Hazardous Waste, and starting accumulation date.

Violations

Violation Date: 04/24/2019 ***Violation Source:*** CERS
Violation Program: APSA ***Violation Division:*** San Bernardino County Fire Department
Citation: HSC 6.67 25270.4.5(a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5(a)
Violation Notes:

Returned to compliance on 03/30/2022. OBSERVATION: OBSERVED RATE OF FLOW LISTED AS GRADUAL TO INSTANTANEOUS AND NO PREDICTED RATE OF FLOW LISTED IN YOUR SPCC PLAN. CORRECTIVE ACTION: UPDATE PLAN TO INCLUDE PREDICTED RATES OF FLOW FOR YOUR EQUIPMENT FAULT ANALYSIS. SUBMIT A STATEMENT INDICATING FAILURE FAULT ANALYSIS HAS BEEN UPDATED TO INCLUDE RATES OF FLOW ALONG WITH CERTIFICATE OF COMPLIANCE WITHIN 30 DAYS. ON 7/22/20 SPCC amendment review, rate of flow listed as gradual to instantaneous. No rate was provided. Violation not corrected. PS (12/16/20).

Violation Description:

Failure to include in the SPCC Plan a prediction of the direction, rate of flow, and total quantity of oil that could be discharged for each type of major equipment failure where experience indicates a reasonable potential for equipment failure.

The rate of flow is not required on a Tier I qualified facility SPCC Plan.

Violations

Violation Date: 03/30/2022 ***Violation Source:*** CERS
Violation Program: HMRRP ***Violation Division:*** San Bernardino County Fire Department
Citation: HSC 6.95 25508.2 - California Health and Safety Code, Chapter 6.95, Section(s) 25508.2
Violation Notes:

Returned to compliance on 03/30/2023. OBSERVATION: The last Business Plan update submitted into CERS is dated 2/20/2018. CORRECTIVE ACTION: Submit a signed statement that a Business Plan update has been submitted into CERS.

Violation Description:

Failure to annually review and electronically certify that the business plan is complete and accurate on or before the annual due date.

Violations

Violation Date: 01/21/2016 ***Violation Source:*** CERS
Violation Program: APSA ***Violation Division:*** San Bernardino County Fire Department
Citation: HSC 6.67 25270.4.5(a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5(a)
Violation Notes:

Returned to compliance on 03/14/2016. Violation Text: Plan describes physical layout of facility and includes a diagram that identifies the location and contents of all regulated fixed oil storage containers. Observation: Observed the (1) 500 gallon AST and the (1) 55 gallon drum of used oil to be missing from the SPCC plan. Compliance requirement: SPCC plan must be amended so to include the (1) 500 gallon AST and the (1) 55 gallon drum of used oil. Provide a statement indicating that the SPCC plan has been properly amended.

Violation Description:

Failure to adequately describe the physical layout of the facility, or no description of the physical layout of the facility included within the SPCC plan.

Violations

Violation Date: 04/24/2019 ***Violation Source:*** CERS
Violation Program: APSA ***Violation Division:*** San Bernardino County Fire Department
Citation: HSC 6.67 25270.4.5(a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5(a)
Violation Notes:

Returned to compliance on 07/22/2020. OBSERVATION: OBSERVED NO SIGNATURES ON MANAGEMENT APPROVAL OR CERTIFICATION PAGES OF YOUR SPCC PLAN. CORRECTIVE ACTION: SUBMIT STATEMENT INDICATING THAT YOUR UPDATED SPCC PLAN HAS ALL REQUIRED SIGNATURES ON MANAGEMENT APPROVAL PAGES. SUBMIT REQUIRED INFORMATION ALONG WITH SIGNED CERTIFICATE OF COMPLIANCE WITHIN 30 DAYS. RECIEVED 7/22/20 SPCC PLAN UPDATES. MANAGEMENT APPROVAL PAGES HAS BEEN SIGNED. VIOLAITON CORRECTED PS (12/16/20).

Violation Description:

"Failure to prepare an SPCC Plan which fulfills all basic requirements that include:

1. The SPCC Plan must be prepared in accordance with good engineering practices.

2. Have full approval of management at a level of authority to commit the necessary resources to fully implement the SPCC Plan.

3. Prepare the SPCC Plan in writing.

4. Follow the sequence of the SPCC rule or include a cross-reference.

5. If the SPCC Plan calls for additional procedures, methods, or equipment not yet fully operational, discuss the items in separate paragraphs."

Violations

Violation Date: 03/30/2022 ***Violation Source:*** CERS
Violation Program: APSA ***Violation Division:*** San Bernardino County Fire Department
Citation: HSC 6.67 25270.4.5(a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5(a)
Violation Notes:

OBSERVATION: A 295-gallon diesel fuel belly tank for a back up generator was not included in the current SPCC plan inventory. CORRECTIVE

ACTION: Submit a signed statement that the SPCC plan has been revised to include all APSA applicable tanks and containers.

Violation Description:

Failure to address in the SPCC Plan the type of oil and storage capacity for each fixed container.
For mobile or portable containers, either provide the type of oil and storage capacity, or an estimate of the potential number of mobile or portable containers, the types of oil, and anticipated storage capacities.

Violations

Violation Date: 03/30/2022 ***Violation Source:*** CERS
Violation Program: APSA ***Violation Division:*** San Bernardino County Fire Department
Citation: HSC 6.67 25270.6(a)(1), 25270.6(a)(2) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.6(a)(1), 25270.6(a)(2)
Violation Notes:

Returned to compliance on 03/30/2023. OBSERVATION: The last Business Plan update/tank facility statement submitted to the CUPA is dated 2/20/2018. CORRECTIVE ACTION: Submit a signed statement that the facility has submitted a completed tank facility statement to the CUPA or a complete business plan into CERS.

Violation Description:

Failure to submit a tank facility statement on or before January 1 annually unless a current Business Plan has been submitted.

Violations

Violation Date: 03/30/2022 ***Violation Source:*** CERS
Violation Program: APSA ***Violation Division:*** San Bernardino County Fire Department
Citation: HSC 6.67 25270.4.5(a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5(a)
Violation Notes:

OBSERVATION: The emergency contact number for San Bernardino County Fire listed in the SPCC plan is not correct. Also, the emergency contact information has changed and must be revised. CORRECTIVE ACTION: Submit a copy of an updated emergency contacts list page.

Violation Description:

Failure to include in the SPCC Plan:

1. A contact list and phone numbers for the facility response coordinator, National Response Center, cleanup contractors with an agreement for response, and all Federal, State, and local agencies who must be contacted in case of a discharge

2. Information and procedures that would enable a person reporting an oil discharge to relate all information as described in 40 CFR 112.7(a)(4), unless facility submitted a Facility Response Plan.

Violations

Violation Date: 01/21/2016 ***Violation Source:*** CERS
Violation Program: APSA ***Violation Division:*** San Bernardino County Fire Department
Citation: HSC 6.67 25270.4.5(a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5(a)
Violation Notes:

Returned to compliance on 03/14/2016. Observation: According to the facility SPCC plan, training of oil-handling personnel at the facility is initiated prior to each such individual's placement into positions with oil storage, transfer or handling and is recorded by using Appendix B of the SPCC plan. Found no training records available at the time of the inspection. Compliance requirement: Submit a copy of the SPCC training records.

Violation Description:

Failure to provide training regarding:
1. The operation and maintenance of equipment to prevent discharges.
2. Discharge procedure protocols.
3. Applicable pollution control laws, rules, and regulations.
4. General facility operations. AND
5. The contents of the SPCC Plan.

Violations

Violation Date: 03/30/2022 ***Violation Source:*** CERS
Violation Program: HMRRP ***Violation Division:*** San Bernardino County Fire Department
Citation: HSC 6.95 25508.1(a)-(f) - California Health and Safety Code, Chapter 6.95, Section(s) 25508.1(a)-(f)
Violation Notes:

OBSERVATION: Hazardous materials were observed on site during the inspection that are not listed in the most current CERS inventory or are listed in lesser quantities. CORRECTIVE ACTION: Submit a signed statement that the inventory has been updated in CERS.

Violation Description:

Failure to electronically update business plan within 30 days of any one of the following events:
A 100 percent or more increase in the quantity of a previously disclosed material.
Any handling of a previously undisclosed hazardous materials at or above reportable quantities.
A change of business address, business ownership, or business name.
A substantial change in the handler's operations that requires modification to any portion of the business plan.

Violations

Violation Date: 04/24/2019 ***Violation Source:*** CERS
Violation Program: APSA ***Violation Division:*** San Bernardino County Fire Department
Citation: HSC 6.67 25270.4.5 (a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5 (a)
Violation Notes:

Returned to compliance on 07/22/2020. OBSERVATION: OBSERVED LAST SPCC SUBMITTAL ON 9/13 AND NO UPDATE OR UPDATE PAGE COMPLETED. SUBMIT 5-YEAR UPDATE WITHIN 30 DAYS. ENSURE ALL INFORMATION IS ON ONE SPCC PLAN. CORRECTIVE ACTION: IMMEDIATELY UPDATE YOUR SPCC PLAN AND DETERMINE OF THE PLAN IS GOING TO BE AMENDED. SUBMIT A SIGNED STATEMENT INDICATING THAT THE SPCC PLAN HAS BEEN UPDATED ALONG WITH SIGNED CERTIFICATE OF COMPLIANCE WITHIN 30 DAYS. 7/22/20 SPCC plan has been submitted reflecting updates. management approval on 7/22/20

Violation Description:

Failure to complete a review and evaluation of the SPCC Plan at least once every five years, document the completion of the review, and sign a statement as to whether the SPCC Plan will be amended.

Enforcements

Enf Action Date: 01/21/2016 ***Enf Action Program:*** APSA
Enf Action Type: Notice of Violation (Unified Program) ***Enf Action Source:*** CERS
Enf Action Division: San Bernardino County Fire Department
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes:

Evaluations

Eval Date: 01/21/2016
Violations Found: No
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: San Bernardino County Fire Department
Eval Program: HMRRP
Eval Source: CERS
Eval Notes:

ROUTINE INSPECTION; Note: data in [EVAL Notes] field for some records is truncated from the source.

Eval Date: 04/24/2019
Violations Found: Yes
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: San Bernardino County Fire Department

Eval Program: HW
Eval Source: CERS
Eval Notes:

HAZ MAT, HAZ WASTE AND APSA INSPECTION; Note: data in [EVAL Notes] field for some records is truncated from the source.

Eval Date: 03/30/2022
Violations Found: Yes
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: San Bernardino County Fire Department
Eval Program: HMRRP
Eval Source: CERS
Eval Notes:

Eval Date: 01/21/2016
Violations Found: No
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: San Bernardino County Fire Department
Eval Program: HW
Eval Source: CERS
Eval Notes:

ROUTINE INSPECTION; Note: data in [EVAL Notes] field for some records is truncated from the source.

Eval Date: 03/30/2022
Violations Found: Yes
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: San Bernardino County Fire Department
Eval Program: HW
Eval Source: CERS
Eval Notes:

Eval Date: 04/24/2019
Violations Found: Yes
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: San Bernardino County Fire Department
Eval Program: HMRRP
Eval Source: CERS
Eval Notes:

HAZ MAT, HAZ WASTE AND APSA INSPECTION; Note: data in [EVAL Notes] field for some records is truncated from the source.

Eval Date: 01/21/2016
Violations Found: Yes
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: San Bernardino County Fire Department
Eval Program: APSA
Eval Source: CERS
Eval Notes:

ROUTINE INSPECTION, SPCC PLAN REVIEW; Note: data in [EVAL Notes] field for some records is truncated from the source.

Eval Date: 04/24/2019
Violations Found: Yes
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: San Bernardino County Fire Department
Eval Program: APSA
Eval Source: CERS

Eval Notes:

HAZ MAT AND HAZ WASTE AND APSA INSPECTION; Note: data in [EVAL Notes] field for some records is truncated from the source.

Eval Date: 03/30/2022
Violations Found: Yes
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: San Bernardino County Fire Department
Eval Program: APSA
Eval Source: CERS
Eval Notes:

Affiliations

Affil Type Desc: Owner/Operator
Entity Name: San Bernardino Cnty Airports
Entity Title: Operator
Address: 777 East Rialto Ave
City: San Bernardino
State: CA
Country:
Zip Code: 92415
Phone:

Affil Type Desc: Document Preparer
Entity Name: Vince Corona
Entity Title:
Address:
City:
State:
Country:
Zip Code:
Phone:

Affil Type Desc: CUPA District
Entity Name: San Bernardino County Fire
Entity Title:
Address: 620 South E Street
City: San Bernardino
State: CA
Country:
Zip Code: 92415-0153
Phone: (909) 386-8401

Affil Type Desc: Facility Mailing Address
Entity Name: Mailing Address
Entity Title:
Address: 21600 Corwin Rd Suite 13
City: Apple Valley
State: CA
Country:
Zip Code: 92307
Phone:

Affil Type Desc: Operator
Entity Name: County of San Bernardino
Entity Title:
Address:
City:
State:
Country:
Zip Code:
Phone: (909) 387-8810

Affil Type Desc: Parent Corporation

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Entity Name:	APPLE VALLEY AIRPORT
Entity Title:	
Address:	
City:	
State:	
Country:	
Zip Code:	
Phone:	
Affil Type Desc:	Property Owner
Entity Name:	COUNTY OF SAN BERNARDINO
Entity Title:	
Address:	21600 Corwin Rd
City:	Apple Valley
State:	CA
Country:	United States
Zip Code:	92307
Phone:	(909) 387-8810
Affil Type Desc:	Legal Owner
Entity Name:	County of San Bernardino
Entity Title:	
Address:	21600 Corwin Rd Suite 13
City:	Apple Valley
State:	CA
Country:	United States
Zip Code:	92307
Phone:	(760) 995-8761
Affil Type Desc:	Identification Signer
Entity Name:	VINCE CORONA
Entity Title:	AIRPORT MAINTENANCE SUPERVISOR
Address:	
City:	
State:	
Country:	
Zip Code:	
Phone:	
Affil Type Desc:	Environmental Contact
Entity Name:	Maureen Snelgrove
Entity Title:	
Address:	7000 Merrill Avenue
City:	Chino
State:	CA
Country:	
Zip Code:	91710
Phone:	

Coordinates

Env Int Type Code:	SMSWIND	*Longitude:*	-117.192640
Program ID:	206053	*Coord Name:*	
Latitude:	34.571670	*Ref Point Type Desc:*	Unknown

2	8 of13	SE	0.24 / 1,260.36	2,970.68 / -10	*APPLE VALLEY AIRPORT* *21600 CORWIN ROAD* *APPLE VALLEY CA*	*HIST TANK*

Owner Name:	COUNTY OF SAN BERNARDINO	*No of Containers:*	4
Owner Street:	STAR ROUTE, BOX 3	*County:*	SAN BERNARDINO
Owner City:	DAGGETT	*Facility State:*	CA
Owner State:	CA	*Facility Zip:*	92307
Owner Zip:	92327		

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
2	9 of13	SE	0.24 / 1,260.36	2,970.68 / -10	MAG AVIATION FUEL APV 21600 CORWIN RD APPLE VALLEY CA 92307	RCRA NON GEN

EPA Handler ID: CAL000387447
Gen Status Universe: No Report
Contact Name: GARRY ABBORTT
Contact Address: 21600 CORWIN RD. , BOX 14 , APPLE VALLEY , CA, 92307-0000 ,
Contact Phone No and Ext: 760-900-0142
Contact Email: GARGOYLE5814C@LIVE.COM
Contact Country:
County Name: SAN BERNARDINO
EPA Region: 09
Land Type:
Receive Date: 20130716
Location Latitude: 34.571687
Location Longitude: -117.192479

Violation/Evaluation Summary

Note: NO RECORDS: As of Oct 2023, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: Yes
Transfer Facility: No
Onsite Burner Exemption: No
Furnace Exemption: No
Underground Injection Activity: No
Commercial TSD: No
Used Oil Transporter: No
Used Oil Transfer Facility: No
Used Oil Processor: No
Used Oil Refiner: No
Used Oil Burner: No
Used Oil Market Burner: No
Used Oil Spec Marketer: No

Hazardous Waste Handler Details

Sequence No: 1
Receive Date: 20130716
Handler Name: MAG AVIATION FUEL APV
Source Type: Implementer
Federal Waste Generator Code: N
Generator Code Description: Not a Generator, Verified

Owner/Operator Details

Owner/Operator Ind: Current Owner
Type: Other
Name: GARRY ABBOT & MITCH LASKOWSKI
Date Became Current:
Date Ended Current:
Phone: 760-900-0142
Source Type: Implementer
Street No:
Street 1: 21600 CORWIN RD
Street 2: BOX14
City: APPLE VALLEY
State: CA
Country:
Zip Code: 92307-0000

Owner/Operator Ind: Current Operator
Type: Other
Name: GARRY ABBORTT
Date Became Current:
Street No:
Street 1: 21600 CORWIN RD.
Street 2: BOX 14
City: APPLE VALLEY

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Date Ended Current:		**State:**	CA
Phone:	760-900-0142	**Country:**	
Source Type:	Implementer	**Zip Code:**	92307-0000

2	10 of13	SE	0.24 / 1,260.36	2,970.68 / -10	**SBCO - APPLE VALLEY AIRPORT** **21600 CORWIN RD, SUITE 13** **APPLE VALLEY CA 92307**	**EMISSIONS**

2018 Criteria Data

Facility ID:	2711	**CERR Code:**	
Facility SIC Code:	9621	**TOGT:**	.7084923310756972111553784860557768924303
CO:	36	**ROGT:**	.708466788
Air Basin:	MD	**COT:**	.007001585
District:	MOJ	**NOXT:**	.0103208
COID:	SBD	**SOXT:**	.0000113
DISN:	MOJAVE DESERT AQMD	**PMT:**	.0001625855130784708249496981891348088531 19
CHAPIS:		**PM10T:**	.00016161

2018 Toxic Data

Facility ID:	2711	**COID:**	SBD
Facility SIC Code:	9621	**DISN:**	MOJAVE DESERT AQMD
CO:	36	**CHAPIS:**	
Air Basin:	MD	**CERR Code:**	
District:	MOJ		
TS:	.16		
Health Risk Asmt:			
Non-Cancer Chronic Haz Ind:			
Non-Cancer Acute Haz Ind:			

2019 Criteria Data

CO:	36	**CHAPIS:**	
Air Basin:	MD	**CERR Code:**	
Facility ID:	2711	**ROGT:**	.708466788
District:	MOJ	**COT:**	.007001585
Facility SIC Code:	9621	**NOXT:**	.0103208
CO ID:	SBD	**SOXT:**	.0000113
DISN:	MOJAVE DESERT AQMD		
PM10T:	.00016161		
TOGT:	.7084923310756972111553784860557768924303		
PMT:	.0001625855130784708249496981891348088531 19		

2019 Toxic Data

CO:	36	**DISN:**	MOJAVE DESERT AQMD
Air Basin:	MD	**CHAPIS:**	
Faccility ID:	2711	**CERR Code:**	
District:	MOJ	**TS:**	.16
Facility SIC Code:	9621	**Health Risk Asmt:**	
COID:	SBD		
Non-Cancer Chronic Haz Ind:			
Non-Cancer Acute Haz Ind:			

2020 Criteria Data

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

CO:	36	**CHAPIS:**	
Air Basin:	MD	**CERR Code:**	
Facility ID:	2711	**ROGT:**	.708466788
District:	MOJ	**COT:**	.007001585
Facility SIC Code:	9621	**NOXT:**	.0103208
CO ID:	SBD	**SOXT:**	.0000113
DISN:	MOJAVE DESERT AQMD		
TOGT:	.708492331075697211155378486055776892430 3		
PMT:	.000162585513078470824949698189134808853119		
PM10T:	.00016161		

2020 Toxic Data

CO:	36	**DISN:**	MOJAVE DESERT AQMD
Air Basin:	MD	**CHAPIS:**	
Facility ID:	2711	**CHERR Code:**	
District:	MOJ	**TS:**	.16
Facility SIC Code:	9621	**Health Risk Asmt:**	
COID:	SBD		
Non-Cancer Chronic Haz Ind:			
Non-Cancer Acute Haz Ind:			

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
2	11 of13	SE	0.24 / 1,260.36	2,970.68 / -10	APPLE VALLEY AIRPORT 21600 CORWIN RD APPLE VALLEY CA	UST SWEEPS

C C:	I36-000-14066	**D Filename:**	NSITE1
BOE:		**Page No:**	103
Comp:	14066	**County:**	SAN BERNARDINO
Status:	INACTIVE	**State :**	CA
No of Tanks:	4	**Zip:**	92307
Jurisdict:	SAN BERNARDINO COUNTY	**Latitude:**	34.566259
Agency:	ENVIRONMENTAL HEALTH - U.S.T.	**Longitude:**	-117.20472
Phone:		**Georesult:**	S5HPNTSCZA

Tank Details

Tank ID:	000004	**S Contain:**	NONE
O Tank ID:		**Stg:**	
SWRCB No:	36-000-014066-000004	**Storage :**	PRODUCT
Removed:	05-04-89	**Storag Type:**	PRODUCT
Installed:	01-01-70	**P Contain:**	UNKNOWN
A Date:		**Content:**	AVIA. GAS
Capac:	12000	**ONA:**	
Tank Use:	M.V. FUEL	**D File Name:**	NTANK1

Tank Details

Tank ID:	000003	**S Contain:**	NONE
O Tank ID:		**Stg:**	
SWRCB No:	36-000-014066-000003	**Storage :**	PRODUCT
Removed:	08-06-89	**Storag Type:**	PRODUCT
Installed:	01-01-70	**P Contain:**	UNKNOWN
A Date:		**Content:**	AVIA. GAS
Capac:	12000	**ONA:**	
Tank Use:	M.V. FUEL	**D File Name:**	NTANK1

Tank Details

Tank ID:	000001	**S Contain:**	NONE
O Tank ID:		**Stg:**	
SWRCB No:	36-000-014066-000001	**Storage :**	PRODUCT
Removed:	08-05-89	**Storag Type:**	PRODUCT

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Installed:	01-01-70	P Contain:	UNKNOWN
A Date:		Content:	LEADED
Capac:	4000	ONA:	
Tank Use:	M.V. FUEL	D File Name:	NTANK1

Tank Details

Tank ID:	000002	S Contain:	NONE
O Tank ID:		Stg:	
SWRCB No:	36-000-014066-000002	Storage :	PRODUCT
Removed:	08-06-89	Storag Type:	PRODUCT
Installed:	01-01-70	P Contain:	UNKNOWN
A Date:		Content:	JET FUEL
Capac:	12000	ONA:	
Tank Use:	M.V. FUEL	D File Name:	NTANK1

---

2 | 12 of13 | SE | 0.24 / 1,260.36 | 2,970.68 / -10 | AZTEC AVIATION, INC
21600 CORWIN RD
APPLE VALLEY CA | UST SWEEPS

C C:	A36-000-16434	D Filename:	SITE10A
BOE:	44-000217	Page No:	7
Comp:	16434	County:	SAN BERNARDINO
Status:	ACTIVE	State :	CA
No of Tanks:	3	Zip:	92307
Jurisdict:	SAN BERNARDINO COUNTY	Latitude:	34.566259
Agency:	ENVIRONMENTAL HEALTH - U.S.T.	Longitude:	-117.20472
Phone:		Georesult:	S5HPNTSCZA

Tank Details

Tank ID:	000290	S Contain:	
O Tank ID:	2	Stg:	P
SWRCB No:	36-000-016434-000290	Storage :	
Removed:		Storag Type:	PRODUCT
Installed:		P Contain:	
A Date:	09-24-93	Content:	AVIA. GAS
Capac:	12000	ONA:	
Tank Use:	M.V. FUEL	D File Name:	TANK10A

Tank Details

Tank ID:	000390	S Contain:	
O Tank ID:	3	Stg:	P
SWRCB No:	36-000-016434-000390	Storage :	
Removed:		Storag Type:	PRODUCT
Installed:		P Contain:	
A Date:	09-24-93	Content:	AVIA. GAS
Capac:	12000	ONA:	
Tank Use:	M.V. FUEL	D File Name:	TANK10A

Tank Details

Tank ID:	000190	S Contain:	
O Tank ID:	1	Stg:	P
SWRCB No:	36-000-016434-000190	Storage :	
Removed:		Storag Type:	PRODUCT
Installed:		P Contain:	
A Date:	09-24-93	Content:	JET FUEL
Capac:	12000	ONA:	
Tank Use:	M.V. FUEL	D File Name:	TANK10A

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
2	13 of13	SE	0.24 / 1,260.36	2,970.68 / -10	AZTEC AVIATION, INC 21600 CORWIN RD APPLE VALLEY CA	UST SWEEPS

C C:	I36-000-16434	D Filename:	NSITE1
BOE:	44-000217	Page No:	103
Comp:	16434	County:	SAN BERNARDINO
Status:	INACTIVE	State :	CA
No of Tanks:	1	Zip:	92307
Jurisdict:	SAN BERNARDINO COUNTY	Latitude:	34.566259
Agency:	ENVIRONMENTAL HEALTH - U.S.T.	Longitude:	-117.20472
Phone:	(619) 240-4686	Georesult:	S5HPNTSCZA

Tank Details

Tank ID:	000001	S Contain:	NONE
O Tank ID:		Stg:	
SWRCB No:	36-000-016434-000001	Storage :	PRODUCT
Removed:	07-28-92	Storag Type:	PRODUCT
Installed:	01-01-72	P Contain:	BARE STEEL
A Date:		Content:	AVIA. GAS
Capac:	1000	ONA:	
Tank Use:	M.V. FUEL	D File Name:	NTANK1

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
3	1 of1	SSE	0.25 / 1,325.17	2,964.68 / -16	APPLE VALLEY AIRPORT APPLE VALLEY CA	PFAS IND

Status:	Active	Fac Fips Code:	06071
Fac Indian Cntry Flg:	N	Compliance Status:	No Violation Identified
Fac Derived Huc:	18090208	EPA Programs:	CWA; RCRA
Fac Derived Wbd:	180902080304	Federal Facility:	No
Fac Derived Cd113:	08	Federal Agency:	-
Fac Derived Cb2010:	060710121011111	Fac Snc Flg:	N
Fac Informal Count:	0	AIR Flag:	N
Last Informal Action:	-	NPDES Flag:	Y
Formal Action Count:	0	SDWIS Flag:	N
Last Formal Action:	-	RCRAFlag:	Y
Fac Total Penalties:	0	TRI Flag:	N
Fac Penalty Count:	-	GHG Flag:	N
Date Last Penalty:	-	TRI IDs:	-
Last Penalty Amt:	-	TRI Releases Trnsfrs:	-
Fac Qtrs With Nc:	0	TRI on Site Releases:	-
Programs With Snc:	0	TRI off Site Trnsfrs:	-
Fac Percent Minority:	45.889	TRI Reporter:	-
Fac Pop Den:	309.74	Fac Imp Water Flg:	-
Count:	1	Fac Major Flag:	-
Fac County:	SAN BERNARDINO	Fac Active Flag:	Y
State Other :		Fac Inspection Count:	0
Region:	09	Date Last Inspection:	-
Latitude:	34.57179	Days Last Inspection:	-
Longitude:	-117.19248		
Fac Derived Tribes:	-		
AIR IDs:	-		
CAA Permit Types:	-		
CAA NAICS:	-		
CAA SICS:	-		
NPDES IDs:	CAZ204728		
CWA Permit Types:	Minor		
CWA NAICS:	-		
CWA SICS:	4581		
RCRA IDs:	CAL000163664		
RCRA Permit Types:	Other		
RCRA NAICS:	4881 488119		
SDWA IDs:	-		
SDWA System Types:	-		
SDWA Compliance Status:	-		

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

SDWA Snc Flag:	N
Fac Collection Meth:	ADDRESS MATCHING-HOUSE NUMBER
EJSCREEN Flag Us:	Y
EJSCREEN Report:	https://ejscreen.epa.gov/mapper/mobile/EJSCREEN_mobile.aspx?geometry=%7B%22x%22:-117.19248,%22y%22:34.57179,%22spatialReference%22:%7B%22wkid%22:4326%7D%7D&unit=9035&areatype=&areaid=&basemap=streets&distance=1
ECHO Facility Report:	https://echo.epa.gov/detailed-facility-report?fid=110065716032
Industry:	Airports

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
4	1 of1	NNW	0.29 / 1,548.18	2,994.29 / 14	VICTORVILLE PBR NO 1 CA	FUDS MRS

FUDS Property ID:	J09CA0675	Media ID:	
DERP Program:	mmrp	Official Site Name:	
Fiscal Year:	2022	Project Status:	investigation
Project No:	J09CA067501	Relative Priority:	
Project Category:		Derpprogram Desc:	Military Munitions Response Program
Proj No (HIFLD):	J09CA067501	Site ID (HIFLD):	01
FUDS Installatn ID:	CA99799F566000	Official Site Name:	
FUDS Site ID:	01	Arc (HIFLD):	Y
SDS ID:		Dist (HIFLD):	SPL
USACE District:	spl	Fuds No (HIFLD):	J09CA0675
USACE Division:	spd	MMRP (HIFLD):	Y
Se Anno Cad Data:		MRA ID (HIFLD):	J09CA067501R01
USACE Dist Desc:	SPL	Phase (HIFLD):	4
USACE Div Desc:	SPD	Fid (HIFLD):	
Featuredesc:		Inst ID (HIFLD):	

Feat Name (HIFLD):	VICTORVILLE PBR NO 1
Project Status Desc:	Investigation
Projectcategory Desc:	
Relative Priority Desc:	
State or Territory Name Desc:	CA
Env Restoration SIID:	01
Env Restoration Site MRA ID:	J09CA067501R01
Feature Name:	Victorville PBR #1
Source:	USACE's Geospatial MRS data layers; Homeland Infrastructure Foundation-Level Data (HIFLD) MRS dataset
Shape Area (HIFLD):	
Shape Leng (HIFLD):	
Shape Length (HIFLD):	
Shape Area:	0.000263281890283906
Shape Length:	0.057910297470409

Additional Information (HIFLD)

Shape Length:	7057.33166762
Shape Leng:	.0579103
Shape Area:	3963198.69921875

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
5	1 of1	NNE	0.51 / 2,697.02	3,019.50 / 39	VICTORVILLE PBR NO 1 APPLE VALLEY CA	FUDS

FUDS Property No:	J09CA0675
EMS Map Link:	https://fudsportal.usace.army.mil/ems/inventory/map?id=53867
FUDS INST ID:	CA99799F566000
Status:	Properties with projects
SDS ID:	
NPL Status Code:	Not Listed
Eligibility:	Eligible
Site Eligib:	Eligible
Current Owner:	Private Sector
Has Project:	Yes
DOD FUDS Pro:	
Project Required:	

No Further Action:	
Congressional District:	23
Congressional Dist 117:	08
Media ID:	
Metadata ID:	
Feature Desc:	
EPA Region:	09
County:	SAN BERNARDINO
Latitude:	34.59166667
Longitude:	-117.19583333
Fiscal year:	2020
USACE Division:	spd
USACE District:	spl
Centroid Lat:	
Centroid Long:	
Se Anno Cad Data:	
Shape Length:	0.0646248146957955
Shape Area:	0.000225679620621599
Shape Len:	.06462481
X:	
Y:	
Data Source:	U.S. Army Corps of Engineers Geospatial Open Data
Property History:	

Victorville PRB No. 1 was used by the Army Air Forces based at Victorville Airfield as a practice bombing area. There were no buildings on the site. The War Department improvements on the site consisted of frame butts and appurtenances. Fences and gates, and a bombing target. The bombing target, located in the center of the site, was composed of asphalt strips approximately 5 feet wide configured as three concentric circles with approximate radii of 100, 200, and 300 feet. In addition, there were two strips of asphalt which transected the concentric circles at right angels to each other. The leases on the 400 acres acquired from private land owners were terminated on 3. December 1942. On 1 November 1948, 160 acres of Victorville PRB No. 1 were informally returned to the U.S. Department of the Interior by a Letter of Transfer. The Letter of Transfer declared the bombing target to have been dedudded and certified to be free and clear of explosives or explosive objects reasonably possible to detect by visual inspection. Transfer of land from the DOD to the U.S. Department of the Interior became official on 29 March 1954, by Public Land Order 948. Currently, the site is divided into 46 parcels owned by private land owners. The site is undeveloped land.

Feature Description:

Victorville PRB No. 1 was used by the Army Air Forces based at Victorville Airfield as a practice bombing area. There were no buildings on the site. The War Department improvements on the site consisted of frame butts and appurtenances. Fences and gates, and a bombing target. The bombing target, located in the center of the site, was composed of asphalt strips approximately 5 feet wide configured as three concentric circles with approximate radii of 100, 200, and 300 feet. In addition, there were two strips of asphalt which transected the concentric circles at right angels to each other. The leases on the 400 acres acquired from private land owners were terminated on 3. December 1942. On 1 November 1948, 160 acres of Victorville PRB No. 1 were informally returned to the U.S. Department of the Interior by a Letter of Transfer. The Letter of Transfer declared the bombing target to have been dedudded and certified to be free and clear of explosives or explosive objects reasonably possible to detect by visual inspection. Transfer of land from the DOD to the U.S. Department of the Interior became official on 29 March 1954, by Public Land Order 948. Currently, the site is divided into 46 parcels owned by private land owners. The site is undeveloped land.

6	1 of1	N	0.88 / 4,649.25	3,035.35 / 55	***VICTORVILLE PBR NO 1*** ***8 MILES NORTHEAST OF VICTORVILLE*** ***VICTORVILLE CA 92392***	***ENVIROSTOR***

Estor/EPA ID:	80000405	***Assembly District:***	34
Site Code:	401340	***Senate District:***	19
Nat Priority List:	NO	***Permit Renewal Lead:***	
APN:	NONE SPECIFIED	***Public Partici Spclst:***	
Census Tract:	6071012101	***Project Manager:***	DANIEL CORDERO
Site Type:	FUDS	***County:***	SAN BERNARDINO
Address Description:	8 MILES NORTHEAST OF VICTORVILLE	***Latitude:***	34.5916666666667
Office:	CLEANUP CYPRESS	***Longitude:***	-117.195833333333
Special Program:		***Acres:***	640 ACRES
Funding:	DERA	***Supervisor:***	EILEEN MANANIAN
Cleanup Status:	INACTIVE - ACTION REQUIRED AS OF 8/15/2018		
Cleanup Oversight Agencies:	DTSC - SITE CLEANUP PROGRAM - LEAD AGENCY		
School District:			
Past Use that Caused Contam:	FIRING RANGE - ARTILLERY, FIRING RANGE - SMALL ARMS ETC...		
Potential Media Affected:	SOIL		
Potential Contamin of Concern:			

EXPLOSIVES (UXO, MEC)
MUNITIONS DEBRIS (MD)

Site History:

FROM THE CORPS PUBLIC GIS SYSTEM: Property Description - The site consisted of 640 acres. In May 1943, 640 acres were transferred from the U.S. Department of the Interior to the War Department through Public Land Order 125. The former Victorville PBR No. 10 is located approximately 10 miles east of Lucerne Valley, California. In November, 1948, PBR No. 10 was transferred back to the U.S. Department of the Interior; this transfer of land became official in March 1954 through PLO 948. Currently, the site is controlled by the U.S. Department of the Interior, Bureau of Land Management. The site is on undeveloped desert land. This property is known or suspected to contain military munitions and explosives of concern (e.g., unexploded ordnance) and therefore may present an explosive hazard.

Property History - Victorville PBR No. 10 was used by the Army Air Forces based at Victorville Airfield as a practice area. There were no buildings on the site. The Department of Defense (DoD) improvements on the site consisted of frame butts and appurtenances, fences and gates, and a target. The target, located in the center of the site, was composed of asphalt strips approximately 5 feet wide configured as three concentric circles with approximate radii of 100, 200, and 300 feet. In addition, there were two strips of asphalt which transected the concentric circles at right angles to each other. Victorville PBR No. 10 was informally returned to the Department of the Interior in November 1948 by a Letter of Transfer.

Status: INACTIVE - ACTION REQUIRED
Program Type: MILITARY EVALUATION
CalEnviroScreen Score: 60-65%
Summary Link: https://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80000405

Completed Activities

Title: USACE INPR Summary J0CA067500 28 Apr 1994
Title Link: https://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80000405&doc_id=5011047
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Inventory Project Report (INPR)
Date Completed: 4/28/1994
Comments:

Title: Technical Project Planning Memorandum
Title Link: https://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80000405&doc_id=5010612
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Preliminary Endangerment Assessment Workplan
Date Completed: 5/31/2007
Comments: No final letter required, refer to DTSC Comments/Review letter on 3/12/07.

Title: Final Site Inspection Report for Victorville Precision Bombing Range 1
Title Link: https://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80000405&doc_id=5012065
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: *Site Inspection (SI) Report
Date Completed: 3/25/2008
Comments: Final document submitted with DTSC comments incorporated. Report Complete.

Title: Site Specific Work Plan Addendum to the Programmatic Work Plan
Title Link: https://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80000405&doc_id=5010611
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: *Site Inspection (SI) Workplan
Date Completed: 9/13/2007
Comments: Final workplan submitted.

Unplottable Summary

Total: 5 Unplottable sites

DB	Company Name/Site Name	Address	City	Zip	ERIS ID
HAZ GEN	APPLE VALLEY AIRPORT	APPLE VALLEY AIRPORT	APPLE VALLEY CA	923070000	900463935
HAZNET	1X COUNTY OF SAN BERNARDINO	APPLE VALLEY AIRPORT	APPLE VALLEY CA	000000000	826599413
HHSS	TEXACO	MUNICIPAL AIRPORT	APPLE VALLEY CA	92307	822982190
HIST MANIFEST		APPLE VALLEY AIRPORT	APPLE VALLEY CA	0	827495444
HIST TANK	TEXACO	MUNICIPAL AIRPORT	APPLE VALLEY CA		865075066

Unplottable Report

Site: ***APPLE VALLEY AIRPORT***
APPLE VALLEY AIRPORT APPLE VALLEY CA 923070000

HAZ GEN

Epa ID:	CAL000163664	***Facility County:***	36
Address 2:		***County:***	San Bernardino

Details DTSC HWTS: The Department of Toxic Substances Control (DTSC) makes available a Waste Code Matrix showing each Waste Code, its description, and annual amounts in its Hazardous Waste Tracking System: https://hwts.dtsc.ca.gov/search

Handler Profile URL: https://hwts.dtsc.ca.gov/facility/CAL000163664

Site: ***1X COUNTY OF SAN BERNARDINO***
APPLE VALLEY AIRPORT APPLE VALLEY CA 000000000

HAZNET

SIC Code:		***Mailing City:***	APPLE VALLEY
NAICS Code:		***Mailing State:***	CA
EPA ID:	CAC000197873	***Mailing Zip:***	923070000
Create Date:	8/7/1989	***Region Code:***	4
Fac Act Ind:	No	***Owner Name:***	COUNTY OF SAN BERNARDINO
Inact Date:	10/25/2000	***Owner Addr 1:***	--
County Code:	36	***Owner Addr 2:***	
County Name:	San Bernardino	***Owner City:***	--
Mail Name:		***Owner State:***	99
Mailing Addr 1:	--	***Owner Zip:***	--
Mailing Addr 2:		***Owner Phone:***	0000000000
Owner Fax:			

Details DTSC HWTS: The Department of Toxic Substances Control (DTSC) makes available a Waste Code Matrix showing each Waste Code, its description, and annual amounts in its Hazardous Waste Tracking System: https://hwts.dtsc.ca.gov/search

DTSC Handler Profile url: https://hwts.dtsc.ca.gov/facility/CAC000197873

Site: ***TEXACO***
MUNICIPAL AIRPORT APPLE VALLEY CA 92307

HHSS

County: San Bernardino
Tank Details Microfiche: http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0002a783.pdf

---

Site:
APPLE VALLEY AIRPORT APPLE VALLEY CA 0

HIST MANIFEST

Gen EPA ID:	CAC000197873
Create Date:	08/07/1989 0:00
Inact Date:	10/25/2000 0:00:00
Facility Mail Street:	--
Facility Mail City:	APPLE VALLEY
Facility Mail State:	CA
Facility Mail Zip:	923070000
Contact Phone(s):	6192542422
File Year(s):	1989
Contact Name(s):	VOJKUFKA, CONNIE/FISCAL CLK II

Tanner Information

State Waste Code:	223	***Generator County:***	San Bernardino
Year:	1989	***Tsd Epa ID:***	CAT080013352
Tons:	2.81	***Tsd County:***	Los Angeles
Method Code:	R01		

State Waste Code Desc: Unspecified oil-containing waste
Method Description:

Site: ***TEXACO***
MUNICIPAL AIRPORT APPLE VALLEY CA

HIST TANK

Owner Name:	TEXACO USA	***No of Containers:***	1
Owner Street:	3350 WILSHIRE BLVD	***County:***	SAN BERNARDINO
Owner City:	LOS ANGELES	***Facility State:***	CA
Owner State:	CA	***Facility Zip:***	92307
Owner Zip:	90010		

Appendix: Database Descriptions

Environmental Risk Information Services (ERIS) can search the following databases. The extent of historical information varies with each database and current information is determined by what is publicly available to ERIS at the time of update. ERIS updates databases as set out in ASTM Standard E1527-13 and E1527-21, Section 8.1.8 Sources of Standard Source Information:

"Government information from nongovernmental sources may be considered current if the source updates the information at least every 90 days, or, for information that is updated less frequently than quarterly by the government agency, within 90 days of the date the government agency makes the information available to the public."

Standard Environmental Record Sources

Federal

National Priority List: NPL

Sites on the United States Environmental Protection Agency (EPA)'s National Priorities List of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action under the Superfund program. The NPL, which EPA is required to update at least once a year, is based primarily on the score a site receives from EPA's Hazard Ranking System. A site must be on the NPL to receive money from the Superfund Trust Fund for remedial action. Sites are represented by boundaries where available in the EPA Superfund Site Boundaries maintained by the Shared Enterprise Geodata and Services (SEGS). Site boundaries represent the footprint of a whole site, the sum of all of the Operable Units and the current understanding of the full extent of contamination; for Federal Facility sites, the total site polygon may be the Facility boundary. Where there is no polygon boundary data available for a given site, the site is represented as a point.

Government Publication Date: Oct 26, 2023

National Priority List - Proposed: PROPOSED NPL

Sites proposed by the United States Environmental Protection Agency (EPA), the state agency, or concerned citizens for addition to the National Priorities List (NPL) due to contamination by hazardous waste and identified by the EPA as a candidate for cleanup because it poses a risk to human health and/or the environment. Sites are represented by boundaries where available in the EPA Superfund Site Boundaries maintained by the Shared Enterprise Geodata and Services (SEGS). Site boundaries represent the footprint of a whole site, the sum of all of the Operable Units and the current understanding of the full extent of contamination; for Federal Facility sites, the total site polygon may be the Facility boundary. Where there is no polygon boundary data available for a given site, the site is represented as a point.

Government Publication Date: Oct 26, 2023

Deleted NPL: DELETED NPL

Sites deleted from the United States Environmental Protection Agency (EPA)'s National Priorities List. The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate. Sites are represented by boundaries where available in the EPA Superfund Site Boundaries maintained by the Shared Enterprise Geodata and Services (SEGS). Site boundaries represent the footprint of a whole site, the sum of all of the Operable Units and the current understanding of the full extent of contamination; for Federal Facility sites, the total site polygon may be the Facility boundary. Where there is no polygon boundary data available for a given site, the site is represented as a point.

Government Publication Date: Oct 26, 2023

SEMS List 8R Active Site Inventory: SEMS

The U.S. Environmental Protection Agency's (EPA) Superfund Program has deployed the Superfund Enterprise Management System (SEMS), which integrates multiple legacy systems into a comprehensive tracking and reporting tool. This inventory contains active sites evaluated by the Superfund program that are either proposed to be or are on the National Priorities List (NPL) as well as sites that are in the screening and assessment phase for possible inclusion on the NPL. The Active Site Inventory Report displays site and location information at active SEMS sites. An active site is one at which site assessment, removal, remedial, enforcement, cost recovery, or oversight activities are being planned or conducted. This data includes SEMS sites from the List 8R Active file as well as applicable sites from the SEMS GIS/REST file layer obtained from EPA's Facility Registry Service.

Government Publication Date: Sep 19, 2023

SEMS List 8R Archive Sites: SEMS ARCHIVE

The U.S. Environmental Protection Agency's (EPA) Superfund Enterprise Management System (SEMS) Archived Site Inventory displays site and location information at sites archived from SEMS. An archived site is one at which EPA has determined that assessment has been completed and no further remedial action is planned under the Superfund program at this time. This data includes sites from the List 8R Archived site file.

Government Publication Date: Sep 19, 2023

Inventory of Open Dumps, June 1985: ODI

The Resource Conservation and Recovery Act (RCRA) provides for publication of an inventory of open dumps. The Act defines "open dumps" as facilities which do not comply with EPA's "Criteria for Classification of Solid Waste Disposal Facilities and Practices" (40 CFR 257).

Government Publication Date: Jun 1985

Comprehensive Environmental Response, Compensation and Liability Information System - CERCLIS: CERCLIS

Superfund is a program administered by the United States Environmental Protection Agency (EPA) to locate, investigate, and clean up the worst hazardous waste sites throughout the United States. CERCLIS is a database of potential and confirmed hazardous waste sites at which the EPA Superfund program has some involvement. It contains sites that are either proposed to be or are on the National Priorities List (NPL) as well as sites that are in the screening and assessment phase for possible inclusion on the NPL. The EPA administers the Superfund program in cooperation with individual states and tribal governments; this database is made available by the EPA.

Government Publication Date: Oct 25, 2013

EPA Report on the Status of Open Dumps on Indian Lands: IODI

Public Law 103-399, The Indian Lands Open Dump Cleanup Act of 1994, enacted October 22, 1994, identified congressional concerns that solid waste open dump sites located on American Indian or Alaska Native (AI/AN) lands threaten the health and safety of residents of those lands and contiguous areas. The purpose of the Act is to identify the location of open dumps on Indian lands, assess the relative health and environment hazards posed by those sites, and provide financial and technical assistance to Indian tribal governments to close such dumps in compliance with Federal standards and regulations or standards promulgated by Indian Tribal governments or Alaska Native entities.

Government Publication Date: Dec 31, 1998

CERCLIS - No Further Remedial Action Planned: CERCLIS NFRAP

An archived site is one at which EPA has determined that assessment has been completed and no further remedial action is planned under the Superfund program at this time. The Archive designation means that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL). This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Government Publication Date: Oct 25, 2013

CERCLIS Liens: CERCLIS LIENS

A Federal Superfund lien exists at any property where EPA has incurred Superfund costs to address contamination ("Superfund site") and has provided notice of liability to the property owner. A Federal CERCLA ("Superfund") lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. This database is made available by the United States Environmental Protection Agency (EPA). This database was provided by the United States Environmental Protection Agency (EPA). Refer to SEMS LIEN as the current data source for Superfund Liens.

Government Publication Date: Jan 30, 2014

RCRA CORRACTS-Corrective Action: RCRA CORRACTS

RCRA Info is the U.S. Environmental Protection Agency's (EPA) comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. At these sites, the Corrective Action Program ensures that cleanups occur. EPA and state regulators work with facilities and communities to design remedies based on the contamination, geology, and anticipated use unique to each site.

Government Publication Date: Oct 2, 2023

RCRA non-CORRACTS TSD Facilities: RCRA TSD

RCRA Info is the U.S. Environmental Protection Agency's (EPA) comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. This database includes Non-Corrective Action sites that have indicated engagement in the treatment, storage, or disposal of hazardous waste which requires a RCRA hazardous waste permit.

Government Publication Date: Oct 2, 2023

RCRA Generator List: RCRA LQG

RCRA Info is the U.S. Environmental Protection Agency's (EPA) comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Large Quantity Generators (LQGs) generate 1,000 kilograms per month or more of hazardous waste or more than one kilogram per month of acutely hazardous waste.

Government Publication Date: Oct 2, 2023

RCRA Small Quantity Generators List: RCRA SQG

RCRA Info is the U.S. Environmental Protection Agency's (EPA) comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Small Quantity Generators (SQGs) generate more than 100 kilograms, but less than 1,000 kilograms, of hazardous waste per month.

Government Publication Date: Oct 2, 2023

RCRA Very Small Quantity Generators List: RCRA VSQG

RCRA Info is the U.S. Environmental Protection Agency's (EPA) comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Very Small Quantity Generators (VSQG) generate 100 kilograms or less per month of hazardous waste, or one kilogram or less per month of acutely hazardous waste. Additionally, VSQG may not accumulate more than 1,000 kilograms of hazardous waste at any time.

Government Publication Date: Oct 2, 2023

RCRA Non-Generators: RCRA NON GEN

RCRA Info is the U.S. Environmental Protection Agency's (EPA) comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Non-Generators do not presently generate hazardous waste.

Government Publication Date: Oct 2, 2023

RCRA Sites with Controls: RCRA CONTROLS

List of Resource Conservation and Recovery Act (RCRA) facilities with institutional controls in place. RCRA gives the U.S. Environmental Protection Agency (EPA) the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances.

Government Publication Date: Oct 2, 2023

Federal Engineering Controls-ECs: FED ENG

This list of Engineering controls (ECs) is provided by the United States Environmental Protection Agency (EPA). ECs encompass a variety of engineered and constructed physical barriers (e.g., soil capping, sub-surface venting systems, mitigation barriers, fences) to contain and/or prevent exposure to contamination on a property. The EC listing includes remedy component data from Superfund decision documents issued in fiscal years 1982-2021 for applicable sites on the final or deleted on the National Priorities List (NPL); and sites with a Superfund Alternative Approach (SAA) Agreement in place. The only sites included that are not on the NPL; proposed for NPL; or removed from proposed NPL, are those with an SAA Agreement in place.

Government Publication Date: Oct 26, 2023

Federal Institutional Controls- ICs: FED INST

This list of Institutional controls (ICs) is provided by the United States Environmental Protection Agency (EPA). ICs are non-engineered instruments, such as administrative and legal controls, that help minimize the potential for human exposure to contamination and/or protect the integrity of the remedy. Although it is EPA's expectation that treatment or engineering controls will be used to address principal threat wastes and that groundwater will be returned to its beneficial use whenever practicable, ICs play an important role in site remedies because they reduce exposure to contamination by limiting land or resource use and guide human behavior at a site. The IC listing includes remedy component data from Superfund decision documents issued in fiscal years 1982-2021 for applicable sites on the final or deleted on the National Priorities List (NPL); and sites with a Superfund Alternative Approach (SAA) Agreement in place. The only sites included that are not on the NPL; proposed for NPL; or removed from proposed NPL, are those with an SAA Agreement in place.

Government Publication Date: Oct 26, 2023

Land Use Control Information System: LUCIS

The LUCIS database is maintained by the U.S. Department of the Navy and contains information for former Base Realignment and Closure (BRAC) properties across the United States.

Government Publication Date: Sep 1, 2006

Institutional Control Boundaries at NPL sites: NPL IC

Boundaries of Institutional Control areas at sites on the United States Environmental Protection Agency (EPA)'s National Priorities List, or Proposed or Deleted, made available by the EPA's Shared Enterprise Geodata and Services (SEGS). United States Environmental Protection Agency (EPA)'s National Priorities List of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action under the Superfund program. Institutional controls are non-engineered instruments such as administrative and legal controls that help minimize the potential for human exposure to contamination and/or protect the integrity of the remedy.

Government Publication Date: Oct 26, 2023

Emergency Response Notification System: ERNS 1982 TO 1986

Database of oil and hazardous substances spill reports controlled by the National Response Center. The primary function of the National Response Center is to serve as the sole national point of contact for reporting oil, chemical, radiological, biological, and etiological discharges into the environment anywhere in the United States and its territories.

Government Publication Date: 1982-1986

Emergency Response Notification System: ERNS 1987 TO 1989

Database of oil and hazardous substances spill reports controlled by the National Response Center. The primary function of the National Response Center is to serve as the sole national point of contact for reporting oil, chemical, radiological, biological, and etiological discharges into the environment anywhere in the United States and its territories.

Government Publication Date: 1987-1989

Emergency Response Notification System: ERNS

Database of oil and hazardous substances spill reports made available by the United States Coast Guard National Response Center (NRC). The NRC fields initial reports for pollution and railroad incidents and forwards that information to appropriate federal/state agencies for response. These data contain initial incident data that has not been validated or investigated by a federal/state response agency.

Government Publication Date: Aug 12, 2023

The Assessment, Cleanup and Redevelopment Exchange System (ACRES) Brownfield Database: FED BROWNFIELDS

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties protects the environment, reduces blight, and takes development pressures off greenspaces and working lands. This data is provided by the United States Environmental Protection Agency (EPA) and includes Brownfield sites from the Cleanups in My Community (CIMC) web application.

Government Publication Date: Mar 13, 2023

FEMA Underground Storage Tank Listing: FEMA UST

The Federal Emergency Management Agency (FEMA) of the Department of Homeland Security maintains a list of FEMA owned underground storage tanks.

Government Publication Date: Dec 31, 2017

Facility Response Plan: FRP

This listing contains facilities that have submitted Facility Response Plans (FRPs) to the U.S. Environmental Protection Agency (EPA). Facilities that could reasonably be expected to cause "substantial harm" to the environment by discharging oil into or on navigable waters are required to prepare and submit FRPs. Harm is determined based on total oil storage capacity, secondary containment and age of tanks, oil transfer activities, history of discharges, proximity to a public drinking water intake or sensitive environments. This listing includes FRP facilities from an applicable EPA FOIA file and Homeland Infrastructure Foundation-Level Data (HIFLD) data file.

Government Publication Date: May 2, 2023

Delisted Facility Response Plans: DELISTED FRP

Facilities that once appeared in - and have since been removed from - the list of facilities that have submitted Facility Response Plans (FRP) to EPA. Facilities that could reasonably be expected to cause "substantial harm" to the environment by discharging oil into or on navigable waters are required to prepare and submit Facility Response Plans (FRPs). Harm is determined based on total oil storage capacity, secondary containment and age of tanks, oil transfer activities, history of discharges, proximity to a public drinking water intake or sensitive environments.

Government Publication Date: May 2, 2023

Historical Gas Stations: HIST GAS STATIONS

This historic directory of service stations is provided by the Cities Service Company. The directory includes Cities Service filling stations that were located throughout the United States in 1930.

Government Publication Date: Jul 1, 1930

Petroleum Refineries: REFN

List of petroleum refineries from the U.S. Energy Information Administration (EIA) Refinery Capacity Report. Includes operating and idle petroleum refineries (including new refineries under construction) and refineries shut down during the previous year located in the 50 States, the District of Columbia, Puerto Rico, the Virgin Islands, Guam, and other U.S. possessions. Survey locations adjusted using public data.

Government Publication Date: Sep 20, 2023

Petroleum Product and Crude Oil Rail Terminals: BULK TERMINAL

A list of petroleum product and crude oil rail terminals from the U.S. Energy Information Administration (EIA), as well as petroleum terminals sourced from the Federal Communications Commission Data hosted by the Homeland Infrastructure Foundation-Level Database. Data includes operable bulk petroleum product terminals with a total bulk shell storage capacity of 50,000 barrels or more, and/or the ability to receive volumes from tanker, barge, or pipeline; also rail terminals handling the loading and unloading of crude oil with activity between 2017 and 2018. EIA petroleum product terminal data comes from the EIA-815 Bulk Terminal and Blender Report, which includes working, shell in operation, and shell idle for several major product groupings.

Government Publication Date: Sep 22, 2023

LIEN on Property: SEMS LIEN

The U.S. Environmental Protection Agency's (EPA) Superfund Enterprise Management System (SEMS) provides Lien details on applicable properties, such as the Superfund lien on property activity, the lien property information, and the parties associated with the lien.

Government Publication Date: Sep 19, 2023

Superfund Decision Documents: SUPERFUND ROD

This database contains a list of decision documents for Superfund sites. Decision documents serve to provide the reasoning for the choice of (or) changes to a Superfund Site cleanup plan. The decision documents include completed Records of Decision (ROD), ROD Amendments, Explanations of Significant Differences (ESD) for active and archived sites stored in the Superfund Enterprise Management System (SEMS), along with other associated memos and files. This information is maintained and made available by the U.S. Environmental Protection Agency.

Government Publication Date: Sep 19, 2023

Formerly Utilized Sites Remedial Action Program: DOE FUSRAP

The U.S. Department of Energy (DOE) established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from the Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations. The DOE Office of Legacy Management (LM) established long-term surveillance and maintenance (LTS&M) requirements for remediated FUSRAP sites. DOE evaluates the final site conditions of a remediated site on the basis of risk for different future uses. DOE then confirms that LTS&M requirements will maintain protectiveness.

Government Publication Date: Mar 4, 2017

State

State Response Sites: RESPONSE

A list of identified confirmed release sites where the Department of Toxic Substances Control (DTSC) is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk. This database is state equivalent NPL.

Government Publication Date: Oct 23, 2023

EnviroStor Database: ENVIROSTOR

The EnviroStor Data Management System is made available by the Department of Toxic Substances Control (DTSC). Includes Corrective Action sites, Tiered Permit sites, Historical Sites and Evaluation/Investigation sites. This database is state equivalent CERCLIS.

Government Publication Date: Oct 23, 2023

Delisted State Response Sites: DELISTED ENVS

Sites removed from the list of State Response Sites made available by the EnviroStor Data Management System, Department of Toxic Substances Control (DTSC).

Government Publication Date: Oct 23, 2023

Solid Waste Information System (SWIS): SWF/LF

The Solid Waste Information System (SWIS) database made available by the Department of Resources Recycling and Recovery (CalRecycle) contains information on solid waste facilities, operations, and disposal sites throughout the State of California. The types of facilities found in this database include landfills, transfer stations, material recovery facilities, composting sites, transformation facilities, waste tire sites, and closed disposal sites.

Government Publication Date: Aug 10, 2023

Solid Waste Disposal Sites with Waste Constituents Above Hazardous Waste Levels: SWRCB SWF

This is a list of solid waste disposal sites identified by California State Water Resources Control Board with waste constituents above hazardous waste levels outside the waste management unit.

Government Publication Date: Sep 20, 2006

Waste Management Unit Database: WMUD

The Waste Management Unit Database System tracks and inventories waste management units. CCR Title 27 contains criteria stating that Waste Management Units are classified according to their ability to contain wastes. Containment shall be determined by geology, hydrology, topography, climatology, and other factors relating to the ability of the Unit to protect water quality. Water Code Section 13273.1 requires that operators submit a water quality solid waste assessment test (SWAT) report to address leak status. The WMUDS was last updated by the State Water Resources control board in 2000.

Government Publication Date: Jan 1, 2000

EnviroStor Hazardous Waste Facilities: HWP

A list of hazardous waste facilities including permitted, post-closure and historical facilities found in the Department of Toxic Substances Control (DTSC) EnviroStor database.

Government Publication Date: Oct 23, 2023

Sites Listed in the Solid Waste Assessment Test (SWAT) Program Report: SWAT

In a 1993 Memorandum of Understanding, the State Water Resources Control Board (SWRCB) agreed to submit a comprehensive report on the Solid Waste Assessment Test (SWAT) Program to the California Integrated Waste Management Board (CIWMB). This report summarizes the work completed to date on the SWAT Program, and addresses both the impacts that leakage from solid waste disposal sites (SWDS) may have upon waters of the State and the actions taken to address such leakage.

Government Publication Date: Dec 31, 1995

Construction and Demolition Debris Recyclers: C&D DEBRIS RECY

This listing of Construction and Demolition Debris Recyclers is maintained by the California Intergrated Waste Management Board-common C&D materials include lumber, drywall, metals, masonry (brick, concrete, etc.), carpet, plastic, pipe, rocks, dirt, paper, cardboard, or green waste related to land development.

Government Publication Date: Jun 20, 2018

Recycling Centers: RECYCLING

This list of Certified Recycling Centers that are operating under the state of California's Beverage Container Recycling Program is maintained by the California Department of Resources Recycling and Recovery.

Government Publication Date: Oct 16, 2023

Listing of Certified Processors: PROCESSORS

This list of Certified Processors that are operating under the state of California's Beverage Container Recycling Program is maintained by the California Department of Resources Recycling and Recovery.

Government Publication Date: Oct 16, 2023

Listing of Certified Dropoff, Collection, and Community Service Programs: CONTAINER RECY

This list of Certified Dropoff, Collection, and Community Service Programs (non-buyback) operating under the state of California's Beverage Container Recycling Program is maintained by the California Department of Resources Recycling and Recovery.

Government Publication Date: Oct 19, 2023

Land Disposal Sites: LDS

Land Disposal Sites in GeoTracker, the State Water Resources Control Board (SWRCB)'s data management system. The Land Disposal program regulates of waste discharge to land for treatment, storage and disposal in waste management units. Waste management units include waste piles, surface impoundments, and landfills.

Government Publication Date: Jul 13, 2023

Leaking Underground Fuel Tank Reports: LUST

List of Leaking Underground Storage Tanks within the Cleanup Sites data in GeoTracker database. GeoTracker is the State Water Resources Control Board's (SWRCB) data management system for managing sites that impact groundwater, especially those that require groundwater cleanup (Underground Storage Tanks, Department of Defense and Site Cleanup Program) as well as permitted facilities such as operating Underground Storage Tanks. The Leak Prevention Program that overlooks LUST sites is the SWRCB in California's Environmental Protection Agency.

Government Publication Date: Jul 13, 2023

Delisted Leaking Storage Tanks: DELISTED LST

List of Leaking Underground Storage Tanks (LUST) cleanup sites removed from GeoTracker, the State Water Resources Control Board (SWRCB)'s database system, as well as sites removed from the SWRCB's list of UST Case closures.

Government Publication Date: Sep 18, 2023

Permitted Underground Storage Tank (UST) in GeoTracker: UST

List of Permitted Underground Storage Tank (UST) sites made available by the State Water Resources Control Board (SWRCB) in California's Environmental Protection Agency (EPA).

Government Publication Date: Nov 22, 2023

Proposed Closure of Underground Storage Tank Cases: UST CLOSURE

This listing includes Proposed Closure of Underground Storage Tank (UST) Cases which are being considered for closure by either the State Water Resources Control Board at a Future Board Meeting or the Executive Director that have been posted for a 60-day public comment period, and Closure of UST Cases with Closure Denials and Approved Orders. The lists are provided by the California Water Boards.

Government Publication Date: Sep 18, 2023

Historical Hazardous Substance Storage Information Database: HHSS

The Historical Hazardous Substance Storage database contains information collected in the 1980s from facilities that stored hazardous substances. The information was originally collected on paper forms, was later transferred to microfiche, and recently indexed as a searchable database. When using this database, please be aware that it is based upon self-reported information submitted by facilities which has not been independently verified. It is unlikely that every facility responded to the survey and the database should not be expected to be a complete inventory of all facilities that were operating at that time. This database is maintained by the California State Water Resources Control Board's (SWRCB) Geotracker.

Government Publication Date: Aug 27, 2015

Statewide Environmental Evaluation and Planning System: UST SWEEPS

The Statewide Environmental Evaluation and Planning System (SWEEPS) is a historical listing of active and inactive underground storage tanks made available by the California State Water Resources Control Board (SWRCB).

Government Publication Date: Oct 1, 1994

Aboveground Storage Tanks: AST

A statewide list from 2009 of aboveground storage tanks (ASTs) made available by the Cal FIRE Office of the State Fire Marshal (OSFM). This list is no longer maintained or updated by the Cal FIRE OSFM.

Government Publication Date: Aug 31, 2009

SWRCB Historical Aboveground Storage Tanks: AST SWRCB

A list of aboveground storage tanks made available by the California State Water Resources Control Board (SWRCB). Effective January 1, 2008, the Certified Unified Program Agencies (CUPAs) are vested with the responsibility and authority to implement the Aboveground Petroleum Storage Act (APSA).

Government Publication Date: Dec 1, 2007

Oil and Gas Facility Tanks: TANK OIL GAS

Locations of oil and gas tanks that fall under the jurisdiction of the Geologic Energy Management Division of the California Department of Conservation (CalGEM) (CCR 1760). CalGEM was formerly the Division of Oil, Gas, and Geothermal Resources (DOGGR).

Government Publication Date: Oct 13, 2023

Delisted Storage Tanks: DELISTED TNK

This database contains a list of storage tank sites that were removed by the State Water Resources Control Board (SWRCB) in California's Environmental Protection Agency (EPA) and the Cal FIRE Office of State Fire Marshal (OSFM).

Government Publication Date: Nov 27, 2023

California Environmental Reporting System (CERS) Tanks: CERS TANK

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Aboveground Petroleum Storage and Underground Storage Tank regulatory programs. The CalEPA oversees the statewide implementation of the Unified Program which applies regulatory standards to protect Californians from hazardous waste and materials.

Government Publication Date: Oct 16, 2023

Delisted California Environmental Reporting System (CERS) Tanks: DELISTED CTNK

This database contains a list of Aboveground Petroleum Storage and Underground Storage Tank sites that were removed from in the California Environmental Protection Agency (CalEPA) Regulated Site Portal.

Government Publication Date: Oct 16, 2023

Historical Hazardous Substance Storage Container Information - Facility Summary: HIST TANK

The State Water Resources Control Board maintained the Hazardous Substance Storage Containers listing and inventory in th 1980s. This facility summary lists historic tank sites where the following container types were present: farm motor vehicle fuel tanks; waste tanks; sumps; pits, ponds, lagoons, and others; and all other product tanks. This set, published in May 1988, lists facility and owner information, as well as the number of containers. This data is historic and will not be updated.

Government Publication Date: May 27, 1988

Site Mitigation and Brownfields Reuse Program Facility Sites with Land Use Restrictions: LUR

The Department of Toxic Substances Control (DTSC) Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents land use restrictions that are active. Some sites have multiple land use restrictions.

Government Publication Date: Oct 23, 2023

CALSITES Database: CALSITES

This historical database was maintained by the Department of Toxic Substance Control (DTSC) for more than a decade. CALSITES contains information on Brownfield properties with confirmed or potential hazardous contamination. In 2006, DTSC introduced EnviroStor as the latest Brownfields site database.

Government Publication Date: May 1, 2004

Hazardous Waste Management Program Facility Sites with Deed / Land Use Restrictions: HLUR

The Department of Toxic Substances Control (DTSC) Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Government Publication Date: Feb 18, 2021

Deed Restrictions and Land Use Restrictions: DEED

List of Deed Restrictions, Land Use Restrictions and Covenants in GeoTracker made available by the State Water Resources Control Board (SWRCB) in California's Environmental Protection Agency. A deed restriction (land use covenant) may be required to facilitate the remediation of past environmental contamination and to protect human health and the environment by reducing the risk of exposure to residual hazardous materials.

Government Publication Date: Jul 13, 2023

Voluntary Cleanup Program: VCP

List of sites in the Voluntary Cleanup Program made available by the Department of Toxic Substances and Control (DTSC). The Voluntary Cleanup Program was designed to respond to lower priority sites. Under the Voluntary Cleanup Program, DTSC enters site-specific agreements with project proponents for DTSC oversight of site assessment, investigation, and/or removal or remediation activities, and the project proponents agree to pay DTSC's reasonable costs for those services.

Government Publication Date: Oct 23, 2023

GeoTracker Cleanup Program Sites: CLEANUP SITES

A list of Cleanup Program sites in the state of California made available by The State Water Resources Control Board (SWRCB) of the California Environmental Protection Agency (EPA). SWRCB tracks leaking underground storage tank cleanups as well as other water board cleanups.

Government Publication Date: Jul 13, 2023

Delisted Cleanup Program Sites: DELISTED CLEANUP

A list of Cleanup Program sites which were once included - and have since been removed from - the list of Cleanup Program Sites in GeoTracker. GeoTracker is the State Water Resource Control Boards' data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.
Government Publication Date: Jul 13, 2023

Delisted County Records: DELISTED COUNTY
Records removed from county or CUPA databases. Records may be removed from the county lists made available by the respective county departments because they are inactive, or because they have been deemed to be below reportable thresholds.
Government Publication Date: Nov 28, 2023

Tribal

Leaking Underground Storage Tanks on Tribal/Indian Lands: INDIAN LUST
This list of leaking underground storage tanks (LUSTs) on Tribal/Indian Lands in Region 9, which includes California, is made available by the United States Environmental Protection Agency (EPA).
Government Publication Date: Apr 19, 2023

Underground Storage Tanks on Tribal/Indian Lands: INDIAN UST
This list of underground storage tanks (USTs) on Tribal/Indian Lands in Region 9, which includes California, is made available by the United States Environmental Protection Agency (EPA).
Government Publication Date: Apr 19, 2023

Delisted Tribal Leaking Storage Tanks: DELISTED INDIAN LST
Leaking Underground Storage Tank (LUST) facilities which once appeared on - and have since been removed from - the Regional Tribal/Indian LUST lists made available by the United States Environmental Protection Agency (EPA).
Government Publication Date: Apr 26, 2023

Delisted Tribal Underground Storage Tanks: DELISTED INDIAN UST
Underground Storage Tank (UST) facilities which once appeared on - and have since been removed from - the Regional Tribal/Indian UST lists made available by the United States Environmental Protection Agency (EPA).
Government Publication Date: Apr 26, 2023

County

San Bernardino County - CUPA List: SANBERN CUPA
A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in San Bernardino County. This list is made available by San Bernardino County Fire Department which is the CUPA for all areas of the County except the city of Victorville.
Government Publication Date: Nov 28, 2023

Additional Environmental Record Sources

Federal

Facility Registry Service/Facility Index: FINDS/FRS
The Facility Registry Service (FRS) is a centrally managed database that identifies facilities, sites, or places subject to environmental regulations or of environmental interest. FRS creates high-quality, accurate, and authoritative facility identification records through rigorous verification and management procedures that incorporate information from program national systems, state master facility records, and data collected from EPA's Central Data Exchange registrations and data management personnel. This list is made available by the U.S. Environmental Protection Agency (EPA).
Government Publication Date: Sep 8, 2023

Toxics Release Inventory (TRI) Program: TRIS

The U.S. Environmental Protection Agency's Toxics Release Inventory (TRI) is a database containing data on disposal or other releases of toxic chemicals from U.S. facilities and information about how facilities manage those chemicals through recycling, energy recovery, and treatment. There are currently 770 individually listed chemicals and 33 chemical categories covered by the TRI Program. Facilities that manufacture, process or otherwise use these chemicals in amounts above established levels must submit annual reporting forms for each chemical. Note that the TRI chemical list does not include all toxic chemicals used in the U.S. One of TRI's primary purposes is to inform communities about toxic chemical releases to the environment.

Government Publication Date: Oct 19, 2022

PFOA/PFOS Contaminated Sites: PFAS NPL

This list of Superfund Sites with Per- and Polyfluoroalkyl Substances (PFAS) detections is made available by the U.S. Environmental Protection Agency (EPA) in their PFAS Analytic Tools data, previously the list was obtained by EPA FOIA requests. EPA's Office of Land and Emergency Management and EPA Regional Offices maintain what is known about site investigations, contamination, and remedial actions under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) where PFAS is present in the environment. Limitations: Detections of PFAS at National Priorities List (NPL) sites do not mean that people are at risk from PFAS, are exposed to PFAS, or that the site is the source of the PFAS. The information in the Superfund NPL and Superfund Alternative Agreement (SAA) PFAS detection site list is years old and may not be accurate today. Site information such as site name, site ID, and location has been confirmed for accuracy; however, PFAS-related information such as media sampled, drinking water being above the health advisory, or mitigation efforts has not been verified. For Federal Facilities data, the other Federal agencies (OFA) are the lead agency for their data and provided them to EPA.

Government Publication Date: Sep 14, 2023

Federal Agency Locations with Known or Suspected PFAS Detections: PFAS FED SITES

List of Federal agency locations with known or suspected detections of Per- and Polyfluoroalkyl Substances (PFAS), made available by the U.S. Environmental Protection Agency (EPA) in their PFAS Analytic Tools data. EPA outlines that these data are gathered from several federal entities, such as the Federal Superfund program, Department of Defense (DOD), National Aeronautics and Space Administration, Department of Transportation, and Department of Energy. The dates this data was extracted for the PFAS Analytic Tools range from March 2022 to September 2023. Sites on this list do not necessarily reflect the source/s of PFAS contamination and detections do not indicate level of risk or human exposure at the site. Agricultural notifications in this data are limited to DOD sites only. At this time, the EPA is aware that this list is not comprehensive of all Federal agencies.

Government Publication Date: Sep 5, 2023

SSEHRI PFAS Contamination Sites: PFAS SSEHRI

This PFAS Contamination Site Tracker database is compiled by the Social Science Environmental Health Research Institute (SSEHRI) at Northeastern University. According to the SSEHRI, the database records qualitative and quantitative data from each known site of PFAS contamination, including timeline of discovery, sources, levels, health impacts, community response, and government response. The goal of this database is to compile information and support public understanding of the rapidly unfolding issue of PFAS contamination. All data presented was extracted from government websites, news articles, or publicly available documents, and this is cited in the tracker. Locations for the Known PFAS Contamination Sites are sourced from the PFAS Sites and Community Resources Map, credited to the Northeastern University's PFAS Project Lab, Silent Spring Institute, and the PFAS-REACH team. Disclaimer: The source conveys the data undergoes regular updates as new information becomes available, some sites may be missing and/or contain information that is incorrect or outdated, as well as their information represents all contamination sites SSEHRI is aware of, not all possible contamination sites. This data is not intended to be used for legal purposes. Access the following source link for the most current information: https://pfasproject.com/pfas-sites-and-community-resources/

Government Publication Date: Oct 9, 2022

National Response Center PFAS Spills: ERNS PFAS

This Per- and Poly-Fluoroalkyl Substances (PFAS) Spills dataset is made available via the U.S. Environmental Protection Agency's (EPA) PFAS Analytic Tools. The National Response Center (NRC), operated by the U.S. Coast Guard, is the designated federal point of contact for reporting all oil, chemical, and other discharges into the environment, for the United States and its territories. This dataset contains NRC spill information from 1990 to the present that is restricted to records associated with PFAS and PFAS-containing materials. Incidents are filtered to include only records with a "Material Involved" or "Incident Description" related to Aqueous Film Forming Foam (AFFF). The keywords used to filter the data included "AFFF," "Fire Fighting Foam," "Aqueous Film Forming Foam," "Fire Suppressant Foam, "PFAS," "PERFL," "PFOA," "PFOS," and "Genx." Limitations: The data from the NRC website contains initial incident data that has not been validated or investigated by a federal/state response agency. Keyword searches may misidentify some incident reports that do not contain PFAS. This dataset should also not be considered to be exhaustive of all PFAS spills/release incidents.

Government Publication Date: Sep 23, 2023

PFAS NPDES Discharge Monitoring: PFAS NPDES

This list of National Pollutant Discharge Elimination System (NPDES) permitted facilities with required monitoring for Per- and Polyfluoroalkyl (PFAS) Substances is made available via the U.S. Environmental Protection Agency (EPA)'s PFAS Analytic Tools. Any point-source wastewater discharger to waters of the United States must have a NPDES permit, which defines a set of parameters for pollutants and monitoring to ensure that the discharge does not degrade water quality or impair human health. This list includes NPDES permitted facilities associated with permits that monitor for Per- and Polyfluoroalkyl Substances (PFAS), limited to the years 2007 - present. EPA further advises the following regarding these data: currently, fewer than half of states have required PFAS monitoring for at least one of their permittees, and fewer states have established PFAS effluent limits for permittees. For states that may have required monitoring, some reporting and data transfer issues may exist on a state-by-state basis.

Government Publication Date: Sep 4, 2023

Perfluorinated Alkyl Substances (PFAS) from Toxic Release Inventory: PFAS TRI

List of Toxics Release Inventory (TRI) facilities at which the reported chemical is a per- or polyfluoroalkyl (PFAS) substance included in the U.S. Environmental Protection Agency's (EPA) consolidated PFAS Master List of PFAS Substances. Encompasses Toxics Release Inventory records included in the EPA PFAS Analytic Tools. The EPA's TRI database currently tracks information on disposal or releases of 770 individually listed toxic chemicals and 33 chemical categories from thousands of U.S. facilities and details about how facilities manage those chemicals through recycling, energy recovery, and treatment.

Government Publication Date: Oct 19, 2022

Perfluorinated Alkyl Substances (PFAS) Water Quality: PFAS WATER

The Water Quality Portal (WQP) is a cooperative service sponsored by the United States Geological Survey (USGS), the Environmental Protection Agency (EPA), and the National Water Quality Monitoring Council (NWQMC). This listing includes records from the Water Quality Portal where the characteristic (environmental measurement) is in the Environmental Protection Agency (EPA)'s consolidated Master List of PFAS Substances.

Government Publication Date: Jul 20, 2020

PFAS TSCA Manufacture and Import Facilities: PFAS TSCA

The U.S. Environmental Protection Agency (EPA) issued the Chemical Data Reporting (CDR) Rule under the Toxic Substances Control Act (TSCA) and requires chemical manufacturers and facilities that manufacture or import chemical substances to report data to EPA. This list is specific only to TSCA Manufacture and Import Facilities with reported per- and poly-fluoroalkyl (PFAS) substances. Data file is sourced from EPA's PFAS Analytic Tools TSCA dataset which includes CDR/Inventory Update Reporting data from 1998 up to 2020. Disclaimer: This data file includes production and importation data for chemicals identified in EPA's CompTox Chemicals Dashboard list of PFAS without explicit structures and list of PFAS structures in DSSTox. Note that some regulations have specific chemical structure requirements that define PFAS differently than the lists in EPA's CompTox Chemicals Dashboard. Reporting information on manufactured or imported chemical substance amounts should not be compared between facilities, as some companies claim Chemical Data Reporting Rule data fields for PFAS information as Confidential Business Information.

Government Publication Date: Jan 5, 2023

PFAS Waste Transfers from RCRA e-Manifest : PFAS E-MANIFEST

This Per- and Poly-Fluoroalkyl Substances (PFAS) Waste Transfers dataset is made available via the U.S. Environmental Protection Agency's (EPA) PFAS Analytic Tools. Every shipment of hazardous waste in the U.S. must be accompanied by a shipment manifest, which is a critical component of the cradle-to-grave tracking of wastes mandated by the Resource Conservation and Recovery Act (RCRA). According to the EPA, currently no Federal Waste Code exists for any PFAS compounds. To work around the lack of PFAS waste codes in the RCRA database, EPA developed the PFAS Transfers dataset by mining e-Manifest records containing at least one of these common PFAS keywords: • PFAS • PFOA • PFOS • PERFL • AFFF • GENX • GEN-X (plus the Vermont state-specific waste codes). Limitations: Amount or concentration of PFAS being transferred cannot be determined from the manifest information. Keyword searches may misidentify some manifest records that do not contain PFAS. This dataset should also not be considered to be exhaustive of all PFAS waste transfers.

Government Publication Date: Oct 11, 2023

PFAS Industry Sectors: PFAS IND

This Per- and Poly-Fluoroalkyl Substances (PFAS) Industry Sectors dataset is made available via the U.S. Environmental Protection Agency's (EPA) PFAS Analytic Tools. The EPA developed the dataset from various sources that show which industries may be handling PFAS including: EPA's Enforcement and Compliance History Online (ECHO) records restricted to potential PFAS-handling industry sectors; ECHO records for Fire Training Sites identified where fire-fighting foam may have been used in training exercises; and 14 CFR Part 139 Airports compiled from historic and current records from the FAA Airport Data and Information Portal. Since July 2006, all certificated Part 139 Airports are required to have fire-fighting foam onsite that meet certain military specifications, which to date have been fluorinated (Aqueous Film Forming Foam). Limitations: Inclusion in this dataset does not indicate that PFAS are being manufactured, processed, used, or released by the facility. Listed facilities potentially handle PFAS based on their industrial profile, but are unconfirmed by the EPA. Keyword searches in ECHO for Fire Training sites may misidentify some facilities and should not be considered to be an exhaustive list of fire training facilities in the U.S.

Government Publication Date: Jul 3, 2023

Hazardous Materials Information Reporting System: HMIRS

The Hazardous Materials Incident Reporting System (HMIRS) database contains unintentional hazardous materials release information reported to the U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration.

Government Publication Date: Mar 6, 2023

National Clandestine Drug Labs: NCDL

The U.S. Department of Justice ("the Department"), Drug Enforcement Administration (DEA), provides this data as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy.

Government Publication Date: Jul 26, 2023

Toxic Substances Control Act: TSCA

The Environmental Protection Agency (EPA) is amending the Toxic Substances Control Act (TSCA) section 8(a) Inventory Update Reporting (IUR) rule and changing its name to the Chemical Data Reporting (CDR) rule.

The CDR enables EPA to collect and publish information on the manufacturing, processing, and use of commercial chemical substances and mixtures (referred to hereafter as chemical substances) on the TSCA Chemical Substance Inventory (TSCA Inventory). This includes current information on chemical substance production volumes, manufacturing sites, and how the chemical substances are used. This information helps the Agency determine whether people or the environment are potentially exposed to reported chemical substances. EPA publishes submitted CDR data that is not Confidential Business Information (CBI).

Government Publication Date: Apr 11, 2019

Hist TSCA: HIST TSCA

The Environmental Protection Agency (EPA) is amending the Toxic Substances Control Act (TSCA) section 8(a) Inventory Update Reporting (IUR) rule and changing its name to the Chemical Data Reporting (CDR) rule.

The 2006 IUR data summary report includes information about chemicals manufactured or imported in quantities of 25,000 pounds or more at a single site during calendar year 2005. In addition to the basic manufacturing information collected in previous reporting cycles, the 2006 cycle is the first time EPA collected information to characterize exposure during manufacturing, processing and use of organic chemicals. The 2006 cycle also is the first time manufacturers of inorganic chemicals were required to report basic manufacturing information.

Government Publication Date: Dec 31, 2006

FTTS Administrative Case Listing: FTTS ADMIN

An administrative case listing from the Federal Insecticide, Fungicide, & Rodenticide Act (FIFRA) and Toxic Substances Control Act (TSCA), together known as FTTS. This database was obtained from the Environmental Protection Agency's (EPA) National Compliance Database (NCDB). The FTTS and NCDB was shut down in 2006.

Government Publication Date: Jan 19, 2007

FTTS Inspection Case Listing: FTTS INSP

An inspection case listing from the Federal Insecticide, Fungicide, & Rodenticide Act (FIFRA) and Toxic Substances Control Act (TSCA), together known as FTTS. This database was obtained from the Environmental Protection Agency's (EPA) National Compliance Database (NCDB). The FTTS and NCDB was shut down in 2006.

Government Publication Date: Jan 19, 2007

Potentially Responsible Parties List: PRP

Early in the site cleanup process, the U.S. Environmental Protection Agency (EPA) conducts a search to find the Potentially Responsible Parties (PRPs). The EPA looks for evidence to determine liability by matching wastes found at the site with parties that may have contributed wastes to the site. This listing contains PRPs, Noticed Parties, at sites in the EPA's Superfund Enterprise Management System (SEMS).

Government Publication Date: Oct 26, 2023

State Coalition for Remediation of Drycleaners Listing: SCRD DRYCLEANER

The State Coalition for Remediation of Drycleaners (SCRD) was established in 1998, with support from the U.S. Environmental Protection Agency (EPA) Office of Superfund Remediation and Technology Innovation. Coalition members are states with mandated programs and funding for drycleaner site remediation. Current members are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin. Since 2017, the SCRD no longer maintains this data, refer to applicable state source data where available.

Government Publication Date: Nov 08, 2017

Integrated Compliance Information System (ICIS): ICIS

The Integrated Compliance Information System (ICIS) database contains integrated enforcement and compliance information across most of U.S. Environmental Protection Agency's (EPA) programs. The vision for ICIS is to replace EPA's independent databases that contain enforcement data with a single repository for that information. Currently, ICIS contains all Federal Administrative and Judicial enforcement actions and a subset of the Permit Compliance System (PCS), which supports the National Pollutant Discharge Elimination System (NPDES). This information is maintained by the EPA Headquarters and at the Regional offices. A future release of ICIS will completely replace PCS and will integrate that information with Federal actions already in the system. ICIS also has the capability to track other activities that support compliance and enforcement programs, including incident tracking, compliance assistance, and compliance monitoring.

Government Publication Date: Jan 21, 2023

Drycleaner Facilities: FED DRYCLEANERS

A list of drycleaner facilities from Enforcement and Compliance History Online (ECHO) data as made available by the U.S. Environmental Protection Agency (EPA), sourced from the ECHO Exporter file. The EPA tracks facilities that possess NAIC and SIC codes that classify businesses as drycleaner establishments.

Government Publication Date: Jul 23, 2023

Delisted Drycleaner Facilities: DELISTED FED DRY

List of sites removed from the list of Drycleaner Facilities (sites in the EPA's Integrated Compliance Information System (ICIS) with NAIC or SIC codes identifying the business as a drycleaner establishment).

Government Publication Date: Jul 23, 2023

Formerly Used Defense Sites: FUDS

Formerly Used Defense Sites (FUDS) are properties that were formerly owned by, leased to, or otherwise possessed by and under the jurisdiction of the Secretary of Defense prior to October 1986, where the Department of Defense (DOD) is responsible for an environmental restoration. The FUDS Annual Report to Congress (ARC) is published by the U.S. Army Corps of Engineers (USACE). This data is compiled from the USACE's Geospatial FUDS data layers and Homeland Infrastructure Foundation-Level Data (HIFLD) FUDS dataset which applies to the Fiscal Year 2021 FUDS Inventory.

Government Publication Date: May 15, 2023

FUDS Munitions Response Sites: FUDS MRS

Boundaries of Munitions Response Sites (MRS), published with the Formerly Used Defense Sites (FUDS) Annual Report to Congress (ARC) by the U.S. Army Corps of Engineers (USACE). An MRS is a discrete location within a Munitions response area (MRA) that is known to require a munitions response. An MRA means any area on a defense site that is known or suspected to contain unexploded ordnance (UXO), discarded military munitions (DMM), or munitions constituents (MC). This data is compiled from the USACE's Geospatial MRS data layers and Homeland Infrastructure Foundation-Level Data (HIFLD) MRS dataset.

Government Publication Date: May 15, 2023

Former Military Nike Missile Sites: FORMER NIKE

This information was taken from report DRXTH-AS-IA-83A016 (Historical Overview of the Nike Missile System, 12/1984) which was performed by Environmental Science and Engineering, Inc. for the U.S. Army Toxic and Hazardous Materials Agency Assessment Division. The Nike system was deployed between 1954 and the mid-1970's. Among the substances used or stored on Nike sites were liquid missile fuel (JP-4); starter fluids (UDKH, aniline, and furfuryl alcohol); oxidizer (IRFNA); hydrocarbons (motor oil, hydraulic fluid, diesel fuel, gasoline, heating oil); solvents (carbon tetrachloride, trichloroethylene, trichloroethane, stoddard solvent); and battery electrolyte. The quantities of material a disposed of and procedures for disposal are not documented in published reports. Virtually all information concerning the potential for contamination at Nike sites is confined to personnel who were assigned to Nike sites. During deactivation most hardware was shipped to depot-level supply points. There were reportedly instances where excess materials were disposed of on or near the site itself at closure. There was reportedly no routine site decontamination.

Government Publication Date: Dec 2, 1984

PHMSA Pipeline Safety Flagged Incidents: PIPELINE INCIDENT

A list of flagged pipeline incidents made available by the U.S. Department of Transportation (US DOT) Pipeline and Hazardous Materials Safety Administration (PHMSA). PHMSA regulations require incident and accident reports for five different pipeline system types.

Government Publication Date: Dec 30, 2022

Material Licensing Tracking System (MLTS): MLTS

A list of sites that store radioactive material subject to the Nuclear Regulatory Commission (NRC) licensing requirements. This list is maintained by the NRC. As of September 2016, the NRC no longer releases location information for sites. Site locations were last received in July 2016.

Government Publication Date: May 11, 2021

Historic Material Licensing Tracking System (MLTS) sites: HIST MLTS

A historic list of sites that have inactive licenses and/or removed from the Material Licensing Tracking System (MLTS). In some cases, a site is removed from the MLTS when the state becomes an "Agreement State". An Agreement State is a State that has signed an agreement with the Nuclear Regulatory Commission (NRC) authorizing the State to regulate certain uses of radioactive materials within the State.

Government Publication Date: Jan 31, 2010

Mines Master Index File: MINES

The Master Index File (MIF) is provided by the United States Department of Labor, Mine Safety and Health Administration (MSHA). This file, which was originally created in the 1970's, contained many Mine-IDs that were invalid. MSHA removes invalid IDs from the MIF upon discovery. MSHA applicable data includes the following: all Coal and Metal/Non-Metal mines under MSHA's jurisdiction since 1/1/1970; mine addresses for all mines in the database except for Abandoned mines prior to 1998 from MSHA's legacy system (addresses may or may not correspond with the physical location of the mine itself); violations that have been assessed penalties as a result of MSHA inspections beginning on 1/1/2000; and violations issued as a result of MSHA inspections conducted beginning on 1/1/2000.

Government Publication Date: May 1, 2023

Surface Mining Control and Reclamation Act Sites: SMCRA

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by the Office of Surface Mining Reclamation and Enforcement (OSMRE) to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). This inventory contains information on the type and extent of Abandoned Mine Land (AML) impacts, as well as information on the cost associated with the reclamation of those problems. The data is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed. Disclaimer: Per the OSMRE, States and tribes who enter their data into eAMLIS (AML Inventory System) may truncate their latitude and longitude so the precise location of usually dangerous AMLs is not revealed in an effort to protect the public from searching for these AMLs, most of which are on private property. If more precise location information is needed, please contact the applicable state/tribe of interest.

Government Publication Date: Jun 13, 2023

Mineral Resource Data System: MRDS

The Mineral Resource Data System (MRDS) is a collection of reports describing metallic and nonmetallic mineral resources throughout the world. Included are deposit name, location, commodity, deposit description, geologic characteristics, production, reserves, resources, and references. This database contains the records previously provided in the Mineral Resource Data System (MRDS) of USGS and the Mineral Availability System/Mineral Industry Locator System (MAS/MILS) originated in the U.S. Bureau of Mines, which is now part of USGS. The USGS has ceased systematic updates of the MRDS database with their focus more recently on deposits of critical minerals while providing a well-documented baseline of historical mine locations from USGS topographic maps.

Government Publication Date: Mar 15, 2016

DOE Legacy Management Sites: LM SITES

The U.S. Department of Energy (DOE) Office of Legacy Management (LM) currently manages radioactive and chemical waste, environmental contamination, and hazardous material at over 100 sites across the U.S. The LM manages sites with diverse regulatory drivers (statutes or programs that direct cleanup and management requirements at DOE sites) or as part of internal DOE or congressionally-recognized programs, such as but not limited to: Formerly Utilized Sites Remedial Action Program (FUSRAP), Uranium Mill Tailings Radiation Control Act (UMTRCA Title I, Tile II), Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Resource Conservation and Recovery Act (RCRA), Decontamination and Decommissioning (D&D), Nuclear Waste Policy Act (NWPA). This site listing includes data exported from the DOE Office of LM's Geospatial Environmental Mapping System (GEMS). GEMS Data disclaimer: The DOE Office of LM makes no representation or warranty, expressed or implied, regarding the use, accuracy, availability, or completeness of the data presented herein.

Government Publication Date: May 25, 2023

Alternative Fueling Stations: ALT FUELS

This list of alternative fueling stations is sourced from the Alternative Fuels Data Center (AFDC). The U.S. Department of Energy's Office of Energy Efficiency & Renewable Energy launched the AFDC in 1991 as a repository for alternative fuel vehicle performance data, which provides a wealth of information and data on alternative and renewable fuels, advanced vehicles, fuel-saving strategies, and emerging transportation technologies. The data includes Biodiesel (B20 and above), Compressed Natural Gas (CNG), Electric, Ethanol (E85), Hydrogen, Liquefied Natural Gas (LNG), Propane (LPG), and Renewable Diesel (R20 and above) fuel type locations.

Government Publication Date: Aug 30, 2023

Superfunds Consent Decrees: CONSENT DECREES

This list of Superfund consent decrees is provided by the Department of Justice, Environment & Natural Resources Division (ENRD) through a Freedom of Information Act (FOIA) applicable file. This listing includes Consent Decrees for CERCLA or Superfund Sites filed and/or as proposed within the ENRD's Case Management System (CMS) since 2010. CMS may not reflect the latest developments in a case nor can the agency guarantee the accuracy of the data. ENRD Disclaimer: Congress excluded three discrete categories of law enforcement and national security records from the requirements of the FOIA; response is limited to those records that are subject to the requirements of the FOIA; however, this should not be taken as an indication that excluded records do, or do not, exist.

Government Publication Date: Apr 19, 2023

Air Facility System: AFS

This EPA retired Air Facility System (AFS) dataset contains emissions, compliance, and enforcement data on stationary sources of air pollution. Regulated sources cover a wide spectrum; from large industrial facilities to relatively small operations such as dry cleaners. AFS does not contain data on facilities that are solely asbestos demolition and/or renovation contractors, or landfills. ECHO Clean Air Act data from AFS are frozen and reflect data as of October 17, 2014; the EPA retired this system for Clean Air Act stationary sources and transitioned to ICIS-Air.

Government Publication Date: Oct 17, 2014

Registered Pesticide Establishments: SSTS

This national list of active EPA-registered foreign and domestic pesticide and/or device-producing establishments is based on data from the Section Seven Tracking System (SSTS). The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Section 7 requires that each producing establishment must place its EPA establishment number on the label or immediate container of each pesticide, active ingredient or device produced. An EPA establishment number on a pesticide product label identifies the EPA registered location where the product was produced. The list of establishments is made available by the U.S. Environmental Protection Agency (EPA).

Government Publication Date: Mar 1, 2023

Polychlorinated Biphenyl (PCB) Transformers: PCBT

Locations of Transformers Containing Polychlorinated Biphenyls (PCBs) registered with the United States Environmental Protection Agency. PCB transformer owners must register their transformer(s) with EPA. Although not required, PCB transformer owners who have removed and properly disposed of a registered PCB transformer may notify EPA to have their PCB transformer de-registered. Data made available by EPA.

Government Publication Date: Oct 15, 2019

Polychlorinated Biphenyl (PCB) Notifiers: PCB

Facilities included in the national list of facilities that have notified the United States Environmental Protection Agency (EPA) of Polychlorinated Biphenyl (PCB) activities. Any company or person storing, transporting or disposing of PCBs or conducting PCB research and development must notify the EPA and receive an identification number.

Government Publication Date: Mar 20, 2023

State

PFAS Sampling Locations: PFAS SAMPLING

This data is sourced from the State Water Board's GeoTracker Per- and Polyfluoroalkyl Substances (PFAS) Map tool which contains individual sampling points (i.e., soil boring, groundwater monitoring well, drinking water well for municipal drinking water systems, etc.) or a site location with PFAS analytical data. Includes analytical results that are finalized and submitted electronically by the Responsible Parties via GeoTracker's Electronic Submittal of Information Portal, and after it's accepted by a Regional Water Quality Control Board.

Government Publication Date: Sep 25, 2023

Dry Cleaning Facilities: DRYCLEANERS

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial, linen supply, commercial laundry, dry cleaning and pressing machines - Coin Operated Laundry and Dry Cleaning. This is provided by the Department of Toxic Substance Control.

Government Publication Date: Dec 20, 2021

Delisted Drycleaners: DELISTED DRYCLEANERS

Sites removed from the list of drycleaner related facilities that have EPA ID numbers, made available by the California Department of Toxic Substance Control.

Government Publication Date: Jan 31, 2022

Non-Toxic Dry Cleaning Incentive Program: DRYC GRANT

A list of grant recipients of the Non-Toxic Dry Cleaning Incentive Program made available by the California Air Resources Board (CARB). The program provides grants to eligible dry cleaning businesses to assist them in transitioning away from PERC machines to alternative non-toxic and non-smog forming technologies.

Government Publication Date: Jan 31, 2022

PFAS GeoTracker Cleanup Sites: PFAS GT CLEANUPS

A list of applicable cleanup sites from the State Water Resources Control Board's (SWRCB) GeoTracker data management system where one or more of the potential contaminants of concern are identified in the PFAS Master List of PFAS Substances made available by the Environmental Protection Agency (US EPA).

Government Publication Date: Jul 13, 2023

PFOA/PFOS Groundwater: PFAS GW

A list of water wells from the Groundwater Ambient Monitoring and Assessment Program (GAMA) Groundwater Information System with the groundwater chemical perfluorooctanoic acid (PFOA) (NL = 0.014 UG/L) or perfluorooctanoic sulfonate (PFOS) (NL = 0.013 UG/L). The GAMA Groundwater Information System search is made available by California Water Boards.

Government Publication Date: Oct 22, 2023

PFAS Investigations: PFAS INVEST

This list of potential Per- and Polyfluoroalkyl Substance (PFAS) sites is compiled from the California State Water Resources Control Board's (SWRCB) PFAS Investigations Map tool. The SWRCB issued investigative orders, per California Water Code (CWC) Section 13267 and/or 13383, to these sites. This does not mean that PFAS has been produced, used, or discharged at these sites. Orders were also issued to the public water systems to sample wells in the vicinity of these locations. The data includes locations for airports, landfills, suspected chrome plating facilities, publicly owned treatment works (aka wastewater treatment plants), bulk fuel terminals, refineries, and military facilities that have potential sources of PFAS.

Government Publication Date: Nov 28, 2022

Hazardous Waste and Substances Site List - Site Cleanup: HWSS CLEANUP

The Hazardous Waste and Substances Sites (Cortese) List is a planning document used by the State, local agencies and developers to comply with the California Environmental Quality Act requirements in providing information about the location of hazardous materials release sites. This list is published by California Department of Toxic Substance Control.

Government Publication Date: Mar 15, 2023

Toxic Pit Cleanup Act Sites: TOXIC PITS

The Toxic Pits Cleanup Act (TPCA) list identifies sites suspected of containing hazardous substances where cleanup has not yet been completed. This list was maintained by the State Water Resources Control Board (SWRCB), is not longer maintained, and updates are not planned.

Government Publication Date: Jul 1, 1995

List of Hazardous Waste Facilities Subject to Corrective Action: DTSC HWF

This is a list of hazardous waste facilities identified in Health and Safety Code (HSC) § 25187.5. These facilities are those where Department of Toxic Substances Control (DTSC) has taken or contracted for corrective action because a facility owner/operator has failed to comply with a date for taking corrective action in an order issued under HSC § 25187, or because DTSC determined that immediate corrective action was necessary to abate an imminent or substantial endangerment.

Government Publication Date: Jul 18, 2016

EnviroStor Inspection, Compliance, and Enforcement: INSP COMP ENF

A list of permitted facilities with inspections and enforcements tracked by the California Department of Toxic Substance Control's (DTSC) EnviroStor data management system.

Government Publication Date: Jul 28, 2023

School Property Evaluation Program Sites: SCH

A list of sites registered with The Department of Toxic Substances Control (DTSC) School Property Evaluation and Cleanup (SPEC) Division. SPEC is responsible for assessing, investigating and cleaning up proposed school sites. The Division ensures that selected properties are free of contamination or, if the properties were previously contaminated, that they have been cleaned up to a level that protects the students and staff who will occupy the new school.

Government Publication Date: Oct 23, 2023

California Hazardous Material Incident Report System (CHMIRS): CHMIRS

A list of reported hazardous material incidents, spills, and releases from the California Hazardous Material Incident Report System (CHMIRS). This list has been made available by the California Office of Emergency Services (OES).

Government Publication Date: Jul 26, 2023

Historical California Hazardous Material Incident Report System (CHMIRS): HIST CHMIRS

A list of reported hazardous material incidents, spills, and releases from the California Hazardous Material Incident Report System (CHMIRS) prior to 1993. This list has been made available by the California Office of Emergency Services (OES).

Government Publication Date: Jan 1, 1993

Handlers from Hazardous Waste Manifest Data: HAZNET

A list of handlers not otherwise classified as Treatment, Storage, Disposal facilities (TSDF) or generators from the facilities and manifests data made available by the California Department of Toxic Substances Control (DTSC) in their Hazardous Waste Tracking System (HWTS).

Government Publication Date: Oct 24, 2016

Generators from Hazardous Waste Manifest Data: HAZ GEN

List of handlers listed as having generated waste from the facilities and manifests data made available by the California Department of Toxic Substances Control (DTSC) in their Hazardous Waste Tracking System (HWTS).

Government Publication Date: Dec 31, 2017

TSDF from Hazardous Waste Manifest Data: HAZ TSD

List of Treatment, Storage, and Disposal Facilities (TSDFs) from the facilities and manifests data made available by the California Department of Toxic Substances Control (DTSC) in their Hazardous Waste Tracking System (HWTS).

Government Publication Date: Dec 31, 2017

Historical Hazardous Waste Manifest Data: HIST MANIFEST

A list of historic hazardous waste manifests received by the Department of Toxic Substances Control (DTSC) from year the 1980 to 1992. The volume of manifests is typically 900,000 - 1,000,000 annually, representing approximately 450,000 - 500,000 shipments.

Government Publication Date: Dec 31, 1992

DTSC Registered Hazardous Waste Transporters: HW TRANSPORT

The California Department of Toxic Substances Control (DTSC) maintains this list of Registered Hazardous Waste Transporters.

Government Publication Date: Sep 28, 2023

Registered Waste Tire Haulers: WASTE TIRE

This list of registered waste tire haulers is maintained by the California Department of Resources Recycling and Recovery.

Government Publication Date: Aug 29, 2023

California Medical Waste Management Program Facility List: MEDICAL WASTE

This list of Medical Waste Management Program Facilities is maintained by the California Department of Public Health. The Medical Waste Management Program (MWMP) regulates the generation, handling, storage, treatment, and disposal of medical waste by providing oversight for the implementation of the Medical Waste Management Act (MWMA). The MWMP permits and inspects all medical waste off-site treatment facilities, medical waste transporters, and medical waste transfer stations. This list contains transporters, treatment, and transfer facilities.

Government Publication Date: Oct 4, 2023

Historical Cortese List: HIST CORTESE

List of sites which were once included on the Cortese list. The Hazardous Waste and Substances Sites (Cortese) List is a planning document used by the State, local agencies and developers to comply with the California Environmental Quality Act requirements for providing information about the location of hazardous sites.

Government Publication Date: Nov 13, 2008

Cease and Desist Orders and Cleanup and Abatement Orders: CDO/CAO

The California Environment Protection Agency "Cortese List" of active Cease and Desist Orders (CDO) and Cleanup and Abatement Orders (CAO). This list contains many CDOs and CAOs that do NOT concern the discharge of wastes that are hazardous materials. Many of the listed orders concern, as examples, discharges of domestic sewage, food processing wastes, or sediment that do not contain hazardous materials, but the Water Boards' database does not distinguish between these types of orders.

Government Publication Date: Dec 6, 2021

California Environmental Reporting System (CERS) Hazardous Waste Sites: CERS HAZ

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the following regulatory programs: Hazardous Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, RCRA LQ HW Generator. The CalEPA oversees the statewide implementation of the Unified Program which applies regulatory standards to protect Californians from hazardous waste and materials.

Government Publication Date: Oct 16, 2023

Delisted Environmental Reporting System (CERS) Hazardous Waste Sites: DELISTED HAZ

This database contains a list of sites that were removed from the California Environmental Protection Agency (CalEPA) in the following regulatory programs: Hazardous Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, RCRA LQ HW Generator.

Government Publication Date: Nov 29, 2018

Sites in GeoTracker: GEOTRACKER

GeoTracker is the State Water Resource Control Boards' data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater. This is a list of sites in GeoTracker that aren't otherwise categorized as LUST, Land Disposal Sites (LDS), Cleanup Sites, or sites having Waste Discharge Requirements (WDR). This listing includes program types such as Underground Injection Control (UIC), Confined Animal Facilities (CAF), Irrigated Lands Regulatory Program, plans, and non-case information.

Government Publication Date: Jul 13, 2023

Mines Listing: MINE

This list includes mine site locations extracted from the Mines Online database, maintained by the California Department of Conservation. Mines Online (MOL) is an interactive web map designed with GIS features that provide information such as the mine name, mine status, commodity sold, location, and other mine specific data. Please note: Mine location information is provided to assist experts in determining the location of mine operators in accordance with California Civil Code section 1103.4 and reflects information reported by mine operators in annual reports provided under Public Resources Code section 2207. While the Division of Mine Reclamation (DMR) attempts to populate MOL with accurate location information, the DMR cannot guarantee the accuracy of operator reported location information.

Government Publication Date: Jun 16, 2023

Recorded Environmental Cleanup Liens: LIEN

The California Department of Toxic Substance Control (DTSC) maintains this list of liens placed upon real properties. A lien is utilized by the DTSC to obtain reimbursement from responsible parties for costs associated with the remediation of contaminated properties.

Government Publication Date: Sep 15, 2023

Waste Discharge Requirements: WASTE DISCHG

List of sites in California State Water Resources Control Board (SWRCB) Waste Discharge Requirements (WDRs) Program in California, made available by the SWRCB via GeoTracker. The WDR program regulates point discharges that are exempt pursuant to Subsection 20090 of Title 27 and not subject to the Federal Water Pollution Control Act. The scope of the WDRs Program also includes the discharge of wastes classified as inert, pursuant to section 20230 of Title 27.

Government Publication Date: Jul 13, 2023

Toxic Pollutant Emissions Facilities: EMISSIONS

A list of criteria and toxic pollutant emissions data for facilities in California made available by the California Environmental Protection Agency - Air Resources Board (ARB). Risk data may be based on previous inventory submittals. The toxics data are submitted to the ARB by the local air districts as requirement of the Air Toxics "Hot Spots" Program. This program requires emission inventory updates every four years.

Government Publication Date: Dec 31, 2020

Clandestine Drug Lab Sites: CDL

The Department of Toxic Substances Control (DTSC) maintains a listing of drug lab sites. DTSC is responsible for removal and disposal of hazardous substances discovered by law enforcement officials while investigating illegal/clandestine drug laboratories.

Government Publication Date: Jan 19, 2021

Tribal

No Tribal additional environmental record sources available for this State.

County

San Bernardino County - Medical Waste Facility List: MED WST SANBERN

This list of San Bernardino County medical waste facilities is maintained by the County of San Bernardino Department of Public Health Medical Waste Program. The Medical Waste Program regulates generators of medical waste based on the Medical Waste Management Act. The program inspects medical waste facilities, facilities with on-site medical waste treatment units, and common storage areas annually. This program also investigates complaints regarding mishandling of medical waste and facilities that may be operating without a valid health permit. Some facilities that may generate medical waste include hospitals, skilled nursing facilities, blood banks, and doctors, dental and veterinarian offices.

Government Publication Date: Oct 6, 2023

Definitions

Database Descriptions: This section provides a detailed explanation for each database including: source, information available, time coverage, and acronyms used. They are listed in alphabetic order.

Detail Report: This is the section of the report which provides the most detail for each individual record. Records are summarized by location, starting with the project property followed by records in closest proximity.

Distance: The distance value is the distance between plotted points, not necessarily the distance between the sites' boundaries. All values are an approximation.

Direction: The direction value is the compass direction of the site in respect to the project property and/or center point of the report.

Elevation: The elevation value is taken from the location at which the records for the site address have been plotted. All values are an approximation. Source: Google Elevation API.

Executive Summary: This portion of the report is divided into 3 sections:

'Report Summary'- Displays a chart indicating how many records fall on the project property and, within the report search radii.

'Site Report Summary'-Project Property'- This section lists all the records which fall on the project property. For more details, see the 'Detail Report' section.

'Site Report Summary-Surrounding Properties'- This section summarizes all records on adjacent properties, listing them in order of proximity from the project property. For more details, see the 'Detail Report' section.

Map Key: The map key number is assigned according to closest proximity from the project property. Map Key numbers always start at #1. The project property will always have a map key of '1' if records are available. If there is a number in brackets beside the main number, this will indicate the number of records on that specific property. If there is no number in brackets, there is only one record for that property.

The symbol and colour used indicates 'elevation': the red inverted triangle will dictate 'ERIS Sites with Lower Elevation', the yellow triangle will dictate 'ERIS Sites with Higher Elevation' and the orange square will dictate 'ERIS Sites with Same Elevation.'

Unplottables: These are records that could not be mapped due to various reasons, including limited geographic information. These records may or may not be in your study area, and are included as reference.

APPENDIX D: QUALIFICATIONS

PARTNER

Nathaniel Grondin
Project Assessor

Education

University of Massachusetts Boston 2014
Bachelor of Arts (B.A.), Environmental Science

Training

OSHA 40 Hour HAZWOPER

Highlights

9 years in the environmental industry
7 years performing Phase I Environmental Site Assessments
4 years performing Property Condition Assessments

Experience Summary

Mr. Grondin is a Staff Assessor at Partner Engineering and Science, Inc. with over four years of experience in the Environmental Due Diligence field. He has experience performing thorough site inspections of properties including gas stations, auto repair stations, historical dry cleaners, commercial and industrial properties and apartment complexes.

From November 2014 to June 2016, Mr. Grondin worked as an Environmental Specialist providing RCRA hazardous waste management services to various clients in Boston and New York City. He served as the lead onsite support specialist for New York Methodist Hospital and Stonybrook University and was responsible for maintaining all hazardous waste accumulation areas to ensure safety and compliance with applicable state and federal regulations.

In July 2016, Mr. Grondin began working on Phase I Environmental Site Assessments and has worked on over 300 assessments in ten states nationwide. His primary responsibilities have included coordinating site inspections, conducting local, state, and federal research, building site figures using Turbo Cad, collecting soil, groundwater, radon, and sub slab soil vapor samples, and preparing technical reports. He also has fours years of experience completing Property Conditions Assessments for acquisitions and refinancing for industrial, residential, hospitality, and commercial properties in Southern California.

Project Experience

Site Mitigation Plan/Dust Control Plan Oversight, San Francisco, *CA.* Served as the lead environmental consultant on a mixed-use commercial/residential redevelopment project in the Potrero neighborhood of San Francisco. His responsibilities included air monitoring, implementing dust control procedures, maintaining daily site logs, logging shipping manifests and ensuring the subcontractors abided by health and safety procedures laid out in the Site Mitigation Plan.

Sub Slab Soil Vapor Sampling, Culver City, *CA.* Organized and oversaw the drilling and sampling of sub-slab soil vapor probes at a commercial property in Culver City.

Symetra Portfolio, Los Angeles, *CA.* Phase I ESA of three retail strip buildings with automobile repair operations, multiple above and in-ground hydraulic lifts, clarifiers, and indoor hazardous substance storage.

Multi-Family Residential, Los Angeles, CA. Completed a debt level PCA Report for multi-family residential complex containing 32 residential units and associated carports

Creative Office Under Construction, Culver City, CA. Completed a debt level PCA Report for a four-story, 66,000-square foot office building with three level, sub-grade, automated parking structure.

DoubleTree Hotel by Hilton Hotel Anaheim, CA. Co-authored an equity level PCA Report for a 461-room hotel with 21,000-square foot conference center, 8,000-sqaure foot ballroom, fitness center, outdoor swimming pool and spa, and an onsite restaurant, café, and sports bar.

Speaking

Environmental Scientist, Triumvirate Environmental Inc, *Stonybrook University.* Mr. Grondin gave a 45-minute lecture to senior-level undergraduate students regarding hazardous waste characterization, the regulatory framework of the hazardous waste industry, and the hazardous waste determination process.

Contact

ngrondin@partneresi.com

PARTNER

Lyly Churchill, MA
Senior Project Manager

Education

M.A. Environmental Studies, Brown University
B.S. Biology, University of California, Los Angeles, Emphasis in Ecology, Behavior and Evolution

Registrations

EPA Accredited Asbestos Inspector
National Registry of Environmental Professionals: Registered Environmental Property Assessor (REPA)

Training

California Underground Storage Tank Inspector

Highlights

15 years in environmental service industry
14 years performing Phase I Environmental Site Assessments (ESAs), Environmental Transaction Screens, radon screening, asbestos inspections, and lead-based paint inspection
13 years of experience with multi-family properties, commercial properties, retail shopping centers, municipal and private airports, oil well properties, oil refineries, gas stations, dry cleaners, aerospace manufacturers, dry cleaning plants, hotels, auto dealership and repair facilities, and various manufacturing operations throughout the US
8 years of project management experience in Environmental Assessments, Property Condition Assessments, Physical Needs Assessments, seismic evaluations, and ALTA Surveys, compliance reports
5 years of project management experience in ESAs and PCAs for properties located in Mexico, Canada, the Caribbean, Southeast Asia and South Pacific

Experience Summary

Ms. Churchill has served as an environmental scientist, project manager, senior author, or client manager for projects associated with thousands of real estate transactions. Ms. Churchill is familiar with the due diligence requirements of a varied number of reporting standards, including ASTM, EPA's All Appropriate Inquiry (AAI), Freddie Mac, Fannie Mae DUS, and U.S. Small Business Administration's (SBA) SOP 50 10. She also has experience with fulfilling numerous customized client scopes of work. Furthermore, Ms. Churchill has working experience in performing biological and noise assessments, and in preparing and reviewing environmental documentation in support of CEPA and NEPA.

While in graduate school, Ms. Churchill's Masters Thesis research focused on evaluating the potential of Japanese Knotweed (an invasive plant species) as an effective phytoremediator of heavy metal contaminated soils along a historically polluted river in Rhode Island. Phytoremediation refers to the natural ability of certain plants called hyperaccumulators to bioaccumulate contaminants in soil. Hyperaccumulators can be grown and harvested economically, leaving the soil with a greatly reduced level of toxic contamination. This cost-effective approach to remediation has gained increasing popularity in both academic and practical circles.

Ms. Churchill previously worked for the City of El Segundo, where she regularly collaborated with other local CUPAs to ensure compliance with State and Federal regulations. Ms. Churchill's responsibilities included implementing and enforcing elements of the CUPA program including the following: hazardous waste

generator program; underground storage tank program; Hazardous Material Release Response Plan (Business Plan) Program and the California Accidental Release Response Plan (CalARP) Programs. Ms. Churchill also worked on enforcing city specific environmental programs such as Stormwater Pollution Prevention and Industrial Wastewater Discharge. As the Principal Environmental Specialist for the City, Ms. Churchill worked with large industries such as Chevron, Northrop Grumman, Boeing and International Rectifier to ensure regulatory compliance pertaining to business operations and remedial activities.

Project Experience

International Airport Portfolio - Project Manager and Senior Reviewer for Phase I ESAs and PCAs of a confidential acquisition of airport facilities throughout the South Pacific and Southeast Asia. The project involved working with many foreign agencies and coordinating dual scope site visits at all facilities within a 2-week time frame.

West Coast Gas Station Portfolio - Project Manager for limited PCAs of an acquisition of gas station/car wash facilities throughout California, Oregon and Washington.

Mexico Industrial Site Portfolio - Project Manager and Senior Reviewer for Phase I ESAs of an acquisition of industrial/warehouse facilities throughout Northern Mexico. The project involved coordinating site inspections of multiple industrial facilities with private security in high - risk danger areas.

Office Tower Portfolio, Los Angeles - Project Manager and Senior Reviewer for Phase I ESAs of a $1.34 Billion acquisition of Class A office buildings in Los Angeles.

Freddie Mac Multi-Scope Portfolio - Project Manager and Senior Reviewer for Phase I ESAs, PCAs and PMLs of an acquisition of multifamily apartment complexes throughout Southern California. The project involved coordinating three different scopes of specially qualified assessors to conduct site visits with radon and ACM sampling.

Contact

lchurchill@partneresi.com

Appendix G
Preliminary Hydrology Study
(Available on the Town website for review)

HYDROLOGY STUDY

For

TERRA NOVA PLANNING
42635 MELANIE PLACE, STE 101
PALM DESERT, CA 92211

DAKOTA & GUSTINE WAREHOUSE

September 3, 2024

Prepared by:

Merrell-Johnson Companies

22221 US Highway 18
Apple Valley, CA 92307
(760) 240-8000

Job No. 4171.001



E. Cary Packer, PE
Associate Engineer
R.C.E. 51752 Exp. 06/30/26

9/3/2024

Mark D. Rowan
Project Manager

22221 US Highway 18 • Apple Valley, CA 92307 • (760) 240-8000 • Fax (760) 240-1400
16091 Kamana Road. • Apple Valley, CA 92307 • (760) 256-2068 • Fax (760) 256-0418

TABLE OF CONTENTS

DISCUSSION ***SECTION 1***

Introduction
Project Location
Methodology
Description
- General
- Existing Condition
- Developed Condition

Conclusions & Recommendations

EXHIBITS ***SECTION 2***

Vicinity Map
Proposed Development Plan

HYDROLOGY CALCULATIONS ***SECTION 3***

Hydrology Calculations
- Off-site Rational Calculations: Q_{100}
- Off-site Drainage Map
- Antecedent Moisture Condition (AMC) Maps

Exhibits
- Soils Mapping and Information
- NOAA Atlas 14 Point Rainfall Information

SECTION 1

DISCUSSION

INTRODUCTION

The purpose of this study was to determine the impact, if any, of the 100-year storm runoff flow tributary to the project site as delineated on the map contained in this study. The project site encompasses approximately 40 acres of vacant property located on the east side of Dakota Road between Gustine Street to the north and Fresno Road to the south. The site is located on the west side of the Apple Valley Airport within the North Apple Valley Industrial Specific Plan in the Town of Apple Valley, CA. Future development of the site will be construction of a warehouse facility.

METHODOLOGY

The method in determining these peak runoff flows was the rational method and the unit hydrograph method as specified in the 1986 San Bernardino County Hydrology Manual and the 2010 San Bernardino County Hydrology Manual Addendum for Arid Regions. The existing offsite flow was examined and delineated from U.S.G.S. Map: Apple Valley North and an examination of the project site.

Point rainfalls for the 100-year storm were obtained from the NOAA Atlas 14 per the 2010 Addendum to the County Hydrology Manual. The 100-year 1-hour point rainfall for the site is 1.06”. Per the afore-mentioned addendum, AMC II was used for the project site and the soil types were determined to be Soil Type A throughout the watershed with a small, localized area of Type C soils at Node 21 of the watershed per the Natural Resources Conservation Service’s “Web Soil Survey”. Rainfall and soils maps are included as exhibits in Section 3 of this report.

The watershed area tributary to the northern boundary of the proposed project, Gustine Street, is approximately 383 acres. The watershed area tributary to the eastern boundary of the project, the proposed extension of Ramona Road, is approximately 130 acres. The rational method was used to analyze the storm runoff from these watersheds. There are minor areas of existing scour within the site from past storm runoff flows and evidence of runoff in the form of sheet flows crossing the project.

The offsite tributary areas examined in this study are shown in Table A.

Table A

Sub-area	Elevation Difference (ft.)	Length (ft)	Area (Acres)	Avg. Slope (ft/ft)
Node 11 – Node 17	167	11,475	382.8	0.0146
Node 21 – Node 26	107	6,770	129.6	0.0158

EXISTING CONDITIONS

The site encompasses approximately 40 acres of vacant property located on the east side of Dakota Road between Gustine Street to the north and Fresno Road to the south. The watershed area tributary to the northern boundary of the proposed project, Gustine Street, is approximately 383 acres. The watershed area tributary to the eastern boundary of the project, the proposed extension of Ramona Road, is approximately 130 acres. There are minor areas of existing scour within the site from past storm runoff flows and evidence of runoff in the form of sheet flows crossing the project.

The results of the offsite and onsite flow analysis are summarized in Table B.

Table B

Sub-Area	Q_{100} (cfs)
Node 11 – Node 17	165.3
Node 21 – Node 26	71.5

CONCLUSIONS AND RECOMMENDATIONS

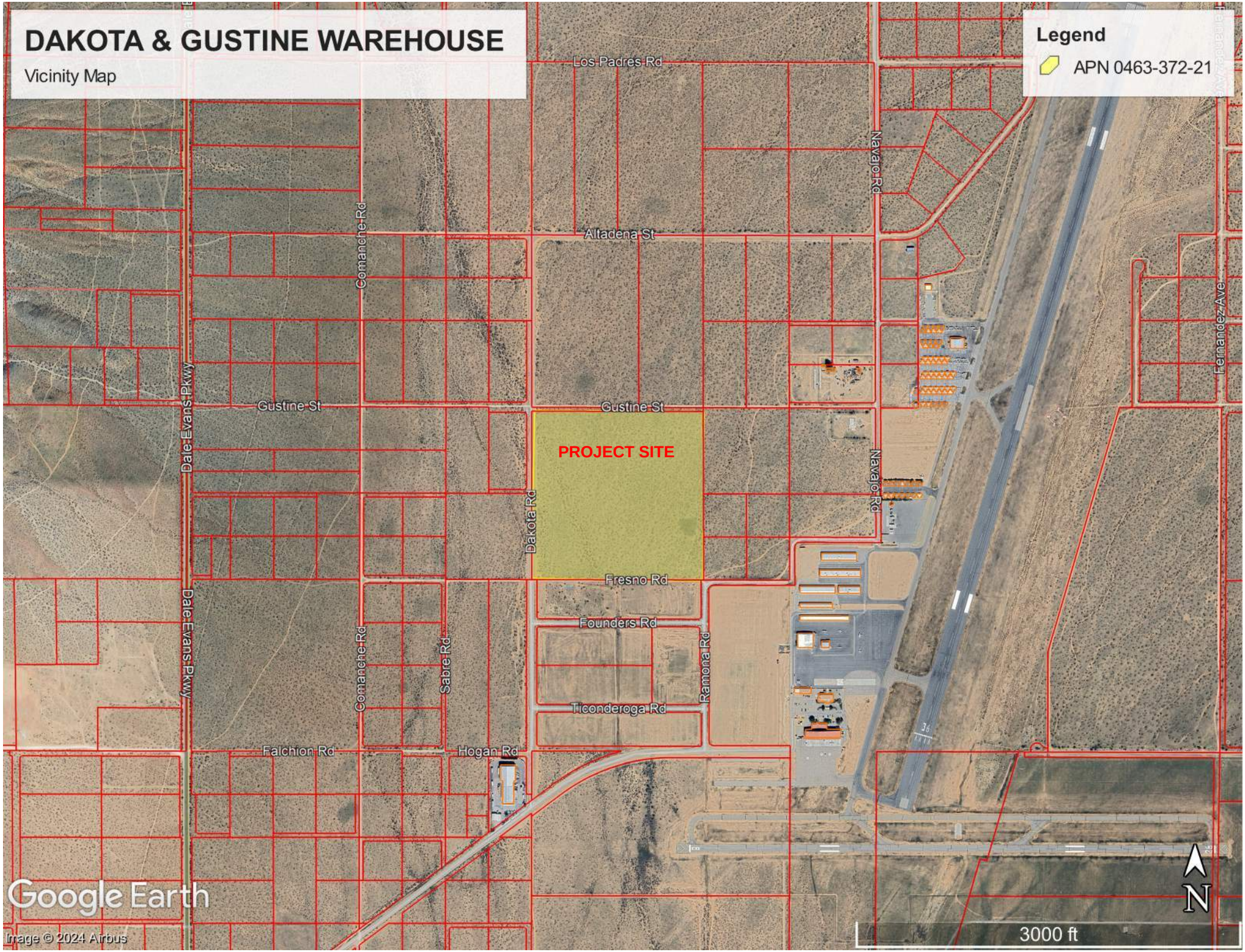
During our field investigation of the site, we observed the existing conditions as stated previously. Development of the project site is a warehouse facility being designed with engineered grading and drainage plans. Runoff from the north will be intercepted within the street improvements of Gustine Street and conveyed around the proposed warehouse with a storm drain system in the proposed street right-of-way. The storm drain system will convey runoff flows to their historical flow location along the southern project boundary on Fresno Road.

Storm runoff from the east will be intercepted within the street improvements of Ramona Road. These flows will also be conveyed around the warehouse facility within a storm drain system in the proposed street right-of-way to their historical flow location within Fresno Road. The two storm drains join together on the north side of Fresno Road and convey the storm runoff south of Fresno Road to an existing drainage swale along the south side of Fresno Road. The runoff will bubble out into the swale following its historical flow path.

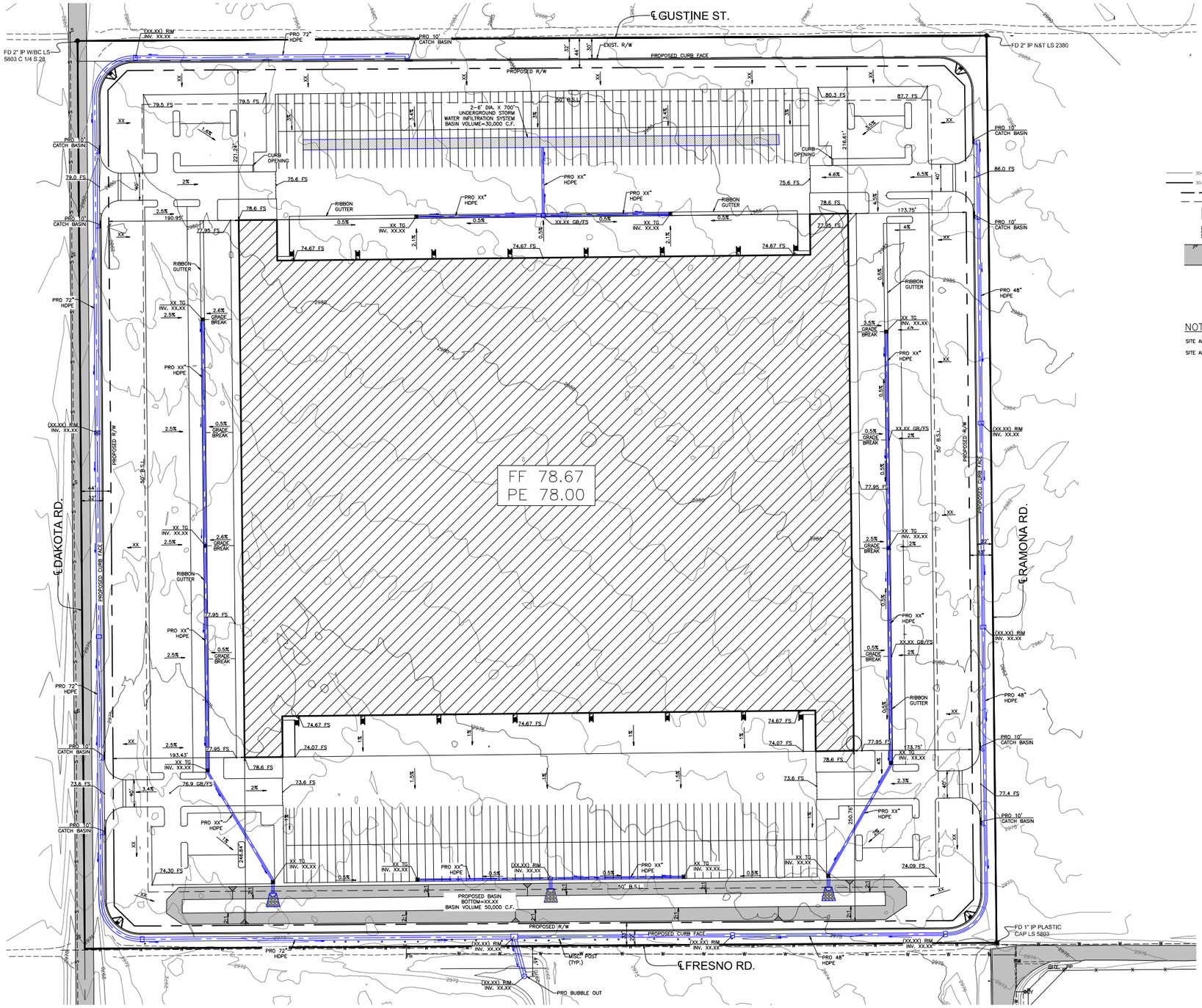
SECTION 2

EXHIBITS

VICINITY MAP


DAKOTA & GUSTINE WAREHOUSE
Vicinity Map
Legend
APN 0463-372-21
Los Padres Rd
Navajo Rd
Altadena St
Comanche Rd
Dale Evans Pkwy
Gustine St
Gustine St
PROJECT SITE
Dakota Rd
Navajo Rd
Fernandez Ave
Fresno Rd
Founders Rd
Ramona Rd
Sabre Rd
Comanche Rd
Dale Evans Pkwy
Ticonderoga Rd
Falchion Rd
Hogan Rd
Google Earth
Image © 2024 Airbus
N
3000 ft

PROPOSED DEVELOPMENT PLAN



LEGEND

- S• INDICATES SEWER MANHOLE
- FH• INDICATES FIRE HYDRANT
- W# INDICATES WATER METER
- W• INDICATES WATER VALVE
- 3040 INDICATES EXISTING CONTOUR
- 3040 INDICATES PROPOSED CONTOUR
- INDICATES PROPOSED PROPERTY LINE
- INDICATES BUILDING SETBACK LINE
- INDICATES PROPOSED BUILDING
- INDICATES PROPOSED RIP-RAP
- INDICATES EXISTING ASPHALT ROAD

NOTE:

SITE AREA BEFORE ROAD DEDICATION 1,787,209.56 S.F (41.03 AC.)

SITE AREA AFTER ROAD DEDICATION 1,585,477.13 S.F (36.40 AC.)

PROPOSED GRADING AND DRAINAGE PLAN

Know what's below. Call before you dig.

SURVEY MONUMENTATION:

ALL SURVEY MONUMENTS AND MARKERS SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROTECT IN PLACE UNTIL SURVEYOR HAS TIED OUT LOCATIONS FOR REPLACEMENT PURSUANT TO BUSINESS AND PROFESSIONS CODE SECTION 8700 TO 8805 (LAND SURVEYOR'S ACT).

UNDERGROUND UTILITIES:

THE LOCATIONS AND EXISTENCE OF UNDERGROUND UTILITIES ARE NOT GUARANTEED. THESE DRAWINGS WERE PREPARED BASED ON SURFACE DATA AND AVAILABLE RECORD INFORMATION AND IT IS POSSIBLE THAT ADDITIONAL UNDERGROUND UTILITIES COULD BE PRESENT THAT ARE NOT SHOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF THE LOCATION AND DEPTH OF EXISTING UNDERGROUND UTILITIES AND SHALL PERFORM POTHOLING AS NECESSARY AT ALL CROSSINGS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TAKING ALL PRECAUTIONS NECESSARY TO PROTECT ALL EXISTING UTILITIES AND STRUCTURES FROM DAMAGE DURING THE COURSE OF THE WORK, AND SHALL BE RESPONSIBLE FOR REPAIRING OR REPLACING ANY UTILITIES OR STRUCTURES DAMAGED DURING THE COURSE OF THE WORK.

BENCHMARK

DESCRIPTION: CSM BENCHMARK 1-23

LOCATION:
1.0 MILES SOUTH ALONG CENTRAL ROAD FROM THE INTERSECTION OF CENTRAL ROAD AND QUARRY ROAD, 166 FEET EAST OF CENTERLINE CENTRAL ROAD, 33 FEET NORTH OF CENTERLINE JOHNSON ROAD, 16 FEET NORTH OF POWER POLE NO. 63127 CEPCO, 0.60 FEET ABOVE GROUND, 6.00 FEET SOUTH OF A WITNESS POST (11/01/70 ORIGINAL DESCRIPTION)

ELEVATION: 3156.94 DATUM:

BASIS OF BEARINGS

CALIFORNIA STATE PLANE COORDINATE SYSTEM ZONE V NAD83

DATE	DELTA	REVISION DESCRIPTION	APPROVAL DATE	APPROVAL BY

MERRELL JOHNSON

MERRELL JOHNSON ENGINEERING, INC.
22221 U.S. HIGHWAY 18, APPLE VALLEY, CA 92307
760.240.8000 | MERRELLJOHNSON.COM

CONCEPTUAL GRADING PLAN

DAKOTA & GUSTINE WAREHOUSE

DRAWN BY: EKJ
DATE: 07/15/24

JOB NO. 4171.001

SHEET 1 OF 1

C:\Users\ekjohnson 521\Dropbox (20 August 2024 FX1).fx1\4171.001 Yard Nova - APN 1445-371-24\1 Warehouse\Virginia\Working\DWG\4171.001.dwg - 11x17(Full Bleed) - Merrell Johnson Companies

SECTION 3

HYDROLOGY CALCULATIONS

RATIONAL CALCULATIONS – Q_{100}

OFFSITE RATIONAL CALCULATIONS

San Bernardino County Rational Hydrology Program

(Hydrology Manual Date - August 1986)

CIVILCADD/CIVILDESIGN Engineering Software, (c) 1989-2019 Version 9.1
Rational Hydrology Study Date: 09/03/24

TERRA NOVA PLANNING - DAKOTA & GUSTINE WAREHOUSE - JOB 4171.001
OFF-SITE TRIBUTARY STORM RUNOFF
NODE 11 - NODE 17
100-YEAR STORM EVENT - AMC II

MERRELL JOHNSON ENGINEERING
22221 HIGHWAY 18
APPLE VALLEY, CA 92307
(760) 240-8000

********* Hydrology Study Control Information **********

Rational hydrology study storm event year is 100.0
Computed rainfall intensity:
Storm year = 100.00 1 hour rainfall = 1.060 (In.)
Slope used for rainfall intensity curve b = 0.7000
Soil antecedent moisture condition (AMC) = 2

++
Process from Point/Station 11.000 to Point/Station 12.000
**** INITIAL AREA EVALUATION ****

UNDEVELOPED (poor cover) subarea
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2) = 67.00
Pervious ratio(Ap) = 1.0000 Max loss rate(Fm)= 0.578(In/Hr)
Initial subarea data:
Initial area flow distance = 937.000(Ft.)
Top (of initial area) elevation = 3149.000(Ft.)
Bottom (of initial area) elevation = 3136.000(Ft.)
Difference in elevation = 13.000(Ft.)
Slope = 0.01387 s(%)= 1.39
TC = k(0.525)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 19.073 min.
Rainfall intensity = 2.364(In/Hr) for a 100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.680
Subarea runoff = 16.075(CFS)
Total initial stream area = 10.000(Ac.)
Pervious area fraction = 1.000

```
Initial area Fm value =    0.578(In/Hr)

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       12.000 to Point/Station       13.000
**** IRREGULAR CHANNEL FLOW TRAVEL TIME ****
________________________________________________________________________
Depth of flow =   0.630(Ft.), Average velocity =   3.128(Ft/s)
        ******* Irregular Channel Data ***********
------------------------------------------------------------------
Information entered for subchannel number 1 :
Point number      'X' coordinate     'Y' coordinate
        1              0.00              1.00
        2              5.00              0.00
        3             10.00              0.00
        4             15.00              1.00
Manning's 'N' friction factor =   0.035
------------------------------------------------------------------
Sub-Channel flow  =     16.075(CFS)
  '     '        flow top width =     11.304(Ft.)
  '     '    velocity=    3.128(Ft/s)
  '     '        area =      5.139(Sq.Ft)
  '     '        Froude number =     0.818

Upstream point elevation =  3136.000(Ft.)
Downstream point elevation =  3125.000(Ft.)
Flow length =   698.000(Ft.)
Travel time  =    3.72 min.
Time of concentration =   22.79 min.
Depth of flow =   0.630(Ft.)
Average velocity =   3.128(Ft/s)
Total irregular channel flow =    16.075(CFS)
Irregular channel normal depth above invert elev. =   0.630(Ft.)
Average velocity of channel(s) =   3.128(Ft/s)

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       12.000 to Point/Station       13.000
**** SUBAREA FLOW ADDITION ****
________________________________________________________________________
UNDEVELOPED (poor cover) subarea
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 67.00
Pervious ratio(Ap) = 1.0000     Max loss rate(Fm)=     0.578(In/Hr)
Time of concentration =    22.79 min.
Rainfall intensity =      2.087(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.651
Subarea runoff =     27.246(CFS) for   21.900(Ac.)
```

```
Total runoff =     43.320(CFS)
Effective area this stream =       31.90(Ac.)
Total Study Area (Main Stream No. 1) =       31.90(Ac.)
Area averaged Fm value =    0.578(In/Hr)

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       13.000 to Point/Station       14.000
**** IRREGULAR CHANNEL FLOW TRAVEL TIME ****
________________________________________________________________________
Depth of flow =   0.801(Ft.), Average velocity =   3.861(Ft/s)
        ******* Irregular Channel Data ***********
------------------------------------------------------------------
Information entered for subchannel number 1 :
Point number      'X' coordinate     'Y' coordinate
        1              0.00              2.00
        2             10.00              0.00
        3             20.00              0.00
        4             30.00              2.00
Manning's 'N' friction factor =   0.035
------------------------------------------------------------------
Sub-Channel flow  =     43.321(CFS)
  '     '        flow top width =     18.011(Ft.)
  '     '    velocity=    3.861(Ft/s)
  '     '        area =     11.220(Sq.Ft)
  '     '        Froude number =     0.862

Upstream point elevation =  3125.000(Ft.)
Downstream point elevation =  3106.000(Ft.)
Flow length =  1208.000(Ft.)
Travel time  =    5.21 min.
Time of concentration =   28.01 min.
Depth of flow =   0.801(Ft.)
Average velocity =   3.861(Ft/s)
Total irregular channel flow =    43.320(CFS)
Irregular channel normal depth above invert elev. =   0.801(Ft.)
Average velocity of channel(s) =   3.861(Ft/s)

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       13.000 to Point/Station       14.000
**** SUBAREA FLOW ADDITION ****
________________________________________________________________________
UNDEVELOPED (poor cover) subarea
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 67.00
Pervious ratio(Ap) = 1.0000     Max loss rate(Fm)=     0.578(In/Hr)
Time of concentration =    28.01 min.
Rainfall intensity =      1.807(In/Hr) for a   100.0 year storm
```

```
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.612
Subarea runoff =     39.388(CFS) for   42.900(Ac.)
Total runoff =     82.708(CFS)
Effective area this stream =       74.80(Ac.)
Total Study Area (Main Stream No. 1) =       74.80(Ac.)
Area averaged Fm value =    0.578(In/Hr)

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       14.000 to Point/Station       15.000
**** IRREGULAR CHANNEL FLOW TRAVEL TIME ****
________________________________________________________________________
Depth of flow =   0.972(Ft.), Average velocity =   4.284(Ft/s)
        ******* Irregular Channel Data ***********
------------------------------------------------------------------
Information entered for subchannel number 1 :
Point number      'X' coordinate     'Y' coordinate
        1              0.00              2.00
        2             10.00              0.00
        3             25.00              0.00
        4             35.00              2.00
Manning's 'N' friction factor =   0.035
------------------------------------------------------------------
Sub-Channel flow  =     82.708(CFS)
  '     '        flow top width =     24.720(Ft.)
  '     '    velocity=    4.284(Ft/s)
  '     '        area =     19.305(Sq.Ft)
  '     '        Froude number =     0.854

Upstream point elevation =  3106.000(Ft.)
Downstream point elevation =  3076.000(Ft.)
Flow length =  2097.000(Ft.)
Travel time  =    8.16 min.
Time of concentration =   36.16 min.
Depth of flow =   0.972(Ft.)
Average velocity =   4.284(Ft/s)
Total irregular channel flow =    82.708(CFS)
Irregular channel normal depth above invert elev. =   0.972(Ft.)
Average velocity of channel(s) =   4.284(Ft/s)

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       14.000 to Point/Station       15.000
**** SUBAREA FLOW ADDITION ****
________________________________________________________________________
UNDEVELOPED (poor cover) subarea
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 67.00
```

```
Pervious ratio(Ap) = 1.0000     Max loss rate(Fm)=     0.578(In/Hr)
Time of concentration =    36.16 min.
Rainfall intensity =      1.511(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.555
Subarea runoff =     50.903(CFS) for   84.400(Ac.)
Total runoff =    133.612(CFS)
Effective area this stream =      159.20(Ac.)
Total Study Area (Main Stream No. 1) =      159.20(Ac.)
Area averaged Fm value =    0.578(In/Hr)

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       15.000 to Point/Station       16.000
**** IRREGULAR CHANNEL FLOW TRAVEL TIME ****
________________________________________________________________________
Depth of flow =   1.068(Ft.), Average velocity =   4.934(Ft/s)
        ******* Irregular Channel Data ***********
------------------------------------------------------------------
Information entered for subchannel number 1 :
Point number      'X' coordinate     'Y' coordinate
        1              0.00              2.00
        2             10.00              0.00
        3             30.00              0.00
        4             40.00              2.00
Manning's 'N' friction factor =   0.035
------------------------------------------------------------------
Sub-Channel flow  =    133.612(CFS)
  '     '        flow top width =     30.685(Ft.)
  '     '    velocity=    4.934(Ft/s)
  '     '        area =     27.078(Sq.Ft)
  '     '        Froude number =     0.926

Upstream point elevation =  3076.000(Ft.)
Downstream point elevation =  3033.000(Ft.)
Flow length =  2670.000(Ft.)
Travel time  =    9.02 min.
Time of concentration =   45.18 min.
Depth of flow =   1.068(Ft.)
Average velocity =   4.934(Ft/s)
Total irregular channel flow =   133.612(CFS)
Irregular channel normal depth above invert elev. =   1.068(Ft.)
Average velocity of channel(s) =   4.934(Ft/s)

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       15.000 to Point/Station       16.000
**** SUBAREA FLOW ADDITION ****
________________________________________________________________________
UNDEVELOPED (poor cover) subarea
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
```

```
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 67.00
Pervious ratio(Ap) = 1.0000     Max loss rate(Fm)=     0.578(In/Hr)
Time of concentration =    45.18 min.
Rainfall intensity =      1.293(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.497
Subarea runoff =     19.045(CFS) for   78.200(Ac.)
Total runoff =    152.657(CFS)
Effective area this stream =      237.40(Ac.)
Total Study Area (Main Stream No. 1) =      237.40(Ac.)
Area averaged Fm value =    0.578(In/Hr)

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       16.000 to Point/Station       17.000
**** IRREGULAR CHANNEL FLOW TRAVEL TIME ****
________________________________________________________________________
Depth of flow =   1.132(Ft.), Average velocity =   4.305(Ft/s)
        ******* Irregular Channel Data ***********
------------------------------------------------------------------
Information entered for subchannel number 1 :
Point number      'X' coordinate     'Y' coordinate
        1              0.00              2.00
        2             20.00              0.00
        3             40.00              0.00
        4             60.00              2.00
Manning's 'N' friction factor =   0.035
------------------------------------------------------------------
Sub-Channel flow  =    152.657(CFS)
  '     '        flow top width =     42.642(Ft.)
  '     '    velocity=    4.305(Ft/s)
  '     '        area =     35.459(Sq.Ft)
  '     '        Froude number =     0.832

Upstream point elevation =  3033.000(Ft.)
Downstream point elevation =  2982.000(Ft.)
Flow length =  3865.000(Ft.)
Travel time  =   14.96 min.
Time of concentration =   60.14 min.
Depth of flow =   1.132(Ft.)
Average velocity =   4.305(Ft/s)
Total irregular channel flow =   152.657(CFS)
Irregular channel normal depth above invert elev. =   1.132(Ft.)
Average velocity of channel(s) =   4.305(Ft/s)

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       16.000 to Point/Station       17.000
**** SUBAREA FLOW ADDITION ****
________________________________________________________________________
```

UNDEVELOPED (poor cover) subarea
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2) = 67.00
Pervious ratio(Ap) = 1.0000 Max loss rate(Fm)= 0.578(In/Hr)
Time of concentration = 60.14 min. T_C
Rainfall intensity = 1.058(In/Hr) for a 100.0 year storm
Effective runoff coefficient used for area,(total area with modified rational method)(Q=KCIA) is C = 0.408
Subarea runoff = 12.674(CFS) for 145.400(Ac.)
Total runoff = 165.331(CFS) Q_{100}
Effective area this stream = 382.80(Ac.)
Total Study Area (Main Stream No. 1) = 382.80(Ac.)
Area averaged Fm value = 0.578(In/Hr)
End of computations, Total Study Area = 382.80 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.
Note: These figures do not consider reduced effective area
effects caused by confluences in the rational equation.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged SCS curve number = 67.0

San Bernardino County Rational Hydrology Program

(Hydrology Manual Date - August 1986)

CIVILCADD/CIVILDESIGN Engineering Software, (c) 1989-2019 Version 9.1
Rational Hydrology Study Date: 09/03/24

TERRA NOVA PLANNING - DAKOTA & GUSTINE WAREHOUSE - JOB 4171.001
OFF-SITE TRIBUTARY STORM RUNOFF
NODE 21 - NODE 26
100-YEAR STORM EVENT - AMC II

MERRELL JOHNSON ENGINEERING
22221 HIGHWAY 18
APPLE VALLEY, CA 92307
(760) 240-8000

********* Hydrology Study Control Information **********

Rational hydrology study storm event year is 100.0
Computed rainfall intensity:
Storm year = 100.00 1 hour rainfall = 1.060 (In.)
Slope used for rainfall intensity curve b = 0.7000
Soil antecedent moisture condition (AMC) = 2

++
Process from Point/Station 21.000 to Point/Station 22.000
**** INITIAL AREA EVALUATION ****

UNDEVELOPED (poor cover) subarea
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2) = 86.00
Pervious ratio(Ap) = 1.0000 Max loss rate(Fm)= 0.265(In/Hr)
Initial subarea data:
Initial area flow distance = 1000.000(Ft.)
Top (of initial area) elevation = 3084.000(Ft.)
Bottom (of initial area) elevation = 3074.000(Ft.)
Difference in elevation = 10.000(Ft.)
Slope = 0.01000 s(%)= 1.00
TC = k(0.525)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 20.901 min.
Rainfall intensity = 2.218(In/Hr) for a 100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.792
Subarea runoff = 5.975(CFS)
Total initial stream area = 3.400(Ac.)
Pervious area fraction = 1.000

```
Initial area Fm value =    0.265(In/Hr)

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       22.000 to Point/Station       23.000
**** IRREGULAR CHANNEL FLOW TRAVEL TIME ****
______________________________________________________________________
Depth of flow =   0.330(Ft.), Average velocity =   2.724(Ft/s)
        ******* Irregular Channel Data ***********
----------------------------------------------------------------------
Information entered for subchannel number 1 :
Point number      'X' coordinate     'Y' coordinate
        1              0.00              1.00
        2              5.00              0.00
        3             10.00              0.00
        4             15.00              1.00
Manning's 'N' friction factor =   0.035
----------------------------------------------------------------------
Sub-Channel flow  =      5.975(CFS)
  '     '        flow top width =      8.299(Ft.)
  '     '    velocity=    2.724(Ft/s)
  '     '        area =      2.193(Sq.Ft)
  '     '        Froude number =     0.934

Upstream point elevation =  3074.000(Ft.)
Downstream point elevation =  3052.000(Ft.)
Flow length =   897.000(Ft.)
Travel time  =    5.49 min.
Time of concentration =   26.39 min.
Depth of flow =   0.330(Ft.)
Average velocity =   2.724(Ft/s)
Total irregular channel flow =     5.975(CFS)
Irregular channel normal depth above invert elev. =   0.330(Ft.)
Average velocity of channel(s) =   2.724(Ft/s)

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       22.000 to Point/Station       23.000
**** SUBAREA FLOW ADDITION ****
______________________________________________________________________
UNDEVELOPED (poor cover) subarea
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 67.00
Pervious ratio(Ap) = 1.0000     Max loss rate(Fm)=     0.578(In/Hr)
Time of concentration =    26.39 min.
Rainfall intensity =      1.884(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.667
Subarea runoff =      8.730(CFS) for    8.300(Ac.)
```

```
Total runoff =     14.704(CFS)
Effective area this stream =       11.70(Ac.)
Total Study Area (Main Stream No. 1) =       11.70(Ac.)
Area averaged Fm value =    0.487(In/Hr)

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       23.000 to Point/Station       24.000
**** IRREGULAR CHANNEL FLOW TRAVEL TIME ****
________________________________________________________________________
Depth of flow =   0.407(Ft.), Average velocity =   2.998(Ft/s)
        ******* Irregular Channel Data ***********
------------------------------------------------------------------
Information entered for subchannel number 1 :
Point number      'X' coordinate     'Y' coordinate
        1              0.00              2.00
        2             10.00              0.00
        3             20.00              0.00
        4             30.00              2.00
Manning's 'N' friction factor =   0.035
------------------------------------------------------------------
Sub-Channel flow  =     14.705(CFS)
  '     '        flow top width =     14.074(Ft.)
  '     '    velocity=    2.998(Ft/s)
  '     '        area =      4.904(Sq.Ft)
  '     '        Froude number =     0.895

Upstream point elevation =  3052.000(Ft.)
Downstream point elevation =  3032.000(Ft.)
Flow length =   976.000(Ft.)
Travel time  =    5.43 min.
Time of concentration =   31.81 min.
Depth of flow =   0.407(Ft.)
Average velocity =   2.998(Ft/s)
Total irregular channel flow =    14.704(CFS)
Irregular channel normal depth above invert elev. =   0.407(Ft.)
Average velocity of channel(s) =   2.998(Ft/s)

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       23.000 to Point/Station       24.000
**** SUBAREA FLOW ADDITION ****
________________________________________________________________________
UNDEVELOPED (poor cover) subarea
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 67.00
Pervious ratio(Ap) = 1.0000     Max loss rate(Fm)=     0.578(In/Hr)
Time of concentration =    31.81 min.
Rainfall intensity =      1.653(In/Hr) for a   100.0 year storm
```

```
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.605
Subarea runoff =     14.970(CFS) for   18.000(Ac.)
Total runoff =     29.675(CFS)
Effective area this stream =       29.70(Ac.)
Total Study Area (Main Stream No. 1) =       29.70(Ac.)
Area averaged Fm value =    0.542(In/Hr)

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       24.000 to Point/Station       25.000
**** IRREGULAR CHANNEL FLOW TRAVEL TIME ****
________________________________________________________________________
Depth of flow =   0.508(Ft.), Average velocity =   3.334(Ft/s)
        ******* Irregular Channel Data ***********
------------------------------------------------------------------
Information entered for subchannel number 1 :
Point number      'X' coordinate     'Y' coordinate
        1              0.00              2.00
        2             10.00              0.00
        3             25.00              0.00
        4             35.00              2.00
Manning's 'N' friction factor =   0.035
------------------------------------------------------------------
Sub-Channel flow  =     29.675(CFS)
  '     '        flow top width =     20.076(Ft.)
  '     '    velocity=    3.334(Ft/s)
  '     '        area =      8.902(Sq.Ft)
  '     '        Froude number =     0.882

Upstream point elevation =  3032.000(Ft.)
Downstream point elevation =  3009.000(Ft.)
Flow length =  1253.000(Ft.)
Travel time  =    6.26 min.
Time of concentration =   38.08 min.
Depth of flow =   0.508(Ft.)
Average velocity =   3.334(Ft/s)
Total irregular channel flow =    29.675(CFS)
Irregular channel normal depth above invert elev. =   0.508(Ft.)
Average velocity of channel(s) =   3.334(Ft/s)

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       24.000 to Point/Station       25.000
**** SUBAREA FLOW ADDITION ****
________________________________________________________________________
UNDEVELOPED (poor cover) subarea
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 67.00
```

```
Pervious ratio(Ap) = 1.0000     Max loss rate(Fm)=     0.578(In/Hr)
Time of concentration =    38.08 min.
Rainfall intensity =      1.457(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.552
Subarea runoff =     25.232(CFS) for   38.500(Ac.)
Total runoff =     54.907(CFS)
Effective area this stream =       68.20(Ac.)
Total Study Area (Main Stream No. 1) =       68.20(Ac.)
Area averaged Fm value =    0.563(In/Hr)

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       25.000 to Point/Station       26.000
**** IRREGULAR CHANNEL FLOW TRAVEL TIME ****
________________________________________________________________________
Depth of flow =   0.699(Ft.), Average velocity =   3.343(Ft/s)
        ******* Irregular Channel Data ***********
------------------------------------------------------------------
Information entered for subchannel number 1 :
Point number      'X' coordinate     'Y' coordinate
        1              0.00              2.00
        2             10.00              0.00
        3             30.00              0.00
        4             40.00              2.00
Manning's 'N' friction factor =   0.035
------------------------------------------------------------------
Sub-Channel flow  =     54.907(CFS)
  '     '        flow top width =     26.991(Ft.)
  '     '    velocity=    3.343(Ft/s)
  '     '        area =     16.425(Sq.Ft)
  '     '        Froude number =     0.755

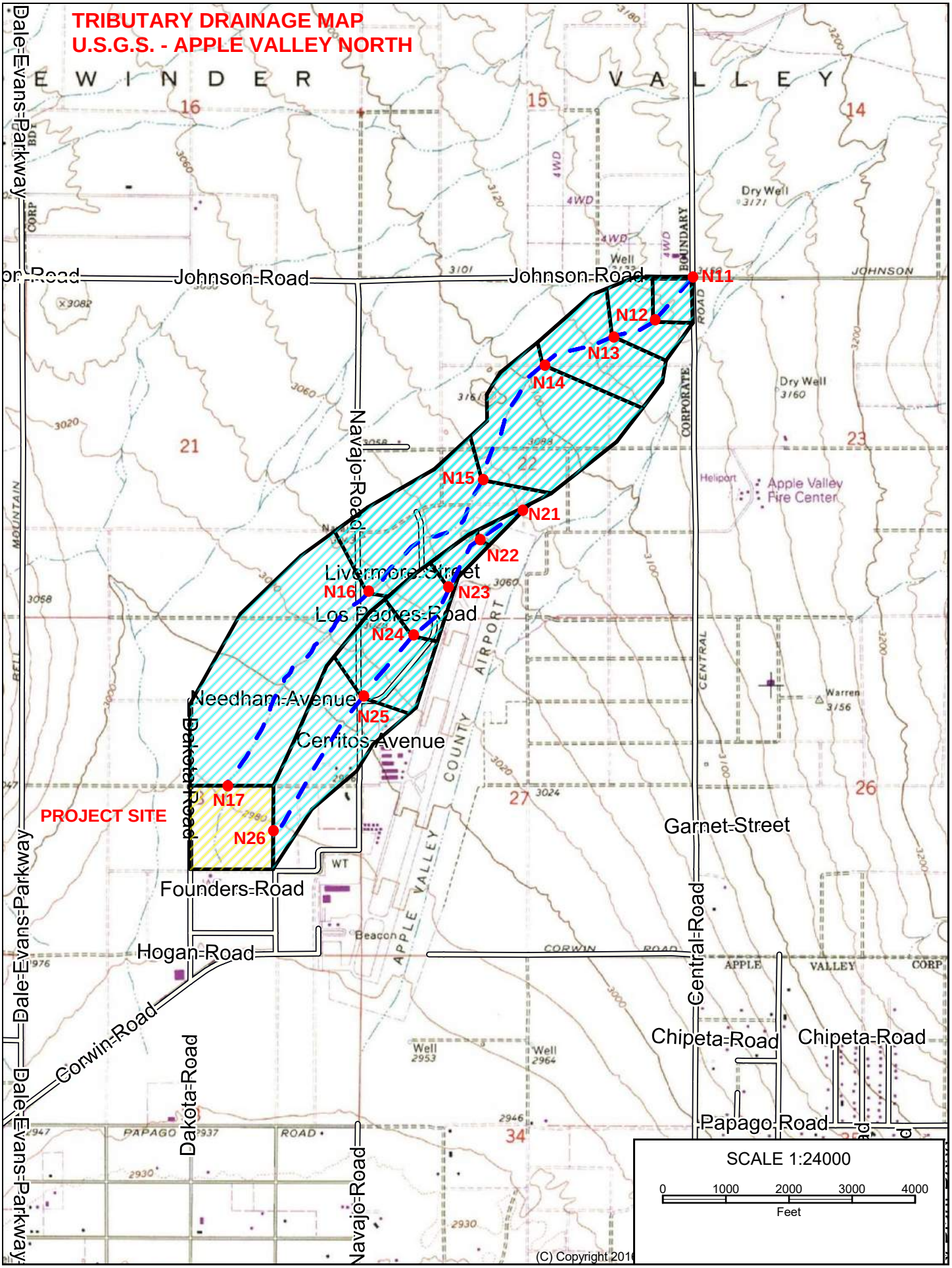
Upstream point elevation =  3009.000(Ft.)
Downstream point elevation =  2977.000(Ft.)
Flow length =  2644.000(Ft.)
Travel time  =   13.18 min.
Time of concentration =   51.26 min.
Depth of flow =   0.699(Ft.)
Average velocity =   3.343(Ft/s)
Total irregular channel flow =    54.907(CFS)
Irregular channel normal depth above invert elev. =   0.699(Ft.)
Average velocity of channel(s) =   3.343(Ft/s)

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       25.000 to Point/Station       26.000
**** SUBAREA FLOW ADDITION ****
________________________________________________________________________
UNDEVELOPED (poor cover) subarea
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
```

Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2) = 67.00
Pervious ratio(Ap) = 1.0000 Max loss rate(Fm)= 0.578(In/Hr)
Time of concentration = 51.26 min. T_C
Rainfall intensity = 1.183(In/Hr) for a 100.0 year storm
Effective runoff coefficient used for area,(total area with modified rational method)(Q=KCIA) is C = 0.466
Subarea runoff = 16.637(CFS) for 61.400(Ac.)
Total runoff = 71.544(CFS) Q_{100}
Effective area this stream = 129.60(Ac.)
Total Study Area (Main Stream No. 1) = 129.60(Ac.)
Area averaged Fm value = 0.570(In/Hr)
End of computations, Total Study Area = 129.60 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.
Note: These figures do not consider reduced effective area
effects caused by confluences in the rational equation.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged SCS curve number = 67.5

TRIBUTARY DRAINAGE MAP


TRIBUTARY DRAINAGE MAP
U.S.G.S. - APPLE VALLEY NORTH
E W I N D E R V A L L E Y
Dale-Evans-Parkway
Johnson-Road
Navajo-Road
Dry Well
Well
Heliport
Apple Valley Fire Center
Livermore-Street
Los Padres-Road
Needham-Avenue
Cerritos-Avenue
Dakota-Road
Founders-Road
Hogan-Road
Corwin-Road
Garnet-Street
Central-Road
Chipeta-Road
Papago-Road
Warren
Beacon
N11
N12
N13
N14
N15
N16
N17
N21
N22
N23
N24
N25
N26
PROJECT SITE
SCALE 1:24000
0 1000 2000 3000 4000
Feet
(C) Copyright 201

2010 ANTECEDENT MOISTURE CONDITION (AMC) MAP

Figure ADD-1
Antecedent Moisture Condition (AMC)

5-day Rainfall - NOAA Atlas 14
(50% of Total Rainfall Prior to Peak)*

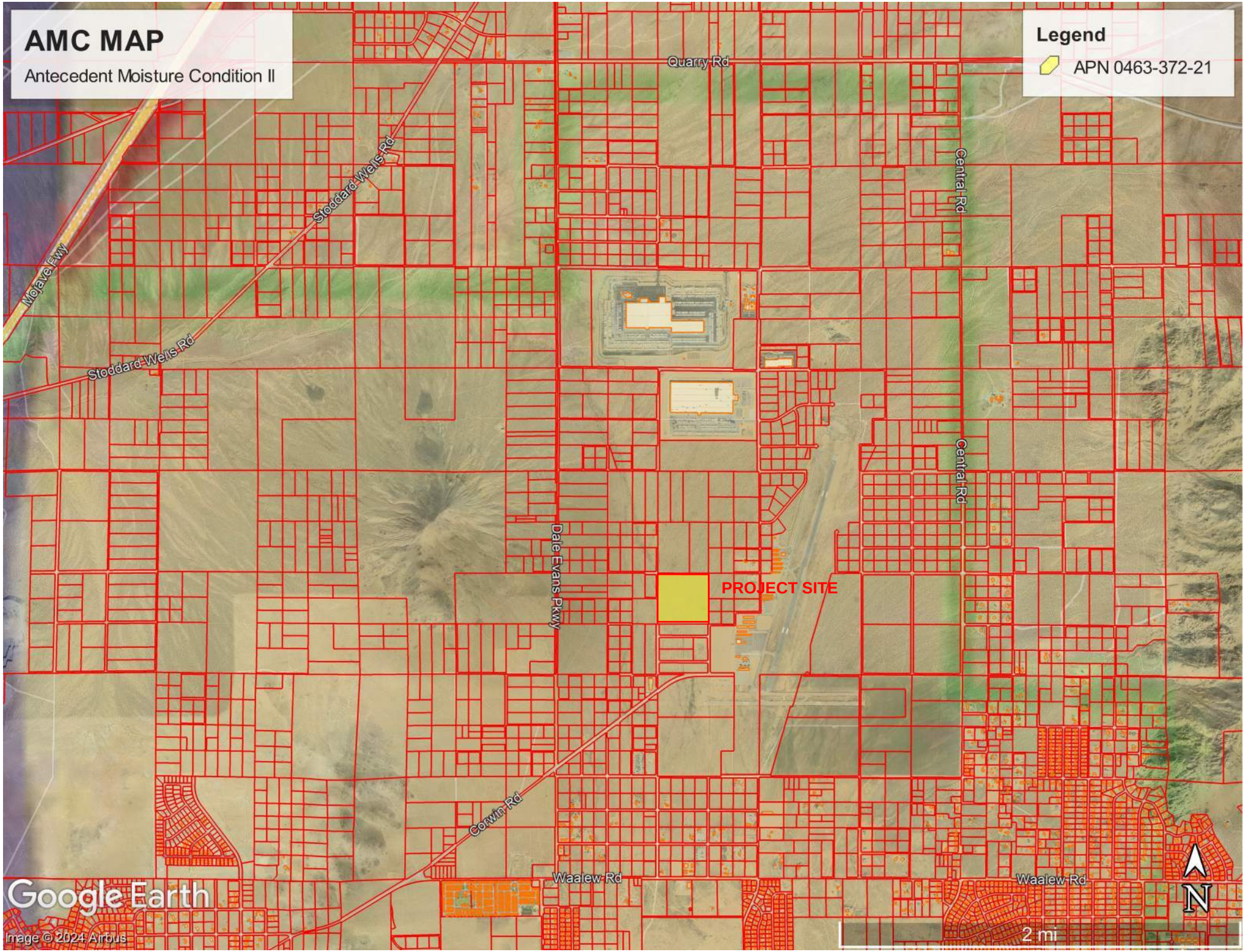
*1/2 (11-day - 1-day) =
1/2 (([10-day] + (1/10 ([20-day] - [10-day]))) - [1-day])

5 0 5 10 15
Miles

N
W E
S

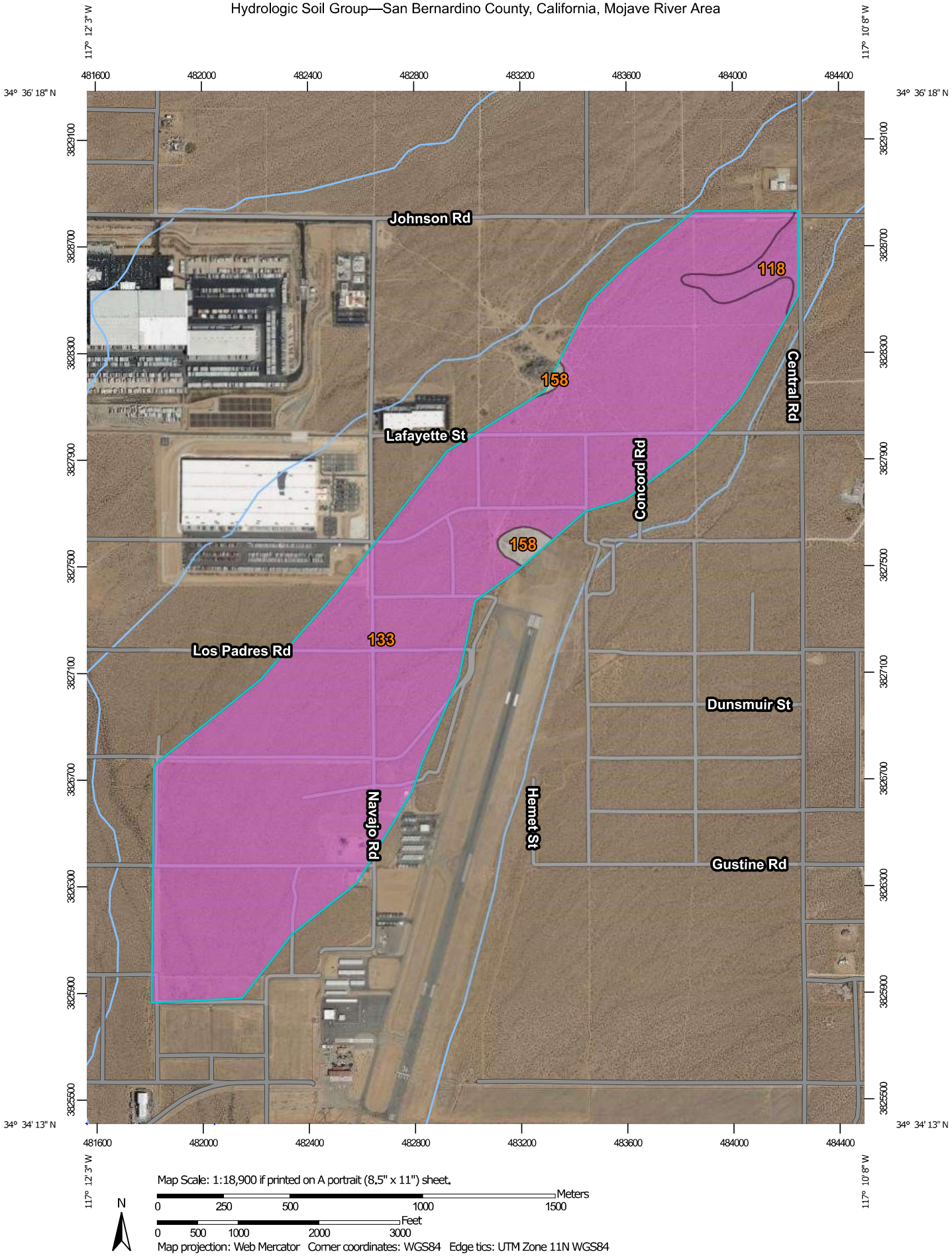
Growing Season
- AMC I
- AMC II
- AMC III

STATE HWY 127
I-15
US HWY 395
I-40
STATE HWY 247
STATE HWY 62
Death Valley
Ridgecrest
Barstow
Boron
Adelanto
George AFB
Victorville
Apple Valley
Mountain View Acres
Hesperia
Wrightwood
Crestline
Lake Arrowhead
Running Springs
Big Bear City
Big Bear Lake
Yucca Valley
Joshua Tree
Twentynine Palms
Morongo Valley
Needles
Parker
Blythe


AMC MAP
Antecedent Moisture Condition II
Legend
APN 0463-372-21
Quarry Rd
Stoddard Wells Rd
Mojave Fwy
Stoddard Wells Rd
Central Rd
Central Rd
Dale Evans Pkwy
PROJECT SITE
Corwin Rd
Waalew Rd
Waalew Rd
N
2 mi
Google Earth
Image © 2024 Airbus

SOILS MAP

Hydrologic Soil Group—San Bernardino County, California, Mojave River Area



Map Scale: 1:18,900 if printed on A portrait (8.5" x 11") sheet.

N

0 250 500 1000 1500 Meters

0 500 1000 2000 3000 Feet

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

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.

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 15, Aug 30, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 17, 2022—Jun 12, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

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	13.3	2.5%
133	HELENDALE-BRYMAN LOAMY SANDS, 2 TO 5 PERCENT SLOPES*	A	515.5	96.5%
158	ROCK OUTCROP-LITHIC TORRIORTHENTS COMPLEX, 15 TO 50 PERCENT SLOPES*		5.6	1.0%
Totals for Area of Interest			**534.4**	**100.0%**

Description

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.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

NOAA ATLAS 14 POINT RAINFALLS

NOAA Atlas 14, Volume 6, Version 2
Location name: Apple Valley, California, USA*
Latitude: 34.5874°, Longitude: -117.1897°
Elevation: 3035 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	0.081 (0.066-0.099)	0.114 (0.094-0.140)	0.161 (0.132-0.198)	0.202 (0.164-0.250)	0.260 (0.205-0.334)	0.308 (0.238-0.404)	0.360 (0.271-0.483)	0.416 (0.305-0.574)	0.498 (0.350-0.714)	0.565 (0.384-0.839)
10-min	0.116 (0.095-0.142)	0.164 (0.135-0.201)	0.231 (0.189-0.284)	0.289 (0.235-0.358)	0.373 (0.294-0.478)	0.442 (0.341-0.578)	0.516 (0.389-0.692)	0.597 (0.438-0.822)	0.713 (0.502-1.02)	0.810 (0.551-1.20)
15-min	0.140 (0.115-0.171)	0.198 (0.163-0.243)	0.279 (0.229-0.344)	0.349 (0.285-0.433)	0.451 (0.356-0.578)	0.535 (0.413-0.700)	0.624 (0.471-0.837)	0.722 (0.529-0.994)	0.863 (0.607-1.24)	0.979 (0.666-1.45)
30-min	0.190 (0.157-0.233)	0.270 (0.222-0.331)	0.380 (0.312-0.468)	0.476 (0.388-0.591)	0.615 (0.485-0.788)	0.729 (0.563-0.953)	0.851 (0.641-1.14)	0.984 (0.721-1.36)	1.18 (0.828-1.69)	1.34 (0.908-1.98)
60-min	0.238 (0.196-0.291)	0.336 (0.277-0.413)	0.474 (0.389-0.584)	0.594 (0.483-0.737)	0.767 (0.604-0.983)	0.909 (0.701-1.19)	1.06 (0.800-1.42)	1.23 (0.900-1.69)	1.47 (1.03-2.10)	1.66 (1.13-2.47)
2-hr	0.339 (0.279-0.415)	0.459 (0.378-0.564)	0.627 (0.515-0.771)	0.770 (0.627-0.955)	0.976 (0.769-1.25)	1.14 (0.882-1.50)	1.32 (0.995-1.77)	1.51 (1.11-2.08)	1.78 (1.26-2.56)	2.01 (1.36-2.98)
3-hr	0.412 (0.339-0.505)	0.551 (0.453-0.676)	0.742 (0.609-0.913)	0.905 (0.737-1.12)	1.14 (0.896-1.46)	1.32 (1.02-1.73)	1.52 (1.15-2.04)	1.74 (1.27-2.39)	2.04 (1.43-2.92)	2.28 (1.55-3.38)
6-hr	0.564 (0.464-0.691)	0.744 (0.613-0.913)	0.990 (0.813-1.22)	1.20 (0.975-1.48)	1.49 (1.17-1.91)	1.72 (1.33-2.25)	1.97 (1.48-2.64)	2.23 (1.63-3.07)	2.59 (1.82-3.72)	2.88 (1.96-4.28)
12-hr	0.729 (0.600-0.893)	0.964 (0.793-1.18)	1.28 (1.05-1.58)	1.54 (1.26-1.92)	1.91 (1.51-2.45)	2.20 (1.70-2.88)	2.50 (1.89-3.36)	2.82 (2.07-3.89)	3.26 (2.30-4.68)	3.61 (2.46-5.36)
24-hr	0.960 (0.852-1.10)	1.28 (1.14-1.48)	1.71 (1.51-1.98)	2.07 (1.81-2.41)	2.56 (2.17-3.08)	2.94 (2.44-3.62)	3.34 (2.70-4.20)	3.75 (2.95-4.86)	4.32 (3.26-5.83)	4.76 (3.48-6.66)
2-day	1.15 (1.02-1.32)	1.56 (1.38-1.80)	2.10 (1.86-2.43)	2.55 (2.24-2.97)	3.16 (2.68-3.81)	3.63 (3.02-4.47)	4.12 (3.34-5.19)	4.62 (3.64-5.98)	5.30 (4.01-7.16)	5.84 (4.26-8.16)
3-day	1.25 (1.11-1.44)	1.72 (1.52-1.98)	2.34 (2.06-2.70)	2.84 (2.49-3.30)	3.52 (2.99-4.24)	4.05 (3.36-4.98)	4.59 (3.72-5.78)	5.15 (4.06-6.67)	5.91 (4.46-7.97)	6.50 (4.75-9.08)
4-day	1.32 (1.17-1.52)	1.83 (1.62-2.10)	2.49 (2.20-2.88)	3.03 (2.65-3.53)	3.76 (3.19-4.53)	4.33 (3.59-5.32)	4.90 (3.97-6.17)	5.49 (4.33-7.12)	6.30 (4.76-8.51)	6.93 (5.06-9.68)
7-day	1.44 (1.28-1.66)	1.97 (1.75-2.27)	2.68 (2.37-3.09)	3.26 (2.85-3.79)	4.05 (3.43-4.87)	4.66 (3.87-5.73)	5.29 (4.28-6.66)	5.94 (4.68-7.69)	6.82 (5.16-9.21)	7.52 (5.49-10.5)
10-day	1.52 (1.35-1.75)	2.08 (1.84-2.39)	2.81 (2.48-3.25)	3.42 (3.00-3.98)	4.26 (3.61-5.12)	4.91 (4.08-6.03)	5.58 (4.52-7.02)	6.27 (4.94-8.12)	7.23 (5.46-9.76)	7.98 (5.83-11.1)
20-day	1.73 (1.54-2.00)	2.37 (2.10-2.73)	3.23 (2.86-3.73)	3.95 (3.46-4.60)	4.94 (4.19-5.95)	5.72 (4.75-7.03)	6.53 (5.29-8.22)	7.38 (5.81-9.55)	8.54 (6.46-11.5)	9.47 (6.92-13.2)
30-day	1.96 (1.73-2.25)	2.68 (2.38-3.09)	3.67 (3.24-4.24)	4.50 (3.94-5.24)	5.66 (4.80-6.81)	6.57 (5.46-8.08)	7.53 (6.10-9.48)	8.53 (6.72-11.0)	9.92 (7.50-13.4)	11.0 (8.05-15.4)
45-day	2.31 (2.05-2.66)	3.18 (2.82-3.66)	4.36 (3.86-5.04)	5.37 (4.70-6.25)	6.79 (5.75-8.17)	7.92 (6.58-9.74)	9.11 (7.38-11.5)	10.4 (8.17-13.4)	12.1 (9.16-16.4)	13.5 (9.88-18.9)
60-day	2.52 (2.24-2.90)	3.46 (3.06-3.98)	4.75 (4.20-5.49)	5.85 (5.13-6.81)	7.42 (6.29-8.93)	8.69 (7.21-10.7)	10.0 (8.12-12.6)	11.4 (9.02-14.8)	13.5 (10.2-18.2)	15.1 (11.0-21.0)

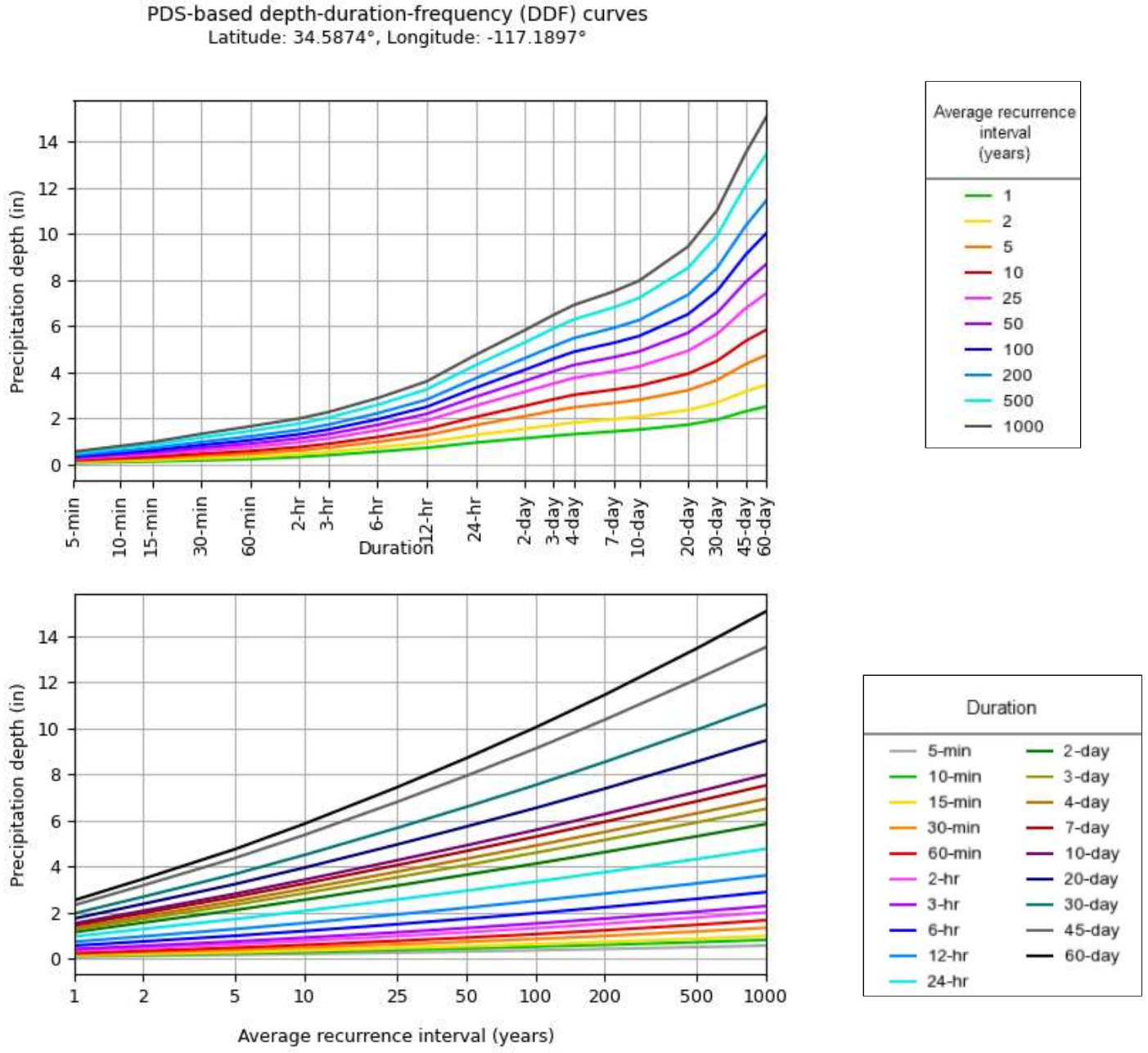
[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

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.

Back to Top

PF graphical



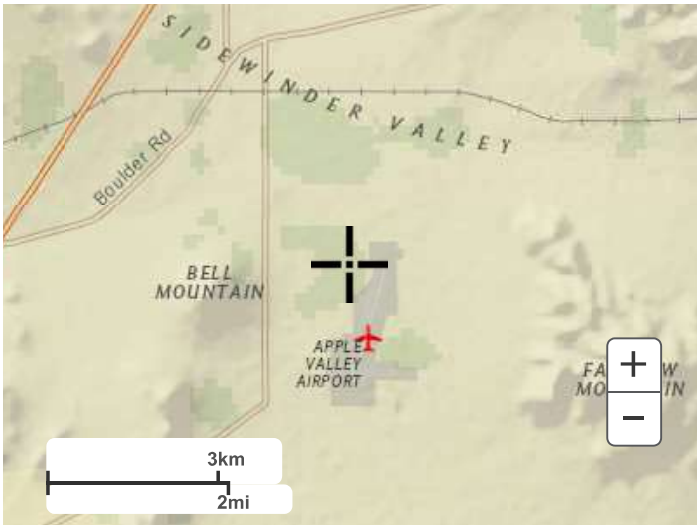
NOAA Atlas 14, Volume 6, Version 2

Created (GMT): Sun Sep 1 21:30:14 2024

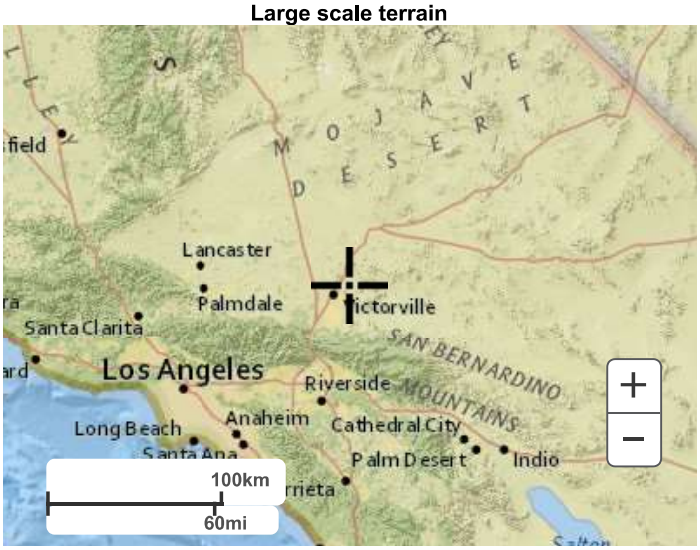
Back to Top

Maps & aerials

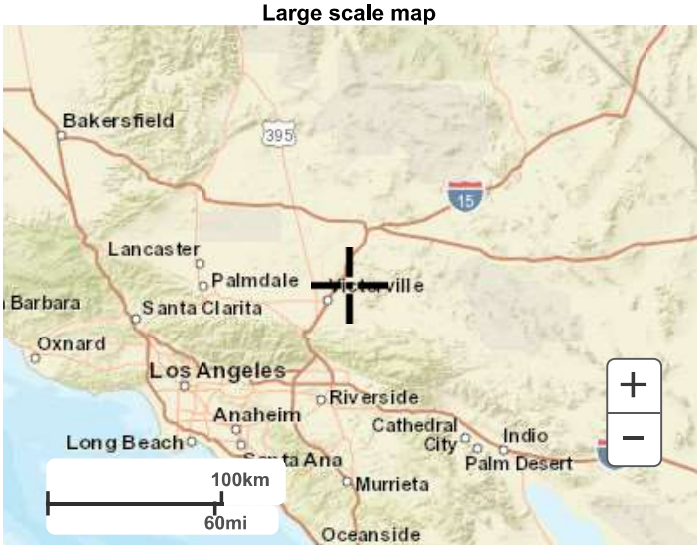
Small scale terrain



Large scale terrain



Large scale map



Large scale aerial



Back to Top

US Department of Commerce
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 H
Traffic Analysis
(Available on the Town website for review)

URBAN | CROSSROADS

LECANGS DAKOTA APPLE VALLEY INDUSTRIAL

TRAFFIC ANALYSIS

PREPARED BY: Janette Cachola | jcachola@urbanxroads.com
Marlie Whiteman, P.E. | mwhiteman@urbanxroads.com
John Kain, AICP | jkain@urbanxroads.com

Reference Number	Agency	Date
16091-02 TA Report.docx	Town of Apple Valley	October 9, 2024

TABLE OF CONTENTS

Table of Contents ii

Appendices iv

List of Exhibits v

List of Tables vi

List of Abbreviated Terms vii

1 Summary of Findings 1

1.1 Project Overview 1
1.2 Analysis Scenarios 4
1.3 Study Area 4
1.4 General Plan Consistency Requirements for Intersections 6
1.5 Recommendations 8
1.6 Queuing Analysis 13

2 Methodologies 15

2.1 Level of Service 15
2.2 Intersection Capacity Analysis 15
2.3 Traffic Signal Warrant Analysis Methodology 17
2.4 Queuing Analysis 18
2.5 Minimum Acceptable Levels of Service (LOS) 18
2.6 Deficiency Criteria 18
2.7 Project Fair Share Calculation Methodology 18

3 Area Conditions 19

3.1 Existing Circulation Network 19
3.2 Town of Apple Valley General Plan Circulation Element 19
3.3 Bicycle and Pedestrian Facilities 23
3.4 Transit Service 23
3.5 Truck Routes 23
3.6 Existing (2024) Traffic Counts 23
3.7 Intersection Operations Analysis 28
3.8 Traffic Signal Warrant Analysis 29
3.9 Queuing Analysis 29

4 Projected Future Traffic 31

4.1 Project Trip Generation 31
4.2 Project Trip Distribution 31
4.3 Modal Split 36
4.4 Project Trip Assignment 36
4.5 Background Traffic 36
4.6 Cumulative Development Traffic 38

5 Opening Year Cumulative (2027) Traffic Conditions 43

5.1 Roadway Improvements 43
5.2 Without Project Traffic Volume Forecasts 43
5.3 With Project Traffic Volume Forecasts 43
5.4 Intersection Operations Analysis 43
5.5 Traffic Signal Warrant Analysis 47
5.6 Off-Ramp Queuing Analysis 47
5.7 Intersection Deficiencies and Cumulative Improvements 48
5.8 Site Access Improvements 50

6 Local and Regional Funding Mechanisms 55

6.1 Town of Apple Valley Development Impact Fee (DIF) Program 55
6.2 Measure "I" Funds 55
6.3 Fair Share Contribution 55

7 References 57

APPENDICES

Appendix 1.1: Traffic Study Scoping Agreement

Appendix 1.2: Site Adjacent Queues

Appendix 3.1: Traffic Counts

Appendix 3.2: Existing (2024) Conditions Intersection Operations Analysis Worksheets

Appendix 3.3: Existing (2024) Conditions Traffic Signal Warrant Analysis Worksheets

Appendix 3.4: Existing (2024) Conditions Queuing Analysis Worksheets

Appendix 5.1: Opening Year Cumulative (2027) Without Project Conditions Intersection Operations Analysis Worksheets

Appendix 5.2: Opening Year Cumulative (2027) With Project Conditions Intersection Operations Analysis Worksheets

Appendix 5.3: Opening Year Cumulative (2027) Without Project Conditions Traffic Signal Warrant Analysis Worksheets

Appendix 5.4: Opening Year Cumulative (2027) With Project Conditions Traffic Signal Warrant Analysis Worksheets

Appendix 5.5: Opening Year Cumulative (2027) Without Project Conditions Off-Ramp Queueing Analysis Worksheets

Appendix 5.6: Opening Year Cumulative (2027) With Project Conditions Off-Ramp Queueing Analysis Worksheets

Appendix 5.7: Opening Year Cumulative (2027) With Project Conditions Intersection Operations Analysis Worksheets With Improvements

Appendix 5.8: Opening Year Cumulative (2027) With Project Conditions Off-Ramp Queueing Analysis s Worksheets With Improvements

LIST OF EXHIBITS

Exhibit 1-1: Location Map 2
Exhibit 1-2: Preliminary Site Plan 3
Exhibit 1-3: Study Area 5
Exhibit 1-4: Opening Year (2027) Recommended Traffic Controls and Intersection Lane Configurations 9
Exhibit 1-5: Site Access Recommendations 12
Exhibit 3-1: Existing Number of Through Lanes and Intersection Controls 20
Exhibit 3-2: Town of Apple Valley General Plan Circulation Element 21
Exhibit 3-3: Town of Apple Valley General Plan Roadway Cross-Sections 22
Exhibit 3-4: Town of Apple Valley Existing and Planned Bicycle Facilities 24
Exhibit 3-5: Existing Transit Routes 25
Exhibit 3-6: Town of Apple Valley Truck Routes 26
Exhibit 3-7: Existing (2024) Peak Hour Traffic Volumes 27
Exhibit 4-1: Project (Trucks) Trip Distribution 34
Exhibit 4-2: Project (Passenger Car) Trip Distribution 35
Exhibit 4-3: Project Only Traffic Volumes 37
Exhibit 4-4: Cumulative Development Location Map 40
Exhibit 4-5: Cumulative Only Traffic Volumes 41
Exhibit 5-1: Opening Year Cumulative (2027) Without Project Traffic Volumes 44
Exhibit 5-2: Opening Year Cumulative (2027) With Project Traffic Volumes 45

LIST OF TABLES

Table 1-1: Intersection Analysis Locations 6
Table 1-2: Summary of LOS 7
Table 1-3: Improvements to Maintain General Plan Consistency 8
Table 2-1: Signalized Intersection LOS Thresholds 16
Table 2-2: Unsignalized Intersection LOS Thresholds 17
Table 3-1: Intersection Analysis for Existing (2024) Conditions 28
Table 3-2: Peak Hour Queuing Summary for Existing (2024) Conditions 29
Table 4-1: Project Trip Generation Summary Actual Vehicles 32
Table 4-2: Project Trip Generation Summary passenger car equivalent (pce) 33
Table 4-3: Cumulative Development Land Use Summary 39
Table 5-1: Intersection Analysis for Opening year Cumulative (2027) Conditions 46
Table 5-2: Peak Hour Queuing Summary for Opening Year Cumulative (2027) Conditions 47
Table 5-3: Intersection Analysis for Opening Year Cumulative (2027) Conditions With Improvements 49
Table 5-4: Peak Hour Queuing Summary for Opening Year Cumulative (2027) Conditions With improvements 50
Table 5-5: SimTraffic Queuing Summary for Opening Year Cumulative (2027) Conditions With improvements 51
Table 6-1: Project Fair Share Calculations 56

LIST OF ABBREVIATED TERMS

(1)	Reference
ADT	Average Daily Traffic
CA MUTCD	California Manual on Uniform Traffic Control Devices
Caltrans	California Department of Transportation
CMP	Congestion Management Program
DIF	Development Impact Fee
HCM	Highway Capacity Manual
HDM	Highway Design Manual
ITE	Institute of Transportation Engineers
LOS	Level of Service
NAVISP	North Apple Valley Industrial Specific Plan
PCE	Passenger Car Equivalent
PHF	Peak Hour Factor
Project	Lecangs Dakota Apple Valley Industrial
SBCTA	San Bernardino County Transportation Authority
TA	Traffic Analysis
v/c	Volume to Capacity
vphgpl	Vehicles per Hour Green per Lane
VVTA	Victor Valley Transit Authority

This page intentionally left blank

1 SUMMARY OF FINDINGS

This report presents the results of the Traffic Analysis (TA) for the Lecangs Dakota Apple Valley Industrial (**Project**), which consists of the development of a 627,200 square foot industrial warehouse and distribution building located within the North Apple Valley Industrial Specific Plan (NAVISP) in the Town of Apple Valley, as shown on Exhibit 1-1.

The purpose of this TA is to evaluate the potential circulation system deficiencies that may result when the Project is developed and where circulation system (intersection and/or roadway) improvements are needed to maintain acceptable levels of service consistent with the Town's General Plan level of service goals and policies. As the Town has not adopted their own traffic analysis guidelines, they utilize to the San Bernardino County Transportation Impact Study Guidelines (July 9, 2019) (**County Guidelines**).

The scope of analysis included in this evaluation is based on County Guidelines and consultation with Town of Apple Valley staff during the TA scoping process. (1) (2) The TA Scoping Agreement is included in Appendix 1.1 and has been reviewed and approved by the Town of Apple Valley.

1.1 PROJECT OVERVIEW

1.1.1 LAND USE

The Project consists of the development of a 627,200 square foot industrial warehouse and distribution building. The site is located between Dachshund Avenue (which becomes Dakota Road south of Fresno Road) and Ramona Road, south of Gustine Street and north of Fresno Road.

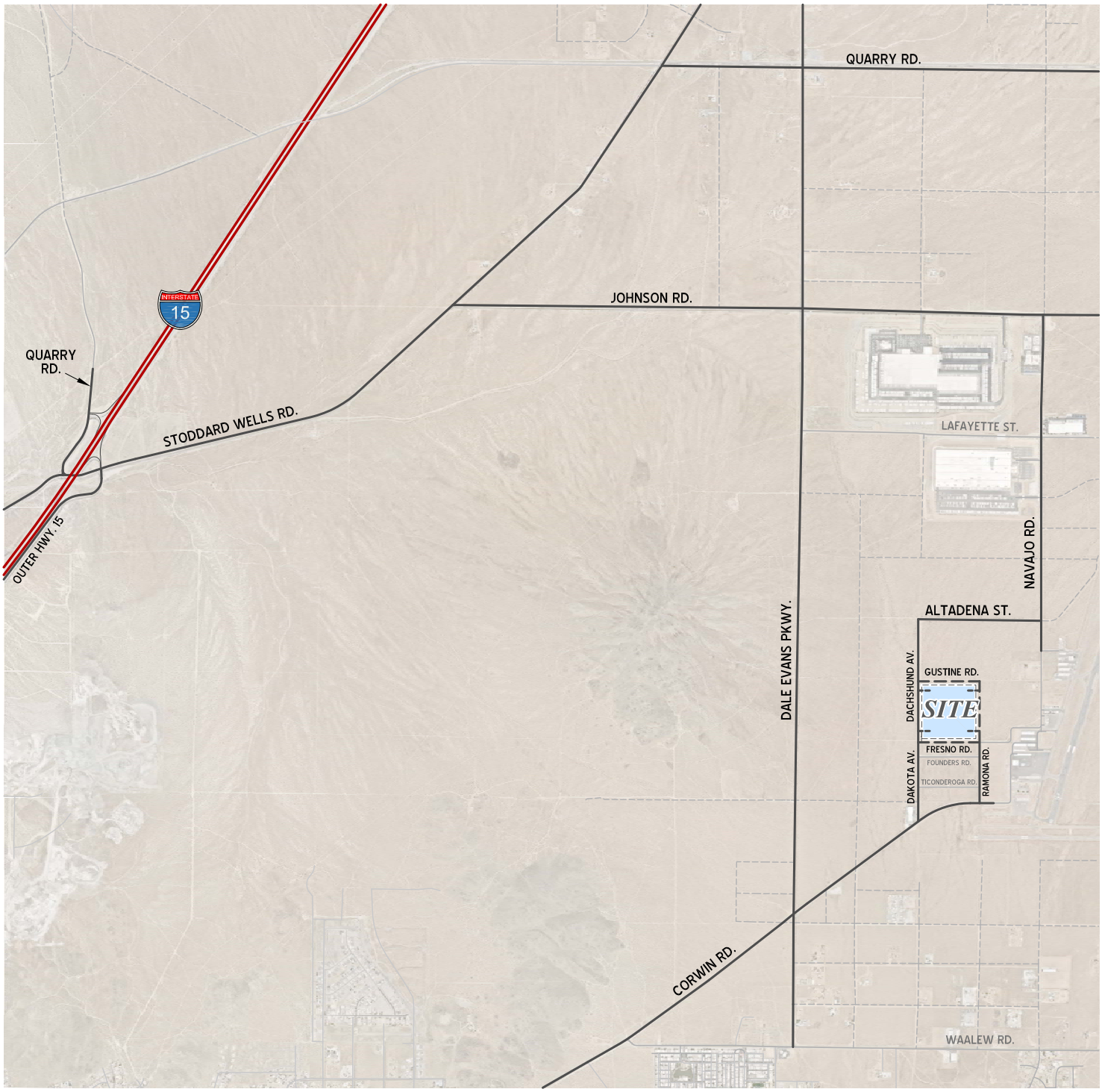
The preliminary site plan for the Project is shown on Exhibit 1-2. Access to the site will be accommodated via two driveways along Dachshund Avenue and two driveways on Ramona Road. All driveways are assumed to allow for full access (no turn restrictions). The Project is anticipated to have an Opening Year of 2027. Regional access to the Project site is accommodated from the I-15 Freeway.

1.1.2 TRIP GENERATION

In order to develop the traffic characteristics of the high-cube warehouse land use for the Proposed Project, trip-generation statistics published in the TUMF High-Cube Warehouse Trip Generation Study (WSP, January 29, 2019) are used. The purpose of WSP 2019 study was to gather enough data to develop reliable trip generation rates for centers for use in traffic impact studies in the Inland Empire.

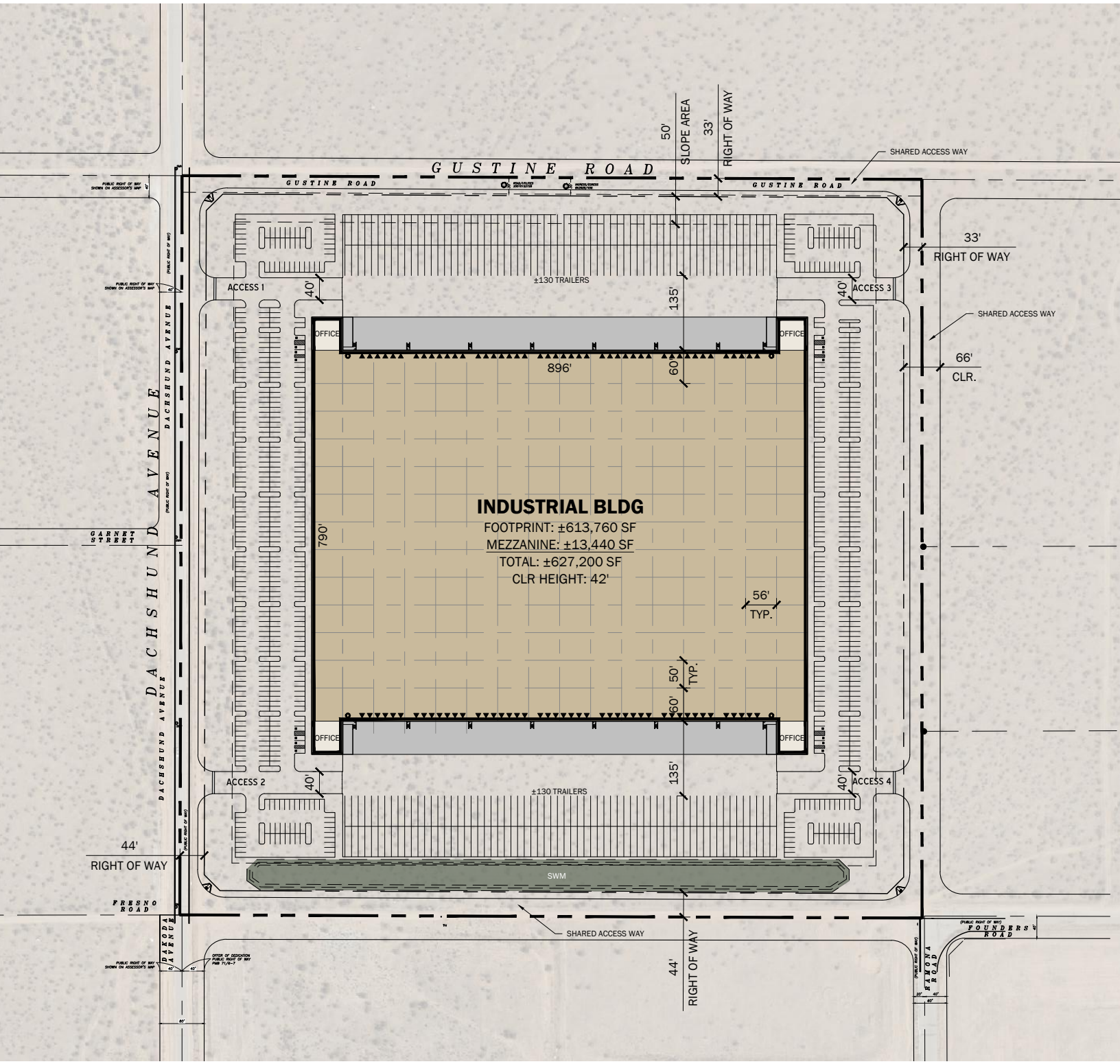
The Project is anticipated to generate a total of 1,335 two-way vehicle trip-ends per day with 77 AM peak hour trips and 104 PM peak hour trips (actual vehicles). The Project is anticipated to generate a total of 2,138 Passenger Car Equivalent (PCE) trip-ends per day with 123 AM PCE peak vehicle hour trips and 167 PM PCE peak hour vehicle trips. The assumptions and methods used to estimate the Project's trip generation characteristics are discussed in greater detail in Section 4.1 *Project Trip Generation* of this report.

EXHIBIT 1-1: LOCATION MAP



16091_01 - Study Area.dwg

EXHIBIT 1-2: PRELIMINARY SITE PLAN



1.2 ANALYSIS SCENARIOS

For the purposes of this TA, potential deficiencies to intersection LOS have been assessed for each of the following conditions:

- Existing (2024) Conditions
- Opening Year Cumulative (2027) Without Project Conditions
- Opening Year Cumulative (2027) With Project Conditions

1.2.1 EXISTING (2024) CONDITIONS

Information for Existing (2024) conditions is disclosed to represent the baseline traffic conditions as they existed at the time this report was prepared. Local schools were in session with in-person instruction at the time of the traffic counts. Traffic counts were conducted in April and late August, 2024.

1.2.2 OPENING YEAR CUMULATIVE (2027) CONDITIONS

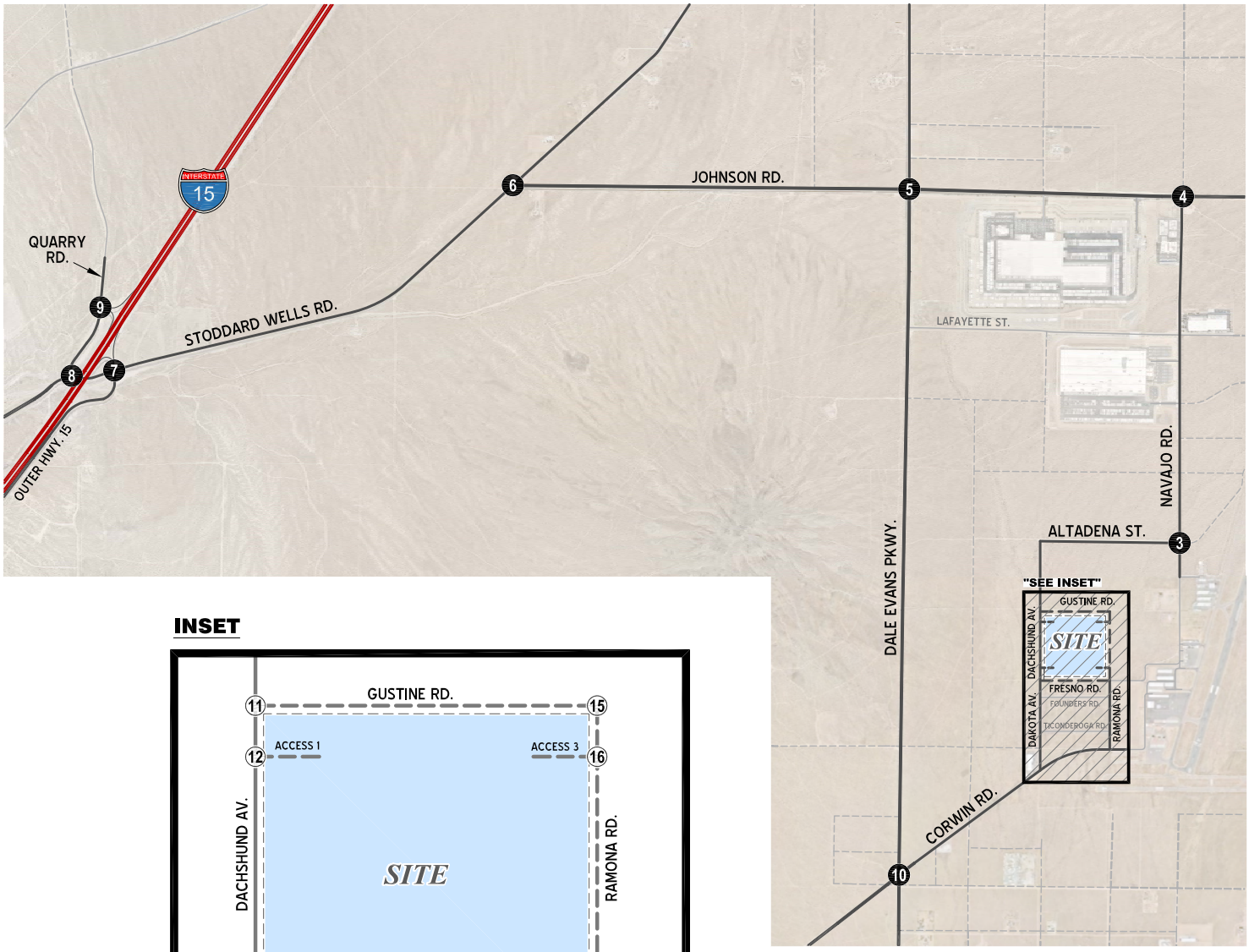
Consistent with County Guidelines, Opening Year Cumulative (2027) traffic conditions analysis determines the potential opening year cumulative circulation system deficiencies. To account for growth in traffic between Existing (2024) traffic conditions and the Project Opening Year Cumulative (2027), a growth rate of 2 percent was assumed (2.0% per year compounded over 3 years or $1.02^{3 \text{ years}}$ for a total of 6.12%). The roadway network is similar to Existing conditions except for new connections to be constructed by the Project. Conservatively, this TA estimates the area ambient traffic growth and then adds traffic generated by other known or probable related projects. These related projects are at least in part already accounted for in the assumed ambient growth rates; and some of these related projects may not be implemented and operational within the 2027 Opening Year timeframe assumed for the Project. The resulting traffic growth utilized in the TA (traffic generated by related projects) would therefore tend to overstate rather than understate background cumulative traffic deficiencies under 2027 traffic conditions.

Consistent with County Guidelines, a list of known and reasonably foreseeable cumulative development projects has been compiled based on information provided by the Town of Apple Valley Planning Department.

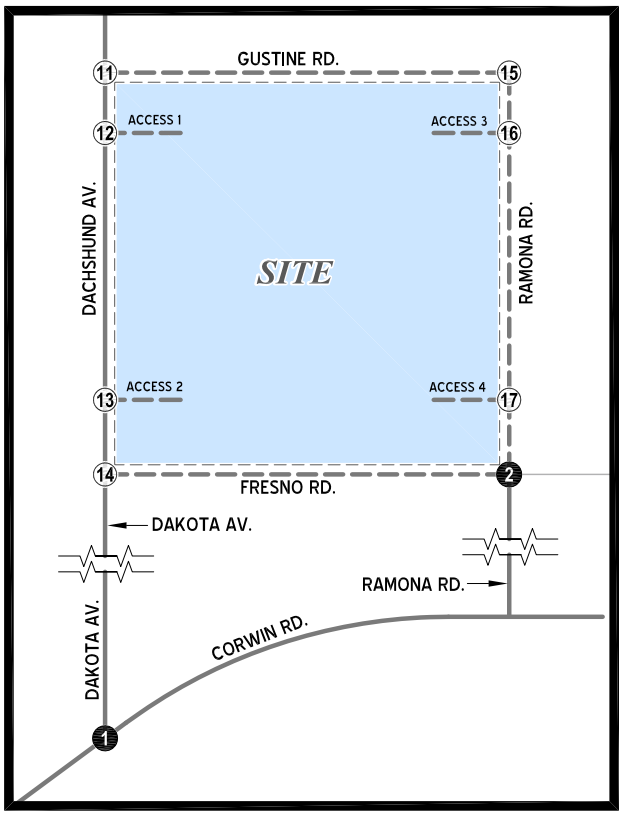
1.3 STUDY AREA

For the purposes of this TA, a total of 17 study area intersections were selected for evaluation based on County Guidelines and consultation with Town of Apple Valley staff. The study area is shown graphically on Exhibit 1-3 and the intersections included for study are also listed in Table 1-1. At a minimum, the study area includes intersections where the Project is anticipated to contribute 50 or more peak hour trips per the County's Guidelines. The "50 peak hour trip" criterion represents a minimum number of trips at which a typical intersection would have the potential to be affected by a given development proposal. The 50 peak hour trip criterion is a traffic engineering rule of thumb that is accepted and widely used within San Bernardino County (including the Town of Apple Valley) for estimating a potential area of influence (i.e., study area).

EXHIBIT 1-3: TRAFFIC ANALYSIS STUDY AREA



INSET



LEGEND:

- (10) = EXISTING ANALYSIS LOCATION
- (7) = FUTURE ANALYSIS LOCATION
- = FUTURE ROADWAY

N

TABLE 1-1: INTERSECTION ANALYSIS LOCATIONS

#	Intersection	#	Intersection
1	Dakota Av. / Corwin Rd.	10	Dale Evans Pkwy. / Corwin Rd.
2	Ramona Rd. / Fresno Rd.	11	Dachshund Av. / Gustine Rd.
3	Navajo Rd. / Altadena St.	12	Dachshund Av. / Access 1
4	Navajo Rd. / Johnson Rd.	13	Dachshund Av. / Access 2
5	Dale Evans Pkwy. / Johnson Rd.	14	Dachshund Av. / Fresno Rd.
6	Stoddard Wells Rd. / Johnson Rd.	15	Ramona Rd. / Gustine Rd.
7	I-15 NB Ramps / Stoddard Wells Rd.	16	Ramona Rd. / Access 3
8	Quarry Rd. / Stoddard Wells Rd.	17	Ramona Rd. / Access 4
9	Quarry Rd. / I-15 SB Ramps		

1.4 GENERAL PLAN CONSISTENCY REQUIREMENTS FOR INTERSECTIONS

This section provides a brief overview of the intersection level of service (LOS) deficiencies identified in this report. The LOS standards used for this assessment are consistent with those identified in the Town of Apple Valley General Plan. Section 2 *Methodologies* provides a detailed explanation on the methodologies used for this assessment, while Section 3 *Area Conditions* and Section 5 *Opening Year Cumulative (2027) Traffic Conditions* include the operations analysis results for each analysis scenario. Additionally, a summary of the peak hour LOS analysis results is presented in Table 1-2.

1.4.1 EXISTING (2024) CONDITIONS

The assessment of existing (2024) traffic conditions is performed to establish a baseline of current LOS operations from which the effects of the Project's future contribution of traffic can be measured. The study area intersections were found to currently operate at an acceptable LOS (i.e., at or above the Town of Apple Valley's adopted General Plan thresholds) during the peak hours.

1.4.2 OPENING YEAR CUMULATIVE (2027) CONDITIONS

An assessment of opening year cumulative traffic conditions is performed to identify whether the traffic contribution associated with both the proposed Project and that of other reasonably foreseeable future development projects in the area have the potential to cause intersection LOS to fall below the Town's adopted thresholds. The Project's contribution to these forecasted LOS deficiencies is typically addressed through fee payments to an established fee program (both local and regional).

The results of the LOS assessments for cumulative traffic conditions are also summarized in Table 1-2, while Section 5 *Opening Year Cumulative (2027) Traffic Conditions* of the report provide a more detailed list of the forecast LOS deficiencies.

TABLE 1-2: LEVEL OF SERVICE (LOS) SUMMARY

#	Intersection	Existing 2024 AM	Existing 2024 PM	2027 Without Project AM	2027 Without Project PM	2027 With Project AM	2027 With Project PM
1	Dakota Av. / Corwin Rd.	A - D	A - D	A - D	A - D	A - D	A - D
2	Ramona Rd. / Fresno Rd.	A - D	A - D	A - D	A - D	A - D	A - D
3	Navajo Rd. / Altadena St.	A - D	A - D	A - D	A - D	A - D	A - D
4	Navajo Rd. / Johnson Rd.	A - D	A - D	F	F	F	F
5	Dale Evans Pkwy. / Johnson Rd.	A - D	A - D	F	F	F	F
6	Stoddard Wells Rd. / Johnson Rd.	A - D	A - D	F	F	F	F
7	I-15 NB Ramps / Stoddard Wells Rd.	A - D	A - D	F	F	F	F
8	Quarry Rd. / Stoddard Wells Rd.	A - D	A - D	A - D	F	A - D	F
9	Quarry Rd. / I-15 SB Ramps	A - D	A - D	A - D	F	A - D	F
10	Dale Evans Pkwy. / Corwin Rd.	A - D	A - D	A - D	A - D	A - D	A - D
11	Dachshund Av. / Gustine Rd.	N/A	N/A	N/A	N/A	A - D	A - D
12	Dachshund Av. / Access 1	N/A	N/A	N/A	N/A	A - D	A - D
13	Dachshund Av. / Access 2	N/A	N/A	N/A	N/A	A - D	A - D
14	Dachshund Av. / Fresno Rd.	N/A	N/A	N/A	N/A	A - D	A - D
15	Ramona Rd. / Gustine Rd.	N/A	N/A	N/A	N/A	A - D	A - D
16	Ramona Rd. / Access 3	N/A	N/A	N/A	N/A	A - D	A - D
17	Ramona Rd. / Access 4	N/A	N/A	N/A	N/A	A - D	A - D

Legend:

= A - D = E = F

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Excel\[16091 - Report.xlsx]1-2_LOS Summary

1.5 RECOMMENDATIONS

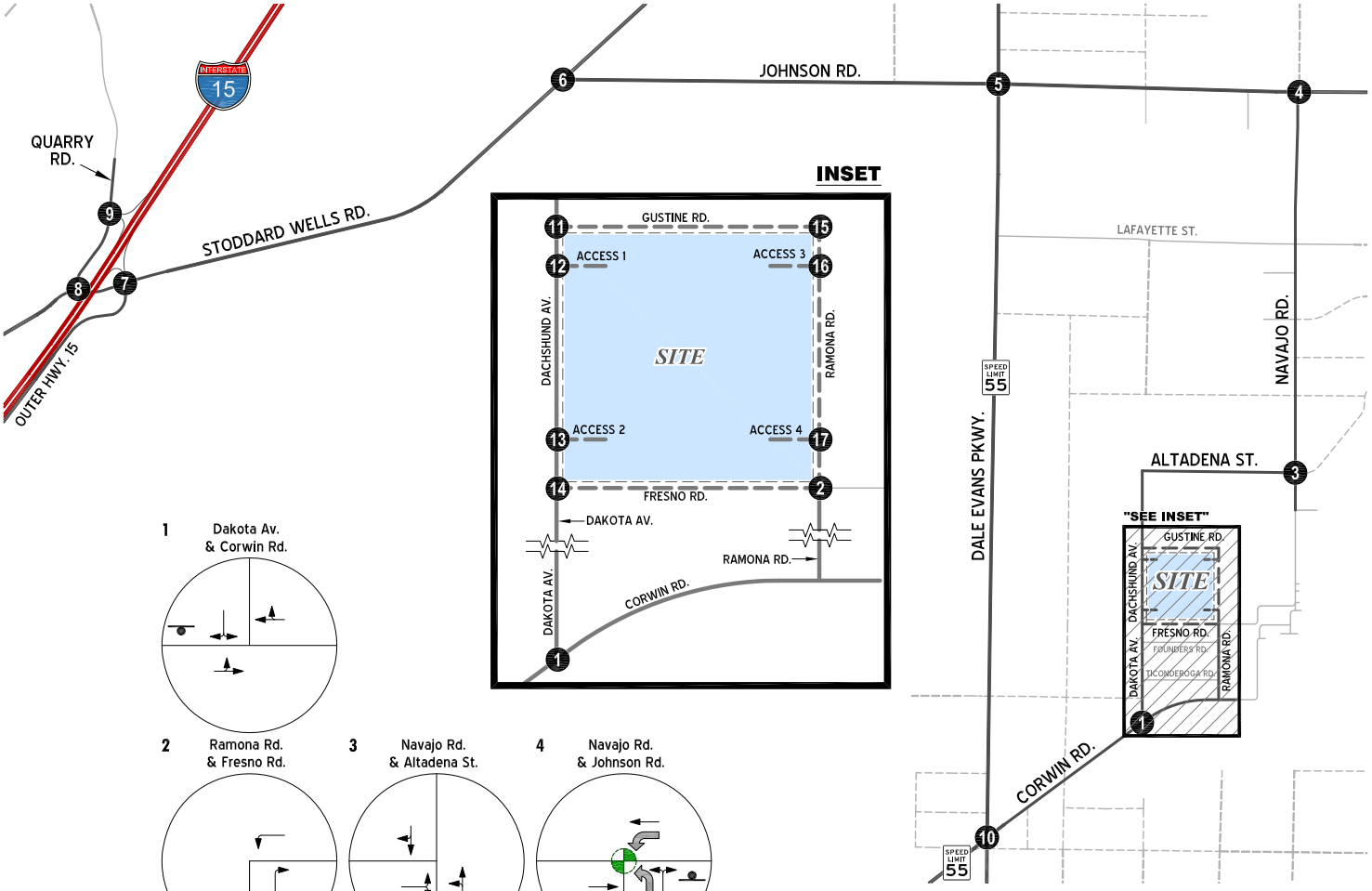
1.5.1 INTERSECTION IMPROVEMENT RECOMMENDATIONS NECESSARY TO MAINTAIN GENERAL PLAN CONSISTENCY

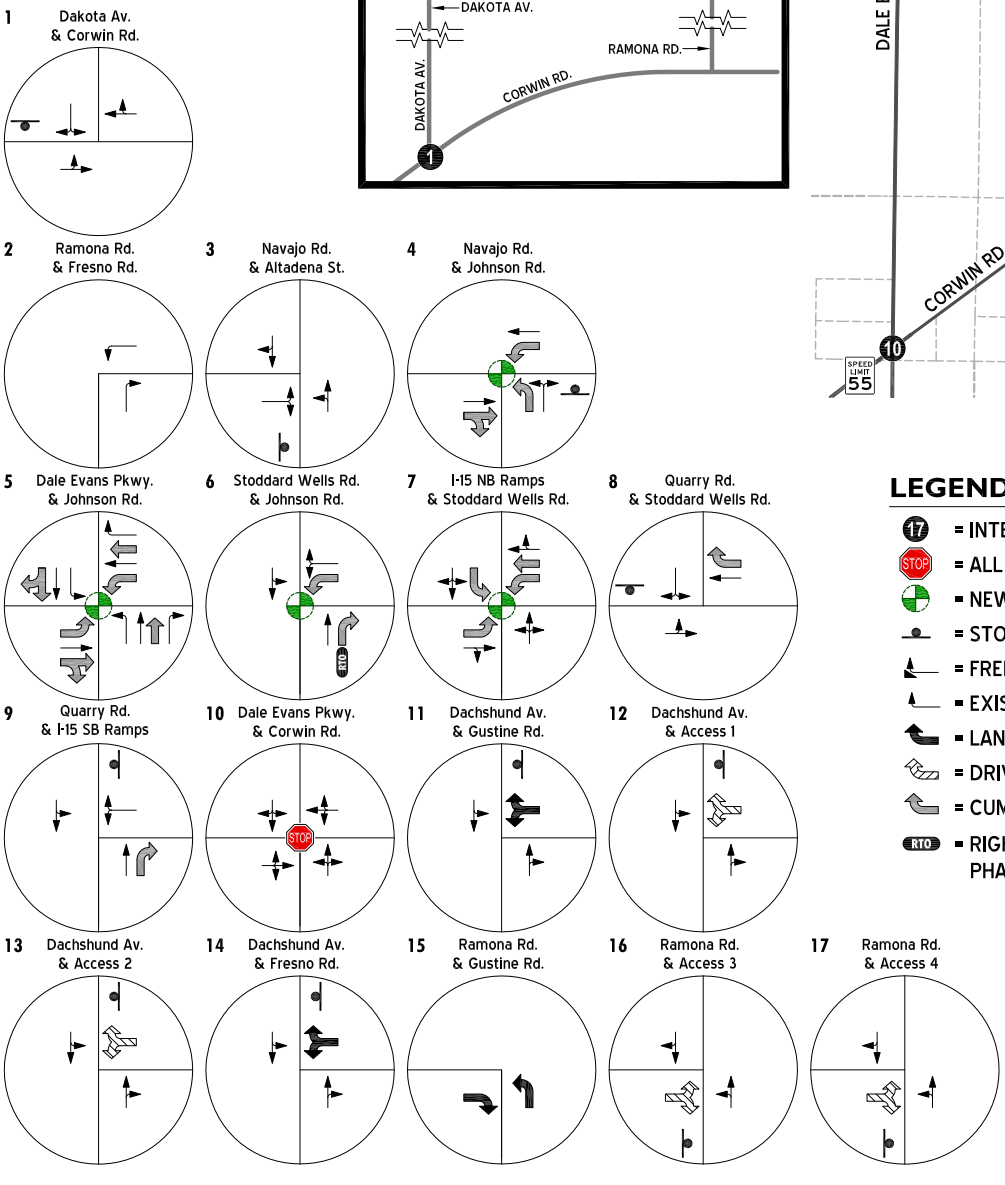
Based on the results of this TA, intersection improvement recommendations necessary to maintain the Town of Apple Valley General Plan LOS standards are listed Table 1-3 shown on Exhibit 1-4.

TABLE 1-3: IMPROVEMENTS TO MAINTAIN GENERAL PLAN CONSISTENCY

#	Intersection Location	Jurisdiction	Opening Year Cumulative (2027)	
			Without Project	With Project
4	Navajo Rd. & Johnson Rd.	Town of Apple Valley	Install a traffic signal	Same
			Add 2nd EB through lane	Same
			Add WB left turn lane	Same
			Add NB left turn lane	Same
5	Dale Evans Pkwy. & Johnson Rd.	Town of Apple Valley, County	Install a traffic signal	Same
			Add 2nd NB through lane	Same
			Add 2nd SB through lane	Same
			Add 2nd EB through lane	Same
			Add 2nd WB through lane	Same
			Add EB left turn lane	Same
			Add WB left turn lane	Same
6	Stoddard Wells Rd. & Johnson Rd.	Town of Apple Valley, County	Install a traffic signal	Same
			Add NB right turn lane	Same
			Add WB left turn lane	Same
			Provide NBR overlap phase	Same
7	I-15 NB Ramps & Stoddard Wells Rd.	Town of Apple Valley, Caltrans	Install a traffic signal	Same
			Add 2nd WB through lane	Same
			Add SB left turn lane	Same
			Add EB left turn lane	Same
			Add WB left turn lane	Same
8	Quarry Rd. & Stoddard Wells Rd.	County	Add WB right turn lane	Same
9	Quarry Rd. & I-15 SB Ramps	County, Caltrans	Add NB right turn lane	Same

EXHIBIT 1-4: OPENING YEAR (2027)
RECOMMENDED TRAFFIC CONTROLS AND INTERSECTION LANE CONFIGURATIONS





LEGEND:

- = INTERSECTION ID
- = ALL WAY STOP
- = NEW TRAFFIC SIGNAL
- = STOP SIGN
- = FREE RIGHT TURN
- = EXISTING LANE
- = LANE IMPROVEMENT
- = DRIVEWAY IMPROVEMENT
- = CUMULATIVE IMPROVEMENT
- = RIGHT TURN OVERLAP PHASING IMPROVEMENT

1.5.2 ON-SITE CIRCULATION RECOMMENDATIONS

The following recommendations are based on the improvements needed to accommodate site access and maintain acceptable peak hour LOS at site access and on-site intersections are described below and shown on Exhibit 1-5. The site adjacent queuing analysis worksheets are provided in Appendix 1.2 for Opening Year Cumulative (2027) With Project traffic conditions. No site adjacent queues are anticipated with the proposed improvements.

Recommendation 1 – Dachshund Avenue & Access 1 (#12) – The following improvements are necessary to accommodate site access:

- Project to install a stop control on the westbound approach and construct a shared left-right turn lane (Project driveway).

Recommendation 2 – Dachshund Avenue & Access 2 (#13) – The following improvements are necessary to accommodate site access:

- Project to install a stop control on the westbound approach and construct a shared left-right turn lane (Project driveway).

Recommendation 3 – Ramona Road & Access 3 (#16) – The following improvements are necessary to accommodate site access:

- Project to install a stop control on the eastbound approach and construct a shared left-right turn lane (Project driveway).
- Project to construct a northbound shared through-left turn lane.
- Project to construct a southbound shared through-right turn lane.

Recommendation 4 – Ramona Road & Access 4 (#17) – The following improvements are necessary to accommodate site access:

- Project to install a stop control on the eastbound approach and construct a shared left-right turn lane (Project driveway).
- Project to construct a northbound shared through-left turn lane.
- Project to construct a southbound shared through-right turn lane.

Recommendation 5 – Dachshund Avenue & Gustine Road (#11) – The following improvements are necessary to accommodate site access:

- Project to install a stop control on the westbound approach and construct a shared left-right turn lane.

Recommendation 6 – Dachshund Avenue & Fresno Road (#14) – The following improvements are necessary to accommodate site access:

- Project to install a stop control on the westbound approach and construct a shared left-right turn lane.

Recommendation 7 – Ramona Road & Gustine Road (#15) – The following improvements are necessary to accommodate site access:

- Project to construct a northbound left turn lane.
- Project to construct an eastbound right turn lane.

Recommendation 8 – Ramona Road & Fresno Road (#2) – The following improvements are necessary to accommodate site access:

- Project to install a stop control on the eastbound and westbound approaches and construct a shared eastbound left-right turn lane.

Recommendation 9 – Dachshund Avenue is a north-south oriented roadway located along the site's western boundary. The Project is to construct Dachshund Avenue from the site's northern boundary (Gustine Road) to the site's southern boundary (Fresno Road) at its ultimate half-section width as a secondary roadway (ultimate 88-foot right-of-way), consistent with the Town's standards.

Recommendation 10 – Ramona Road is a north-south oriented roadway located along the site's eastern boundary. The Project is to construct Ramona Road from the site's northern boundary (Gustine Road) to the site's southern boundary (Fresno Road) as a 2-lane local roadway.

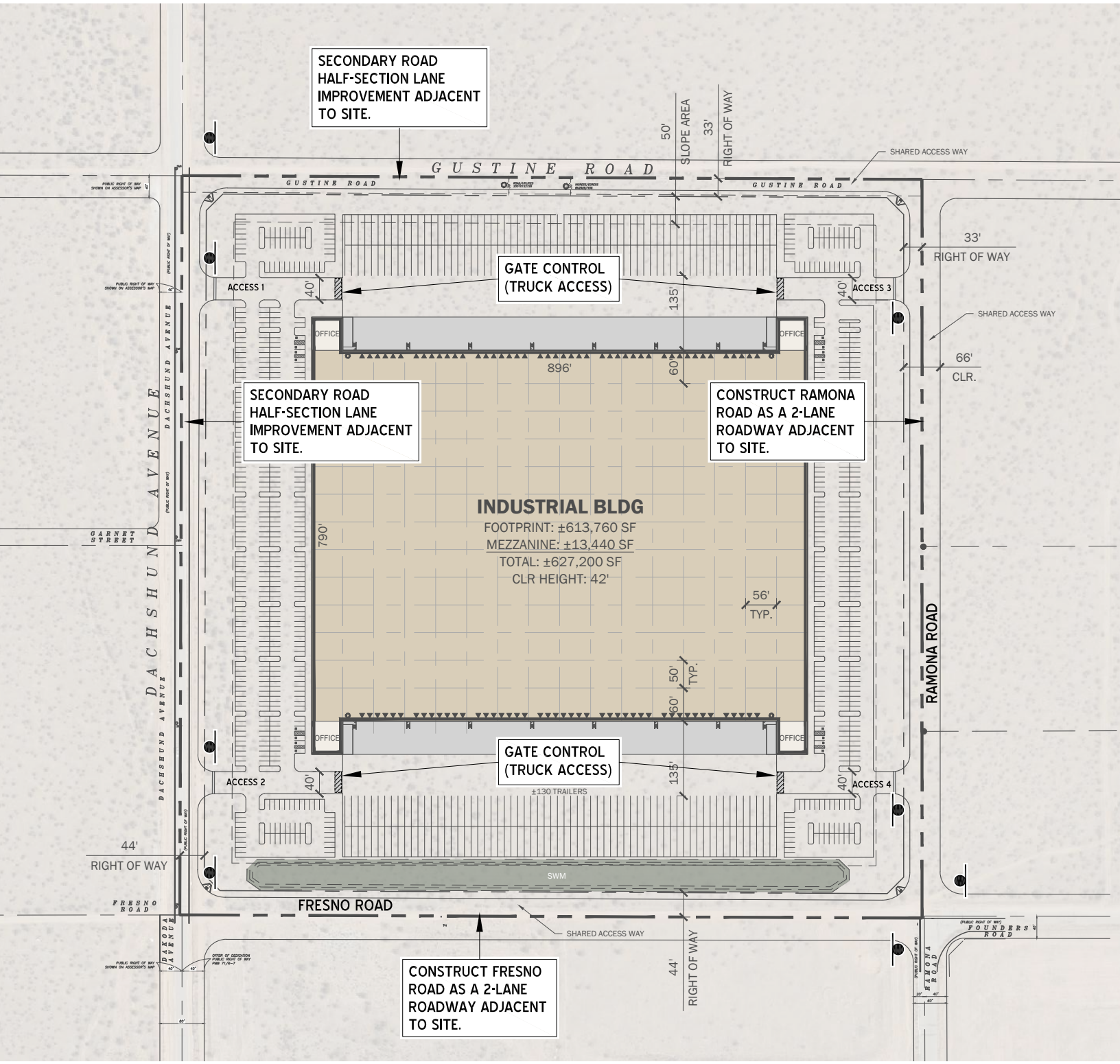
Recommendation 11 – Gustine Road is an east-west oriented roadway located along the site's northern boundary. The Project is to construct Gustine Road from the Project's western boundary (Dachshund Avenue) to the site's eastern boundary (Ramona Road) at its ultimate half-section width as a secondary roadway (ultimate 88-foot right-of-way), consistent with the Town's standards. The Project will also provide an additional 12 feet of pavement width to accommodate one westbound lane from the Project's eastern boundary to Dachshund Avenue to facilitate site access.

Recommendation 12 – Fresno Road is an east-west oriented roadway located along the site's southern boundary. The Project is to construct Fresno Road from the Project's western boundary (Dachshund Avenue) to the site's eastern boundary (Ramona Road) as a 2-lane local roadway.

On-site traffic signing and striping should be implemented agreeable with the provisions of the California Manual on Uniform Traffic Control Devices (CA MUTCD) and in conjunction with detailed construction plans for the Project site.

Sight distance at each project access point should be reviewed with respect to standard California Department of Transportation (Caltrans) and Town of Apple Valley sight distance standards at the time of preparation of final grading, landscape, and street improvement plans.

EXHIBIT 1-5: SITE ACCESS RECOMMENDATIONS



1.6 QUEUING ANALYSIS

The traffic modeling and signal timing optimization software package SimTraffic has been utilized to assess the queues, for both on-site roadways (Project design features) and off-site interchange off-ramp queues, for Opening Year (2027) With Improvement conditions. SimTraffic is designed to model networks of signalized and unsignalized intersections, with the primary purpose of checking and fine-tuning signal operations. SimTraffic uses the input parameters from Synchro to generate random simulations. These random simulations generated by SimTraffic have been utilized to determine the 95th percentile queue lengths observed for each applicable turn lane. A SimTraffic simulation has been recorded up to 5 times, during the weekday AM and weekday PM peak hours, and has been seeded for 5-minute periods with 15-minute recording intervals.

1.6.1 OFF-SITE QUEUING

Existing (2024) Conditions

Although not required by County Guidelines, a review of freeway off-ramp queues has also been included at the request of Caltrans. Based on the results of this analysis, there are currently no freeway off-ramp movements found to exceed available off-ramp storage capacity during the weekday AM or PM peak 95th percentile traffic flows.

Cumulative Traffic Conditions

The following movements are anticipated to exceed available off-ramp storage capacity during the weekday AM or PM peak 95th percentile traffic flows under Opening Year Cumulative (2027) Without Project traffic conditions:

- I-15 Northbound Ramps & Stoddard Wells Road (#7) – Southbound shared left-through-right – AM and PM peak hours

1.6.2 ON-SITE QUEUING

The results of the queuing analysis worksheets for the weekday AM and PM peak hours are provided in Appendix 1.2 of this report for Opening Year Cumulative (2027) With Project traffic conditions and have been used to verify the recommended pocket lengths for each of the Project access intersections, as discussed in Section 1.5 *Recommendations*.

This Page Intentionally Left Blank

2 METHODOLOGIES

This section of the report presents the methodologies used to perform the traffic analyses summarized in this report. The methodologies described are consistent with Town of Apple Valley's Traffic Study Guidelines.

2.1 LEVEL OF SERVICE

Traffic operations of roadway facilities are described using the term "Level of Service" (LOS). LOS is a qualitative description of traffic flow based on several factors, such as speed, travel time, delay, and freedom to maneuver. Six levels are typically defined ranging from LOS A, representing completely free-flow conditions, to LOS F, representing a breakdown in flow resulting in stop-and-go conditions. LOS E represents operations at or near capacity, an unstable level where vehicles are operating with the minimum spacing for maintaining uniform flow.

2.2 INTERSECTION CAPACITY ANALYSIS

The definitions of LOS for interrupted traffic flow (flow restrained by the existence of traffic signals and other traffic control devices) differ slightly depending on the type of traffic control. The LOS is typically dependent on the quality of traffic flow at the intersections along a roadway. The 7th Edition Highway Capacity Manual (HCM) methodology expresses the LOS at an intersection in terms of delay time for the various intersection approaches. (4) The HCM uses different procedures depending on the type of intersection control.

2.2.1 SIGNALIZED INTERSECTIONS

The Town of Apple Valley requires signalized intersection operations analysis based on the methodology described in the HCM. (4) Intersection LOS operations are based on an intersection's average control delay. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. For signalized intersections, LOS is related to the average control delay per vehicle and is correlated to a LOS designation as described in Table 2-1. The saturation flow rates utilized are consistent with the rates identified in the San Bernardino County CMP.

The traffic modeling and signal timing optimization software package Synchro (Version 11) is utilized to analyze signalized intersections within the study area. Synchro is a macroscopic traffic software program that is based on the signalized intersection capacity analysis as specified in the HCM. Macroscopic level models represent traffic in terms of aggregate measures for each movement at the study intersections. Equations are used to determine measures of effectiveness such as delay and queue length. The level of service and capacity analysis performed by Synchro takes into consideration optimization and coordination of signalized intersections within a network.

TABLE 2-1: SIGNALIZED INTERSECTION LOS THRESHOLDS

Description	Average Control Delay (Seconds), V/C ≤ 1.0	Level of Service, V/C ≤ 1.0[1]
Operations with very low delay occurring with favorable progression and/or short cycle length.	0 to 10.00	A
Operations with low delay occurring with good progression and/or short cycle lengths.	10.01 to 20.00	B
Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	20.01 to 35.00	C
Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	35.01 to 55.00	D
Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	55.01 to 80.00	E
Operation with delays unacceptable to most drivers occurring due to over saturation, poor progression, or very long cycle lengths.	80.01 and up	F

The peak hour traffic volumes have been adjusted using a peak hour factor (PHF) to reflect peak 15-minute volumes. Customary practice for LOS analysis is to use a peak 15-minute rate of flow. However, flow rates are typically expressed in vehicles per hour. The PHF is the relationship between the peak 15-minute flow rate and the full hourly volume (e.g., PHF = [Hourly Volume] / [4 x Peak 15-minute Flow Rate]). The use of a 15-minute PHF produces a more detailed analysis as compared to analyzing vehicles per hour. Existing PHFs have been used for all analysis scenarios. Per the HCM, PHF values over 0.95 often are indicative of high traffic volumes with capacity constraints on peak hour flows while lower PHF values are indicative of greater variability of flow during the peak hour. (4)

2.2.2 UNSIGNALIZED INTERSECTIONS

The Town of Apple Valley requires the operations of unsignalized intersections to be evaluated using the methodology described in the HCM. (4) The LOS rating is based on the weighted average control delay expressed in seconds per vehicle (see Table 2-2). At two-way or side-street stop-controlled intersections, LOS is calculated for each controlled movement and for the left turn movement from the major street, as well as for the intersection as a whole. For approaches composed of a single lane, the delay is computed as the average of all movements in that lane. Delay for the intersection is reported for the worst individual movement at a two-way stop-controlled intersection. For all-way stop-controlled intersections, LOS is computed for the intersection as a whole (average delay).

TABLE 2-2: UNSIGNALIZED INTERSECTION LOS THRESHOLDS

Description	Average Control Delay (Seconds), V/C ≤ 1.0	Level of Service, V/C ≤ 1.0[1]
Little or no delays.	0 to 10.00	A
Short traffic delays.	10.01 to 15.00	B
Average traffic delays.	15.01 to 25.00	C
Long traffic delays.	25.01 to 35.00	D
Very long traffic delays.	35.01 to 50.00	E
Extreme traffic delays with intersection capacity exceeded.	> 50.00	F

2.3 TRAFFIC SIGNAL WARRANT ANALYSIS METHODOLOGY

The term "signal warrants" refers to the list of established criteria used by Caltrans and other public agencies to quantitatively justify or ascertain the potential need for installation of a traffic signal at an otherwise unsignalized intersection. This TA uses the signal warrant criteria presented in the latest edition of the California Department of Transportation (Caltrans) California Manual on Uniform Traffic Control Devices *(CA MUTCD)* for all study area intersections. (6)

The signal warrant criteria for Existing conditions are based upon several factors, including volume of vehicular and pedestrian traffic, frequency of accidents, and location of school areas. The CA MUTCD indicates that the installation of a traffic signal should be considered if one or more of the signal warrants are met. (6) Specifically, this TA utilizes the Peak Hour Volume-based Warrant 3 as the appropriate representative traffic signal warrant analysis for existing study area intersections for all analysis scenarios. Warrant 3 is appropriate to use for this TA because it provides specialized warrant criteria for intersections with urban characteristics (e.g., adjacent major streets operating at or below 40 miles per hour) or rural characteristics (e.g., adjacent major streets operating above 40 miles per hour). For the purposes of this study, the speed limit was the basis for determining whether Urban or Rural warrants were used for a given intersection.

Future intersections that do not currently exist have been assessed regarding the potential need for new traffic signals based on future average daily traffic (ADT) volumes, using the Caltrans planning level ADT-based signal warrant analysis worksheets.

The traffic signal warrant analysis for Existing (2024) conditions are presented in Section 3 *Area Conditions.* The traffic signal warrant analyses for future conditions are presented in Section 5 *Opening Year Cumulative (2027) Traffic Conditions*.

It is important to note that a signal warrant defines the minimum condition under which the installation of a traffic signal might be warranted. Meeting this threshold condition does not require that a traffic control signal be installed at a particular location, but rather, that other traffic factors and conditions be evaluated in order to determine whether the signal is truly justified. It should also be noted that signal warrants do not necessarily correlate with LOS. An intersection may satisfy a signal warrant condition and operate at or above acceptable LOS or operate below acceptable LOS and not meet a signal warrant.

2.4 QUEUING ANALYSIS

The 95th percentile queuing of vehicles has been assessed at the Project access driveways to determine appropriate turn lane lengths. The traffic progression analysis tool and HCM intersection analysis program, Synchro, has been used to assess the potential deficiencies/needs of the Project access intersections. Storage (turn-pocket) length recommendations at the driveways have been based upon the 95th percentile queue resulting from the Synchro progression analysis. The footnote from the Synchro output sheets indicates if the 95th percentile cycle exceeds capacity. Traffic is simulated for two complete cycles of the 95th percentile traffic in Synchro in order to account for the effects of spillover between cycles. In practice, the 95th percentile queue shown will rarely be exceeded and the queues shown with the footnote are acceptable for the design of storage bays. The 95th percentile queue is derived from the average queue plus 1.65 standard deviations. The 95th percentile queue is not necessarily ever observed, it is simply based on statistical calculations.

2.5 MINIMUM ACCEPTABLE LEVELS OF SERVICE (LOS)

According to the Town of Apple Valley's General Plan, LOS C or better is preferable, but LOS D is the minimum acceptable condition that should be maintained during the peak commute hours, where feasible. Therefore, for the purposes of this traffic analysis, LOS D has also been considered the acceptable threshold for all study area intersections.

2.6 DEFICIENCY CRITERIA

This section outlines the methodology used in this analysis related to identifying circulation system deficiencies. Per the County's Traffic Study Guidelines, at intersections where the LOS falls below, or is expected to fall below an acceptable threshold with or without the addition of the Project, feasible measures shall be identified to mitigate the Project's impacts for all Project scenario conditions. The TA calculates the Project's fair share towards each improvement required to serve cumulative conditions with or without the Project.

2.7 PROJECT FAIR SHARE CALCULATION METHODOLOGY

In cases where this TA identifies that the Project would contribute additional traffic volumes to traffic deficiencies, Project fair share costs of improvements necessary to address deficiencies have been identified. The Project's fair share cost of improvements is determined based on the following equation, which is the ratio of Project traffic to new future traffic, and new future traffic is Project traffic plus future development traffic:

Project Fair Share % = Project AM/PM Traffic / (2027 With Project AM/PM Total Traffic – Existing AM/PM Traffic)

The Project fair share percentage has been calculated for both the AM peak hour and PM peak hour and the higher of the two has been selected. The Project fair share contribution calculations are presented in Section 6 *Local and Regional Funding Mechanisms* of this TA.

3 AREA CONDITIONS

This section provides a summary of the existing circulation network, the Town of Apple Valley General Plan Circulation Network, and a review of existing peak hour intersection operations, traffic signal warrant, and freeway off-ramp queuing analyses.

3.1 EXISTING CIRCULATION NETWORK

Pursuant to the agreement with Town of Apple Valley staff (Appendix 1.1), the study area includes a total of 17 existing and future intersections as shown previously on Exhibit 1-3. Exhibit 3-1 illustrates the study area intersections located near the proposed Project and identifies the number of through traffic lanes for existing roadways and intersection traffic controls.

3.2 TOWN OF APPLE VALLEY GENERAL PLAN CIRCULATION ELEMENT

The roadway classifications and planned (ultimate) roadway cross-sections of the major roadways within the study area, as identified on the Town of Apple Valley General Plan Circulation Element, are described subsequently. Exhibit 3-2 shows the Town of Apple Valley General Plan Circulation Element. Exhibit 3-3 illustrates the Town of Apple Valley General Plan roadway cross-sections.

Major Divided Parkways are designed to accommodate six travel lanes with a 20-foot center median and 15-foot parkways on each side of the roadway, within a 142-foot right-of-way. Dale Evans Parkway is classified as a Major Divided Parkway in the Town of Apple Valley.

Major Divided Arterials are designed to accommodate six travel lanes with a 12-foot center turn lane or median and 10-foot bike or parking lanes on each side of the roadway, within a 128-foot right-of-way. Stoddard Wells Road, south of Johnson Road is classified as a Major Divided Arterial in the Town of Apple Valley.

Major Roads are designed to accommodate four travel lanes with a 12-foot center turn lane or median and two bike or parking lanes, within a 104-foot right-of-way. The following study area roadways within the Town of Apple Valley are classified as Major Roads:

- Stoddard Wells Road, north of Johnson Road
- Johnson Road
- Corwin Road
- Dakota Road, south of Fresno Road

Secondary Roads are designed to accommodate four travel lanes with a bike or parking lane, within an 88-foot right-of-way. The following study area roadways within the Town of Apple Valley are classified as Secondary Roads:

- Navajo Road
- Dachshund Avenue
- Gustine Road

EXHIBIT 3-1: EXISTING TRAFFIC CONTROLS AND INTERSECTION LANE CONFIGURATIONS

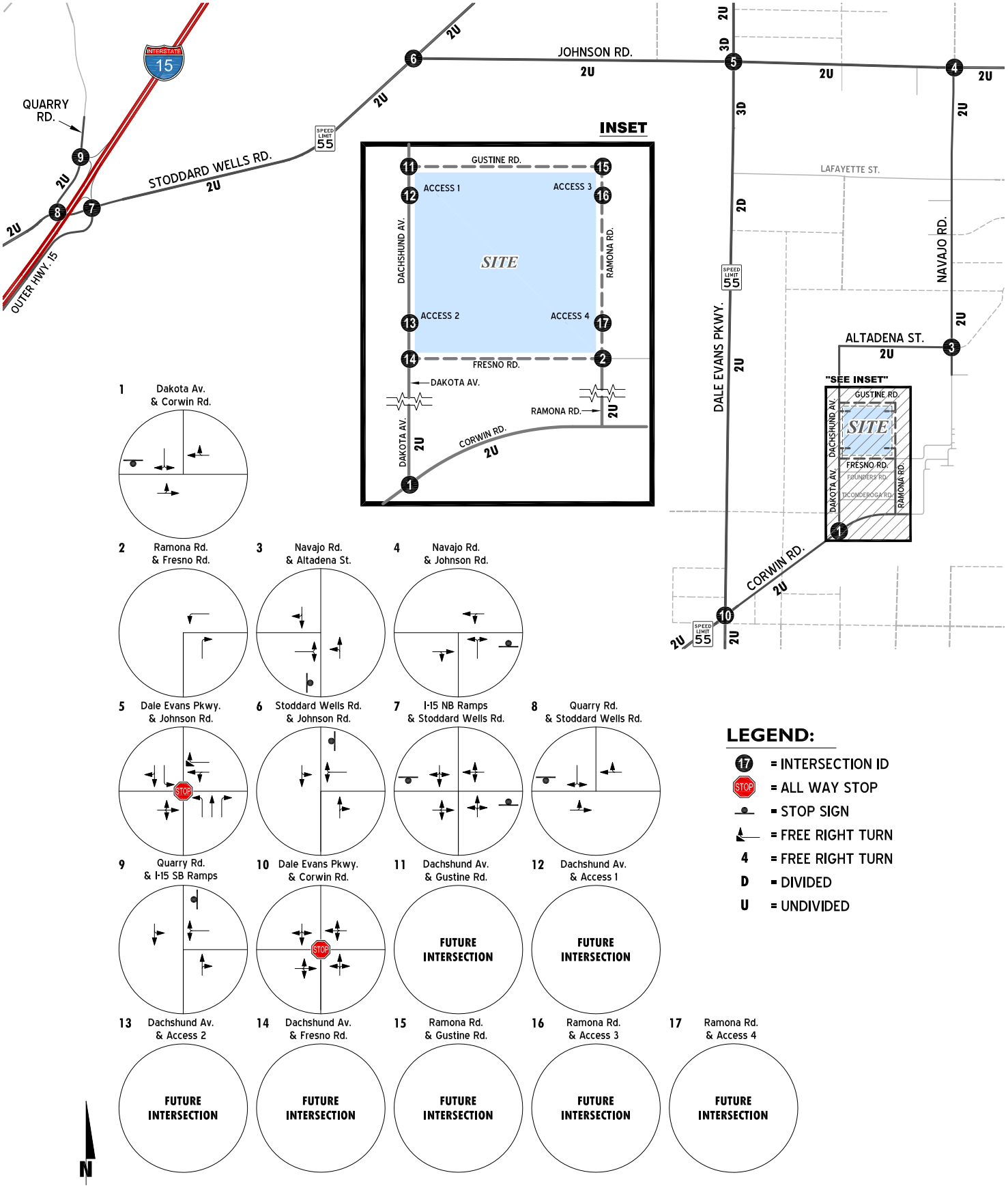


EXHIBIT 3-2: TOWN OF APPLE VALLEY GENERAL PLAN STREET SYSTEM

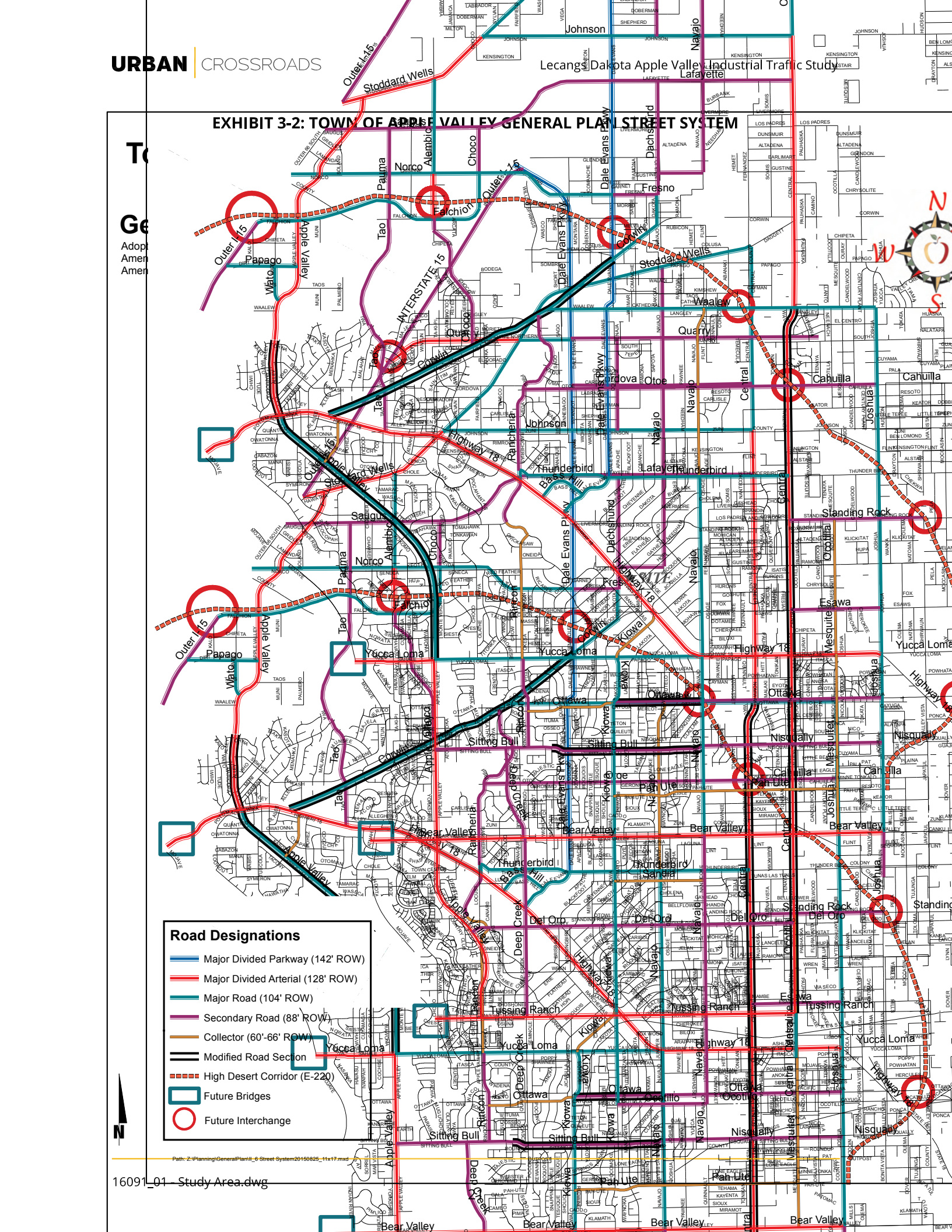
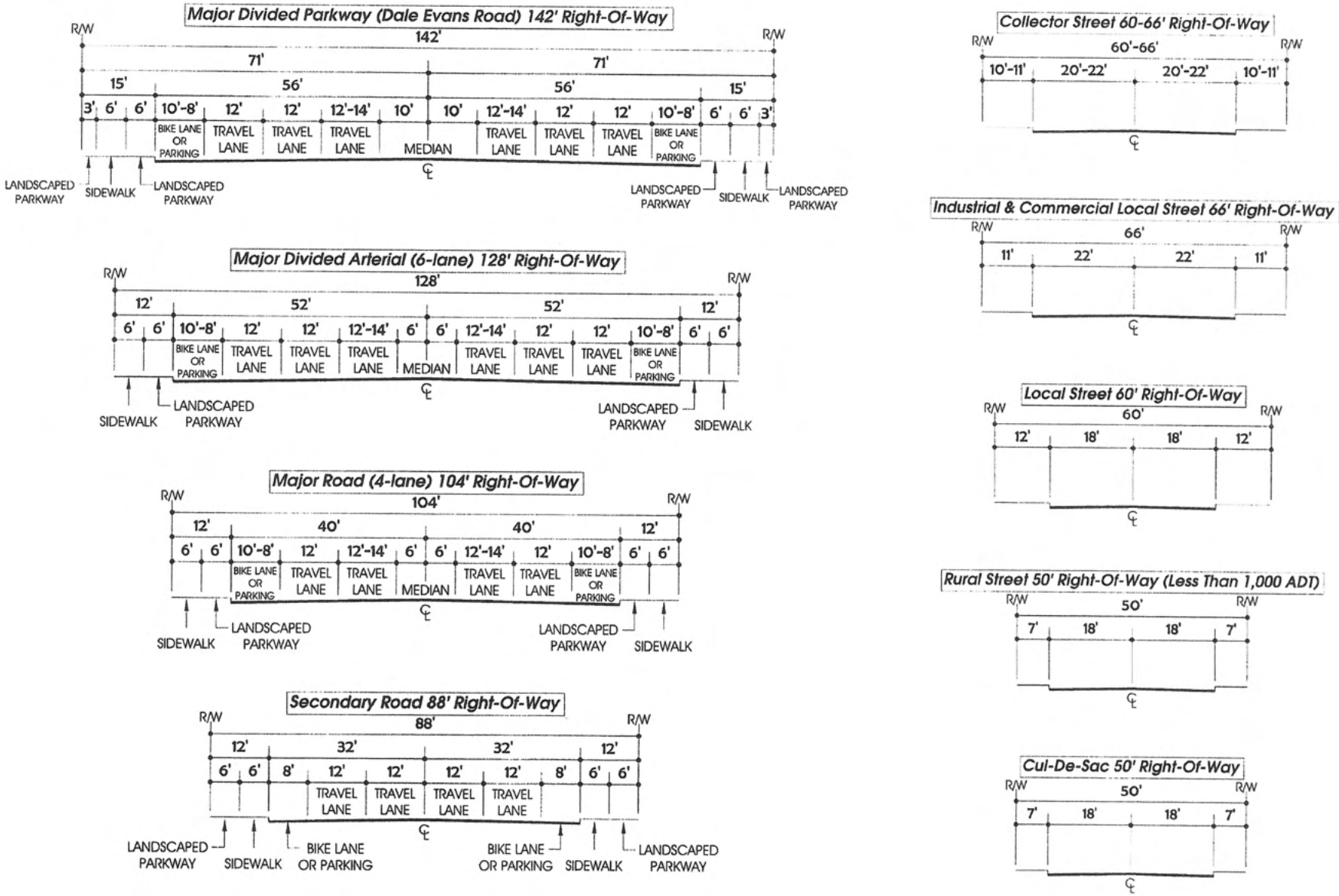


EXHIBIT 3-3: TOWN OF APPLE VALLEY GENERAL PLAN ROADWAY CROSS-SECTIONS



Source: Urban Crossroads 11.24.2008

3.3 BICYCLE AND PEDESTRIAN FACILITIES

Exhibit 3-4 illustrates the Town of Apple Valley bike paths. As shown at Exhibit 3-4, there are proposed Class II bike lanes on Dale Evans Parkway (between Fresno and Corwin Road), and Class I bike paths along Stoddard Wells Road, Dale Evans Parkway, and Corwin Road. There are no pedestrian facilities in close proximity to the Project. Field observations indicate nominal pedestrian and bicycle activity within the study area.

3.4 TRANSIT SERVICE

The study area is currently served by Victor Valley Transit Authority (VVTA), a public transit agency serving various jurisdictions within San Bernardino County. The existing transit routes within the study area are shown on Exhibit 3-5. Route 42 currently runs along Dale Evans Parkway, Johnson Road, and Corwin Road.

Transit service is reviewed and updated by VVTA periodically to address ridership, budget and community demand needs. Changes in land use can affect these periodic adjustments which may lead to either enhanced or reduced service where appropriate. As such, it is recommended that the applicant work in conjunction with VVTA to potentially provide bus service to the site.

3.5 TRUCK ROUTES

The Town of Apple Valley truck routes are shown on Exhibit 3-6. Through truck routes are included on Dale Evans Parkway, and Johnson Road east of Dale Evans Parkway in the study area. Local Truck Routes are also shown on Stoddard Wells Road, Johnson Road west of Dale Evans Parkway, Navajo Road, Fresno Road. These designated truck routes have been utilized for both the proposed Project and future cumulative development projects for the purposes of this TA.

3.6 EXISTING (2024) TRAFFIC COUNTS

The intersection LOS analysis is based on the traffic volumes observed during the peak hour conditions using traffic count data collected in April 2024 and late August 2024. The following peak hours were selected for analysis:

- Weekday AM Peak Hour (peak hour between 7:00 AM and 9:00 AM)
- Weekday PM Peak Hour (peak hour between 4:00 PM and 6:00 PM)

The 2024 weekday AM and weekday PM peak hour count data is representative of typical weekday peak hour traffic conditions in the study area. There were no observations made in the field that would indicate atypical traffic conditions on the count dates, such as construction activity or detour routes and near-by schools were in session and operating on normal schedules. The raw manual peak hour turning movement traffic count data sheets are included in Appendix 3.1. Existing weekday AM and weekday PM peak hour intersection volumes are also shown on Exhibit 3-7. Existing weekday ADT volumes are shown on Exhibit 3-7. Where actual 24-hour tube count data was not available, Existing ADT volumes were based upon factored intersection peak hour counts collected using the following formula for each intersection leg:

Weekday PM Peak Hour (Approach Volume + Exit Volume) x 8.00 = Leg Volume

EXHIBIT 3-4: TOWN OF APPLE VALLEY EXISTING AND PLANNED BICYCLE FACILITIES

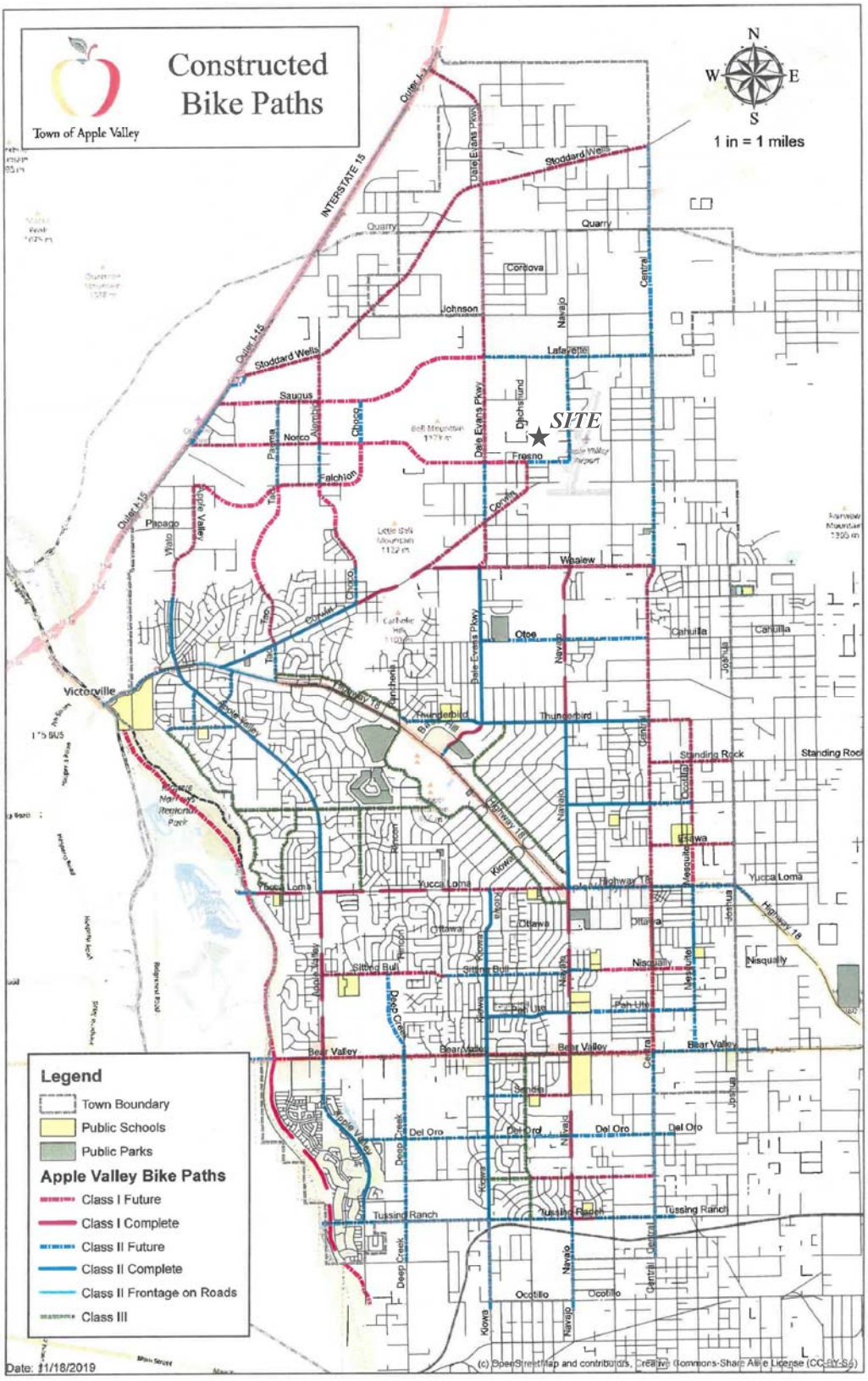
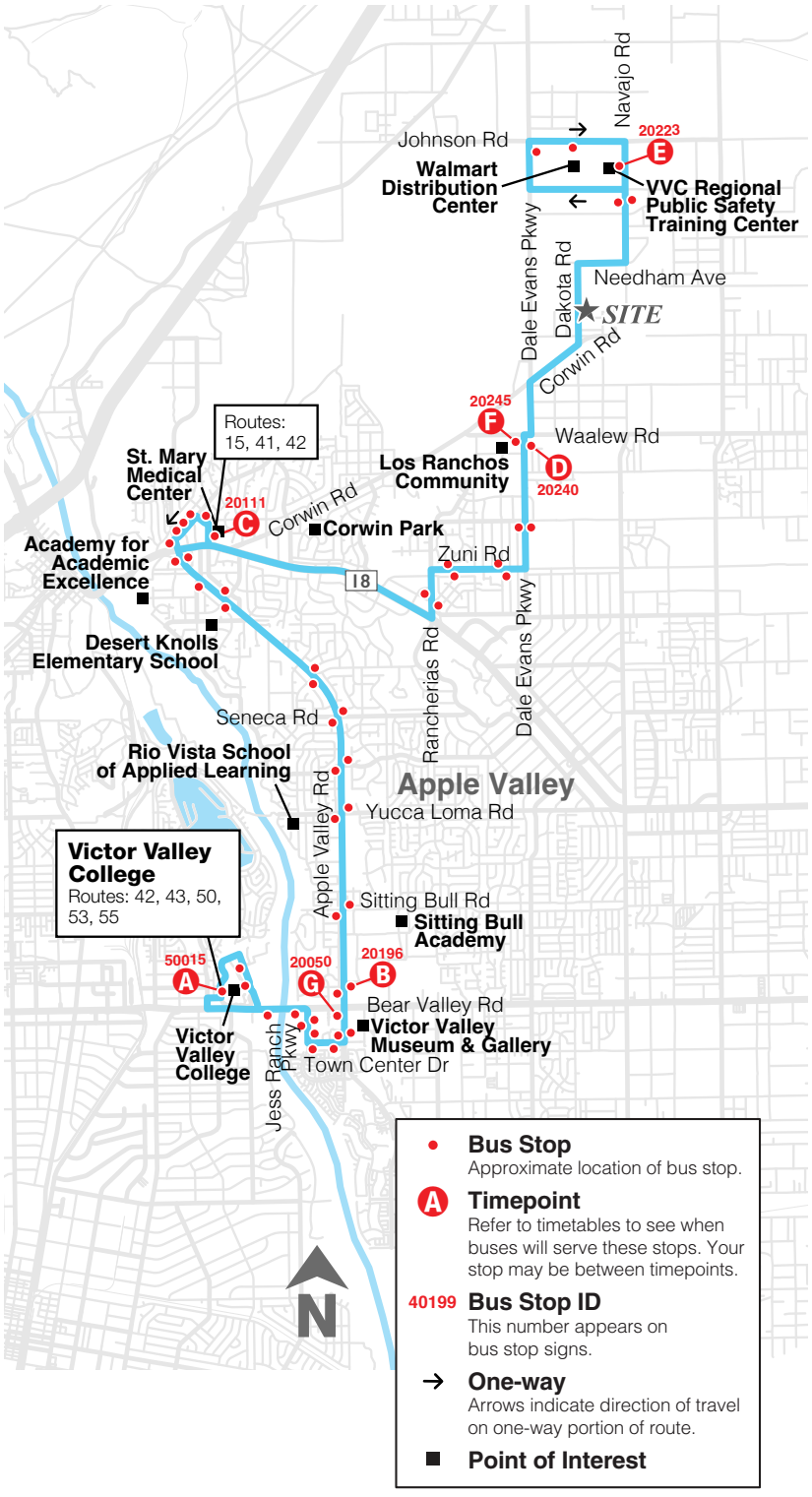


EXHIBIT 3-5: EXISTING TRANSIT ROUTES

42 Apple Valley Road



Monday-Friday

Northbo

	Victor Valley College A	Apple Valley Rd & Pimlico Rd B	Kasota Rd & Hwy 18 C
AM	5:50	5:57	6:10
	6:50	6:57	7:10
	7:50	7:57	8:10
	8:50	8:57	9:10
	9:50	9:58	10:11
	10:50	10:58	11:11
	11:50	11:58	**12:11**
PM	**12:50**	**12:58**	**1:11**
	1:50	**1:58**	**2:11**
	2:50	**2:58**	**3:11**
	3:50	**3:58**	**4:12**
	4:50	**4:58**	**5:12**
	5:50	**5:58**	**6:12**
	6:50	**6:58**	**7:12**
	7:50	**7:58**	**8:09**
	8:50	**8:58**	**9:09**

Saturday

Northbo

	Victor Valley College A	Apple Valley Rd & Pimlico Rd B	Kasota Rd & Hwy 18 C
AM	6:50	6:58	7:12
	7:50	7:58	8:12
	8:50	8:58	9:12
	9:50	9:58	10:12
	10:50	10:58	11:12
	11:50	11:58	**12:12**
PM	**12:50**	**12:58**	**1:12**
	1:50	**1:58**	**2:12**
	2:50	**2:58**	**3:12**
	3:50	**3:58**	**4:12**
	4:50	**4:58**	**5:12**
	5:50	**5:58**	**6:12**
	6:50	**6:58**	**7:12**
	7:50	**7:58**	**8:12**

Sunday

Northbo

	Victor Valley College A	Apple Valley Rd & Pimlico Rd B	Kasota Rd & Hwy 18 C
AM	7:50	7:58	8:12
	8:50	8:58	9:12
	9:50	9:58	10:12
	10:50	10:58	11:12
	11:50	11:58	**12:12**
PM	**12:50**	**12:58**	**1:12**
	1:50	**1:58**	**2:12**
	2:50	**2:58**	**3:12**
	3:50	**3:58**	**4:12**
	4:50	**4:58**	**5:12**

N

EXHIBIT 3-6: TOWN OF APPLE VALLEY TRUCK ROUTES

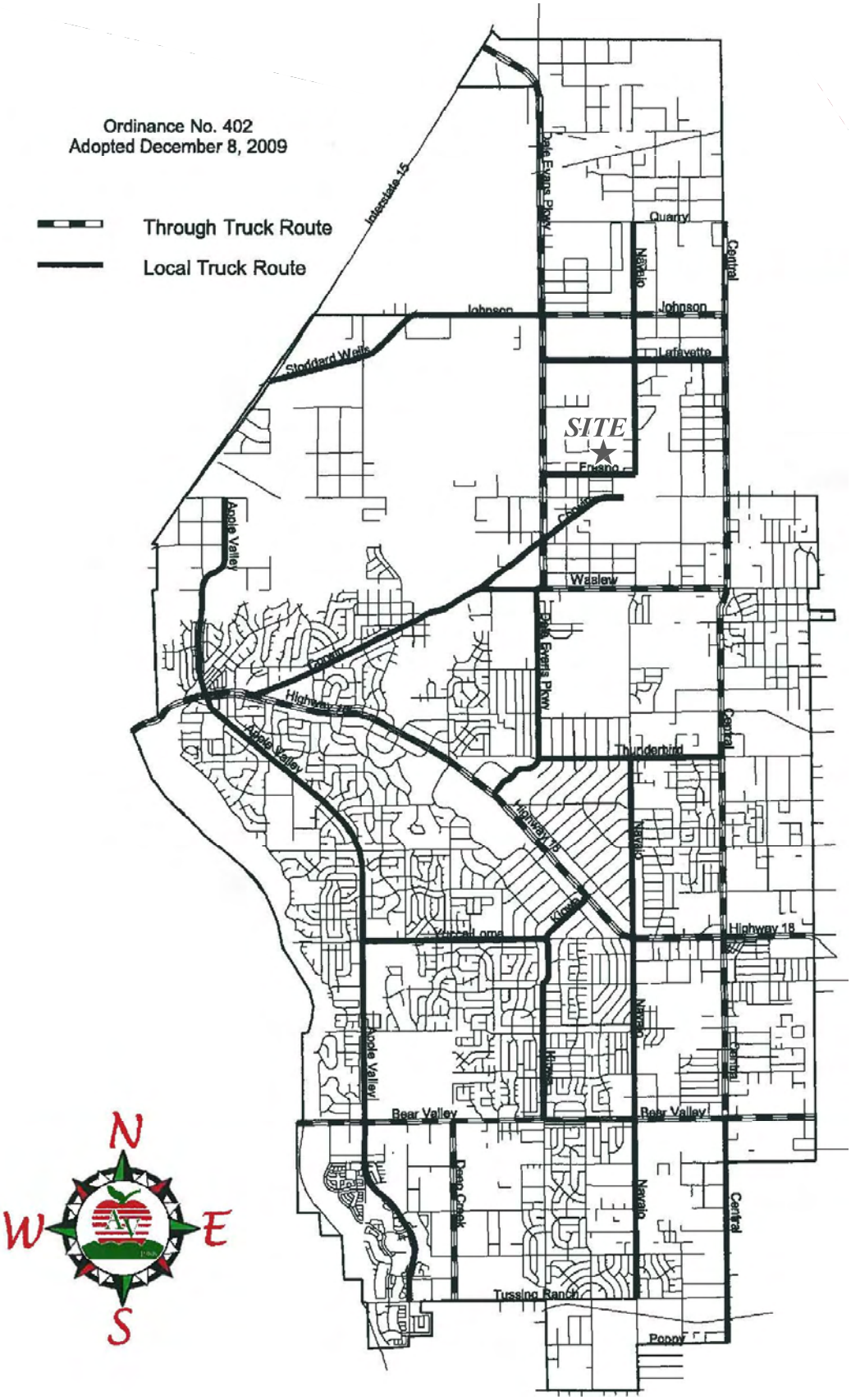
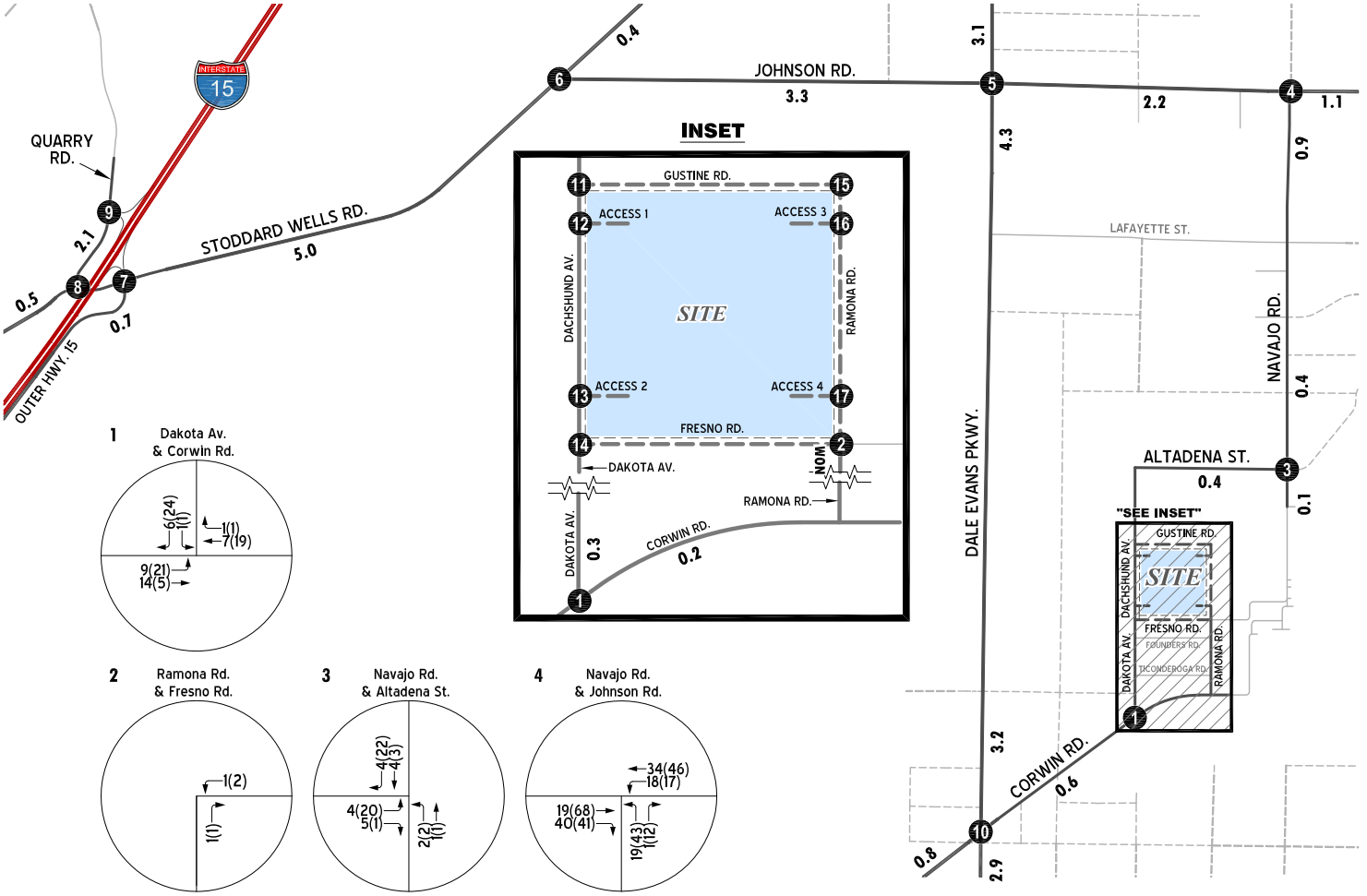
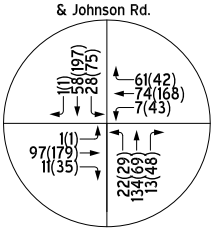
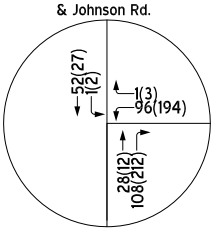
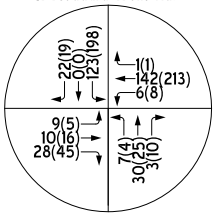


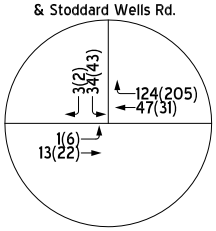
EXHIBIT 3-7: EXISTING (2024) TRAFFIC VOLUMES (PASSENGER CAR EQUIVALENT)

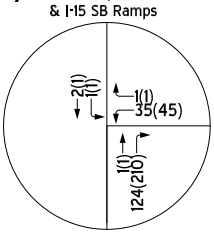


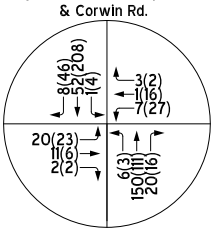


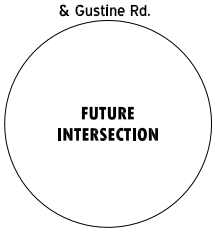


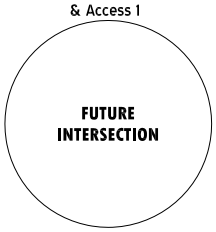


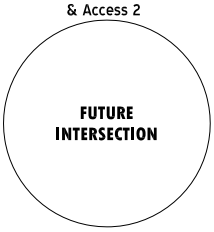


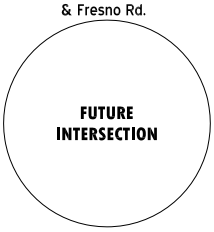


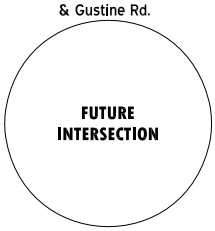


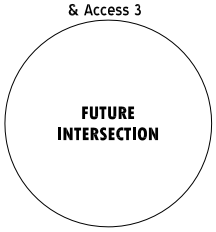


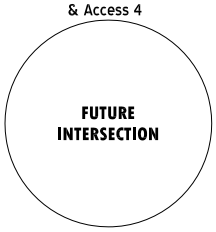












LEGEND:

- (#) = INTERSECTION ID
- = FUTURE ROADWAY
- 10.0 = VEHICLES PER DAY (1000'S)
- NOM = NOMINAL, LESS THAN 50 VEHICLES PER DAY

A comparison of the PM peak hour and daily traffic volumes of various roadway segments within the study area indicate that the peak-to-daily relationship is approximately 12.50 percent. As such, the above equation utilizing a factor of 8.00 estimates the ADT volumes on the study area roadway segments assuming a peak-to-daily relationship of approximately 10.35 percent (i.e., 1/0.1250 = 8.00) and was assumed to sufficiently estimate ADT volumes for planning-level analyses.

3.7 INTERSECTION OPERATIONS ANALYSIS

Existing peak hour traffic operations have been evaluated for the study area intersections based on the analysis methodologies presented in Section 2.2 *Intersection Capacity Analysis* of this report. The intersection operations analysis results are summarized in Table 3-1, which indicates that all the study area intersections are currently operating at an acceptable LOS during the peak hours. The intersection operations analysis worksheets are included in Appendix 3.2 of this TA.

TABLE 3-1: INTERSECTION ANALYSIS FOR EXISTING (2024) CONDITIONS

#	Intersection	Traffic Control[1]	Delay[2] (secs.) AM	Delay[2] (secs.) PM	Level of Service AM	Level of Service PM
1	Dakota Av. / Corwin Rd.	CSS	8.5	8.6	A	A
2	Ramona Rd. / Fresno Rd.	CSS	8.5	8.5	A	A
3	Navajo Rd. / Altadena St.	CSS	8.5	8.7	A	A
4	Navajo Rd. / Johnson Rd.	CSS	9.4	10.0	A	B
5	Dale Evans Pkwy. / Johnson Rd.	AWS	9.8	16.5	A	C
6	Stoddard Wells Rd. / Johnson Rd.	CSS	10.0	12.5	B	B
7	I-15 NB Ramps / Stoddard Wells Rd.	CSS	11.2	21.7	B	C
8	Quarry Rd. / Stoddard Wells Rd.	CSS	9.4	10.7	A	B
9	Quarry Rd. / I-15 SB Ramps	CSS	9.1	10.0	A	B
10	Dale Evans Pkwy. / Corwin Rd.	AWS	7.9	8.7	A	A
11	Dachshund Av. / Gustine Rd.	CSS	Future Intersection			
12	Dachshund Av. / Access 1	CSS	Future Intersection			
13	Dachshund Av. / Access 2	CSS	Future Intersection			
14	Dachshund Av. / Fresno Rd.	CSS	Future Intersection			
15	Ramona Rd. / Gustine Rd.	CSS	Future Intersection			
16	Ramona Rd. / Access 3	CSS	Future Intersection			
17	Ramona Rd. / Access 4	CSS	Future Intersection			

* **BOLD** = LOS does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

[1] AWS = All-Way Stop; CSS = Cross-Street Stop; CSS = Improvement

[2] Per the Highway Capacity Manual (7th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

3.8 TRAFFIC SIGNAL WARRANT ANALYSIS

Traffic signal warrants for Existing traffic conditions are based on existing peak hour intersection turning volumes. The following unsignalized study area intersection currently warrants a traffic signal for Existing traffic conditions:

- Dale Evans Parkway & Johnson Road (#5)

Existing conditions traffic signal warrant analysis worksheets are provided in Appendix 3.3.

3.9 QUEUING ANALYSIS

Queuing analysis findings are presented in Table 3-2. As shown in Table 3-2, there are currently no study area off-ramps experiencing queuing issues during the peak hours under Existing (2024) traffic conditions. Worksheets for Existing traffic conditions queuing analysis are provided in Appendix 3.4.

TABLE 3-2: PEAK HOUR QUEUING SUMMARY FOR EXISTING (2024) CONDITIONS

#	Intersection	Movement	Available Stacking Distance (Feet)	95th Percentile Queue (Feet)		Acceptable? [1]	
				AM Peak Hour	PM Peak Hour	AM	PM
7	I-15 NB Ramps / Stoddard Wells Rd.	SBL/T/R	1,000	20	100	Yes	Yes
9	Quarry Rd. / I-15 SB Ramps	WBL/R	1,000	5	8	Yes	Yes

[1] Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided.

This Page Intentionally Left Blank

4 PROJECTED FUTURE TRAFFIC

This section presents the traffic volumes estimated to be generated by the Project, as well as the Project's trip assignment onto the study area roadway network. The Project consists of the development of a 627,200 square foot industrial warehouse and distribution building.

The site is located between Dachshund Avenue (which becomes Dakota Road south of Fresno Road) and Ramona Road, south of Gustine Street and north of Fresno Road.

Access to the site will be accommodated via two driveways along Dachshund Avenue and two driveways on Ramona Road. All driveways are assumed to allow for full access (no turn restrictions). The Project is anticipated to have an Opening Year of 2027.

4.1 PROJECT TRIP GENERATION

Trip generation represents the amount of traffic which is both attracted to, and produced by, a development. Determining traffic generation for a specific project is therefore based upon forecasting the amount of traffic that is expected to be both attracted to, and produced by, the specific land uses being proposed for a given development. In order to develop the traffic characteristics of the high-cube warehouse land use for the Proposed Project, trip-generation statistics published in the TUMF High-Cube Warehouse Trip Generation Study (WSP, January 29, 2019) are used. The vehicle mix (passenger cars versus trucks) has been obtained from the ITE's Trip Generation Manual.

Table 4-1 shows the trip generation rates and resulting Project trip generation summary, which shows the Project is anticipated to generate a net total of 1,335 two-way vehicle trip-ends per day with 77 AM peak hour trips and 104 PM peak hour trips (actual vehicles).

PCE factors were applied to the trip generation rates for heavy trucks (large 2-axles, 3-axles, 4+-axles). PCEs allow the typical "real-world" mix of vehicle types to be represented as a single, standardized unit, such as the passenger car, to be used for the purposes of capacity and level of service analyses. The PCE factors are consistent with the recommended PCE factors in the County's Guidelines.

Table 4-2 shows the resulting Project trip generation summary in PCE, which shows the Project is anticipated to generate a total of 2,138 Passenger Car Equivalent (PCE) trip-ends per day with 123 AM PCE peak vehicle hour trips and 167 PM PCE peak hour vehicle trips.

4.2 PROJECT TRIP DISTRIBUTION

The Project trip distribution represents the directional orientation of traffic to and from the Project site. Trip distribution is the process of identifying the probable destinations, directions or traffic routes that will be utilized by Project traffic. The potential interaction between the planned land uses and surrounding regional access routes are considered, to identify the route where the Project traffic would distribute. The Project trip distribution represents the directional orientation of traffic to and from the Project site. The Project trip distributions are shown on Exhibit 4-1 for trucks and Exhibit 4-2 for passenger cars. The Project truck trip distribution patterns adhere to the Town's approved truck routes and were part of the TA scoping process (see Appendix 1.1).

TABLE 4-1: PROJECT TRIP GENERATION SUMMARY
ACTUAL VEHICLES

Proposed Project Trip Generation Rates[1]

Land Use	ITE LU Code	Quantity[2]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
High-Cube Warehouse[3]	-	627.200 TSF	0.094	0.028	0.122	0.046	0.119	0.165	2.129
Passenger Cars			0.066	0.020	0.086	0.033	0.082	0.115	1.489
2 to 4-Axle+ Trucks			0.028	0.008	0.036	0.014	0.036	0.050	0.640

Proposed Project Trip Generation Results

Land Use	ITE LU Code	Quantity[2]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
High-Cube Warehouse	-	627.200 TSF							
- Passenger Cars			41	13	54	21	52	73	934
- Truck Trips (Actual)			18	5	23	9	22	31	401
PROJECT TOTAL TRIPS (ACTUAL VEHICLES)[4]			59	18	77	30	74	104	1,335

[1] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, 11th Edition (2021).

[2] TSF = Thousand Square Feet; DU = Dwelling Units

[3] Source: *TUMF High-Cube Warehouse Trip Generation Study*. Prepared by WSP, January 2019.
Passenger and Truck AM/PM peak hour (in/out) splits are estimated from based on ITE peak-to-daily relationship
Truck Daily Rate Source: *Notice of Preparation of a Draft Environmental Impact Report for the Proposed Potrero Logistics Center*.
Prepared by South Coast Air Quality Management District (SCAQMD), June 2020.

[4] Total Net Trips (Actual Vehicles) = Passenger Cars + Net Truck Trips (Actual Trucks).

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Excel\[16091 - Report.xlsx]16091 TG - Actual_WSP

TABLE 4-2: PROJECT TRIP GENERATION SUMMARY
PASSENGER CAR EQUIVALENT (PCE)

Project Trip Generation Rates[1]

Land Use	ITE LU Code	Quantity[2]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
High-Cube Warehouse[3]	-	627.200 TSF	0.150	0.045	0.195	0.075	0.190	0.265	3.409
		Passenger Cars	0.066	0.020	0.086	0.033	0.082	0.115	1.489
		2 to 4-Axle+ Trucks (PCE = 3.0)	0.084	0.025	0.109	0.042	0.108	0.150	1.920

Project Trip Generation Results

Land Use	ITE LU Code	Quantity[2]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
High-Cube Warehouse	-	627.200 TSF							
- Passenger Cars			41	13	54	21	52	73	934
- Truck Trips (PCE = 3.0)			53	16	69	26	68	94	1,204
PROJECT TOTAL EXTERNAL TRIPS (PCE)[4]			94	29	123	47	120	167	2,138

[1] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, 11th Edition (2021).

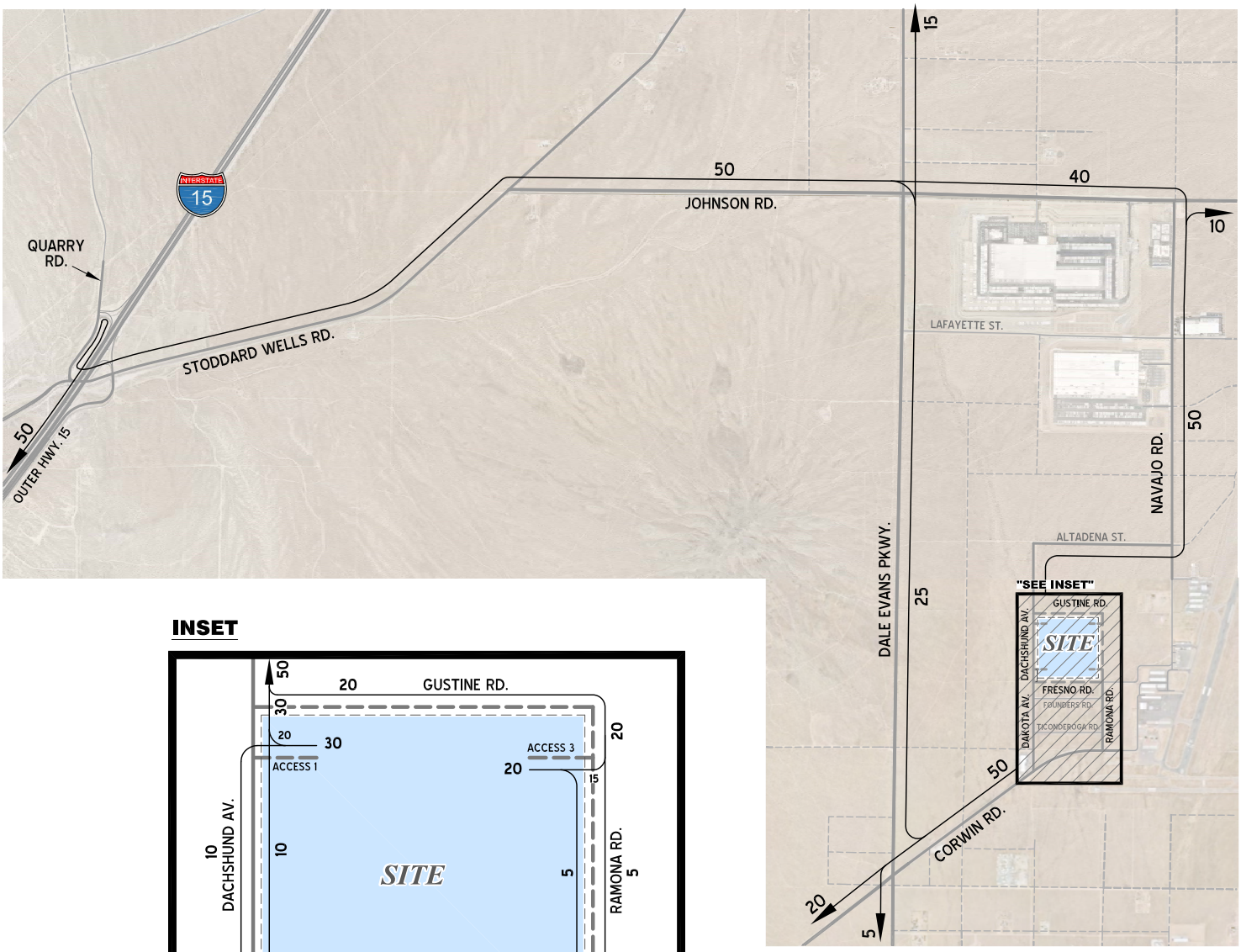
[2] TSF = Thousand Square Feet; DU = Dwelling Units

[3] Source: *TUMF High-Cube Warehouse Trip Generation Study* . Prepared by WSP, January 2019.
Passenger and Truck AM/PM peak hour (in/out) splits are estimated from based on ITE peak-to-daily relationship
Truck Daily Rate Source: *Notice of Preparation of a Draft Environmental Impact Report for the Proposed Potrero Logistics Center* .
Prepared by South Coast Air Quality Management District (SCAQMD), June 2020.

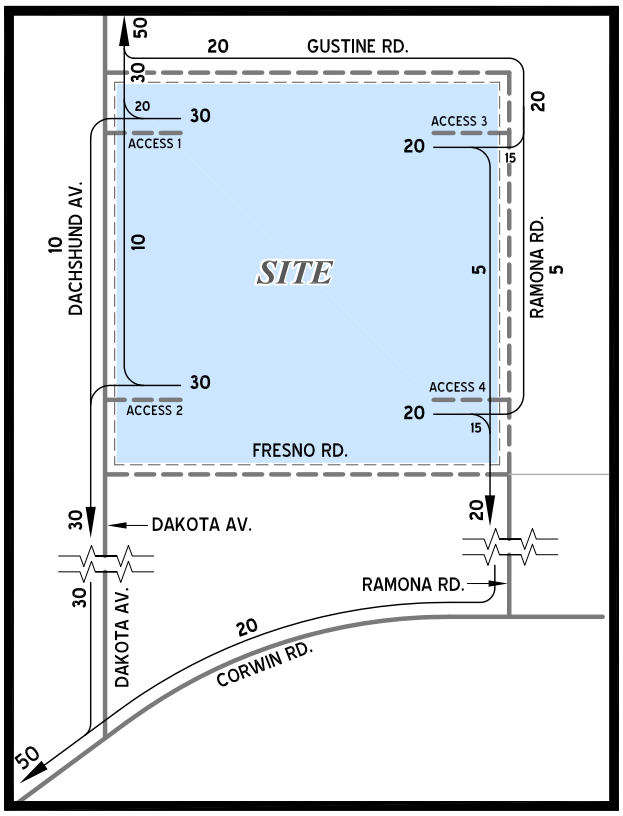
[4] Total Net Trips (PCE) = Passenger Cars + Net Truck Trips (Passenger Car Equivalent).

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Excel\[16091 - Report.xlsx]16091 TG - PCE

EXHIBIT 4-1: PROJECT (TRUCK) TRIP DISTRIBUTION



INSET



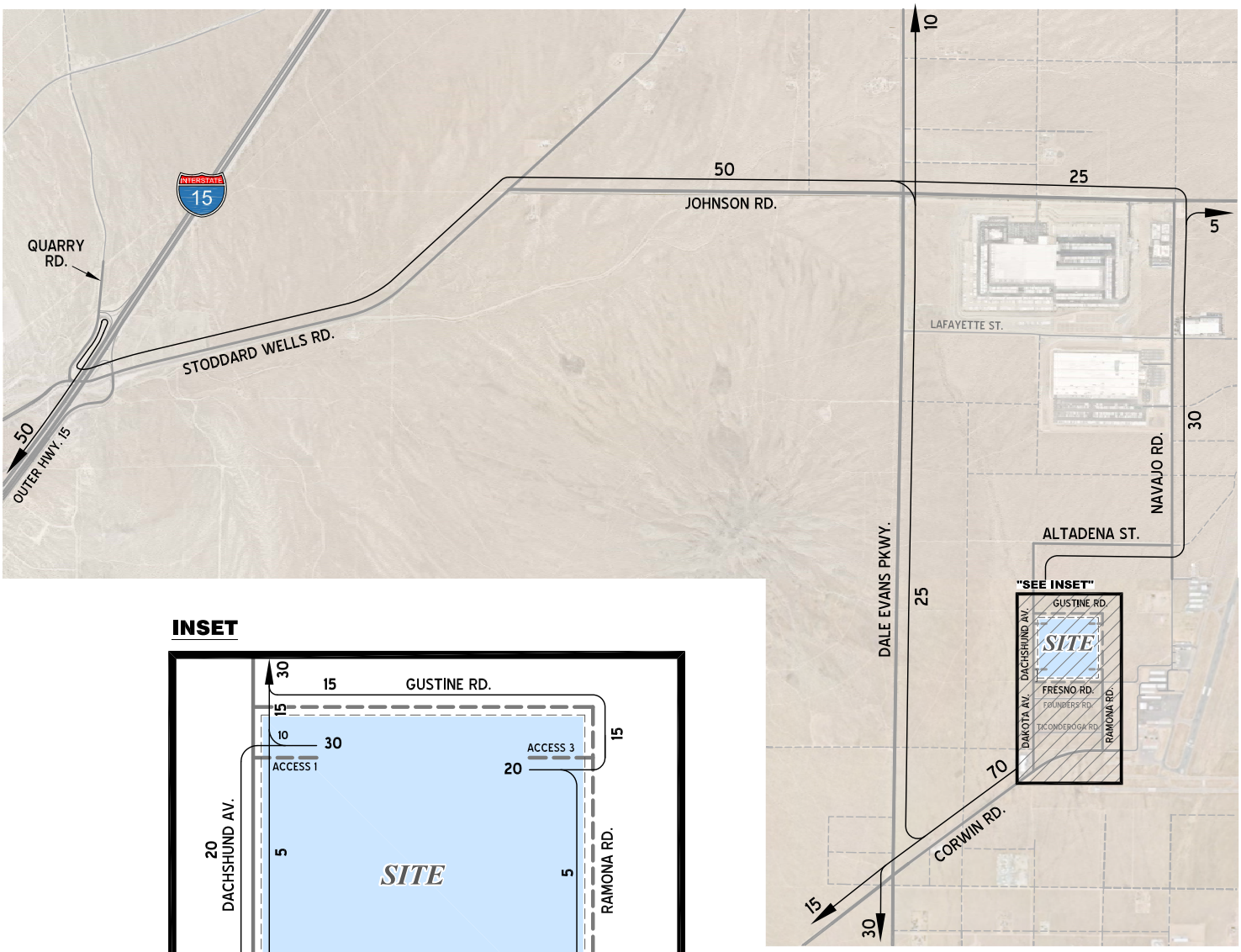
LEGEND:

10 = PERCENT TO/FROM PROJECT

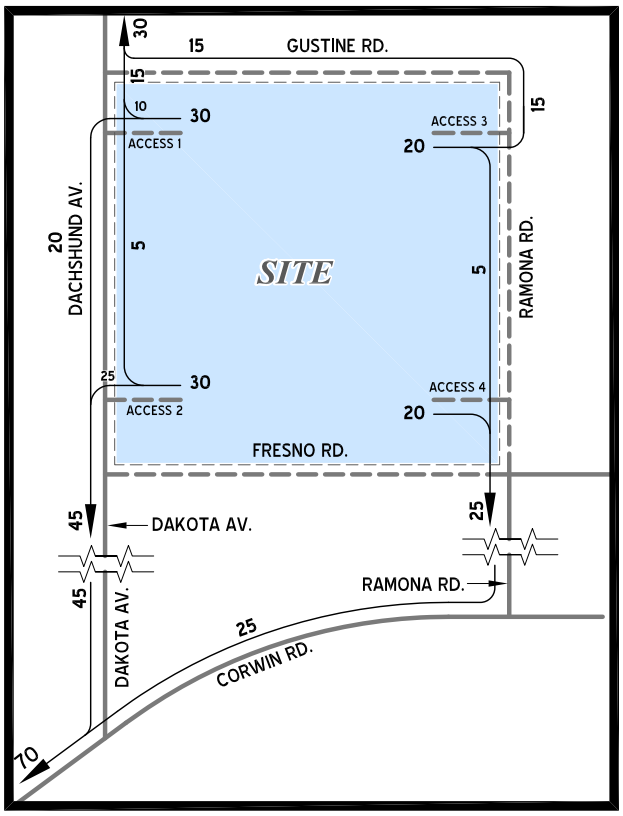
= FUTURE ROADWAY

N

EXHIBIT 4-2: PROJECT (PASSENGER CAR) TRIP DISTRIBUTION



INSET



LEGEND:

10 = PERCENT TO/FROM PROJECT

= FUTURE ROADWAY

N

4.3 MODAL SPLIT

The potential for Project trips to be reduced by the use of public transit, walking, or bicycling have not been included as part of the Project's estimated trip generation. Essentially, the Project's traffic projections are "conservative" in that these alternative travel modes would reduce the forecasted traffic volumes.

4.4 PROJECT TRIP ASSIGNMENT

The assignment of traffic from the Project area to the adjoining roadway system is based upon the Project trip generation, trip distribution, and the arterial highway and local street system improvements that would be in place by the time of initial occupancy of the Project. Based on the identified Project traffic generation and trip distribution patterns, Project weekday peak hour intersection turn movement volumes and ADT, in actual vehicles, are shown on Exhibit 4-3.

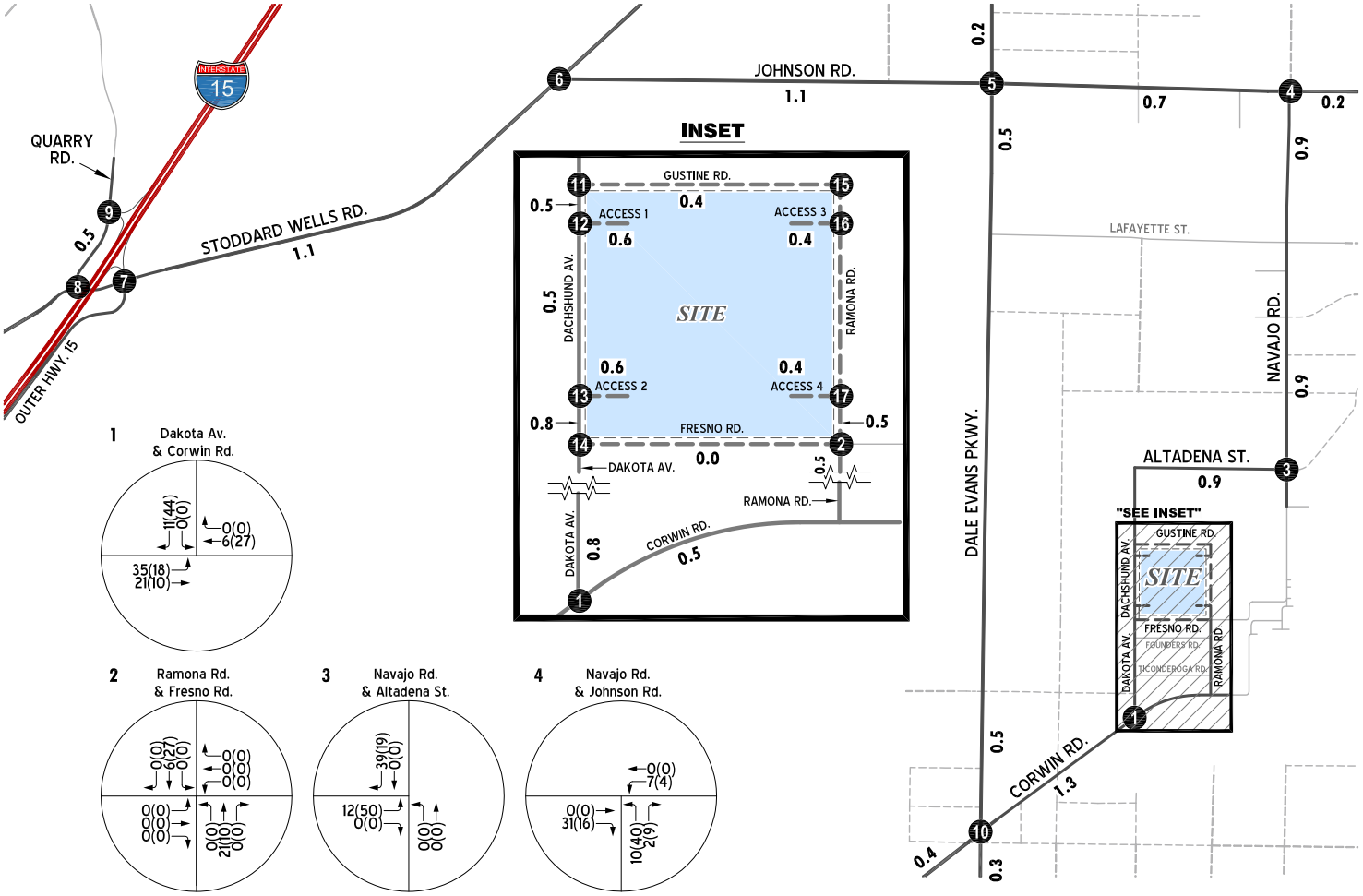
4.5 BACKGROUND TRAFFIC

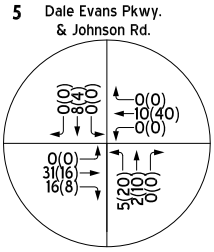
Future year traffic forecasts have been based upon background (ambient) growth at 2.0% per year, compounded annually. The total ambient growth is 6.12% for 2027 traffic. The ambient growth factor is intended to approximate regional traffic growth. This ambient growth rate is added to existing traffic volumes to account for area-wide growth not reflected by cumulative development projects. Ambient growth has been added to daily and peak hour traffic volumes on surrounding roadways, in addition to traffic generated by the development of future projects that have been approved but not yet built and/or for which development applications have been filed and are under consideration by governing agencies. The traffic generated by the proposed Project is manually added to the base volume to determine Opening Year Cumulative forecasts.

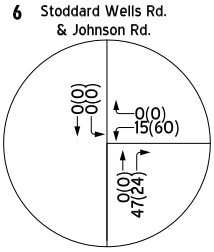
The traffic analysis includes the following traffic conditions, with the various traffic components:

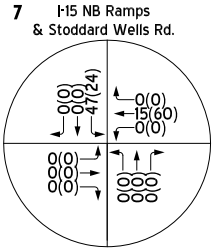
- Opening Year Cumulative (2027) Without Project
    - Existing 2024 volumes
    - Ambient growth traffic (6.12%)
    - Cumulative Development traffic
- Opening Year Cumulative (2027) With Project
    - Existing 2024 volumes
    - Ambient growth traffic (6.12%)
    - Cumulative Development traffic
    - Project Traffic

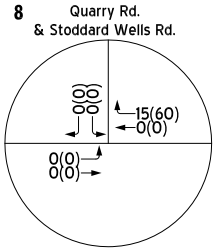
EXHIBIT 4-3: PROJECT ONLY TRAFFIC VOLUMES (PASSENGER CAR EQUIVALENT)

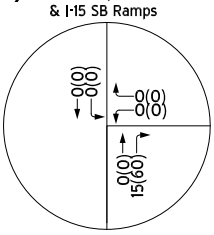


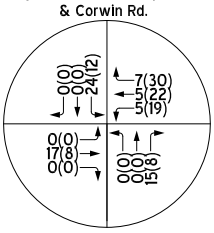


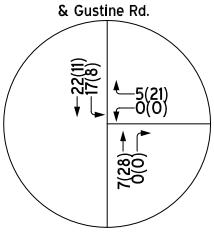


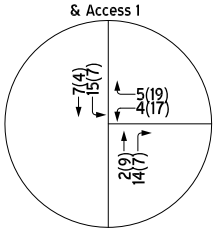


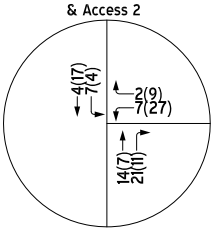


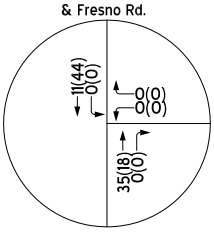


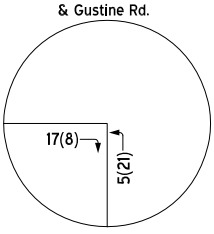


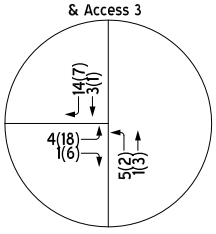


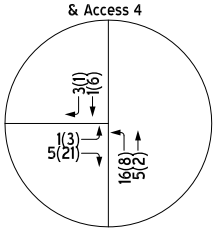












LEGEND:

- (#) = INTERSECTION ID
- = FUTURE ROADWAY
- 10.0 = VEHICLES PER DAY (1000'S)

4.6 CUMULATIVE DEVELOPMENT TRAFFIC

A cumulative project list was developed for the purposes of this analysis through consultation with planning and engineering staff from the Town of Apple Valley. The cumulative projects listed are those that would generate traffic and would contribute traffic to study area intersections. Exhibit 4-4 illustrates the cumulative development location map. A summary of cumulative development projects and their proposed land uses are shown in Table 4-3. If applicable, the traffic generated by individual cumulative projects was manually added to the Opening Year Cumulative (2027) forecasts to ensure that traffic generated by the listed cumulative development projects in Table 4-3 is reflected as part of the background traffic. In an effort to conduct a conservative analysis, the cumulative projects are added in conjunction with the ambient growth identified in Section 4.5 *Background Traffic*. Cumulative peak hour intersection turning movement volumes and ADT are shown on Exhibits 4-6.

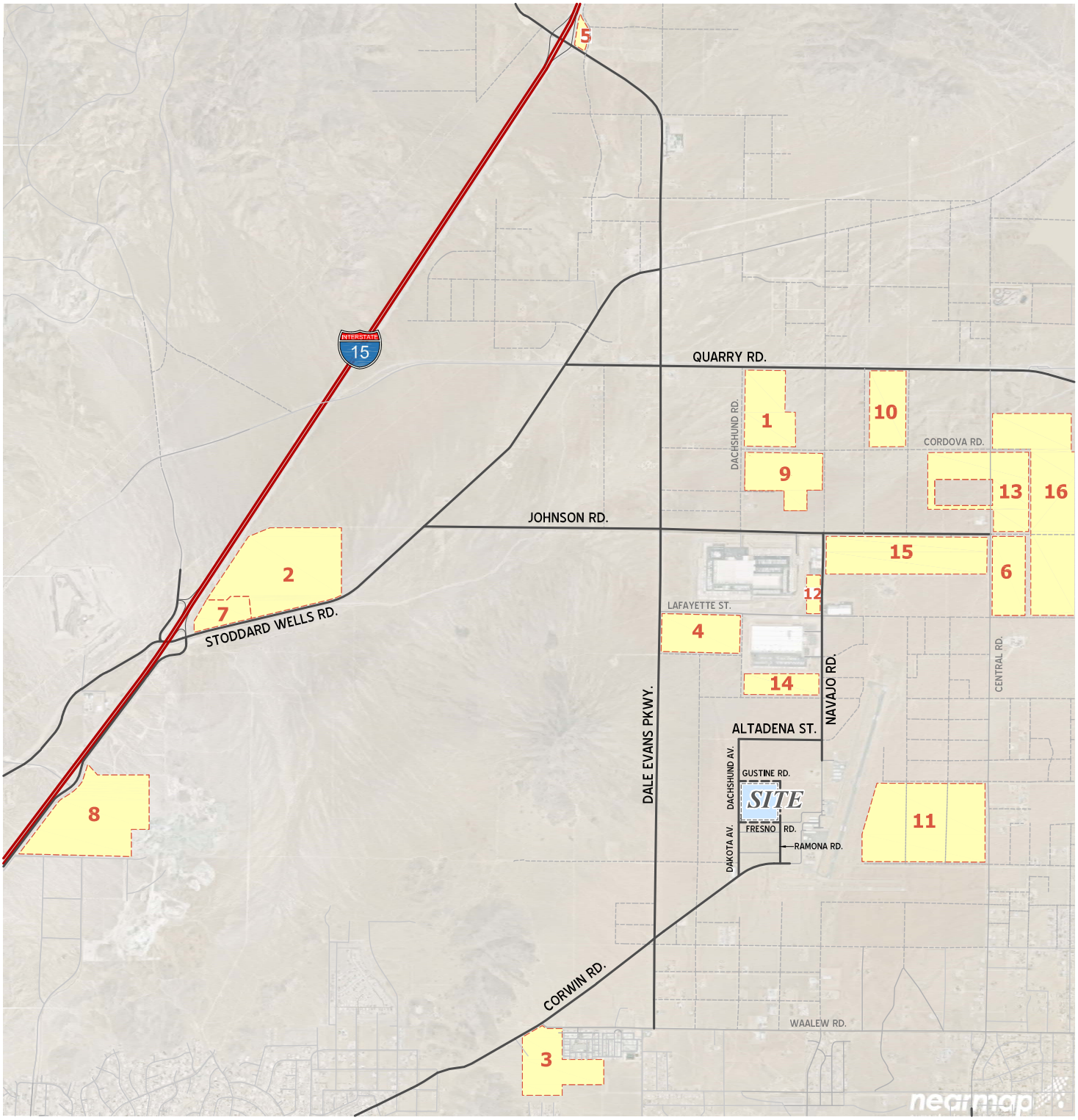
TABLE 4-3: CUMULATIVE DEVELOPMENT LAND USE SUMMARY

TAZ	Project	Land Use	Quantity	Units[1]
1	Cordova Road Logistics (SEC Dachshund Av. & Quarry Rd.)	High-Cube Fulfillment Center	1,144.33	TSF
		High-Cube Cold Storage	201.94	TSF
2	Apple Valley 143	Industrial/Warehouse	2,518.50	TSF
3	TTM 20306 (south of Waalew & east of Corwin)	Single Family Residential	160	DU
4	Lafayette Street Logistics (Redwood West)	High-Cube Warehouse	1,026.41	TSF
		High-Cube Cold Storage	181.13	TSF
5	Apple Valley Gateway Center (north of Dale Evans & east of I-15)	Pad A - Hotel	84	RM
		Pad B - Fast-Food Restaurant w/ Drive-Thru	5.769	TSF
		Pad C - Gas Station with C-Store (5 TSF)	16	VFP
		Pad D - Gas Station with C-Store (3.35 TSF)	12	VFP
		Pad E - Fast-Food Restaurant w/ Drive-Thru	4.00	TSF
		Pad F - Fast-Food Restaurant w/ Drive-Thru	4.20	TSF
		Pad G - Restaurant	4.00	TSF
		Pad H - Shops	10.261	TSF
		Pad I - Fast-Food Restaurant w/ Drive-Thru	2.80	TSF
6	1M Warehouse (east of Central Road, between Johnson Road & Lafayette Street)	High Cube Fulfillment Center Warehouse	1,080.125	TSF
7	Apple Valley I-15 Travel Center (Love's Travel Stop - north of Stoddard Wells & east of I-15)	RV Park	80	Spaces
		Gas Station with C-Store (9.66 TSF)	26	VFP
		Fast-Food Restaurant w/ Drive-Thru	3.043	TSF
		Truck Maintenance/Tire Building	13.786	TSF
8	Inland Empire North Logistics Ctr. (north of Falchion Road & east of I-5)	Industrial/Warehouse	2,604.446	TSF
9	Cordova Quarry	High-Cube Cold Storage	1,559.952	TSF
10	Quarry at Pawnee	High-Cube Cold Storage	1,462.342	TSF
11	Lake Creek Logistics Center (Apple Valley Logistics Center)	General Light Industrial (10%)	348.074	TSF
		High-Cube Cold Storage (10%)	348.074	TSF
		High-Cube Fulfillment (80%)	2,784.588	TSF
12	Green Trucking Solutions	High-Cube Cold Storage	385.004	TSF
13	Apple Valley 3PL Center	Industrial/Warehouse	2,134.000	TSF
14	Watson High Desert Logistics West	High-Cube Fulfillment Center (Non-Sort)	896.500	TSF
15	Watson High Desert Logistics East	High-Cube Fulfillment Center (Non-Sort)	2,832.600	TSF
16	North Apple Valley Industrial Park	Warhousing	5,821.709	TSF

[1] DU = Dwelling Units; TSF = Thousand Square Feet; RM = Room; VFP = Vehicle Fueling Positions

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Excel\[16091 - Report.xlsx]16091-C

EXHIBIT 4-4: CUMULATIVE DEVELOPMENT LOCATION MAP



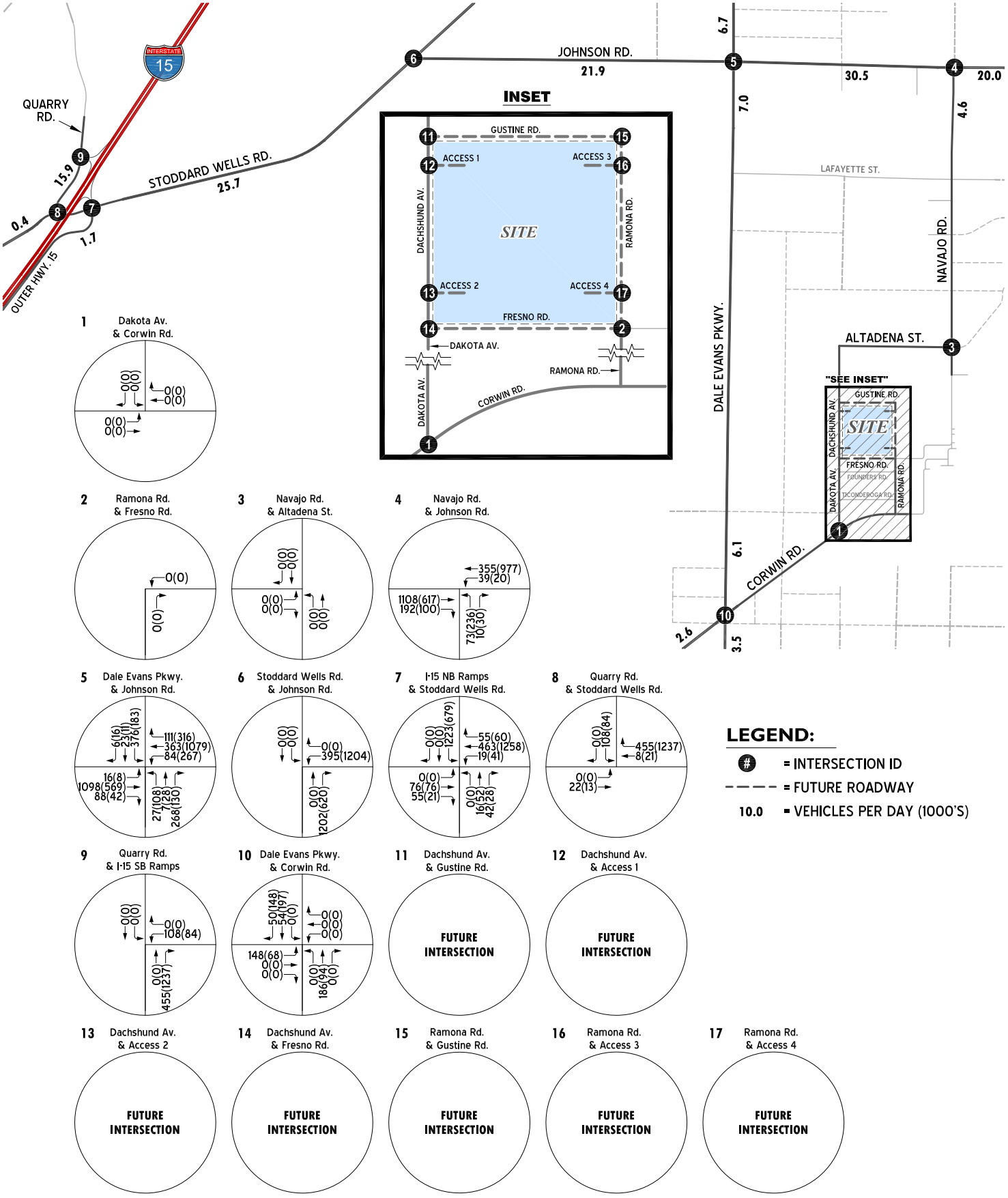
LEGEND:

(#) = CUMULATIVE DEVELOPMENT ID

N

16091_01 - Study Area.dwg

EXHIBIT 4-5: CUMULATIVE ONLY TRAFFIC VOLUMES



This Page Intentionally Left Blank

5 OPENING YEAR CUMULATIVE (2027) TRAFFIC CONDITIONS

This section discusses the methods used to develop Opening Year Cumulative (2027) Without and With Project traffic forecasts, and the resulting intersection operations, and traffic signal warrant analyses.

5.1 ROADWAY IMPROVEMENTS

The lane configurations and traffic controls assumed to be in place for Opening Year Cumulative (2027) conditions are consistent with those shown previously on Exhibit 3-1, with the exception of Project and Cumulative project driveways and those facilities assumed to be constructed by the Project or Cumulative projects to provide site access are also assumed to be in place for Opening Year Cumulative conditions only (e.g., intersection and roadway improvements along the Project's or Cumulative project's frontage and driveways).

5.2 WITHOUT PROJECT TRAFFIC VOLUME FORECASTS

This scenario includes Existing traffic volumes, plus an ambient growth rate of 6.12%, plus traffic from pending and approved but not yet constructed known development projects in the area. The weekday AM and PM peak hour volumes which can be expected for Opening Year Cumulative (2027) Without Project traffic conditions are shown on Exhibit 5-1. The weekday ADT which can be expected for Opening Year Cumulative (2027) Without Project traffic conditions are shown on Exhibit 5-1.

5.3 WITH PROJECT TRAFFIC VOLUME FORECASTS

This scenario includes Opening Year Cumulative (2027) Without Project traffic in conjunction with the addition of Project traffic. The weekday AM and PM peak hour volumes which can be expected for Opening Year Cumulative (2027) With Project traffic conditions are shown on Exhibit 5-2. The weekday ADT which can be expected for Opening Year Cumulative (2027) With Project traffic conditions are shown on Exhibit 5-2.

5.4 INTERSECTION OPERATIONS ANALYSIS

5.4.1 OPENING YEAR CUMULATIVE (2027) WITHOUT PROJECT TRAFFIC CONDITIONS

LOS calculations were conducted for the study intersections to evaluate their operations under Opening Year Cumulative (2027) Without Project conditions with roadway and intersection geometrics consistent with Section 5.1 *Roadway Improvements*. As shown in Table 5-1, the following study area intersections are anticipated to operate at an unacceptable LOS under Opening Year Cumulative (2027) Without Project traffic conditions:

- Navajo Road & Johnson Road (#4) – LOS F AM and PM peak hours
- Dale Evans Parkway & Johnson Road (#5) – LOS F AM and PM peak hours
- Stoddard Wells Road & Johnson Road (#6) – LOS F AM and PM peak hours
- I-15 Northbound Ramps & Stoddard Wells Road (#7) – LOS F AM and PM peak hours
- Quarry Road & Stoddard Wells Road (#8) – LOS F PM peak hour only
- Quarry Road & I-15 Southbound Ramps (#9) – LOS F PM peak hour only

EXHIBIT 5-1: OPENING YEAR CUMULATIVE (2027) WITHOUT PROJECT TRAFFIC VOLUMES

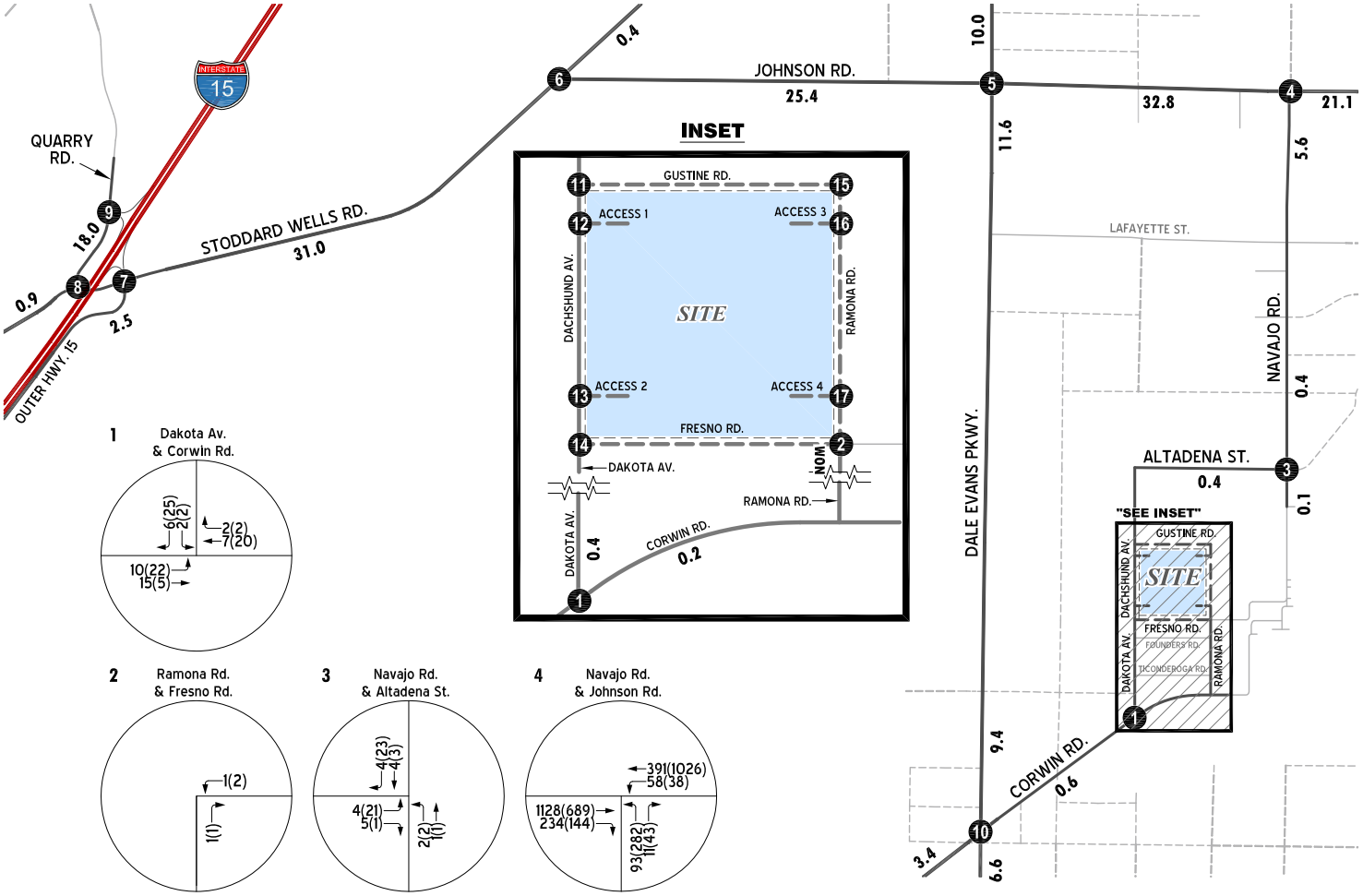
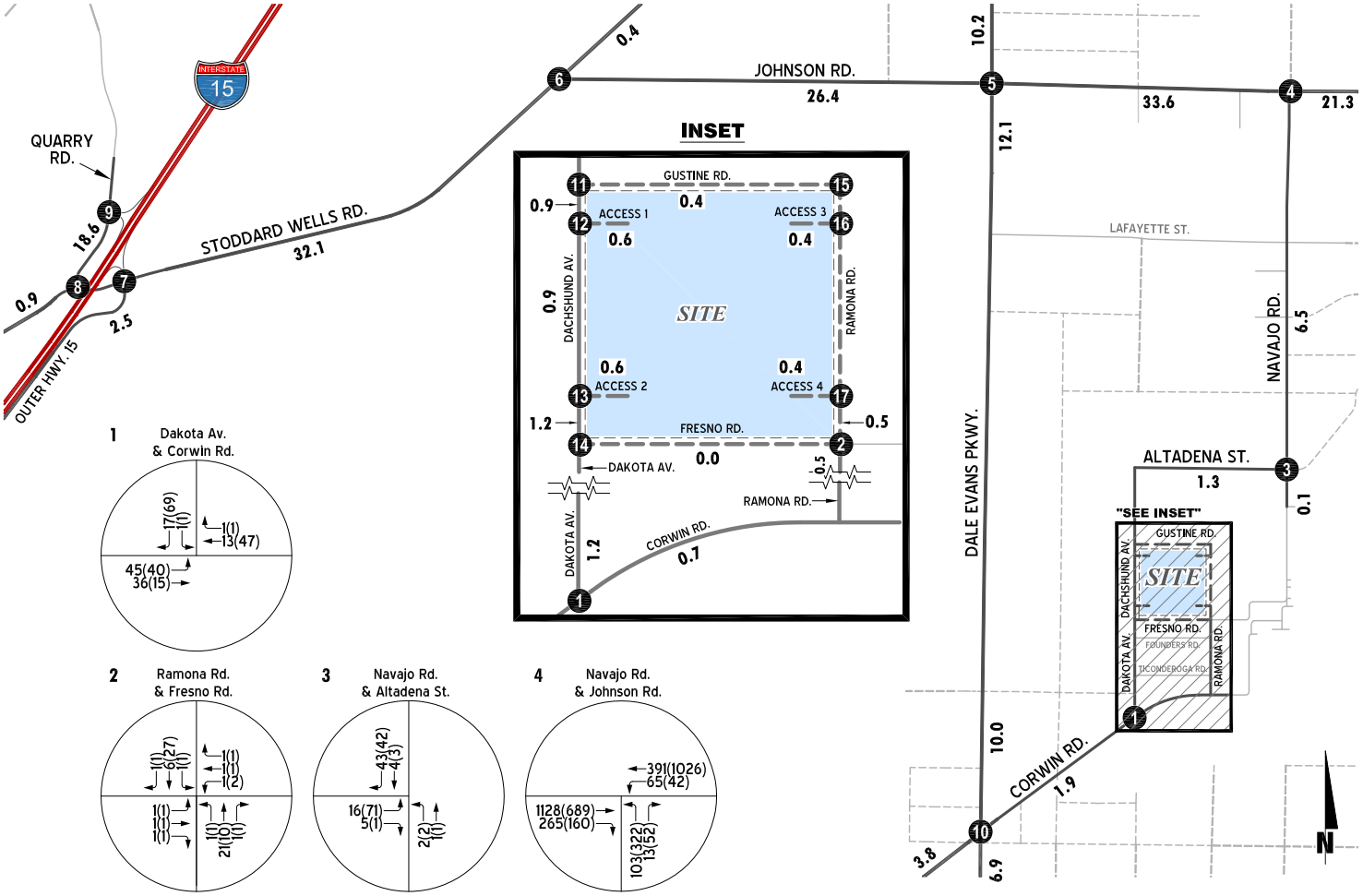
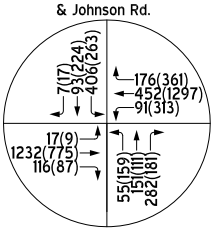
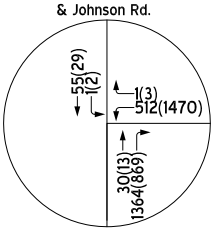
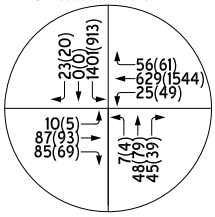

INTERSTATE 15
QUARRY RD.
STODDARD WELLS RD.
OUTER HWY. 15
JOHNSON RD.
DALE EVANS PKWY.
CORWIN RD.
LAFAYETTE ST.
NAVAJO RD.
ALTADENA ST.
"SEE INSET"
INSET
GUSTINE RD.
ACCESS 1
ACCESS 2
ACCESS 3
ACCESS 4
SITE
DACHSHUND AV.
RAMONA RD.
FRESNO RD.
DAKOTA AV.
FOUNDERS RD.
ZEPHYR RD.
ZEROLITE RD.
ZEROLITE PL.
ZEPHYR CT.
ZEPHYR PL.
ZEROLITE CT.
ZEPHYR AV.
ZEROLITE AV.
ZEPHYR WY.
ZEROLITE WY.
ZEPHYR ST.
ZEROLITE ST.
ZEPHYR LN.
ZEROLITE LN.
ZEPHYR DR.
ZEROLITE DR.
ZEPHYR TR.
ZEROLITE TR.
ZEPHYR PKWY.
ZEROLITE PKWY.
ZEPHYR BLVD.
ZEROLITE BLVD.
ZEPHYR CIR.
ZEROLITE CIR.
ZEPHYR WAY.
ZEROLITE WAY.
ZEPHYR ROAD.
ZEROLITE ROAD.
ZEPHYR STREET.
ZEROLITE STREET.
ZEPHYR LANE.
ZEROLITE LANE.
ZEPHYR DRIVE.
ZEROLITE DRIVE.
ZEPHYR TRAIL.
ZEROLITE TRAIL.
ZEPHYR PARKWAY.
ZEROLITE PARKWAY.
ZEPHYR BOULEVARD.
ZEROLITE BOULEVARD.
ZEPHYR CIRCLE.
ZEROLITE CIRCLE

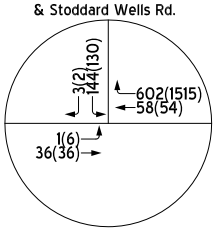
EXHIBIT 5-2: OPENING YEAR CUMULATIVE (2027) WITH PROJECT TRAFFIC VOLUMES

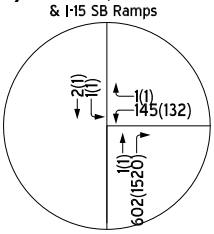


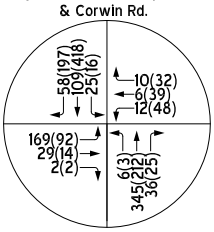


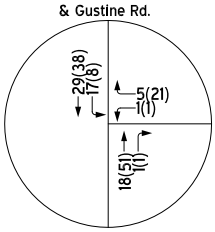


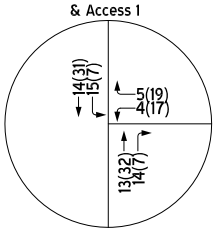


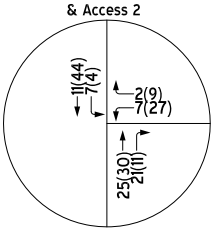


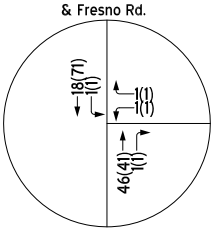


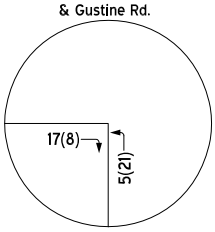


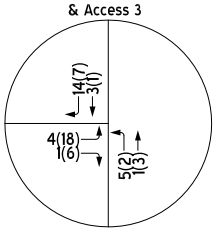


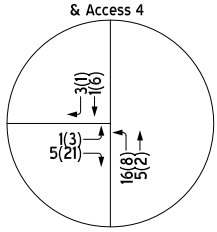












LEGEND:

- (#) = INTERSECTION ID
- = FUTURE ROADWAY
- 10.0 = VEHICLES PER DAY (1000'S)

The intersection operations analysis worksheets for Opening Year Cumulative (2027) Without Project traffic conditions are included in Appendix 5.1 of this TA.

5.4.2 OPENING YEAR CUMULATIVE (2027) WITH PROJECT TRAFFIC CONDITIONS

As shown in Table 5-1, there are no additional study area intersections that are anticipated to operate at an unacceptable LOS with the addition of Project traffic under Opening Year Cumulative (2027) With Project traffic conditions. The intersection operations analysis worksheets for Opening Year Cumulative (2027) With Project traffic conditions are included in Appendix 5.2 of this TA.

TABLE 5-1: INTERSECTION ANALYSIS FOR OPENING YEAR CUMULATIVE (2027) CONDITIONS

			2027 Without Project				2027 With Project			
			Delay[2] (secs.)		Level of Service		Delay[2] (secs.)		Level of Service	
#	Intersection	Traffic Control[1]	AM	PM	AM	PM	AM	PM	AM	PM
1	Dakota Av. / Corwin Rd.	CSS	8.5	8.6	A	A	8.6	9.0	A	A
2	Ramona Rd. / Fresno Rd.	CSS	8.5	8.5	A	A	8.9	9.0	A	A
3	Navajo Rd. / Altadena St.	CSS	8.5	8.7	A	A	8.8	9.1	A	A
4	Navajo Rd. / Johnson Rd.	CSS	**>100.0**	**>100.0**	**F**	**F**	**>100.0**	**>100.0**	**F**	**F**
5	Dale Evans Pkwy. / Johnson Rd.	AWS	**>100.0**	**>100.0**	**F**	**F**	**>100.0**	**>100.0**	**F**	**F**
6	Stoddard Wells Rd. / Johnson Rd.	CSS	**>100.0**	**>100.0**	**F**	**F**	**>100.0**	**>100.0**	**F**	**F**
7	I-15 NB Ramps / Stoddard Wells Rd.	CSS	**>100.0**	**>100.0**	**F**	**F**	**>100.0**	**>100.0**	**F**	**F**
8	Quarry Rd. / Stoddard Wells Rd.	CSS	14.3	**>100.0**	B	**F**	14.5	**>100.0**	B	**F**
9	Quarry Rd. / I-15 SB Ramps	CSS	13.1	**>100.0**	B	**F**	13.3	**>100.0**	B	**F**
10	Dale Evans Pkwy. / Corwin Rd.	AWS	11.7	21.3	B	C	12.8	28.6	B	D
11	Dachshund Av. / Gustine Rd.	CSS	Future Intersection				8.5	8.7	A	A
12	Dachshund Av. / Access 1	CSS	Future Intersection				8.6	8.8	A	A
13	Dachshund Av. / Access 2	CSS	Future Intersection				8.8	9.0	A	A
14	Dachshund Av. / Fresno Rd.	CSS	Future Intersection				8.7	8.8	A	A
15	Ramona Rd. / Gustine Rd.	CSS	Future Intersection				8.4	8.3	A	A
16	Ramona Rd. / Access 3	CSS	Future Intersection				8.6	8.6	A	A
17	Ramona Rd. / Access 4	CSS	Future Intersection				8.4	8.5	A	A

* **BOLD** = LOS does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

[1] AWS = All-Way Stop; CSS = Cross-Street Stop; CSS = Improvement

[2] Per the Highway Capacity Manual (7th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

5.5 TRAFFIC SIGNAL WARRANT ANALYSIS

Traffic signal warrants have been performed for Opening Year Cumulative (2027) traffic conditions based on peak hour intersection turning movements volumes or planning level (ADT) volumes. The following study area intersections are anticipated to meet a traffic signal warrant under Opening Year Cumulative (2027) Without Project traffic conditions:

- Navajo Road & Johnson Road (#4)
- Stoddard Wells Road & Johnson Road (#6)
- I-15 Northbound Ramps & Stoddard Wells Road (#7)
- Quarry Rd. & Stoddard Wells Rd (#8)
- Quarry Rd. & I-15 SB Ramps (#9)

With the addition of Project traffic, the intersection of Dale Evans Parkway & Corwin (#10) Road is anticipated to meet a traffic signal warrant under Opening Year Cumulative (2027) With Project traffic conditions.

As mentioned previously, meeting this threshold condition does not require that a traffic control signal be installed at a particular location, but rather, that other traffic factors and conditions be evaluated in order to determine whether the signal is truly justified. It should also be noted that signal warrants do not necessarily correlate with LOS. An intersection may satisfy a signal warrant condition and operate at or above acceptable LOS or operate below acceptable LOS and not meet a signal warrant.

The Opening Year Cumulative (2027) Without Project and With Project traffic conditions traffic signal warrant analysis worksheets are provided in Appendices 5.3 and 5.4, respectively.

5.6 OFF-RAMP QUEUING ANALYSIS

Queuing analysis findings for Opening Year Cumulative (2027) Without Project are presented in Table 5-2. As shown in Table 5-2, the southbound shared left-through-right lane for the intersection of I-15 Northbound Ramps & Stoddard Wells Road (#7) is anticipated to experience queueing issues during the weekday AM or weekday PM peak 95th percentile traffic flows under Opening Year Cumulative (2027) Without Project traffic conditions. The addition of Project traffic is not anticipated to result in additional off-ramp queuing issue during the weekday AM or weekday PM peak 95th percentile traffic flows under Opening Year Cumulative (2027) With Project traffic conditions.

Worksheets for Opening Year Cumulative (2027) Without Project and With Project traffic conditions queuing analysis are provided in Appendices 5.5 and 5.6, respectively.

TABLE 5-2: PEAK HOUR QUEUING SUMMARY FOR OPENING YEAR CUMULATIVE (2027) CONDITIONS

			Available Stacking Distance (Feet)	2027 Without Project				2027 With Project			
				95th Percentile Queue (Feet)		Acceptable? [1]		95th Percentile Queue (Feet)		Acceptable? [1]	
#	Intersection	Movement		AM Peak	PM Peak	AM	PM	AM Peak	PM Peak	AM	PM
7	I-15 NB Ramps / Stoddard Wells Rd.	SBL/T/R	1,000	**3,913**	**4,203**	**No**	**No**	**4,085**	**4,320**	**No**	**No**
9	Quarry Rd. / I-15 SB Ramps	WBL/R	1,000	30	353	Yes	Yes	30	380	Yes	Yes

[1]Stacking distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided. **BOLD** = 95th percentile queue exceeds the available storage.

5.7 INTERSECTION DEFICIENCIES AND CUMULATIVE IMPROVEMENTS

The effectiveness of the recommended improvement strategies to address Opening Year Cumulative (2027) traffic deficiencies are presented in Table 5-3 to achieve pre-project delay or better. Worksheets for Opening Year Cumulative (2027) With Project conditions, with improvements, HCM calculation worksheets are provided in Appendix 5.7.

5.7.1 RECOMMENDED IMPROVEMENTS TO ADDRESS DEFICIENCIES AT INTERSECTIONS

The following cumulative intersection improvements are recommended:

#	Intersection Location	Jurisdiction	Opening Year Cumulative (2027)	
			Without Project	With Project
4	Navajo Rd. & Johnson Rd.	Town of Apple Valley	Install a traffic signal	Same
			Add 2nd EB through lane	Same
			Add WB left turn lane	Same
			Add NB left turn lane	Same
5	Dale Evans Pkwy. & Johnson Rd.	Town of Apple Valley, County	Install a traffic signal	Same
			Add 2nd NB through lane	Same
			Add 2nd SB through lane	Same
			Add 2nd EB through lane	Same
			Add 2nd WB through lane	Same
			Add EB left turn lane	Same
			Add WB left turn lane	Same
6	Stoddard Wells Rd. & Johnson Rd.	Town of Apple Valley, County	Install a traffic signal	Same
			Add NB right turn lane	Same
			Add WB left turn lane	Same
			Provide NBR overlap phase	Same
7	I-15 NB Ramps & Stoddard Wells Rd.	Town of Apple Valley, Caltrans	Install a traffic signal	Same
			Add 2nd WB through lane	Same
			Add SB left turn lane	Same
			Add EB left turn lane	Same
			Add WB left turn lane	Same
8	Quarry Rd. & Stoddard Wells Rd.	County	Add WB right turn lane	Same
9	Quarry Rd. & I-15 SB Ramps	County, Caltrans	Add NB right turn lane	Same

TABLE 5-3: INTERSECTION ANALYSIS FOR OPENING YEAR CUMULATIVE (2027) CONDITIONS WITH IMPROVEMENTS

#	Intersection	Traffic Control[1]	Intersection Approach Lanes[2] Northbound L	T	R	Southbound L	T	R	Eastbound L	T	R	Westbound L	T	R	Delay[3] (secs.) AM	PM	Level of Service AM	PM
4	Navajo Rd. / Johnson Rd.																	
	- Without Improvements	CSS	0	1	0	0	0	0	0	1	0	0	1	0	**>100.0**	**>100.0**	**F**	**F**
	- With Improvements	**TS**	**1.5**	0	0.5	0	0	0	0	**2**	0	**1**	1	0	12.2	35.9	B	D
5	Dale Evans Pkwy. / Johnson Rd.																	
	- Without Improvements	AWS	1	1	1	1	1	0	0	1!	0	0	1	1>>	**>100.0**	**>100.0**	**F**	**F**
	- With Improvements	**TS**	1	**2**	1	1	**2**	0	**1**	**2**	0	**1**	**2**	1	54.9	53.6	D	D
6	Stoddard Wells Rd. / Johnson Rd.																	
	- Without Improvements	CSS	0	1	0	0	1	0	0	0	0	0	1	0	**>100.0**	**>100.0**	**F**	**F**
	- With Improvements	**TS**	0	1	**1>**	0	1	0	0	0	0	**1.5**	0	0.5	21.4	16.3	C	B
7	I-15 NB Ramps / Stoddard Wells Rd.																	
	- Without Improvements	CSS	0	1	0	0	1	0	0	1	0	0	1	0	**>100.0**	**>100.0**	**F**	**F**
	- With Improvements	**TS**	0	1!	0	**1**	1!	0	**1**	1	0	**1**	**2**	0	24.7	45.0	C	D
8	Quarry Rd. / Stoddard Wells Rd.																	
	- Without Improvements	CSS	0	0	0	0	1	0	0	1	0	0	1	0	14.5	**>100.0**	B	**F**
	- With Improvements	CSS	0	0	0	0	1	0	0	1	0	0	1	**1**	10.0	30.1	B	D
9	Quarry Rd. / I-15 SB Ramps																	
	- Without Improvements	CSS	0	1	0	0	1	0	0	0	0	0	1	0	13.3	**>100.0**	B	**F**
	- With Improvements	CSS	0	1	**1**	0	1	0	0	0	0	0	1	0	9.3	28.9	A	D

* **BOLD** = LOS does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

[1] TS = Traffic Signal; CSS = Cross-Street Stop; AWS = All Way Stop

[2] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; 0.5 = Shared Lane; 1! = Shared Left/Through/Right lane; >> = Free-Right Turn; > = Right Turn Overlap Phasing; **1** = Improvement

[3] Per the Highway Capacity Manual (7th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

5.7.2 RECOMMENDED IMPROVEMENTS TO ADDRESS DEFICIENCIES FOR OFF-RAMP QUEUES

The effectiveness of the recommended improvement strategies to address Opening Year Cumulative (2027) off-ramp deficiencies are presented in Table 5-4 based on queues calculated in Synchro. Table 5-5 presents the queueing analysis results for both off-ramp and project access intersections using random simulations generated by SimTraffic to determine the 95th percentile queue lengths observed for each applicable turn lane.

TABLE 5-4: PEAK HOUR QUEUING SUMMARY FOR OPENING YEAR CUMULATIVE (2027) CONDITIONS WITH IMPROVEMENTS

				2027 With Project			
				95th Percentile Queue (Feet)		Acceptable? [1]	
#	Intersection	Movement	Available Stacking Distance (Feet)	AM Peak	PM Peak	AM	PM
7	I-15 NB Ramps / Stoddard Wells Rd.	<u>SBL</u>	1,000	750 [2]	625 [2]	Yes	Yes
		SBL/T/R	1,000	556	486 [2]	Yes	Yes

<u>Underline</u> = Improvement

[1] Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided.

[2] 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

The improvements are consistent with the intersection improvements identified in Table 5-3. Worksheets for Opening Year Cumulative (2027) With Project conditions, with improvements, off-ramp queueing analysis worksheets are provided in Appendix 5.8.

5.8 SITE ACCESS IMPROVEMENTS

Dachshund Avenue & Access 1 (#12) – The following improvements are necessary to accommodate site access:

- Project to install a stop control on the westbound approach and construct a shared left-right turn lane (Project driveway).

Dachshund Avenue & Access 2 (#13) – The following improvements are necessary to accommodate site access:

- Project to install a stop control on the westbound approach and construct a shared left-right turn lane (Project driveway).

Ramona Road & Access 3 (#16) – The following improvements are necessary to accommodate site access:

- Project to install a stop control on the eastbound approach and construct a shared left-right turn lane (Project driveway).
- Project to construct a northbound shared through-left turn lane.
- Project to construct a southbound shared through-right turn lane.

TABLE 5-5: SIMTRAFFIC QUEUEING SUMMARY
FOR OPENING YEAR CUMULATIVE (2027) CONDITIONS WITH IMPROVEMENTS

ID	Intersection	Movement	# of Lanes	2027 With Project Peak Hour Volume				Available Stacking Distance (Feet)	95th Percentile Queue Length (ft.)[1,3]		Acceptable? [1]	
				AM	PM	Pk Hr	Volume		AM	PM	AM	AM
FREEWAY RAMPS												
7	I-15 NB Ramps / Stoddard Wells Rd.											
		SBL	1	±980	±640	PM	980	1,000	324	309	Yes	Yes
		SB L/T/R	1	±444	±293	PM	444	1,000	358	329	Yes	Yes
9	Quarry Rd. / I-15 SB Ramps											
		WB L/R	1	145	132	AM	145	1,000	55	199	Yes	Yes
PROJECT ACCESS												
12	Dachshund Av. / Access 1											
		NB T/R	1	27	39	PM	39	>200	NOM	NOM	Yes	Yes
		SB L/T	1	29	38	PM	38	>150	NOM	8	Yes	Yes
		WB L/R	1	9	36	PM	36	>50	28	49	Yes	Yes
13	Dachshund Av. / Access 2						0					
		NB T/R	1	46	41	AM	46	>200	NOM	NOM	Yes	Yes
		SB L/T	1	18	48	PM	48	>150	NOM	NOM	Yes	Yes
		WB L/R	1	9	36	PM	36	>50	29	43	Yes	Yes
16	Ramona Rd. / Access 3											
		NB L/T	1	6	5	AM	6	>200	NOM	NOM	Yes	Yes
		SB T/R	1	17	8	AM	17	>150	NOM	NOM	Yes	Yes
		EB L/R	1	5	24	PM	24	>50	23	43	Yes	Yes
17	Ramona Rd. / Access 4						0					
		NB L/T	1	21	10	AM	21	>200	NOM	NOM	Yes	Yes
		SB T/R	1	4	7	PM	7	>150	NOM	NOM	Yes	Yes
		EB L/R	1	6	24	PM	24	>50	22	34	Yes	Yes

Underline = Improvement

[1] Queue length calculated using SimTraffic.

[2] Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided.

[3] NOM = Nominal, less than 5 feet.

[4] Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided.

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Excel\[16091 - Report.xlsx]5-5 - SimTraffic_Queues

Ramona Road & Access 4 (#17) – The following improvements are necessary to accommodate site access:

- Project to install a stop control on the eastbound approach and construct a shared left-right turn lane (Project driveway).
- Project to construct a northbound shared through-left turn lane.
- Project to construct a southbound shared through-right turn lane.

Dachshund Avenue & Gustine Road (#11) – The following improvements are necessary to accommodate site access:

- Project to install a stop control on the westbound approach and construct a shared left-right turn lane.

Dachshund Avenue & Fresno Road (#14) – The following improvements are necessary to accommodate site access:

- Project to install a stop control on the westbound approach and construct a shared left-right turn lane.

Ramona Road & Gustine Road (#15) – The following improvements are necessary to accommodate site access:

- Project to construct a northbound left turn lane.
- Project to construct an eastbound right turn lane.

Ramona Road & Fresno Road (#2) – The following improvements are necessary to accommodate site access:

- Project to install a stop control on the eastbound and westbound approaches and construct a shared eastbound left-right turn lane.

Dachshund Avenue is a north-south oriented roadway located along the site's western boundary. The Project is to construct Dachshund Avenue from the site's northern boundary (Gustine Road) to the site's southern boundary (Fresno Road) at its ultimate half-section width as a secondary roadway (ultimate 88-foot right-of-way), consistent with the Town's standards.

Ramona Road is a north-south oriented roadway located along the site's eastern boundary. The Project is to construct Ramona Road from the site's northern boundary (Gustine Road) to the site's southern boundary (Fresno Road) as a 2-lane local roadway.

Gustine Road is an east-west oriented roadway located along the site's northern boundary. The Project is to construct Gustine Road from the Project's western boundary (Dachshund Avenue) to the site's eastern boundary (Ramona Road) at its ultimate half-section width as a secondary roadway (ultimate 88-foot right-of-way), consistent with the Town's standards. The Project will also provide an additional 12 feet of pavement width to accommodate one westbound lane from the Project's eastern boundary to Dachshund Avenue to facilitate site access.

Fresno Road is an east-west oriented roadway located along the site's southern boundary. The Project is to construct Fresno Road from the Project's western boundary (Dachshund Avenue) to the site's eastern boundary (Ramona Road) as a 2-lane local roadway.

This page intentionally left blank

6 LOCAL AND REGIONAL FUNDING MECHANISMS

Transportation improvements within the Town of Apple Valley are funded through a combination of direct project mitigation, development impact fee programs or fair share contributions, such as the Town of Apple Valley Development Impact Fee (DIF) program. Identification and timing of needed improvements is generally determined through local jurisdictions based upon a variety of factors.

6.1 TOWN OF APPLE VALLEY DEVELOPMENT IMPACT FEE (DIF) PROGRAM

The Town of Apple Valley has implemented a DIF program. This program collects fees from new single-family residential, multi-family residential, commercial, office use, and industrial developments. These fees serve to fund compliant facilities such as law enforcement, storm drainage, sanitary sewer, and general government fees. Fees are also allocated to finance parks and Apple Valley fire. Under the Town's DIF program, the Town may grant developers a credit against specific components of fees when those developers construct certain facilities and landscaped medians identified in the list of improvements funded by the DIF program.

6.2 MEASURE "I" FUNDS

In 2004, the voters of San Bernardino County approved the 30-year extension of Measure "I", a one-half of one percent sales tax on retail transactions, through the year 2040, for transportation projects including, but not limited to, infrastructure improvements, commuter rail, public transit, and other identified improvements. The Measure "I" extension requires that a regional traffic impact fee be created to ensure development is paying its fair share. A regional Nexus study was prepared by San Bernardino County Transportation Authority (SBCTA) and concluded that each jurisdiction should include a regional fee component in their local programs to meet the Measure "I" requirement. The regional component assigns specific facilities and cost sharing formulas to each jurisdiction and was most recently updated in September 2017. Revenues collected through these programs are used in tandem with Measure "I" funds to deliver projects identified in the Nexus Study.

While Measure "I" is a self-executing sales tax administered by SBCTA, it bears discussion here because the funds raised through Measure "I" have funded, and will continue to fund, new transportation facilities in San Bernardino County, including within the Town of Apple Valley.

6.3 FAIR SHARE CONTRIBUTION

Project improvements may include a combination of fee payments to established programs, construction of specific improvements, payment of a fair share contribution toward future improvements or a combination of these approaches. Improvements constructed by development may be eligible for a fee credit or reimbursement through the program where appropriate (to be determined at the Town's discretion).

When off-site improvements are identified with a minor share of responsibility assigned to proposed development, the approving jurisdiction may elect to collect a fair share contribution or require the development to construct improvements. Detailed fair share calculations, for each Project site and peak hour, has been provided in Table 6-1 for the applicable deficient study area intersections.

TABLE 6-1: PROJECT FAIR SHARE CALCULATIONS

#	Intersection	Existing (2024) Traffic	2027 w/ Project Traffic	Project Only Traffic	Total New Traffic[1]	Project Fair Share (%)[2]
4	Navajo Rd. / Johnson Rd.					
	• AM Peak Hour	130	2,891	50	2,761	1.8%
	• PM Peak Hour	227	3,046	69	2,819	**2.4%**
5	Dale Evans Pkwy. / Johnson Rd.					
	• AM Peak Hour	506	3,185	72	2,679	2.7%
	• PM Peak Hour	885	4,096	98	3,211	**3.1%**
6	Stoddard Wells Rd. / Johnson Rd.					
	• AM Peak Hour	284	2,023	62	1,739	3.6%
	• PM Peak Hour	450	2,439	84	1,989	**4.2%**
7	I-15 NB Ramps / Stoddard Wells Rd.					
	• AM Peak Hour	380	4,924	62	4,544	1.4%
	• PM Peak Hour	543	5,519	84	4,976	**1.7%**
8	Quarry Rd. / Stoddard Wells Rd.					
	• AM Peak Hour	222	2,195	15	1,973	0.8%
	• PM Peak Hour	309	3,352	60	3,043	**2.0%**
9	Quarry Rd. / I-15 SB Ramps					
	• AM Peak Hour	164	1,600	15	1,436	1.0%
	• PM Peak Hour	257	2,897	60	2,640	**2.3%**

[1] Total New Traffic = (2027 With Project - Existing Traffic)

[2] Project Fair Share % = (Project Only Traffic / Total New Traffic)

7 REFERENCES

1. **County of San Bernardino.** *County of San Bernardino Transportation Impact Study Guidelines.* County of San Bernardino : s.n., July 2019.
2. **San Bernardino Associated Governments.** *Congestion Management Program for County of San Bernardino.* County of San Bernardino : s.n., Updated June 2016.
3. **Transportation Research Board.** *Highway Capacity Manual (HCM).* 6th Edition. s.l. : National Academy of Sciences, 2022.
4. **Caltrans.** California Manual on Uniform Traffic Control Devices (MUTCD). [book auth.] California Department of Transportation. *California Manual on Uniform Traffic Control Devices (CAMUTCD).* 2017.

This page intentionally left blank

APPENDIX 1.1: TRAFFIC STUDY SCOPING AGREEMENT

This Page Intentionally Left Blank

MEMORANDUM

URBAN CROSSROADS

DATE: August 19, 2024
TO: Richard Hirsch, Town of Apple Valley
FROM: John Kain, AICP and Marlie Whiteman, P.E., Urban Crossroads
JOB NO: 16091-01 TA Scope.docx

LECANGS DAKOTA APPLE VALLEY INDUSTRIAL SCOPING AGREEMENT

The firm of Urban Crossroads, Inc. is pleased to submit this scoping letter regarding the traffic analysis for Lecangs Dakota Apple Valley Industrial development (**Project**), which is located within the North Apple Valley Industrial Specific Plan (**NAVISP**) in the Town of Apple Valley. This letter describes the proposed Project trip generation, trip distribution, and analysis methodology, which have been used to establish the draft proposed Project study area and analysis locations. The following scoping agreement has been prepared in accordance with the County's Transportation Impact Study Guidelines, dated July 9, 2019 (since the Town uses the County guidelines).

PROJECT DESCRIPTION

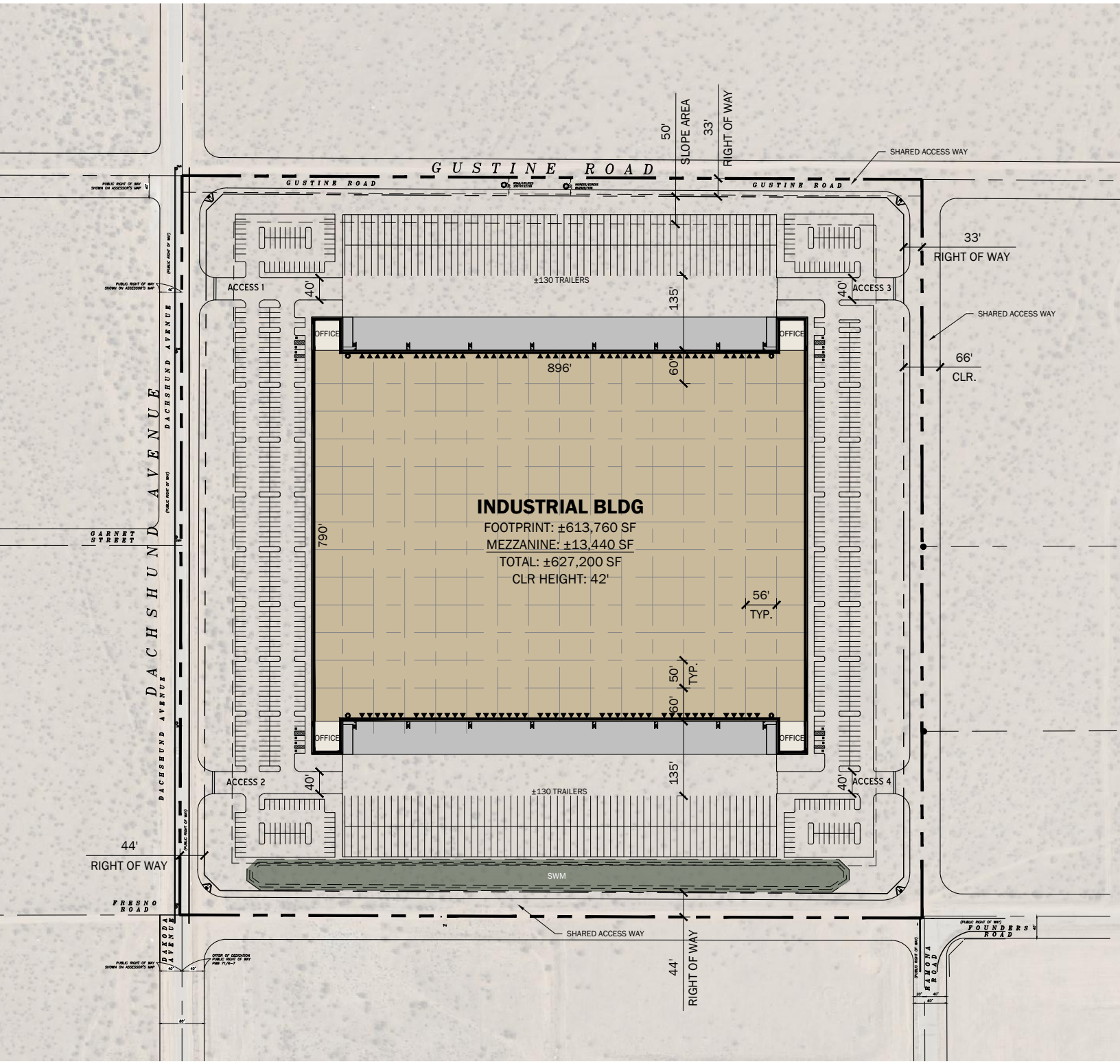
The Project consists of the development of a 627,200 square foot industrial warehouse and distribution building. The site is located between Dachshund Avenue (which becomes Dakota Road south of Fresno Road) and Ramona Road, south of Gustine Street and north of Fresno Road. In order to develop the traffic characteristics of the high-cube warehouse land use for the Proposed Project, trip-generation statistics published in the TUMF High-Cube Warehouse Trip Generation Study (WSP, January 29, 2019) are used. The purpose of WSP 2019 study was to gather enough data to develop reliable trip generation rates for centers for use in traffic impact studies in the Inland Empire.

A preliminary site plan for the proposed Project is shown on Exhibit 1. Access to the site will be accommodated via two driveways along Dachshund Avenue and two driveways on Ramona Road. All driveways are assumed to allow for full access (no turn restrictions). The Project is anticipated to have an Opening Year of 2026.

TRIP GENERATION

Trip generation represents the amount of traffic which is both attracted to and produced by a development. Determining traffic generation for a specific project is therefore based upon forecasting the amount of traffic that is expected to be both attracted to and produced by the specific land uses being proposed for a given development

EXHIBIT 1: PRELIMINARY SITE PLAN



Refinements to the raw trip generation estimates for the Project have been made to provide a more detailed breakdown of trips by vehicle type (passenger cars or trucks). Passenger car equivalents (PCEs) allow the typical "real-world" mix of vehicle types to be represented as a single, standardized unit, such as the passenger car, to be used for the purposes of capacity and level of service analyses.

Table 1 shows the trip generation rates and resulting Project trip generation summary, which shows the Project is anticipated to generate a net total of 1,335 two-way vehicle trip-ends per day with 77 AM peak hour trips and 104 PM peak hour trips (actual vehicles).

Passenger car equivalent (**PCE**) factors were applied to the trip generation rates for heavy trucks (large 2-axles, 3-axles, 4+-axles). PCEs allow the typical "real-world" mix of vehicle types to be represented as a single, standardized unit, such as the passenger car, to be used for the purposes of capacity and level of service analyses. The PCE factors are consistent with the recommended PCE factors in the County's Guidelines.

Table 2 shows the resulting Project trip generation summary in PCE, which shows the Project is anticipated to generate a net total of 2,138 two-way PCE vehicle trip-ends per day with 123 PCE AM peak hour trips and 167 PCE PM peak hour trips. Consistent with the County requirements, the peak hour intersection operations analysis will be conducted using the PCE volumes shown in Table 2.

TRIP DISTRIBUTION

The Project trip distribution represents the directional orientation of traffic to and from the Project site. Trip distribution is the process of identifying the probable destinations, directions or traffic routes that will be utilized by Project traffic. The potential interaction between the planned land uses and surrounding regional access routes are considered, to identify the route where the Project traffic would distribute. The Project trip distribution represents the directional orientation of traffic to and from the Project site. The proposed Project trip distributions are shown in Exhibit 2 for passenger cars and Exhibit 3 for trucks. The Project truck trip distribution patterns adhere to the Town's approved truck routes.

ANALYSIS SCENARIOS

Consistent with the County's Guidelines, intersection analysis will be provided for the following analysis scenarios during the AM and PM peak hours (7-9 AM and 4-6 PM):

1. Existing (2024) Conditions
2. Opening Year Cumulative (2026) Without Project Conditions
3. Opening Year Cumulative (2026) With Project Conditions

All study area intersections will be evaluated using the Highway Capacity Manual (HCM) 7th Edition analysis methodology. The study area that is proposed to be evaluated is shown on Exhibit 4.

Exhibit 5 shows the Town of Apple Valley General Plan Street System and Exhibit 6 illustrates the Town of Apple Valley General Plan roadway cross-sections.

TABLE 1: PROJECT TRIP GENERATION SUMMARY
ACTUAL VEHICLES

Proposed Project Trip Generation Rates[1]

Land Use	ITE LU Code	Quantity[2]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
High-Cube Warehouse[3]	-	627.200 TSF	0.094	0.028	0.122	0.046	0.119	0.165	2.129
Passenger Cars			0.066	0.020	0.086	0.033	0.082	0.115	1.489
2 to 4-Axle+ Trucks			0.028	0.008	0.036	0.014	0.036	0.050	0.640

Proposed Project Trip Generation Results

Land Use	ITE LU Code	Quantity[2]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
High-Cube Warehouse	-	627.200 TSF							
- Passenger Cars			41	13	54	21	52	73	934
- Truck Trips (Actual)			18	5	23	9	22	31	401
PROJECT TOTAL TRIPS (ACTUAL VEHICLES)[4]			59	18	77	30	74	104	1,335

[1] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, 11th Edition (2021).

[2] TSF = Thousand Square Feet; DU = Dwelling Units

[3] Source: *TUMF High-Cube Warehouse Trip Generation Study*. Prepared by WSP, January 2019.
Passenger and Truck AM/PM peak hour (in/out) splits are estimated from based on ITE peak-to-daily relationship
Truck Daily Rate Source: *Notice of Preparation of a Draft Environmental Impact Report for the Proposed Potrero Logistics Center*.
Prepared by South Coast Air Quality Management District (SCAQMD), June 2020.

[4] Total Net Trips (Actual Vehicles) = Passenger Cars + Net Truck Trips (Actual Trucks).

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Excel\[16091 - Scope.xlsx]16091 TG - Actual_WSP

TABLE 2: PROJECT TRIP GENERATION SUMMARY
PASSENGER CAR EQUIVALENT (PCE)

Project Trip Generation Rates[1]

Land Use	ITE LU Code	Quantity[2]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
High-Cube Warehouse[3]	-	627.200 TSF	0.150	0.045	0.195	0.075	0.190	0.265	3.409
		Passenger Cars	0.066	0.020	0.086	0.033	0.082	0.115	1.489
		2 to 4-Axle+ Trucks (PCE = 3.0)	0.084	0.025	0.109	0.042	0.108	0.150	1.920

Project Trip Generation Results

Land Use	ITE LU Code	Quantity[2]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
High-Cube Warehouse	-	627.200 TSF							
- Passenger Cars			41	13	54	21	52	73	934
- Truck Trips (PCE = 3.0)			53	16	69	26	68	94	1,204
PROJECT TOTAL EXTERNAL TRIPS (PCE)[4]			94	29	123	47	120	167	2,138

[1] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, 11th Edition (2021).

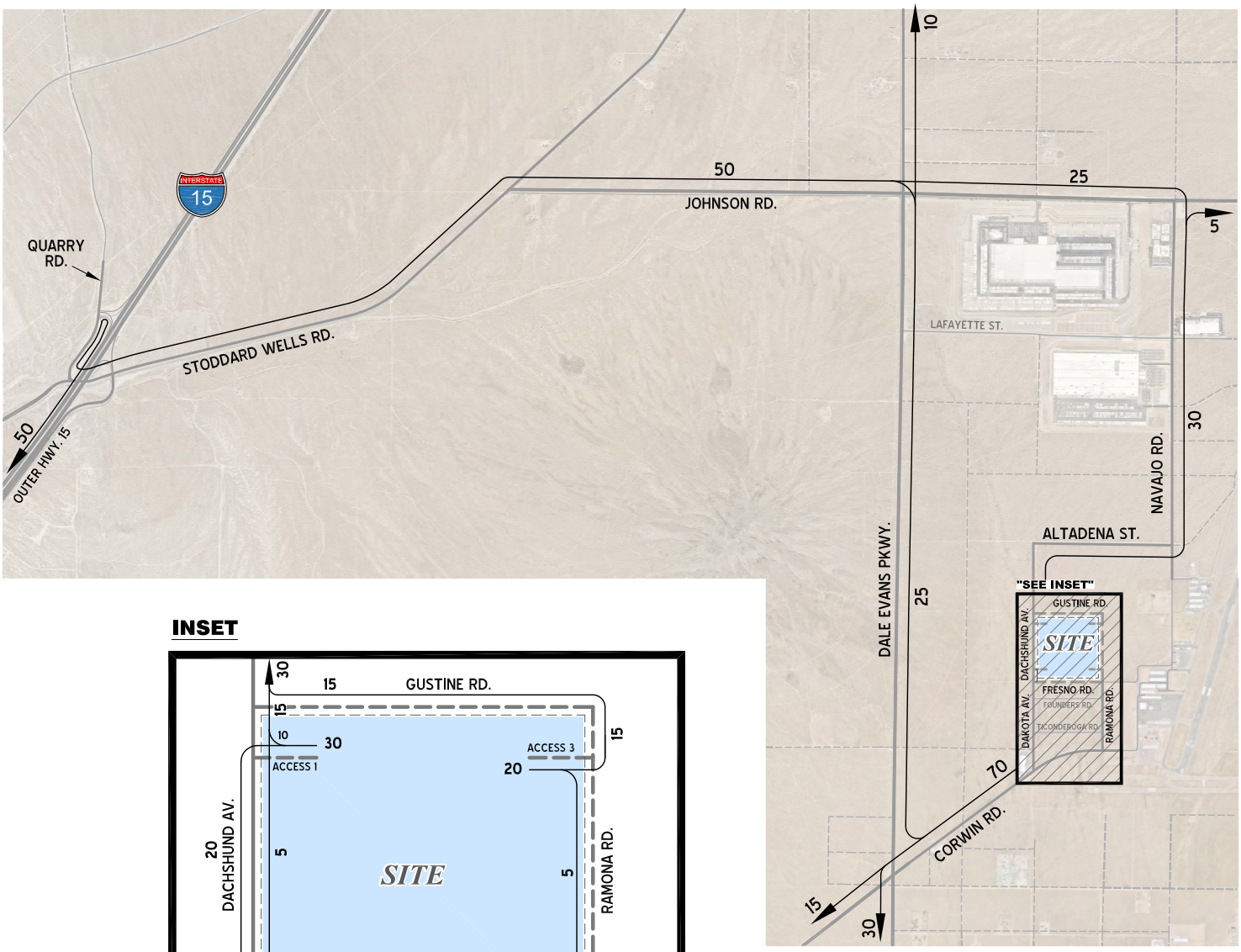
[2] TSF = Thousand Square Feet; DU = Dwelling Units

[3] Source: *TUMF High-Cube Warehouse Trip Generation Study* . Prepared by WSP, January 2019.
Passenger and Truck AM/PM peak hour (in/out) splits are estimated from based on ITE peak-to-daily relationship
Truck Daily Rate Source: *Notice of Preparation of a Draft Environmental Impact Report for the Proposed Potrero Logistics Center* .
Prepared by South Coast Air Quality Management District (SCAQMD), June 2020.

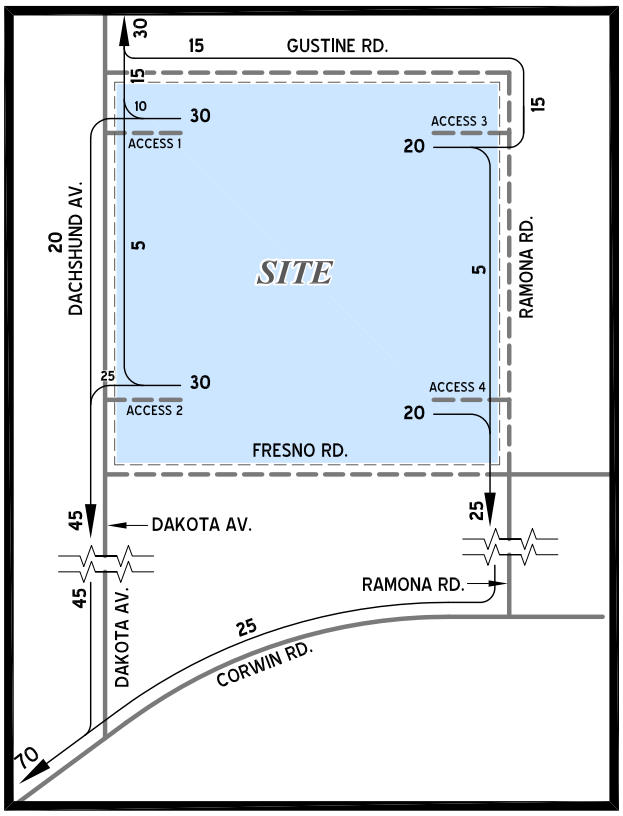
[4] Total Net Trips (PCE) = Passenger Cars + Net Truck Trips (Passenger Car Equivalent).

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Excel\[16091 - Scope.xlsx]16091 TG - PCE

EXHIBIT 2: PROJECT (PASSENGER CAR) TRIP DISTRIBUTION



INSET



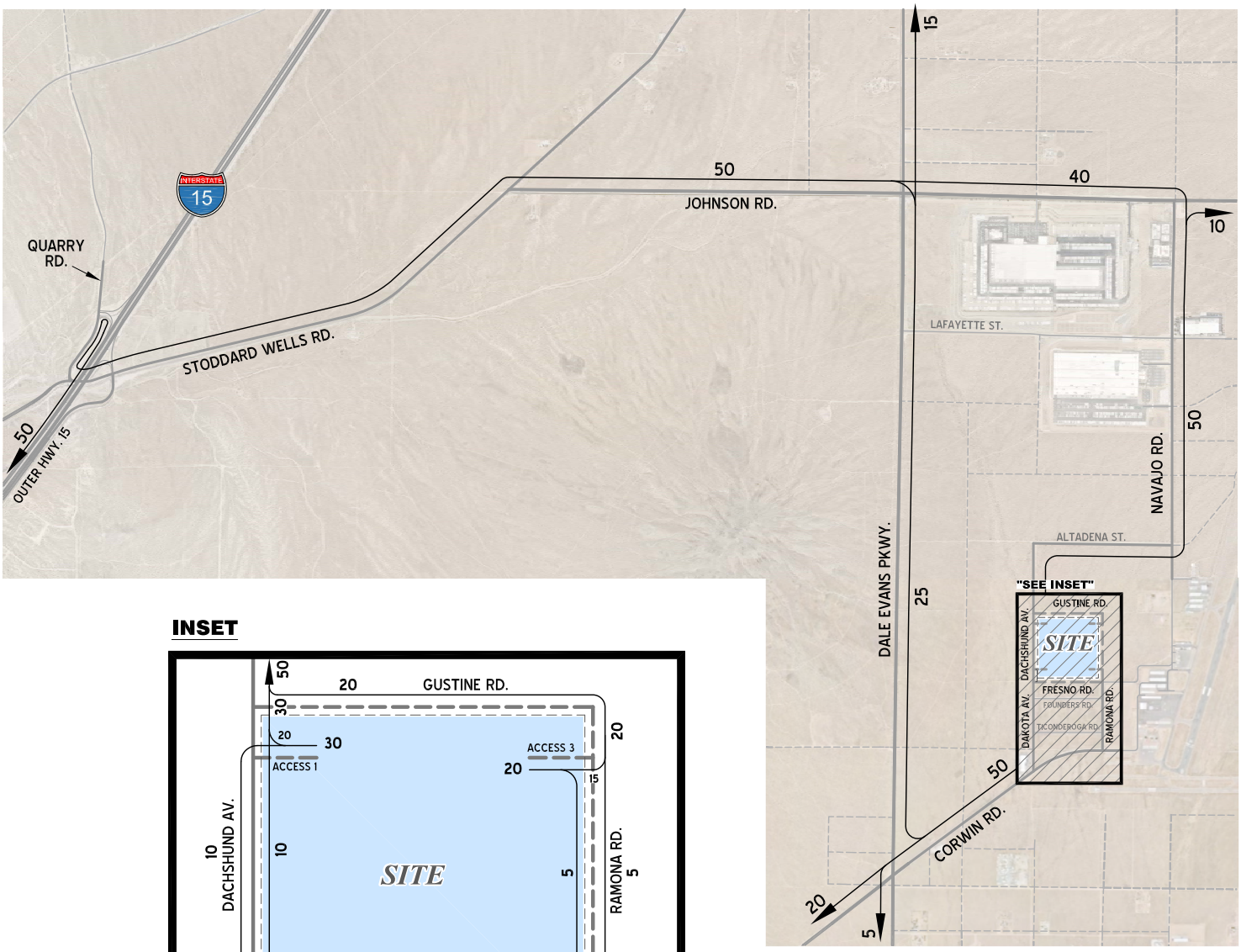
LEGEND:

10 = PERCENT TO/FROM PROJECT

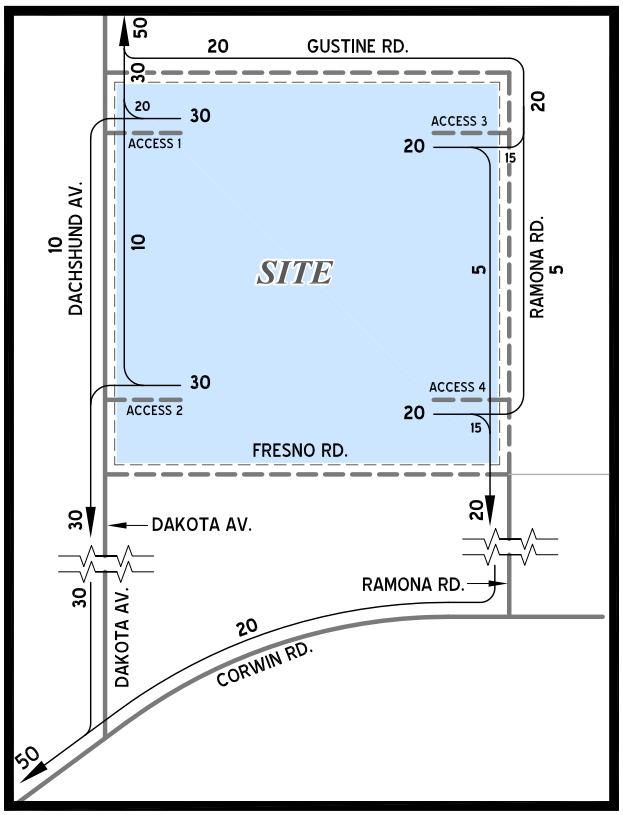
= FUTURE ROADWAY

N

EXHIBIT 3: PROJECT (TRUCK) TRIP DISTRIBUTION



INSET



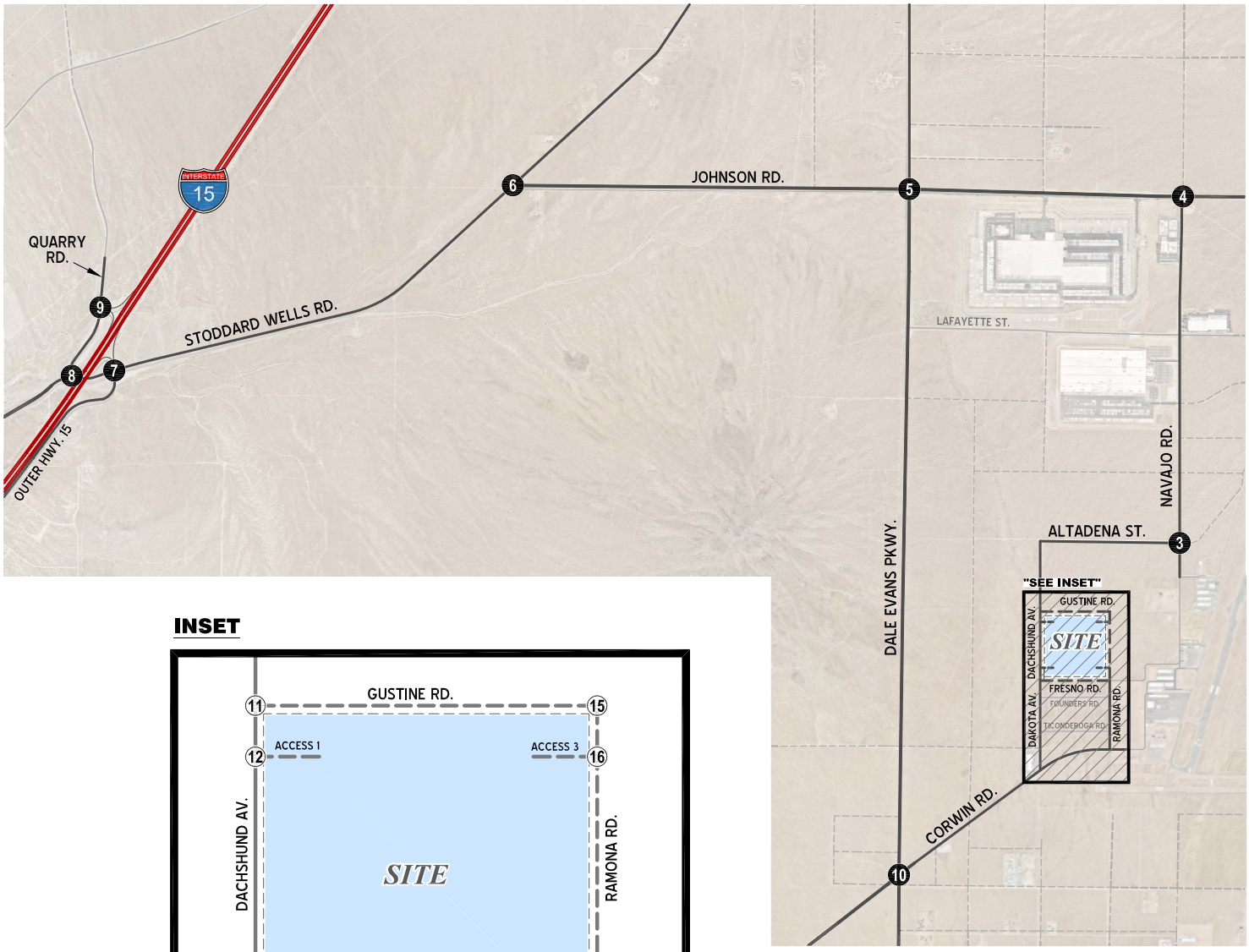
LEGEND:

10 = PERCENT TO/FROM PROJECT

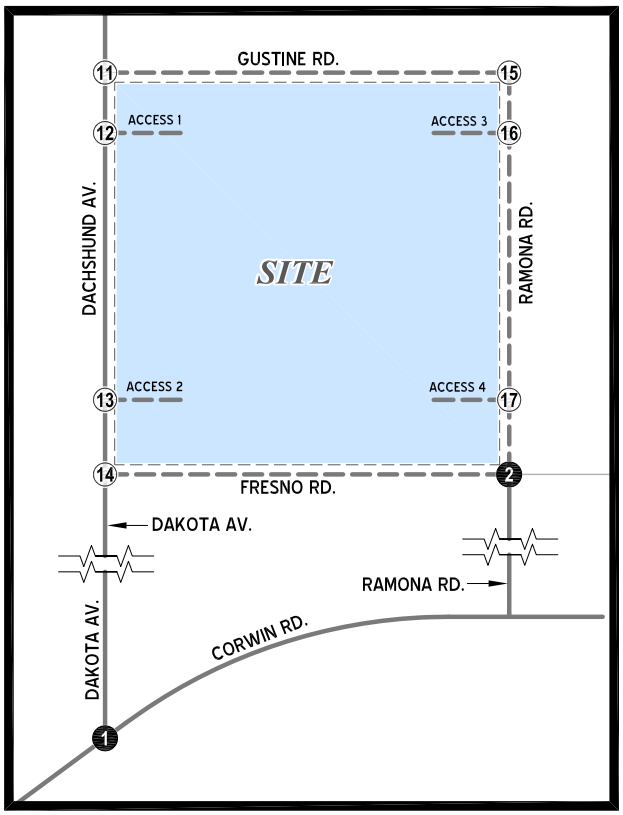
= FUTURE ROADWAY

N

EXHIBIT 4: TRAFFIC ANALYSIS STUDY AREA



INSET



LEGEND:

- 10 = EXISTING ANALYSIS LOCATION
- 7 = FUTURE ANALYSIS LOCATION
- = FUTURE ROADWAY

N

EXHIBIT 5: TOWN OF APPLE VALLEY GENERAL PLAN STREET SYSTEM

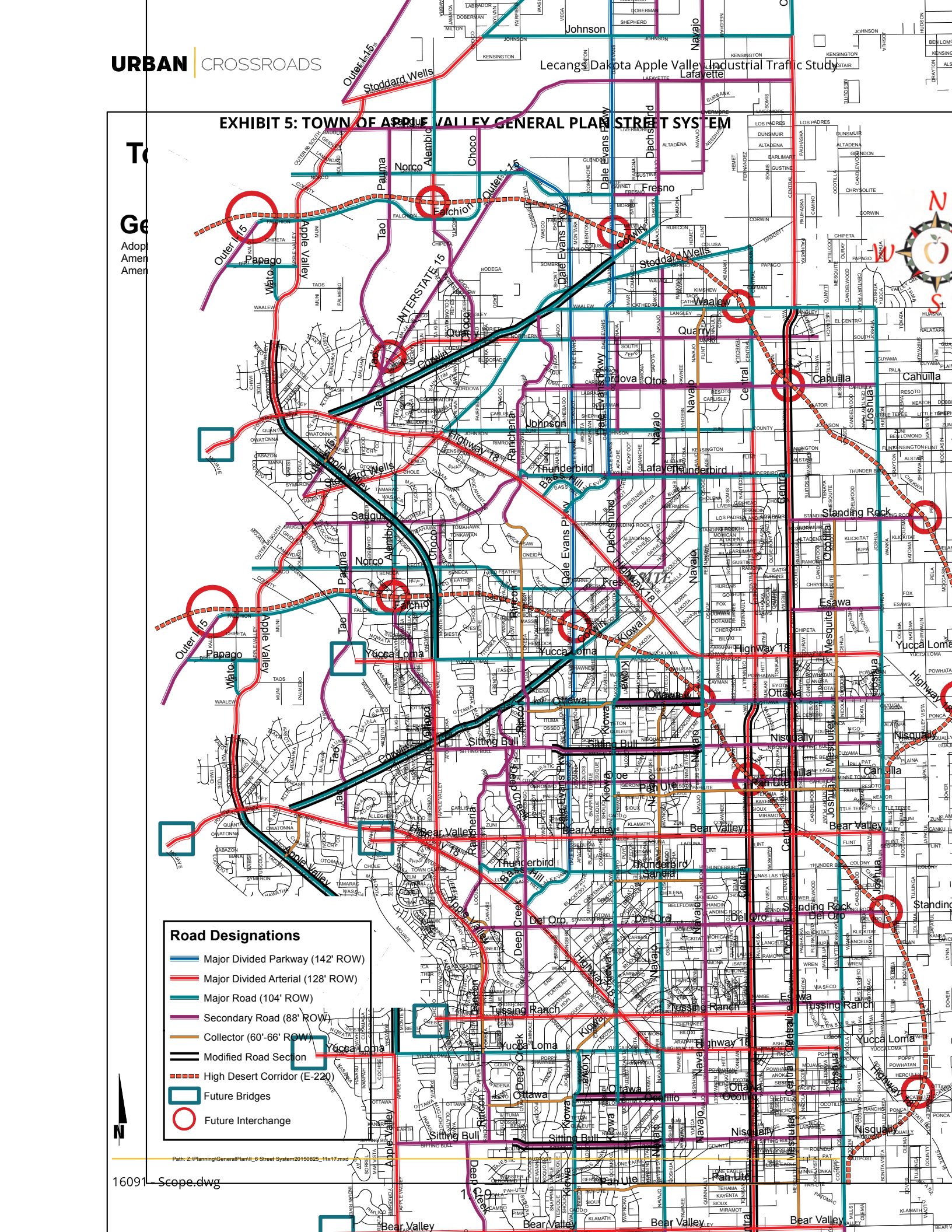
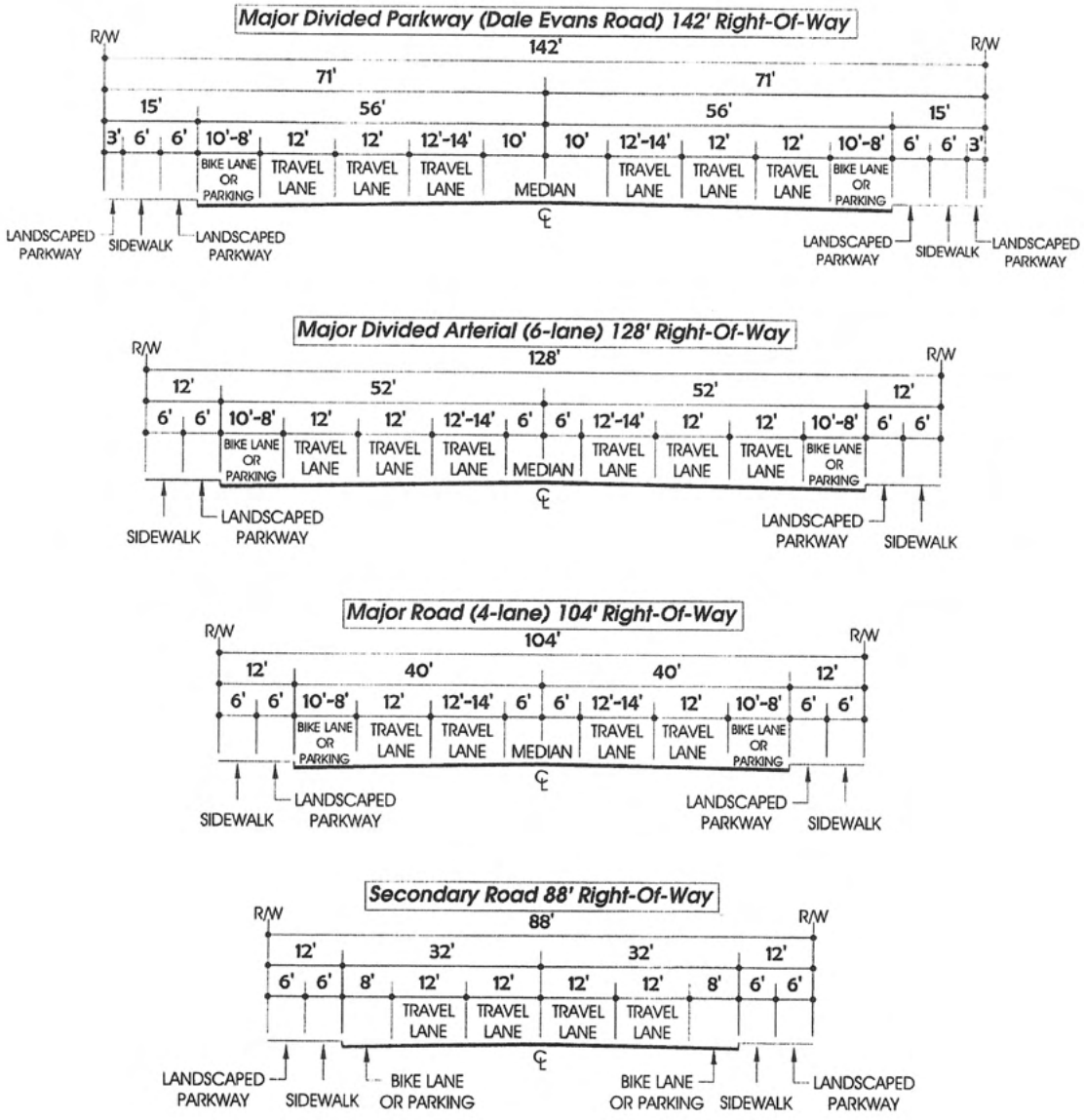


EXHIBIT 6: TOWN OF APPLE VALLEY GENERAL PLAN ROADWAY CROSS-SECTIONS



Source: Urban Crossroads 11.24.2008

TRAFFIC COUNTS

Majority of the traffic counts within the study area were collected in January 2024 and April 2024. New traffic counts (classified by vehicle type) will be conducted for the remaining intersections while local schools are in session and operating on a typical bell schedule. No adjustments are proposed to the traffic counts for the baseline traffic condition with the exception of any adjustments to account for volume balancing between closely spaced intersections.

AMBIENT GROWTH

Future year traffic forecasts will include background (ambient) growth at 2.0% per year, compounded annually. The total ambient growth is 4.04% for 2026 traffic conditions. The ambient growth factor is intended to approximate regional traffic growth. This ambient growth rate will be added to existing traffic volumes to account for area-wide growth not reflected by cumulative development projects.

CUMULATIVE PROJECTS

Exhibit 5 shows the locations of the cumulative projects listed on Table 3. It is requested that the Town review the list and also provide any additional current cumulative projects within the study area for inclusion in the Traffic Analysis.

IDENTIFYING DEFICIENCIES

The identification of project deficiencies is designed to identify potential level of service (**LOS**) problems and to address them before they occur. This will provide a framework for establishing transportation-related project conditions by the Town.

A project deficiency occurs when a signalized or unsignalized intersection is forecast to degrade intersection operations below the Town's acceptable LOS standard, which is identified in the Town's Circulation Element, or if a project adds five seconds of delay or more to an intersection that operates below acceptable standards without the addition of project traffic. Additionally, all unsignalized intersections shall be evaluated for a peak hour traffic signal warrant based on the California Manual on Uniform Transportation Control Devices (**MUTCD**). Any unsignalized intersection that meets the peak hour signal warrant is considered deficient.

IDENTIFYING IMPROVEMENTS AND COST ESTIMATES

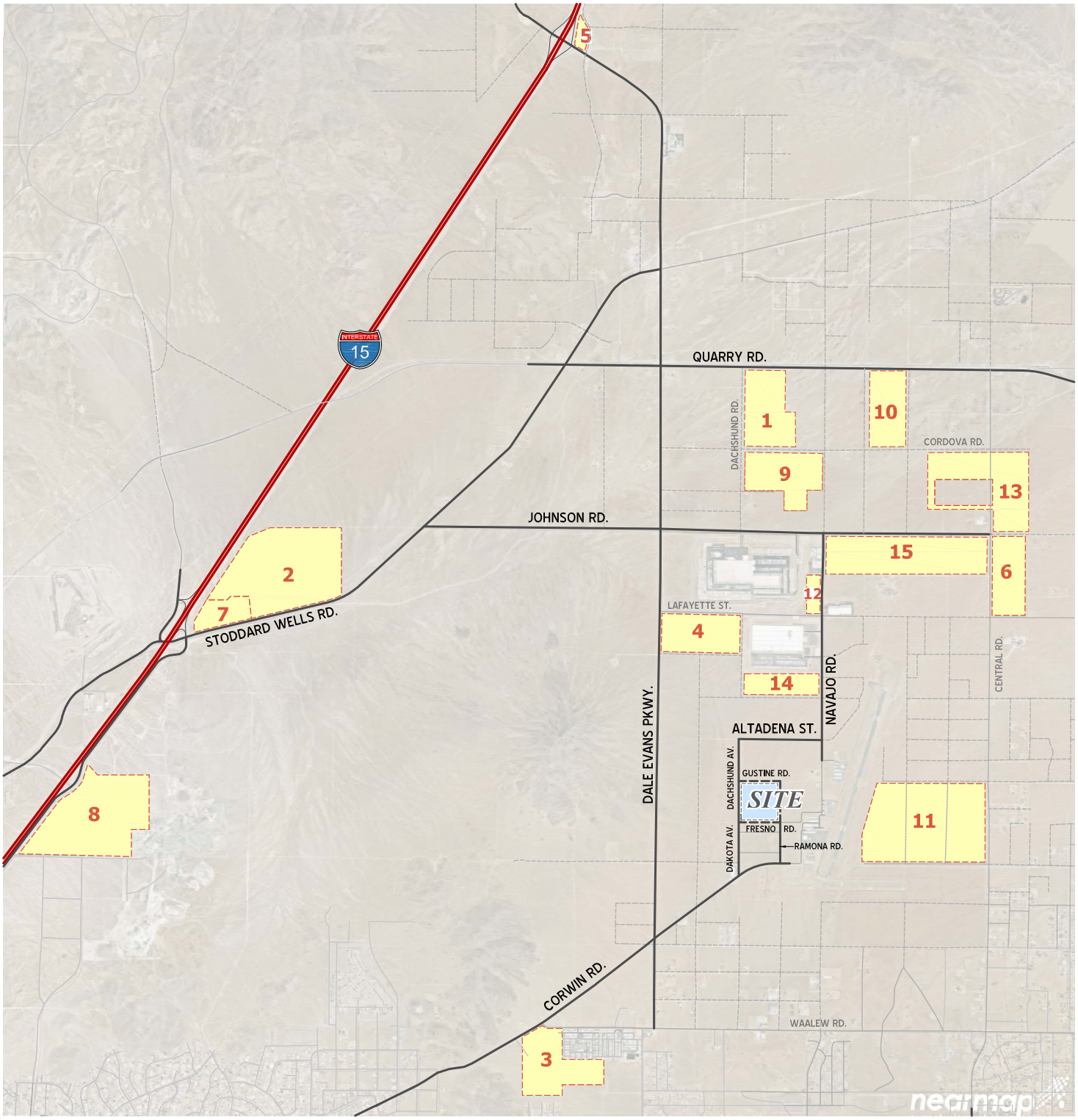
Physical improvements shall be identified at all intersections that are forecast to operate deficiently. Improvements under future year conditions must bring intersection operations to acceptable standards, while improvements under opening year conditions must bring intersection operations to better than pre-project conditions.

TABLE 3: LIST OF CUMULATIVE PROJECTS

TAZ	Project	Land Use	Quantity	Units[1]
1	Cordova Road Logistics (SEC Dachshund Av. & Quarry Rd.)	High-Cube Fulfillment Center	1,144.33	TSF
		High-Cube Cold Storage	201.94	TSF
2	Apple Valley 143	Industrial/Warehouse	2,518.50	TSF
3	TTM 20306 (south of Waalew & east of Corwin)	Single Family Residential	160	DU
4	Lafayette Street Logistics (Redwood West)	High-Cube Warehouse	1,026.41	TSF
		High-Cube Cold Storage	181.13	TSF
5	Apple Valley Gateway Center (north of Dale Evans & east of I-15)	Pad A - Hotel	84	RM
		Pad B - Fast-Food Restaurant w/ Drive-Thru	5.769	TSF
		Pad C - Gas Station with C-Store (5 TSF)	16	VFP
		Pad D - Gas Station with C-Store (3.35 TSF)	12	VFP
		Pad E - Fast-Food Restaurant w/ Drive-Thru	4.00	TSF
		Pad F - Fast-Food Restaurant w/ Drive-Thru	4.20	TSF
		Pad G - Restaurant	4.00	TSF
		Pad H - Shops	10.261	TSF
		Pad I - Fast-Food Restaurant w/ Drive-Thru	2.80	TSF
6	1M Warehouse (east of Central Road, between Johnson Road & Lafayette Street)	High Cube Fulfillment Center Warehouse	1,080.125	TSF
7	Apple Valley I-15 Travel Center (Love's Travel Stop - north of Stoddard Wells & east of I-15)	RV Park	80	Spaces
		Gas Station with C-Store (9.66 TSF)	26	VFP
		Fast-Food Restaurant w/ Drive-Thru	3.043	TSF
		Truck Maintenance/Tire Building	13.786	TSF
8	Inland Empire North Logistics Ctr. (north of Falchion Road & east of I-5)	Industrial/Warehouse	2,604.446	TSF
9	Cordova Quarry	High-Cube Cold Storage	1,559.952	TSF
10	Quarry at Pawnee	High-Cube Cold Storage	1,462.342	TSF
11	Lake Creek Logistics Center (Apple Valley Logistics Center)	General Light Industrial (10%)	348.074	TSF
		High-Cube Cold Storage (10%)	348.074	TSF
		High-Cube Fulfillment (80%)	2,784.588	TSF
12	Green Trucking Solutions	High-Cube Cold Storage	385.004	TSF
13	Apple Valley 3PL Center	Industrial/Warehouse	2,134.000	TSF
14	Watson High Desert Logistics West	High-Cube Fulfillment Center (Non-Sort)	896.500	TSF
15	Watson High Desert Logistics East	High-Cube Fulfillment Center (Non-Sort)	2,832.600	TSF

[1] DU = Dwelling Units; TSF = Thousand Square Feet; RM = Room; VFP = Vehicle Fueling Positions

EXHIBIT 7: CUMULATIVE DEVELOPMENT LOCATION MAP



LEGEND:

(#) = CUMULATIVE DEVELOPMENT ID

N

Opening year improvement costs are the sole responsibility of the project, and future year improvement costs are based on a fair share contribution calculation. The project's fair share contribution for future year improvements can be estimated using the following equation:

$$Fair\ Share\ Percentage = \frac{Project\ Trips}{Future\ Year\ With\ Project - Existing}$$

SITE ACCESS AND CHARACTERISTICS

LOS shall be estimated at all project driveways to ensure they are sized accordingly. The site should be reviewed to ensure that it does not have any design characteristics that would promote inefficient circulation. For example, proposed driveways should provide sufficient length so that vehicles entering the site will not cause subsequent vehicles entering the site to spill back into the Town transportation system. Additionally, driveways should have adequate space between existing/proposed driveways and other existing intersections to limit adverse effects at adjacent facilities and discourage weaving. Finally, the project's parking supply shall satisfy requirements set forth by the Town.

SPECIAL ISSUES

The following special issues will also be addressed:

- ***Queuing Analysis:*** conduct 95th percentile queuing assessment to ensure turn pockets can accommodate the anticipated peak hour queues at the Project driveways and at site adjacent intersections.
- ***Traffic Signal Warrant Analysis:*** Conduct traffic signal warrant analysis for all existing and future unsignalized study area intersections, which also includes all Project driveways.

SIGNAL TIMING

It is requested that the Town provide signal timing for any signalized Town-controlled intersections.

If you have any questions or comments, we can be reached at jkain@urbanxroads.com for John or mwhiteman@urbanxroads.com for Marlie

APPENDIX 1.2: SITE ADJACENT QUEUES

This Page Intentionally Left Blank

Intersection: 12: Dachshund Av. & Access 1

Movement	WB
Directions Served	LR
Maximum Queue (ft)	25
Average Queue (ft)	7
95th Queue (ft)	28
Link Distance (ft)	324
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 13: Dachshund Av. & Access 2

Movement	WB
Directions Served	LR
Maximum Queue (ft)	24
Average Queue (ft)	8
95th Queue (ft)	29
Link Distance (ft)	333
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 16: Ramona Rd. & Access 3

Movement	EB
Directions Served	LR
Maximum Queue (ft)	18
Average Queue (ft)	5
95th Queue (ft)	23
Link Distance (ft)	313
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 17: Ramona Rd. & Access 4

Movement	EB
Directions Served	LR
Maximum Queue (ft)	23
Average Queue (ft)	5
95th Queue (ft)	22
Link Distance (ft)	339
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Zone Summary

Zone wide Queuing Penalty: 0

Intersection: 12: Dachshund Av. & Access 1

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	40	5
Average Queue (ft)	22	1
95th Queue (ft)	49	8
Link Distance (ft)	324	169
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 13: Dachshund Av. & Access 2

Movement	WB
Directions Served	LR
Maximum Queue (ft)	30
Average Queue (ft)	20
95th Queue (ft)	43
Link Distance (ft)	333
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 16: Ramona Rd. & Access 3

Movement	EB
Directions Served	LR
Maximum Queue (ft)	36
Average Queue (ft)	16
95th Queue (ft)	43
Link Distance (ft)	313
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 17: Ramona Rd. & Access 4

Movement	EB
Directions Served	LR
Maximum Queue (ft)	31
Average Queue (ft)	11
95th Queue (ft)	34
Link Distance (ft)	339
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Zone Summary

Zone wide Queuing Penalty: 0

APPENDIX 3.1: TRAFFIC COUNTS

This Page Intentionally Left Blank

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Dakota Avenue
E/W: Corwin Road
Weather: Clear

File Name : 01_APV_Dak_Cor AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

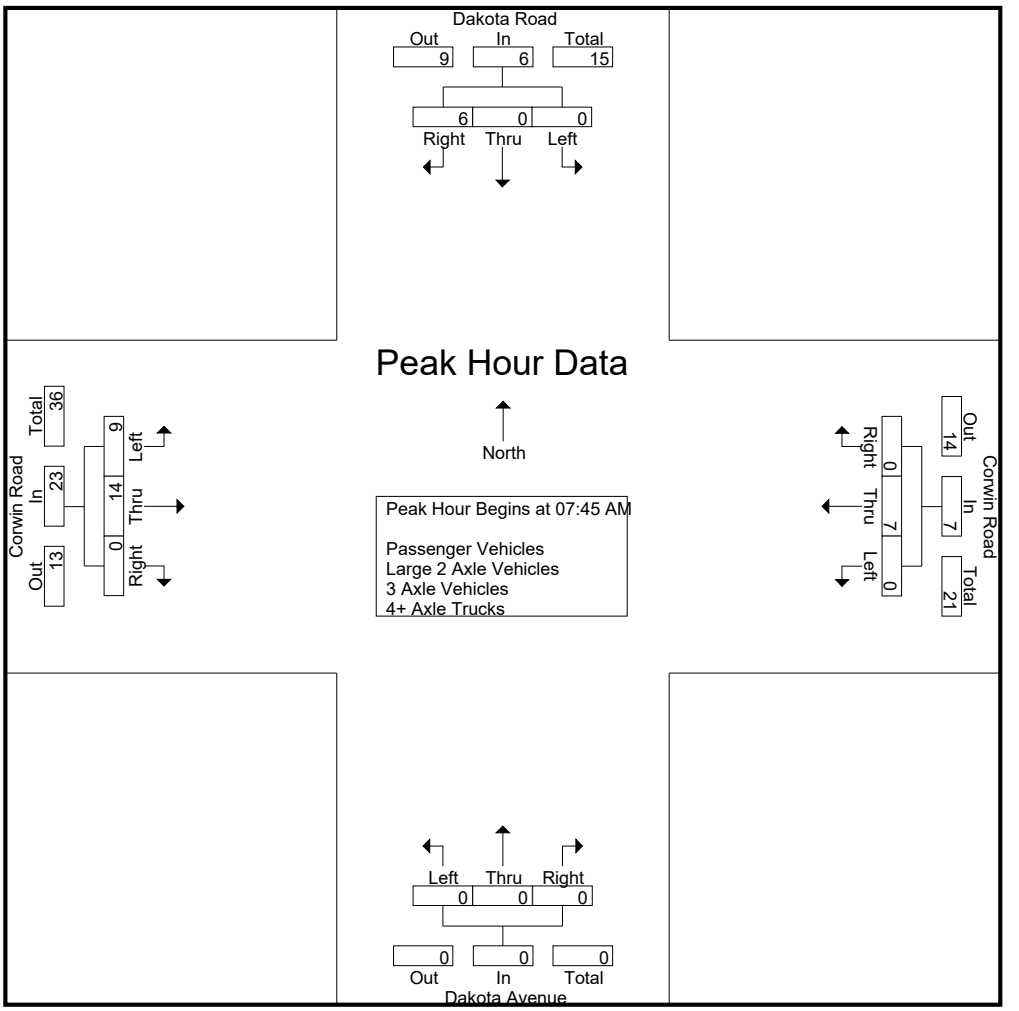
	Dakota Road Southbound				Corwin Road Westbound				Dakota Avenue Northbound				Corwin Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	1	1	0	1	0	1	0	0	0	0	3	5	0	8	10
07:15 AM	0	0	2	2	0	2	0	2	0	0	0	0	3	2	0	5	9
07:30 AM	0	0	1	1	0	3	0	3	0	0	0	0	0	1	0	1	5
07:45 AM	0	0	0	0	0	1	0	1	0	0	0	0	2	6	0	8	9
Total	0	0	4	4	0	7	0	7	0	0	0	0	8	14	0	22	33
08:00 AM	0	0	1	1	0	0	0	0	0	0	0	0	3	3	0	6	7
08:15 AM	0	0	2	2	0	1	0	1	0	0	0	0	1	2	0	3	6
08:30 AM	0	0	3	3	0	5	0	5	0	0	0	0	3	3	0	6	14
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	3	3
Total	0	0	6	6	0	6	0	6	0	0	0	0	8	10	0	18	30
Grand Total	0	0	10	10	0	13	0	13	0	0	0	0	16	24	0	40	63
Apprch %	0	0	100		0	100	0		0	0	0		40	60	0		
Total %	0	0	15.9	15.9	0	20.6	0	20.6	0	0	0	0	25.4	38.1	0	63.5	
Passenger Vehicles	0	0	10	10	0	13	0	13	0	0	0	0	16	24	0	40	63
% Passenger Vehicles	0	0	100	100	0	100	0	100	0	0	0	0	100	100	0	100	100
Large 2 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Large 2 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% 3 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4+ Axle Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% 4+ Axle Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Dakota Road Southbound				Corwin Road Westbound				Dakota Avenue Northbound				Corwin 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 07:45 AM																	
07:45 AM	0	0	0	0	0	1	0	1	0	0	0	0	2	**6**	0	**8**	9
08:00 AM	0	0	1	1	0	0	0	0	0	0	0	0	**3**	3	0	6	7
08:15 AM	0	0	2	2	0	1	0	1	0	0	0	0	1	2	0	3	6
08:30 AM	0	0	**3**	**3**	0	**5**	0	**5**	0	0	0	0	3	3	0	6	**14**
Total Volume	0	0	6	6	0	7	0	7	0	0	0	0	9	14	0	23	36
% App. Total	0	0	100		0	100	0		0	0	0		39.1	60.9	0		
PHF	.000	.000	.500	.500	.000	.350	.000	.350	.000	.000	.000	.000	.750	.583	.000	.719	.643

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Dakota Avenue
E/W: Corwin Road
Weather: Clear

File Name : 01_APV_Dak_Cor AM
Site Code : 05124741
Start Date : 8/27/2024
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				07:00 AM				07:00 AM				07:45 AM			
+0 mins.	0	0	0	0	0	1	0	1	0	0	0	0	2	**6**	0	**8**
+15 mins.	0	0	1	1	0	2	0	2	0	0	0	0	**3**	3	0	6
+30 mins.	0	0	2	2	0	**3**	0	**3**	0	0	0	0	1	2	0	3
+45 mins.	0	0	**3**	**3**	0	1	0	1	0	0	0	0	3	3	0	6
Total Volume	0	0	6	6	0	7	0	7	0	0	0	0	9	14	0	23
% App. Total	0	0	100		0	100	0		0	0	0		39.1	60.9	0	
PHF	.000	.000	.500	.500	.000	.583	.000	.583	.000	.000	.000	.000	.750	.583	.000	.719

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Dakota Avenue
E/W: Corwin Road
Weather: Clear

File Name : 01_APV_Dak_Cor AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- Passenger Vehicles

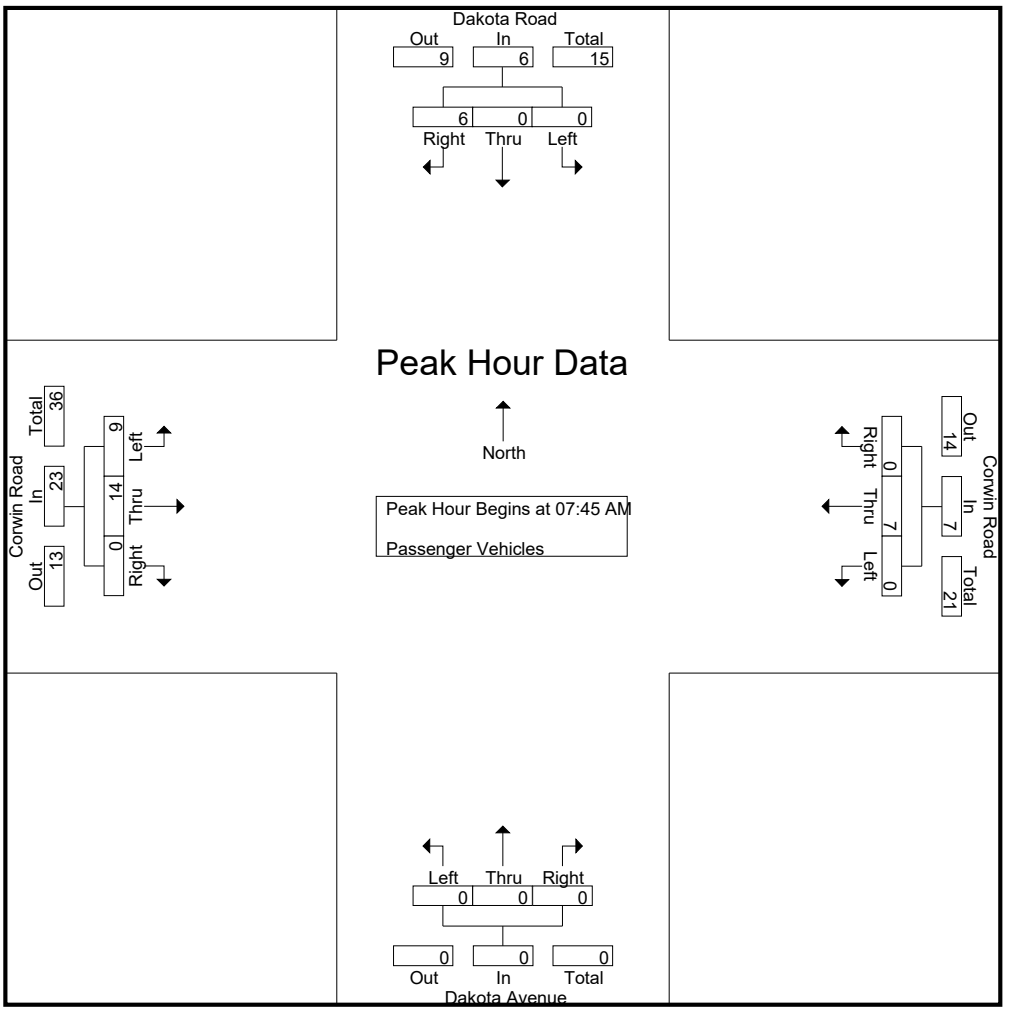
	Dakota Road Southbound				Corwin Road Westbound				Dakota Avenue Northbound				Corwin Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	1	1	0	1	0	1	0	0	0	0	3	5	0	8	10
07:15 AM	0	0	2	2	0	2	0	2	0	0	0	0	3	2	0	5	9
07:30 AM	0	0	1	1	0	3	0	3	0	0	0	0	0	1	0	1	5
07:45 AM	0	0	0	0	0	1	0	1	0	0	0	0	2	6	0	8	9
Total	0	0	4	4	0	7	0	7	0	0	0	0	8	14	0	22	33
08:00 AM	0	0	1	1	0	0	0	0	0	0	0	0	3	3	0	6	7
08:15 AM	0	0	2	2	0	1	0	1	0	0	0	0	1	2	0	3	6
08:30 AM	0	0	3	3	0	5	0	5	0	0	0	0	3	3	0	6	14
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	3	3
Total	0	0	6	6	0	6	0	6	0	0	0	0	8	10	0	18	30
Grand Total	0	0	10	10	0	13	0	13	0	0	0	0	16	24	0	40	63
Apprch %	0	0	100		0	100	0		0	0	0		40	60	0		
Total %	0	0	15.9	15.9	0	20.6	0	20.6	0	0	0	0	25.4	38.1	0	63.5	

	Dakota Road Southbound				Corwin Road Westbound				Dakota Avenue Northbound				Corwin 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 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	0	0	0	1	0	1	0	0	0	0	2	**6**	0	**8**	9
08:00 AM	0	0	1	1	0	0	0	0	0	0	0	0	**3**	3	0	6	7
08:15 AM	0	0	2	2	0	1	0	1	0	0	0	0	1	2	0	3	6
08:30 AM	0	0	**3**	**3**	0	**5**	0	**5**	0	0	0	0	3	3	0	6	**14**
Total Volume	0	0	6	6	0	7	0	7	0	0	0	0	9	14	0	23	36
% App. Total	0	0	100		0	100	0		0	0	0		39.1	60.9	0		
PHF	.000	.000	.500	.500	.000	.350	.000	.350	.000	.000	.000	.000	.750	.583	.000	.719	.643

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Dakota Avenue
E/W: Corwin Road
Weather: Clear

File Name : 01_APV_Dak_Cor AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	0	0	0	0	0	1	0	1	0	0	0	0	2	**6**	0	**8**
+15 mins.	0	0	1	1	0	0	0	0	0	0	0	0	**3**	3	0	6
+30 mins.	0	0	2	2	0	1	0	1	0	0	0	0	1	2	0	3
+45 mins.	0	0	**3**	**3**	0	**5**	0	**5**	0	0	0	0	3	3	0	6
Total Volume	0	0	6	6	0	7	0	7	0	0	0	0	9	14	0	23
% App. Total	0	0	100		0	100	0		0	0	0		39.1	60.9	0	
PHF	.000	.000	.500	.500	.000	.350	.000	.350	.000	.000	.000	.000	.750	.583	.000	.719

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Dakota Avenue
E/W: Corwin Road
Weather: Clear

File Name : 01_APV_Dak_Cor AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- Large 2 Axle Vehicles

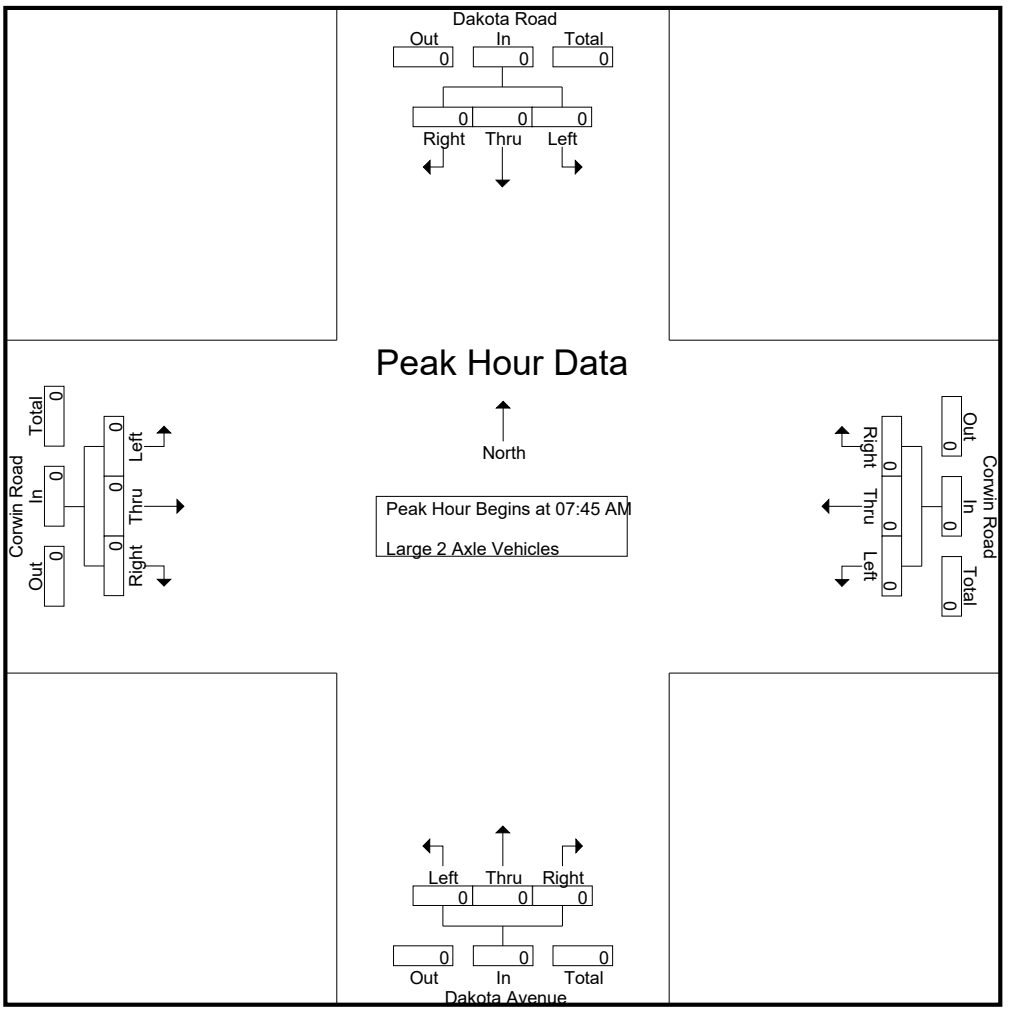
	Dakota Road Southbound				Corwin Road Westbound				Dakota Avenue Northbound				Corwin Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0		
Total %																	

	Dakota Road Southbound				Corwin Road Westbound				Dakota Avenue Northbound				Corwin 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 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Dakota Avenue
E/W: Corwin Road
Weather: Clear

File Name : 01_APV_Dak_Cor AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Dakota Avenue
E/W: Corwin Road
Weather: Clear

File Name : 01_APV_Dak_Cor AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- 3 Axle Vehicles

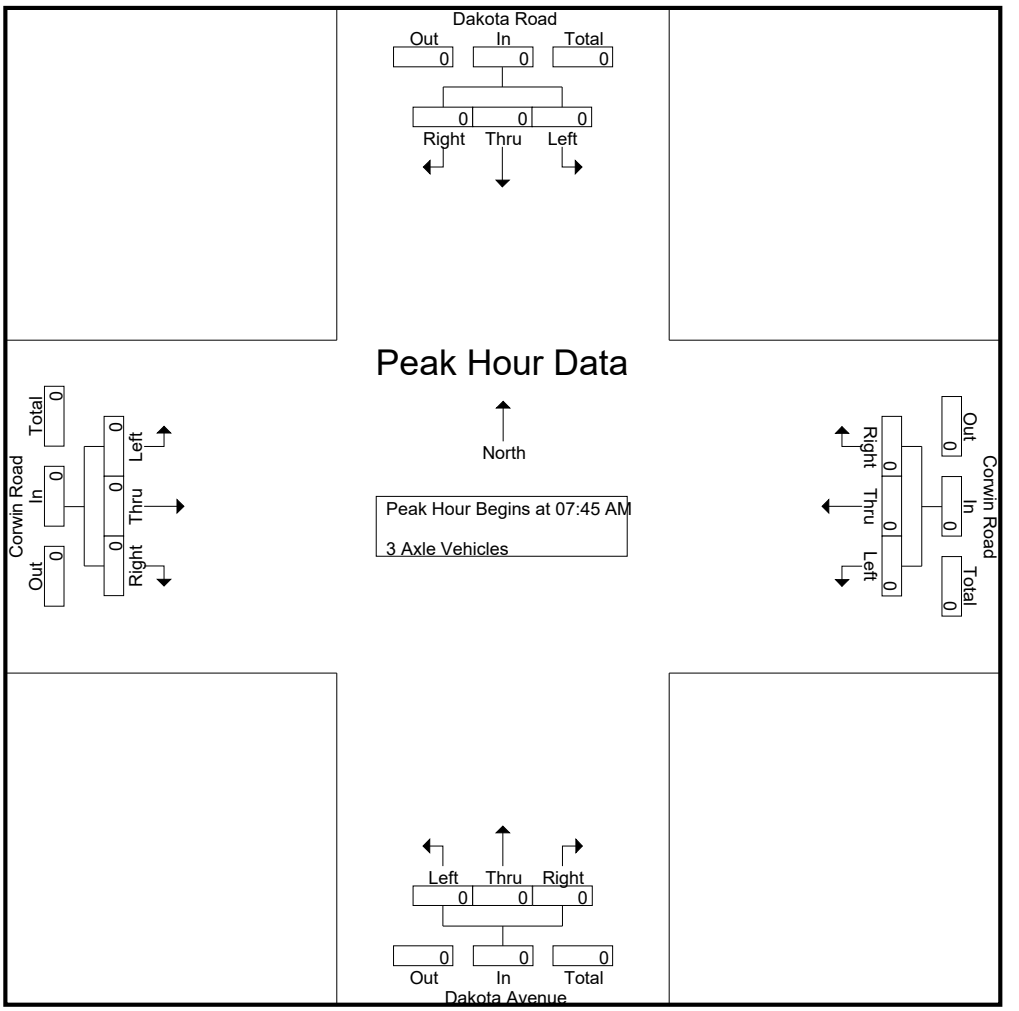
	Dakota Road Southbound				Corwin Road Westbound				Dakota Avenue Northbound				Corwin Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0		
Total %																	

	Dakota Road Southbound				Corwin Road Westbound				Dakota Avenue Northbound				Corwin 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 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Dakota Avenue
E/W: Corwin Road
Weather: Clear

File Name : 01_APV_Dak_Cor AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Dakota Avenue
E/W: Corwin Road
Weather: Clear

File Name : 01_APV_Dak_Cor AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- 4+ Axle Trucks

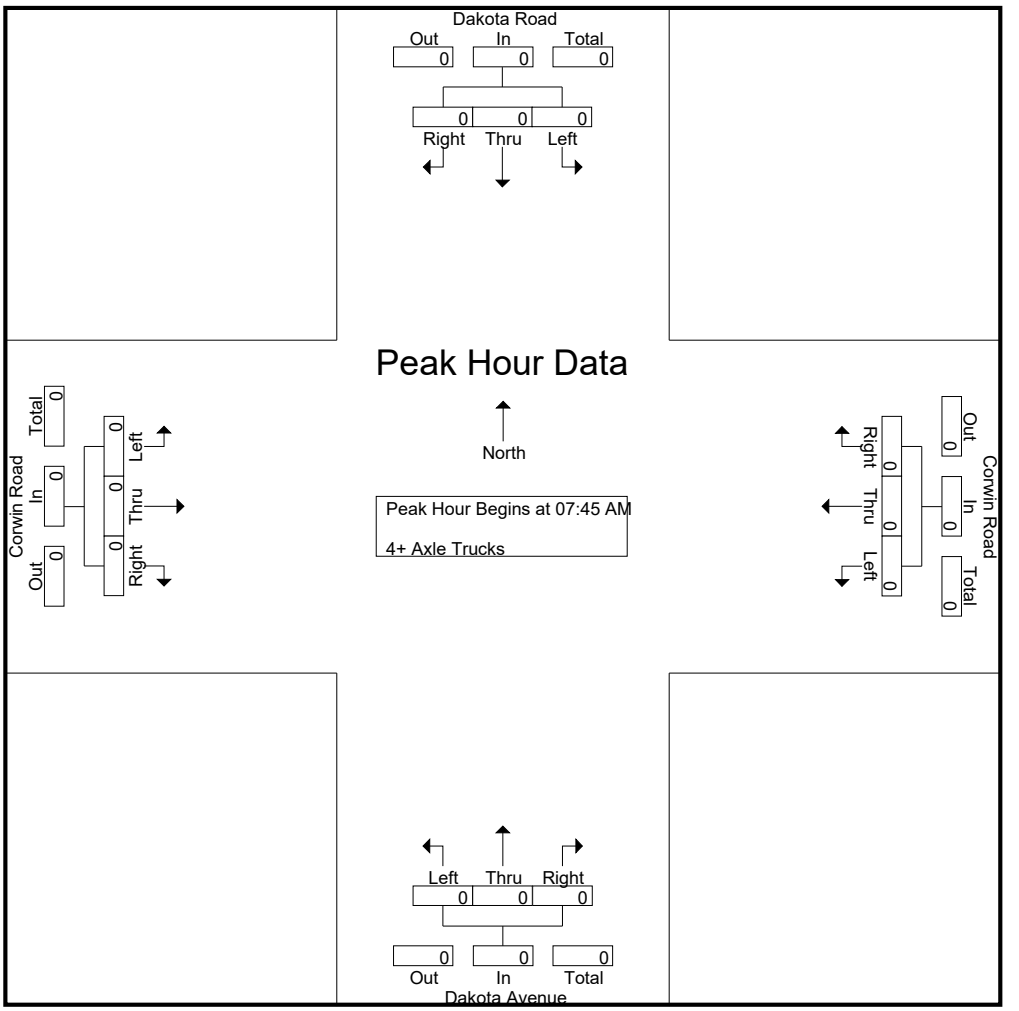
	Dakota Road Southbound				Corwin Road Westbound				Dakota Avenue Northbound				Corwin Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0		
Total %																	

	Dakota Road Southbound				Corwin Road Westbound				Dakota Avenue Northbound				Corwin 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 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Dakota Avenue
E/W: Corwin Road
Weather: Clear

File Name : 01_APV_Dak_Cor AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Dakota Avenue
E/W: Corwin Road
Weather: Clear

File Name : 01_APV_Dak_Cor PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

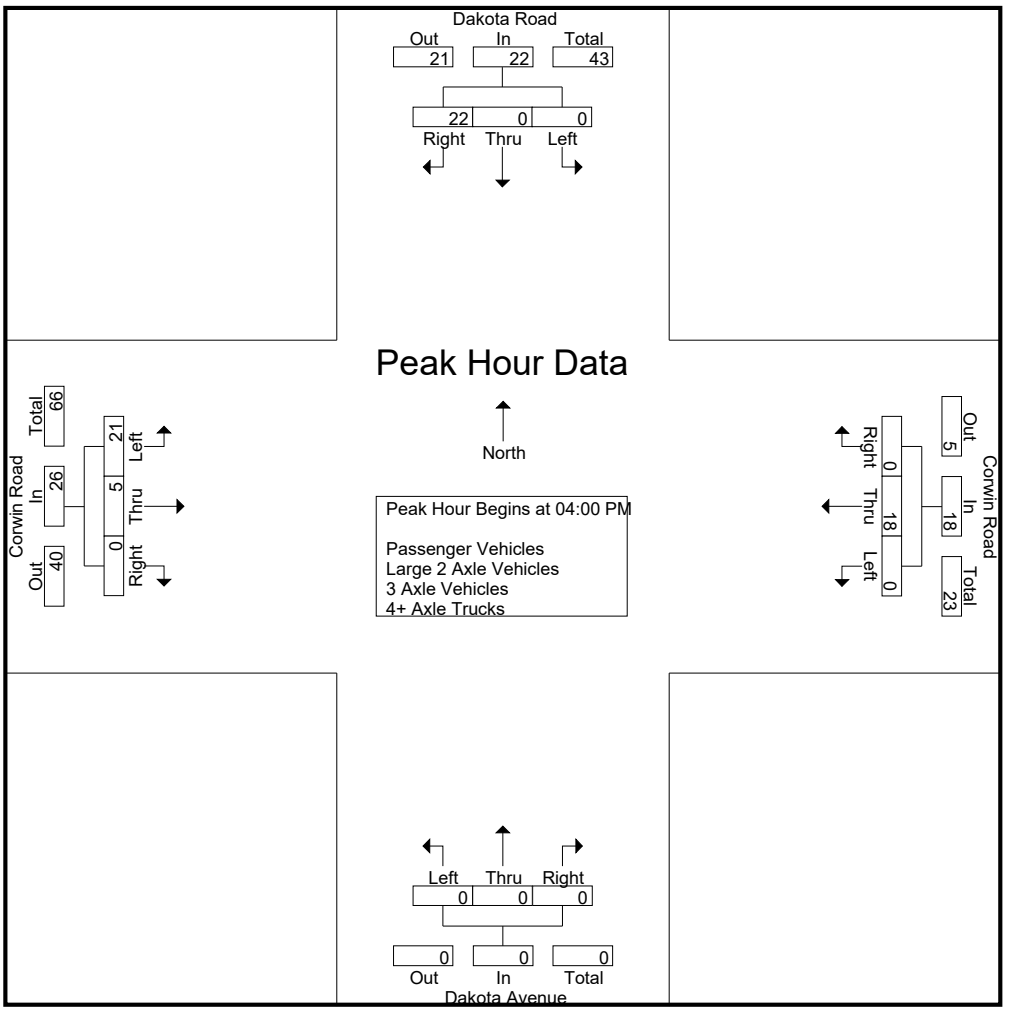
	Dakota Road Southbound				Corwin Road Westbound				Dakota Avenue Northbound				Corwin Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	7	7	0	8	0	8	0	0	0	0	7	2	0	9	24
04:15 PM	0	0	7	7	0	4	0	4	0	0	0	0	7	1	0	8	19
04:30 PM	0	0	6	6	0	1	0	1	0	0	0	0	2	0	0	2	9
04:45 PM	0	0	2	2	0	5	0	5	0	0	0	0	5	2	0	7	14
Total	0	0	22	22	0	18	0	18	0	0	0	0	21	5	0	26	66
05:00 PM	0	0	5	5	0	1	0	1	0	0	0	0	0	2	0	2	8
05:15 PM	0	0	1	1	0	1	0	1	0	0	0	0	0	1	0	1	3
05:30 PM	0	0	6	6	0	2	0	2	0	0	0	0	1	0	0	1	9
05:45 PM	0	0	1	1	0	2	0	2	0	1	0	1	0	0	0	0	4
Total	0	0	13	13	0	6	0	6	0	1	0	1	1	3	0	4	24
Grand Total	0	0	35	35	0	24	0	24	0	1	0	1	22	8	0	30	90
Apprch %	0	0	100		0	100	0		0	100	0		73.3	26.7	0		
Total %	0	0	38.9	38.9	0	26.7	0	26.7	0	1.1	0	1.1	24.4	8.9	0	33.3	
Passenger Vehicles	0	0	34	34	0	23	0	23	0	1	0	1	22	8	0	30	88
% Passenger Vehicles	0	0	97.1	97.1	0	95.8	0	95.8	0	100	0	100	100	100	0	100	97.8
Large 2 Axle Vehicles	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	2
% Large 2 Axle Vehicles	0	0	2.9	2.9	0	4.2	0	4.2	0	0	0	0	0	0	0	0	2.2
3 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% 3 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4+ Axle Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% 4+ Axle Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Dakota Road Southbound				Corwin Road Westbound				Dakota Avenue Northbound				Corwin 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	0	0	**7**	**7**	0	**8**	0	**8**	0	0	0	0	**7**	**2**	0	**9**	**24**
04:15 PM	0	0	7	7	0	4	0	4	0	0	0	0	7	1	0	8	19
04:30 PM	0	0	6	6	0	1	0	1	0	0	0	0	2	0	0	2	9
04:45 PM	0	0	2	2	0	5	0	5	0	0	0	0	5	2	0	7	14
Total Volume	0	0	22	22	0	18	0	18	0	0	0	0	21	5	0	26	66
% App. Total	0	0	100		0	100	0		0	0	0		80.8	19.2	0		
PHF	.000	.000	.786	.786	.000	.563	.000	.563	.000	.000	.000	.000	.750	.625	.000	.722	.688

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Dakota Avenue
E/W: Corwin Road
Weather: Clear

File Name : 01_APV_Dak_Cor PM
Site Code : 05124741
Start Date : 8/27/2024
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				05:00 PM				04:00 PM			
+0 mins.	0	0	**7**	**7**	0	**8**	0	**8**	0	0	0	0	**7**	**2**	0	**9**
+15 mins.	0	0	7	7	0	4	0	4	0	0	0	0	7	1	0	8
+30 mins.	0	0	6	6	0	1	0	1	0	0	0	0	2	0	0	2
+45 mins.	0	0	2	2	0	5	0	5	0	**1**	0	**1**	5	2	0	7
Total Volume	0	0	22	22	0	18	0	18	0	1	0	1	21	5	0	26
% App. Total	0	0	100		0	100	0		0	100	0		80.8	19.2	0	
PHF	.000	.000	.786	.786	.000	.563	.000	.563	.000	.250	.000	.250	.750	.625	.000	.722

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Dakota Avenue
E/W: Corwin Road
Weather: Clear

File Name : 01_APV_Dak_Cor PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- Passenger Vehicles

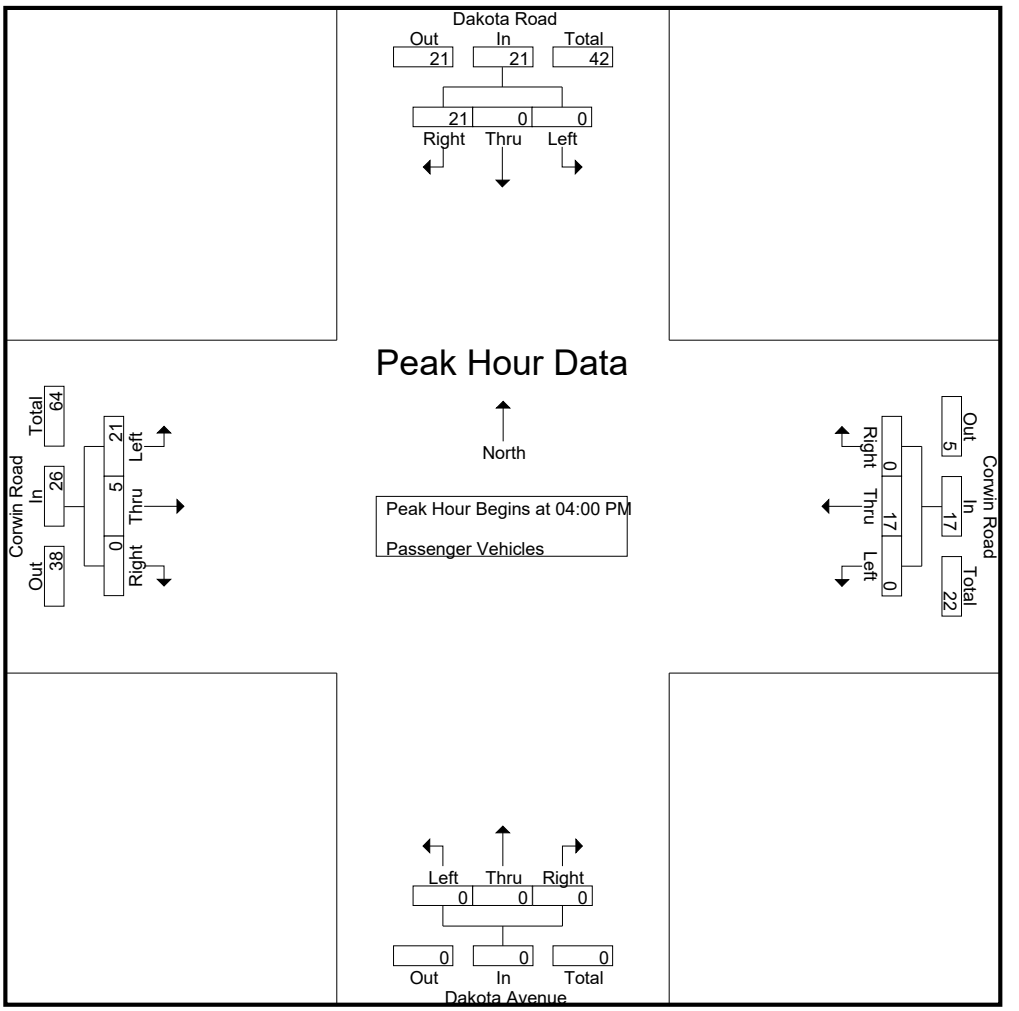
	Dakota Road Southbound				Corwin Road Westbound				Dakota Avenue Northbound				Corwin Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	7	7	0	7	0	7	0	0	0	0	7	2	0	9	23
04:15 PM	0	0	6	6	0	4	0	4	0	0	0	0	7	1	0	8	18
04:30 PM	0	0	6	6	0	1	0	1	0	0	0	0	2	0	0	2	9
04:45 PM	0	0	2	2	0	5	0	5	0	0	0	0	5	2	0	7	14
Total	0	0	21	21	0	17	0	17	0	0	0	0	21	5	0	26	64
05:00 PM	0	0	5	5	0	1	0	1	0	0	0	0	0	2	0	2	8
05:15 PM	0	0	1	1	0	1	0	1	0	0	0	0	0	1	0	1	3
05:30 PM	0	0	6	6	0	2	0	2	0	0	0	0	1	0	0	1	9
05:45 PM	0	0	1	1	0	2	0	2	0	1	0	1	0	0	0	0	4
Total	0	0	13	13	0	6	0	6	0	1	0	1	1	3	0	4	24
Grand Total	0	0	34	34	0	23	0	23	0	1	0	1	22	8	0	30	88
Apprch %	0	0	100		0	100	0		0	100	0		73.3	26.7	0		
Total %	0	0	38.6	38.6	0	26.1	0	26.1	0	1.1	0	1.1	25	9.1	0	34.1	

	Dakota Road Southbound				Corwin Road Westbound				Dakota Avenue Northbound				Corwin 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 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	**7**	**7**	0	**7**	0	**7**	0	0	0	0	**7**	**2**	0	**9**	**23**
04:15 PM	0	0	6	6	0	4	0	4	0	0	0	0	7	1	0	8	18
04:30 PM	0	0	6	6	0	1	0	1	0	0	0	0	2	0	0	2	9
04:45 PM	0	0	2	2	0	5	0	5	0	0	0	0	5	2	0	7	14
Total Volume	0	0	21	21	0	17	0	17	0	0	0	0	21	5	0	26	64
% App. Total	0	0	100		0	100	0		0	0	0		80.8	19.2	0		
PHF	.000	.000	.750	.750	.000	.607	.000	.607	.000	.000	.000	.000	.750	.625	.000	.722	.696

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Dakota Avenue
E/W: Corwin Road
Weather: Clear

File Name : 01_APV_Dak_Cor PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 2



Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	**7**	**7**	0	**7**	0	**7**	0	0	0	0	**7**	**2**	0	**9**
+15 mins.	0	0	6	6	0	4	0	4	0	0	0	0	7	1	0	8
+30 mins.	0	0	6	6	0	1	0	1	0	0	0	0	2	0	0	2
+45 mins.	0	0	2	2	0	5	0	5	0	0	0	0	5	2	0	7
Total Volume	0	0	21	21	0	17	0	17	0	0	0	0	21	5	0	26
% App. Total	0	0	100		0	100	0		0	0	0		80.8	19.2	0	
PHF	.000	.000	.750	.750	.000	.607	.000	.607	.000	.000	.000	.000	.750	.625	.000	.722

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Dakota Avenue
E/W: Corwin Road
Weather: Clear

File Name : 01_APV_Dak_Cor PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- Large 2 Axle Vehicles

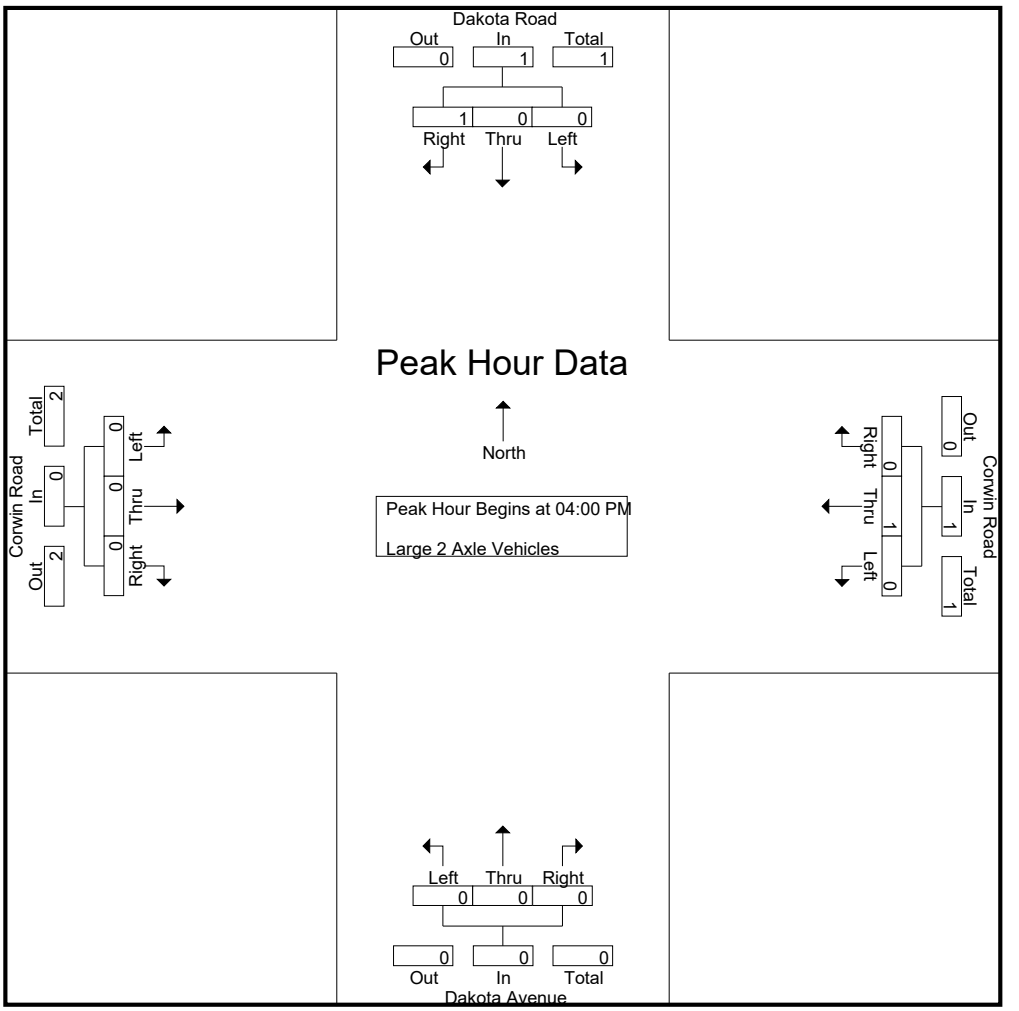
	Dakota Road Southbound				Corwin Road Westbound				Dakota Avenue Northbound				Corwin Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
04:15 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	2
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	2
Apprch %	0	0	100		0	100	0		0	0	0		0	0	0		
Total %	0	0	50	50	0	50	0	50	0	0	0	0	0	0	0	0	

	Dakota Road Southbound				Corwin Road Westbound				Dakota Avenue Northbound				Corwin 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 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	**1**	0	**1**	0	0	0	0	0	0	0	0	**1**
04:15 PM	0	0	**1**	**1**	0	0	0	0	0	0	0	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	2
% App. Total	0	0	100		0	100	0		0	0	0		0	0	0		
PHF	.000	.000	.250	.250	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.500

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Dakota Avenue
E/W: Corwin Road
Weather: Clear

File Name : 01_APV_Dak_Cor PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 2



Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	0	0	0	**1**	0	**1**	0	0	0	0	0	0	0	0
+15 mins.	0	0	**1**	**1**	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0
% App. Total	0	0	100		0	100	0		0	0	0		0	0	0	
PHF	.000	.000	.250	.250	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Dakota Avenue
E/W: Corwin Road
Weather: Clear

File Name : 01_APV_Dak_Cor PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- 3 Axle Vehicles

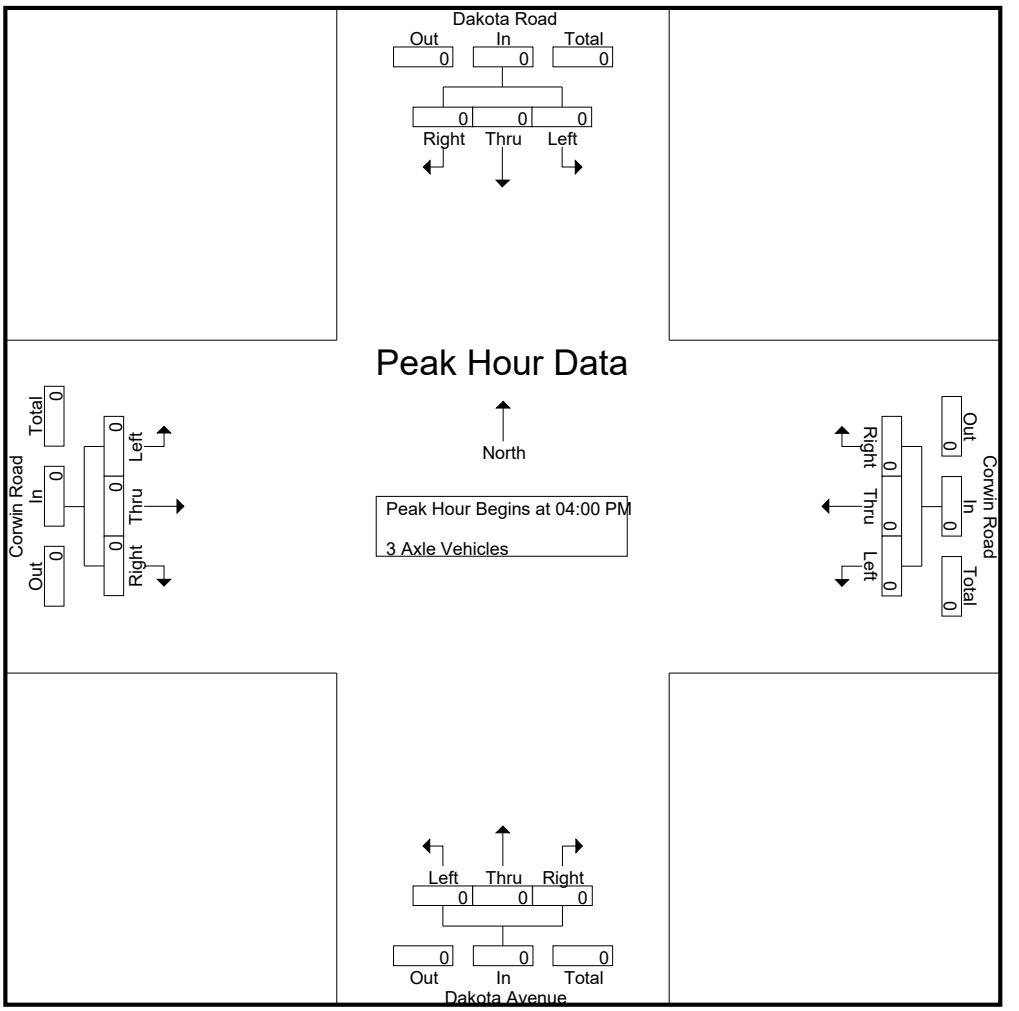
	Dakota Road Southbound				Corwin Road Westbound				Dakota Avenue Northbound				Corwin Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0		
Total %																	

	Dakota Road Southbound				Corwin Road Westbound				Dakota Avenue Northbound				Corwin 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 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Dakota Avenue
E/W: Corwin Road
Weather: Clear

File Name : 01_APV_Dak_Cor PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 2



Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Dakota Avenue
E/W: Corwin Road
Weather: Clear

File Name : 01_APV_Dak_Cor PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- 4+ Axle Trucks

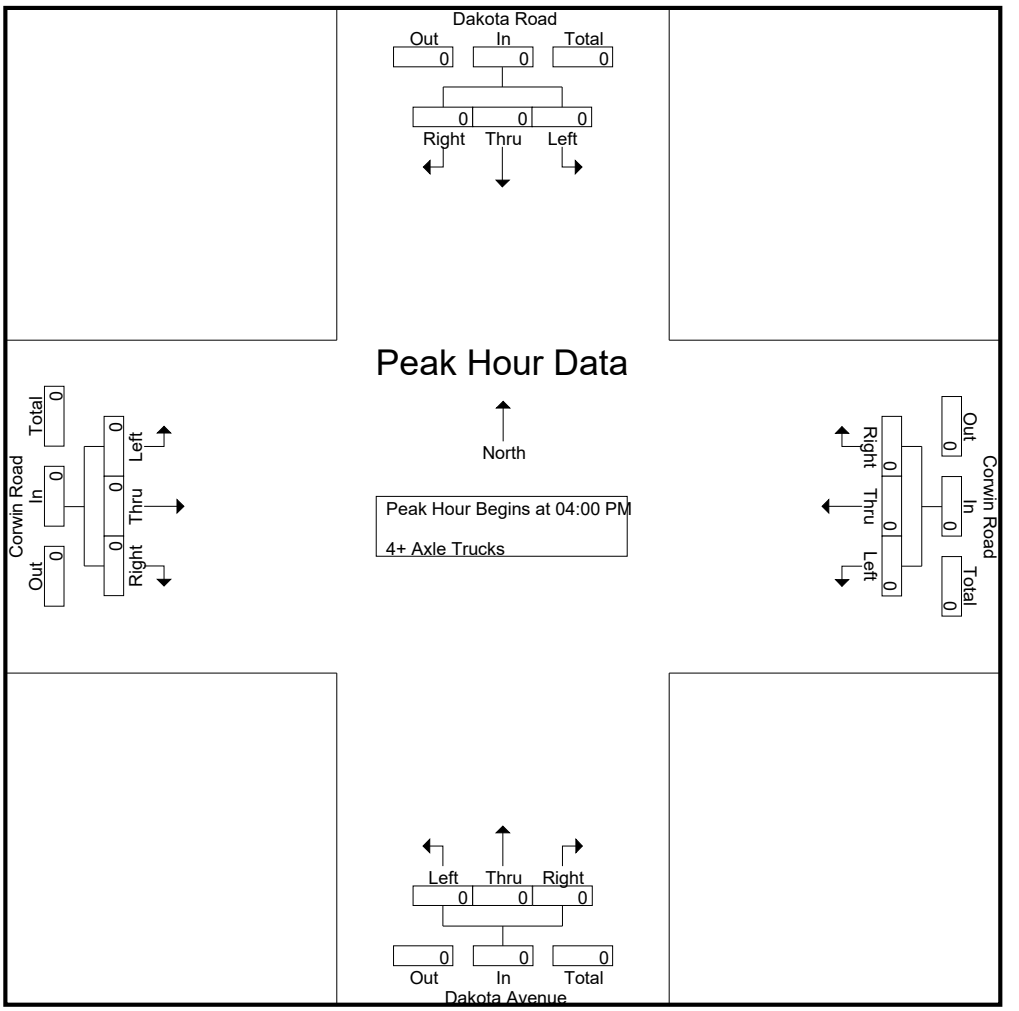
	Dakota Road Southbound				Corwin Road Westbound				Dakota Avenue Northbound				Corwin Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0		
Total %																	

	Dakota Road Southbound				Corwin Road Westbound				Dakota Avenue Northbound				Corwin 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 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Dakota Avenue
E/W: Corwin Road
Weather: Clear

File Name : 01_APV_Dak_Cor PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 2



Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Ramona Road
E/W: Fresno Road
Weather: Clear

File Name : 02_APV_Ram_Fres AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

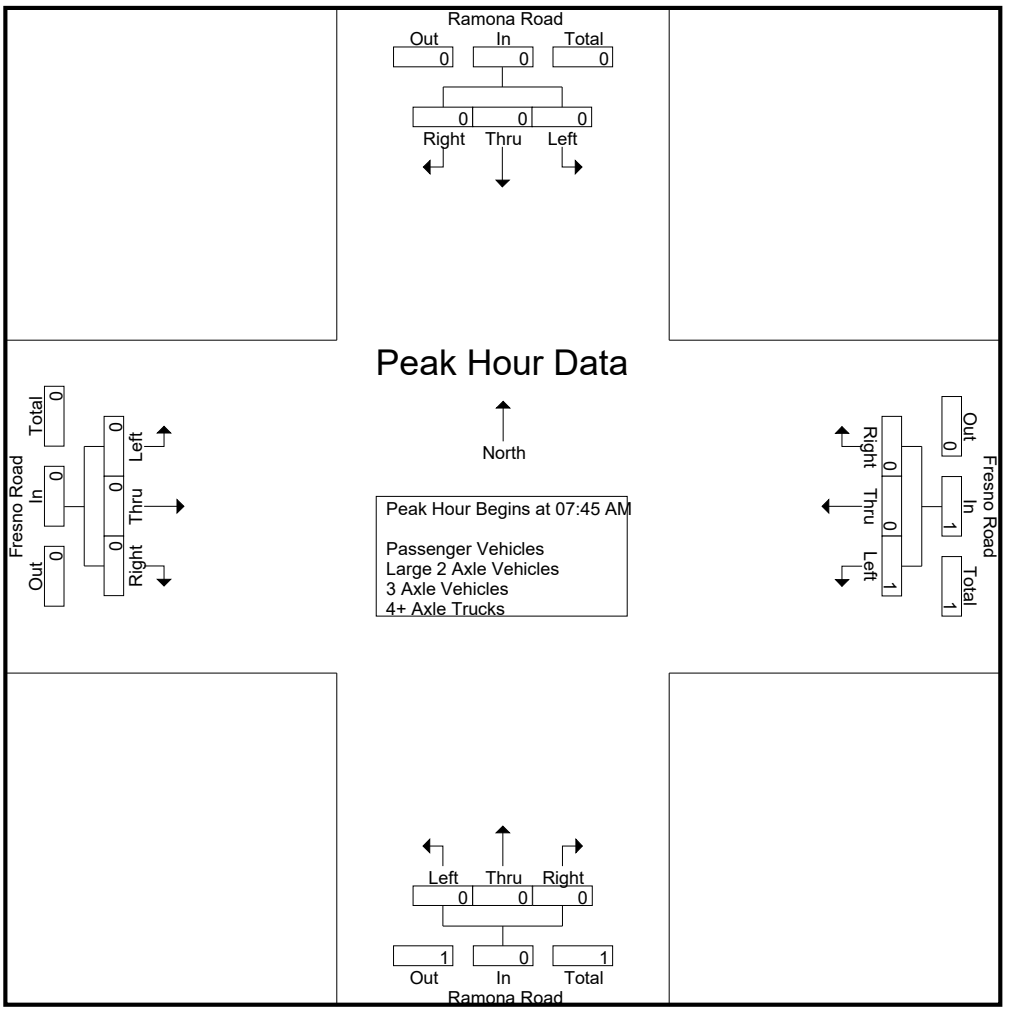
	Ramona Road Southbound				Fresno Road Westbound				Ramona Road Northbound				Fresno Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
Grand Total	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
Apprch %	0	0	0		100	0	0		0	0	0		0	0	0		
Total %	0	0	0	0	100	0	0	100	0	0	0	0	0	0	0	0	
Passenger Vehicles	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
% Passenger Vehicles	0	0	0	0	100	0	0	100	0	0	0	0	0	0	0	0	100
Large 2 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Large 2 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% 3 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4+ Axle Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% 4+ Axle Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Ramona Road Southbound				Fresno Road Westbound				Ramona Road Northbound				Fresno 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 07:45 AM																	
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	**1**	0	0	**1**	0	0	0	0	0	0	0	0	**1**
Total Volume	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
% App. Total	0	0	0		100	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.250	.000	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.250

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Ramona Road
E/W: Fresno Road
Weather: Clear

File Name : 02_APV_Ram_Fres AM
Site Code : 05124741
Start Date : 8/27/2024
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:

	07:00 AM				07:45 AM				07:00 AM				07:00 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	**1**	0	0	**1**	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0
% App. Total	0	0	0		100	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.250	.000	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Ramona Road
E/W: Fresno Road
Weather: Clear

File Name : 02_APV_Ram_Fres AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- Passenger Vehicles

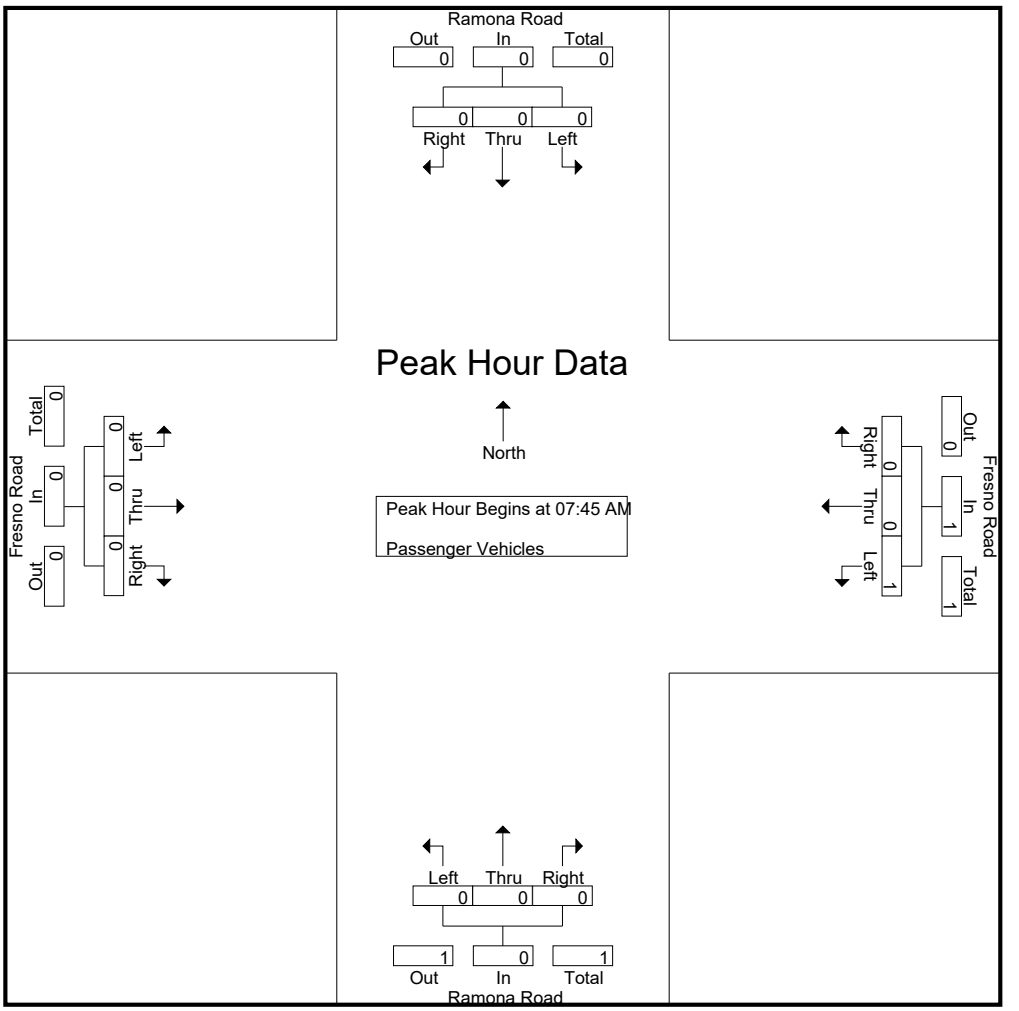
	Ramona Road Southbound				Fresno Road Westbound				Ramona Road Northbound				Fresno Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
Grand Total	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
Apprch %	0	0	0		100	0	0		0	0	0		0	0	0		
Total %	0	0	0	0	100	0	0	100	0	0	0	0	0	0	0	0	

	Ramona Road Southbound				Fresno Road Westbound				Ramona Road Northbound				Fresno 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 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	**1**	0	0	**1**	0	0	0	0	0	0	0	0	**1**
Total Volume	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
% App. Total	0	0	0		100	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.250	.000	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.250

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Ramona Road
E/W: Fresno Road
Weather: Clear

File Name : 02_APV_Ram_Fres AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	**1**	0	0	**1**	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0
% App. Total	0	0	0		100	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.250	.000	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Ramona Road
E/W: Fresno Road
Weather: Clear

File Name : 02_APV_Ram_Fres AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- Large 2 Axle Vehicles

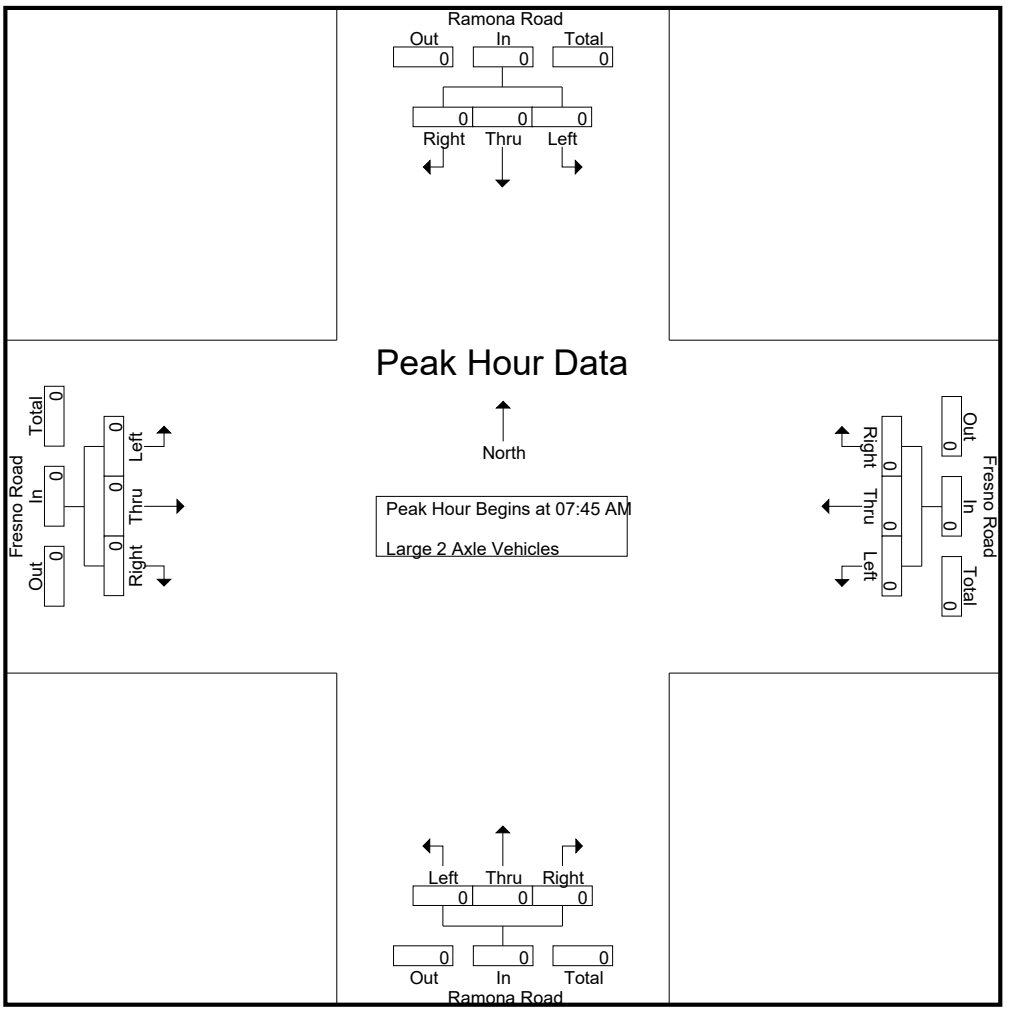
	Ramona Road Southbound				Fresno Road Westbound				Ramona Road Northbound				Fresno Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0		
Total %																	

	Ramona Road Southbound				Fresno Road Westbound				Ramona Road Northbound				Fresno 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 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Ramona Road
E/W: Fresno Road
Weather: Clear

File Name : 02_APV_Ram_Fres AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Ramona Road
E/W: Fresno Road
Weather: Clear

File Name : 02_APV_Ram_Fres AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- 3 Axle Vehicles

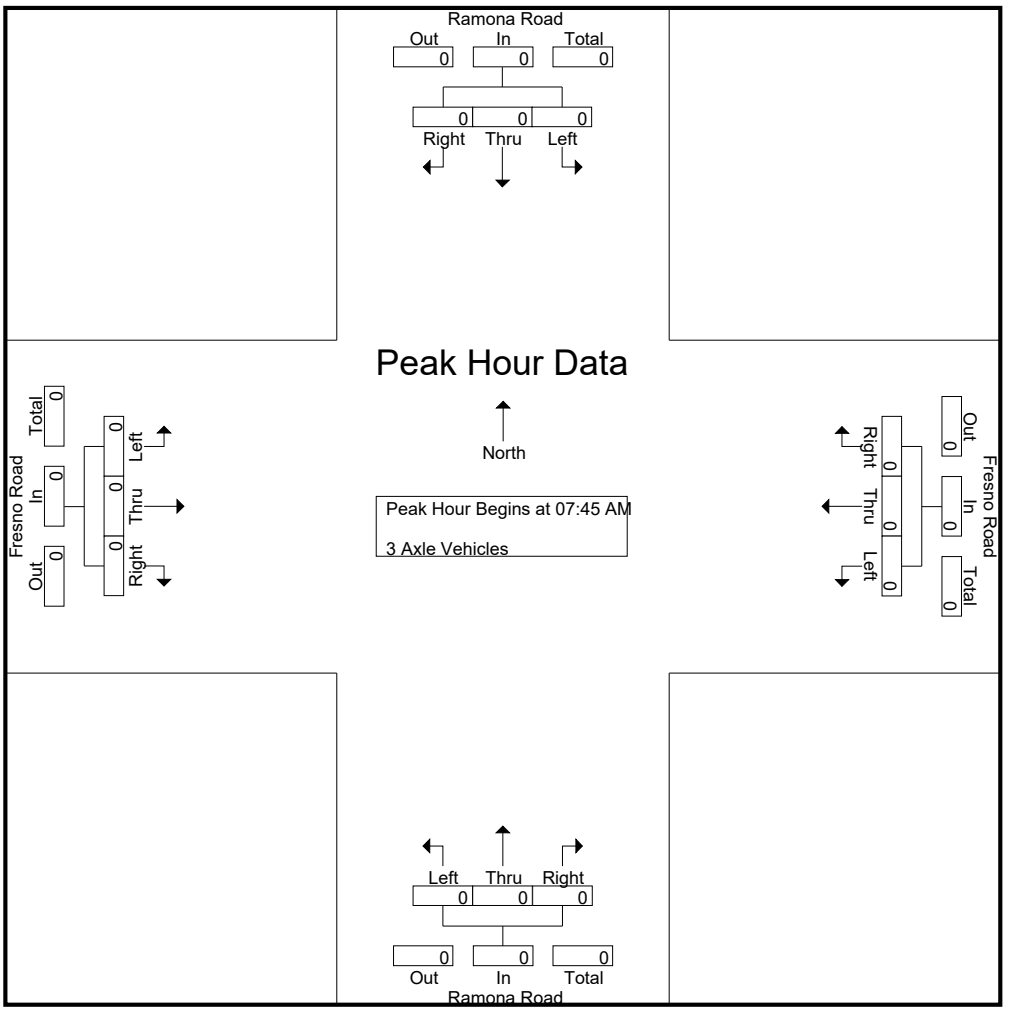
	Ramona Road Southbound				Fresno Road Westbound				Ramona Road Northbound				Fresno Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0		
Total %																	

	Ramona Road Southbound				Fresno Road Westbound				Ramona Road Northbound				Fresno 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 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Ramona Road
E/W: Fresno Road
Weather: Clear

File Name : 02_APV_Ram_Fres AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Ramona Road
E/W: Fresno Road
Weather: Clear

File Name : 02_APV_Ram_Fres AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- 4+ Axle Trucks

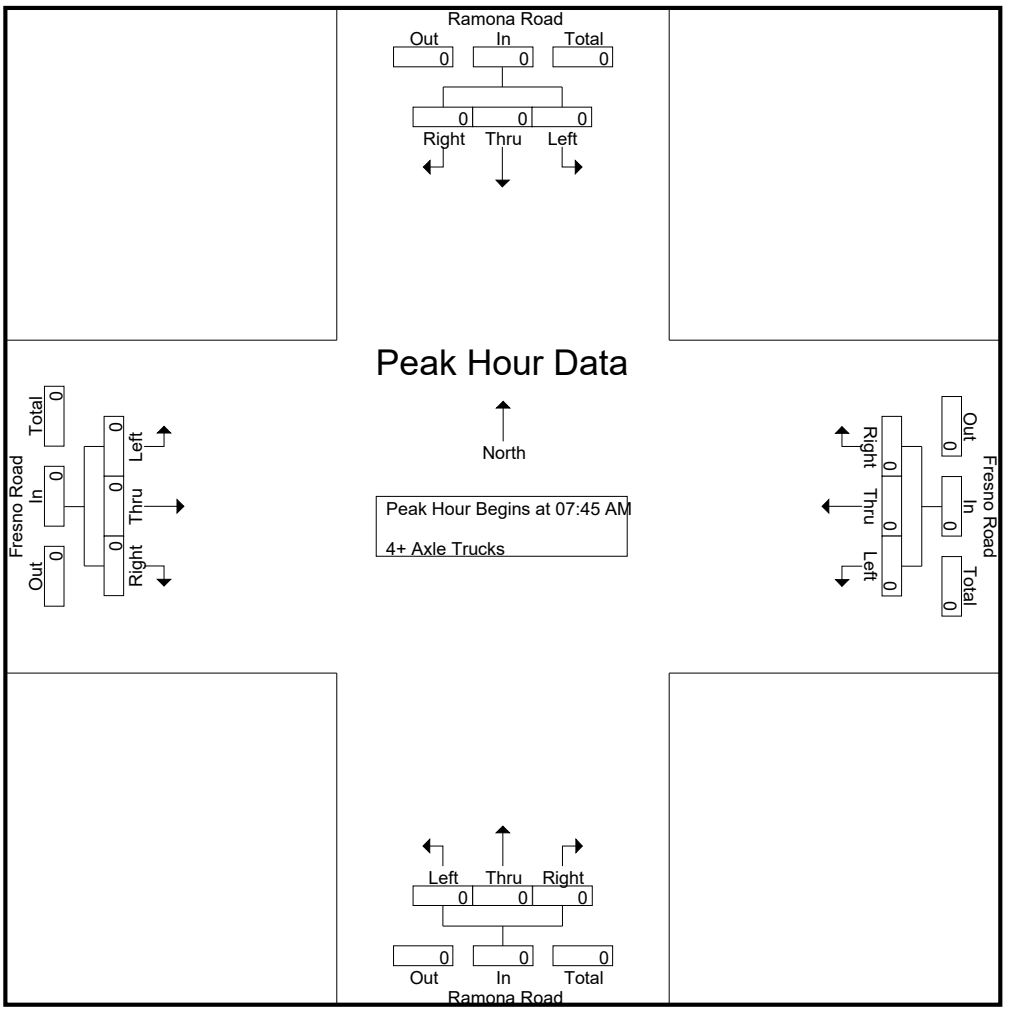
	Ramona Road Southbound				Fresno Road Westbound				Ramona Road Northbound				Fresno Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0		
Total %																	

	Ramona Road Southbound				Fresno Road Westbound				Ramona Road Northbound				Fresno 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 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Ramona Road
E/W: Fresno Road
Weather: Clear

File Name : 02_APV_Ram_Fres AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Ramona Road
E/W: Fresno Road
Weather: Clear

File Name : 02_APV_Ram_Fres PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

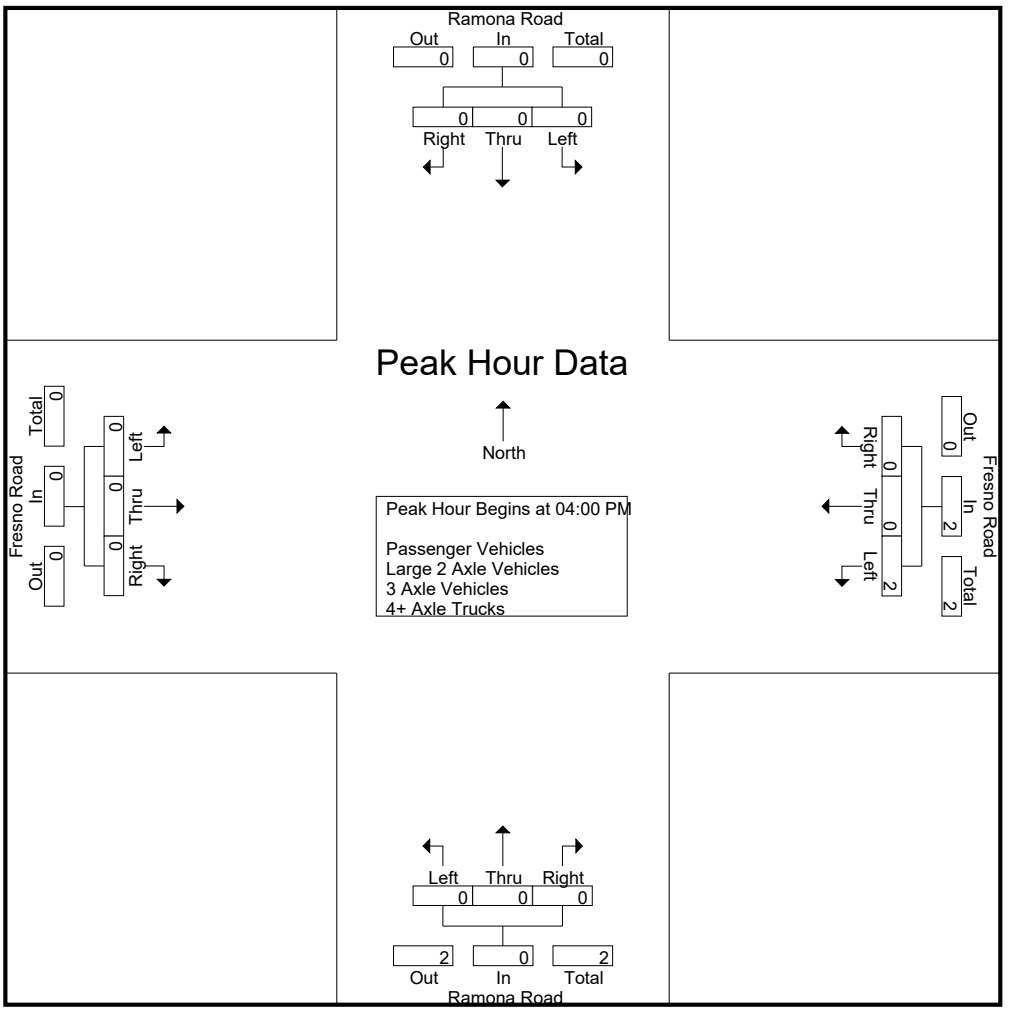
	Ramona Road Southbound				Fresno Road Westbound				Ramona Road Northbound				Fresno Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	2
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
Grand Total	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	3
Apprch %	0	0	0		100	0	0		0	0	0		0	0	0		
Total %	0	0	0	0	100	0	0	100	0	0	0	0	0	0	0	0	
Passenger Vehicles	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	3
% Passenger Vehicles	0	0	0	0	100	0	0	100	0	0	0	0	0	0	0	0	100
Large 2 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Large 2 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% 3 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4+ Axle Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% 4+ Axle Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Ramona Road Southbound				Fresno Road Westbound				Ramona Road Northbound				Fresno 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	0	0	0	0	**1**	0	0	**1**	0	0	0	0	0	0	0	0	**1**
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	2
% App. Total	0	0	0		100	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.500	.000	.000	.500	.000	.000	.000	.000	.000	.000	.000	.000	.500

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Ramona Road
E/W: Fresno Road
Weather: Clear

File Name : 02_APV_Ram_Fres PM
Site Code : 05124741
Start Date : 8/27/2024
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				04:00 PM			
+0 mins.	0	0	0	0	**1**	0	0	**1**	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0
% App. Total	0	0	0		100	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.500	.000	.000	.500	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Ramona Road
E/W: Fresno Road
Weather: Clear

File Name : 02_APV_Ram_Fres PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- Passenger Vehicles

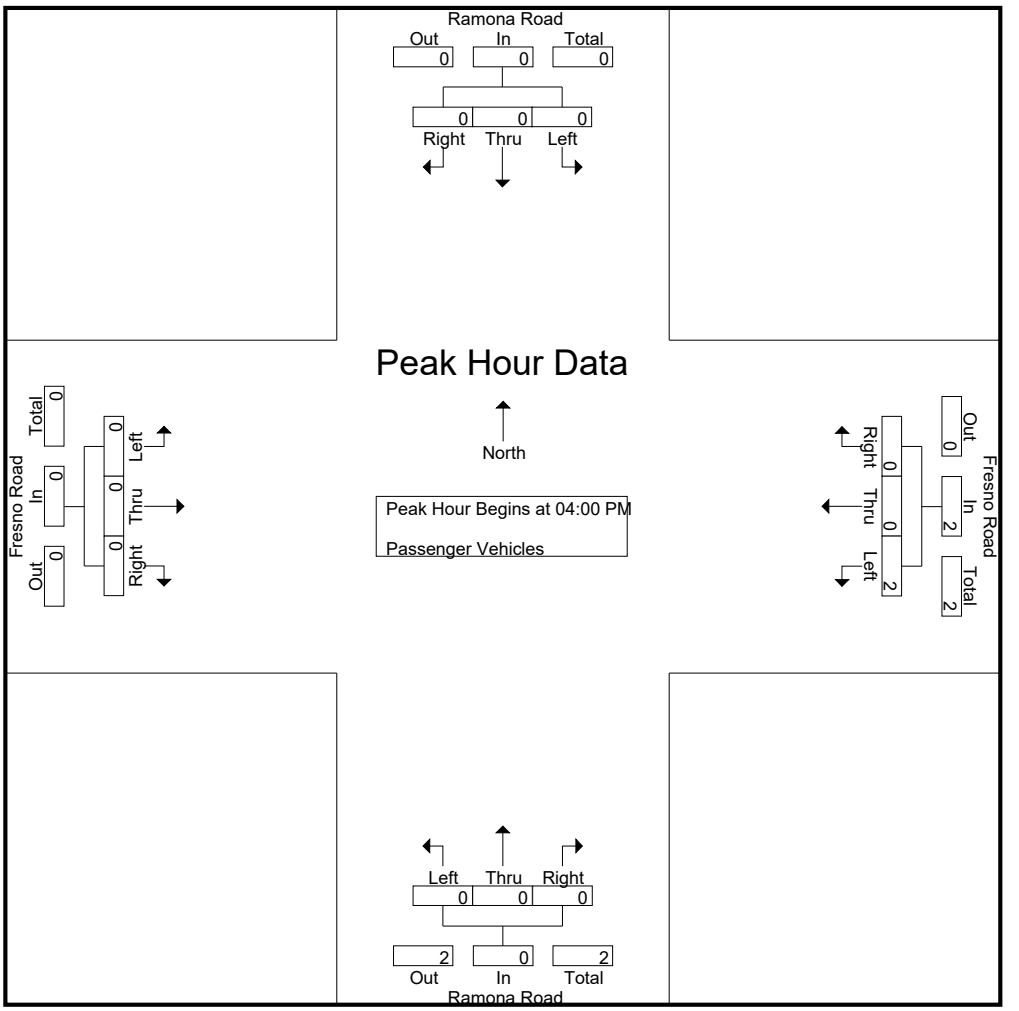
	Ramona Road Southbound				Fresno Road Westbound				Ramona Road Northbound				Fresno Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	2
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
Grand Total	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	3
Apprch %	0	0	0		100	0	0		0	0	0		0	0	0		
Total %	0	0	0	0	100	0	0	100	0	0	0	0	0	0	0	0	

	Ramona Road Southbound				Fresno Road Westbound				Ramona Road Northbound				Fresno 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 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	**1**	0	0	**1**	0	0	0	0	0	0	0	0	**1**
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	2
% App. Total	0	0	0		100	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.500	.000	.000	.500	.000	.000	.000	.000	.000	.000	.000	.000	.500

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Ramona Road
E/W: Fresno Road
Weather: Clear

File Name : 02_APV_Ram_Fres PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 2



Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	0	0	**1**	0	0	**1**	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0
% App. Total	0	0	0		100	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.500	.000	.000	.500	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Ramona Road
E/W: Fresno Road
Weather: Clear

File Name : 02_APV_Ram_Fres PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- Large 2 Axle Vehicles

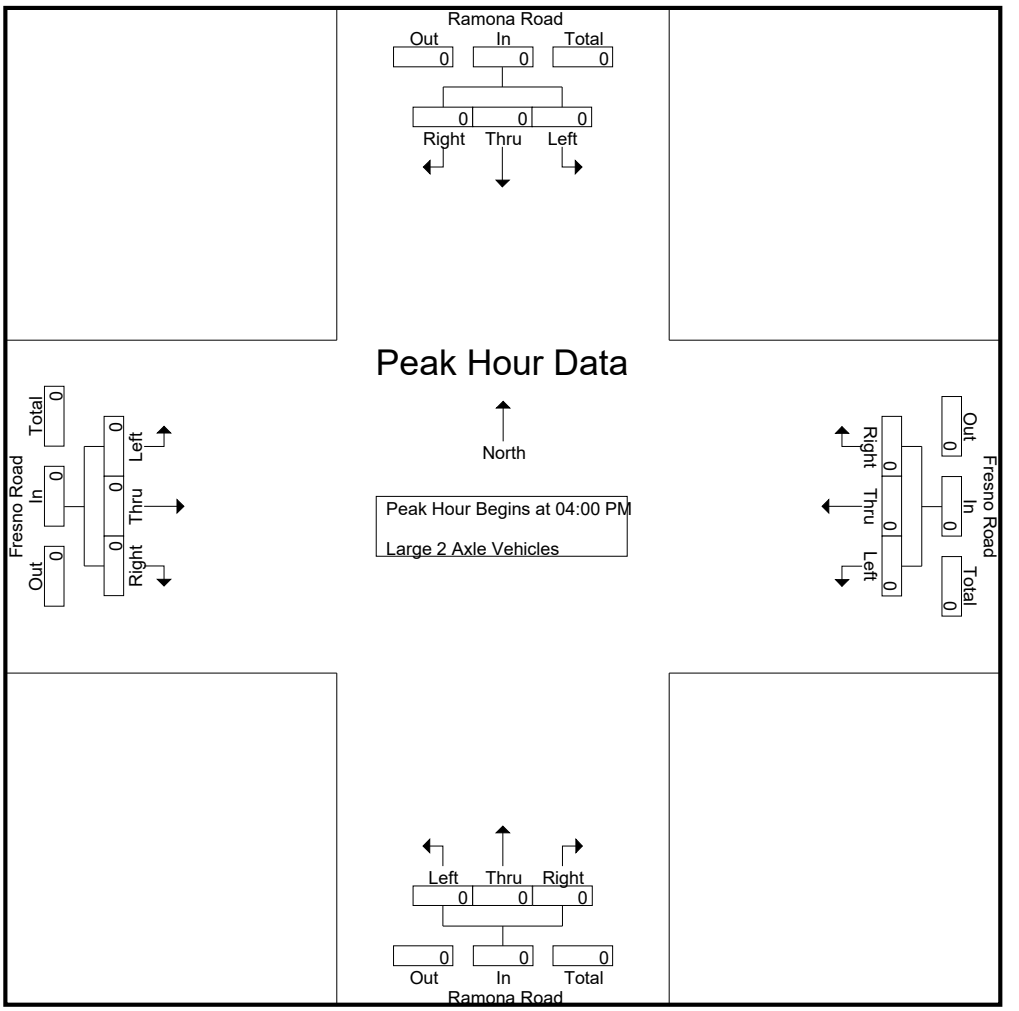
	Ramona Road Southbound				Fresno Road Westbound				Ramona Road Northbound				Fresno Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0		
Total %																	

	Ramona Road Southbound				Fresno Road Westbound				Ramona Road Northbound				Fresno 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 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Ramona Road
E/W: Fresno Road
Weather: Clear

File Name : 02_APV_Ram_Fres PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 2



Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Ramona Road
E/W: Fresno Road
Weather: Clear

File Name : 02_APV_Ram_Fres PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- 3 Axle Vehicles

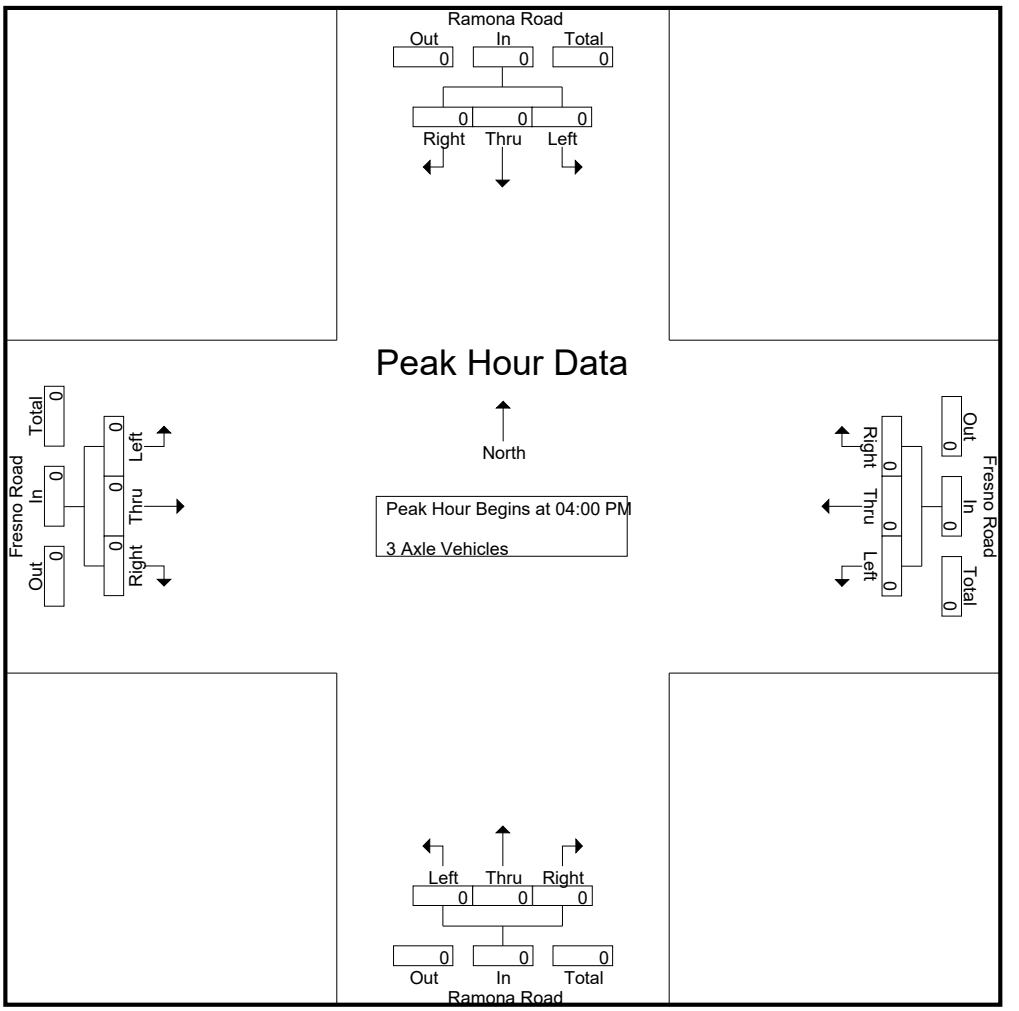
	Ramona Road Southbound				Fresno Road Westbound				Ramona Road Northbound				Fresno Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0		
Total %																	

	Ramona Road Southbound				Fresno Road Westbound				Ramona Road Northbound				Fresno 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 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Ramona Road
E/W: Fresno Road
Weather: Clear

File Name : 02_APV_Ram_Fres PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 2



Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Ramona Road
E/W: Fresno Road
Weather: Clear

File Name : 02_APV_Ram_Fres PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- 4+ Axle Trucks

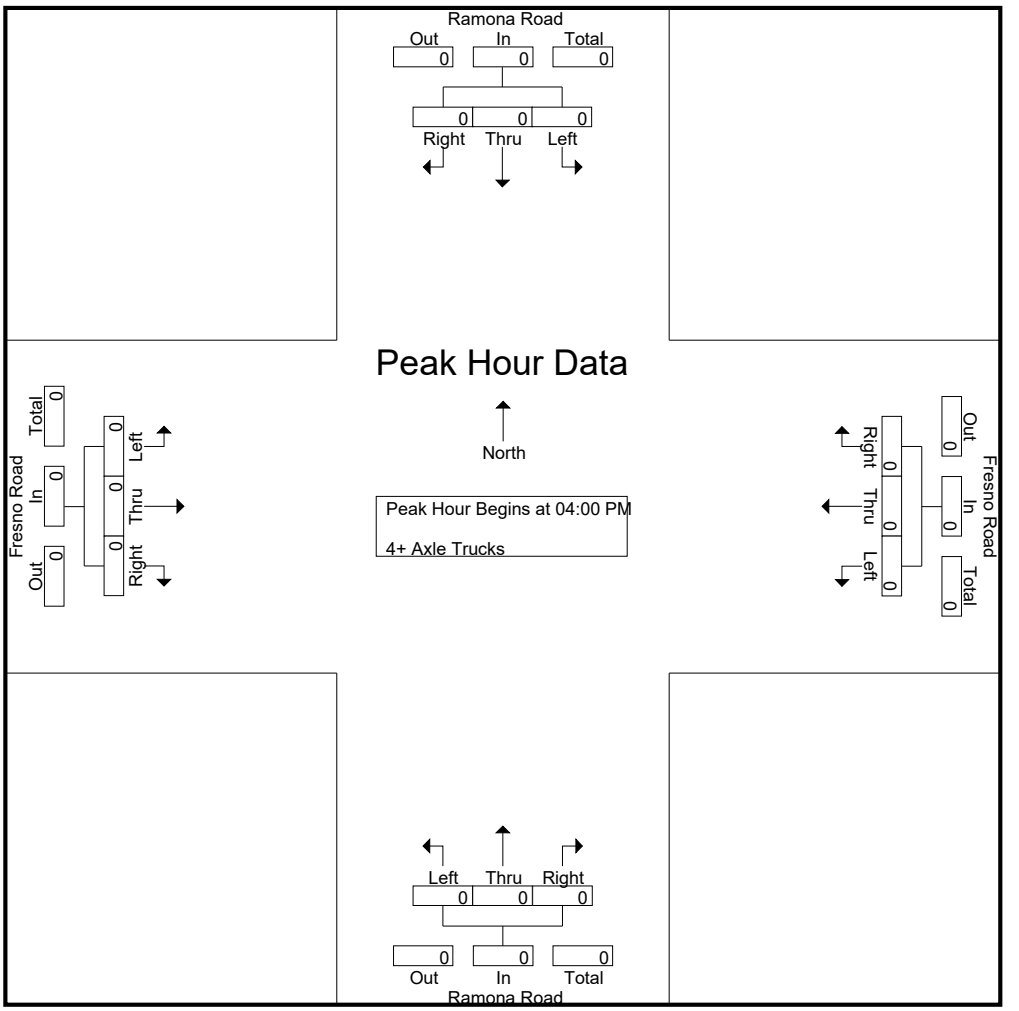
	Ramona Road Southbound				Fresno Road Westbound				Ramona Road Northbound				Fresno Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0		
Total %																	

	Ramona Road Southbound				Fresno Road Westbound				Ramona Road Northbound				Fresno 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 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Ramona Road
E/W: Fresno Road
Weather: Clear

File Name : 02_APV_Ram_Fres PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 2



Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Navajo Road
E/W: Altadena Street/Needham Avenue
Weather: Clear

File Name : 03_APV_Nav_Alta AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

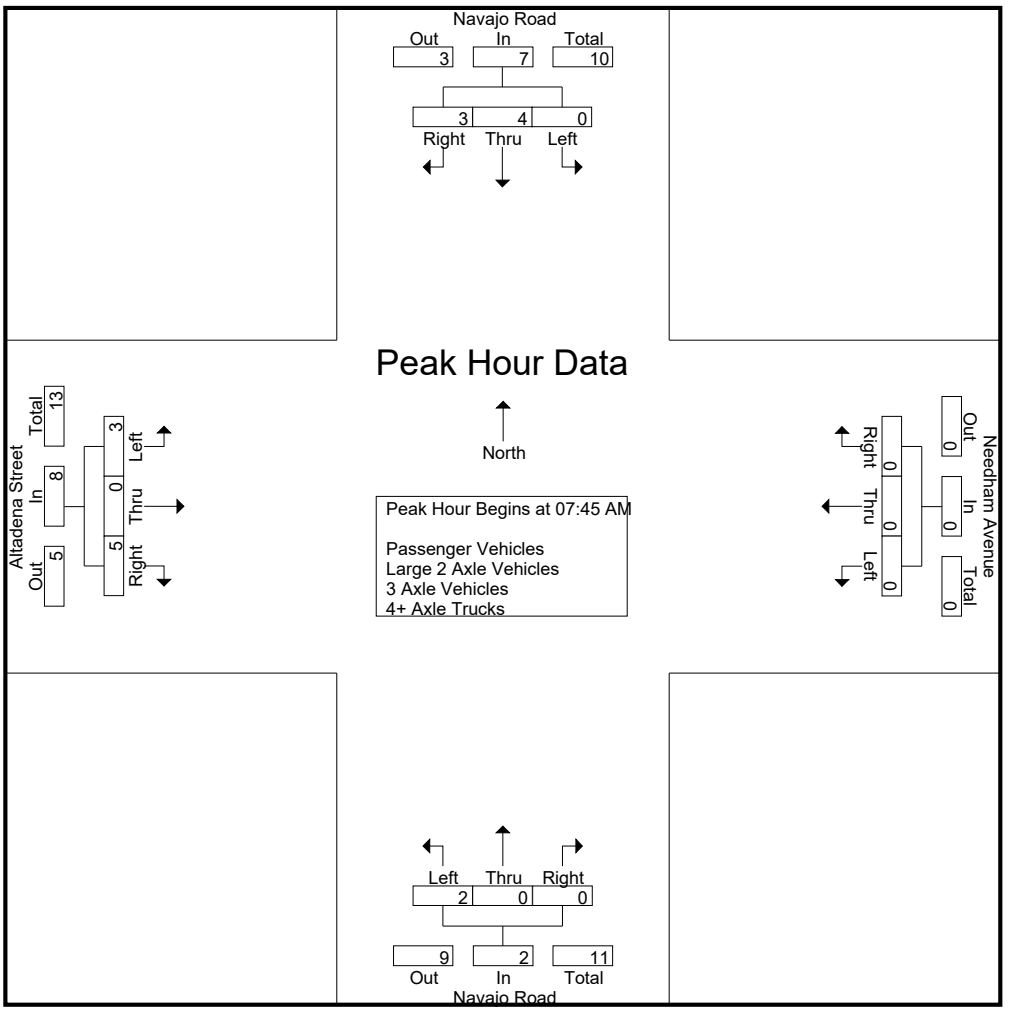
	Navajo Road Southbound				Needham Avenue Westbound				Navajo Road Northbound				Altadena Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	2
07:15 AM	0	0	2	2	0	0	0	0	1	0	0	1	2	0	1	3	6
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2
Total	0	0	2	2	0	0	0	0	1	0	0	1	4	0	4	8	11
08:00 AM	0	1	0	1	0	0	0	0	0	0	0	0	3	0	0	3	4
08:15 AM	0	2	2	4	0	0	0	0	1	0	0	1	0	0	1	1	6
08:30 AM	0	1	1	2	0	0	0	0	1	0	0	1	0	0	2	2	5
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	2
Total	0	4	3	7	0	0	0	0	2	0	0	2	4	0	4	8	17
Grand Total	0	4	5	9	0	0	0	0	3	0	0	3	8	0	8	16	28
Apprch %	0	44.4	55.6		0	0	0		100	0	0		50	0	50		
Total %	0	14.3	17.9	32.1	0	0	0	0	10.7	0	0	10.7	28.6	0	28.6	57.1	
Passenger Vehicles	0	4	5	9	0	0	0	0	3	0	0	3	8	0	8	16	28
% Passenger Vehicles	0	100	100	100	0	0	0	0	100	0	0	100	100	0	100	100	100
Large 2 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Large 2 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% 3 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4+ Axle Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% 4+ Axle Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Navajo Road Southbound				Needham Avenue Westbound				Navajo Road Northbound				Altadena Street 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 07:45 AM																	
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**2**	2	2
08:00 AM	0	1	0	1	0	0	0	0	0	0	0	0	**3**	0	0	**3**	4
08:15 AM	0	**2**	**2**	**4**	0	0	0	0	**1**	0	0	**1**	0	0	1	1	**6**
08:30 AM	0	1	1	2	0	0	0	0	1	0	0	1	0	0	2	2	5
Total Volume	0	4	3	7	0	0	0	0	2	0	0	2	3	0	5	8	17
% App. Total	0	57.1	42.9		0	0	0		100	0	0		37.5	0	62.5		
PHF	.000	.500	.375	.438	.000	.000	.000	.000	.500	.000	.000	.500	.250	.000	.625	.667	.708

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Navajo Road
E/W: Altadena Street/Needham Avenue
Weather: Clear

File Name : 03_APV_Nav_Alta AM
Site Code : 05124741
Start Date : 8/27/2024
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				07:00 AM				07:45 AM				07:15 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	**3**
+15 mins.	0	1	0	1	0	0	0	0	0	0	0	0	1	0	0	1
+30 mins.	0	**2**	**2**	**4**	0	0	0	0	**1**	0	0	**1**	0	0	**2**	2
+45 mins.	0	1	1	2	0	0	0	0	1	0	0	1	**3**	0	0	3
Total Volume	0	4	3	7	0	0	0	0	2	0	0	2	6	0	3	9
% App. Total	0	57.1	42.9		0	0	0		100	0	0		66.7	0	33.3	
PHF	.000	.500	.375	.438	.000	.000	.000	.000	.500	.000	.000	.500	.500	.000	.375	.750

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Navajo Road
E/W: Altadena Street/Needham Avenue
Weather: Clear

File Name : 03_APV_Nav_Alta AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- Passenger Vehicles

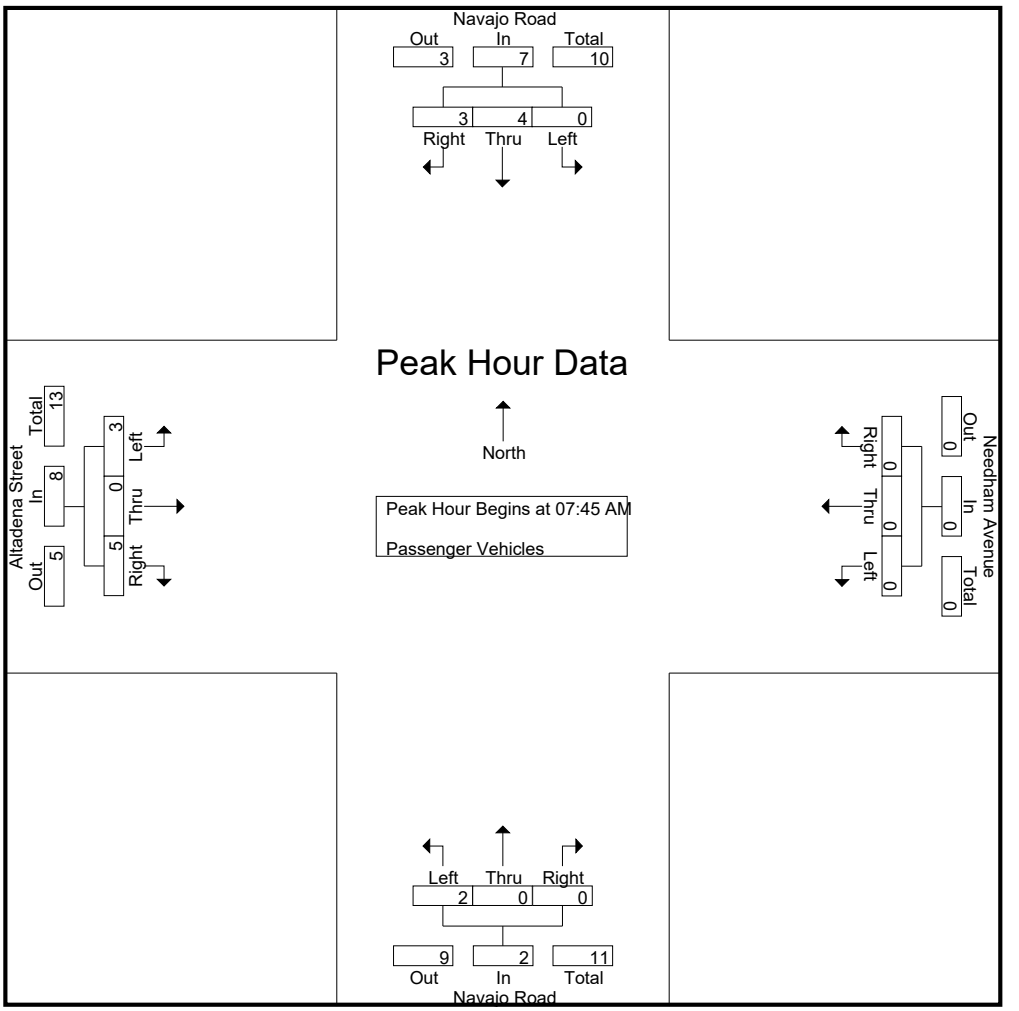
	Navajo Road Southbound				Needham Avenue Westbound				Navajo Road Northbound				Altadena Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	2
07:15 AM	0	0	2	2	0	0	0	0	1	0	0	1	2	0	1	3	6
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2
Total	0	0	2	2	0	0	0	0	1	0	0	1	4	0	4	8	11
08:00 AM	0	1	0	1	0	0	0	0	0	0	0	0	3	0	0	3	4
08:15 AM	0	2	2	4	0	0	0	0	1	0	0	1	0	0	1	1	6
08:30 AM	0	1	1	2	0	0	0	0	1	0	0	1	0	0	2	2	5
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	2
Total	0	4	3	7	0	0	0	0	2	0	0	2	4	0	4	8	17
Grand Total	0	4	5	9	0	0	0	0	3	0	0	3	8	0	8	16	28
Apprch %	0	44.4	55.6		0	0	0		100	0	0		50	0	50		
Total %	0	14.3	17.9	32.1	0	0	0	0	10.7	0	0	10.7	28.6	0	28.6	57.1	

	Navajo Road Southbound				Needham Avenue Westbound				Navajo Road Northbound				Altadena Street 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 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**2**	2	2
08:00 AM	0	1	0	1	0	0	0	0	0	0	0	0	**3**	0	0	**3**	4
08:15 AM	0	**2**	**2**	**4**	0	0	0	0	**1**	0	0	**1**	0	0	1	1	**6**
08:30 AM	0	1	1	2	0	0	0	0	1	0	0	1	0	0	2	2	5
Total Volume	0	4	3	7	0	0	0	0	2	0	0	2	3	0	5	8	17
% App. Total	0	57.1	42.9		0	0	0		100	0	0		37.5	0	62.5		
PHF	.000	.500	.375	.438	.000	.000	.000	.000	.500	.000	.000	.500	.250	.000	.625	.667	.708

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Navajo Road
E/W: Altadena Street/Needham Avenue
Weather: Clear

File Name : 03_APV_Nav_Alta AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**2**	2
+15 mins.	0	1	0	1	0	0	0	0	0	0	0	0	**3**	0	0	**3**
+30 mins.	0	**2**	**2**	**4**	0	0	0	0	**1**	0	0	**1**	0	0	1	1
+45 mins.	0	1	1	2	0	0	0	0	1	0	0	1	0	0	2	2
Total Volume	0	4	3	7	0	0	0	0	2	0	0	2	3	0	5	8
% App. Total	0	57.1	42.9		0	0	0		100	0	0		37.5	0	62.5	
PHF	.000	.500	.375	.438	.000	.000	.000	.000	.500	.000	.000	.500	.250	.000	.625	.667

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Navajo Road
E/W: Altadena Street/Needham Avenue
Weather: Clear

File Name : 03_APV_Nav_Alta AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- Large 2 Axle Vehicles

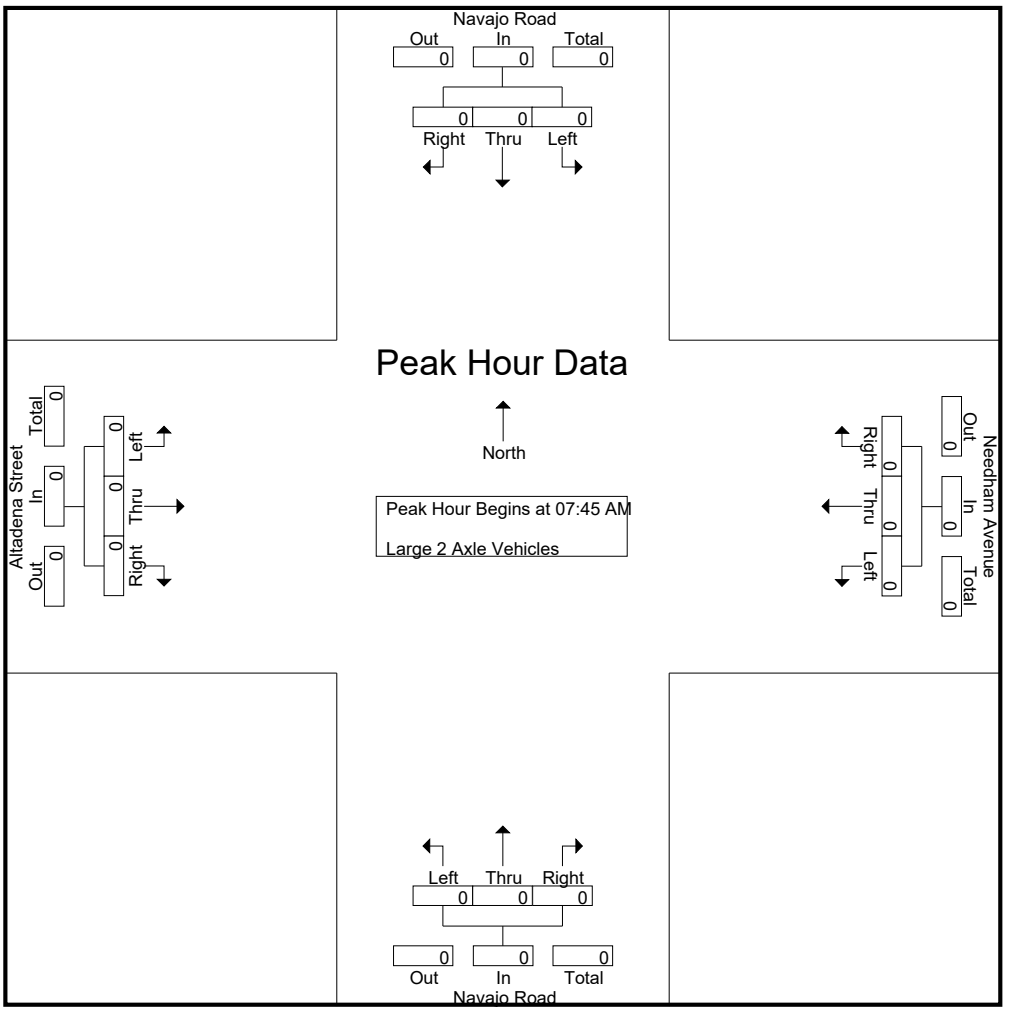
	Navajo Road Southbound				Needham Avenue Westbound				Navajo Road Northbound				Altadena Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0		
Total %																	

	Navajo Road Southbound				Needham Avenue Westbound				Navajo Road Northbound				Altadena Street 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 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Navajo Road
E/W: Altadena Street/Needham Avenue
Weather: Clear

File Name : 03_APV_Nav_Alta AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Navajo Road
E/W: Altadena Street/Needham Avenue
Weather: Clear

File Name : 03_APV_Nav_Alta AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- 3 Axle Vehicles

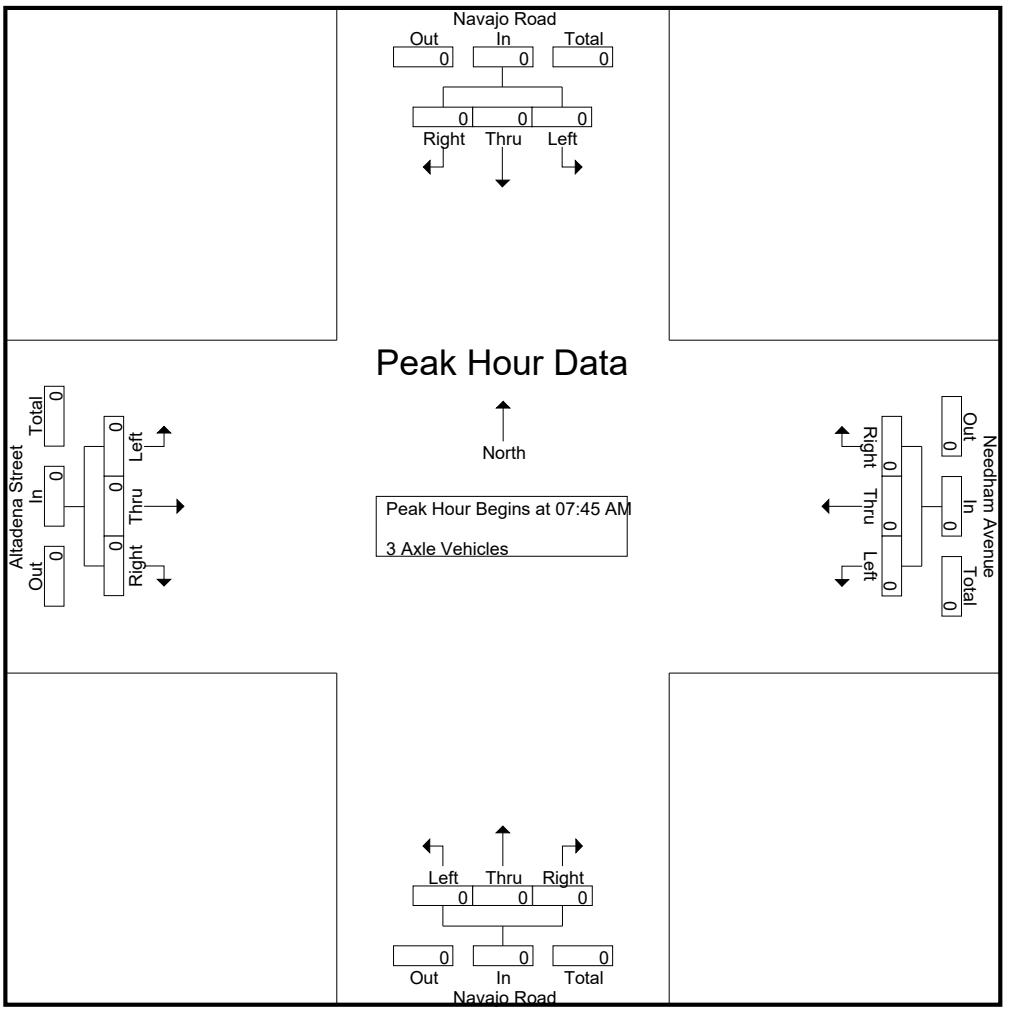
	Navajo Road Southbound				Needham Avenue Westbound				Navajo Road Northbound				Altadena Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0		
Total %																	

	Navajo Road Southbound				Needham Avenue Westbound				Navajo Road Northbound				Altadena Street 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 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Navajo Road
E/W: Altadena Street/Needham Avenue
Weather: Clear

File Name : 03_APV_Nav_Alta AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Navajo Road
E/W: Altadena Street/Needham Avenue
Weather: Clear

File Name : 03_APV_Nav_Alta AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- 4+ Axle Trucks

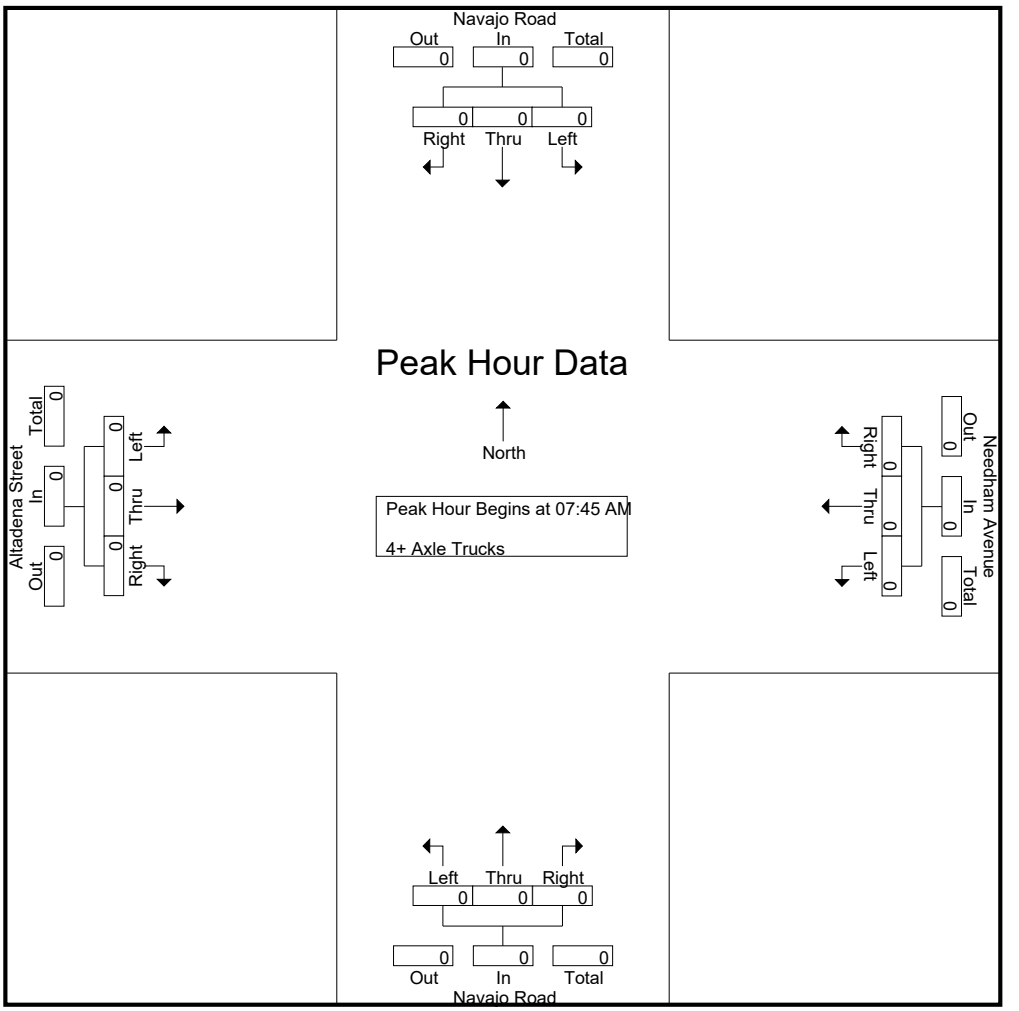
	Navajo Road Southbound				Needham Avenue Westbound				Navajo Road Northbound				Altadena Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0		
Total %																	

	Navajo Road Southbound				Needham Avenue Westbound				Navajo Road Northbound				Altadena Street 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 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Navajo Road
E/W: Altadena Street/Needham Avenue
Weather: Clear

File Name : 03_APV_Nav_Alta AM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Navajo Road
E/W: Altadena Street/Needham Avenue
Weather: Clear

File Name : 03_APV_Nav_Alta PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

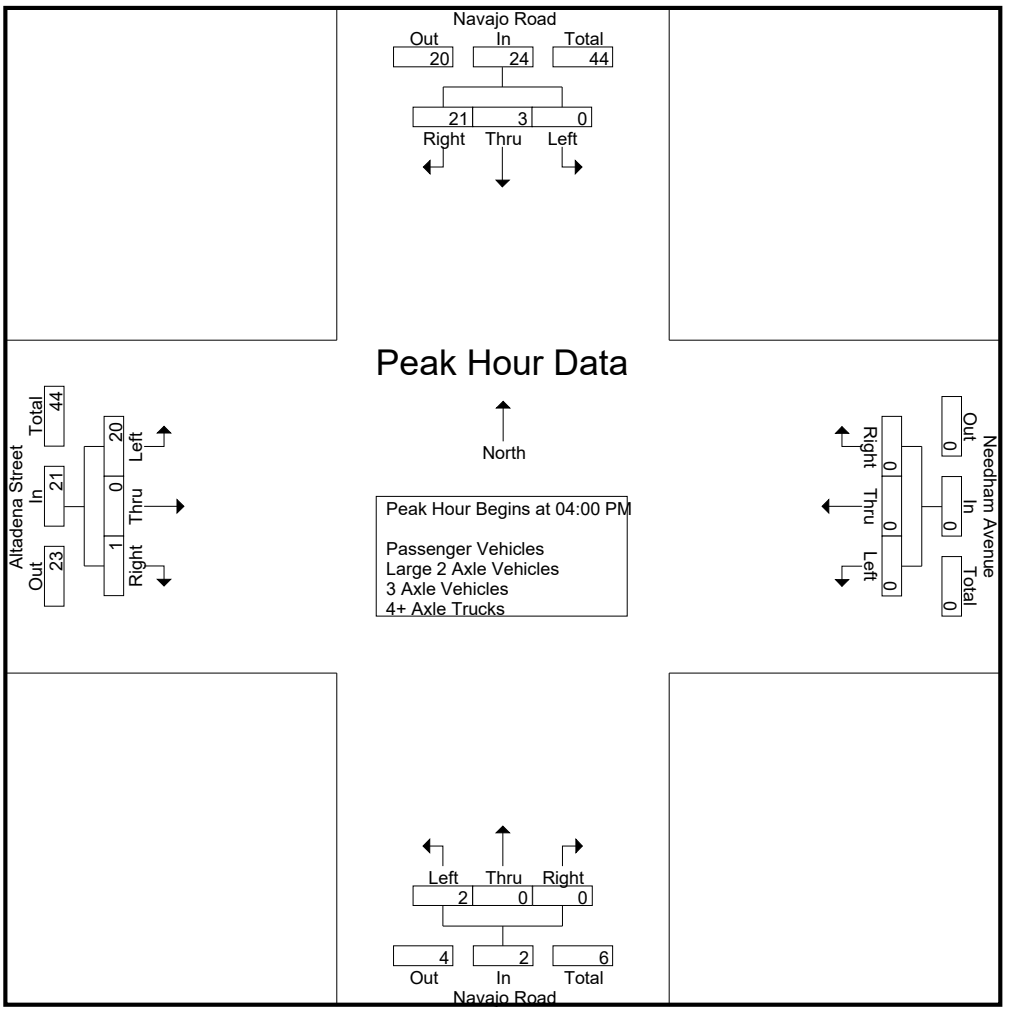
	Navajo Road Southbound				Needham Avenue Westbound				Navajo Road Northbound				Altadena Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	2	7	9	0	0	0	0	1	0	0	1	6	0	0	6	16
04:15 PM	0	0	6	6	0	0	0	0	1	0	0	1	8	0	0	8	15
04:30 PM	0	1	5	6	0	0	0	0	0	0	0	0	1	0	1	2	8
04:45 PM	0	0	3	3	0	0	0	0	0	0	0	0	5	0	0	5	8
Total	0	3	21	24	0	0	0	0	2	0	0	2	20	0	1	21	47
05:00 PM	0	0	5	5	0	0	0	0	0	0	0	0	2	0	0	2	7
05:15 PM	0	0	1	1	0	0	0	0	0	1	0	1	0	0	0	0	2
05:30 PM	0	0	5	5	0	0	0	0	1	0	0	1	1	0	0	1	7
05:45 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	12	12	0	0	0	0	1	1	0	2	3	0	0	3	17
Grand Total	0	3	33	36	0	0	0	0	3	1	0	4	23	0	1	24	64
Apprch %	0	8.3	91.7		0	0	0		75	25	0		95.8	0	4.2		
Total %	0	4.7	51.6	56.2	0	0	0	0	4.7	1.6	0	6.2	35.9	0	1.6	37.5	
Passenger Vehicles	0	3	32	35	0	0	0	0	3	1	0	4	23	0	1	24	63
% Passenger Vehicles	0	100	97	97.2	0	0	0	0	100	100	0	100	100	0	100	100	98.4
Large 2 Axle Vehicles	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
% Large 2 Axle Vehicles	0	0	3	2.8	0	0	0	0	0	0	0	0	0	0	0	0	1.6
3 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% 3 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4+ Axle Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% 4+ Axle Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Navajo Road Southbound				Needham Avenue Westbound				Navajo Road Northbound				Altadena Street 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	0	**2**	**7**	**9**	0	0	0	0	**1**	0	0	**1**	6	0	0	6	**16**
04:15 PM	0	0	6	6	0	0	0	0	1	0	0	1	**8**	0	0	**8**	15
04:30 PM	0	1	5	6	0	0	0	0	0	0	0	0	1	0	**1**	2	8
04:45 PM	0	0	3	3	0	0	0	0	0	0	0	0	5	0	0	5	8
Total Volume	0	3	21	24	0	0	0	0	2	0	0	2	20	0	1	21	47
% App. Total	0	12.5	87.5		0	0	0		100	0	0		95.2	0	4.8		
PHF	.000	.375	.750	.667	.000	.000	.000	.000	.500	.000	.000	.500	.625	.000	.250	.656	.734

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Navajo Road
E/W: Altadena Street/Needham Avenue
Weather: Clear

File Name : 03_APV_Nav_Alta PM
Site Code : 05124741
Start Date : 8/27/2024
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				04:00 PM			
+0 mins.	0	**2**	**7**	**9**	0	0	0	0	**1**	0	0	**1**	6	0	0	6
+15 mins.	0	0	6	6	0	0	0	0	1	0	0	1	**8**	0	0	**8**
+30 mins.	0	1	5	6	0	0	0	0	0	0	0	0	1	0	**1**	2
+45 mins.	0	0	3	3	0	0	0	0	0	0	0	0	5	0	0	5
Total Volume	0	3	21	24	0	0	0	0	2	0	0	2	20	0	1	21
% App. Total	0	12.5	87.5		0	0	0		100	0	0		95.2	0	4.8	
PHF	.000	.375	.750	.667	.000	.000	.000	.000	.500	.000	.000	.500	.625	.000	.250	.656

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Navajo Road
E/W: Altadena Street/Needham Avenue
Weather: Clear

File Name : 03_APV_Nav_Alta PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- Passenger Vehicles

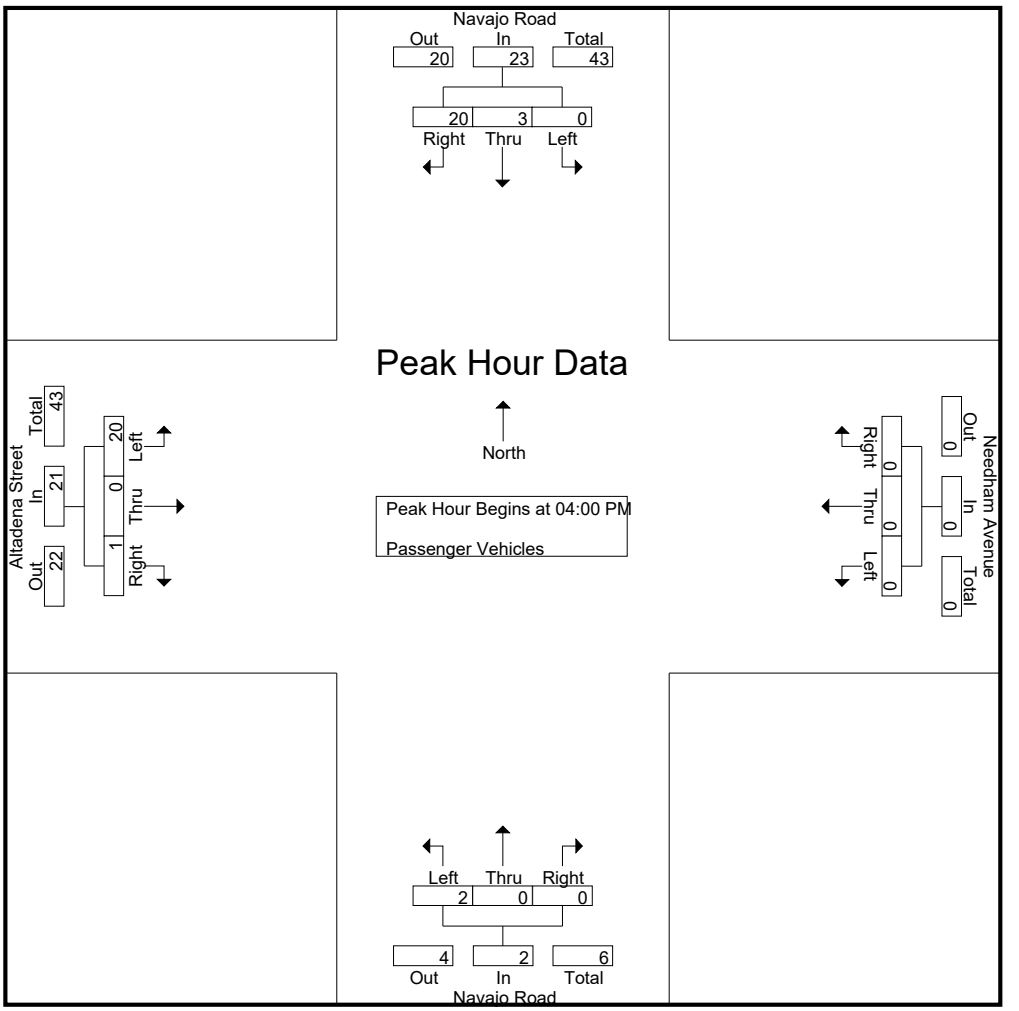
	Navajo Road Southbound				Needham Avenue Westbound				Navajo Road Northbound				Altadena Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	2	7	9	0	0	0	0	1	0	0	1	6	0	0	6	16
04:15 PM	0	0	5	5	0	0	0	0	1	0	0	1	8	0	0	8	14
04:30 PM	0	1	5	6	0	0	0	0	0	0	0	0	1	0	1	2	8
04:45 PM	0	0	3	3	0	0	0	0	0	0	0	0	5	0	0	5	8
Total	0	3	20	23	0	0	0	0	2	0	0	2	20	0	1	21	46
05:00 PM	0	0	5	5	0	0	0	0	0	0	0	0	2	0	0	2	7
05:15 PM	0	0	1	1	0	0	0	0	0	1	0	1	0	0	0	0	2
05:30 PM	0	0	5	5	0	0	0	0	1	0	0	1	1	0	0	1	7
05:45 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	12	12	0	0	0	0	1	1	0	2	3	0	0	3	17
Grand Total	0	3	32	35	0	0	0	0	3	1	0	4	23	0	1	24	63
Apprch %	0	8.6	91.4		0	0	0		75	25	0		95.8	0	4.2		
Total %	0	4.8	50.8	55.6	0	0	0	0	4.8	1.6	0	6.3	36.5	0	1.6	38.1	

	Navajo Road Southbound				Needham Avenue Westbound				Navajo Road Northbound				Altadena Street 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 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	**2**	**7**	**9**	0	0	0	0	**1**	0	0	**1**	6	0	0	6	**16**
04:15 PM	0	0	5	5	0	0	0	0	1	0	0	1	**8**	0	0	**8**	14
04:30 PM	0	1	5	6	0	0	0	0	0	0	0	0	1	0	**1**	2	8
04:45 PM	0	0	3	3	0	0	0	0	0	0	0	0	5	0	0	5	8
Total Volume	0	3	20	23	0	0	0	0	2	0	0	2	20	0	1	21	46
% App. Total	0	13	87		0	0	0		100	0	0		95.2	0	4.8		
PHF	.000	.375	.714	.639	.000	.000	.000	.000	.500	.000	.000	.500	.625	.000	.250	.656	.719

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Navajo Road
E/W: Altadena Street/Needham Avenue
Weather: Clear

File Name : 03_APV_Nav_Alta PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 2



Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	**2**	**7**	**9**	0	0	0	0	**1**	0	0	**1**	6	0	0	6
+15 mins.	0	0	5	5	0	0	0	0	1	0	0	1	**8**	0	0	**8**
+30 mins.	0	1	5	6	0	0	0	0	0	0	0	0	1	0	**1**	2
+45 mins.	0	0	3	3	0	0	0	0	0	0	0	0	5	0	0	5
Total Volume	0	3	20	23	0	0	0	0	2	0	0	2	20	0	1	21
% App. Total	0	13	87		0	0	0		100	0	0		95.2	0	4.8	
PHF	.000	.375	.714	.639	.000	.000	.000	.000	.500	.000	.000	.500	.625	.000	.250	.656

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Navajo Road
E/W: Altadena Street/Needham Avenue
Weather: Clear

File Name : 03_APV_Nav_Alta PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- Large 2 Axle Vehicles

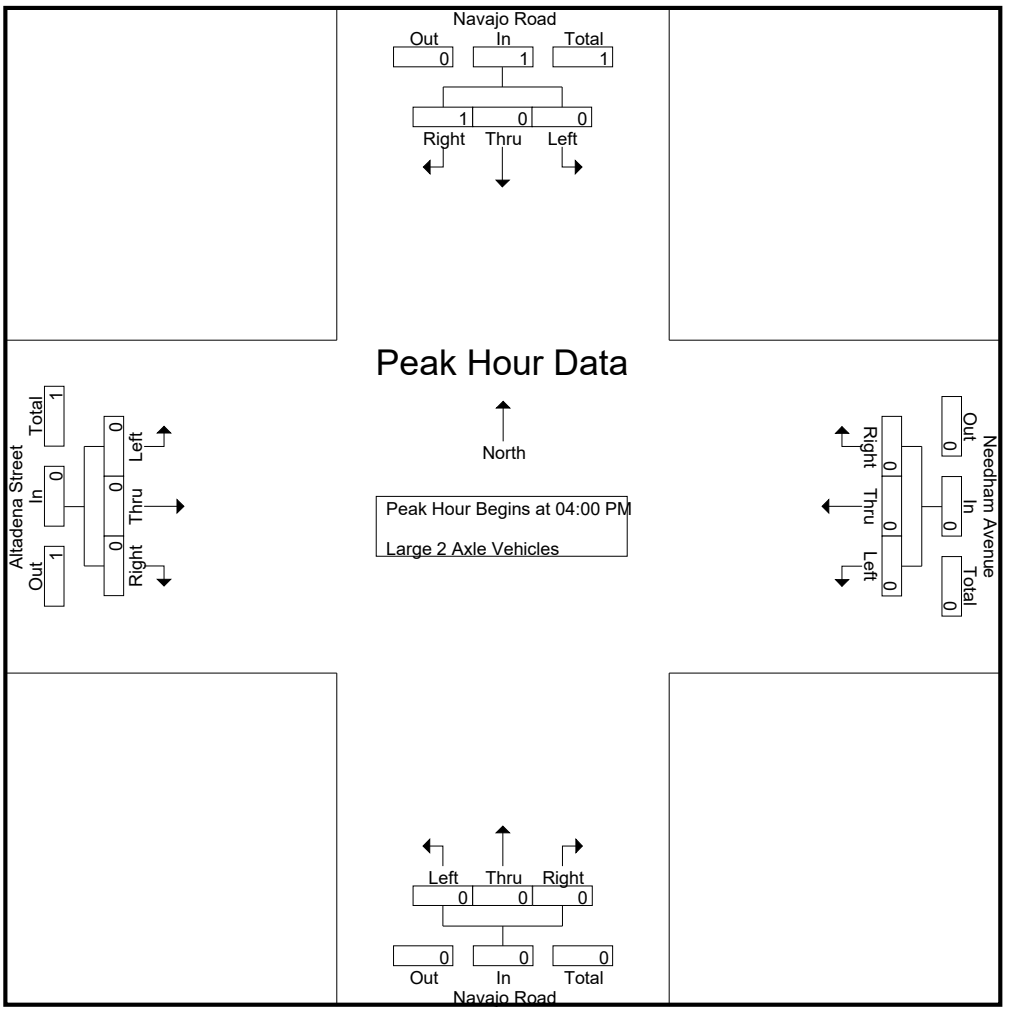
	Navajo Road Southbound				Needham Avenue Westbound				Navajo Road Northbound				Altadena Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Apprch %	0	0	100		0	0	0		0	0	0		0	0	0		
Total %	0	0	100	100	0	0	0	0	0	0	0	0	0	0	0	0	

	Navajo Road Southbound				Needham Avenue Westbound				Navajo Road Northbound				Altadena Street 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 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	**1**	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**1**
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
% App. Total	0	0	100		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.250	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Navajo Road
E/W: Altadena Street/Needham Avenue
Weather: Clear

File Name : 03_APV_Nav_Alta PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 2



Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	**1**	**1**	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	100		0	0	0		0	0	0		0	0	0	
PHF	.000	.000	.250	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Navajo Road
E/W: Altadena Street/Needham Avenue
Weather: Clear

File Name : 03_APV_Nav_Alta PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- 3 Axle Vehicles

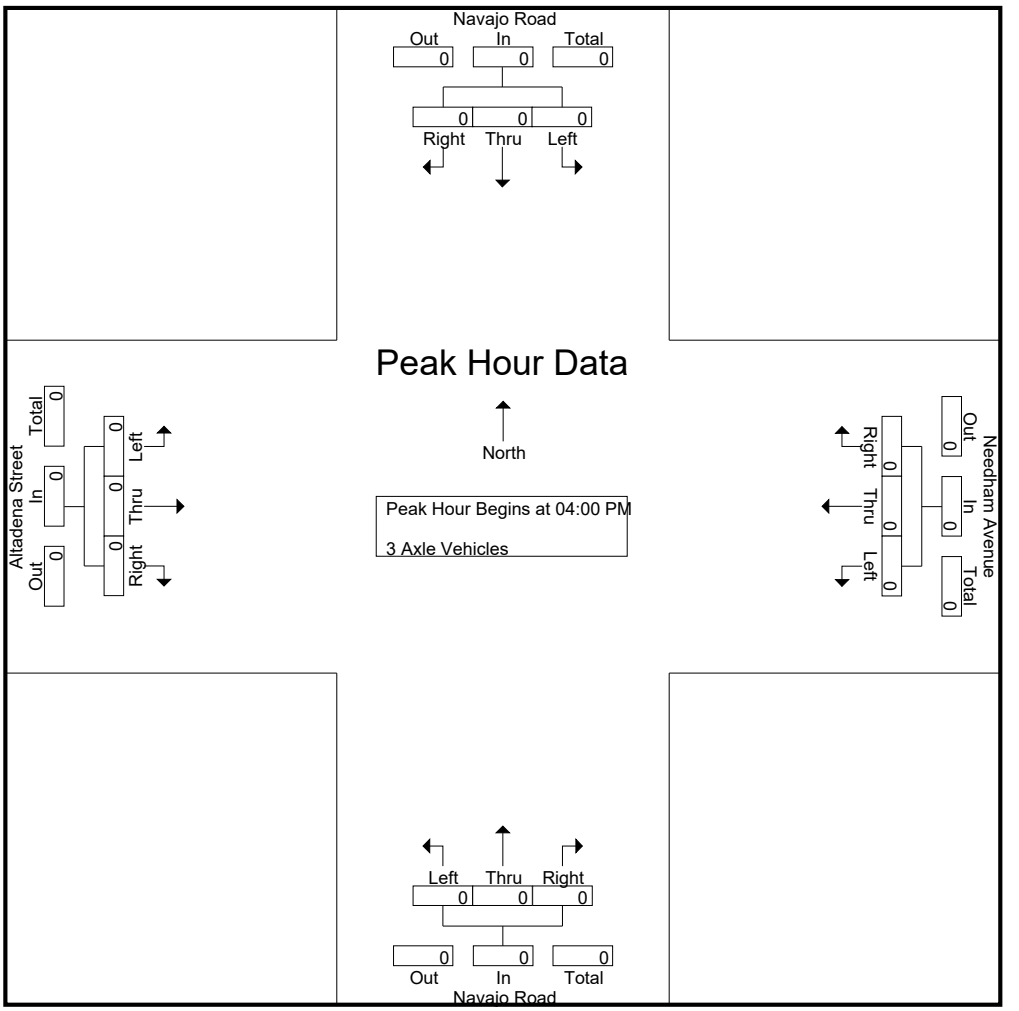
	Navajo Road Southbound				Needham Avenue Westbound				Navajo Road Northbound				Altadena Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0		
Total %																	

	Navajo Road Southbound				Needham Avenue Westbound				Navajo Road Northbound				Altadena Street 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 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Navajo Road
E/W: Altadena Street/Needham Avenue
Weather: Clear

File Name : 03_APV_Nav_Alta PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 2



Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Navajo Road
E/W: Altadena Street/Needham Avenue
Weather: Clear

File Name : 03_APV_Nav_Alta PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 1

Groups Printed- 4+ Axle Trucks

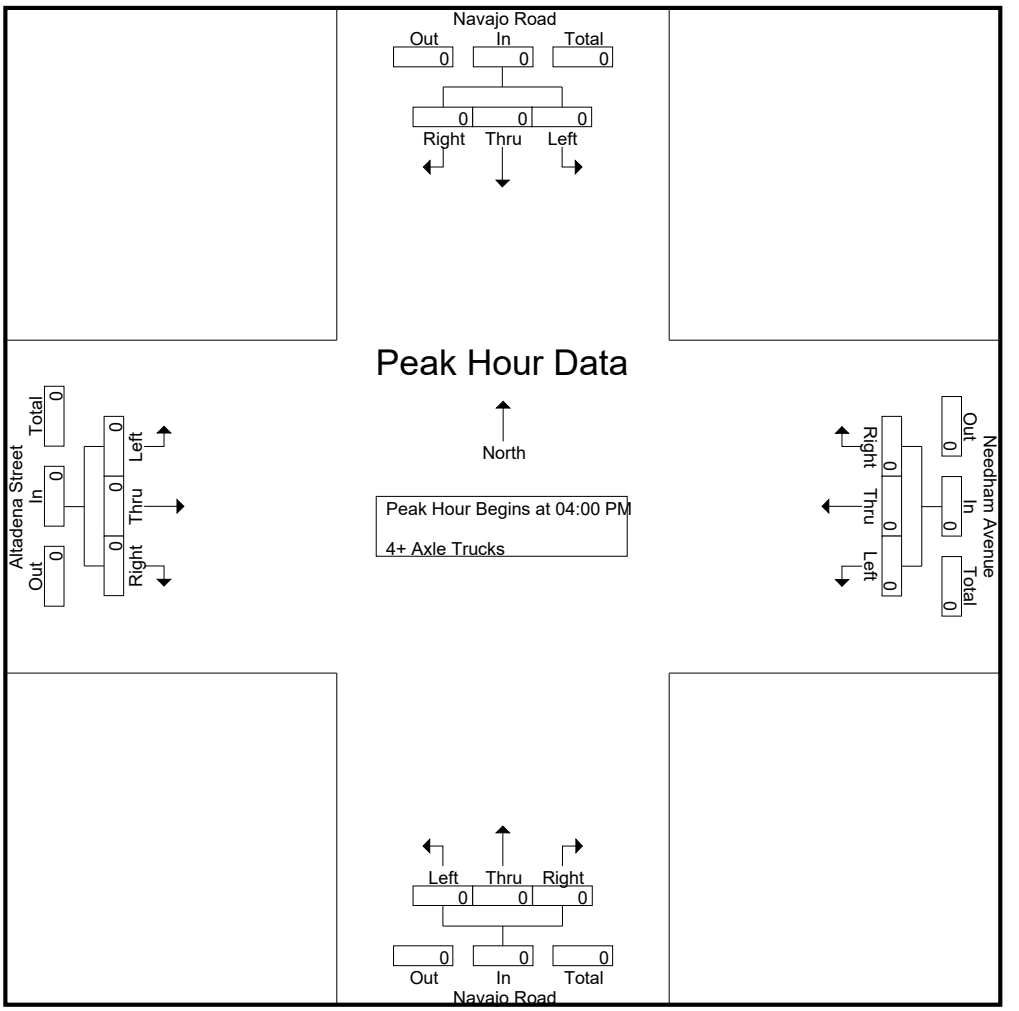
	Navajo Road Southbound				Needham Avenue Westbound				Navajo Road Northbound				Altadena Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0		
Total %																	

	Navajo Road Southbound				Needham Avenue Westbound				Navajo Road Northbound				Altadena Street 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 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Apple Valley
N/S: Navajo Road
E/W: Altadena Street/Needham Avenue
Weather: Clear

File Name : 03_APV_Nav_Alta PM
Site Code : 05124741
Start Date : 8/27/2024
Page No : 2



Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

INTERSECTION TURNING MOVEMENT COUNTS

T020624

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, Apr 2, 24	LOCATION:	Apple Valley	PROJECT #: SC4523
	NORTH & SOUTH:	Navajo Rd	LOCATION #: 11
	EAST & WEST:	Johnson Rd	CONTROL: STOP N

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Navajo Rd			SOUTHBOUND Navajo Rd			EASTBOUND Johnson Rd			WESTBOUND Johnson Rd			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	1	0	0	0	0	0	0	4	3	2	7	0	17
	7:15 AM	1	0	0	0	0	0	0	4	4	1	4	0	14
	7:30 AM	4	0	0	0	0	0	0	5	13	2	8	0	32
	7:45 AM	0	0	0	0	0	0	0	2	10	1	10	0	23
	8:00 AM	2	0	0	0	0	0	0	1	4	10	4	0	21
	8:15 AM	2	0	0	0	0	0	0	5	7	1	6	0	21
	8:30 AM	4	0	1	0	0	0	0	3	7	3	6	0	24
	8:45 AM	4	0	0	0	0	0	0	3	15	3	1	0	26
	VOLUMES	18	0	1	0	0	0	0	27	63	23	46	0	178
	APPROACH %	95%	0%	5%	0%	0%	0%	0%	30%	70%	33%	67%	0%	
	APP/DEPART	19	/	0	0	/	86	90	/	28	69	/	64	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	8	0	0	0	0	0	0	13	34	14	28	0	97
	APPROACH %	100%	0%	0%	0%	0%	0%	0%	28%	72%	33%	67%	0%	
	PEAK HR FACTOR		0.500			0.000			0.653			0.750		0.758
	APP/DEPART	8	/	0	0	/	48	47	/	13	42	/	36	0
PM	4:00 PM	9	0	2	0	0	0	0	23	6	2	10	0	52
	4:15 PM	12	0	1	0	0	0	0	9	14	7	19	0	62
	4:30 PM	7	0	1	0	0	0	0	14	5	3	7	0	37
	4:45 PM	6	0	2	0	0	0	0	12	9	5	4	0	38
	5:00 PM	3	0	2	0	0	0	0	14	3	1	3	0	26
	5:15 PM	2	0	0	0	0	0	0	13	5	0	3	0	23
	5:30 PM	23	0	7	0	0	0	0	13	2	0	5	0	50
	5:45 PM	3	0	0	0	0	0	0	11	9	3	2	0	28
	VOLUMES	65	0	15	0	0	0	0	109	53	21	53	0	316
	APPROACH %	81%	0%	19%	0%	0%	0%	0%	67%	33%	28%	72%	0%	
	APP/DEPART	80	/	0	0	/	74	162	/	124	74	/	118	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	34	0	6	0	0	0	0	58	34	17	40	0	189
	APPROACH %	85%	0%	15%	0%	0%	0%	0%	63%	37%	30%	70%	0%	
	PEAK HR FACTOR		0.769			0.000			0.793			0.548		0.762
	APP/DEPART	40	/	0	0	/	51	92	/	64	57	/	74	0

U-TURNS

NB 0	SB 0	EB 0	WB 0	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Navajo Rd

NORTH LEG

Johnson Rd WEST LEG — EAST LEG **Johnson Rd**

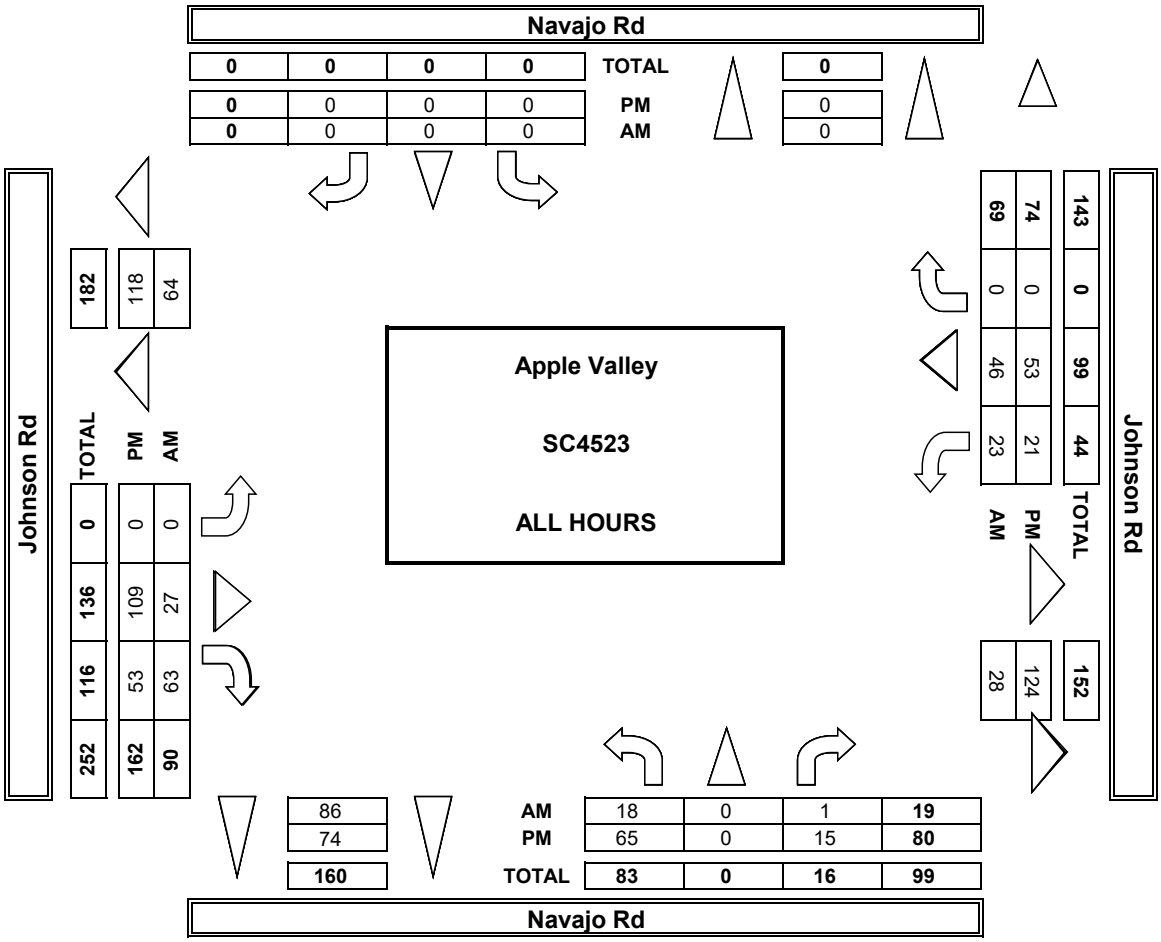
SOUTH LEG

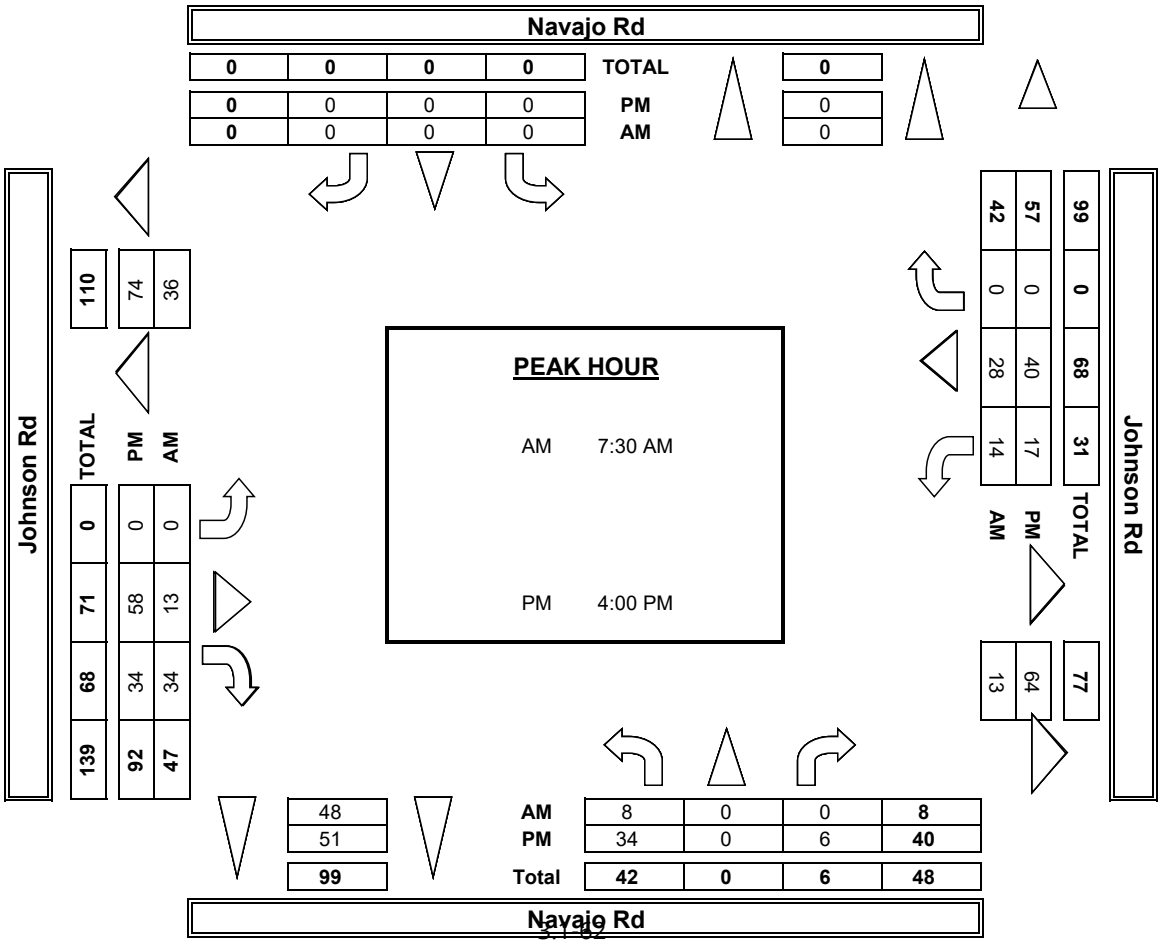
Navajo Rd

		ALL PED + BIKE & SCOOTER					PEDESTRIAN CROSSINGS					BICYCLE & SCOOTER CROSSINGS				
		E LEG	W LEG	S LEG	N LEG	TOTAL	E LEG	W LEG	S LEG	N LEG	TOTAL	EL	WL	SL	NL	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





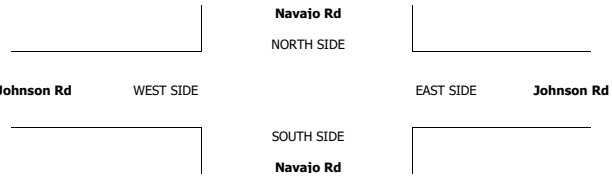
INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 4/2/24 TUESDAY	LOCATION:	Apple Valley	PROJECT #:	SC4523
	NORTH & SOUTH:	Navajo Rd	LOCATION #:	11
	EAST & WEST:	Johnson Rd	CONTROL:	STOP N

	NOTES:											
PCE Adjusted	Class	1	2	3	4	5	6		AM PM MD OTHER OTHER		▲ N	
	Factor	1	1.5	2	3	2	2			◄ W		E ►
											S ▼	

		NORTHBOUND Navajo Rd			SOUTHBOUND Navajo Rd			EASTBOUND Johnson Rd			WESTBOUND Johnson Rd				U-TURNS				
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	3	0	0	0	0	0	0	5	6	2	10	0	25					0
	7:15 AM	3	0	0	0	0	0	0	4	4	1	5	0	17					0
	7:30 AM	9	0	0	0	0	0	0	5	13	3	9	0	39					0
	7:45 AM	0	0	0	0	0	0	0	4	10	1	11	0	26					0
	8:00 AM	5	0	0	0	0	0	0	1	7	11	5	0	28					0
	8:15 AM	6	0	0	0	0	0	0	6	11	2	7	0	31					0
	8:30 AM	9	0	1	0	0	0	0	3	10	3	6	0	31					0
	8:45 AM	10	0	0	0	0	0	0	5	17	3	1	0	36					0
	VOLUMES	44	0	1	0	0	0	0	32	78	25	53	0	232	0	0	0	0	0
	APPROACH %	98%	0%	2%	0%	0%	0%	0%	29%	71%	32%	68%	0%						
	APP/DEPART	45	/	0	0	/	102	110	/	33	77	/	97	0					
	BEGIN PEAK HR	7:30 AM																	
	VOLUMES	20	0	0	0	0	0	0	16	41	16	31	0	123					
	APPROACH %	100%	0%	0%	0%	0%	0%	0%	27%	73%	33%	67%	0%						
	PEAK HR FACTOR	0.542			0.000			0.785			0.750			0.795					
	APP/DEPART	20	/	0	0	/	57	57	/	16	47	/	51	0					
PM	4:00 PM	11	0	4	0	0	0	0	23	6	2	11	0	57					0
	4:15 PM	12	0	1	0	0	0	0	10	22	7	19	0	71					0
	4:30 PM	12	0	1	0	0	0	0	15	5	3	9	0	44					0
	4:45 PM	9	0	2	0	0	0	0	12	9	5	6	0	43					0
	5:00 PM	9	0	2	0	0	0	0	15	5	1	5	0	37					0
	5:15 PM	4	0	0	0	0	0	0	13	7	0	3	0	27					0
	5:30 PM	24	0	7	0	0	0	0	13	5	0	5	0	54					0
	5:45 PM	7	0	0	0	0	0	0	14	9	3	2	0	35					0
	VOLUMES	88	0	17	0	0	0	0	114	68	21	59	0	367	0	0	0	0	0
	APPROACH %	84%	0%	16%	0%	0%	0%	0%	63%	37%	26%	74%	0%						
	APP/DEPART	105	/	0	0	/	89	182	/	131	80	/	147	0					
	BEGIN PEAK HR	4:00 PM																	
	VOLUMES	44	0	8	0	0	0	0	60	42	17	44	0	215					
	APPROACH %	85%	0%	15%	0%	0%	0%	0%	59%	41%	28%	72%	0%						
	PEAK HR FACTOR	0.867			0.000			0.793			0.587			0.755					
	APP/DEPART	52	/	0	0	/	59	102	/	68	61	/	88	0					



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Navajo Rd	LOCATION #:	11
TUESDAY	EAST & WEST:	Johnson Rd	CONTROL:	STOP N

CLASS 1: PASSENGER VEHICLES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Navajo Rd			SOUTHBOUND Navajo Rd			EASTBOUND Johnson Rd			WESTBOUND Johnson Rd			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	3	1	2	5	0	11
	7:15 AM	0	0	0	0	0	0	0	4	4	1	3	0	12
	7:30 AM	1	0	0	0	0	0	0	5	13	1	7	0	27
	7:45 AM	0	0	0	0	0	0	0	1	10	1	9	0	21
	8:00 AM	0	0	0	0	0	0	0	1	2	9	2	0	14
	8:15 AM	0	0	0	0	0	0	0	4	5	0	5	0	14
	8:30 AM	0	0	1	0	0	0	0	3	5	3	6	0	18
	8:45 AM	1	0	0	0	0	0	0	2	14	3	1	0	21
	VOLUMES	2	0	1	0	0	0	0	23	54	20	38	0	138
	APPROACH %	67%	0%	33%	0%	0%	0%	0%	30%	70%	34%	66%	0%	
	APP/DEPART	3	/	0	0	/	74	77	/	24	58	/	40	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	1	0	0	0	0	0	0	11	30	11	23	0	76
	APPROACH %	100%	0%	0%	0%	0%	0%	0%	27%	73%	32%	68%	0%	
	PEAK HR FACTOR		0.250			0.000			0.569			0.773		0.704
	APP/DEPART	1	/	0	0	/	41	41	/	11	34	/	24	0
PM	4:00 PM	8	0	1	0	0	0	0	23	6	2	9	0	49
	4:15 PM	12	0	1	0	0	0	0	7	9	7	19	0	55
	4:30 PM	4	0	1	0	0	0	0	13	5	3	5	0	31
	4:45 PM	4	0	2	0	0	0	0	12	9	5	2	0	34
	5:00 PM	0	0	2	0	0	0	0	12	2	1	2	0	19
	5:15 PM	1	0	0	0	0	0	0	13	3	0	3	0	20
	5:30 PM	22	0	7	0	0	0	0	13	0	0	5	0	47
	5:45 PM	1	0	0	0	0	0	0	9	9	3	2	0	24
	VOLUMES	52	0	14	0	0	0	0	102	43	21	47	0	279
	APPROACH %	79%	0%	21%	0%	0%	0%	0%	70%	30%	31%	69%	0%	
	APP/DEPART	66	/	0	0	/	64	145	/	116	68	/	99	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	28	0	5	0	0	0	0	55	29	17	35	0	169
	APPROACH %	85%	0%	15%	0%	0%	0%	0%	65%	35%	33%	67%	0%	
	PEAK HR FACTOR		0.635			0.000			0.724			0.500		0.768
	APP/DEPART	33	/	0	0	/	46	84	/	60	52	/	63	0

U-TURNS					
NB	SB	EB	WB	TTL	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	

RTOR			
NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Navajo Rd

NORTH SIDE

Johnson Rd WEST SIDE EAST SIDE **Johnson Rd**

SOUTH SIDE

Navajo Rd

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Navajo Rd	LOCATION #:	11
TUESDAY	EAST & WEST:	Johnson Rd	CONTROL:	STOP N

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

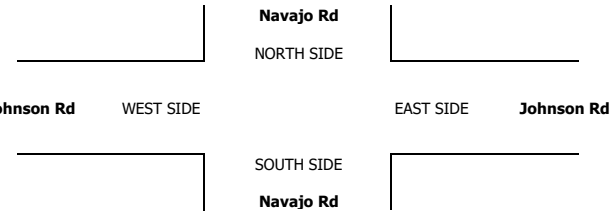
		NORTHBOUND Navajo Rd			SOUTHBOUND Navajo Rd			EASTBOUND Johnson Rd			WESTBOUND Johnson Rd			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	1	0	0	1	0	2
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	1
	7:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
	8:00 AM	1	0	0	0	0	0	0	0	0	1	2	0	4
	8:15 AM	0	0	0	0	0	0	0	1	0	1	1	0	3
	8:30 AM	1	0	0	0	0	0	0	0	1	0	0	0	2
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	2	0	0	0	0	0	0	2	1	3	5	0	13
	APPROACH %	100%	0%	0%	0%	0%	0%	0%	67%	33%	38%	63%	0%	
	APP/DEPART	2	/	0	0	/	4	3	/	2	8	/	7	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	1	0	0	0	0	0	0	1	0	3	4	0	9
	APPROACH %	100%	0%	0%	0%	0%	0%	0%	100%	0%	43%	57%	0%	
	PEAK HR FACTOR		0.250			0.000			0.250			0.583		0.563
	APP/DEPART	1	/	0	0	/	3	1	/	1	7	/	5	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	2	0	0	0	0	2
	4:30 PM	0	0	0	0	0	0	0	1	0	0	1	0	2
	4:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
	5:00 PM	0	0	0	0	0	0	0	2	0	0	0	0	2
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
	VOLUMES	0	0	0	0	0	0	0	6	0	0	2	0	8
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
	APP/DEPART	0	/	0	0	/	0	6	/	6	2	/	2	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	0	0	0	0	0	0	3	0	0	2	0	5
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
	PEAK HR FACTOR		0.000			0.000			0.375			0.500		0.625
	APP/DEPART	0	/	0	0	/	0	3	/	3	2	/	2	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Navajo Rd	LOCATION #:	11
TUESDAY	EAST & WEST:	Johnson Rd	CONTROL:	STOP N

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Navajo Rd			SOUTHBOUND Navajo Rd			EASTBOUND Johnson Rd			WESTBOUND Johnson Rd			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	1	0	0	0	0	0	0	0	0	0	0	0	1
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	1	0	0	0	0	0	0	0	0	0	1	0	2
	APPROACH %	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	
	APP/DEPART	1	/	0	0	/	0	0	/	0	1	/	2	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	1	0	1
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.250		0.250
	APP/DEPART	0	/	0	0	/	0	0	/	0	1	/	1	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
	4:15 PM	0	0	0	0	0	0	0	0	1	0	0	0	1
	4:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
	4:45 PM	1	0	0	0	0	0	0	0	0	0	1	0	2
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	1	0	0	0	1
	5:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	1
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	1	0	0	0	0	0	0	0	3	0	3	0	7
	APPROACH %	100%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	
	APP/DEPART	1	/	0	0	/	3	3	/	0	3	/	4	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	1	0	0	0	0	0	0	0	1	0	3	0	5
	APPROACH %	100%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	
	PEAK HR FACTOR		0.250			0.000			0.250			0.750		0.625
	APP/DEPART	1	/	0	0	/	1	1	/	0	3	/	4	0

	U-TURNS					RTOR			
	NB	SB	EB	WB	TTL	NRR X	SRR X	ERR X	WRR X
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0		0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0		0	0	0	0

Navajo Rd

NORTH SIDE

Johnson Rd WEST SIDE EAST SIDE **Johnson Rd**

SOUTH SIDE

Navajo Rd

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Navajo Rd	LOCATION #:	11
TUESDAY	EAST & WEST:	Johnson Rd	CONTROL:	STOP N

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Navajo Rd			SOUTHBOUND Navajo Rd			EASTBOUND Johnson Rd			WESTBOUND Johnson Rd			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	1	0	0	0	0	0	0	0	1	0	1	0	3
	7:15 AM	1	0	0	0	0	0	0	0	0	0	0	0	1
	7:30 AM	2	0	0	0	0	0	0	0	0	0	0	0	2
	7:45 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
	8:00 AM	1	0	0	0	0	0	0	0	1	0	0	0	2
	8:15 AM	2	0	0	0	0	0	0	0	2	0	0	0	4
	8:30 AM	1	0	0	0	0	0	0	0	1	0	0	0	2
	8:45 AM	3	0	0	0	0	0	0	1	1	0	0	0	5
	VOLUMES	11	0	0	0	0	0	0	2	6	0	1	0	20
	APPROACH %	100%	0%	0%	0%	0%	0%	0%	25%	75%	0%	100%	0%	
	APP/DEPART	11	/	0	0	/	6	8	/	2	1	/	12	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	5	0	0	0	0	0	0	1	3	0	0	0	9
	APPROACH %	100%	0%	0%	0%	0%	0%	0%	25%	75%	0%	0%	0%	
	PEAK HR FACTOR		0.625			0.000			0.500			0.000		0.563
	APP/DEPART	5	/	0	0	/	3	4	/	1	0	/	5	0
PM	4:00 PM	1	0	1	0	0	0	0	0	0	0	0	0	2
	4:15 PM	0	0	0	0	0	0	0	0	3	0	0	0	3
	4:30 PM	2	0	0	0	0	0	0	0	0	0	0	0	2
	4:45 PM	1	0	0	0	0	0	0	0	0	0	0	0	1
	5:00 PM	3	0	0	0	0	0	0	0	1	0	1	0	5
	5:15 PM	1	0	0	0	0	0	0	0	0	0	0	0	1
	5:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	1
	5:45 PM	2	0	0	0	0	0	0	1	0	0	0	0	3
	VOLUMES	10	0	1	0	0	0	0	1	5	0	1	0	18
	APPROACH %	91%	0%	9%	0%	0%	0%	0%	17%	83%	0%	100%	0%	
	APP/DEPART	11	/	0	0	/	5	6	/	2	1	/	11	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	4	0	1	0	0	0	0	0	3	0	0	0	8
	APPROACH %	80%	0%	20%	0%	0%	0%	0%	0%	100%	0%	0%	0%	
	PEAK HR FACTOR		0.625			0.000			0.250			0.000		0.667
	APP/DEPART	5	/	0	0	/	3	3	/	1	0	/	4	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Navajo Rd

NORTH SIDE

Johnson Rd WEST SIDE EAST SIDE **Johnson Rd**

SOUTH SIDE

Navajo Rd

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Navajo Rd	LOCATION #:	11
TUESDAY	EAST & WEST:	Johnson Rd	CONTROL:	STOP N

CLASS 5: RV

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Navajo Rd			SOUTHBOUND Navajo Rd			EASTBOUND Johnson Rd			WESTBOUND Johnson Rd			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Navajo Rd

NORTH SIDE

Johnson Rd WEST SIDE EAST SIDE **Johnson Rd**

SOUTH SIDE

Navajo Rd

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Navajo Rd	LOCATION #:	11
TUESDAY	EAST & WEST:	Johnson Rd	CONTROL:	STOP N

CLASS 6: BUSES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Navajo Rd			SOUTHBOUND Navajo Rd			EASTBOUND Johnson Rd			WESTBOUND Johnson Rd			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	1	0	0	0	1
	7:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
	7:30 AM	1	0	0	0	0	0	0	0	0	0	0	0	1
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	1	0	0	0	1
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	1	0	0	0	0	0	0	0	0	0	0	0	1
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	2	0	0	0	0	0	0	0	2	0	1	0	5
	APPROACH %	100%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	
	APP/DEPART	2	/	0	0	/	2	2	/	0	1	/	3	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	1	0	0	0	0	0	0	0	1	0	0	0	2
	APPROACH %	100%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	
	PEAK HR FACTOR		0.250			0.000			0.250			0.000		0.500
	APP/DEPART	1	/	0	0	/	1	1	/	0	0	/	1	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	1	0	0	0	1
	4:30 PM	1	0	0	0	0	0	0	0	0	0	0	0	1
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	1	0	0	0	1
	5:30 PM	1	0	0	0	0	0	0	0	0	0	0	0	1
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	2	0	0	0	0	0	0	0	2	0	0	0	4
	APPROACH %	100%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	
	APP/DEPART	2	/	0	0	/	2	2	/	0	0	/	2	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	1	0	0	0	0	0	0	0	1	0	0	0	2
	APPROACH %	100%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	
	PEAK HR FACTOR		0.250			0.000			0.250			0.000		0.500
	APP/DEPART	1	/	0	0	/	1	1	/	0	0	/	1	0

U-TURNS NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	

RTOR NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Navajo Rd

NORTH SIDE

Johnson Rd WEST SIDE EAST SIDE **Johnson Rd**

SOUTH SIDE

Navajo Rd

INTERSECTION TURNING MOVEMENT COUNTS

T020624

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, Apr 2, 24

LOCATION: Apple Valley
NORTH & SOUTH: Dale Evans Pkwy
EAST & WEST: Johnson Rd

PROJECT #: SC4523
LOCATION #: 9
CONTROL: STOP ALL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N / ◄ W / E ► / S ▼

		NORTHBOUND Dale Evans Pkwy			SOUTHBOUND Dale Evans Pkwy			EASTBOUND Johnson Rd			WESTBOUND Johnson Rd			
	LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0.5	WT 0.5	WR 1	TOTAL
AM	7:00 AM	3	27	2	1	10	0	0	12	2	2	6	5	70
	7:15 AM	3	32	6	4	16	1	0	7	1	1	3	8	82
	7:30 AM	2	35	3	8	12	0	0	24	2	2	11	7	106
	7:45 AM	4	24	2	2	12	0	0	17	4	0	16	5	86
	8:00 AM	1	26	2	2	8	0	0	13	1	0	9	6	68
	8:15 AM	0	20	3	2	10	0	0	13	3	0	8	5	64
	8:30 AM	1	19	4	2	16	0	0	20	4	1	12	4	83
	8:45 AM	4	16	4	2	14	0	0	22	3	2	7	3	77
	VOLUMES	18	199	26	23	98	1	0	128	20	8	72	43	636
	APPROACH %	7%	82%	11%	19%	80%	1%	0%	86%	14%	7%	59%	35%	
	APP/DEPART	243	/	242	122	/	126	148	/	177	123	/	91	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	12	118	13	15	50	1	0	60	9	5	36	25	344
	APPROACH %	8%	83%	9%	23%	76%	2%	0%	87%	13%	8%	55%	38%	
	PEAK HR FACTOR		0.872			0.786			0.663			0.786		0.811
	APP/DEPART	143	/	143	66	/	64	69	/	88	66	/	49	0
PM	4:00 PM	4	10	13	11	36	0	0	31	10	25	72	9	221
	4:15 PM	2	14	28	10	42	0	0	74	7	7	27	4	215
	4:30 PM	11	13	6	8	50	0	0	25	5	7	15	5	145
	4:45 PM	5	25	1	5	47	0	0	13	8	4	14	4	126
	5:00 PM	0	13	1	13	52	0	0	18	3	3	11	4	118
	5:15 PM	2	11	1	9	41	0	0	14	2	5	9	4	98
	5:30 PM	3	13	1	7	31	1	0	11	6	3	33	2	111
	5:45 PM	3	19	1	7	33	0	0	19	5	2	5	1	95
	VOLUMES	30	118	52	70	332	1	0	205	46	56	186	33	1,129
	APPROACH %	15%	59%	26%	17%	82%	0%	0%	82%	18%	20%	68%	12%	
	APP/DEPART	200	/	151	403	/	434	251	/	327	275	/	217	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	22	62	48	34	175	0	0	143	30	43	128	22	707
	APPROACH %	17%	47%	36%	16%	84%	0%	0%	83%	17%	22%	66%	11%	
	PEAK HR FACTOR		0.750			0.901			0.534			0.455		0.800
	APP/DEPART	132	/	84	209	/	248	173	/	225	193	/	150	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Dale Evans Pkwy

NORTH LEG

Johnson Rd WEST LEG — EAST LEG **Johnson Rd**

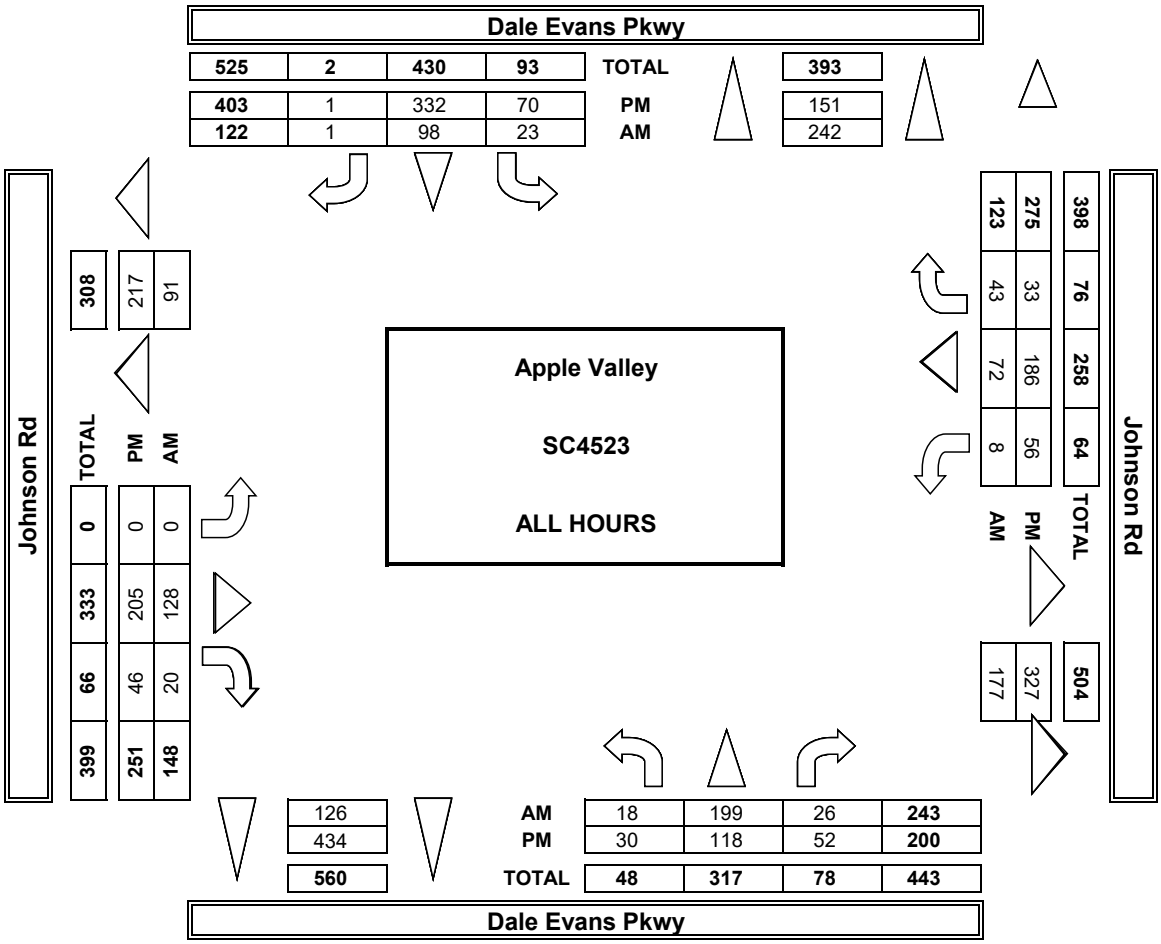
SOUTH LEG

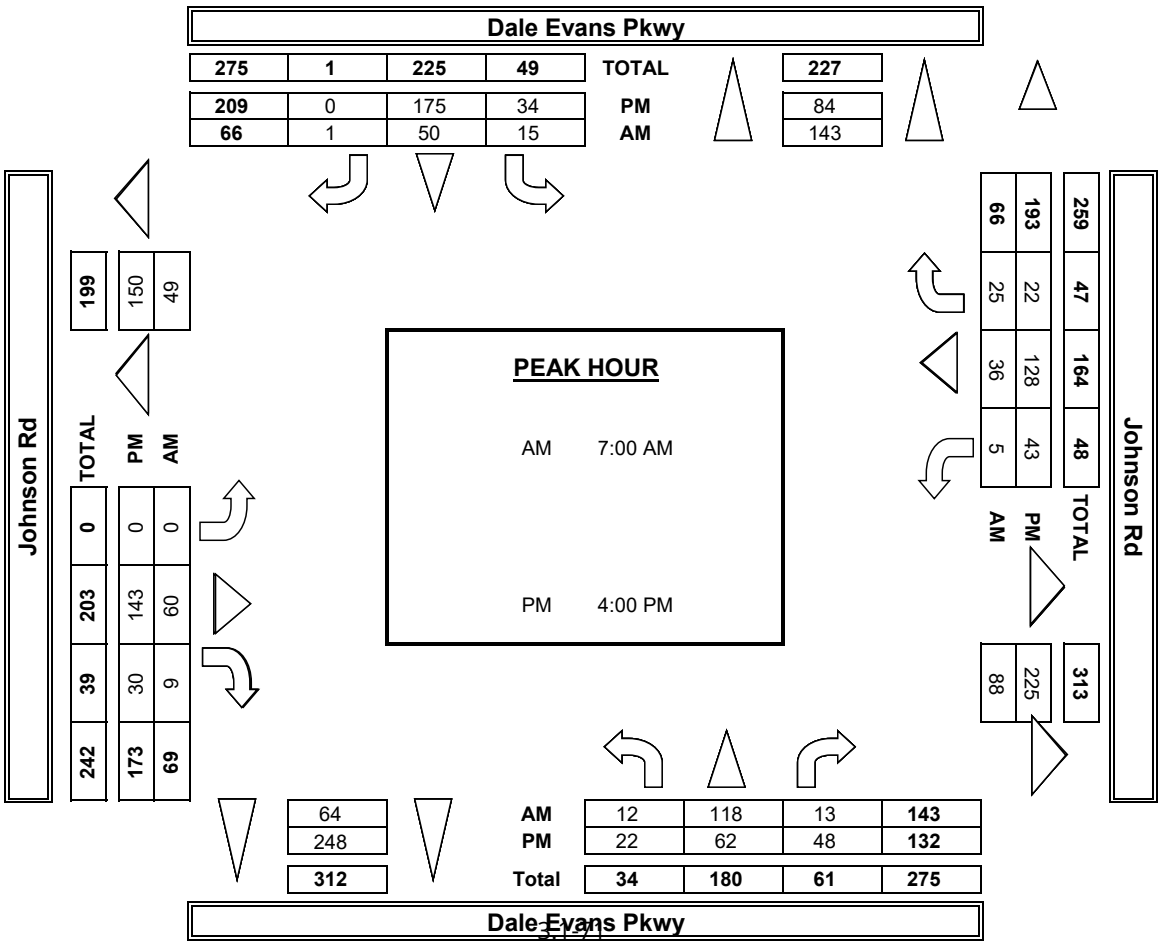
Dale Evans Pkwy

		ALL PED + BIKE & SCOOTER					PEDESTRIAN CROSSINGS					BICYCLE & SCOOTER CROSSINGS				
		E LEG	W LEG	S LEG	N LEG	TOTAL	E LEG	W LEG	S LEG	N LEG	TOTAL	EL	WL	SL	NL	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





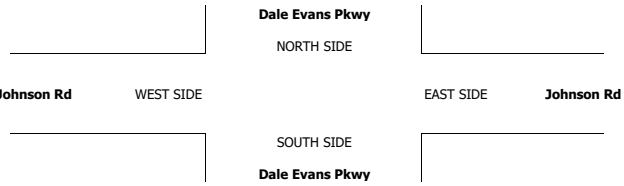
INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Dale Evans Pkwy	LOCATION #:	9
TUESDAY	EAST & WEST:	Johnson Rd	CONTROL:	STOP ALL

	NOTES:												
PCE Adjusted	Class	1	2	3	4	5	6			AM		▲ N	
	Factor	1	1.5	2	3	2	2			PM	◄ W		E ►
										MD			
										OTHER		S ▼	
										OTHER			

		NORTHBOUND Dale Evans Pkwy			SOUTHBOUND Dale Evans Pkwy			EASTBOUND Johnson Rd			WESTBOUND Johnson Rd				U-TURNS				
	LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0.5	WT 0.5	WR 1	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	3	30	3	1	11	0	0	17	2	2	11	11	90					0
	7:15 AM	6	35	6	6	16	1	0	11	1	3	5	19	108					0
	7:30 AM	4	40	3	14	14	0	0	32	2	3	21	16	149					0
	7:45 AM	7	25	2	6	18	0	0	19	5	0	29	15	124					0
	8:00 AM	1	28	3	6	11	0	0	22	1	0	13	18	103					0
	8:15 AM	0	23	3	3	11	0	0	21	4	0	15	9	87					0
	8:30 AM	1	22	4	6	19	0	0	33	8	2	22	10	126					0
	8:45 AM	6	18	4	4	15	0	0	31	3	2	15	8	105					0
	VOLUMES	27	219	28	46	114	1	0	185	25	12	129	106	891	0	0	0	0	0
	APPROACH %	10%	80%	10%	29%	71%	1%	0%	88%	12%	5%	52%	43%						
	APP/DEPART	274	/	325	161	/	151	210	/	259	247	/	157	0					
	BEGIN PEAK HR		7:00 AM																
	VOLUMES	19	129	14	27	59	1	0	79	10	8	65	61	470					
	APPROACH %	12%	80%	9%	31%	68%	1%	0%	89%	11%	6%	49%	45%						
	PEAK HR FACTOR		0.862			0.772			0.647			0.767		0.791					
	APP/DEPART	162	/	190	87	/	76	88	/	120	134	/	85	0					
PM	4:00 PM	4	12	13	18	38	0	0	34	11	25	80	16	251					0
	4:15 PM	2	16	29	16	44	0	0	95	8	7	30	8	253					0
	4:30 PM	15	13	6	22	55	0	0	31	5	8	20	9	184					0
	4:45 PM	6	25	1	11	50	0	0	17	11	4	22	6	152					0
	5:00 PM	0	15	1	25	54	0	0	28	4	3	17	12	159					0
	5:15 PM	2	14	2	13	44	0	0	20	2	5	15	12	129					0
	5:30 PM	5	13	1	13	32	1	0	16	6	4	37	2	130					0
	5:45 PM	3	19	1	13	34	0	0	26	5	2	7	3	113					0
	VOLUMES	37	127	54	131	350	1	0	266	51	58	227	68	1,369	0	0	0	0	0
	APPROACH %	17%	58%	25%	27%	73%	0%	0%	84%	16%	16%	64%	19%						
	APP/DEPART	218	/	195	482	/	459	317	/	450	353	/	265	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	27	66	49	67	186	0	0	176	35	44	151	39	839					
	APPROACH %	19%	46%	35%	26%	74%	0%	0%	84%	16%	19%	65%	17%						
	PEAK HR FACTOR		0.755			0.820			0.516			0.485		0.829					
	APP/DEPART	142	/	105	253	/	265	211	/	292	234	/	178	0					



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Dale Evans Pkwy	LOCATION #:	9
TUESDAY	EAST & WEST:	Johnson Rd	CONTROL:	STOP ALL

CLASS 1: PASSENGER VEHICLES

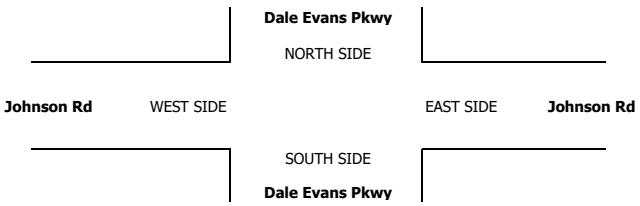
NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

	NORTHBOUND Dale Evans Pkwy			SOUTHBOUND Dale Evans Pkwy			EASTBOUND Johnson Rd			WESTBOUND Johnson Rd			
LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0.5	WT 0.5	WR 1	TOTAL
7:00 AM	3	21	1	1	9	0	0	9	2	2	3	2	53
7:15 AM	1	30	6	3	16	1	0	4	1	0	2	2	66
7:30 AM	1	30	3	5	10	0	0	20	2	1	6	2	80
7:45 AM	2	23	2	0	8	0	0	16	3	0	9	0	63
8:00 AM	1	24	1	0	4	0	0	7	1	0	5	0	43
8:15 AM	0	16	3	1	9	0	0	7	2	0	4	3	45
8:30 AM	1	17	4	0	14	0	0	12	1	0	6	1	56
8:45 AM	3	14	4	1	13	0	0	15	3	2	3	0	58
VOLUMES	12	175	24	11	83	1	0	90	15	5	38	10	464
APPROACH %	6%	83%	11%	12%	87%	1%	0%	86%	14%	9%	72%	19%	
APP/DEPART	211	/	185	95	/	103	105	/	125	53	/	51	0
BEGIN PEAK HR	7:00 AM												
VOLUMES	7	104	12	9	43	1	0	49	8	3	20	6	262
APPROACH %	6%	85%	10%	17%	81%	2%	0%	86%	14%	10%	69%	21%	
PEAK HR FACTOR		0.831			0.663			0.648			0.806		0.819
APP/DEPART	123	/	110	53	/	54	57	/	70	29	/	28	0
4:00 PM	4	9	13	7	33	0	0	29	9	25	67	5	201
4:15 PM	2	13	27	6	39	0	0	63	6	7	25	2	190
4:30 PM	9	13	6	1	46	0	0	21	5	6	12	3	122
4:45 PM	4	25	1	2	45	0	0	11	6	4	8	3	109
5:00 PM	0	12	1	7	51	0	0	11	2	3	8	0	95
5:15 PM	2	9	0	7	38	0	0	11	2	5	5	0	79
5:30 PM	2	13	1	4	30	1	0	8	6	2	31	2	100
5:45 PM	3	19	1	4	31	0	0	15	5	2	4	0	84
VOLUMES	26	113	50	38	313	1	0	169	41	54	160	15	980
APPROACH %	14%	60%	26%	11%	89%	0%	0%	80%	20%	24%	70%	7%	
APP/DEPART	189	/	128	352	/	408	210	/	257	229	/	187	0
BEGIN PEAK HR	4:00 PM												
VOLUMES	19	60	47	16	163	0	0	124	26	42	112	13	622
APPROACH %	15%	48%	37%	9%	91%	0%	0%	83%	17%	25%	67%	8%	
PEAK HR FACTOR		0.750			0.952			0.543			0.430		0.774
APP/DEPART	126	/	73	179	/	231	150	/	187	167	/	131	0

U-TURNS					
NB	SB	EB	WB	TTL	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	

RTOR			
NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Dale Evans Pkwy	LOCATION #:	9
TUESDAY	EAST & WEST:	Johnson Rd	CONTROL:	STOP ALL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Dale Evans Pkwy			SOUTHBOUND Dale Evans Pkwy			EASTBOUND Johnson Rd			WESTBOUND Johnson Rd			
	LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0.5	WT 0.5	WR 1	TOTAL
AM	7:00 AM	0	6	0	0	1	0	0	0	0	0	1	0	8
	7:15 AM	1	1	0	0	0	0	0	1	0	0	0	0	3
	7:30 AM	0	2	0	0	0	0	0	0	0	0	0	1	3
	7:45 AM	1	1	0	0	0	0	0	0	1	0	1	0	4
	8:00 AM	0	1	0	0	2	0	0	0	0	0	2	0	5
	8:15 AM	0	2	0	0	1	0	0	1	1	0	1	0	6
	8:30 AM	0	0	0	0	0	0	0	1	0	0	1	0	2
	8:45 AM	0	1	0	0	1	0	0	0	0	0	0	0	2
	VOLUMES	2	14	0	0	5	0	0	3	2	0	6	1	33
	APPROACH %	13%	88%	0%	0%	100%	0%	0%	60%	40%	0%	86%	14%	
	APP/DEPART	16	/	15	5	/	7	5	/	3	7	/	8	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	2	10	0	0	1	0	0	1	1	0	2	1	18
	APPROACH %	17%	83%	0%	0%	100%	0%	0%	50%	50%	0%	67%	33%	
	PEAK HR FACTOR		0.500			0.250			0.500			0.750		0.563
	APP/DEPART	12	/	11	1	/	2	2	/	1	3	/	4	0
PM	4:00 PM	0	0	0	0	2	0	0	0	0	0	1	0	3
	4:15 PM	0	0	0	1	3	0	0	1	1	0	0	0	6
	4:30 PM	0	0	0	0	2	0	0	1	0	0	0	0	3
	4:45 PM	0	0	0	0	1	0	0	0	0	0	1	0	2
	5:00 PM	0	0	0	0	0	0	0	2	1	0	0	0	3
	5:15 PM	0	1	0	0	2	0	0	0	0	0	0	0	3
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	2	0	0	1	0	0	0	0	3
	VOLUMES	0	1	0	1	12	0	0	5	2	0	2	0	23
	APPROACH %	0%	100%	0%	8%	92%	0%	0%	71%	29%	0%	100%	0%	
	APP/DEPART	1	/	1	13	/	14	7	/	6	2	/	2	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	0	0	1	8	0	0	2	1	0	2	0	14
	APPROACH %	0%	0%	0%	11%	89%	0%	0%	67%	33%	0%	100%	0%	
	PEAK HR FACTOR		0.000			0.563			0.375			0.500		0.583
	APP/DEPART	0	/	0	9	/	9	3	/	3	2	/	2	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	

Dale Evans Pkwy

NORTH SIDE

Johnson Rd WEST SIDE EAST SIDE **Johnson Rd**

SOUTH SIDE

Dale Evans Pkwy

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Dale Evans Pkwy	LOCATION #:	9
TUESDAY	EAST & WEST:	Johnson Rd	CONTROL:	STOP ALL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Dale Evans Pkwy			SOUTHBOUND Dale Evans Pkwy			EASTBOUND Johnson Rd			WESTBOUND Johnson Rd			
	LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0.5	WT 0.5	WR 1	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
	7:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
	7:30 AM	0	1	0	0	1	0	0	0	0	0	0	0	2
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	1	0	0	0	0	0	3	0	0	1	0	5
	8:15 AM	0	1	0	1	0	0	0	3	0	0	0	0	5
	8:30 AM	0	1	0	0	0	0	0	2	2	0	1	0	6
	8:45 AM	0	0	0	0	0	0	0	5	0	0	0	1	6
	VOLUMES	0	4	0	1	1	0	0	15	2	0	2	1	26
	APPROACH %	0%	100%	0%	50%	50%	0%	0%	88%	12%	0%	67%	33%	
	APP/DEPART	4	/	5	2	/	3	17	/	16	3	/	2	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	0	1	0	0	1	0	0	2	0	0	0	0	4
	APPROACH %	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.250			0.250			0.500			0.000		0.500
	APP/DEPART	1	/	1	1	/	1	2	/	2	0	/	0	0
PM	4:00 PM	0	0	0	1	0	0	0	1	1	0	1	0	4
	4:15 PM	0	0	0	1	0	0	0	0	0	0	1	0	2
	4:30 PM	0	0	0	0	0	0	0	1	0	0	1	0	2
	4:45 PM	1	0	0	0	0	0	0	0	1	0	3	0	5
	5:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
	5:15 PM	0	0	0	0	0	0	0	0	0	0	2	0	2
	5:30 PM	0	0	0	0	1	0	0	1	0	0	0	0	2
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	1	0	0	2	1	0	0	4	2	0	8	0	18
	APPROACH %	100%	0%	0%	67%	33%	0%	0%	67%	33%	0%	100%	0%	
	APP/DEPART	1	/	0	3	/	3	6	/	6	8	/	9	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	1	0	0	2	0	0	0	2	2	0	6	0	13
	APPROACH %	100%	0%	0%	100%	0%	0%	0%	50%	50%	0%	100%	0%	
	PEAK HR FACTOR		0.250			0.500			0.500			0.500		0.650
	APP/DEPART	1	/	0	2	/	2	4	/	4	6	/	7	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Dale Evans Pkwy

NORTH SIDE

Johnson Rd WEST SIDE EAST SIDE **Johnson Rd**

SOUTH SIDE

Dale Evans Pkwy

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Dale Evans Pkwy	LOCATION #:	9
TUESDAY	EAST & WEST:	Johnson Rd	CONTROL:	STOP ALL

CLASS 4: 4 OR MORE AXLE TRUCKS

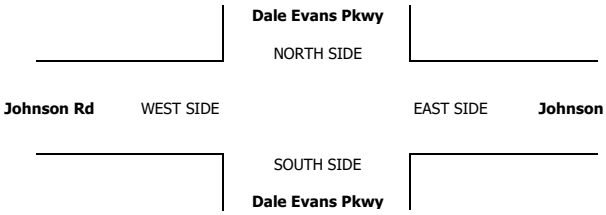
NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Dale Evans Pkwy			SOUTHBOUND Dale Evans Pkwy			EASTBOUND Johnson Rd			WESTBOUND Johnson Rd			
	LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0.5	WT 0.5	WR 1	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	2	0	0	2	3	7
	7:15 AM	1	1	0	1	0	0	0	1	0	1	1	5	11
	7:30 AM	1	1	0	3	0	0	0	4	0	0	5	4	18
	7:45 AM	1	0	0	2	2	0	0	1	0	0	6	5	17
	8:00 AM	0	0	0	2	0	0	0	3	0	0	1	6	12
	8:15 AM	0	0	0	0	0	0	0	2	0	0	3	2	7
	8:30 AM	0	1	0	2	1	0	0	5	1	0	4	3	17
	8:45 AM	1	0	0	1	0	0	0	2	0	0	4	2	10
	VOLUMES	4	3	0	11	3	0	0	20	1	1	26	30	99
	APPROACH %	57%	43%	0%	79%	21%	0%	0%	95%	5%	2%	46%	53%	
	APP/DEPART	7	/	33	14	/	5	21	/	31	57	/	30	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	3	2	0	6	2	0	0	8	0	1	14	17	53
	APPROACH %	60%	40%	0%	75%	25%	0%	0%	100%	0%	3%	44%	53%	
	PEAK HR FACTOR		0.625			0.500			0.500			0.727		0.736
	APP/DEPART	5	/	19	8	/	3	8	/	14	32	/	17	0
PM	4:00 PM	0	1	0	3	0	0	0	1	0	0	3	3	11
	4:15 PM	0	1	0	2	0	0	0	10	0	0	1	2	16
	4:30 PM	2	0	0	7	2	0	0	2	0	0	2	2	17
	4:45 PM	0	0	0	3	1	0	0	2	1	0	2	1	10
	5:00 PM	0	1	0	6	1	0	0	4	0	0	3	4	19
	5:15 PM	0	1	0	2	1	0	0	3	0	0	2	4	13
	5:30 PM	1	0	0	3	0	0	0	2	0	0	2	0	8
	5:45 PM	0	0	0	3	0	0	0	3	0	0	1	1	8
	VOLUMES	3	4	0	29	5	0	0	27	1	0	16	17	102
	APPROACH %	43%	57%	0%	85%	15%	0%	0%	96%	4%	0%	48%	52%	
	APP/DEPART	7	/	21	34	/	6	28	/	56	33	/	19	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	2	2	0	15	3	0	0	15	1	0	8	8	54
	APPROACH %	50%	50%	0%	83%	17%	0%	0%	94%	6%	0%	50%	50%	
	PEAK HR FACTOR		0.500			0.500			0.400			0.667		0.794
	APP/DEPART	4	/	10	18	/	4	16	/	30	16	/	10	0

U-TURNS					
	NB	SB	EB	WB	TTL
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	
	0	0	0	0	
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	
	0	0	0	0	

RTOR			
NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Dale Evans Pkwy	LOCATION #:	9
TUESDAY	EAST & WEST:	Johnson Rd	CONTROL:	STOP ALL

CLASS 5: RV

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Dale Evans Pkwy			SOUTHBOUND Dale Evans Pkwy			EASTBOUND Johnson Rd			WESTBOUND Johnson Rd			
	LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0.5	WT 0.5	WR 1	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Dale Evans Pkwy

NORTH SIDE

Johnson Rd WEST SIDE EAST SIDE **Johnson Rd**

SOUTH SIDE

Dale Evans Pkwy

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Dale Evans Pkwy	LOCATION #:	9
TUESDAY	EAST & WEST:	Johnson Rd	CONTROL:	STOP ALL

CLASS 6: BUSES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

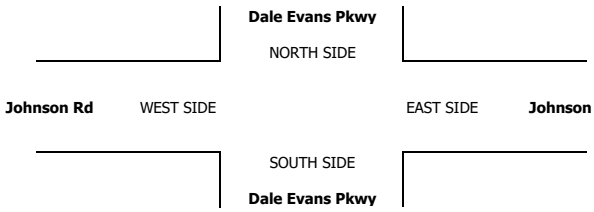
		NORTHBOUND Dale Evans Pkwy			SOUTHBOUND Dale Evans Pkwy			EASTBOUND Johnson Rd			WESTBOUND Johnson Rd			
	LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0.5	WT 0.5	WR 1	TOTAL
AM	7:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	1
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	1
	7:30 AM	0	1	0	0	1	0	0	0	0	1	0	0	3
	7:45 AM	0	0	0	0	2	0	0	0	0	0	0	0	2
	8:00 AM	0	0	1	0	2	0	0	0	0	0	0	0	3
	8:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
	8:30 AM	0	0	0	0	1	0	0	0	0	1	0	0	2
	8:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
	VOLUMES	0	3	2	0	6	0	0	0	0	2	0	1	14
	APPROACH %	0%	60%	40%	0%	100%	0%	0%	0%	0%	67%	0%	33%	
	APP/DEPART	5	/	4	6	/	8	0	/	2	3	/	0	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	0	1	1	0	3	0	0	0	0	1	0	1	7
	APPROACH %	0%	50%	50%	0%	100%	0%	0%	0%	0%	50%	0%	50%	
	PEAK HR FACTOR		0.500			0.375			0.000			0.500		0.583
	APP/DEPART	2	/	2	3	/	4	0	/	1	2	/	0	0
PM	4:00 PM	0	0	0	0	1	0	0	0	0	0	0	1	2
	4:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	1
	4:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	1
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	1
	5:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	1
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	2	0	1	0	0	0	0	2	0	1	6
	APPROACH %	0%	0%	100%	0%	100%	0%	0%	0%	0%	67%	0%	33%	
	APP/DEPART	2	/	1	1	/	3	0	/	2	3	/	0	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	0	1	0	1	0	0	0	0	1	0	1	4
	APPROACH %	0%	0%	100%	0%	100%	0%	0%	0%	0%	50%	0%	50%	
	PEAK HR FACTOR		0.250			0.250			0.000			0.500		0.500
	APP/DEPART	1	/	1	1	/	2	0	/	1	2	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

T020624

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, Apr 2, 24	LOCATION:	Apple Valley	PROJECT #: SC4523
	NORTH & SOUTH:	Stoddard Wells Rd	LOCATION #: 4
	EAST & WEST:	Johnson Rd	CONTROL: STOP W

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Stoddard Wells Rd			SOUTHBOUND Stoddard Wells Rd			EASTBOUND Johnson Rd			WESTBOUND Johnson Rd			
	LANES:	NL X	NT 1	NR 1	SL 1	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL
AM	7:00 AM	0	8	12	1	4	0	0	0	0	11	0	0	36
	7:15 AM	0	5	14	0	4	0	0	0	0	7	0	0	30
	7:30 AM	0	5	23	0	3	0	0	0	0	11	0	0	42
	7:45 AM	0	3	18	0	9	0	0	0	0	21	0	0	51
	8:00 AM	0	5	17	0	4	0	0	0	0	10	0	0	36
	8:15 AM	0	5	17	0	7	0	0	0	0	9	0	0	38
	8:30 AM	0	2	23	1	1	0	0	0	0	12	0	0	39
	8:45 AM	0	2	20	0	11	0	0	0	0	7	0	0	40
	VOLUMES	0	35	144	2	43	0	0	0	0	88	0	0	312
	APPROACH %	0%	20%	80%	4%	96%	0%	0%	0%	0%	100%	0%	0%	
	APP/DEPART	179	/	35	45	/	131	0	/	146	88	/	0	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	0	18	75	0	23	0	0	0	0	51	0	0	167
	APPROACH %	0%	19%	81%	0%	100%	0%	0%	0%	0%	100%	0%	0%	
	PEAK HR FACTOR		0.830			0.639			0.000			0.607		0.819
	APP/DEPART	93	/	18	23	/	74	0	/	75	51	/	0	0
PM	4:00 PM	0	1	41	2	7	0	0	0	0	81	0	0	132
	4:15 PM	0	6	76	0	6	0	0	0	0	27	0	1	116
	4:30 PM	0	2	26	0	5	0	0	0	0	23	0	0	56
	4:45 PM	0	2	20	0	6	0	0	0	0	22	0	2	52
	5:00 PM	0	3	20	0	1	0	0	0	0	10	0	0	34
	5:15 PM	0	2	18	0	2	0	0	0	0	12	0	0	34
	5:30 PM	0	2	21	0	4	0	0	0	0	37	0	0	64
	5:45 PM	0	1	22	1	3	0	0	0	0	9	0	0	36
	VOLUMES	0	19	244	3	34	0	0	0	0	221	0	3	524
	APPROACH %	0%	7%	93%	8%	92%	0%	0%	0%	0%	99%	0%	1%	
	APP/DEPART	263	/	22	37	/	255	0	/	247	224	/	0	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	11	163	2	24	0	0	0	0	153	0	3	356
	APPROACH %	0%	6%	94%	8%	92%	0%	0%	0%	0%	98%	0%	2%	
	PEAK HR FACTOR		0.530			0.722			0.000			0.481		0.674
	APP/DEPART	174	/	14	26	/	177	0	/	165	156	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Stoddard Wells Rd

NORTH LEG

Johnson Rd WEST LEG — EAST LEG **Johnson Rd**

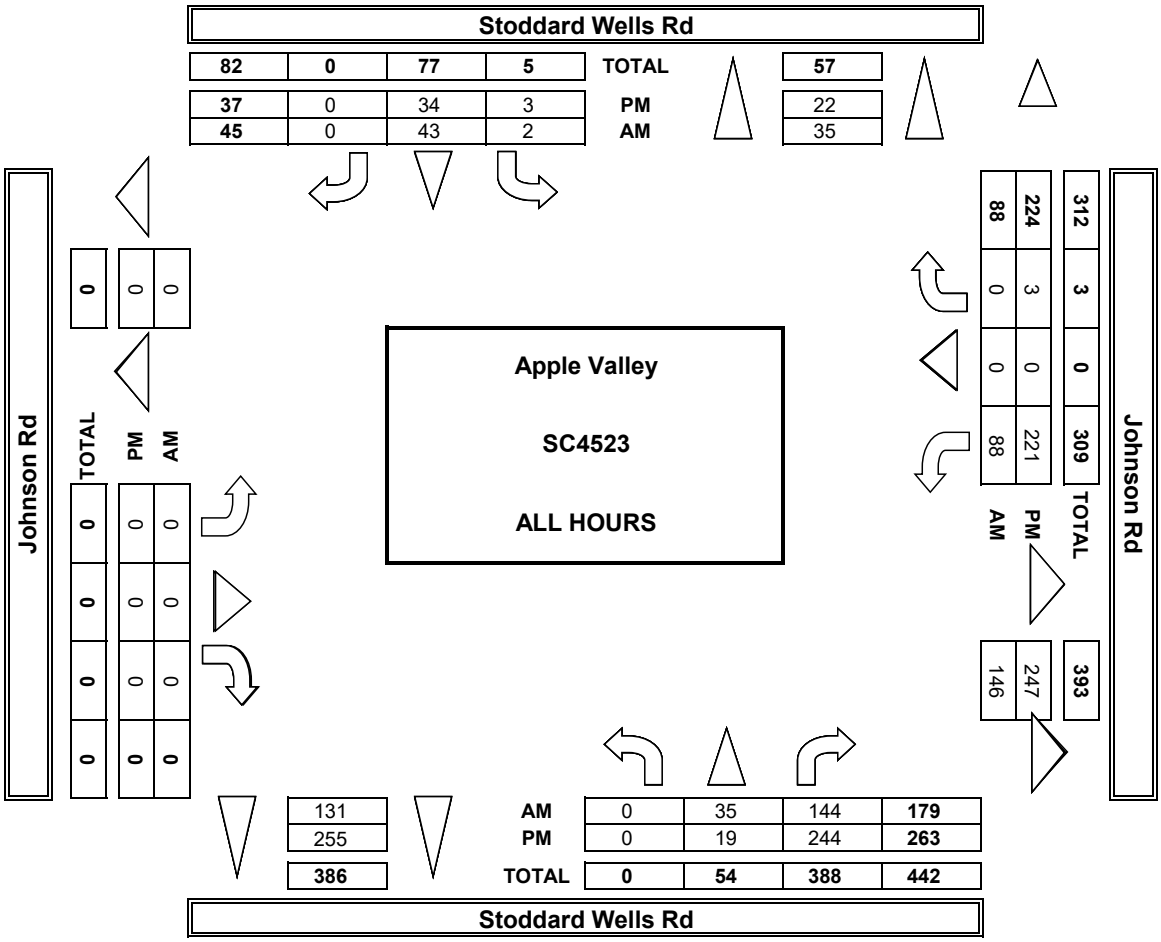
SOUTH LEG

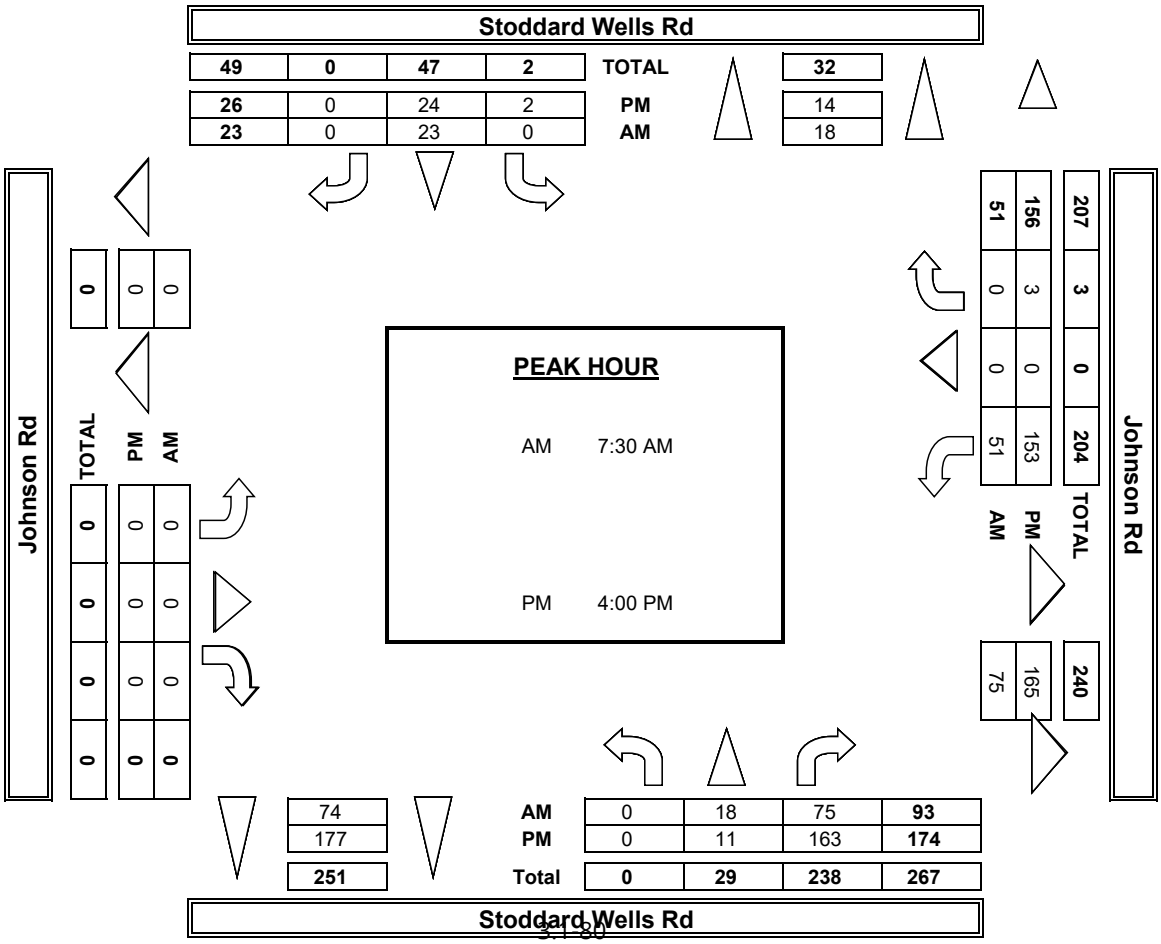
Stoddard Wells Rd

		ALL PED + BIKE & SCOOTER					PEDESTRIAN CROSSINGS					BICYCLE & SCOOTER CROSSINGS				
		E LEG	W LEG	S LEG	N LEG	TOTAL	E LEG	W LEG	S LEG	N LEG	TOTAL	EL	WL	SL	NL	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 4/2/24 TUESDAY	LOCATION:	Apple Valley	PROJECT #:	SC4523
	NORTH & SOUTH:	Stoddard Wells Rd	LOCATION #:	4
	EAST & WEST:	Johnson Rd	CONTROL:	STOP W

	NOTES:											
PCE Adjusted	Class	1	2	3	4	5	6		AM		▲ N	
	Factor	1	1.5	2	3	2	2		PM	◄ W		E ►
									MD		S ▼	
									OTHER			
									OTHER			

	NORTHBOUND Stoddard Wells Rd			SOUTHBOUND Stoddard Wells Rd			EASTBOUND Johnson Rd			WESTBOUND Johnson Rd				U-TURNS				
LANES:	NL X	NT 1	NR 1	SL 1	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL	NB	SB	EB	WB	TTL
7:00 AM	0	10	17	1	4	0	0	0	0	21	0	0	53					0
7:15 AM	0	6	20	0	6	0	0	0	0	12	0	0	43					0
7:30 AM	0	6	30	0	5	0	0	0	0	22	0	0	63					0
7:45 AM	0	3	19	0	24	0	0	0	0	41	0	0	86					0
8:00 AM	0	10	29	0	10	0	0	0	0	14	0	0	63					0
8:15 AM	0	9	27	0	13	0	0	0	0	16	0	0	65					0
8:30 AM	0	3	38	1	1	0	0	0	0	20	0	0	62					0
8:45 AM	0	4	27	0	16	0	0	0	0	16	0	0	62					0
AM VOLUMES	0	51	206	2	78	0	0	0	0	160	0	0	496	0	0	0	0	0
AM APPROACH %	0%	20%	80%	3%	98%	0%	0%	0%	0%	100%	0%	0%						
AM APP/DEPART	257	/	51	80	/	238	0	/	208	160	/	0	0					
AM BEGIN PEAK HR	7:30 AM																	
AM VOLUMES	0	28	105	0	52	0	0	0	0	92	0	0	276					
AM APPROACH %	0%	21%	79%	0%	100%	0%	0%	0%	0%	100%	0%	0%						
AM PEAK HR FACTOR	0.849			0.548			0.000			0.568			0.802					
AM APP/DEPART	133	/	28	52	/	144	0	/	105	92	/	0	0					
4:00 PM	0	1	46	2	7	0	0	0	0	87	0	0	142					0
4:15 PM	0	6	96	0	8	0	0	0	0	32	0	1	143					0
4:30 PM	0	3	30	0	5	0	0	0	0	30	0	0	67					0
4:45 PM	0	2	30	0	6	0	0	0	0	35	0	2	75					0
5:00 PM	0	3	28	0	3	0	0	0	0	14	0	0	48					0
5:15 PM	0	4	24	0	2	0	0	0	0	20	0	0	50					0
5:30 PM	0	2	26	0	5	0	0	0	0	43	0	0	76					0
5:45 PM	0	1	29	1	3	0	0	0	0	11	0	0	45					0
PM VOLUMES	0	22	308	3	39	0	0	0	0	271	0	3	644	0	0	0	0	0
PM APPROACH %	0%	7%	93%	7%	93%	0%	0%	0%	0%	99%	0%	1%						
PM APP/DEPART	329	/	25	42	/	309	0	/	311	274	/	0	0					
PM BEGIN PEAK HR	4:00 PM																	
PM VOLUMES	0	12	201	2	26	0	0	0	0	183	0	3	426					
PM APPROACH %	0%	5%	95%	7%	93%	0%	0%	0%	0%	98%	0%	2%						
PM PEAK HR FACTOR	0.521			0.778			0.000			0.536			0.747					
PM APP/DEPART	213	/	15	28	/	209	0	/	203	186	/	0	0					



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Stoddard Wells Rd	LOCATION #:	4
TUESDAY	EAST & WEST:	Johnson Rd	CONTROL:	STOP W

CLASS 1: PASSENGER VEHICLES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

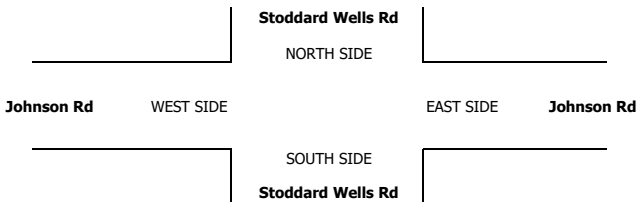
	NORTHBOUND Stoddard Wells Rd			SOUTHBOUND Stoddard Wells Rd			EASTBOUND Johnson Rd			WESTBOUND Johnson Rd			
LANES:	NL X	NT 1	NR 1	SL 1	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL
7:00 AM	0	7	9	1	4	0	0	0	0	6	0	0	27
7:15 AM	0	3	10	0	3	0	0	0	0	4	0	0	20
7:30 AM	0	3	19	0	2	0	0	0	0	5	0	0	29
7:45 AM	0	3	17	0	1	0	0	0	0	9	0	0	30
8:00 AM	0	1	8	0	1	0	0	0	0	6	0	0	16
8:15 AM	0	3	10	0	4	0	0	0	0	5	0	0	22
8:30 AM	0	1	14	1	1	0	0	0	0	7	0	0	24
8:45 AM	0	1	14	0	8	0	0	0	0	2	0	0	25
AM VOLUMES	0	22	101	2	24	0	0	0	0	44	0	0	193
AM APPROACH %	0%	18%	82%	8%	92%	0%	0%	0%	0%	100%	0%	0%	
AM APP/DEPART	123	/	22	26	/	68	0	/	103	44	/	0	0
BEGIN PEAK HR		7:30 AM											
AM PEAK VOLUMES	0	10	54	0	8	0	0	0	0	25	0	0	97
AM PEAK APPROACH %	0%	16%	84%	0%	100%	0%	0%	0%	0%	100%	0%	0%	
AM PEAK HR FACTOR		0.727			0.500			0.000			0.694		0.808
AM PEAK APP/DEPART	64	/	10	8	/	33	0	/	54	25	/	0	0
4:00 PM	0	1	37	2	7	0	0	0	0	77	0	0	124
4:15 PM	0	6	66	0	5	0	0	0	0	24	0	1	102
4:30 PM	0	1	23	0	5	0	0	0	0	19	0	0	48
4:45 PM	0	2	15	0	6	0	0	0	0	13	0	2	38
5:00 PM	0	3	14	0	0	0	0	0	0	8	0	0	25
5:15 PM	0	1	15	0	2	0	0	0	0	7	0	0	25
5:30 PM	0	2	18	0	3	0	0	0	0	34	0	0	57
5:45 PM	0	1	18	1	3	0	0	0	0	8	0	0	31
PM VOLUMES	0	17	206	3	31	0	0	0	0	190	0	3	450
PM APPROACH %	0%	8%	92%	9%	91%	0%	0%	0%	0%	98%	0%	2%	
PM APP/DEPART	223	/	20	34	/	221	0	/	209	193	/	0	0
BEGIN PEAK HR		4:00 PM											
PM PEAK VOLUMES	0	10	141	2	23	0	0	0	0	133	0	3	312
PM PEAK APPROACH %	0%	7%	93%	8%	92%	0%	0%	0%	0%	98%	0%	2%	
PM PEAK HR FACTOR		0.524			0.694			0.000			0.442		0.629
PM PEAK APP/DEPART	151	/	13	25	/	156	0	/	143	136	/	0	0

U-TURNS

	NB	SB	EB	WB	TTL
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0

RTOR

	NRR X	SRR X	ERR X	WRR X
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Stoddard Wells Rd	LOCATION #:	4
TUESDAY	EAST & WEST:	Johnson Rd	CONTROL:	STOP W

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Stoddard Wells Rd			SOUTHBOUND Stoddard Wells Rd			EASTBOUND Johnson Rd			WESTBOUND Johnson Rd			
	LANES:	NL X	NT 1	NR 1	SL 1	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	2	1	0	0	0	0	0	0	1	0	0	4
	7:30 AM	0	2	1	0	0	0	0	0	0	0	0	0	3
	7:45 AM	0	0	0	0	1	0	0	0	0	3	0	0	4
	8:00 AM	0	2	2	0	0	0	0	0	0	2	0	0	6
	8:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	1
	8:30 AM	0	0	1	0	0	0	0	0	0	1	0	0	2
	8:45 AM	0	0	0	0	1	0	0	0	0	1	0	0	2
	VOLUMES	0	6	5	0	2	0	0	0	0	9	0	0	22
	APPROACH %	0%	55%	45%	0%	100%	0%	0%	0%	0%	100%	0%	0%	
	APP/DEPART	11	/	6	2	/	11	0	/	5	9	/	0	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	0	4	3	0	1	0	0	0	0	6	0	0	14
	APPROACH %	0%	57%	43%	0%	100%	0%	0%	0%	0%	100%	0%	0%	
	PEAK HR FACTOR		0.438			0.250			0.000			0.500		0.583
	APP/DEPART	7	/	4	1	/	7	0	/	3	6	/	0	0
PM	4:00 PM	0	0	1	0	0	0	0	0	0	1	0	0	2
	4:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	1
	4:30 PM	0	1	1	0	0	0	0	0	0	0	0	0	2
	4:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	1
	5:00 PM	0	0	2	0	0	0	0	0	0	0	0	0	2
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
	5:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	1
	VOLUMES	0	1	5	0	1	0	0	0	0	3	0	0	10
	APPROACH %	0%	17%	83%	0%	100%	0%	0%	0%	0%	100%	0%	0%	
	APP/DEPART	6	/	1	1	/	4	0	/	5	3	/	0	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	1	2	0	0	0	0	0	0	3	0	0	6
	APPROACH %	0%	33%	67%	0%	0%	0%	0%	0%	0%	100%	0%	0%	
	PEAK HR FACTOR		0.375			0.000			0.000			0.750		0.750
	APP/DEPART	3	/	1	0	/	3	0	/	2	3	/	0	0

U-TURNS					
	NB	SB	EB	WB	TTL
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0

RTOR			
NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Stoddard Wells Rd

NORTH SIDE

Johnson Rd WEST SIDE EAST SIDE **Johnson Rd**

SOUTH SIDE

Stoddard Wells Rd

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Stoddard Wells Rd	LOCATION #:	4
TUESDAY	EAST & WEST:	Johnson Rd	CONTROL:	STOP W

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Stoddard Wells Rd			SOUTHBOUND Stoddard Wells Rd			EASTBOUND Johnson Rd			WESTBOUND Johnson Rd				U-TURNS					RTOR			
	LANES:	NL X	NT 1	NR 1	SL 1	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL	NB	SB	EB	WB	TTL	NRR X	SRR X	ERR X	WRR X
AM	7:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	3	0	0	0	0	0	0	1	0	0	4	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	4	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0
	8:30 AM	0	1	2	0	0	0	0	0	0	1	0	0	4	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	5	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0
	VOLUMES	0	1	17	0	0	0	0	0	0	3	0	0	21	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	6%	94%	0%	0%	0%	0%	0%	0%	100%	0%	0%										
	APP/DEPART	18	/	1	0	/	3	0	/	17	3	/	0	0									
	BEGIN PEAK HR		7:30 AM																				
	VOLUMES	0	0	8	0	0	0	0	0	0	2	0	0	10	0	0	0	0		0	0	0	0
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	0%	0%										
	PEAK HR FACTOR		0.500			0.000			0.000			0.500		0.625									
	APP/DEPART	8	/	0	0	/	2	0	/	8	2	/	0	0									
PM	4:00 PM	0	0	2	0	0	0	0	0	0	1	0	0	3	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	1	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	5	0	0	0	0	0	0	8	0	0	13	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	0%	0%										
	APP/DEPART	5	/	0	0	/	8	0	/	5	8	/	0	0									
	BEGIN PEAK HR		4:00 PM																				
	VOLUMES	0	0	3	0	0	0	0	0	0	6	0	0	9	0	0	0	0		0	0	0	0
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	0%	0%										
	PEAK HR FACTOR		0.375			0.000			0.000			0.375		0.563									
	APP/DEPART	3	/	0	0	/	6	0	/	3	6	/	0	0									

Stoddard Wells Rd

NORTH SIDE

Johnson Rd WEST SIDE EAST SIDE **Johnson Rd**

SOUTH SIDE

Stoddard Wells Rd

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Stoddard Wells Rd	LOCATION #:	4
TUESDAY	EAST & WEST:	Johnson Rd	CONTROL:	STOP W

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

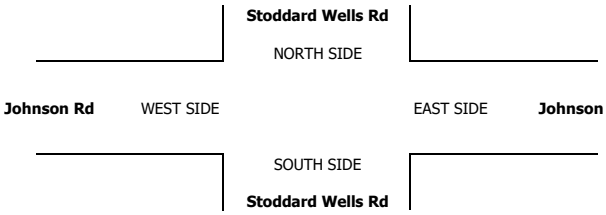
		NORTHBOUND Stoddard Wells Rd			SOUTHBOUND Stoddard Wells Rd			EASTBOUND Johnson Rd			WESTBOUND Johnson Rd			
	LANES:	NL X	NT 1	NR 1	SL 1	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL
AM	7:00 AM	0	1	2	0	0	0	0	0	0	5	0	0	8
	7:15 AM	0	0	2	0	1	0	0	0	0	2	0	0	5
	7:30 AM	0	0	3	0	1	0	0	0	0	5	0	0	9
	7:45 AM	0	0	0	0	7	0	0	0	0	9	0	0	16
	8:00 AM	0	2	4	0	3	0	0	0	0	1	0	0	10
	8:15 AM	0	2	3	0	3	0	0	0	0	3	0	0	11
	8:30 AM	0	0	6	0	0	0	0	0	0	3	0	0	9
	8:45 AM	0	1	1	0	2	0	0	0	0	4	0	0	8
	VOLUMES	0	6	21	0	17	0	0	0	0	32	0	0	76
	APPROACH %	0%	22%	78%	0%	100%	0%	0%	0%	0%	100%	0%	0%	
	APP/DEPART	27	/	6	17	/	49	0	/	21	32	/	0	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	0	4	10	0	14	0	0	0	0	18	0	0	46
	APPROACH %	0%	29%	71%	0%	100%	0%	0%	0%	0%	100%	0%	0%	
	PEAK HR FACTOR		0.583			0.500			0.000			0.500		0.719
	APP/DEPART	14	/	4	14	/	32	0	/	10	18	/	0	0
PM	4:00 PM	0	0	1	0	0	0	0	0	0	2	0	0	3
	4:15 PM	0	0	10	0	1	0	0	0	0	2	0	0	13
	4:30 PM	0	0	1	0	0	0	0	0	0	3	0	0	4
	4:45 PM	0	0	5	0	0	0	0	0	0	4	0	0	9
	5:00 PM	0	0	3	0	1	0	0	0	0	2	0	0	6
	5:15 PM	0	1	3	0	0	0	0	0	0	3	0	0	7
	5:30 PM	0	0	2	0	0	0	0	0	0	3	0	0	5
	5:45 PM	0	0	3	0	0	0	0	0	0	1	0	0	4
	VOLUMES	0	1	28	0	2	0	0	0	0	20	0	0	51
	APPROACH %	0%	3%	97%	0%	100%	0%	0%	0%	0%	100%	0%	0%	
	APP/DEPART	29	/	1	2	/	22	0	/	28	20	/	0	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	0	17	0	1	0	0	0	0	11	0	0	29
	APPROACH %	0%	0%	100%	0%	100%	0%	0%	0%	0%	100%	0%	0%	
	PEAK HR FACTOR		0.425			0.250			0.000			0.688		0.558
	APP/DEPART	17	/	0	1	/	12	0	/	17	11	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Stoddard Wells Rd	LOCATION #:	4
TUESDAY	EAST & WEST:	Johnson Rd	CONTROL:	STOP W

CLASS 5: RV

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Stoddard Wells Rd			SOUTHBOUND Stoddard Wells Rd			EASTBOUND Johnson Rd			WESTBOUND Johnson Rd			
	LANES:	NL X	NT 1	NR 1	SL 1	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Stoddard Wells Rd

NORTH SIDE

Johnson Rd WEST SIDE EAST SIDE **Johnson Rd**

SOUTH SIDE

Stoddard Wells Rd

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Stoddard Wells Rd	LOCATION #:	4
TUESDAY	EAST & WEST:	Johnson Rd	CONTROL:	STOP W

CLASS 6:	NOTES:
BUSES	

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Stoddard Wells Rd			SOUTHBOUND Stoddard Wells Rd			EASTBOUND Johnson Rd			WESTBOUND Johnson Rd				U-TURNS					RTOR			
	LANES:	NL X	NT 1	NR 1	SL 1	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL	NB	SB	EB	WB	TTL	NRR X	SRR X	ERR X	WRR X
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%										
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0									
	BEGIN PEAK HR		7:30 AM																				
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%										
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000									
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0									
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%										
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0									
	BEGIN PEAK HR		4:00 PM																				
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%										
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000									
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0									

Stoddard Wells Rd

NORTH SIDE

Johnson Rd WEST SIDE EAST SIDE **Johnson Rd**

SOUTH SIDE

Stoddard Wells Rd

INTERSECTION TURNING MOVEMENT COUNTS

T020624

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, Apr 2, 24	LOCATION:	Apple Valley	PROJECT #: SC4523
	NORTH & SOUTH:	I-15 NB Ramps	LOCATION #: 3
	EAST & WEST:	Stoddard Wells Rd	CONTROL: STOP N/S

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND I-15 NB Ramps			SOUTHBOUND I-15 NB Ramps			EASTBOUND Stoddard Wells Rd			WESTBOUND Stoddard Wells Rd			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	0	4	0	18	0	4	0	0	5	0	13	0	44
	7:15 AM	0	12	2	17	1	3	0	1	1	0	12	0	49
	7:30 AM	1	4	0	28	0	3	2	0	9	1	13	0	61
	7:45 AM	1	7	2	16	0	5	1	1	2	2	26	0	63
	8:00 AM	1	10	0	21	0	4	1	2	7	0	17	0	63
	8:15 AM	0	9	1	21	0	3	2	1	1	2	13	0	53
	8:30 AM	0	5	2	21	0	3	1	2	6	0	13	0	53
	8:45 AM	1	3	0	22	1	1	0	1	12	4	15	1	61
	VOLUMES	4	54	7	164	2	26	7	8	43	9	122	1	448
	APPROACH %	6%	83%	11%	85%	1%	13%	12%	14%	74%	7%	92%	1%	
	APP/DEPART	65	/	63	193	/	54	58	/	179	132	/	152	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	3	30	3	86	0	15	6	4	19	5	69	0	241
	APPROACH %	8%	83%	8%	84%	0%	15%	21%	14%	66%	7%	93%	0%	
	PEAK HR FACTOR		0.818			0.823			0.659			0.661		0.956
	APP/DEPART	36	/	37	102	/	24	29	/	93	74	/	87	0
PM	4:00 PM	0	7	4	49	0	4	1	1	6	4	86	0	162
	4:15 PM	2	4	3	65	0	6	2	3	10	2	37	0	134
	4:30 PM	0	6	1	26	0	2	0	4	11	0	26	0	76
	4:45 PM	0	4	2	16	0	2	0	2	13	0	31	0	70
	5:00 PM	0	9	2	21	0	2	2	3	13	0	11	0	63
	5:15 PM	0	3	0	12	1	0	0	0	7	1	13	0	37
	5:30 PM	1	2	0	27	0	2	0	0	9	1	39	0	81
	5:45 PM	0	1	3	22	0	0	1	1	11	1	13	0	53
	VOLUMES	3	36	15	238	1	18	6	14	80	9	256	0	676
	APPROACH %	6%	67%	28%	93%	0%	7%	6%	14%	80%	3%	97%	0%	
	APP/DEPART	54	/	42	257	/	90	100	/	267	265	/	277	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	2	21	10	156	0	14	3	10	40	6	180	0	442
	APPROACH %	6%	64%	30%	92%	0%	8%	6%	19%	75%	3%	97%	0%	
	PEAK HR FACTOR		0.750			0.599			0.883			0.517		0.682
	APP/DEPART	33	/	24	170	/	46	53	/	176	186	/	196	0

U-TURNS

NB 0	SB 0	EB 0	WB 0	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	1	0	0	1
0	1	0	0	
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

I-15 NB Ramps

NORTH LEG

Stoddard Wells Rd WEST LEG EAST LEG **Stoddard Wells Rd**

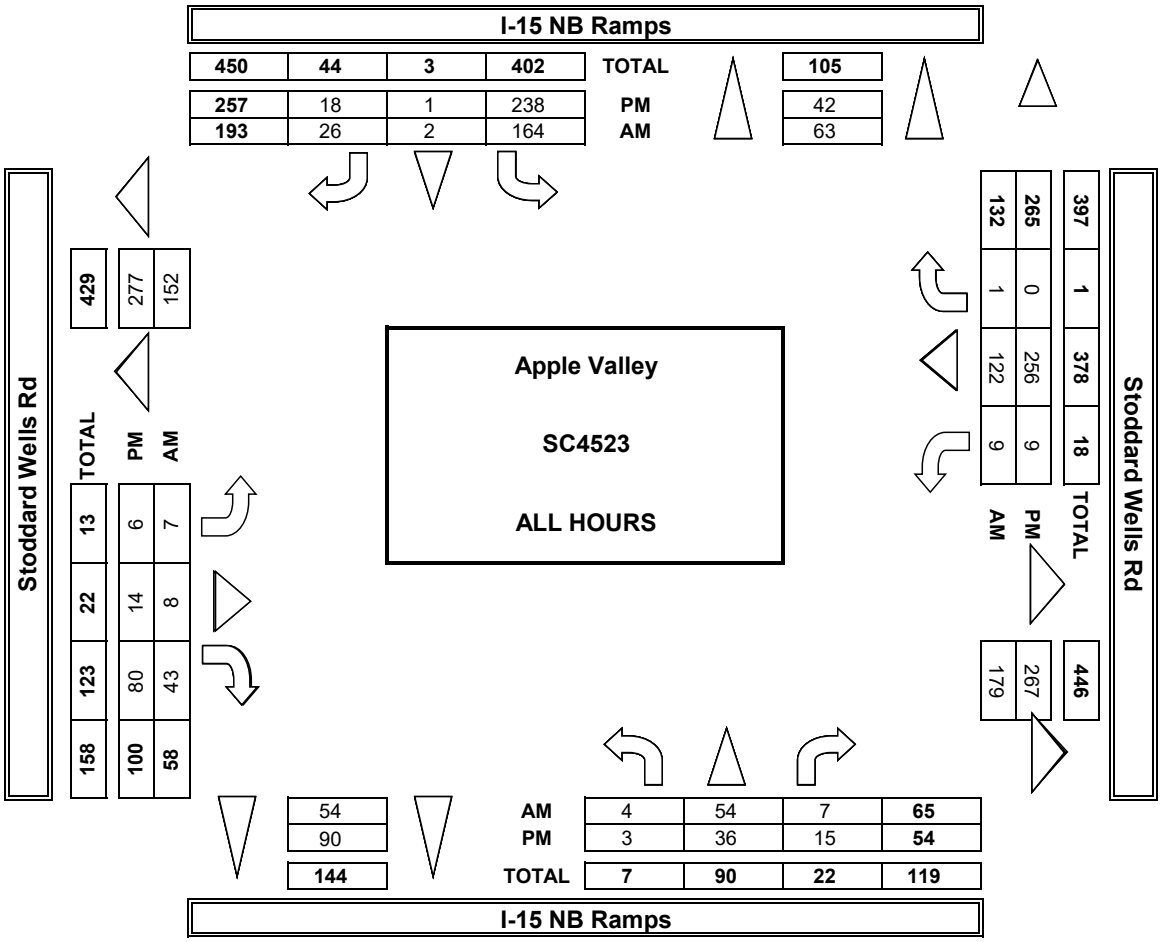
SOUTH LEG

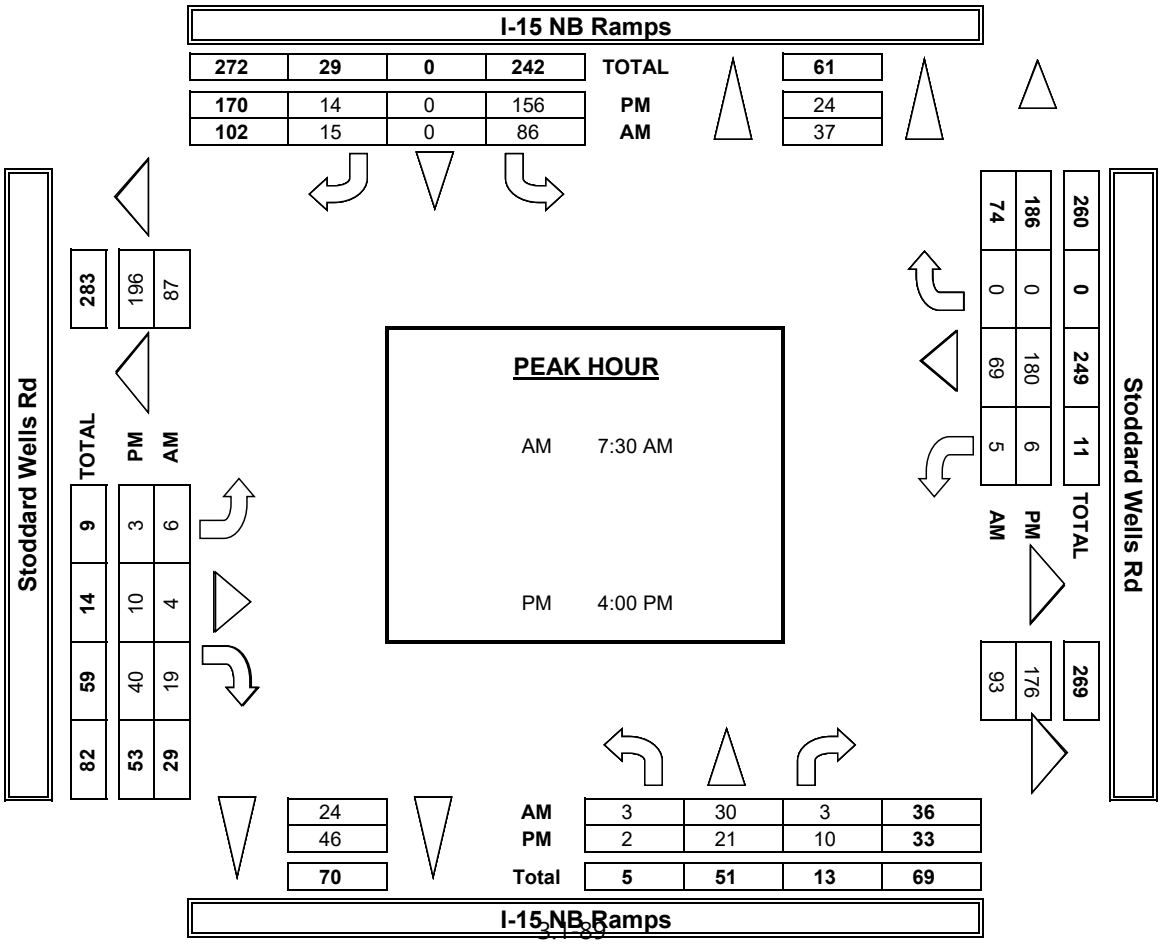
I-15 NB Ramps

	ALL PED + BIKE & SCOOTER					PEDESTRIAN CROSSINGS					BICYCLE & SCOOTER CROSSINGS				
		E LEG	W LEG	S LEG	N LEG	TOTAL	E LEG	W LEG	S LEG	N LEG	TOTAL	EL	WL	SL	NL	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





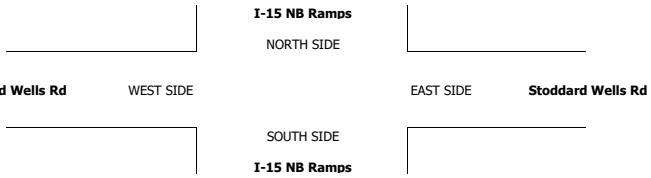
INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 4/2/24 TUESDAY	LOCATION:	Apple Valley	PROJECT #:	SC4523
	NORTH & SOUTH:	I-15 NB Ramps	LOCATION #:	3
	EAST & WEST:	Stoddard Wells Rd	CONTROL:	STOP N/S

	NOTES:											
PCE Adjusted	Class	1	2	3	4	5	6		AM		▲ N	
	Factor	1	1.5	2	3	2	2		PM MD	◄ W		E ►
									OTHER		S ▼	
									OTHER			

		NORTHBOUND I-15 NB Ramps			SOUTHBOUND I-15 NB Ramps			EASTBOUND Stoddard Wells Rd			WESTBOUND Stoddard Wells Rd				U-TURNS				
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	0	5	0	24	0	5	0	0	6	0	22	0	61					0
	7:15 AM	0	14	2	24	1	4	0	3	2	0	19	0	68					0
	7:30 AM	1	4	0	33	0	3	2	0	10	1	26	0	79					0
	7:45 AM	3	7	2	22	0	8	1	2	3	2	54	0	103					0
	8:00 AM	3	10	0	33	0	7	1	3	11	0	28	0	96					0
	8:15 AM	0	9	1	33	0	4	4	3	1	3	24	0	81					0
	8:30 AM	0	9	2	35	0	5	1	3	8	0	21	0	83					0
	8:45 AM	1	3	0	31	1	2	0	1	13	4	27	1	83					0
	VOLUMES	8	61	7	234	2	38	9	15	52	10	218	1	654	0	0	0	0	0
	APPROACH %	11%	80%	9%	86%	1%	14%	12%	20%	68%	4%	95%	0%						
	APP/DEPART	76	/	71	273	/	64	76	/	256	229	/	264	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	7	30	3	121	0	22	8	8	25	6	131	0	359					
	APPROACH %	18%	75%	8%	85%	0%	15%	20%	20%	60%	4%	96%	0%						
	PEAK HR FACTOR		0.769			0.888			0.675			0.615		0.871					
	APP/DEPART	40	/	38	142	/	30	41	/	132	137	/	160	0					
PM	4:00 PM	0	7	4	56	0	5	1	1	6	4	91	0	174					0
	4:15 PM	4	6	3	82	0	7	4	6	11	4	45	0	171					0
	4:30 PM	0	8	1	31	0	3	0	5	11	0	34	0	92					0
	4:45 PM	0	4	2	21	0	5	0	5	16	0	44	0	95					0
	5:00 PM	0	11	2	35	0	2	3	3	14	0	16	0	85					0
	5:15 PM	0	3	0	14	1	0	0	0	7	1	23	0	49					0
	5:30 PM	1	2	0	35	0	5	0	0	9	1	46	0	98					0
	5:45 PM	0	1	3	26	0	0	1	1	11	1	15	0	59					0
	VOLUMES	5	42	15	298	1	25	9	20	84	11	313	0	822	0	0	0	0	0
	APPROACH %	8%	68%	24%	92%	0%	8%	8%	17%	75%	3%	97%	0%						
	APP/DEPART	62	/	51	324	/	96	112	/	333	324	/	343	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	4	25	10	189	0	19	5	16	44	8	213	0	531					
	APPROACH %	10%	64%	26%	91%	0%	9%	8%	24%	68%	4%	96%	0%						
	PEAK HR FACTOR		0.750			0.586			0.780			0.583		0.763					
	APP/DEPART	39	/	30	208	/	52	64	/	215	221	/	235	0					



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	I-15 NB Ramps	LOCATION #:	3
TUESDAY	EAST & WEST:	Stoddard Wells Rd	CONTROL:	STOP N/S

CLASS 1: PASSENGER VEHICLES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

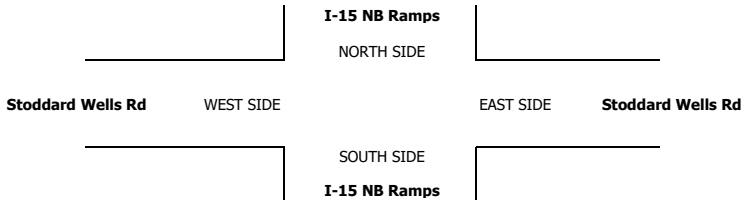
		NORTHBOUND (I-15 NB Ramps)			SOUTHBOUND (I-15 NB Ramps)			EASTBOUND (Stoddard Wells Rd)			WESTBOUND (Stoddard Wells Rd)			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	0	3	0	14	0	3	0	0	4	0	8	0	32
	7:15 AM	0	11	2	11	1	2	0	0	0	0	8	0	35
	7:30 AM	1	4	0	25	0	3	2	0	8	1	6	0	50
	7:45 AM	0	7	2	13	0	3	1	0	1	2	11	0	40
	8:00 AM	0	10	0	11	0	1	1	0	5	0	9	0	37
	8:15 AM	0	9	1	13	0	1	1	0	1	1	7	0	34
	8:30 AM	0	3	2	12	0	2	1	1	5	0	8	0	34
	8:45 AM	1	3	0	14	1	0	0	1	11	4	8	1	44
	VOLUMES	2	50	7	113	2	15	6	2	35	8	65	1	306
	APPROACH %	3%	85%	12%	87%	2%	12%	14%	5%	81%	11%	88%	1%	
	APP/DEPART	59	/	57	130	/	45	43	/	122	74	/	82	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	1	30	3	62	0	8	5	0	15	4	33	0	161
	APPROACH %	3%	88%	9%	89%	0%	11%	25%	0%	75%	11%	89%	0%	
	PEAK HR FACTOR		0.850			0.625			0.500			0.712		0.805
	APP/DEPART	34	/	35	70	/	19	20	/	65	37	/	42	0
PM	4:00 PM	0	7	4	43	0	3	1	1	6	4	83	0	152
	4:15 PM	1	3	3	56	0	4	1	1	9	1	32	0	111
	4:30 PM	0	5	1	23	0	1	0	3	11	0	21	0	65
	4:45 PM	0	4	2	13	0	0	0	0	10	0	22	0	51
	5:00 PM	0	8	2	13	0	2	1	3	12	0	8	0	49
	5:15 PM	0	3	0	11	1	0	0	0	7	1	7	0	30
	5:30 PM	1	2	0	22	0	0	0	0	9	1	34	0	69
	5:45 PM	0	1	3	20	0	0	1	1	11	1	12	0	50
	VOLUMES	2	33	15	201	1	10	4	9	75	8	219	0	577
	APPROACH %	4%	66%	30%	95%	0%	5%	5%	10%	85%	4%	96%	0%	
	APP/DEPART	50	/	37	212	/	84	88	/	225	227	/	231	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	1	19	10	135	0	8	2	5	36	5	158	0	379
	APPROACH %	3%	63%	33%	94%	0%	6%	5%	12%	84%	3%	97%	0%	
	PEAK HR FACTOR		0.682			0.596			0.768			0.468		0.623
	APP/DEPART	30	/	21	143	/	41	43	/	150	163	/	167	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
X	X	X	X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	I-15 NB Ramps	LOCATION #:	3
TUESDAY	EAST & WEST:	Stoddard Wells Rd	CONTROL:	STOP N/S

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND I-15 NB Ramps			SOUTHBOUND I-15 NB Ramps			EASTBOUND Stoddard Wells Rd			WESTBOUND Stoddard Wells Rd				U-TURNS					RTOR			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL	NB	SB	EB	WB	TTL	NRR X	SRR X	ERR X	WRR X
AM	7:00 AM	0	0	0	1	0	0	0	0	1	0	1	0	3	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	2	0	0	0	0	1	0	1	0	4	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	1	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	1	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	2	0	2	0	2	0	0	2	0	8	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	2	0	0	0	1	1	0	4	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	1	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	2	0	0	0	0	1	0	1	0	4	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	9	0	5	0	2	4	1	8	0	29	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	64%	0%	36%	0%	33%	67%	11%	89%	0%										
	APP/DEPART	0	/	0	14	/	5	6	/	11	9	/	13	0									
	BEGIN PEAK HR		7:30 AM																				
	VOLUMES	0	0	0	3	0	5	0	2	1	1	4	0	16	0	0	0	0		0	0	0	0
	APPROACH %	0%	0%	0%	38%	0%	63%	0%	67%	33%	20%	80%	0%										
	PEAK HR FACTOR		0.000			0.500			0.375			0.625		0.500									
	APP/DEPART	0	/	0	8	/	2	3	/	5	5	/	9	0									
PM	4:00 PM	0	0	0	2	0	1	0	0	0	0	1	0	4	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	1	0	2	0	1	1	0	0	0	5	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	1	0	1	0	0	1	0	3	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	1	0	1	0	1	2	0	1	0	6	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	1	0	0	1	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	1	0	1	0	0	0	0	2	0	4	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	6	0	6	1	3	4	0	5	0	25	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	50%	0%	50%	13%	38%	50%	0%	100%	0%										
	APP/DEPART	0	/	1	12	/	4	8	/	9	5	/	11	0									
	BEGIN PEAK HR		4:00 PM																				
	VOLUMES	0	0	0	4	0	5	0	3	3	0	3	0	18	0	0	0	0		0	0	0	0
	APPROACH %	0%	0%	0%	44%	0%	56%	0%	50%	50%	0%	100%	0%										
	PEAK HR FACTOR		0.000			0.750			0.500			0.750		0.750									
	APP/DEPART	0	/	0	9	/	3	6	/	7	3	/	8	0									

I-15 NB Ramps

NORTH SIDE

Stoddard Wells Rd WEST SIDE EAST SIDE **Stoddard Wells Rd**

SOUTH SIDE

I-15 NB Ramps

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	I-15 NB Ramps	LOCATION #:	3
TUESDAY	EAST & WEST:	Stoddard Wells Rd	CONTROL:	STOP N/S

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND I-15 NB Ramps			SOUTHBOUND I-15 NB Ramps			EASTBOUND Stoddard Wells Rd			WESTBOUND Stoddard Wells Rd			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	0	1	0	1	0	1	0	0	0	0	0	0	3
	7:15 AM	0	0	0	2	0	1	0	0	0	0	0	0	3
	7:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
	7:45 AM	0	0	0	0	0	0	0	1	1	0	1	0	3
	8:00 AM	0	0	0	5	0	0	0	0	0	0	2	0	7
	8:15 AM	0	0	0	4	0	0	0	0	0	0	0	0	4
	8:30 AM	0	0	0	3	0	0	0	1	0	0	1	0	5
	8:45 AM	0	0	0	4	0	1	0	0	0	0	1	0	6
	VOLUMES	0	1	0	19	0	3	0	2	1	0	6	0	32
	APPROACH %	0%	100%	0%	86%	0%	14%	0%	67%	33%	0%	100%	0%	
	APP/DEPART	1	/	1	22	/	1	3	/	21	6	/	9	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	0	0	0	9	0	0	0	1	1	0	4	0	15
	APPROACH %	0%	0%	0%	100%	0%	0%	0%	50%	50%	0%	100%	0%	
	PEAK HR FACTOR		0.000			0.450			0.250			0.500		0.536
	APP/DEPART	0	/	0	9	/	1	2	/	10	4	/	4	0
PM	4:00 PM	0	0	0	2	0	0	0	0	0	0	0	0	2
	4:15 PM	0	0	0	0	0	0	0	0	0	0	2	0	2
	4:30 PM	0	0	0	1	0	0	0	0	0	0	1	0	2
	4:45 PM	0	0	0	0	0	0	0	0	0	0	4	0	4
	5:00 PM	0	0	0	1	0	0	0	0	0	0	1	0	2
	5:15 PM	0	0	0	0	0	0	0	0	0	0	2	0	2
	5:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	1
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	5	0	0	0	0	0	0	10	0	15
	APPROACH %	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	0%	
	APP/DEPART	0	/	0	5	/	0	0	/	5	10	/	10	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	0	0	3	0	0	0	0	0	0	7	0	10
	APPROACH %	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	0%	
	PEAK HR FACTOR		0.000			0.375			0.000			0.438		0.625
	APP/DEPART	0	/	0	3	/	0	0	/	3	7	/	7	0

U-TURNS					
NB	SB	EB	WB	TTL	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0		
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0		

RTOR			
NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

I-15 NB Ramps

NORTH SIDE

Stoddard Wells Rd WEST SIDE EAST SIDE **Stoddard Wells Rd**

SOUTH SIDE

I-15 NB Ramps

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	I-15 NB Ramps	LOCATION #:	3
TUESDAY	EAST & WEST:	Stoddard Wells Rd	CONTROL:	STOP N/S

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

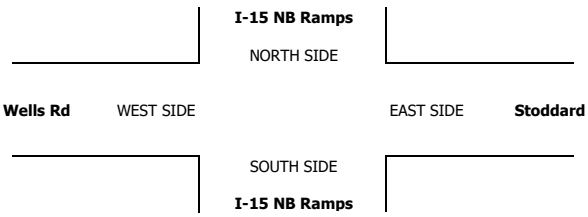
	NORTHBOUND I-15 NB Ramps			SOUTHBOUND I-15 NB Ramps			EASTBOUND Stoddard Wells Rd			WESTBOUND Stoddard Wells Rd			
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
7:00 AM	0	0	0	2	0	0	0	0	0	0	4	0	6
7:15 AM	0	1	0	2	0	0	0	1	0	0	3	0	7
7:30 AM	0	0	0	2	0	0	0	0	0	0	6	0	8
7:45 AM	1	0	0	3	0	1	0	0	0	0	13	0	18
8:00 AM	1	0	0	3	0	1	0	0	2	0	4	0	11
8:15 AM	0	0	0	4	0	0	1	1	0	0	5	0	11
8:30 AM	0	2	0	5	0	1	0	0	1	0	3	0	12
8:45 AM	0	0	0	2	0	0	0	0	0	0	5	0	7
VOLUMES	2	3	0	23	0	3	1	2	3	0	43	0	81
APPROACH %	40%	60%	0%	85%	0%	11%	17%	33%	50%	0%	100%	0%	
APP/DEPART	5	/	5	27	/	3	6	/	25	43	/	48	0
BEGIN PEAK HR		7:30 AM											
VOLUMES	2	0	0	12	0	2	1	1	2	0	28	0	49
APPROACH %	100%	0%	0%	80%	0%	13%	25%	25%	50%	0%	100%	0%	
PEAK HR FACTOR		0.500			0.750			0.500			0.538		0.681
APP/DEPART	2	/	2	15	/	2	4	/	13	28	/	32	0
4:00 PM	0	0	0	2	0	0	0	0	0	0	2	0	4
4:15 PM	1	1	0	8	0	0	1	1	0	1	3	0	16
4:30 PM	0	1	0	2	0	0	0	0	0	0	3	0	6
4:45 PM	0	0	0	2	0	1	0	1	1	0	4	0	9
5:00 PM	0	1	0	6	0	0	0	0	0	0	2	0	9
5:15 PM	0	0	0	1	0	0	0	0	0	0	4	0	5
5:30 PM	0	0	0	3	0	1	0	0	0	0	3	0	7
5:45 PM	0	0	0	2	0	0	0	0	0	0	1	0	3
VOLUMES	1	3	0	26	0	2	1	2	1	1	22	0	59
APPROACH %	25%	75%	0%	93%	0%	7%	25%	50%	25%	4%	96%	0%	
APP/DEPART	4	/	4	28	/	2	4	/	28	23	/	25	0
BEGIN PEAK HR		4:00 PM											
VOLUMES	1	2	0	14	0	1	1	2	1	1	12	0	35
APPROACH %	33%	67%	0%	93%	0%	7%	25%	50%	25%	8%	92%	0%	
PEAK HR FACTOR		0.375			0.469			0.500			0.813		0.547
APP/DEPART	3	/	3	15	/	2	4	/	16	13	/	14	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	1	0	0	
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

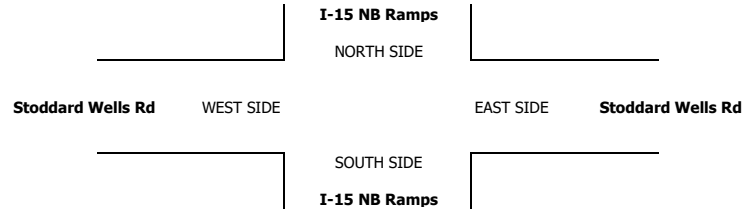
DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	I-15 NB Ramps	LOCATION #:	3
TUESDAY	EAST & WEST:	Stoddard Wells Rd	CONTROL:	STOP N/S

CLASS 5: RV

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND I-15 NB Ramps			SOUTHBOUND I-15 NB Ramps			EASTBOUND Stoddard Wells Rd			WESTBOUND Stoddard Wells Rd				U-TURNS					RTOR			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL	NB	SB	EB	WB	TTL	NRR X	SRR X	ERR X	WRR X
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%										
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0									
	BEGIN PEAK HR		7:30 AM																				
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%										
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000									
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0									
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%										
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0									
	BEGIN PEAK HR		4:00 PM																				
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%										
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000									
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0									



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	I-15 NB Ramps	LOCATION #:	3
TUESDAY	EAST & WEST:	Stoddard Wells Rd	CONTROL:	STOP N/S

CLASS 6:	NOTES:
BUSES	

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

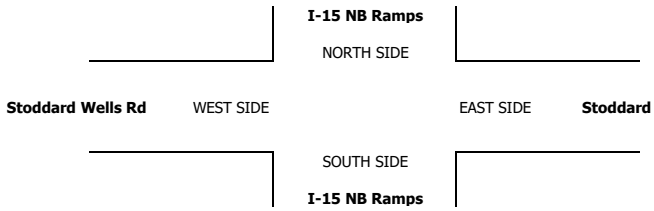
	NORTHBOUND I-15 NB Ramps			SOUTHBOUND I-15 NB Ramps			EASTBOUND Stoddard Wells Rd			WESTBOUND Stoddard Wells Rd			
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
AM APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
AM APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
BEGIN PEAK HR		7:30 AM											
AM VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
AM APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
AM APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
PM APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
PM APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
BEGIN PEAK HR		4:00 PM											
PM VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
PM APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
PM APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

T020624

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, Apr 2, 24	LOCATION:	Apple Valley	PROJECT #: SC4523
	NORTH & SOUTH:	Quarry Rd	LOCATION #: 2
	EAST & WEST:	Stoddard Wells Rd	CONTROL: STOP S

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Quarry Rd			SOUTHBOUND Quarry Rd			EASTBOUND Stoddard Wells Rd			WESTBOUND Stoddard Wells Rd			
	LANES:	NL X	NT X	NR X	SL 0	ST X	SR 0	EL 0	ET 1	ER X	WL X	WT 1	WR 1	TOTAL
AM	7:00 AM	0	0	0	4	0	0	0	0	0	0	3	13	20
	7:15 AM	0	0	0	1	0	1	0	1	0	0	6	11	20
	7:30 AM	0	0	0	8	0	0	1	3	0	0	4	12	28
	7:45 AM	0	0	0	2	0	0	0	2	0	0	12	18	34
	8:00 AM	0	0	0	8	0	1	0	2	0	0	6	18	35
	8:15 AM	0	0	0	1	0	0	0	3	0	0	4	11	19
	8:30 AM	0	0	0	6	0	0	2	3	0	0	1	14	26
	8:45 AM	0	0	0	12	0	1	2	1	0	0	6	13	35
	VOLUMES	0	0	0	42	0	3	5	15	0	0	42	110	217
	APPROACH %	0%	0%	0%	93%	0%	7%	25%	75%	0%	0%	28%	72%	
	APP/DEPART	0	/	115	45	/	0	20	/	57	152	/	45	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	0	0	19	0	2	1	8	0	0	28	59	117
	APPROACH %	0%	0%	0%	90%	0%	10%	11%	89%	0%	0%	32%	68%	
	PEAK HR FACTOR		0.000			0.583			0.563			0.725		0.836
	APP/DEPART	0	/	60	21	/	0	9	/	27	87	/	30	0
PM	4:00 PM	0	0	0	9	0	0	0	3	0	0	2	96	110
	4:15 PM	0	0	0	10	0	1	2	4	0	0	5	36	58
	4:30 PM	0	0	0	10	0	1	1	3	0	0	6	19	40
	4:45 PM	0	0	0	13	0	0	2	2	0	0	4	28	49
	5:00 PM	0	0	0	13	0	0	6	4	0	0	3	11	37
	5:15 PM	0	0	0	6	0	2	3	1	0	0	0	13	25
	5:30 PM	0	0	0	10	0	1	1	1	0	0	1	39	53
	5:45 PM	0	0	0	11	0	1	0	2	0	0	1	14	29
	VOLUMES	0	0	0	82	0	6	15	20	0	0	22	256	401
	APPROACH %	0%	0%	0%	93%	0%	7%	43%	57%	0%	0%	8%	92%	
	APP/DEPART	0	/	271	88	/	0	35	/	102	278	/	28	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	0	0	42	0	2	5	12	0	0	17	179	257
	APPROACH %	0%	0%	0%	95%	0%	5%	29%	71%	0%	0%	9%	91%	
	PEAK HR FACTOR		0.000			0.846			0.708			0.500		0.584
	APP/DEPART	0	/	184	44	/	0	17	/	54	196	/	19	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Quarry Rd

NORTH LEG

Stoddard Wells Rd WEST LEG EAST LEG **Stoddard Wells Rd**

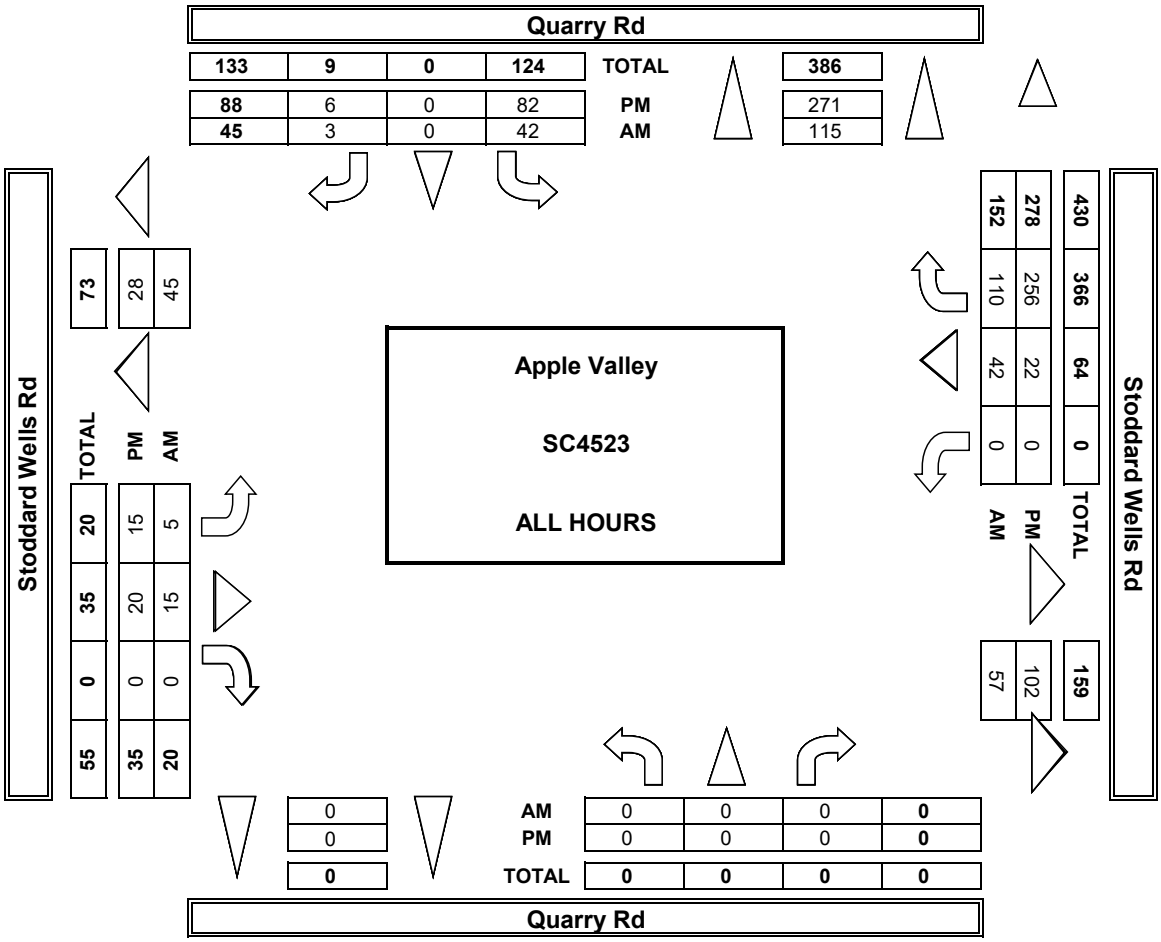
SOUTH LEG

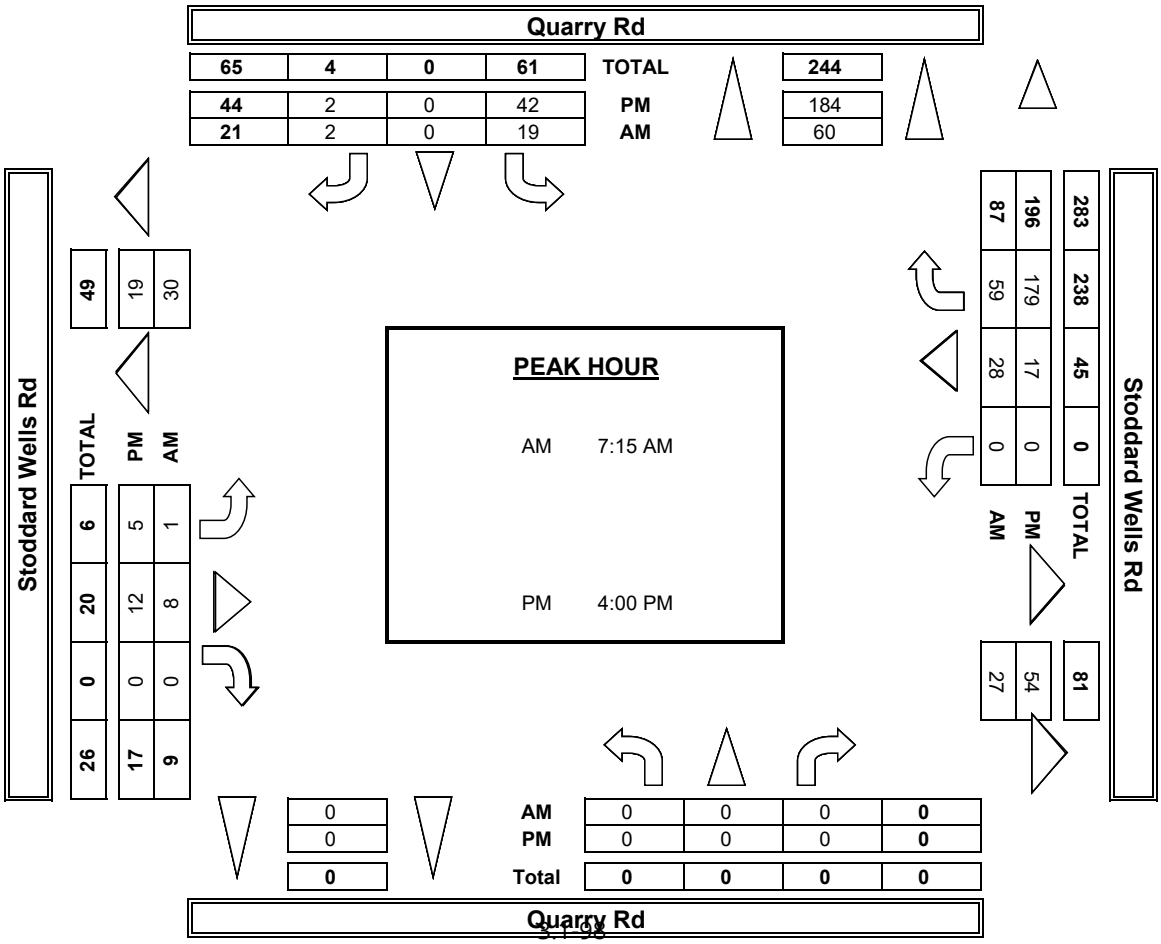
Quarry Rd

		ALL PED + BIKE & SCOOTER					PEDESTRIAN CROSSINGS					BICYCLE & SCOOTER CROSSINGS				
		E LEG	W LEG	S LEG	N LEG	TOTAL	E LEG	W LEG	S LEG	N LEG	TOTAL	EL	WL	SL	NL	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

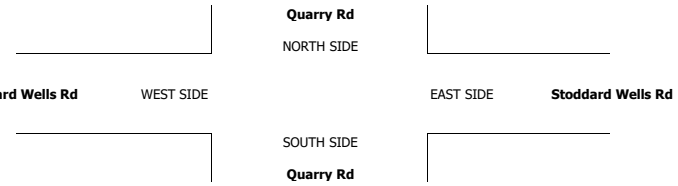
DATE: 4/2/24 TUESDAY	LOCATION:	Apple Valley	PROJECT #:	SC4523
	NORTH & SOUTH:	Quarry Rd	LOCATION #:	2
	EAST & WEST:	Stoddard Wells Rd	CONTROL:	STOP S

NOTES:

PCE Adjusted									
Class	1	2	3	4	5	6			
Factor	1	1.5	2	3	2	2			

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Quarry Rd			SOUTHBOUND Quarry Rd			EASTBOUND Stoddard Wells Rd			WESTBOUND Stoddard Wells Rd				U-TURNS				
	LANES:	NL X	NT X	NR X	SL 0	ST X	SR 0	EL 0	ET 1	ER X	WL X	WT 1	WR 1	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	0	0	0	5	0	0	0	0	0	0	5	22	32					0
	7:15 AM	0	0	0	2	0	1	0	3	0	0	7	19	31					0
	7:30 AM	0	0	0	8	0	0	1	4	0	0	7	22	42					0
	7:45 AM	0	0	0	3	0	0	0	3	0	0	22	37	65					0
	8:00 AM	0	0	0	12	0	1	0	3	0	0	9	32	57					0
	8:15 AM	0	0	0	1	0	0	0	7	0	0	5	20	33					0
	8:30 AM	0	0	0	6	0	0	3	6	0	0	1	24	39					0
	8:45 AM	0	0	0	13	0	1	3	1	0	0	10	24	51					0
	VOLUMES	0	0	0	49	0	3	6	27	0	0	65	199	348	0	0	0	0	0
	APPROACH %	0%	0%	0%	94%	0%	6%	18%	82%	0%	0%	25%	75%						
	APP/DEPART	0	/	205	52	/	0	33	/	75	264	/	68	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	0	0	0	25	0	2	1	13	0	0	45	110	194					
	APPROACH %	0%	0%	0%	92%	0%	8%	7%	93%	0%	0%	29%	71%						
	PEAK HR FACTOR		0.000			0.510			0.750			0.658		0.752					
	APP/DEPART	0	/	111	27	/	0	14	/	37	154	/	47	0					
PM	4:00 PM	0	0	0	9	0	0	0	4	0	0	5	99	116					0
	4:15 PM	0	0	0	10	0	1	2	9	0	0	9	43	74					0
	4:30 PM	0	0	0	10	0	1	1	4	0	0	10	24	49					0
	4:45 PM	0	0	0	14	0	0	3	6	0	0	8	39	69					0
	5:00 PM	0	0	0	14	0	0	6	5	0	0	3	16	43					0
	5:15 PM	0	0	0	6	0	2	3	1	0	0	0	23	35					0
	5:30 PM	0	0	0	10	0	3	1	1	0	0	1	49	65					0
	5:45 PM	0	0	0	11	0	1	0	2	0	0	1	16	31					0
	VOLUMES	0	0	0	84	0	8	16	31	0	0	36	308	481	0	0	0	0	0
	APPROACH %	0%	0%	0%	91%	0%	9%	34%	66%	0%	0%	10%	90%						
	APP/DEPART	0	/	324	92	/	0	46	/	114	344	/	44	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	0	0	0	43	0	2	6	22	0	0	31	205	308					
	APPROACH %	0%	0%	0%	96%	0%	4%	20%	80%	0%	0%	13%	87%						
	PEAK HR FACTOR		0.000			0.804			0.625			0.568		0.663					
	APP/DEPART	0	/	210	45	/	0	28	/	65	235	/	33	0					



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Quarry Rd	LOCATION #:	2
TUESDAY	EAST & WEST:	Stoddard Wells Rd	CONTROL:	STOP S

CLASS 1: PASSENGER VEHICLES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

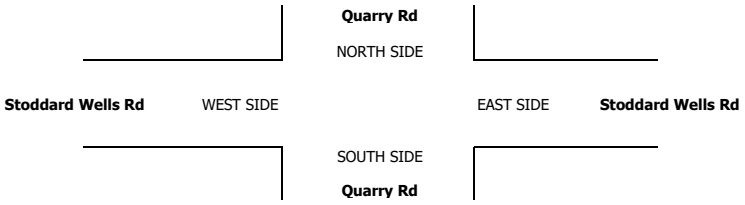
	NORTHBOUND (Quarry Rd)			SOUTHBOUND (Quarry Rd)			EASTBOUND (Stoddard Wells Rd)			WESTBOUND (Stoddard Wells Rd)			
LANES:	NL X	NT X	NR X	SL 0	ST X	SR 0	EL 0	ET 1	ER X	WL X	WT 1	WR 1	TOTAL
7:00 AM	0	0	0	3	0	0	0	0	0	0	2	8	13
7:15 AM	0	0	0	0	0	1	0	0	0	0	4	6	11
7:30 AM	0	0	0	8	0	0	1	2	0	0	2	7	20
7:45 AM	0	0	0	1	0	0	0	1	0	0	5	8	15
8:00 AM	0	0	0	6	0	1	0	0	0	0	4	9	20
8:15 AM	0	0	0	1	0	0	0	1	0	0	2	6	10
8:30 AM	0	0	0	6	0	0	1	1	0	0	1	8	17
8:45 AM	0	0	0	11	0	1	1	1	0	0	3	7	24
VOLUMES	0	0	0	36	0	3	3	6	0	0	23	59	130
APPROACH %	0%	0%	0%	92%	0%	8%	33%	67%	0%	0%	28%	72%	
APP/DEPART	0	/	62	39	/	0	9	/	42	82	/	26	0
BEGIN PEAK HR		7:15 AM											
VOLUMES	0	0	0	15	0	2	1	3	0	0	15	30	66
APPROACH %	0%	0%	0%	88%	0%	12%	25%	75%	0%	0%	33%	67%	
PEAK HR FACTOR		0.000			0.531			0.333			0.865		0.825
APP/DEPART	0	/	31	17	/	0	4	/	18	45	/	17	0
4:00 PM	0	0	0	9	0	0	0	2	0	0	0	93	104
4:15 PM	0	0	0	10	0	1	2	0	0	0	2	32	47
4:30 PM	0	0	0	10	0	1	1	2	0	0	2	16	32
4:45 PM	0	0	0	11	0	0	1	0	0	0	1	21	34
5:00 PM	0	0	0	12	0	0	6	3	0	0	3	8	32
5:15 PM	0	0	0	6	0	2	3	1	0	0	0	7	19
5:30 PM	0	0	0	10	0	0	1	1	0	0	1	32	45
5:45 PM	0	0	0	11	0	1	0	2	0	0	1	13	28
VOLUMES	0	0	0	79	0	5	14	11	0	0	10	222	341
APPROACH %	0%	0%	0%	94%	0%	6%	56%	44%	0%	0%	4%	96%	
APP/DEPART	0	/	236	84	/	0	25	/	90	232	/	15	0
BEGIN PEAK HR		4:00 PM											
VOLUMES	0	0	0	40	0	2	4	4	0	0	5	162	217
APPROACH %	0%	0%	0%	95%	0%	5%	50%	50%	0%	0%	3%	97%	
PEAK HR FACTOR		0.000			0.955			0.667			0.449		0.522
APP/DEPART	0	/	166	42	/	0	8	/	44	167	/	7	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Quarry Rd	LOCATION #:	2
TUESDAY	EAST & WEST:	Stoddard Wells Rd	CONTROL:	STOP S

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS	NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Quarry Rd			SOUTHBOUND Quarry Rd			EASTBOUND Stoddard Wells Rd			WESTBOUND Stoddard Wells Rd			
	LANES:	NL X	NT X	NR X	SL 0	ST X	SR 0	EL 0	ET 1	ER X	WL X	WT 1	WR 1	TOTAL
AM	7:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	1
	7:15 AM	0	0	0	1	0	0	0	0	0	0	2	1	4
	7:30 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
	7:45 AM	0	0	0	0	0	0	0	0	0	0	3	0	3
	8:00 AM	0	0	0	0	0	0	0	2	0	0	0	2	4
	8:15 AM	0	0	0	0	0	0	0	0	0	0	2	1	3
	8:30 AM	0	0	0	0	0	0	1	0	0	0	0	1	2
	8:45 AM	0	0	0	1	0	0	1	0	0	0	1	0	3
	VOLUMES	0	0	0	3	0	0	2	3	0	0	8	5	21
	APPROACH %	0%	0%	0%	100%	0%	0%	40%	60%	0%	0%	62%	38%	
	APP/DEPART	0	/	7	3	/	0	5	/	6	13	/	8	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	0	0	1	0	0	0	3	0	0	5	3	12
	APPROACH %	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	63%	38%	
	PEAK HR FACTOR		0.000			0.250			0.375			0.667		0.750
	APP/DEPART	0	/	3	1	/	0	3	/	4	8	/	5	0
PM	4:00 PM	0	0	0	0	0	0	0	1	0	0	1	2	4
	4:15 PM	0	0	0	0	0	0	0	2	0	0	1	0	3
	4:30 PM	0	0	0	0	0	0	0	1	0	0	3	0	4
	4:45 PM	0	0	0	2	0	0	1	0	0	0	0	1	4
	5:00 PM	0	0	0	1	0	0	0	1	0	0	0	0	2
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	3	3
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	3	0	0	1	5	0	0	5	6	20
	APPROACH %	0%	0%	0%	100%	0%	0%	17%	83%	0%	0%	45%	55%	
	APP/DEPART	0	/	7	3	/	0	6	/	8	11	/	5	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	0	0	2	0	0	1	4	0	0	5	3	15
	APPROACH %	0%	0%	0%	100%	0%	0%	20%	80%	0%	0%	63%	38%	
	PEAK HR FACTOR		0.000			0.250			0.625			0.667		0.938
	APP/DEPART	0	/	4	2	/	0	5	/	6	8	/	5	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Quarry Rd

NORTH SIDE

Stoddard Wells Rd WEST SIDE EAST SIDE **Stoddard Wells Rd**

SOUTH SIDE

Quarry Rd

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Quarry Rd	LOCATION #:	2
TUESDAY	EAST & WEST:	Stoddard Wells Rd	CONTROL:	STOP S

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Quarry Rd			SOUTHBOUND Quarry Rd			EASTBOUND Stoddard Wells Rd			WESTBOUND Stoddard Wells Rd			
	LANES:	NL X	NT X	NR X	SL 0	ST X	SR 0	EL 0	ET 1	ER X	WL X	WT 1	WR 1	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	1
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	1
	7:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
	7:45 AM	0	0	0	1	0	0	0	1	0	0	0	1	3
	8:00 AM	0	0	0	0	0	0	0	0	0	0	1	1	2
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	1	0	0	0	1	2
	8:45 AM	0	0	0	0	0	0	0	0	0	0	1	1	2
	VOLUMES	0	0	0	1	0	0	0	2	0	0	3	6	12
	APPROACH %	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	33%	67%	
	APP/DEPART	0	/	6	1	/	0	2	/	3	9	/	3	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	0	0	1	0	0	0	1	0	0	2	3	7
	APPROACH %	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	40%	60%	
	PEAK HR FACTOR		0.000			0.250			0.250			0.625		0.583
	APP/DEPART	0	/	3	1	/	0	1	/	2	5	/	2	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	1	1	2
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	1
	4:45 PM	0	0	0	0	0	0	0	0	0	0	2	2	4
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	1
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	2	2
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	3	7	10
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	30%	70%	
	APP/DEPART	0	/	7	0	/	0	0	/	0	10	/	3	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	3	4	7
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	43%	57%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.438		0.438
	APP/DEPART	0	/	4	0	/	0	0	/	0	7	/	3	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Quarry Rd

NORTH SIDE

Stoddard Wells Rd WEST SIDE EAST SIDE **Stoddard Wells Rd**

SOUTH SIDE

Quarry Rd

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Quarry Rd	LOCATION #:	2
TUESDAY	EAST & WEST:	Stoddard Wells Rd	CONTROL:	STOP S

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Quarry Rd			SOUTHBOUND Quarry Rd			EASTBOUND Stoddard Wells Rd			WESTBOUND Stoddard Wells Rd			
	LANES:	NL X	NT X	NR X	SL 0	ST X	SR 0	EL 0	ET 1	ER X	WL X	WT 1	WR 1	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	1	4	5
	7:15 AM	0	0	0	0	0	0	0	1	0	0	0	3	4
	7:30 AM	0	0	0	0	0	0	0	0	0	0	1	5	6
	7:45 AM	0	0	0	0	0	0	0	0	0	0	4	9	13
	8:00 AM	0	0	0	2	0	0	0	0	0	0	1	6	9
	8:15 AM	0	0	0	0	0	0	0	2	0	0	0	4	6
	8:30 AM	0	0	0	0	0	0	0	1	0	0	0	4	5
	8:45 AM	0	0	0	0	0	0	0	0	0	0	1	5	6
	VOLUMES	0	0	0	2	0	0	0	4	0	0	8	40	54
	APPROACH %	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	17%	83%	
	APP/DEPART	0	/	40	2	/	0	4	/	6	48	/	8	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	0	0	2	0	0	0	1	0	0	6	23	32
	APPROACH %	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	21%	79%	
	PEAK HR FACTOR		0.000			0.250			0.250			0.558		0.615
	APP/DEPART	0	/	23	2	/	0	1	/	3	29	/	6	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	1	1	2
	4:15 PM	0	0	0	0	0	0	0	2	0	0	1	3	6
	4:30 PM	0	0	0	0	0	0	0	0	0	0	1	2	3
	4:45 PM	0	0	0	0	0	0	0	2	0	0	1	4	7
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	2	2
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	4	4
	5:30 PM	0	0	0	0	0	1	0	0	0	0	0	4	5
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	1
	VOLUMES	0	0	0	0	0	1	0	4	0	0	4	21	30
	APPROACH %	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	16%	84%	
	APP/DEPART	0	/	21	1	/	0	4	/	4	25	/	5	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	0	0	0	0	0	0	4	0	0	4	10	18
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	29%	71%	
	PEAK HR FACTOR		0.000			0.000			0.500			0.700		0.643
	APP/DEPART	0	/	10	0	/	0	4	/	4	14	/	4	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Quarry Rd

NORTH SIDE

Stoddard Wells Rd WEST SIDE EAST SIDE **Stoddard Wells Rd**

SOUTH SIDE

Quarry Rd

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Quarry Rd	LOCATION #:	2
TUESDAY	EAST & WEST:	Stoddard Wells Rd	CONTROL:	STOP S

CLASS 5: RV

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Quarry Rd			SOUTHBOUND Quarry Rd			EASTBOUND Stoddard Wells Rd			WESTBOUND Stoddard Wells Rd			
	LANES:	NL X	NT X	NR X	SL 0	ST X	SR 0	EL 0	ET 1	ER X	WL X	WT 1	WR 1	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Quarry Rd

NORTH SIDE

Stoddard Wells Rd WEST SIDE EAST SIDE **Stoddard Wells Rd**

SOUTH SIDE

Quarry Rd

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Quarry Rd	LOCATION #:	2
TUESDAY	EAST & WEST:	Stoddard Wells Rd	CONTROL:	STOP S

CLASS 6:	NOTES:
BUSES	

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Quarry Rd			SOUTHBOUND Quarry Rd			EASTBOUND Stoddard Wells Rd			WESTBOUND Stoddard Wells Rd			
	LANES:	NL X	NT X	NR X	SL 0	ST X	SR 0	EL 0	ET 1	ER X	WL X	WT 1	WR 1	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0

U-TURNS					
	NB	SB	EB	WB	TTL
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0

RTOR				
	NRR X	SRR X	ERR X	WRR X
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0

Quarry Rd

NORTH SIDE

Stoddard Wells Rd WEST SIDE EAST SIDE **Stoddard Wells Rd**

SOUTH SIDE

Quarry Rd

INTERSECTION TURNING MOVEMENT COUNTS

T020624

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, Apr 2, 24	LOCATION:	Apple Valley	PROJECT #: SC4523
	NORTH & SOUTH:	Quarry Rd	LOCATION #: 1
	EAST & WEST:	I-15 SB Ramps	CONTROL: STOP W

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Quarry Rd			SOUTHBOUND Quarry Rd			EASTBOUND I-15 SB Ramps			WESTBOUND I-15 SB Ramps			
	LANES:	NL X	NT 1	NR 0	SL 0	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL
AM	7:00 AM	0	0	12	0	0	0	0	0	0	3	0	0	15
	7:15 AM	0	0	12	0	0	0	0	0	0	2	0	0	14
	7:30 AM	0	1	12	1	0	0	0	0	0	8	0	1	23
	7:45 AM	0	0	17	0	0	0	0	0	0	2	0	0	19
	8:00 AM	0	0	19	0	1	0	0	0	0	9	0	0	29
	8:15 AM	0	0	11	0	0	0	0	0	0	0	0	0	11
	8:30 AM	0	1	14	1	1	0	0	0	0	5	0	1	23
	8:45 AM	0	0	16	0	0	0	0	0	0	13	0	0	29
	VOLUMES	0	2	113	2	2	0	0	0	0	42	0	2	164
	APPROACH %	0%	2%	98%	50%	50%	0%	0%	0%	0%	93%	0%	4%	
	APP/DEPART	115	/	4	4	/	44	0	/	116	45	/	0	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	0	1	60	1	2	0	0	0	0	27	0	1	92
	APPROACH %	0%	2%	98%	33%	67%	0%	0%	0%	0%	96%	0%	4%	
	PEAK HR FACTOR		0.803			0.375			0.000			0.538		0.793
	APP/DEPART	61	/	2	3	/	29	0	/	61	28	/	0	0
PM	4:00 PM	0	0	94	0	0	0	0	0	0	7	0	1	102
	4:15 PM	0	0	39	1	0	0	0	0	0	12	0	0	52
	4:30 PM	0	0	20	0	0	0	0	0	0	11	0	0	31
	4:45 PM	0	0	30	0	0	0	0	0	0	13	0	0	43
	5:00 PM	0	0	17	0	1	0	0	0	0	12	0	1	31
	5:15 PM	0	0	17	0	1	0	0	0	0	8	0	0	26
	5:30 PM	0	0	40	0	0	0	0	0	0	11	0	0	51
	5:45 PM	0	0	13	1	0	0	0	0	0	11	0	1	26
	VOLUMES	0	0	270	2	2	0	0	0	0	85	0	3	364
	APPROACH %	0%	0%	100%	50%	50%	0%	0%	0%	0%	94%	0%	3%	
	APP/DEPART	270	/	3	4	/	87	0	/	274	90	/	0	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	0	183	1	0	0	0	0	0	43	0	1	229
	APPROACH %	0%	0%	100%	100%	0%	0%	0%	0%	0%	96%	0%	2%	
	PEAK HR FACTOR		0.487			0.250			0.000			0.865		0.556
	APP/DEPART	183	/	1	1	/	43	0	/	185	45	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	1	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	1	1
0	0	0	0	0
0	0	0	1	1
0	0	0	2	2
0	0	0	1	

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Quarry Rd

NORTH LEG

I-15 SB Ramps WEST LEG EAST LEG **I-15 SB Ramps**

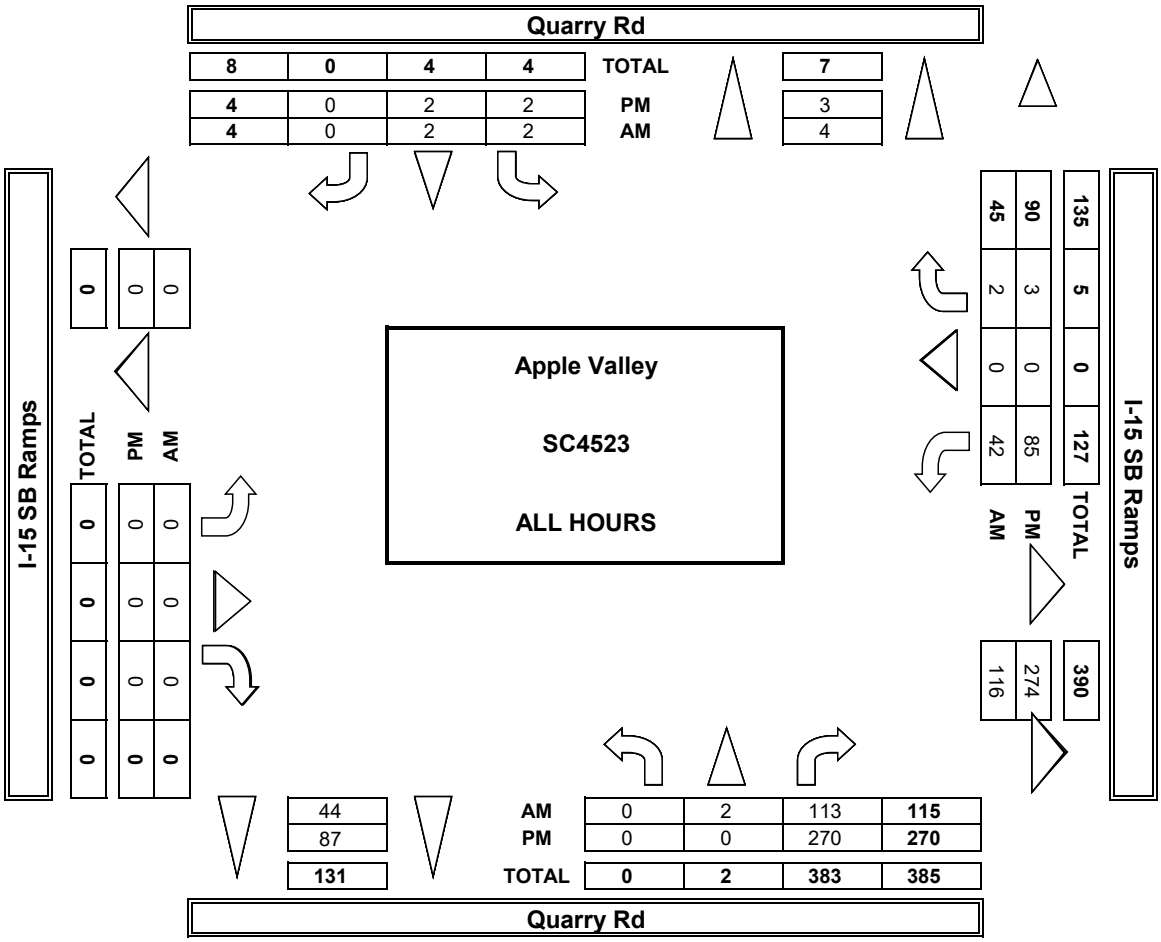
SOUTH LEG

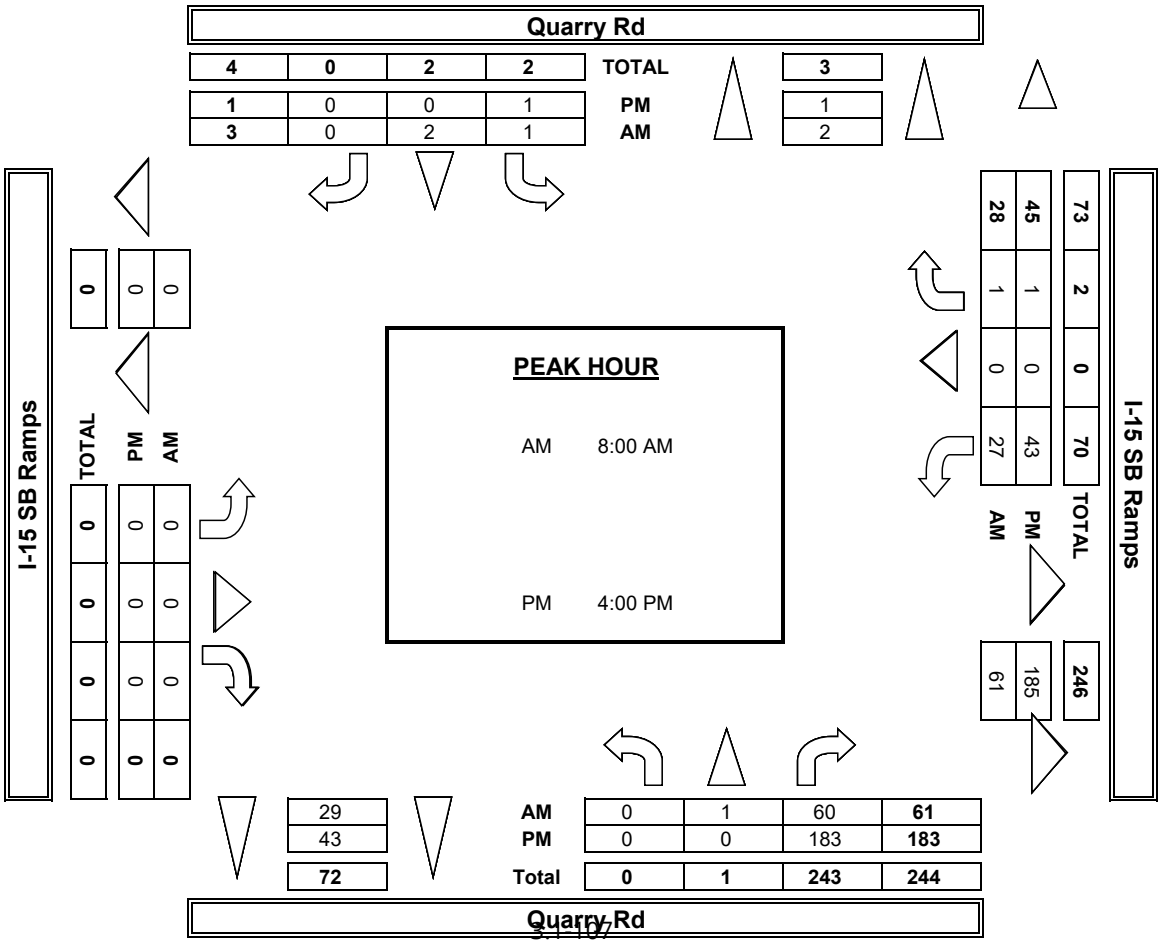
Quarry Rd

		ALL PED + BIKE & SCOOTER					PEDESTRIAN CROSSINGS					BICYCLE & SCOOTER CROSSINGS				
		E LEG	W LEG	S LEG	N LEG	TOTAL	E LEG	W LEG	S LEG	N LEG	TOTAL	EL	WL	SL	NL	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





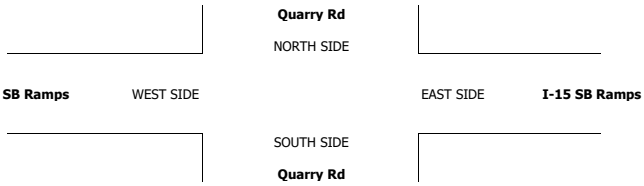
INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 4/2/24 TUESDAY	LOCATION:	Apple Valley	PROJECT #: SC4523
	NORTH & SOUTH:	Quarry Rd	LOCATION #: 1
	EAST & WEST:	I-15 SB Ramps	CONTROL: STOP W

	NOTES:										
PCE Adjusted	Class	1	2	3	4	5	6			AM PM MD OTHER OTHER	▲ N ◄ W E ► S ▼
	Factor	1	1.5	2	3	2	2				

		NORTHBOUND Quarry Rd			SOUTHBOUND Quarry Rd			EASTBOUND I-15 SB Ramps			WESTBOUND I-15 SB Ramps				U-TURNS				
	LANES:	NL X	NT 1	NR 0	SL 0	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	0	0	21	0	0	0	0	0	0	4	0	0	25					0
	7:15 AM	0	0	20	0	0	0	0	0	0	3	0	0	22					0
	7:30 AM	0	1	22	1	0	0	0	0	0	8	0	1	33					0
	7:45 AM	0	0	34	0	0	0	0	0	0	3	0	0	37					0
	8:00 AM	0	0	35	0	1	0	0	0	0	13	0	0	49					0
	8:15 AM	0	0	20	0	0	0	0	0	0	0	0	0	20					0
	8:30 AM	0	1	22	1	1	0	0	0	0	5	0	1	31					0
	8:45 AM	0	0	30	0	0	0	0	0	0	14	0	0	43					0
	VOLUMES	0	2	203	2	2	0	0	0	0	49	0	2	259	0	0	0	0	0
	APPROACH %	0%	1%	99%	50%	50%	0%	0%	0%	0%	96%	0%	4%						
	APP/DEPART	205	/	4	4	/	51	0	/	205	51	/	0	0					
	BEGIN PEAK HR		8:00 AM																
	VOLUMES	0	1	106	1	2	0	0	0	0	32	0	1	143					
	APPROACH %	0%	1%	99%	33%	67%	0%	0%	0%	0%	97%	0%	3%						
	PEAK HR FACTOR		0.764			0.375			0.000			0.602		0.727					
	APP/DEPART	107	/	2	3	/	34	0	/	107	33	/	0	0					
PM	4:00 PM	0	0	98	0	0	0	0	0	0	7	0	1	106					0
	4:15 PM	0	0	45	1	0	0	0	0	0	12	0	0	58					0
	4:30 PM	0	0	25	0	0	0	0	0	0	11	0	0	36					0
	4:45 PM	0	0	41	0	0	0	0	0	0	14	0	0	55					0
	5:00 PM	0	0	22	0	1	0	0	0	0	13	0	1	37					0
	5:15 PM	0	0	27	0	1	0	0	0	0	8	0	0	36					0
	5:30 PM	0	0	50	0	0	0	0	0	0	13	0	0	63					0
	5:45 PM	0	0	15	1	0	0	0	0	0	11	0	1	28					0
	VOLUMES	0	0	323	2	2	0	0	0	0	89	0	3	418	0	0	0	0	0
	APPROACH %	0%	0%	100%	50%	50%	0%	0%	0%	0%	97%	0%	3%						
	APP/DEPART	323	/	3	4	/	91	0	/	325	92	/	0	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	0	0	209	1	0	0	0	0	0	44	0	1	255					
	APPROACH %	0%	0%	100%	100%	0%	0%	0%	0%	0%	98%	0%	2%						
	PEAK HR FACTOR		0.533			0.250			0.000			0.804		0.601					
	APP/DEPART	209	/	1	1	/	44	0	/	210	45	/	0	0					



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Quarry Rd	LOCATION #:	1
TUESDAY	EAST & WEST:	I-15 SB Ramps	CONTROL:	STOP W

CLASS 1: PASSENGER VEHICLES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

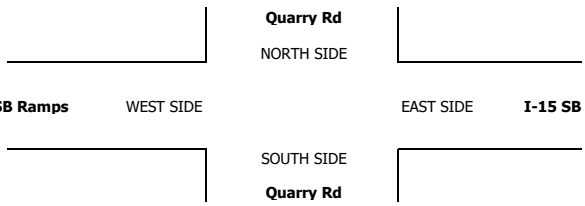
	NORTHBOUND (Quarry Rd)			SOUTHBOUND (Quarry Rd)			EASTBOUND (I-15 SB Ramps)			WESTBOUND (I-15 SB Ramps)			
LANES:	NL X	NT 1	NR 0	SL 0	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL
7:00 AM	0	0	7	0	0	0	0	0	0	2	0	0	9
7:15 AM	0	0	7	0	0	0	0	0	0	1	0	0	8
7:30 AM	0	1	7	1	0	0	0	0	0	8	0	1	18
7:45 AM	0	0	8	0	0	0	0	0	0	1	0	0	9
8:00 AM	0	0	9	0	1	0	0	0	0	7	0	0	17
8:15 AM	0	0	6	0	0	0	0	0	0	0	0	0	6
8:30 AM	0	1	8	1	1	0	0	0	0	5	0	1	17
8:45 AM	0	0	8	0	0	0	0	0	0	12	0	0	20
VOLUMES	0	2	60	2	2	0	0	0	0	36	0	2	105
APPROACH %	0%	3%	97%	50%	50%	0%	0%	0%	0%	92%	0%	5%	
APP/DEPART	62	/	4	4	/	38	0	/	63	39	/	0	0
BEGIN PEAK HR		8:00 AM											
VOLUMES	0	1	31	1	2	0	0	0	0	24	0	1	60
APPROACH %	0%	3%	97%	33%	67%	0%	0%	0%	0%	96%	0%	4%	
PEAK HR FACTOR		0.889			0.375			0.000			0.521		0.750
APP/DEPART	32	/	2	3	/	26	0	/	32	25	/	0	0
4:00 PM	0	0	90	0	0	0	0	0	0	7	0	1	98
4:15 PM	0	0	36	1	0	0	0	0	0	12	0	0	49
4:30 PM	0	0	17	0	0	0	0	0	0	11	0	0	28
4:45 PM	0	0	22	0	0	0	0	0	0	11	0	0	33
5:00 PM	0	0	14	0	1	0	0	0	0	11	0	1	27
5:15 PM	0	0	11	0	1	0	0	0	0	8	0	0	20
5:30 PM	0	0	33	0	0	0	0	0	0	10	0	0	43
5:45 PM	0	0	12	1	0	0	0	0	0	11	0	1	25
VOLUMES	0	0	235	2	2	0	0	0	0	81	0	3	325
APPROACH %	0%	0%	100%	50%	50%	0%	0%	0%	0%	94%	0%	3%	
APP/DEPART	235	/	3	4	/	83	0	/	239	86	/	0	0
BEGIN PEAK HR		4:00 PM											
VOLUMES	0	0	165	1	0	0	0	0	0	41	0	1	209
APPROACH %	0%	0%	100%	100%	0%	0%	0%	0%	0%	95%	0%	2%	
PEAK HR FACTOR		0.458			0.250			0.000			0.896		0.528
APP/DEPART	165	/	1	1	/	41	0	/	167	43	/	0	0

U-TURNS

AM NB	AM SB	AM EB	AM WB	AM TTL	PM NB	PM SB	PM EB	PM WB	PM TTL	BEGIN PEAK HR NB	BEGIN PEAK HR SB	BEGIN PEAK HR EB	BEGIN PEAK HR WB
0	0	0	0	0	0	0	0	1	1	0	0	0	0
0	0	0	0	0	0	0	0	0	0				
0	0	0	0	0	0	0	0	0	0				
0	0	0	1	1	0	0	0	0	0				
0	0	0	0	0	0	0	0	0	0				
0	0	0	0	0	0	0	0	0	0				
0	0	0	0	0	0	0	0	0	0				
0	0	0	0	0	0	0	0	0	0				
0	0	0	1	1	0	0	0	2	2				

RTOR

AM NRR	AM SRR	AM ERR	AM WRR	PM NRR	PM SRR	PM ERR	PM WRR	BEGIN PEAK HR NRR	BEGIN PEAK HR SRR	BEGIN PEAK HR ERR	BEGIN PEAK HR WRR
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0				
0	0	0	0	0	0	0	0				
0	0	0	0	0	0	0	0				
0	0	0	0	0	0	0	0				
0	0	0	0	0	0	0	0				
0	0	0	0	0	0	0	0				
0	0	0	0	0	0	0	0				
0	0	0	0	0	0	0	0				



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Quarry Rd	LOCATION #:	1
TUESDAY	EAST & WEST:	I-15 SB Ramps	CONTROL:	STOP W

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

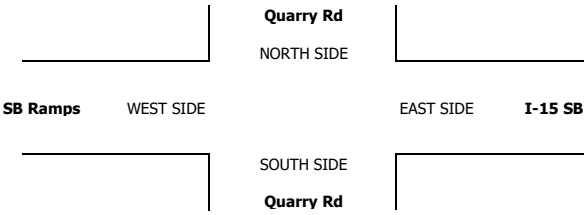
NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Quarry Rd			SOUTHBOUND Quarry Rd			EASTBOUND I-15 SB Ramps			WESTBOUND I-15 SB Ramps			
	LANES:	NL X	NT 1	NR 0	SL 0	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	1
	7:15 AM	0	0	1	0	0	0	0	0	0	1	0	0	2
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	2	0	0	0	0	0	0	0	0	0	2
	8:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	1
	8:30 AM	0	0	2	0	0	0	0	0	0	0	0	0	2
	8:45 AM	0	0	1	0	0	0	0	0	0	1	0	0	2
	VOLUMES	0	0	7	0	0	0	0	0	0	3	0	0	10
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	0%	0%	
	APP/DEPART	7	/	0	0	/	3	0	/	7	3	/	0	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	0	0	6	0	0	0	0	0	0	1	0	0	7
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	0%	0%	
	PEAK HR FACTOR		0.750			0.000			0.000			0.250		0.875
	APP/DEPART	6	/	0	0	/	1	0	/	6	1	/	0	0
PM	4:00 PM	0	0	2	0	0	0	0	0	0	0	0	0	2
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	2	0	0	0	0	0	0	2	0	0	4
	5:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	1
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	3	0	0	0	0	0	0	0	0	0	3
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	7	0	0	0	0	0	0	3	0	0	10
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	0%	0%	
	APP/DEPART	7	/	0	0	/	3	0	/	7	3	/	0	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	0	4	0	0	0	0	0	0	2	0	0	6
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	0%	0%	
	PEAK HR FACTOR		0.500			0.000			0.000			0.250		0.375
	APP/DEPART	4	/	0	0	/	2	0	/	4	2	/	0	0

U-TURNS					
	NB	SB	EB	WB	TTL
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	
	0	0	0	0	
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	
	0	0	0	0	

RTOR				
	NRR X	SRR X	ERR X	WRR X
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

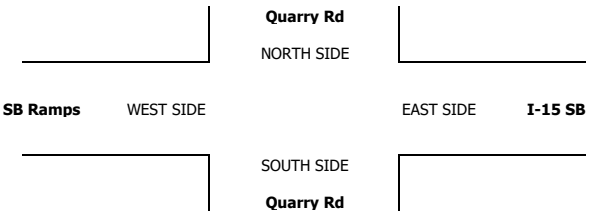
DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Quarry Rd	LOCATION #:	1
TUESDAY	EAST & WEST:	I-15 SB Ramps	CONTROL:	STOP W

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Quarry Rd			SOUTHBOUND Quarry Rd			EASTBOUND I-15 SB Ramps			WESTBOUND I-15 SB Ramps				U-TURNS					RTOR			
	LANES:	NL X	NT 1	NR 0	SL 0	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL	NB	SB	EB	WB	TTL	NRR X	SRR X	ERR X	WRR X
AM	7:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	1	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	6	0	0	0	0	0	0	1	0	0	7	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	0%	0%										
	APP/DEPART	6	/	0	0	/	1	0	/	6	1	/	0	0									
	BEGIN PEAK HR		8:00 AM																				
	VOLUMES	0	0	3	0	0	0	0	0	0	0	0	0	3	0	0	0	0		0	0	0	0
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%										
	PEAK HR FACTOR		0.750			0.000			0.000			0.000		0.750									
	APP/DEPART	3	/	0	0	/	0	0	/	3	0	/	0	0									
PM	4:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	2	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	2	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	7	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%										
	APP/DEPART	7	/	0	0	/	0	0	/	7	0	/	0	0									
	BEGIN PEAK HR		4:00 PM																				
	VOLUMES	0	0	4	0	0	0	0	0	0	0	0	0	4	0	0	0	0		0	0	0	0
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%										
	PEAK HR FACTOR		0.500			0.000			0.000			0.000		0.500									
	APP/DEPART	4	/	0	0	/	0	0	/	4	0	/	0	0									



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Quarry Rd	LOCATION #:	1
TUESDAY	EAST & WEST:	I-15 SB Ramps	CONTROL:	STOP W

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

	NORTHBOUND Quarry Rd			SOUTHBOUND Quarry Rd			EASTBOUND I-15 SB Ramps			WESTBOUND I-15 SB Ramps			
LANES:	NL X	NT 1	NR 0	SL 0	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL
7:00 AM	0	0	4	0	0	0	0	0	0	0	0	0	4
7:15 AM	0	0	3	0	0	0	0	0	0	0	0	0	3
7:30 AM	0	0	5	0	0	0	0	0	0	0	0	0	5
7:45 AM	0	0	8	0	0	0	0	0	0	0	0	0	8
8:00 AM	0	0	7	0	0	0	0	0	0	2	0	0	9
8:15 AM	0	0	4	0	0	0	0	0	0	0	0	0	4
8:30 AM	0	0	3	0	0	0	0	0	0	0	0	0	3
8:45 AM	0	0	6	0	0	0	0	0	0	0	0	0	6
AM VOLUMES	0	0	40	0	0	0	0	0	0	2	0	0	42
AM APPROACH %	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	0%	0%	
AM APP/DEPART	40	/	0	0	/	2	0	/	40	2	/	0	0
BEGIN PEAK HR		8:00 AM											
AM VOLUMES	0	0	20	0	0	0	0	0	0	2	0	0	22
AM APPROACH %	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	0%	0%	
AM PEAK HR FACTOR		0.714			0.000			0.000			0.250		0.611
AM APP/DEPART	20	/	0	0	/	2	0	/	20	2	/	0	0
4:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	1
4:15 PM	0	0	3	0	0	0	0	0	0	0	0	0	3
4:30 PM	0	0	2	0	0	0	0	0	0	0	0	0	2
4:45 PM	0	0	4	0	0	0	0	0	0	0	0	0	4
5:00 PM	0	0	2	0	0	0	0	0	0	0	0	0	2
5:15 PM	0	0	4	0	0	0	0	0	0	0	0	0	4
5:30 PM	0	0	4	0	0	0	0	0	0	1	0	0	5
5:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	1
PM VOLUMES	0	0	21	0	0	0	0	0	0	1	0	0	22
PM APPROACH %	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	0%	0%	
PM APP/DEPART	21	/	0	0	/	1	0	/	21	1	/	0	0
BEGIN PEAK HR		4:00 PM											
PM VOLUMES	0	0	10	0	0	0	0	0	0	0	0	0	10
PM APPROACH %	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
PM PEAK HR FACTOR		0.625			0.000			0.000			0.000		0.625
PM APP/DEPART	10	/	0	0	/	0	0	/	10	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Quarry Rd

NORTH SIDE

I-15 SB Ramps WEST SIDE EAST SIDE **I-15 SB Ramps**

SOUTH SIDE

Quarry Rd

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Quarry Rd	LOCATION #:	1
TUESDAY	EAST & WEST:	I-15 SB Ramps	CONTROL:	STOP W

CLASS 5: RV

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

	NORTHBOUND (Quarry Rd)			SOUTHBOUND (Quarry Rd)			EASTBOUND (I-15 SB Ramps)			WESTBOUND (I-15 SB Ramps)			
LANES:	NL X	NT 1	NR 0	SL 0	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL
AM													
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
BEGIN PEAK HR		8:00 AM											
VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
PM													
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
BEGIN PEAK HR		4:00 PM											
VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Quarry Rd

NORTH SIDE

I-15 SB Ramps WEST SIDE EAST SIDE **I-15 SB Ramps**

SOUTH SIDE

Quarry Rd

INTERSECTION TURNING MOVEMENT COUNTS

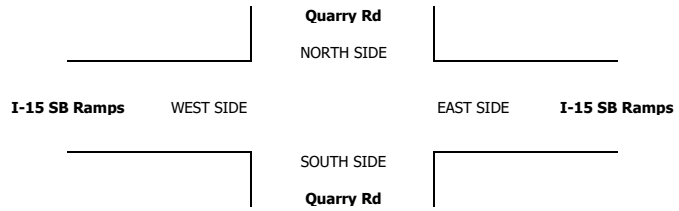
PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Quarry Rd	LOCATION #:	1
TUESDAY	EAST & WEST:	I-15 SB Ramps	CONTROL:	STOP W

CLASS 6:	NOTES:
BUSES	

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Quarry Rd			SOUTHBOUND Quarry Rd			EASTBOUND I-15 SB Ramps			WESTBOUND I-15 SB Ramps				U-TURNS					RTOR			
	LANES:	NL X	NT 1	NR 0	SL 0	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL	NB	SB	EB	WB	TTL	NRR X	SRR X	ERR X	WRR X
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%										
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0									
	BEGIN PEAK HR		8:00 AM																				
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%										
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000									
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0									
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%										
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0									
	BEGIN PEAK HR		4:00 PM																				
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%										
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000									
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0									



INTERSECTION TURNING MOVEMENT COUNTS

T020624

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, Apr 2, 24	LOCATION:	Apple Valley	PROJECT #: SC4523
	NORTH & SOUTH:	Dale Evans Pkwy	LOCATION #: 10
	EAST & WEST:	Corwin Rd	CONTROL: STOP ALL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Dale Evans Pkwy			SOUTHBOUND Dale Evans Pkwy			EASTBOUND Corwin Rd			WESTBOUND Corwin Rd				U-TURNS					RTOR			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL	NRR X	SRR X	ERR X	WRR X
AM	7:00 AM	0	33	4	0	12	3	3	3	0	1	0	0	59	0	0	0	0	0	0	0	0	0
	7:15 AM	0	41	1	0	16	1	7	3	0	1	0	1	71	0	0	0	0	0	0	0	0	0
	7:30 AM	0	31	6	0	9	4	5	2	1	1	0	0	59	0	0	0	0	0	0	0	0	0
	7:45 AM	4	32	8	1	12	0	3	2	0	3	0	1	66	0	0	0	0	0	0	0	0	0
	8:00 AM	0	24	4	0	4	0	7	1	0	2	2	0	44	0	0	0	0	0	0	0	0	0
	8:15 AM	0	20	4	1	8	6	4	3	1	4	4	0	55	0	0	0	0	0	0	0	0	0
	8:30 AM	1	24	4	0	9	6	5	1	1	1	1	1	54	0	0	0	0	0	0	0	0	0
	8:45 AM	1	20	1	0	19	4	1	2	0	1	0	0	49	0	0	0	0	0	0	0	0	0
	VOLUMES	6	225	32	2	89	24	35	17	3	14	7	3	457	0	0	0	0	0	0	0	0	0
	APPROACH %	2%	86%	12%	2%	77%	21%	64%	31%	5%	58%	29%	13%										
	APP/DEPART	263	/	263	115	/	106	55	/	51	24	/	37	0									
	BEGIN PEAK HR		7:00 AM																				
	VOLUMES	4	137	19	1	49	8	18	10	1	6	0	2	255	0	0	0	0		0	0	0	0
	APPROACH %	3%	86%	12%	2%	84%	14%	62%	34%	3%	75%	0%	25%										
	PEAK HR FACTOR		0.909			0.853			0.725			0.500		0.898									
	APP/DEPART	160	/	157	58	/	56	29	/	30	8	/	12	0									
PM	4:00 PM	0	25	4	0	53	16	5	3	1	6	7	0	120	0	0	0	0	0	0	0	0	0
	4:15 PM	1	34	5	1	44	9	11	0	0	5	4	0	114	0	0	0	0	0	0	0	0	0
	4:30 PM	1	21	3	1	52	11	4	2	0	8	3	2	108	0	0	0	0	0	0	0	0	0
	4:45 PM	1	28	3	1	50	9	2	1	1	6	2	0	104	0	0	0	0	0	0	0	0	0
	5:00 PM	0	13	1	1	50	12	2	1	0	6	2	0	88	0	0	0	0	0	0	0	0	0
	5:15 PM	0	14	2	0	42	3	5	1	0	2	2	0	71	0	0	0	0	0	0	0	0	0
	5:30 PM	0	17	1	1	36	8	0	0	0	3	1	0	67	0	0	0	0	0	0	0	0	0
	5:45 PM	1	17	3	0	35	4	2	2	0	5	1	0	70	0	0	1	0	1	0	0	0	0
	VOLUMES	4	169	22	5	362	72	31	10	2	41	22	2	743	0	0	1	0	1	0	0	0	0
	APPROACH %	2%	87%	11%	1%	82%	16%	70%	23%	5%	63%	34%	3%										
	APP/DEPART	195	/	202	439	/	405	44	/	37	65	/	99	0									
	BEGIN PEAK HR		4:00 PM																				
	VOLUMES	3	108	15	3	199	45	22	6	2	25	16	2	446	0	0	0	0		0	0	0	0
	APPROACH %	2%	86%	12%	1%	81%	18%	73%	20%	7%	58%	37%	5%										
	PEAK HR FACTOR		0.788			0.895			0.682			0.827		0.929									
	APP/DEPART	126	/	132	247	/	226	30	/	24	43	/	64	0									

Dale Evans Pkwy

NORTH LEG

Corwin Rd WEST LEG EAST LEG **Corwin Rd**

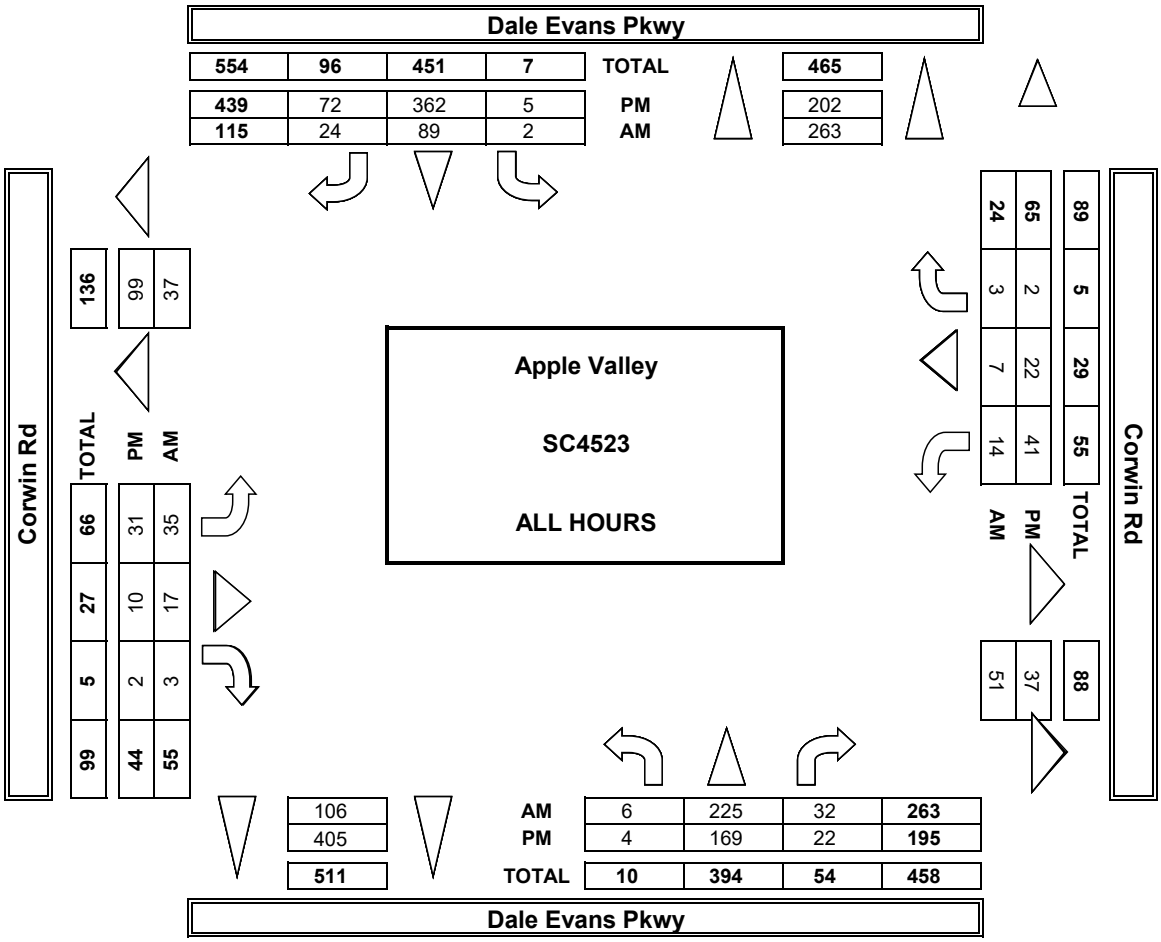
SOUTH LEG

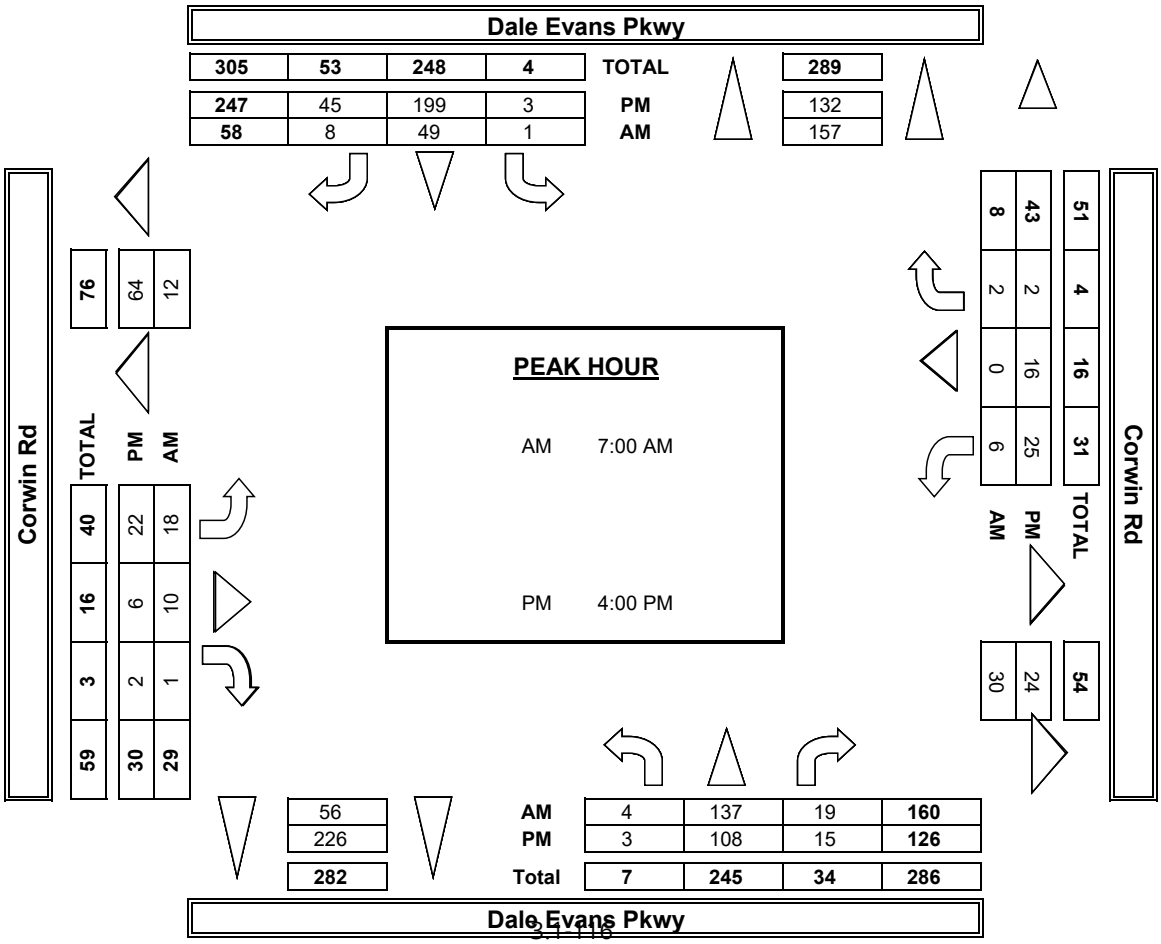
Dale Evans Pkwy

		ALL PED + BIKE & SCOOTER					PEDESTRIAN CROSSINGS					BICYCLE & SCOOTER CROSSINGS				
		E LEG	W LEG	S LEG	N LEG	TOTAL	E LEG	W LEG	S LEG	N LEG	TOTAL	EL	WL	SL	NL	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1

AimTD LLC

TURNING MOVEMENT COUNTS





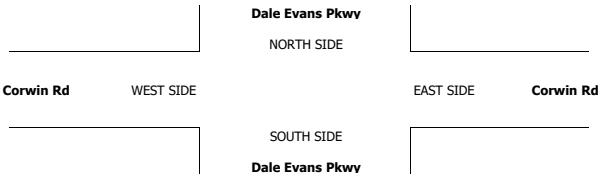
INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 4/2/24 TUESDAY	LOCATION:	Apple Valley	PROJECT #:	SC4523
	NORTH & SOUTH:	Dale Evans Pkwy	LOCATION #:	10
	EAST & WEST:	Corwin Rd	CONTROL:	STOP ALL

	NOTES:											
PCE Adjusted	Class	1	2	3	4	5	6			AM PM MD OTHER OTHER	▲ N ◄ W E ► S ▼	
	Factor	1	1.5	2	3	2	2					

	NORTHBOUND Dale Evans Pkwy			SOUTHBOUND Dale Evans Pkwy			EASTBOUND Corwin Rd			WESTBOUND Corwin Rd				U-TURNS				
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL	NB	SB	EB	WB	TTL
7:00 AM	0	37	4	0	13	3	3	4	0	1	0	0	64					0
7:15 AM	0	48	1	0	16	1	7	4	0	2	0	2	79					0
7:30 AM	0	36	6	0	11	6	7	2	2	1	0	0	71					0
7:45 AM	7	32	9	1	14	0	3	2	0	3	0	1	72					0
8:00 AM	0	28	4	0	7	0	7	1	0	2	4	0	53					0
8:15 AM	0	21	5	1	10	6	6	3	1	4	5	0	60					0
8:30 AM	1	28	4	0	11	9	5	1	1	1	1	1	63					0
8:45 AM	2	26	1	0	20	4	1	2	0	1	0	0	57					0
AM VOLUMES	10	254	33	2	101	29	39	18	4	15	10	4	517	0	0	0	0	0
AM APPROACH %	3%	86%	11%	2%	76%	22%	64%	30%	7%	53%	35%	13%						
AM APP/DEPART	297	/	297	132	/	119	61	/	53	28	/	49	0					
AM BEGIN PEAK HR		7:00 AM																
AM VOLUMES	7	152	20	1	54	10	20	11	2	7	0	3	285					
AM APPROACH %	4%	85%	11%	2%	83%	16%	61%	33%	6%	72%	0%	28%						
AM PEAK HR FACTOR		0.918			0.949			0.750			0.563		0.900					
AM APP/DEPART	178	/	174	65	/	62	33	/	32	9	/	17	0					
4:00 PM	0	27	4	0	54	16	5	4	1	6	7	0	124					0
4:15 PM	1	35	5	1	46	9	11	0	0	5	4	0	117					0
4:30 PM	1	23	4	2	54	12	5	2	0	8	3	2	114					0
4:45 PM	2	28	3	1	56	10	2	1	1	8	2	0	113					0
5:00 PM	0	15	1	1	54	12	2	1	0	6	2	0	94					0
5:15 PM	0	18	3	0	43	3	5	1	0	2	2	0	76					0
5:30 PM	0	19	1	1	38	9	0	0	0	3	1	0	72					0
5:45 PM	2	17	3	0	35	4	2	2	0	5	1	0	71					0
PM VOLUMES	6	182	23	6	379	75	32	11	2	43	22	2	780	0	0	0	0	0
PM APPROACH %	3%	86%	11%	1%	83%	16%	71%	25%	4%	64%	33%	3%						
PM APP/DEPART	211	/	215	459	/	423	45	/	40	67	/	103	0					
PM BEGIN PEAK HR		4:00 PM																
PM VOLUMES	4	113	16	4	209	47	23	7	2	27	16	2	468					
PM APPROACH %	3%	85%	12%	1%	81%	18%	71%	22%	6%	60%	36%	4%						
PM PEAK HR FACTOR		0.808			0.932			0.716			0.856		0.946					
PM APP/DEPART	133	/	138	259	/	238	32	/	26	45	/	67	0					



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Dale Evans Pkwy	LOCATION #:	10
TUESDAY	EAST & WEST:	Corwin Rd	CONTROL:	STOP ALL

CLASS 1: PASSENGER VEHICLES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

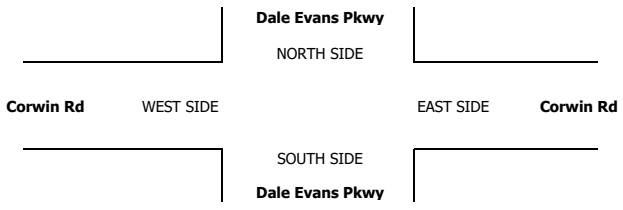
		NORTHBOUND (Dale Evans Pkwy)			SOUTHBOUND (Dale Evans Pkwy)			EASTBOUND (Corwin Rd)			WESTBOUND (Corwin Rd)			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	0	27	4	0	11	3	3	2	0	1	0	0	51
	7:15 AM	0	37	1	0	16	1	7	2	0	0	0	0	64
	7:30 AM	0	26	6	0	8	2	4	2	0	1	0	0	49
	7:45 AM	2	32	7	1	10	0	3	2	0	3	0	1	61
	8:00 AM	0	19	4	0	2	0	7	1	0	2	1	0	36
	8:15 AM	0	19	3	1	5	6	3	3	1	4	3	0	48
	8:30 AM	1	22	4	0	7	4	5	1	1	1	1	1	48
	8:45 AM	0	15	1	0	18	4	1	2	0	1	0	0	42
	VOLUMES	3	197	30	2	77	20	33	15	2	13	5	2	399
	APPROACH %	1%	86%	13%	2%	78%	20%	66%	30%	4%	65%	25%	10%	
	APP/DEPART	230	/	232	99	/	92	50	/	47	20	/	28	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	2	122	18	1	45	6	17	8	0	5	0	1	225
	APPROACH %	1%	86%	13%	2%	87%	12%	68%	32%	0%	83%	0%	17%	
	PEAK HR FACTOR		0.866			0.765			0.694			0.375		0.879
	APP/DEPART	142	/	140	52	/	50	25	/	27	6	/	8	0
PM	4:00 PM	0	22	4	0	52	16	5	2	1	6	7	0	115
	4:15 PM	1	33	5	1	41	9	11	0	0	5	4	0	110
	4:30 PM	1	20	2	0	51	10	3	2	0	8	3	2	102
	4:45 PM	0	28	3	1	45	8	2	1	1	3	2	0	94
	5:00 PM	0	12	1	1	48	12	2	1	0	6	2	0	85
	5:15 PM	0	11	1	0	41	3	5	1	0	2	2	0	66
	5:30 PM	0	16	1	1	35	7	0	0	0	3	1	0	64
	5:45 PM	0	17	3	0	35	4	2	2	0	5	1	0	69
	VOLUMES	2	159	20	4	348	69	30	9	2	38	22	2	706
	APPROACH %	1%	88%	11%	1%	83%	16%	71%	21%	5%	61%	35%	3%	
	APP/DEPART	181	/	191	421	/	388	42	/	33	62	/	94	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	2	103	14	2	189	43	21	5	2	22	16	2	421
	APPROACH %	2%	87%	12%	1%	81%	18%	75%	18%	7%	55%	40%	5%	
	PEAK HR FACTOR		0.763			0.860			0.636			0.769		0.915
	APP/DEPART	119	/	126	234	/	213	28	/	21	40	/	61	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	1	0	1
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Dale Evans Pkwy	LOCATION #:	10
TUESDAY	EAST & WEST:	Corwin Rd	CONTROL:	STOP ALL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

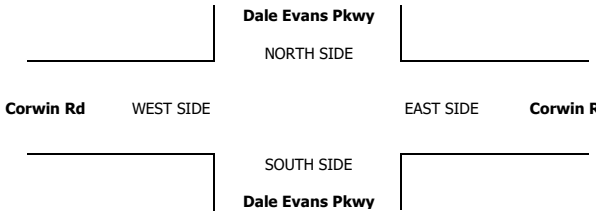
		NORTHBOUND Dale Evans Pkwy			SOUTHBOUND Dale Evans Pkwy			EASTBOUND Corwin Rd			WESTBOUND Corwin Rd			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	0	5	0	0	1	0	0	1	0	0	0	0	7
	7:15 AM	0	1	0	0	0	0	0	1	0	1	0	1	4
	7:30 AM	0	3	0	0	0	0	0	0	0	0	0	0	3
	7:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	1
	8:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	2
	8:15 AM	0	1	1	0	3	0	0	0	0	0	1	0	6
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	2	0	0	1	0	0	0	0	0	0	0	3
	VOLUMES	0	14	2	0	5	0	0	2	0	1	1	1	26
	APPROACH %	0%	88%	13%	0%	100%	0%	0%	100%	0%	33%	33%	33%	
	APP/DEPART	16	/	15	5	/	6	2	/	4	3	/	1	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	0	9	1	0	1	0	0	2	0	1	0	1	15
	APPROACH %	0%	90%	10%	0%	100%	0%	0%	100%	0%	50%	0%	50%	
	PEAK HR FACTOR		0.500			0.250			0.500			0.250		0.536
	APP/DEPART	10	/	10	1	/	2	2	/	3	2	/	0	0
PM	4:00 PM	0	2	0	0	1	0	0	0	0	0	0	0	3
	4:15 PM	0	0	0	0	2	0	0	0	0	0	0	0	2
	4:30 PM	0	0	1	1	0	1	1	0	0	0	0	0	4
	4:45 PM	0	0	0	0	3	0	0	0	0	3	0	0	6
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	1	1	0	1	0	0	0	0	0	0	0	3
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	3	2	1	7	1	1	0	0	3	0	0	18
	APPROACH %	0%	60%	40%	11%	78%	11%	100%	0%	0%	100%	0%	0%	
	APP/DEPART	5	/	4	9	/	10	1	/	3	3	/	1	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	2	1	1	6	1	1	0	0	3	0	0	15
	APPROACH %	0%	67%	33%	13%	75%	13%	100%	0%	0%	100%	0%	0%	
	PEAK HR FACTOR		0.375			0.667			0.250			0.250		0.625
	APP/DEPART	3	/	3	8	/	9	1	/	2	3	/	1	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

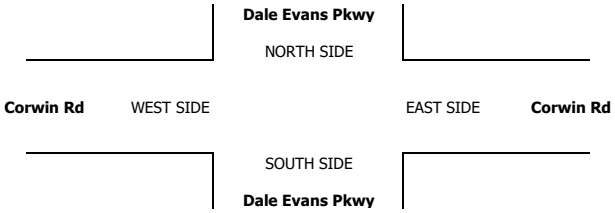
DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Dale Evans Pkwy	LOCATION #:	10
TUESDAY	EAST & WEST:	Corwin Rd	CONTROL:	STOP ALL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Dale Evans Pkwy			SOUTHBOUND Dale Evans Pkwy			EASTBOUND Corwin Rd			WESTBOUND Corwin Rd				U-TURNS					RTOR			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL	NB	SB	EB	WB	TTL	NRR X	SRR X	ERR X	WRR X
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	1	0	0	1	0	0	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	100%	0%	0%	100%	0%	0%	0%	100%	0%	0%	0%										
	APP/DEPART	1	/	1	1	/	2	1	/	0	0	/	0	0									
	BEGIN PEAK HR		7:00 AM																				
	VOLUMES	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0		0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%										
	PEAK HR FACTOR		0.000			0.000			0.250			0.000		0.250									
	APP/DEPART	0	/	0	0	/	1	1	/	0	0	/	0	0									
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%										
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0									
	BEGIN PEAK HR		4:00 PM																				
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%										
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000									
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0									



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Dale Evans Pkwy	LOCATION #:	10
TUESDAY	EAST & WEST:	Corwin Rd	CONTROL:	STOP ALL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Dale Evans Pkwy			SOUTHBOUND Dale Evans Pkwy			EASTBOUND Corwin Rd			WESTBOUND Corwin Rd			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	3	0	0	0	0	0	0	0	0	0	0	3
	7:30 AM	0	1	0	0	1	0	1	0	0	0	0	0	3
	7:45 AM	1	0	0	0	0	0	0	0	0	0	0	0	1
	8:00 AM	0	0	0	0	1	0	0	0	0	0	1	0	2
	8:15 AM	0	0	0	0	0	0	1	0	0	0	0	0	1
	8:30 AM	0	2	0	0	0	1	0	0	0	0	0	0	3
	8:45 AM	0	2	0	0	0	0	0	0	0	0	0	0	2
	VOLUMES	1	8	0	0	2	1	2	0	0	0	1	0	15
	APPROACH %	11%	89%	0%	0%	67%	33%	100%	0%	0%	0%	100%	0%	
	APP/DEPART	9	/	10	3	/	2	2	/	0	1	/	3	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	1	4	0	0	1	0	1	0	0	0	0	0	7
	APPROACH %	20%	80%	0%	0%	100%	0%	100%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.417			0.250			0.250			0.000		0.583
	APP/DEPART	5	/	5	1	/	1	1	/	0	0	/	1	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	2
	4:45 PM	0	0	0	0	2	0	0	0	0	0	0	0	2
	5:00 PM	0	1	0	0	2	0	0	0	0	0	0	0	3
	5:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
	5:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	2
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	4	0	0	6	0	0	0	0	0	0	0	10
	APPROACH %	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	4	/	4	6	/	6	0	/	0	0	/	0	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	1	0	0	3	0	0	0	0	0	0	0	4
	APPROACH %	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.250			0.375			0.000			0.000		0.500
	APP/DEPART	1	/	1	3	/	3	0	/	0	0	/	0	0

U-TURNS					
	NB	SB	EB	WB	TTL
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Dale Evans Pkwy	LOCATION #:	10
TUESDAY	EAST & WEST:	Corwin Rd	CONTROL:	STOP ALL

CLASS 5: RV

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Dale Evans Pkwy			SOUTHBOUND Dale Evans Pkwy			EASTBOUND Corwin Rd			WESTBOUND Corwin Rd			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Dale Evans Pkwy

NORTH SIDE

Corwin Rd WEST SIDE EAST SIDE **Corwin Rd**

SOUTH SIDE

Dale Evans Pkwy

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Apple Valley	PROJECT #:	SC4523
4/2/24	NORTH & SOUTH:	Dale Evans Pkwy	LOCATION #:	10
TUESDAY	EAST & WEST:	Corwin Rd	CONTROL:	STOP ALL

CLASS 6: BUSES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

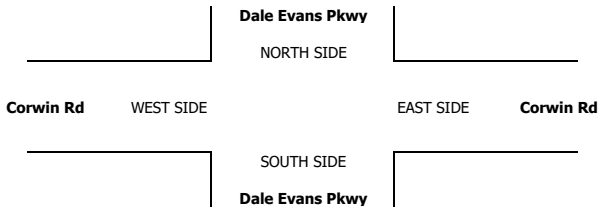
	NORTHBOUND Dale Evans Pkwy			SOUTHBOUND Dale Evans Pkwy			EASTBOUND Corwin Rd			WESTBOUND Corwin Rd			
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
7:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	1	0	0	0	2	0	0	0	0	0	0	3
7:45 AM	1	0	0	0	2	0	0	0	0	0	0	0	3
8:00 AM	0	2	0	0	1	0	0	0	0	0	0	0	3
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	1	1	0	0	0	0	0	0	2
8:45 AM	1	1	0	0	0	0	0	0	0	0	0	0	2
AM VOLUMES	2	5	0	0	4	3	0	0	0	0	0	0	14
AM APPROACH %	29%	71%	0%	0%	57%	43%	0%	0%	0%	0%	0%	0%	
AM APP/DEPART	7	/	5	7	/	4	0	/	0	0	/	5	0
BEGIN PEAK HR		7:00 AM											
PEAK HR VOLUMES	1	2	0	0	2	2	0	0	0	0	0	0	7
PEAK HR APPROACH %	33%	67%	0%	0%	50%	50%	0%	0%	0%	0%	0%	0%	
PEAK HR FACTOR		0.750			0.500			0.000			0.000		0.583
AM PEAK HR APP/DEPART	3	/	2	4	/	2	0	/	0	0	/	3	0
4:00 PM	0	1	0	0	0	0	0	1	0	0	0	0	2
4:15 PM	0	1	0	0	1	0	0	0	0	0	0	0	2
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	1	0	0	0	0	1	0	0	0	0	0	0	2
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	1
5:45 PM	1	0	0	0	0	0	0	0	0	0	0	0	1
PM VOLUMES	2	3	0	0	1	2	0	1	0	0	0	0	9
PM APPROACH %	40%	60%	0%	0%	33%	67%	0%	100%	0%	0%	0%	0%	
PM APP/DEPART	5	/	3	3	/	1	1	/	1	0	/	4	0
BEGIN PEAK HR		4:00 PM											
PEAK HR VOLUMES	1	2	0	0	1	1	0	1	0	0	0	0	6
PEAK HR APPROACH %	33%	67%	0%	0%	50%	50%	0%	100%	0%	0%	0%	0%	
PEAK HR FACTOR		0.750			0.500			0.250			0.000		0.750
PM PEAK HR APP/DEPART	3	/	2	2	/	1	1	/	1	0	/	2	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



A102423

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Tuesday, April 02, 2024 **CITY:** Apple Valley

JOB #: SC4523 **LOCATION:** CLASS4 Stoddard Wells Rd east of I-15 NB Ramps

AM TIME	EB 1	2	3	4	5	6	TOTAL
0:00	1	0	0	0	0	0	1
0:15	3	0	0	1	0	0	4
0:30	2	0	1	0	0	0	3
0:45	2	0	1	1	0	0	4
1:00	0	0	0	2	0	0	2
1:15	2	0	1	1	0	0	4
1:30	5	0	0	0	0	0	5
1:45	5	0	0	0	0	0	5
2:00	2	0	1	1	0	0	4
2:15	2	0	0	0	0	0	2
2:30	4	0	0	1	0	0	5
2:45	8	0	0	0	0	0	8
3:00	7	0	0	0	0	0	7
3:15	6	0	0	0	0	0	6
3:30	15	0	0	1	0	0	16
3:45	17	0	0	2	0	0	19
4:00	18	0	0	0	0	0	18
4:15	25	0	1	0	0	0	26
4:30	33	0	0	2	0	0	35
4:45	63	0	0	3	0	0	66
5:00	29	0	1	3	0	0	33
5:15	60	1	0	3	0	0	64
5:30	32	2	1	4	0	0	39
5:45	34	0	0	2	0	0	36
6:00	20	0	2	6	0	0	28
6:15	23	2	2	0	0	0	27
6:30	17	3	1	2	0	0	23
6:45	14	2	1	3	0	0	20
7:00	14	1	1	2	0	0	18
7:15	13	2	2	3	0	0	20
7:30	25	1	0	2	0	0	28
7:45	15	0	1	3	0	0	19
8:00	11	4	5	3	0	0	23
8:15	14	0	4	5	0	0	23
8:30	15	1	4	5	0	0	25
8:45	15	2	4	2	0	0	23
9:00	13	0	1	9	0	0	23
9:15	6	2	3	8	0	0	19
9:30	10	4	3	3	0	0	20
9:45	4	2	1	3	0	0	10
10:00	10	1	7	10	0	0	28
10:15	6	4	2	4	0	0	16
10:30	11	2	6	10	0	0	29
10:45	5	4	3	3	0	0	15
11:00	8	6	2	6	0	0	22
11:15	6	1	1	4	0	0	12
11:30	7	1	5	4	0	0	17
11:45	8	1	3	7	0	0	19
TOTAL	665	49	71	134	0	0	919

AM PEAK HOUR	4:45 AM
AM PEAK VOLUME	202

PM Time	EB 1	2	3	4	5	6	TOTAL
12:00	3	2	5	4	0	0	14
12:15	5	0	2	4	0	0	11
12:30	8	1	2	7	0	0	18
12:45	4	0	2	8	0	0	14
13:00	9	2	1	3	0	0	15
13:15	7	1	2	3	0	0	13
13:30	10	1	6	6	0	0	23
13:45	13	1	3	3	0	0	20
14:00	10	0	2	5	0	0	17
14:15	21	4	1	4	0	0	30
14:30	18	1	2	3	0	0	24
14:45	13	0	1	5	0	0	19
15:00	17	1	1	6	0	0	25
15:15	31	1	4	5	0	0	41
15:30	27	4	2	8	0	0	41
15:45	52	1	0	4	0	0	57
16:00	48	2	2	2	0	0	54
16:15	60	2	0	9	0	0	71
16:30	27	1	1	2	0	0	31
16:45	15	2	0	3	0	0	20
17:00	18	1	1	6	0	0	26
17:15	11	0	0	1	0	0	12
17:30	22	1	1	3	0	0	27
17:45	24	0	0	2	0	0	26
18:00	10	1	2	5	0	0	18
18:15	12	0	0	9	0	0	21
18:30	12	0	3	4	0	0	19
18:45	10	0	0	3	0	0	13
19:00	10	0	1	0	0	0	11
19:15	9	0	0	0	0	0	9
19:30	11	1	0	5	0	0	17
19:45	7	0	2	3	0	0	12
20:00	8	0	0	2	0	0	10
20:15	6	0	0	6	0	0	12
20:30	11	0	0	5	0	0	16
20:45	9	0	3	1	1	0	14
21:00	4	0	0	0	0	0	4
21:15	4	0	1	2	0	0	7
21:30	1	0	0	0	0	0	1
21:45	7	0	0	2	0	0	9
22:00	3	0	0	2	0	0	5
22:15	5	0	0	1	0	0	6
22:30	2	0	1	0	0	0	3
22:45	3	0	2	2	0	0	7
23:00	0	0	0	1	0	0	1
23:15	1	0	0	0	0	0	1
23:30	0	0	1	2	0	0	3
23:45	1	0	0	3	0	0	4
TOTAL	619	31	57	164	1	0	872

AM PEAK HOUR	3:30 PM
AM PEAK VOLUME	223

CLASS 1	PASSENGER VEHICLES	TOTAL: AM+PM	1,284	80	128	298	1	0	1,791
CLASS 2	2-AXLE TRUCKS	% OF TOTAL	71.7%	4.5%	7.1%	16.6%	0.1%	0.0%	100.0%
CLASS 3	3-AXLE TRUCKS								
CLASS 4	4 OR MORE AXLE TRUCKS								
CLASS 5	RV	TOTAL: ALL	2,346	148	191	678	1	0	3,364
CLASS 6	Buses	% OF TOTAL	69.7%	4.4%	5.7%	20.2%	0.0%	0.0%	100.0%

A102423

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Tuesday, April 02, 2024
JOB #: SC4523
CITY: Apple Valley
LOCATION: CLASS4 Stoddard Wells Rd east of I-15 NB Ramps

AM	WB						
TIME	1	2	3	4	5	6	TOTAL
0:00	2	0	1	2	0	0	5
0:15	1	0	0	2	0	0	3
0:30	2	0	0	2	0	0	4
0:45	2	0	0	2	0	0	4
1:00	9	0	0	1	0	0	10
1:15	7	0	0	0	0	0	7
1:30	7	0	0	3	0	0	10
1:45	2	0	0	1	0	0	3
2:00	9	0	0	1	0	0	10
2:15	4	0	0	1	0	0	5
2:30	11	1	0	6	0	0	18
2:45	11	0	0	1	0	0	12
3:00	29	0	0	1	0	0	30
3:15	19	0	0	2	0	0	21
3:30	15	0	0	1	0	0	16
3:45	19	0	0	2	0	0	21
4:00	5	0	0	1	0	0	6
4:15	1	0	1	0	0	0	2
4:30	3	0	0	2	0	0	5
4:45	5	0	0	3	0	0	8
5:00	7	0	0	2	0	0	9
5:15	3	0	0	1	0	0	4
5:30	8	2	0	0	0	0	10
5:45	6	1	1	2	0	0	10
6:00	13	0	0	4	0	0	17
6:15	5	0	0	2	0	0	7
6:30	8	0	0	4	0	0	12
6:45	6	0	0	7	0	0	13
7:00	8	1	0	4	0	0	13
7:15	8	1	0	3	0	0	12
7:30	7	0	1	6	0	0	14
7:45	13	1	1	13	0	0	28
8:00	9	2	2	4	0	0	17
8:15	8	2	0	5	0	0	15
8:30	8	1	1	3	0	0	13
8:45	13	1	1	5	0	0	20
9:00	10	0	0	7	0	0	17
9:15	7	1	3	5	0	0	16
9:30	3	0	0	9	0	0	12
9:45	4	3	1	5	0	0	13
10:00	6	1	4	6	0	0	17
10:15	7	1	2	10	0	0	20
10:30	3	0	1	11	0	0	15
10:45	6	5	1	9	0	0	21
11:00	8	2	1	9	0	0	20
11:15	2	1	2	12	0	0	17
11:30	11	6	1	10	0	0	28
11:45	8	4	2	4	0	0	18
TOTAL	368	37	27	196	0	0	628

AM PEAK HOUR	3:00 AM
AM PEAK VOLUME	88

PM	WB						
Time	1	2	3	4	5	6	TOTAL
12:00	10	2	2	3	0	0	17
12:15	4	1	3	6	0	0	14
12:30	6	2	1	7	0	0	16
12:45	7	3	0	8	0	0	18
13:00	10	1	0	8	0	0	19
13:15	10	1	2	8	0	0	21
13:30	20	1	1	6	0	0	28
13:45	30	1	0	3	0	0	34
14:00	14	1	1	5	0	0	21
14:15	7	1	0	7	0	0	15
14:30	34	0	0	4	0	0	38
14:45	14	0	1	4	0	0	19
15:00	21	1	3	9	0	0	34
15:15	18	2	1	4	0	0	25
15:30	61	4	0	9	0	0	74
15:45	31	1	1	4	0	0	37
16:00	87	1	0	2	0	0	90
16:15	33	0	2	4	0	0	39
16:30	21	1	1	3	0	0	26
16:45	22	1	4	4	0	0	31
17:00	8	0	1	2	0	0	11
17:15	8	0	2	4	0	0	14
17:30	35	2	0	3	0	0	40
17:45	13	0	0	1	0	0	14
18:00	6	0	0	1	0	0	7
18:15	11	1	2	3	0	0	17
18:30	20	0	0	1	0	0	21
18:45	13	0	0	10	0	0	23
19:00	9	0	0	6	0	0	15
19:15	10	0	1	5	0	0	16
19:30	10	0	0	3	0	0	13
19:45	9	0	1	0	0	0	10
20:00	3	2	0	3	0	0	8
20:15	7	0	0	4	0	0	11
20:30	9	0	1	3	0	0	13
20:45	12	1	0	5	0	0	18
21:00	13	0	0	3	0	0	16
21:15	8	0	0	0	0	0	8
21:30	4	0	0	3	0	0	7
21:45	2	0	0	0	0	0	2
22:00	6	0	0	4	0	0	10
22:15	3	0	0	1	0	0	4
22:30	8	0	1	0	0	0	9
22:45	3	0	0	2	0	0	5
23:00	1	0	1	1	0	0	3
23:15	0	0	1	1	0	0	2
23:30	2	0	1	6	0	0	9
23:45	1	0	1	1	0	0	3
TOTAL	694	31	36	184	0	0	945

AM PEAK HOUR	3:30 PM
AM PEAK VOLUME	240

TOTAL: AM+PM	1,062	68	63	380	0	0	1,573
% OF TOTAL	67.5%	4.3%	4.0%	24.2%	0.0%	0.0%	100.0%

CLASS 1	PASSENGER VEHICLES
CLASS 2	2-AXLE TRUCKS
CLASS 3	3-AXLE TRUCKS
CLASS 4	4 OR MORE AXLE TRUCKS
CLASS 5	RV
CLASS 6	BUS

A102423

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Tuesday, April 02, 2024 **CITY:** Apple Valley

JOB #: SC4523 **LOCATION:** CLASS4 Stoddard Wells Rd east of I-15 NB Ramps

AM TIME	COMBINED 1	2	3	4	5	6	TOTAL	PM Time	COMBINED 1	2	3	4	5	6	TOTAL
0:00	3	0	1	2	0	0	6	12:00	13	4	7	7	0	0	31
0:15	4	0	0	3	0	0	7	12:15	9	1	5	10	0	0	25
0:30	4	0	1	2	0	0	7	12:30	14	3	3	14	0	0	34
0:45	4	0	1	3	0	0	8	12:45	11	3	2	16	0	0	32
1:00	9	0	0	3	0	0	12	13:00	19	3	1	11	0	0	34
1:15	9	0	1	1	0	0	11	13:15	17	2	4	11	0	0	34
1:30	12	0	0	3	0	0	15	13:30	30	2	7	12	0	0	51
1:45	7	0	0	1	0	0	8	13:45	43	2	3	6	0	0	54
2:00	11	0	1	2	0	0	14	14:00	24	1	3	10	0	0	38
2:15	6	0	0	1	0	0	7	14:15	28	5	1	11	0	0	45
2:30	15	1	0	7	0	0	23	14:30	52	1	2	7	0	0	62
2:45	19	0	0	1	0	0	20	14:45	27	0	2	9	0	0	38
3:00	36	0	0	1	0	0	37	15:00	38	2	4	15	0	0	59
3:15	25	0	0	2	0	0	27	15:15	49	3	5	9	0	0	66
3:30	30	0	0	2	0	0	32	15:30	88	8	2	17	0	0	115
3:45	36	0	0	4	0	0	40	15:45	83	2	1	8	0	0	94
4:00	23	0	0	1	0	0	24	16:00	135	3	2	4	0	0	144
4:15	26	0	2	0	0	0	28	16:15	93	2	2	13	0	0	110
4:30	36	0	0	4	0	0	40	16:30	48	2	2	5	0	0	57
4:45	68	0	0	6	0	0	74	16:45	37	3	4	7	0	0	51
5:00	36	0	1	5	0	0	42	17:00	26	1	2	8	0	0	37
5:15	63	1	0	4	0	0	68	17:15	19	0	2	5	0	0	26
5:30	40	4	1	4	0	0	49	17:30	57	3	1	6	0	0	67
5:45	40	1	1	4	0	0	46	17:45	37	0	0	3	0	0	40
6:00	33	0	2	10	0	0	45	18:00	16	1	2	6	0	0	25
6:15	28	2	2	2	0	0	34	18:15	23	1	2	12	0	0	38
6:30	25	3	1	6	0	0	35	18:30	32	0	3	5	0	0	40
6:45	20	2	1	10	0	0	33	18:45	23	0	0	13	0	0	36
7:00	22	2	1	6	0	0	31	19:00	19	0	1	6	0	0	26
7:15	21	3	2	6	0	0	32	19:15	19	0	1	5	0	0	25
7:30	32	1	1	8	0	0	42	19:30	21	1	0	8	0	0	30
7:45	28	1	2	16	0	0	47	19:45	16	0	3	3	0	0	22
8:00	20	6	7	7	0	0	40	20:00	11	2	0	5	0	0	18
8:15	22	2	4	10	0	0	38	20:15	13	0	0	10	0	0	23
8:30	23	2	5	8	0	0	38	20:30	20	0	1	8	0	0	29
8:45	28	3	5	7	0	0	43	20:45	21	1	3	6	1	0	32
9:00	23	0	1	16	0	0	40	21:00	17	0	0	3	0	0	20
9:15	13	3	6	13	0	0	35	21:15	12	0	1	2	0	0	15
9:30	13	4	3	12	0	0	32	21:30	5	0	0	3	0	0	8
9:45	8	5	2	8	0	0	23	21:45	9	0	0	2	0	0	11
10:00	16	2	11	16	0	0	45	22:00	9	0	0	6	0	0	15
10:15	13	5	4	14	0	0	36	22:15	8	0	0	2	0	0	10
10:30	14	2	7	21	0	0	44	22:30	10	0	2	0	0	0	12
10:45	11	9	4	12	0	0	36	22:45	6	0	2	4	0	0	12
11:00	16	8	3	15	0	0	42	23:00	1	0	1	2	0	0	4
11:15	8	2	3	16	0	0	29	23:15	1	0	1	1	0	0	3
11:30	18	7	6	14	0	0	45	23:30	2	0	2	8	0	0	12
11:45	16	5	5	11	0	0	37	23:45	2	0	1	4	0	0	7
TOTAL	1,033	86	98	330	0	0	1,547	TOTAL	1,313	62	93	348	1	0	1,817

AM PEAK HOUR	4:45 AM
AM PEAK VOLUME	233

AM PEAK HOUR	3:30 PM
AM PEAK VOLUME	463

CLASS 1	PASSENGER VEHICLES
CLASS 2	2-AXLE TRUCKS
CLASS 3	3-AXLE TRUCKS
CLASS 4	4 OR MORE AXLE TRUCKS
CLASS 5	RV
CLASS 6	Buses

	1	2	3	4	5	6	TOTAL
TOTAL: AM+PM	2,346	148	191	678	1	0	3,364
% OF TOTAL	69.7%	4.4%	5.7%	20.2%	0.0%	0.0%	100.0%

31124

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Tuesday, April 02, 2024 **CITY:** Apple Valley

JOB #: SC4523 **LOCATION:** CLASS2 Johnson Rd west of Navajo Rd

AM	EB							PM	EB						
TIME	1	2	3	4	5	6	TOTAL	Time	1	2	3	4	5	6	TOTAL
0:00	3	3	0	1	0	0	7	12:00	6	2	0	1	0	1	10
0:15	3	0	0	0	0	0	3	12:15	1	1	0	0	0	0	2
0:30	1	1	1	1	0	0	4	12:30	0	1	0	0	0	0	1
0:45	2	0	1	1	0	0	4	12:45	1	0	0	3	0	0	4
1:00	2	0	0	0	0	0	2	13:00	3	2	1	5	0	1	12
1:15	1	0	1	1	0	0	3	13:15	3	3	0	0	0	0	6
1:30	2	0	0	0	0	0	2	13:30	3	4	0	1	0	0	8
1:45	2	0	0	1	0	0	3	13:45	4	0	0	3	0	0	7
2:00	5	1	0	0	0	0	6	14:00	10	2	0	2	0	1	15
2:15	0	1	1	1	0	0	3	14:15	13	3	0	3	0	0	19
2:30	1	0	1	2	0	0	4	14:30	7	1	0	2	0	0	10
2:45	4	0	0	0	0	0	4	14:45	12	3	0	0	0	0	15
3:00	17	4	0	0	0	0	21	15:00	10	4	0	1	0	0	15
3:15	2	0	0	1	0	0	3	15:15	16	9	0	1	0	1	27
3:30	4	1	0	1	0	0	6	15:30	13	10	0	4	0	0	27
3:45	0	1	0	1	0	0	2	15:45	22	8	0	1	0	0	31
4:00	2	1	0	1	0	0	4	16:00	29	0	0	0	0	0	29
4:15	0	1	0	0	0	0	1	16:15	16	2	1	3	0	1	23
4:30	3	1	0	0	0	0	4	16:30	18	1	0	0	0	0	19
4:45	9	1	0	1	0	0	11	16:45	21	0	0	0	0	0	21
5:00	2	0	1	1	0	0	4	17:00	14	2	0	1	0	0	17
5:15	3	1	0	0	0	0	4	17:15	16	0	1	0	0	1	18
5:30	9	0	0	3	0	0	12	17:30	13	0	1	1	0	0	15
5:45	12	1	0	2	0	0	15	17:45	18	1	0	1	0	0	20
6:00	8	3	0	0	0	0	11	18:00	8	3	1	0	0	0	12
6:15	1	1	0	2	0	0	4	18:15	2	4	0	2	0	1	9
6:30	4	2	0	0	0	1	7	18:30	4	1	0	1	0	0	6
6:45	4	2	0	2	0	0	8	18:45	7	2	0	0	0	0	9
7:00	4	1	0	1	0	1	7	19:00	2	3	0	1	0	1	7
7:15	8	0	0	0	0	0	8	19:15	7	2	0	2	0	0	11
7:30	18	0	0	0	0	0	18	19:30	8	0	0	0	0	0	8
7:45	11	0	0	1	0	0	12	19:45	6	1	0	1	0	0	8
8:00	3	0	0	1	0	1	5	20:00	4	0	0	1	0	1	6
8:15	9	1	0	2	0	0	12	20:15	4	1	0	0	0	0	5
8:30	8	1	0	1	0	0	10	20:30	7	0	0	2	0	0	9
8:45	16	0	0	2	0	0	18	20:45	4	1	1	0	0	1	7
9:00	6	2	0	2	0	1	11	21:00	2	0	0	0	0	0	2
9:15	5	1	0	0	0	0	6	21:15	1	1	0	1	0	0	3
9:30	2	2	0	3	0	0	7	21:30	2	1	0	1	0	0	4
9:45	3	1	0	1	0	0	5	21:45	5	1	0	1	0	0	7
10:00	1	2	1	3	0	0	7	22:00	2	4	0	1	0	0	7
10:15	3	3	2	1	0	1	10	22:15	2	1	0	2	0	0	5
10:30	7	1	1	2	0	0	11	22:30	1	0	0	1	0	0	2
10:45	3	1	1	0	0	0	5	22:45	1	0	0	0	0	0	1
11:00	1	6	0	2	0	2	11	23:00	0	0	0	1	0	0	1
11:15	3	0	0	1	0	0	4	23:15	3	0	1	1	0	0	5
11:30	1	1	0	0	0	0	2	23:30	0	1	1	0	0	0	2
11:45	2	2	0	1	0	0	5	23:45	1	1	0	2	0	0	4
TOTAL	220	51	11	47	0	7	336	TOTAL	352	87	8	54	0	10	511

AM PEAK HOUR	8:15 AM
AM PEAK VOLUME	51

AM PEAK HOUR	3:15 PM
AM PEAK VOLUME	114

CLASS 1	PASSENGER VEHICLES	TOTAL: AM+PM	572	138	19	101	0	17	847
CLASS 2	2-AXLE TRUCKS	% OF TOTAL	67.5%	16.3%	2.2%	11.9%	0.0%	2.0%	100.0%
CLASS 3	3-AXLE TRUCKS								
CLASS 4	4 OR MORE AXLE TRUCKS								
CLASS 5	RV	TOTAL: ALL	980	279	37	201	0	37	1,534
CLASS 6	Buses	% OF TOTAL	63.9%	18.2%	2.4%	13.1%	0.0%	2.4%	100.0%

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Tuesday, April 02, 2024
JOB #: SC4523
CITY: Apple Valley
LOCATION: CLASS2 Johnson Rd west of Navajo Rd

AM TIME	WB 1	2	3	4	5	6	TOTAL	PM Time	WB 1	2	3	4	5	6	TOTAL
0:00	0	0	0	0	0	0	0	12:00	2	2	1	0	0	0	5
0:15	0	0	1	1	0	0	2	12:15	1	1	0	0	0	0	2
0:30	0	0	0	1	0	0	1	12:30	2	0	0	2	0	1	5
0:45	0	1	0	1	0	0	2	12:45	1	2	0	0	0	0	3
1:00	0	1	0	2	0	0	3	13:00	1	1	0	2	0	0	4
1:15	3	1	0	2	0	0	6	13:15	5	2	1	1	0	0	9
1:30	3	1	0	1	0	0	5	13:30	5	1	0	1	0	1	8
1:45	1	1	0	1	0	0	3	13:45	4	2	0	1	0	1	8
2:00	2	1	0	0	0	0	3	14:00	3	3	0	0	0	0	6
2:15	2	2	0	0	0	0	4	14:15	5	1	0	1	0	0	7
2:30	2	3	0	3	0	0	8	14:30	8	1	0	2	0	1	12
2:45	0	0	0	2	0	0	2	14:45	1	3	0	1	0	0	5
3:00	2	1	0	0	0	0	3	15:00	5	3	1	2	0	0	11
3:15	2	0	0	1	0	0	3	15:15	1	2	0	0	0	0	3
3:30	6	2	0	2	0	0	10	15:30	6	2	0	0	0	1	9
3:45	3	0	0	1	0	0	4	15:45	6	3	0	3	0	0	12
4:00	2	1	0	1	0	0	4	16:00	17	0	1	1	0	0	19
4:15	6	2	1	0	0	0	9	16:15	31	0	0	0	0	0	31
4:30	2	3	0	2	0	0	7	16:30	9	1	1	2	0	1	14
4:45	5	4	1	2	0	0	12	16:45	6	1	2	1	0	0	10
5:00	9	6	0	0	0	1	16	17:00	2	0	0	4	0	0	6
5:15	9	6	0	0	0	0	15	17:15	4	0	0	1	0	0	5
5:30	2	7	0	0	0	0	9	17:30	27	0	0	0	0	1	28
5:45	5	2	0	0	0	0	7	17:45	3	0	0	2	0	0	5
6:00	9	2	0	0	0	1	12	18:00	4	1	0	1	0	0	6
6:15	5	3	0	2	0	0	10	18:15	8	5	0	1	0	0	14
6:30	4	1	0	1	0	1	7	18:30	6	1	0	1	0	1	9
6:45	1	2	0	0	0	0	3	18:45	8	1	0	3	0	0	12
7:00	5	1	0	2	0	0	8	19:00	4	3	0	1	0	0	8
7:15	3	0	0	1	0	1	5	19:15	5	1	0	0	0	0	6
7:30	8	0	1	2	0	1	12	19:30	5	0	0	1	0	1	7
7:45	9	1	0	0	0	0	10	19:45	4	1	0	0	0	0	5
8:00	2	3	0	1	0	0	6	20:00	0	0	0	1	0	0	1
8:15	5	1	0	2	0	0	8	20:15	2	3	0	1	0	0	6
8:30	6	1	1	1	0	1	10	20:30	14	1	0	0	0	1	16
8:45	2	0	0	3	0	0	5	20:45	10	5	0	0	0	0	15
9:00	7	1	1	3	0	0	12	21:00	7	3	0	0	0	0	10
9:15	5	0	0	1	0	0	6	21:15	3	2	0	1	0	0	6
9:30	0	2	0	3	0	2	7	21:30	1	0	0	1	0	0	2
9:45	0	0	0	2	0	0	2	21:45	3	0	0	1	0	0	4
10:00	1	1	0	2	0	0	4	22:00	5	1	0	1	0	0	7
10:15	1	1	1	0	0	0	3	22:15	0	1	0	1	0	0	2
10:30	3	1	0	1	0	1	6	22:30	1	1	0	1	0	0	3
10:45	6	4	0	1	0	0	11	22:45	0	0	1	0	0	0	1
11:00	9	1	0	1	0	0	11	23:00	0	0	0	0	0	0	0
11:15	2	1	0	1	0	0	4	23:15	1	1	1	0	0	0	3
11:30	2	4	1	1	0	1	9	23:30	0	0	0	1	0	0	1
11:45	1	3	1	1	0	0	6	23:45	0	0	0	1	0	0	1
TOTAL	162	79	9	55	0	10	315	**TOTAL**	246	62	9	45	0	10	372
				AM PEAK HOUR			4:45 AM					**AM PEAK HOUR**			3:45 PM
				AM PEAK VOLUME			52					**AM PEAK VOLUME**			76

CLASS 1	PASSENGER VEHICLES	**TOTAL: AM+PM**	408	141	18	100	0	20	687
CLASS 2	2-AXLE TRUCKS	**% OF TOTAL**	59.4%	20.5%	2.6%	14.6%	0.0%	2.9%	100.0%
CLASS 3	3-AXLE TRUCKS								
CLASS 4	4 OR MORE AXLE TRUCKS								
CLASS 5	RV								
CLASS 6	BUS								

31124

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Tuesday, April 02, 2024 **CITY:** Apple Valley

JOB #: SC4523 **LOCATION:** CLASS2 Johnson Rd west of Navajo Rd

AM	COMBINED							PM	COMBINED						
TIME	1	2	3	4	5	6	TOTAL	Time	1	2	3	4	5	6	TOTAL
0:00	3	3	0	1	0	0	7	12:00	8	4	1	1	0	1	15
0:15	3	0	1	1	0	0	5	12:15	2	2	0	0	0	0	4
0:30	1	1	1	2	0	0	5	12:30	2	1	0	2	0	1	6
0:45	2	1	1	2	0	0	6	12:45	2	2	0	3	0	0	7
1:00	2	1	0	2	0	0	5	13:00	4	3	1	7	0	1	16
1:15	4	1	1	3	0	0	9	13:15	8	5	1	1	0	0	15
1:30	5	1	0	1	0	0	7	13:30	8	5	0	2	0	1	16
1:45	3	1	0	2	0	0	6	13:45	8	2	0	4	0	1	15
2:00	7	2	0	0	0	0	9	14:00	13	5	0	2	0	1	21
2:15	2	3	1	1	0	0	7	14:15	18	4	0	4	0	0	26
2:30	3	3	1	5	0	0	12	14:30	15	2	0	4	0	1	22
2:45	4	0	0	2	0	0	6	14:45	13	6	0	1	0	0	20
3:00	19	5	0	0	0	0	24	15:00	15	7	1	3	0	0	26
3:15	4	0	0	2	0	0	6	15:15	17	11	0	1	0	1	30
3:30	10	3	0	3	0	0	16	15:30	19	12	0	4	0	1	36
3:45	3	1	0	2	0	0	6	15:45	28	11	0	4	0	0	43
4:00	4	2	0	2	0	0	8	16:00	46	0	1	1	0	0	48
4:15	6	3	1	0	0	0	10	16:15	47	2	1	3	0	1	54
4:30	5	4	0	2	0	0	11	16:30	27	2	1	2	0	1	33
4:45	14	5	1	3	0	0	23	16:45	27	1	2	1	0	0	31
5:00	11	6	1	1	0	1	20	17:00	16	2	0	5	0	0	23
5:15	12	7	0	0	0	0	19	17:15	20	0	1	1	0	1	23
5:30	11	7	0	3	0	0	21	17:30	40	0	1	1	0	1	43
5:45	17	3	0	2	0	0	22	17:45	21	1	0	3	0	0	25
6:00	17	5	0	0	0	1	23	18:00	12	4	1	1	0	0	18
6:15	6	4	0	4	0	0	14	18:15	10	9	0	3	0	1	23
6:30	8	3	0	1	0	2	14	18:30	10	2	0	2	0	1	15
6:45	5	4	0	2	0	0	11	18:45	15	3	0	3	0	0	21
7:00	9	2	0	3	0	1	15	19:00	6	6	0	2	0	1	15
7:15	11	0	0	1	0	1	13	19:15	12	3	0	2	0	0	17
7:30	26	0	1	2	0	1	30	19:30	13	0	0	1	0	1	15
7:45	20	1	0	1	0	0	22	19:45	10	2	0	1	0	0	13
8:00	5	3	0	2	0	1	11	20:00	4	0	0	2	0	1	7
8:15	14	2	0	4	0	0	20	20:15	6	4	0	1	0	0	11
8:30	14	2	1	2	0	1	20	20:30	21	1	0	2	0	1	25
8:45	18	0	0	5	0	0	23	20:45	14	6	1	0	0	1	22
9:00	13	3	1	5	0	1	23	21:00	9	3	0	0	0	0	12
9:15	10	1	0	1	0	0	12	21:15	4	3	0	2	0	0	9
9:30	2	4	0	6	0	2	14	21:30	3	1	0	2	0	0	6
9:45	3	1	0	3	0	0	7	21:45	8	1	0	2	0	0	11
10:00	2	3	1	5	0	0	11	22:00	7	5	0	2	0	0	14
10:15	4	4	3	1	0	1	13	22:15	2	2	0	3	0	0	7
10:30	10	2	1	3	0	1	17	22:30	2	1	0	2	0	0	5
10:45	9	5	1	1	0	0	16	22:45	1	0	1	0	0	0	2
11:00	10	7	0	3	0	2	22	23:00	0	0	0	1	0	0	1
11:15	5	1	0	2	0	0	8	23:15	4	1	2	1	0	0	8
11:30	3	5	1	1	0	1	11	23:30	0	1	1	1	0	0	3
11:45	3	5	1	2	0	0	11	23:45	1	1	0	3	0	0	5
TOTAL	382	130	20	102	0	17	651	TOTAL	598	149	17	99	0	20	883

AM PEAK HOUR	8:15 AM
AM PEAK VOLUME	86

AM PEAK HOUR	3:30 PM
AM PEAK VOLUME	181

TOTAL: AM+PM	980	279	37	201	0	37	1,534		
% OF TOTAL	63.9%	18.2%	2.4%	13.1%	0.0%	2.4%	100.0%		

CLASS 1	PASSENGER VEHICLES
CLASS 2	2-AXLE TRUCKS
CLASS 3	3-AXLE TRUCKS
CLASS 4	4 OR MORE AXLE TRUCKS
CLASS 5	RV
CLASS 6	Buses

Counts Unlimited, Inc.

PO Box 1178
Corona, CA 92878
Phone: (951) 268-6268
email: counts@countsunlimited.com

Town of Apple Valley
Johnson Road
W/ Central Road
24 Hour Directional Classification Count

APV003
Site Code: 051-24070

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
01/30/24	0	10	0	0	0	0	0	0	0	0	0	0	0	10
01:00	0	13	0	0	0	0	0	0	1	0	0	0	0	14
02:00	0	5	0	0	0	0	0	0	1	0	0	0	0	6
03:00	0	**17**	2	0	0	0	0	0	0	0	0	0	0	**19**
04:00	0	7	1	0	0	0	0	0	1	0	0	0	0	9
05:00	0	7	1	0	0	0	0	**1**	1	0	0	0	0	10
06:00	0	11	6	0	0	**1**	0	1	0	0	0	0	0	19
07:00	0	7	4	0	0	0	0	0	1	0	0	0	0	12
08:00	0	9	2	0	0	0	0	0	0	0	0	0	0	11
09:00	0	6	1	0	0	1	0	0	0	0	0	0	0	8
10:00	**1**	9	5	0	0	0	0	0	**2**	0	0	0	0	17
11:00	0	2	**8**	0	**1**	0	0	1	2	0	0	0	0	14
12 PM	0	18	5	0	**2**	0	0	0	0	0	0	0	0	25
13:00	0	20	8	0	1	0	0	0	**1**	0	0	0	0	30
14:00	0	21	9	0	1	0	0	**1**	0	0	0	0	0	32
15:00	**1**	52	17	0	2	0	0	1	1	0	0	0	0	74
16:00	0	**56**	**25**	0	0	**1**	0	0	0	0	0	0	0	**82**
17:00	0	43	11	0	0	0	0	0	1	0	0	0	0	55
18:00	0	26	2	0	0	0	0	1	1	0	0	0	0	30
19:00	0	14	0	0	0	0	0	0	1	0	0	0	0	15
20:00	0	8	0	0	0	0	0	0	0	0	0	0	0	8
21:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
22:00	0	14	0	0	0	0	0	0	0	0	0	0	0	14
23:00	0	7	0	0	0	0	0	0	0	0	0	0	0	7
Total	2	386	107	0	7	3	0	6	14	0	0	0	0	525
Percent	0.4%	73.5%	20.4%	0.0%	1.3%	0.6%	0.0%	1.1%	2.7%	0.0%	0.0%	0.0%	0.0%	
AM Peak	10:00	03:00	11:00		11:00	06:00		05:00	10:00					03:00
Vol.	1	17	8		1	1		1	2					19
PM Peak	15:00	16:00	16:00		12:00	16:00		14:00	13:00					16:00
Vol.	1	56	25		2	1		1	1					82
Grand Total	2	386	107	0	7	3	0	6	14	0	0	0	0	525
Percent	0.4%	73.5%	20.4%	0.0%	1.3%	0.6%	0.0%	1.1%	2.7%	0.0%	0.0%	0.0%	0.0%	

Counts Unlimited, Inc.

PO Box 1178
Corona, CA 92878
Phone: (951) 268-6268
email: counts@countsunlimited.com

Town of Apple Valley
Johnson Road
W/ Central Road
24 Hour Directional Classification Count

APV003
Site Code: 051-24070

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
01/30/24	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:00	0	0	0	0	1	0	0	0	0	0	0	0	0	1
02:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
03:00	0	6	1	0	0	0	0	0	0	0	0	0	0	7
04:00	0	32	7	0	0	0	0	**1**	0	0	0	0	0	40
05:00	0	**42**	**14**	0	0	0	0	0	0	0	0	0	0	**56**
06:00	0	28	5	1	0	0	0	0	**1**	0	0	0	0	35
07:00	0	31	5	1	0	0	0	0	1	0	0	0	0	38
08:00	0	17	6	**2**	1	0	0	0	1	0	0	0	0	27
09:00	0	16	3	0	0	0	0	1	0	0	0	0	0	20
10:00	**1**	9	3	0	2	0	0	0	0	0	0	0	0	15
11:00	1	8	2	0	**3**	0	0	0	1	0	0	0	0	15
12 PM	0	13	6	0	0	0	0	0	**2**	0	0	0	0	21
13:00	**1**	13	**9**	0	0	0	0	0	0	0	0	0	0	23
14:00	0	10	6	0	**1**	0	0	0	1	0	0	0	0	18
15:00	0	18	9	**1**	0	1	0	0	1	0	0	0	0	30
16:00	0	**40**	9	0	1	**2**	0	**2**	1	0	0	0	0	**55**
17:00	0	13	2	0	0	0	0	0	0	0	0	0	0	15
18:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
19:00	1	7	0	0	0	0	0	0	2	0	0	0	0	10
20:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
21:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
22:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
23:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
Total	4	324	87	5	9	3	0	4	11	0	0	0	0	447
Percent	0.9%	72.5%	19.5%	1.1%	2.0%	0.7%	0.0%	0.9%	2.5%	0.0%	0.0%	0.0%	0.0%	
AM Peak	10:00	05:00	05:00	08:00	11:00			04:00	06:00					05:00
Vol.	1	42	14	2	3			1	1					56
PM Peak	13:00	16:00	13:00	15:00	14:00	16:00		16:00	12:00					16:00
Vol.	1	40	9	1	1	2		2	2					55
Grand Total	4	324	87	5	9	3	0	4	11	0	0	0	0	447
Percent	0.9%	72.5%	19.5%	1.1%	2.0%	0.7%	0.0%	0.9%	2.5%	0.0%	0.0%	0.0%	0.0%	

Counts Unlimited, Inc.

PO Box 1178
Corona, CA 92878
Phone: (951) 268-6268
email: counts@countsunlimited.com

Town of Apple Valley
Johnson Road
W/ Central Road
24 Hour Directional Classification Count

APV003
Site Code: 051-24070

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
01/30/24	0	11	0	0	0	0	0	0	0	0	0	0	0	11
01:00	0	13	0	0	1	0	0	0	1	0	0	0	0	15
02:00	0	9	0	0	0	0	0	0	1	0	0	0	0	10
03:00	0	23	3	0	0	0	0	0	0	0	0	0	0	26
04:00	0	39	8	0	0	0	0	**1**	1	0	0	0	0	49
05:00	0	**49**	**15**	0	0	0	0	1	1	0	0	0	0	**66**
06:00	0	39	11	1	0	**1**	0	1	1	0	0	0	0	54
07:00	0	38	9	1	0	0	0	0	2	0	0	0	0	50
08:00	0	26	8	**2**	1	0	0	0	1	0	0	0	0	38
09:00	0	22	4	0	0	1	0	1	0	0	0	0	0	28
10:00	**2**	18	8	0	2	0	0	0	2	0	0	0	0	32
11:00	1	10	10	0	**4**	0	0	1	**3**	0	0	0	0	29
12 PM	0	31	11	0	**2**	0	0	0	2	0	0	0	0	46
13:00	**1**	33	17	0	1	0	0	0	1	0	0	0	0	53
14:00	0	31	15	0	2	0	0	1	1	0	0	0	0	50
15:00	1	70	26	**1**	2	1	0	1	2	0	0	0	0	104
16:00	0	**96**	**34**	0	1	**3**	0	**2**	1	0	0	0	0	**137**
17:00	0	56	13	0	0	0	0	0	1	0	0	0	0	70
18:00	0	30	2	0	0	0	0	1	1	0	0	0	0	34
19:00	1	21	0	0	0	0	0	0	**3**	0	0	0	0	25
20:00	0	12	0	0	0	0	0	0	0	0	0	0	0	12
21:00	0	7	0	0	0	0	0	0	0	0	0	0	0	7
22:00	0	17	0	0	0	0	0	0	0	0	0	0	0	17
23:00	0	9	0	0	0	0	0	0	0	0	0	0	0	9
Total	6	710	194	5	16	6	0	10	25	0	0	0	0	972
Percent	0.6%	73.0%	20.0%	0.5%	1.6%	0.6%	0.0%	1.0%	2.6%	0.0%	0.0%	0.0%	0.0%	
AM Peak	10:00	05:00	05:00	08:00	11:00	06:00		04:00	11:00					05:00
Vol.	2	49	15	2	4	1		1	3					66
PM Peak	13:00	16:00	16:00	15:00	12:00	16:00		16:00	19:00					16:00
Vol.	1	96	34	1	2	3		2	3					137
Grand Total	6	710	194	5	16	6	0	10	25	0	0	0	0	972
Percent	0.6%	73.0%	20.0%	0.5%	1.6%	0.6%	0.0%	1.0%	2.6%	0.0%	0.0%	0.0%	0.0%	

A102423

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Tuesday, April 02, 2024 **CITY:** Apple Valley

JOB #: SC4523 **LOCATION:** CLASS3 Dale Evans Pkwy south of Johnson Rd

AM	NB						
TIME	1	2	3	4	5	6	TOTAL
0:00	3	0	0	1	0	0	4
0:15	6	0	0	0	0	0	6
0:30	2	0	0	0	0	0	2
0:45	5	0	0	0	0	0	5
1:00	1	0	0	1	0	0	2
1:15	2	0	0	0	0	0	2
1:30	4	0	0	0	0	0	4
1:45	0	0	0	0	0	0	0
2:00	6	0	0	0	0	0	6
2:15	1	0	0	0	0	0	1
2:30	9	0	0	1	0	0	10
2:45	10	0	0	0	0	0	10
3:00	2	1	0	0	0	0	3
3:15	11	0	0	0	0	0	11
3:30	10	0	0	0	0	0	10
3:45	10	0	0	0	0	0	10
4:00	11	0	0	0	0	0	11
4:15	19	0	0	0	0	0	19
4:30	19	0	0	1	0	0	20
4:45	33	0	0	1	0	0	34
5:00	35	1	0	0	0	0	36
5:15	49	5	0	0	0	0	54
5:30	52	0	0	0	0	0	52
5:45	29	1	0	0	0	0	30
6:00	22	0	1	2	0	0	25
6:15	33	1	0	0	0	1	35
6:30	33	1	0	0	0	0	34
6:45	26	1	1	1	0	0	29
7:00	25	6	0	0	0	1	32
7:15	37	2	0	2	0	0	41
7:30	34	2	1	2	0	1	40
7:45	27	2	0	1	0	0	30
8:00	26	1	1	0	0	1	29
8:15	19	2	1	0	0	1	23
8:30	22	0	1	1	0	0	24
8:45	21	1	0	1	0	1	24
9:00	17	1	0	4	0	1	23
9:15	14	2	2	3	0	0	21
9:30	16	2	1	1	0	0	20
9:45	23	3	0	2	0	0	28
10:00	16	1	1	0	1	1	20
10:15	15	2	1	2	0	0	20
10:30	12	2	2	1	0	0	17
10:45	17	1	0	2	0	0	20
11:00	9	2	0	0	0	1	12
11:15	11	1	0	0	0	0	12
11:30	15	3	0	1	0	0	19
11:45	23	1	2	0	0	0	26
TOTAL	842	48	15	31	1	9	946

AM PEAK HOUR	4:45 AM
AM PEAK VOLUME	176

PM	NB						
Time	1	2	3	4	5	6	TOTAL
12:00	25	2	1	0	0	1	29
12:15	20	0	1	1	0	0	22
12:30	15	1	0	1	0	0	17
12:45	20	1	1	3	0	0	25
13:00	17	0	0	1	0	1	19
13:15	25	1	1	1	0	0	28
13:30	26	1	0	1	0	1	29
13:45	23	1	0	2	0	0	26
14:00	31	2	0	0	1	1	35
14:15	34	1	0	2	0	1	38
14:30	33	0	0	0	0	2	35
14:45	18	2	0	1	0	0	21
15:00	18	1	2	0	0	2	23
15:15	23	0	0	0	0	1	24
15:30	39	1	0	1	0	0	41
15:45	22	0	0	1	0	0	23
16:00	26	0	0	1	0	0	27
16:15	42	0	0	1	0	1	44
16:30	28	0	0	2	0	0	30
16:45	30	0	1	0	0	0	31
17:00	13	0	0	1	0	0	14
17:15	11	1	0	1	0	1	14
17:30	16	0	0	1	0	0	17
17:45	23	0	0	0	0	0	23
18:00	12	0	0	0	0	0	12
18:15	13	1	0	1	0	1	16
18:30	14	0	0	1	1	0	16
18:45	9	0	0	1	0	0	10
19:00	7	0	0	0	0	1	8
19:15	10	0	0	1	0	0	11
19:30	11	0	1	1	0	0	13
19:45	8	0	1	2	0	0	11
20:00	11	0	0	1	0	1	13
20:15	16	0	0	0	0	0	16
20:30	12	1	1	0	0	0	14
20:45	6	0	0	0	0	0	6
21:00	11	0	0	0	0	0	11
21:15	13	0	0	0	0	0	13
21:30	5	0	0	0	0	0	5
21:45	8	0	0	0	0	0	8
22:00	12	0	0	0	0	0	12
22:15	6	0	0	0	0	0	6
22:30	4	0	0	1	0	0	5
22:45	3	0	0	0	0	0	3
23:00	0	0	0	0	0	0	0
23:15	5	0	0	0	0	0	5
23:30	5	0	0	0	0	0	5
23:45	2	0	0	0	0	0	2
TOTAL	781	17	10	31	2	15	856

AM PEAK HOUR	3:30 PM
AM PEAK VOLUME	135

CLASS 1	PASSENGER VEHICLES
CLASS 2	2-AXLE TRUCKS
CLASS 3	3-AXLE TRUCKS
CLASS 4	4 OR MORE AXLE TRUCKS
CLASS 5	RV
CLASS 6	Buses

TOTAL: AM+PM	1,623	65	25	62	3	24	1,802
% OF TOTAL	90.1%	3.6%	1.4%	3.4%	0.2%	1.3%	100.0%
TOTAL: ALL	3,407	137	55	124	4	52	3,779
% OF TOTAL	90.2%	3.6%	1.5%	3.3%	0.1%	1.4%	100.0%

A102423

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Tuesday, April 02, 2024
JOB #: SC4523
CITY: Apple Valley
LOCATION: CLASS3 Dale Evans Pkwy south of Johnson Rd

AM TIME	SB 1	2	3	4	5	6	TOTAL
0:00	7	0	0	0	0	0	7
0:15	0	0	0	0	0	0	0
0:30	5	0	0	0	0	0	5
0:45	7	1	0	2	0	0	10
1:00	9	0	0	0	0	0	9
1:15	6	0	0	0	0	0	6
1:30	2	0	0	0	0	0	2
1:45	3	0	0	0	0	0	3
2:00	4	1	0	0	0	0	5
2:15	4	0	0	0	0	0	4
2:30	2	0	0	0	0	0	2
2:45	16	0	0	1	0	0	17
3:00	29	0	0	1	0	0	30
3:15	10	0	0	0	0	0	10
3:30	10	0	0	0	0	0	10
3:45	14	0	0	0	0	0	14
4:00	9	0	0	0	0	0	9
4:15	6	0	0	0	0	0	6
4:30	7	0	0	0	0	0	7
4:45	26	1	0	1	0	0	28
5:00	7	0	0	1	0	0	8
5:15	10	0	0	0	0	0	10
5:30	16	1	0	1	0	0	18
5:45	18	0	0	0	0	0	18
6:00	7	0	0	0	0	0	7
6:15	9	1	0	1	0	1	12
6:30	11	0	1	0	0	1	13
6:45	6	0	0	0	0	0	6
7:00	13	1	0	0	0	0	14
7:15	17	0	0	1	0	0	18
7:30	13	0	1	0	0	2	16
7:45	11	1	0	2	0	2	16
8:00	5	2	0	0	0	2	9
8:15	11	2	0	0	0	0	13
8:30	15	0	2	2	0	2	21
8:45	18	1	0	0	0	0	19
9:00	12	1	0	2	0	0	15
9:15	15	0	1	1	0	0	17
9:30	19	1	0	0	0	1	21
9:45	12	1	0	1	0	0	14
10:00	17	1	2	1	0	0	21
10:15	14	3	0	1	0	0	18
10:30	22	0	2	4	0	1	29
10:45	17	1	0	1	0	0	19
11:00	21	1	0	1	0	0	23
11:15	16	2	0	1	0	0	19
11:30	22	0	2	1	0	1	26
11:45	23	1	1	1	0	0	26
TOTAL	573	24	12	28	0	13	650

AM PEAK HOUR	11:00 AM
AM PEAK VOLUME	94

PM Time	SB 1	2	3	4	5	6	TOTAL
12:00	23	1	3	1	0	0	28
12:15	23	1	1	1	0	0	26
12:30	23	0	1	3	0	1	28
12:45	22	2	0	2	0	0	26
13:00	16	3	0	1	0	0	20
13:15	14	1	0	1	0	0	16
13:30	25	1	1	2	0	1	30
13:45	21	2	0	0	0	1	24
14:00	18	2	2	0	1	1	24
14:15	26	0	2	0	0	0	28
14:30	31	1	0	1	0	2	35
14:45	37	2	1	2	0	1	43
15:00	29	2	1	2	0	0	34
15:15	44	4	0	1	0	1	50
15:30	51	3	0	0	0	1	55
15:45	53	5	1	0	0	0	59
16:00	67	2	1	0	0	1	71
16:15	52	4	0	0	0	0	56
16:30	57	2	0	2	0	1	62
16:45	55	1	1	2	0	0	59
17:00	56	1	0	1	0	0	58
17:15	45	2	0	1	0	0	48
17:30	38	0	1	0	0	1	40
17:45	38	2	0	0	0	0	40
18:00	31	1	0	1	0	0	33
18:15	28	0	0	0	0	0	28
18:30	25	1	0	0	0	1	27
18:45	20	0	0	2	0	0	22
19:00	27	0	1	0	0	0	28
19:15	18	0	0	1	0	0	19
19:30	18	1	0	0	0	1	20
19:45	21	1	0	0	0	0	22
20:00	13	0	0	0	0	0	13
20:15	13	0	0	0	0	0	13
20:30	16	0	0	1	0	1	18
20:45	19	0	0	1	0	0	20
21:00	15	0	1	0	0	0	16
21:15	12	0	0	1	0	0	13
21:30	9	0	0	0	0	0	9
21:45	5	0	0	0	0	0	5
22:00	7	0	0	2	0	0	9
22:15	2	0	0	1	0	0	3
22:30	8	0	0	0	0	0	8
22:45	9	0	0	0	0	0	9
23:00	10	0	0	0	0	0	10
23:15	13	0	0	0	0	0	13
23:30	7	0	0	0	0	0	7
23:45	1	0	0	1	0	0	2
TOTAL	1,211	48	18	34	1	15	1,327

AM PEAK HOUR	4:00 PM
AM PEAK VOLUME	248

TOTAL: AM+PM	1,784	72	30	62	1	28	1,977
% OF TOTAL	90.2%	3.6%	1.5%	3.1%	0.1%	1.4%	100.0%

CLASS 1	PASSENGER VEHICLES
CLASS 2	2-AXLE TRUCKS
CLASS 3	3-AXLE TRUCKS
CLASS 4	4 OR MORE AXLE TRUCKS
CLASS 5	RV
CLASS 6	BUS

A102423

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Tuesday, April 02, 2024 **CITY:** Apple Valley

JOB #: SC4523 **LOCATION:** CLASS3 Dale Evans Pkwy south of Johnson Rd

AM TIME	COMBINED 1	2	3	4	5	6	TOTAL	PM Time	COMBINED 1	2	3	4	5	6	TOTAL
0:00	10	0	0	1	0	0	11	12:00	48	3	4	1	0	1	57
0:15	6	0	0	0	0	0	6	12:15	43	1	2	2	0	0	48
0:30	7	0	0	0	0	0	7	12:30	38	1	1	4	0	1	45
0:45	12	1	0	2	0	0	15	12:45	42	3	1	5	0	0	51
1:00	10	0	0	1	0	0	11	13:00	33	3	0	2	0	1	39
1:15	8	0	0	0	0	0	8	13:15	39	2	1	2	0	0	44
1:30	6	0	0	0	0	0	6	13:30	51	2	1	3	0	2	59
1:45	3	0	0	0	0	0	3	13:45	44	3	0	2	0	1	50
2:00	10	1	0	0	0	0	11	14:00	49	4	2	0	2	2	59
2:15	5	0	0	0	0	0	5	14:15	60	1	2	2	0	1	66
2:30	11	0	0	1	0	0	12	14:30	64	1	0	1	0	4	70
2:45	26	0	0	1	0	0	27	14:45	55	4	1	3	0	1	64
3:00	31	1	0	1	0	0	33	15:00	47	3	3	2	0	2	57
3:15	21	0	0	0	0	0	21	15:15	67	4	0	1	0	2	74
3:30	20	0	0	0	0	0	20	15:30	90	4	0	1	0	1	96
3:45	24	0	0	0	0	0	24	15:45	75	5	1	1	0	0	82
4:00	20	0	0	0	0	0	20	16:00	93	2	1	1	0	1	98
4:15	25	0	0	0	0	0	25	16:15	94	4	0	1	0	1	100
4:30	26	0	0	1	0	0	27	16:30	85	2	0	4	0	1	92
4:45	59	1	0	2	0	0	62	16:45	85	1	2	2	0	0	90
5:00	42	1	0	1	0	0	44	17:00	69	1	0	2	0	0	72
5:15	59	5	0	0	0	0	64	17:15	56	3	0	2	0	1	62
5:30	68	1	0	1	0	0	70	17:30	54	0	1	1	0	1	57
5:45	47	1	0	0	0	0	48	17:45	61	2	0	0	0	0	63
6:00	29	0	1	2	0	0	32	18:00	43	1	0	1	0	0	45
6:15	42	2	0	1	0	2	47	18:15	41	1	0	1	0	1	44
6:30	44	1	1	0	0	1	47	18:30	39	1	0	1	1	1	43
6:45	32	1	1	1	0	0	35	18:45	29	0	0	3	0	0	32
7:00	38	7	0	0	0	1	46	19:00	34	0	1	0	0	1	36
7:15	54	2	0	3	0	0	59	19:15	28	0	0	2	0	0	30
7:30	47	2	2	2	0	3	56	19:30	29	1	1	1	0	1	33
7:45	38	3	0	3	0	2	46	19:45	29	1	1	2	0	0	33
8:00	31	3	1	0	0	3	38	20:00	24	0	0	1	0	1	26
8:15	30	4	1	0	0	1	36	20:15	29	0	0	0	0	0	29
8:30	37	0	3	3	0	2	45	20:30	28	1	1	1	0	1	32
8:45	39	2	0	1	0	1	43	20:45	25	0	0	1	0	0	26
9:00	29	2	0	6	0	1	38	21:00	26	0	1	0	0	0	27
9:15	29	2	3	4	0	0	38	21:15	25	0	0	1	0	0	26
9:30	35	3	1	1	0	1	41	21:30	14	0	0	0	0	0	14
9:45	35	4	0	3	0	0	42	21:45	13	0	0	0	0	0	13
10:00	33	2	3	1	1	1	41	22:00	19	0	0	2	0	0	21
10:15	29	5	1	3	0	0	38	22:15	8	0	0	1	0	0	9
10:30	34	2	4	5	0	1	46	22:30	12	0	0	1	0	0	13
10:45	34	2	0	3	0	0	39	22:45	12	0	0	0	0	0	12
11:00	30	3	0	1	0	1	35	23:00	10	0	0	0	0	0	10
11:15	27	3	0	1	0	0	31	23:15	18	0	0	0	0	0	18
11:30	37	3	2	2	0	1	45	23:30	12	0	0	0	0	0	12
11:45	46	2	3	1	0	0	52	23:45	3	0	0	1	0	0	4
TOTAL	1,415	72	27	59	1	22	1,596	TOTAL	1,992	65	28	65	3	30	2,183

AM PEAK HOUR	4:45 AM	PM PEAK HOUR	4:00 PM
AM PEAK VOLUME	240	AM PEAK VOLUME	380

TOTAL: AM+PM	3,407	137	55	124	4	52	3,779
% OF TOTAL	90.2%	3.6%	1.5%	3.3%	0.1%	1.4%	100.0%

CLASS 1	PASSENGER VEHICLES
CLASS 2	2-AXLE TRUCKS
CLASS 3	3-AXLE TRUCKS
CLASS 4	4 OR MORE AXLE TRUCKS
CLASS 5	RV
CLASS 6	Buses

31124

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Tuesday, April 02, 2024 **CITY:** Apple Valley

JOB #: SC4523 **LOCATION:** CLASS1 Navajo Rd north of Los Padres Rd

AM TIME	NB 1	2	3	4	5	6	TOTAL
0:00	1	0	0	0	0	0	1
0:15	0	0	0	0	0	0	0
0:30	0	0	0	0	0	0	0
0:45	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0
1:15	0	0	0	0	0	0	0
1:30	0	0	0	0	0	0	0
1:45	1	0	0	0	0	0	1
2:00	1	0	0	0	0	0	1
2:15	0	0	0	0	0	0	0
2:30	0	0	0	0	0	0	0
2:45	0	0	0	0	0	0	0
3:00	1	0	0	0	0	0	1
3:15	0	0	0	0	0	0	0
3:30	3	0	0	0	0	0	3
3:45	1	0	0	0	0	0	1
4:00	1	0	0	0	0	0	1
4:15	2	0	0	0	0	0	2
4:30	6	1	0	0	0	0	7
4:45	8	0	0	0	0	0	8
5:00	0	0	0	0	0	0	0
5:15	3	1	0	0	0	0	4
5:30	0	0	0	0	0	0	0
5:45	2	1	0	0	0	0	3
6:00	2	0	0	0	0	0	2
6:15	0	0	0	0	0	0	0
6:30	0	0	0	0	0	0	0
6:45	1	0	0	0	0	0	1
7:00	1	0	0	0	0	0	1
7:15	0	1	0	0	0	0	1
7:30	1	0	0	0	0	0	1
7:45	1	0	0	0	0	0	1
8:00	0	0	0	0	0	0	0
8:15	2	0	0	0	0	0	2
8:30	1	0	0	0	0	0	1
8:45	2	0	0	0	0	0	2
9:00	1	2	0	0	0	0	3
9:15	2	0	1	0	0	0	3
9:30	3	1	0	0	0	0	4
9:45	4	0	0	0	0	0	4
10:00	2	0	0	0	0	0	2
10:15	1	1	0	0	0	0	2
10:30	2	0	0	0	0	0	2
10:45	0	0	0	0	0	0	0
11:00	0	0	0	0	0	0	0
11:15	1	0	0	0	0	0	1
11:30	1	1	0	0	0	0	2
11:45	2	0	0	0	0	0	2
TOTAL	60	9	1	0	0	0	70

AM PEAK HOUR	4:30 AM
AM PEAK VOLUME	19

PM Time	NB 1	2	3	4	5	6	TOTAL
12:00	0	0	0	0	0	0	0
12:15	1	0	0	0	0	0	1
12:30	0	1	0	0	0	0	1
12:45	0	1	0	0	0	0	1
13:00	1	0	0	0	0	0	1
13:15	0	0	0	0	0	0	0
13:30	3	0	0	0	0	0	3
13:45	2	1	0	0	0	0	3
14:00	0	1	0	0	0	0	1
14:15	4	0	0	0	0	0	4
14:30	3	0	0	0	0	0	3
14:45	2	2	0	0	0	0	4
15:00	0	0	0	1	0	0	1
15:15	8	4	1	0	0	0	13
15:30	3	2	0	0	0	0	5
15:45	4	0	0	0	0	0	4
16:00	3	2	0	0	0	0	5
16:15	5	0	1	0	0	0	6
16:30	2	0	0	0	0	0	2
16:45	2	0	0	0	0	0	2
17:00	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0
17:30	1	0	0	0	0	0	1
17:45	1	0	0	0	0	0	1
18:00	0	0	0	0	0	0	0
18:15	1	0	0	0	0	0	1
18:30	1	0	0	0	0	0	1
18:45	0	0	0	0	0	0	0
19:00	1	0	0	0	0	0	1
19:15	1	1	0	0	0	0	2
19:30	1	0	0	0	0	0	1
19:45	0	1	0	0	0	0	1
20:00	0	0	0	0	0	0	0
20:15	2	0	0	0	0	0	2
20:30	1	0	0	0	0	0	1
20:45	0	0	0	0	0	0	0
21:00	0	0	0	0	0	0	0
21:15	2	0	0	0	0	0	2
21:30	1	0	0	0	0	0	1
21:45	1	0	0	0	0	0	1
22:00	0	0	0	0	0	0	0
22:15	0	0	0	0	0	0	0
22:30	0	0	0	0	0	0	0
22:45	0	0	0	0	0	0	0
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	0	0	0	0	0	0	0
TOTAL	57	16	2	1	0	0	76

AM PEAK HOUR	3:15 PM
AM PEAK VOLUME	27

CLASS 1	PASSENGER VEHICLES	TOTAL: AM+PM	117	25	3	1	0	0	146
CLASS 2	2-AXLE TRUCKS	% OF TOTAL	80.1%	17.1%	2.1%	0.7%	0.0%	0.0%	100.0%
CLASS 3	3-AXLE TRUCKS								
CLASS 4	4 OR MORE AXLE TRUCKS								
CLASS 5	RV	TOTAL: ALL	305	66	4	2	0	0	377
CLASS 6	Buses	% OF TOTAL	80.9%	17.5%	1.1%	0.5%	0.0%	0.0%	100.0%

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Tuesday, April 02, 2024
JOB #: SC4523
CITY: Apple Valley
LOCATION: CLASS1 Navajo Rd north of Los Padres Rd

AM TIME	SB 1	2	3	4	5	6	TOTAL	PM Time	SB 1	2	3	4	5	6	TOTAL
0:00	0	0	0	0	0	0	0	12:00	0	0	0	0	0	0	0
0:15	1	0	0	0	0	0	1	12:15	1	0	0	0	0	0	1
0:30	1	1	0	0	0	0	2	12:30	1	2	0	0	0	0	3
0:45	0	0	0	0	0	0	0	12:45	3	0	0	0	0	0	3
1:00	2	0	0	0	0	0	2	13:00	1	0	0	0	0	0	1
1:15	0	0	0	0	0	0	0	13:15	1	1	0	0	0	0	2
1:30	1	0	0	0	0	0	1	13:30	7	2	0	0	0	0	9
1:45	2	0	0	0	0	0	2	13:45	6	1	0	0	0	0	7
2:00	2	0	0	0	0	0	2	14:00	3	0	0	0	0	0	3
2:15	1	0	0	0	0	0	1	14:15	5	1	0	0	0	0	6
2:30	0	0	0	0	0	0	0	14:30	10	3	0	0	0	0	13
2:45	0	0	0	0	0	0	0	14:45	5	1	0	0	0	0	6
3:00	5	1	0	0	0	0	6	15:00	4	0	0	1	0	0	5
3:15	4	0	0	0	0	0	4	15:15	5	1	0	0	0	0	6
3:30	3	0	0	0	0	0	3	15:30	10	0	0	0	0	0	10
3:45	4	0	0	0	0	0	4	15:45	2	0	0	0	0	0	2
4:00	4	0	0	0	0	0	4	16:00	4	5	0	0	0	0	9
4:15	1	0	0	0	0	0	1	16:15	0	0	0	0	0	0	0
4:30	0	0	0	0	0	0	0	16:30	4	0	0	0	0	0	4
4:45	2	0	0	0	0	0	2	16:45	1	0	0	0	0	0	1
5:00	0	0	0	0	0	0	0	17:00	0	0	0	0	0	0	0
5:15	0	2	0	0	0	0	2	17:15	2	0	0	0	0	0	2
5:30	1	0	0	0	0	0	1	17:30	5	0	0	0	0	0	5
5:45	1	1	0	0	0	0	2	17:45	5	1	0	0	0	0	6
6:00	0	0	0	0	0	0	0	18:00	1	1	0	0	0	0	2
6:15	0	0	0	0	0	0	0	18:15	1	0	0	0	0	0	1
6:30	0	0	0	0	0	0	0	18:30	7	1	0	0	0	0	8
6:45	0	0	0	0	0	0	0	18:45	5	0	0	0	0	0	5
7:00	0	0	0	0	0	0	0	19:00	0	1	0	0	0	0	1
7:15	0	0	0	0	0	0	0	19:15	0	0	0	0	0	0	0
7:30	1	1	0	0	0	0	2	19:30	1	0	0	0	0	0	1
7:45	1	1	0	0	0	0	2	19:45	1	0	0	0	0	0	1
8:00	2	4	0	0	0	0	6	20:00	5	0	0	0	0	0	5
8:15	1	0	0	0	0	0	1	20:15	2	1	0	0	0	0	3
8:30	1	0	1	0	0	0	2	20:30	2	0	0	0	0	0	2
8:45	2	1	0	0	0	0	3	20:45	0	0	0	0	0	0	0
9:00	2	1	0	0	0	0	3	21:00	4	0	0	0	0	0	4
9:15	2	0	0	0	0	0	2	21:15	1	0	0	0	0	0	1
9:30	3	0	0	0	0	0	3	21:30	0	0	0	0	0	0	0
9:45	2	0	0	0	0	0	2	21:45	0	0	0	0	0	0	0
10:00	1	1	0	0	0	0	2	22:00	0	0	0	0	0	0	0
10:15	4	1	0	0	0	0	5	22:15	0	0	0	0	0	0	0
10:30	1	0	0	0	0	0	1	22:30	3	0	0	0	0	0	3
10:45	2	0	0	0	0	0	2	22:45	0	0	0	0	0	0	0
11:00	3	1	0	0	0	0	4	23:00	0	0	0	0	0	0	0
11:15	2	1	0	0	0	0	3	23:15	0	0	0	0	0	0	0
11:30	2	2	0	0	0	0	4	23:30	0	0	0	0	0	0	0
11:45	2	0	0	0	0	0	2	23:45	1	0	0	0	0	0	1
TOTAL	69	19	1	0	0	0	89	**TOTAL**	119	22	0	1	0	0	142
	AM PEAK HOUR						3:00 AM					**AM PEAK HOUR**			2:30 PM
	AM PEAK VOLUME						17					**AM PEAK VOLUME**			30

TOTAL: AM+PM	188	41	1	1	0	0	231
% OF TOTAL	81.4%	17.7%	0.4%	0.4%	0.0%	0.0%	100.0%

CLASS 1	PASSENGER VEHICLES
CLASS 2	2-AXLE TRUCKS
CLASS 3	3-AXLE TRUCKS
CLASS 4	4 OR MORE AXLE TRUCKS
CLASS 5	RV
CLASS 6	BUS

31124

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Tuesday, April 02, 2024 **CITY:** Apple Valley

JOB #: SC4523 **LOCATION:** CLASS1 Navajo Rd north of Los Padres Rd

AM TIME	COMBINED 1	2	3	4	5	6	TOTAL	PM Time	COMBINED 1	2	3	4	5	6	TOTAL
0:00	1	0	0	0	0	0	1	12:00	0	0	0	0	0	0	0
0:15	1	0	0	0	0	0	1	12:15	2	0	0	0	0	0	2
0:30	1	1	0	0	0	0	2	12:30	1	3	0	0	0	0	4
0:45	0	0	0	0	0	0	0	12:45	3	1	0	0	0	0	4
1:00	2	0	0	0	0	0	2	13:00	2	0	0	0	0	0	2
1:15	0	0	0	0	0	0	0	13:15	1	1	0	0	0	0	2
1:30	1	0	0	0	0	0	1	13:30	10	2	0	0	0	0	12
1:45	3	0	0	0	0	0	3	13:45	8	2	0	0	0	0	10
2:00	3	0	0	0	0	0	3	14:00	3	1	0	0	0	0	4
2:15	1	0	0	0	0	0	1	14:15	9	1	0	0	0	0	10
2:30	0	0	0	0	0	0	0	14:30	13	3	0	0	0	0	16
2:45	0	0	0	0	0	0	0	14:45	7	3	0	0	0	0	10
3:00	6	1	0	0	0	0	7	15:00	4	0	0	2	0	0	6
3:15	4	0	0	0	0	0	4	15:15	13	5	1	0	0	0	19
3:30	6	0	0	0	0	0	6	15:30	13	2	0	0	0	0	15
3:45	5	0	0	0	0	0	5	15:45	6	0	0	0	0	0	6
4:00	5	0	0	0	0	0	5	16:00	7	7	0	0	0	0	14
4:15	3	0	0	0	0	0	3	16:15	5	0	1	0	0	0	6
4:30	6	1	0	0	0	0	7	16:30	6	0	0	0	0	0	6
4:45	10	0	0	0	0	0	10	16:45	3	0	0	0	0	0	3
5:00	0	0	0	0	0	0	0	17:00	0	0	0	0	0	0	0
5:15	3	3	0	0	0	0	6	17:15	2	0	0	0	0	0	2
5:30	1	0	0	0	0	0	1	17:30	6	0	0	0	0	0	6
5:45	3	2	0	0	0	0	5	17:45	6	1	0	0	0	0	7
6:00	2	0	0	0	0	0	2	18:00	1	1	0	0	0	0	2
6:15	0	0	0	0	0	0	0	18:15	2	0	0	0	0	0	2
6:30	0	0	0	0	0	0	0	18:30	8	1	0	0	0	0	9
6:45	1	0	0	0	0	0	1	18:45	5	0	0	0	0	0	5
7:00	1	0	0	0	0	0	1	19:00	1	1	0	0	0	0	2
7:15	0	1	0	0	0	0	1	19:15	1	1	0	0	0	0	2
7:30	2	1	0	0	0	0	3	19:30	2	0	0	0	0	0	2
7:45	2	1	0	0	0	0	3	19:45	1	1	0	0	0	0	2
8:00	2	4	0	0	0	0	6	20:00	5	0	0	0	0	0	5
8:15	3	0	0	0	0	0	3	20:15	4	1	0	0	0	0	5
8:30	2	0	1	0	0	0	3	20:30	3	0	0	0	0	0	3
8:45	4	1	0	0	0	0	5	20:45	0	0	0	0	0	0	0
9:00	3	3	0	0	0	0	6	21:00	4	0	0	0	0	0	4
9:15	4	0	1	0	0	0	5	21:15	3	0	0	0	0	0	3
9:30	6	1	0	0	0	0	7	21:30	1	0	0	0	0	0	1
9:45	6	0	0	0	0	0	6	21:45	1	0	0	0	0	0	1
10:00	3	1	0	0	0	0	4	22:00	0	0	0	0	0	0	0
10:15	5	2	0	0	0	0	7	22:15	0	0	0	0	0	0	0
10:30	3	0	0	0	0	0	3	22:30	3	0	0	0	0	0	3
10:45	2	0	0	0	0	0	2	22:45	0	0	0	0	0	0	0
11:00	3	1	0	0	0	0	4	23:00	0	0	0	0	0	0	0
11:15	3	1	0	0	0	0	4	23:15	0	0	0	0	0	0	0
11:30	3	3	0	0	0	0	6	23:30	0	0	0	0	0	0	0
11:45	4	0	0	0	0	0	4	23:45	1	0	0	0	0	0	1
TOTAL	129	28	2	0	0	0	159	TOTAL	176	38	2	2	0	0	218
				AM PEAK HOUR			4:00 AM					AM PEAK HOUR			3:15 PM
				AM PEAK VOLUME			25					AM PEAK VOLUME			54

TOTAL: AM+PM	305	66	4	2	0	0	377
% OF TOTAL	80.9%	17.5%	1.1%	0.5%	0.0%	0.0%	100.0%

CLASS 1	PASSENGER VEHICLES
CLASS 2	2-AXLE TRUCKS
CLASS 3	3-AXLE TRUCKS
CLASS 4	4 OR MORE AXLE TRUCKS
CLASS 5	RV
CLASS 6	Buses

Counts Unlimited, Inc.

PO Box 1178
Corona, CA 92878
(951) 268-6268
email: counts@countsunlimited.com

City of Apple Valley
Dakota Avenue
N/ Corwin Road
24 Hour Directional Classification Count

APV001
Site Code: 051-24741

Northbound

Start Time	Motorcy	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
08/27/24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	8	0	0	0	**1**	0	0	0	0	0	0	0	9
04:00	0	**19**	1	0	0	0	0	0	0	0	0	0	0	**20**
05:00	0	13	**2**	0	0	0	0	0	0	0	0	0	0	15
06:00	0	4	1	0	0	0	0	0	0	0	0	0	0	5
07:00	0	7	1	0	0	0	0	0	0	0	0	0	0	8
08:00	0	6	1	0	**1**	0	0	0	0	0	0	0	0	8
09:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
10:00	0	2	2	0	0	0	0	0	0	0	0	0	0	4
11:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
12 PM	0	0	2	0	**1**	0	0	0	0	0	0	0	0	3
13:00	0	4	0	0	1	0	0	0	0	0	0	0	0	5
14:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
15:00	0	8	1	0	1	0	0	0	0	0	0	0	0	10
16:00	0	**15**	**4**	0	0	0	0	0	0	0	0	0	0	**19**
17:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
18:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
19:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
20:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21:00	0	4	1	0	0	0	0	0	0	0	0	0	0	5
22:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	115	18	0	4	1	0	0	0	0	0	0	0	138
Percent	0.0%	83.3%	13.0%	0.0%	2.9%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak		04:00	05:00		08:00	03:00								04:00
Vol.		19	2		1	1								20
PM Peak		16:00	16:00		12:00									16:00
Vol.		15	4		1									19
Grand Total	0	115	18	0	4	1	0	0	0	0	0	0	0	138
Percent	0.0%	83.3%	13.0%	0.0%	2.9%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	

Counts Unlimited, Inc.

PO Box 1178
Corona, CA 92878
(951) 268-6268
email: counts@countsunlimited.com

City of Apple Valley
Dakota Avenue
N/ Corwin Road
24 Hour Directional Classification Count

APV001
Site Code: 051-24741

Southbound

Start Time	Motorcy	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
08/27/24	0	0	**2**	0	0	0	0	0	0	0	0	0	0	2
01:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	7	0	0	0	0	0	0	0	0	0	0	0	7
04:00	0	7	0	0	0	0	0	0	0	0	0	0	0	7
05:00	0	6	1	0	0	0	0	0	0	0	0	0	0	7
06:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
07:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
08:00	0	5	0	0	**1**	0	0	0	0	0	0	0	0	6
09:00	0	**9**	1	0	1	0	0	0	0	0	0	0	0	**11**
10:00	0	3	1	0	0	0	0	**1**	0	0	0	0	0	5
11:00	0	6	1	0	1	0	0	0	**1**	0	0	0	0	9
12 PM	0	**18**	1	0	1	**1**	0	0	**1**	0	0	0	0	**22**
13:00	0	11	1	0	**2**	0	0	0	0	0	0	0	0	14
14:00	0	14	2	0	1	0	0	0	0	0	0	0	0	17
15:00	0	6	2	0	2	0	0	0	0	0	0	0	0	10
16:00	0	17	4	0	1	0	0	0	0	0	0	0	0	22
17:00	0	7	**5**	0	1	0	0	0	0	0	0	0	0	13
18:00	0	9	0	0	0	0	0	0	0	0	0	0	0	9
19:00	0	0	2	0	0	0	0	0	0	0	0	0	0	2
20:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
21:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
22:00	0	11	1	0	0	0	0	0	0	0	0	0	0	12
23:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
Total	0	153	25	0	11	1	0	1	2	0	0	0	0	193
Percent	0.0%	79.3%	13.0%	0.0%	5.7%	0.5%	0.0%	0.5%	1.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak		09:00	00:00		08:00			10:00	11:00					09:00
Vol.		9	2		1			1	1					11
PM Peak		12:00	17:00		13:00	12:00			12:00					12:00
Vol.		18	5		2	1			1					22
Grand Total	0	153	25	0	11	1	0	1	2	0	0	0	0	193
Percent	0.0%	79.3%	13.0%	0.0%	5.7%	0.5%	0.0%	0.5%	1.0%	0.0%	0.0%	0.0%	0.0%	

Counts Unlimited, Inc.

PO Box 1178
Corona, CA 92878
(951) 268-6268
email: counts@countsunlimited.com

City of Apple Valley
Dakota Avenue
N/ Corwin Road
24 Hour Directional Classification Count

APV001
Site Code: 051-24741

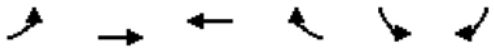
Northbound, Southbound

Start Time	Motorcy	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
08/27/24	0	0	2	0	0	0	0	0	0	0	0	0	0	2
01:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
02:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
03:00	0	15	0	0	0	**1**	0	0	0	0	0	0	0	16
04:00	0	**26**	1	0	0	0	0	0	0	0	0	0	0	**27**
05:00	0	19	**3**	0	0	0	0	0	0	0	0	0	0	22
06:00	0	7	1	0	0	0	0	0	0	0	0	0	0	8
07:00	0	10	2	0	0	0	0	0	0	0	0	0	0	12
08:00	0	11	1	0	**2**	0	0	0	0	0	0	0	0	14
09:00	0	15	1	0	1	0	0	0	0	0	0	0	0	17
10:00	0	5	3	0	0	0	0	**1**	0	0	0	0	0	9
11:00	0	7	1	0	1	0	0	0	**1**	0	0	0	0	10
12 PM	0	18	3	0	2	**1**	0	0	**1**	0	0	0	0	25
13:00	0	15	1	0	**3**	0	0	0	0	0	0	0	0	19
14:00	0	18	2	0	1	0	0	0	0	0	0	0	0	21
15:00	0	14	3	0	3	0	0	0	0	0	0	0	0	20
16:00	0	**32**	**8**	0	1	0	0	0	0	0	0	0	0	**41**
17:00	0	9	5	0	1	0	0	0	0	0	0	0	0	15
18:00	0	14	0	0	0	0	0	0	0	0	0	0	0	14
19:00	0	2	3	0	0	0	0	0	0	0	0	0	0	5
20:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
21:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
22:00	0	14	1	0	0	0	0	0	0	0	0	0	0	15
23:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
Total	0	268	43	0	15	2	0	1	2	0	0	0	0	331
Percent	0.0%	81.0%	13.0%	0.0%	4.5%	0.6%	0.0%	0.3%	0.6%	0.0%	0.0%	0.0%	0.0%	
AM Peak		04:00	05:00		08:00	03:00		10:00	11:00					04:00
Vol.		26	3		2	1		1	1					27
PM Peak		16:00	16:00		13:00	12:00			12:00					16:00
Vol.		32	8		3	1			1					41
Grand Total	0	268	43	0	15	2	0	1	2	0	0	0	0	331
Percent	0.0%	81.0%	13.0%	0.0%	4.5%	0.6%	0.0%	0.3%	0.6%	0.0%	0.0%	0.0%	0.0%	

This Page Intentionally Left Blank

APPENDIX 3.2: EXISTING (2024) CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

This Page Intentionally Left Blank



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	9	14	7	1	1	6
Future Volume (vph)	9	14	7	1	1	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		55	55		45	
Link Distance (ft)		3330	1344		1769	
Travel Time (s)		41.3	16.7		26.8	
Peak Hour Factor	0.64	0.64	0.64	0.64	0.64	0.64
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

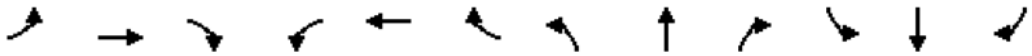
Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	9	14	7	1	1	6
Future Vol, veh/h	9	14	7	1	1	6
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	64	64	64	64	64	64
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	14	22	11	2	2	9

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	13	0	-	0	62	12
Stage 1	-	-	-	-	12	-
Stage 2	-	-	-	-	50	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1619	-	-	-	950	1075
Stage 1	-	-	-	-	1016	-
Stage 2	-	-	-	-	978	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1619	-	-	-	941	1075
Mov Cap-2 Maneuver	-	-	-	-	941	-
Stage 1	-	-	-	-	1007	-
Stage 2	-	-	-	-	978	-

Approach	EB	WB	SB
HCM Control Delay, s/v	2.83	0	8.45
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	704	-	-	-	1054
HCM Lane V/C Ratio	0.009	-	-	-	0.01
HCM Control Delay (s/veh)	7.2	0	-	-	8.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	1	0	0	0	0	1	0	0	0
Future Volume (vph)	0	0	0	1	0	0	0	0	1	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1354			321			1023			285	
Travel Time (s)		20.5			4.9			15.5			4.3	
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	1	0	0	0	0	1	0	0	0
Future Vol, veh/h	0	0	0	1	0	0	0	0	1	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	50	50	50	50	50	50	50	50	50
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	0	2	0	0	0	0	2	0	0	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2	4	2	3	3	1	2	0	0	2	0	0
Stage 1	2	2	-	1	1	-	-	-	-	-	-	-
Stage 2	0	2	-	2	2	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	1026	896	1088	1024	897	1090	1634	-	-	1634	-	-
Stage 1	1026	898	-	1027	899	-	-	-	-	-	-	-
Stage 2	-	898	-	1026	898	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	1026	896	1088	1024	897	1090	1634	-	-	1634	-	-
Mov Cap-2 Maneuver	1026	896	-	1024	897	-	-	-	-	-	-	-
Stage 1	1026	898	-	1027	899	-	-	-	-	-	-	-
Stage 2	-	898	-	1026	898	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	8.52	0	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1634	-	-	-	1024	1634	-	-
HCM Lane V/C Ratio	-	-	-	-	0.002	-	-	-
HCM Control Delay (s/veh)	0	-	-	0	8.5	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0	0	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	4	5	2	1	4	4
Future Volume (vph)	4	5	2	1	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			55	55	
Link Distance (ft)	2664			475	6664	
Travel Time (s)	60.5			5.9	82.6	
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	5	2	1	4	4
Future Vol, veh/h	4	5	2	1	4	4
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	71	71	71	71	71	71
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	6	7	3	1	6	6

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	15	8	11	0	-	0
Stage 1	8	-	-	-	-	-
Stage 2	7	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	1008	1079	1621	-	-	-
Stage 1	1020	-	-	-	-	-
Stage 2	1021	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1006	1079	1621	-	-	-
Mov Cap-2 Maneuver	1006	-	-	-	-	-
Stage 1	1018	-	-	-	-	-
Stage 2	1021	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.49	4.82	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1200	-	1046	-	-
HCM Lane V/C Ratio	0.002	-	0.012	-	-
HCM Control Delay (s/veh)	7.2	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	19	40	18	34	19	1
Future Volume (vph)	19	40	18	34	19	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	0		0	100
Storage Lanes		0	0		1	0
Taper Length (ft)			90		90	
Link Speed (mph)	45			45	55	
Link Distance (ft)	5327			1321	6664	
Travel Time (s)	80.7			20.0	82.6	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	19	40	18	34	19	1
Future Vol, veh/h	19	40	18	34	19	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	76	76	76	76	76	76
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	25	53	24	45	25	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	78	0	143	51
Stage 1	-	-	-	-	51	-
Stage 2	-	-	-	-	92	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1534	-	854	1022
Stage 1	-	-	-	-	976	-
Stage 2	-	-	-	-	937	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1534	-	840	1022
Mov Cap-2 Maneuver	-	-	-	-	840	-
Stage 1	-	-	-	-	976	-
Stage 2	-	-	-	-	922	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	2.56	9.38
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	848	-	-	623	-
HCM Lane V/C Ratio	0.031	-	-	0.015	-
HCM Control Delay (s/veh)	9.4	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	97	11	7	74	61	22	134	13	28	58	1
Future Volume (vph)	1	97	11	7	74	61	22	134	13	28	58	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		165	100		0	325		0
Storage Lanes	0		0	0		1	1		1	1		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		45			45			55			55	
Link Distance (ft)		7616			5327			4005			1074	
Travel Time (s)		115.4			80.7			49.6			13.3	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

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	1	97	11	7	74	61	22	134	13	28	58	1
Future Vol, veh/h	1	97	11	7	74	61	22	134	13	28	58	1
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	1	120	14	9	91	75	27	165	16	35	72	1
Number of Lanes	0	1	0	0	1	1	1	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	3	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	2	2	1
HCM Control Delay, s/veh	10.2	9.2	10.1	9.6
HCM LOS	B	A	B	A

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	1%	9%	0%	100%	0%
Vol Thru, %	0%	100%	0%	89%	91%	0%	0%	98%
Vol Right, %	0%	0%	100%	10%	0%	100%	0%	2%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	22	134	13	109	81	61	28	59
LT Vol	22	0	0	1	7	0	28	0
Through Vol	0	134	0	97	74	0	0	58
RT Vol	0	0	13	11	0	61	0	1
Lane Flow Rate	27	165	16	135	100	75	35	73
Geometry Grp	6	6	6	6	6	6	6	6
Degree of Util (X)	0.047	0.264	0.023	0.218	0.163	0.107	0.062	0.121
Departure Headway (Hd)	6.26	5.755	5.049	5.823	5.869	5.122	6.493	5.975
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	573	625	710	618	612	700	553	601
Service Time	3.984	3.479	2.772	3.549	3.594	2.847	4.22	3.701
HCM Lane V/C Ratio	0.047	0.264	0.023	0.218	0.163	0.107	0.063	0.121
HCM Control Delay, s/veh	9.3	10.5	7.9	10.2	9.7	8.5	9.7	9.5
HCM Lane LOS	A	B	A	B	A	A	A	A
HCM 95th-tile Q	0.1	1.1	0.1	0.8	0.6	0.4	0.2	0.4



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	96	1	28	108	1	52
Future Volume (vph)	96	1	28	108	1	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	45		45			45
Link Distance (ft)	7616		549			661
Travel Time (s)	115.4		8.3			10.0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

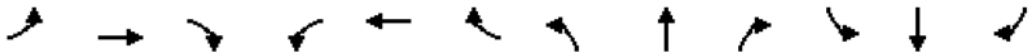
Intersection	
Int Delay, s/veh	3.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	96	1	28	108	1	52
Future Vol, veh/h	96	1	28	108	1	52
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	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	112	1	33	126	1	60

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	158	95	0	0	158	0
Stage 1	95	-	-	-	-	-
Stage 2	63	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	838	967	-	-	1434	-
Stage 1	933	-	-	-	-	-
Stage 2	965	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	837	967	-	-	1434	-
Mov Cap-2 Maneuver	837	-	-	-	-	-
Stage 1	933	-	-	-	-	-
Stage 2	964	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	9.96	0	0.14
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	838	34	-
HCM Lane V/C Ratio	-	-	0.135	0.001	-
HCM Control Delay (s/veh)	-	-	10	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	10	28	6	142	1	7	30	3	123	0	22
Future Volume (vph)	9	10	28	6	142	1	7	30	3	123	0	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		889			1144			979			330	
Travel Time (s)		13.5			17.3			22.3			7.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

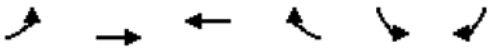
Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	9	10	28	6	142	1	7	30	3	123	0	22
Future Vol, veh/h	9	10	28	6	142	1	7	30	3	123	0	22
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	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	9	10	29	6	148	1	7	31	3	128	0	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	149	0	0	40	0	0	204	205	25	206	219	148
Stage 1	-	-	-	-	-	-	44	44	-	161	161	-
Stage 2	-	-	-	-	-	-	160	161	-	45	58	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1445	-	-	1583	-	-	758	695	1057	756	683	904
Stage 1	-	-	-	-	-	-	976	862	-	846	769	-
Stage 2	-	-	-	-	-	-	846	768	-	974	850	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1445	-	-	1583	-	-	731	687	1057	712	675	904
Mov Cap-2 Maneuver	-	-	-	-	-	-	731	687	-	712	675	-
Stage 1	-	-	-	-	-	-	969	857	-	842	765	-
Stage 2	-	-	-	-	-	-	821	765	-	930	845	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	1.44	0.29	10.36	11.15
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	713	300	-	-	72	-	-	736
HCM Lane V/C Ratio	0.058	0.006	-	-	0.004	-	-	0.205
HCM Control Delay (s/veh)	10.4	7.5	0	-	7.3	0	-	11.2
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.8



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1	13	47	124	34	3
Future Volume (vph)	1	13	47	124	34	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0	0	25
Storage Lanes	0			0	1	0
Taper Length (ft)	90				90	
Link Speed (mph)		45	45		45	
Link Distance (ft)		1552	889		1482	
Travel Time (s)		23.5	13.5		22.5	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	13	47	124	34	3
Future Vol, veh/h	1	13	47	124	34	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	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, %	0	0	0	0	0	0
Mvmt Flow	1	15	56	148	40	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	56	0	-	0	148	130
Stage 1	-	-	-	-	130	-
Stage 2	-	-	-	-	18	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1562	-	-	-	849	925
Stage 1	-	-	-	-	901	-
Stage 2	-	-	-	-	1010	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1562	-	-	-	849	925
Mov Cap-2 Maneuver	-	-	-	-	849	-
Stage 1	-	-	-	-	900	-
Stage 2	-	-	-	-	1010	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.52	0	9.44
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	129	-	-	-	854
HCM Lane V/C Ratio	0.001	-	-	-	0.052
HCM Control Delay (s/veh)	7.3	0	-	-	9.4
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.2



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	35	1	1	124	1	2
Future Volume (vph)	35	1	1	124	1	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		45			45
Link Distance (ft)	263		1482			525
Travel Time (s)	6.0		22.5			8.0
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

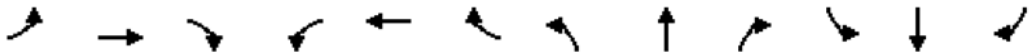
Intersection	
Int Delay, s/veh	2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	35	1	1	124	1	2
Future Vol, veh/h	35	1	1	124	1	2
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	79	79	79	79	79	79
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	44	1	1	157	1	3

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	85	80	0	0	158	0
Stage 1	80	-	-	-	-	-
Stage 2	5	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	922	986	-	-	1434	-
Stage 1	948	-	-	-	-	-
Stage 2	1023	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	921	986	-	-	1434	-
Mov Cap-2 Maneuver	921	-	-	-	-	-
Stage 1	948	-	-	-	-	-
Stage 2	1022	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	9.11	0	2.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	922	600	-
HCM Lane V/C Ratio	-	-	0.049	0.001	-
HCM Control Delay (s/veh)	-	-	9.1	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	11	2	7	1	3	6	150	20	1	52	8
Future Volume (vph)	20	11	2	7	1	3	6	150	20	1	52	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1375			3330			1135			747	
Travel Time (s)		17.0			41.3			14.1			9.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other

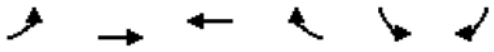
Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	11	2	7	1	3	6	150	20	1	52	8
Future Vol, veh/h	20	11	2	7	1	3	6	150	20	1	52	8
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	22	12	2	8	1	3	7	167	22	1	58	9
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, s/veh	7.8	7.5	8.1	7.5
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	3%	61%	64%	2%
Vol Thru, %	85%	33%	9%	85%
Vol Right, %	11%	6%	27%	13%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	176	33	11	61
LT Vol	6	20	7	1
Through Vol	150	11	1	52
RT Vol	20	2	3	8
Lane Flow Rate	196	37	12	68
Geometry Grp	1	1	1	1
Degree of Util (X)	0.216	0.046	0.015	0.076
Departure Headway (Hd)	3.976	4.561	4.468	4.059
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	898	790	806	873
Service Time	2.023	2.561	2.469	2.129
HCM Lane V/C Ratio	0.218	0.047	0.015	0.078
HCM Control Delay, s/veh	8.1	7.8	7.5	7.5
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.8	0.1	0	0.2



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	21	5	19	1	1	24
Future Volume (vph)	21	5	19	1	1	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		55	55		45	
Link Distance (ft)		3330	1344		1769	
Travel Time (s)		41.3	16.7		26.8	
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

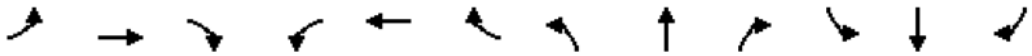
Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	21	5	19	1	1	24
Future Vol, veh/h	21	5	19	1	1	24
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	69	69	69	69	69	69
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	30	7	28	1	1	35

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	29	0	-	0	96	28
Stage 1	-	-	-	-	28	-
Stage 2	-	-	-	-	68	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1597	-	-	-	908	1053
Stage 1	-	-	-	-	999	-
Stage 2	-	-	-	-	960	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1597	-	-	-	890	1053
Mov Cap-2 Maneuver	-	-	-	-	890	-
Stage 1	-	-	-	-	980	-
Stage 2	-	-	-	-	960	-

Approach	EB	WB	SB
HCM Control Delay, s/v	5.89	0	8.57
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1454	-	-	-	1045
HCM Lane V/C Ratio	0.019	-	-	-	0.035
HCM Control Delay (s/veh)	7.3	0	-	-	8.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	2	0	0	0	0	1	0	0	0
Future Volume (vph)	0	0	0	2	0	0	0	0	1	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1354			321			1023			285	
Travel Time (s)		20.5			4.9			15.5			4.3	
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	2	0	0	0	0	1	0	0	0
Future Vol, veh/h	0	0	0	2	0	0	0	0	1	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	50	50	50	50	50	50	50	50	50
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	0	4	0	0	0	0	2	0	0	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2	4	2	3	3	1	2	0	0	2	0	0
Stage 1	2	2	-	1	1	-	-	-	-	-	-	-
Stage 2	0	2	-	2	2	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	1026	896	1088	1024	897	1090	1634	-	-	1634	-	-
Stage 1	1026	898	-	1027	899	-	-	-	-	-	-	-
Stage 2	-	898	-	1026	898	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	1026	896	1088	1024	897	1090	1634	-	-	1634	-	-
Mov Cap-2 Maneuver	1026	896	-	1024	897	-	-	-	-	-	-	-
Stage 1	1026	898	-	1027	899	-	-	-	-	-	-	-
Stage 2	-	898	-	1026	898	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	8.53	0	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1634	-	-	-	1024	1634	-	-
HCM Lane V/C Ratio	-	-	-	-	0.004	-	-	-
HCM Control Delay (s/veh)	0	-	-	0	8.5	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0	0	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	20	1	2	1	3	22
Future Volume (vph)	20	1	2	1	3	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			55	55	
Link Distance (ft)	2664			475	6664	
Travel Time (s)	60.5			5.9	82.6	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

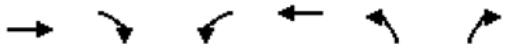
Intersection	
Int Delay, s/veh	4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	1	2	1	3	22
Future Vol, veh/h	20	1	2	1	3	22
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	73	73	73	73	73	73
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	27	1	3	1	4	30

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	26	19	34	0	-	0
Stage 1	19	-	-	-	-	-
Stage 2	7	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	995	1065	1590	-	-	-
Stage 1	1009	-	-	-	-	-
Stage 2	1021	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	993	1065	1590	-	-	-
Mov Cap-2 Maneuver	993	-	-	-	-	-
Stage 1	1007	-	-	-	-	-
Stage 2	1021	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.72	4.85	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1200	-	996	-	-
HCM Lane V/C Ratio	0.002	-	0.029	-	-
HCM Control Delay (s/veh)	7.3	0	8.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	68	41	17	46	43	12
Future Volume (vph)	68	41	17	46	43	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	0		0	100
Storage Lanes		0	0		1	0
Taper Length (ft)			90		90	
Link Speed (mph)	45			45	55	
Link Distance (ft)	5327			1835	6664	
Travel Time (s)	80.7			27.8	82.6	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

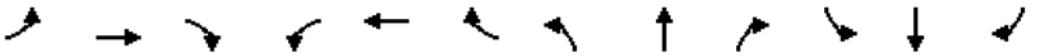
Intersection	
Int Delay, s/veh	3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	68	41	17	46	43	12
Future Vol, veh/h	68	41	17	46	43	12
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	76	76	76	76	76	76
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	89	54	22	61	57	16

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	143	0	222	116
Stage 1	-	-	-	-	116	-
Stage 2	-	-	-	-	105	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1452	-	771	941
Stage 1	-	-	-	-	914	-
Stage 2	-	-	-	-	924	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1452	-	759	941
Mov Cap-2 Maneuver	-	-	-	-	759	-
Stage 1	-	-	-	-	914	-
Stage 2	-	-	-	-	909	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	2.03	10
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	792	-	-	486	-
HCM Lane V/C Ratio	0.091	-	-	0.015	-
HCM Control Delay (s/veh)	10	-	-	7.5	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	179	35	43	168	42	29	69	48	75	197	1
Future Volume (vph)	1	179	35	43	168	42	29	69	48	75	197	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		165	100		0	325		0
Storage Lanes	0		0	0		1	1		1	1		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		45			45			55			55	
Link Distance (ft)		7616			5327			4005			1074	
Travel Time (s)		115.4			80.7			49.6			13.3	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

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	1	179	35	43	168	42	29	69	48	75	197	1
Future Vol, veh/h	1	179	35	43	168	42	29	69	48	75	197	1
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	1	224	44	54	210	53	36	86	60	94	246	1
Number of Lanes	0	1	0	0	1	1	1	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	3	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	2	2	1
HCM Control Delay, s/veh	18.7	17.4	11.9	16.3
HCM LOS	C	C	B	C

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	0%	20%	0%	100%	0%
Vol Thru, %	0%	100%	0%	83%	80%	0%	0%	99%
Vol Right, %	0%	0%	100%	16%	0%	100%	0%	1%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	29	69	48	215	211	42	75	198
LT Vol	29	0	0	1	43	0	75	0
Through Vol	0	69	0	179	168	0	0	197
RT Vol	0	0	48	35	0	42	0	1
Lane Flow Rate	36	86	60	269	264	53	94	248
Geometry Grp	6	6	6	6	6	6	6	6
Degree of Util (X)	0.085	0.189	0.119	0.548	0.547	0.097	0.206	0.509
Departure Headway (Hd)	8.395	7.88	7.16	7.335	7.462	6.646	7.925	7.407
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	426	454	499	492	483	538	452	485
Service Time	6.166	5.651	4.93	5.096	5.223	4.406	5.689	5.171
HCM Lane V/C Ratio	0.085	0.189	0.12	0.547	0.547	0.099	0.208	0.511
HCM Control Delay, s/veh	12	12.5	10.9	18.7	18.9	10.1	12.7	17.7
HCM Lane LOS	B	B	B	C	C	B	B	C
HCM 95th-tile Q	0.3	0.7	0.4	3.3	3.2	0.3	0.8	2.8



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	194	3	12	212	2	27
Future Volume (vph)	194	3	12	212	2	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	45		45			45
Link Distance (ft)	7616		549			661
Travel Time (s)	115.4		8.3			10.0
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

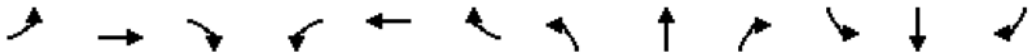
Intersection	
Int Delay, s/veh	5.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	194	3	12	212	2	27
Future Vol, veh/h	194	3	12	212	2	27
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	67	67	67	67	67	67
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	290	4	18	316	3	40

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	222	176	0	0	334	0
Stage 1	176	-	-	-	-	-
Stage 2	46	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	770	872	-	-	1236	-
Stage 1	859	-	-	-	-	-
Stage 2	981	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	768	872	-	-	1236	-
Mov Cap-2 Maneuver	768	-	-	-	-	-
Stage 1	859	-	-	-	-	-
Stage 2	979	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	12.54	0	0.55
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	770	124	-
HCM Lane V/C Ratio	-	-	0.382	0.002	-
HCM Control Delay (s/veh)	-	-	12.5	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.8	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	16	45	8	213	1	4	25	10	198	0	19
Future Volume (vph)	5	16	45	8	213	1	4	25	10	198	0	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		889			1144			979			330	
Travel Time (s)		13.5			17.3			22.3			7.5	
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

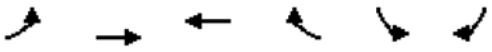
Intersection	
Int Delay, s/veh	9.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	16	45	8	213	1	4	25	10	198	0	19
Future Vol, veh/h	5	16	45	8	213	1	4	25	10	198	0	19
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	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	7	24	66	12	313	1	6	37	15	291	0	28

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	315	0	0	90	0	0	408	410	57	394	442	314
Stage 1	-	-	-	-	-	-	71	71	-	337	337	-
Stage 2	-	-	-	-	-	-	337	338	-	57	104	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1257	-	-	1518	-	-	557	535	1015	569	513	731
Stage 1	-	-	-	-	-	-	943	839	-	681	644	-
Stage 2	-	-	-	-	-	-	682	644	-	960	813	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1257	-	-	1518	-	-	528	526	1015	514	505	731
Mov Cap-2 Maneuver	-	-	-	-	-	-	528	526	-	514	505	-
Stage 1	-	-	-	-	-	-	938	834	-	675	638	-
Stage 2	-	-	-	-	-	-	649	638	-	899	808	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.6	0.27	11.62	21.7
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	601	119	-	-	65	-	-	528
HCM Lane V/C Ratio	0.095	0.006	-	-	0.008	-	-	0.605
HCM Control Delay (s/veh)	11.6	7.9	0	-	7.4	0	-	21.7
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	4



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	6	22	31	205	43	2
Future Volume (vph)	6	22	31	205	43	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0	0	25
Storage Lanes	0			0	1	0
Taper Length (ft)	90				90	
Link Speed (mph)		45	45		45	
Link Distance (ft)		1552	889		1482	
Travel Time (s)		23.5	13.5		22.5	
Peak Hour Factor	0.58	0.58	0.58	0.58	0.58	0.58
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	22	31	205	43	2
Future Vol, veh/h	6	22	31	205	43	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	58	58	58	58	58	58
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	10	38	53	353	74	3

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	53	0	-	0	289	230
Stage 1	-	-	-	-	230	-
Stage 2	-	-	-	-	59	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1565	-	-	-	706	814
Stage 1	-	-	-	-	813	-
Stage 2	-	-	-	-	969	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1565	-	-	-	701	814
Mov Cap-2 Maneuver	-	-	-	-	701	-
Stage 1	-	-	-	-	807	-
Stage 2	-	-	-	-	969	-

Approach	EB	WB	SB
HCM Control Delay, s/v	1.57	0	10.73
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	386	-	-	-	706
HCM Lane V/C Ratio	0.007	-	-	-	0.11
HCM Control Delay (s/veh)	7.3	0	-	-	10.7
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.4



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	45	1	1	210	1	1
Future Volume (vph)	45	1	1	210	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		45			45
Link Distance (ft)	263		1482			525
Travel Time (s)	6.0		22.5			8.0
Peak Hour Factor	0.56	0.56	0.56	0.56	0.56	0.56
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

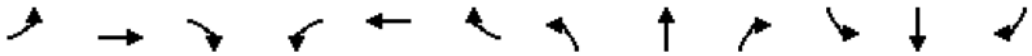
Intersection	
Int Delay, s/veh	1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	45	1	1	210	1	1
Future Vol, veh/h	45	1	1	210	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	56	56	56	56	56	56
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	80	2	2	375	2	2

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	195	189	0	0	377	0
Stage 1	189	-	-	-	-	-
Stage 2	5	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	799	858	-	-	1193	-
Stage 1	848	-	-	-	-	-
Stage 2	1023	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	798	858	-	-	1193	-
Mov Cap-2 Maneuver	798	-	-	-	-	-
Stage 1	848	-	-	-	-	-
Stage 2	1021	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	10.02	0	4.01
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	799	900	-
HCM Lane V/C Ratio	-	-	0.103	0.001	-
HCM Control Delay (s/veh)	-	-	10	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	6	2	27	16	2	3	111	16	4	208	46
Future Volume (vph)	23	6	2	27	16	2	3	111	16	4	208	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1375			3330			1135			747	
Travel Time (s)		17.0			41.3			14.1			9.3	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	8.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	6	2	27	16	2	3	111	16	4	208	46
Future Vol, veh/h	23	6	2	27	16	2	3	111	16	4	208	46
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	25	6	2	29	17	2	3	119	17	4	224	49
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, s/veh	8.2	8.3	8.2	9.1
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	74%	60%	2%
Vol Thru, %	85%	19%	36%	81%
Vol Right, %	12%	6%	4%	18%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	130	31	45	258
LT Vol	3	23	27	4
Through Vol	111	6	16	208
RT Vol	16	2	2	46
Lane Flow Rate	140	33	48	277
Geometry Grp	1	1	1	1
Degree of Util (X)	0.168	0.046	0.066	0.32
Departure Headway (Hd)	4.315	4.976	4.938	4.149
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	833	720	726	868
Service Time	2.331	3.002	2.964	2.162
HCM Lane V/C Ratio	0.168	0.046	0.066	0.319
HCM Control Delay, s/veh	8.2	8.2	8.3	9.1
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	0.1	0.2	1.4

APPENDIX 3.3: EXISTING (2024) CONDITIONS TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS

This Page Intentionally Left Blank

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

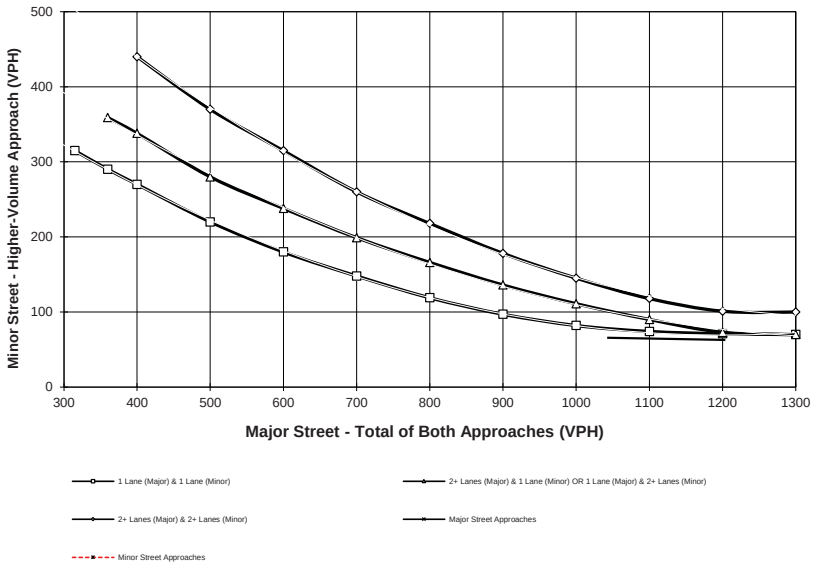
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING (2024) AM Peak Hour Warrants**

Major Street Name = **Corwin Rd.** Total of Both Approaches (VPH) = **31**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Dakota Av.** High Volume Approach (VPH) = **7**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #1

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Warrants\01 - Existing\01R_AM.xls\Fig 4C-4 (Rural Peak)

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

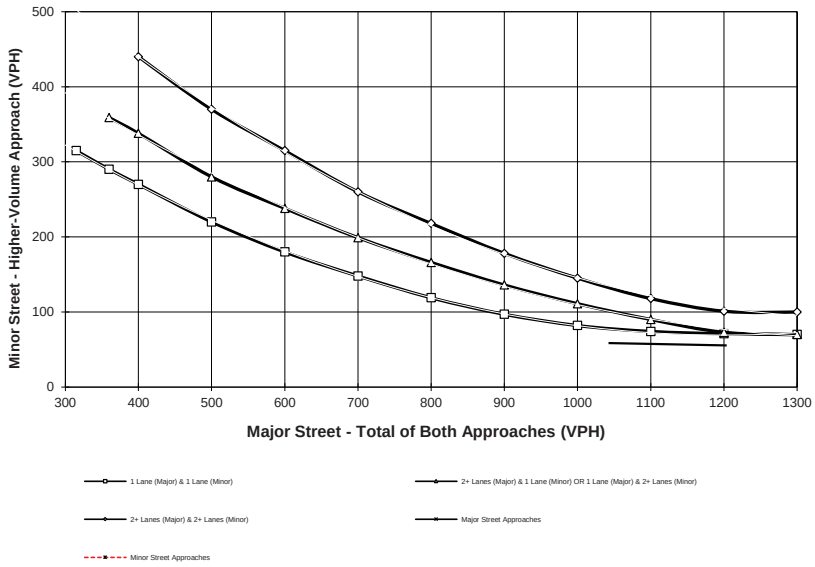
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING (2024) PM Peak Hour Warrants**

Major Street Name = **Corwin Rd.** Total of Both Approaches (VPH) = **46**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Dakota Av.** High Volume Approach (VPH) = **25**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #1

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Warrants\01 - Existing\01R_PM.xls\Fig 4C-4 (Rural Peak)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

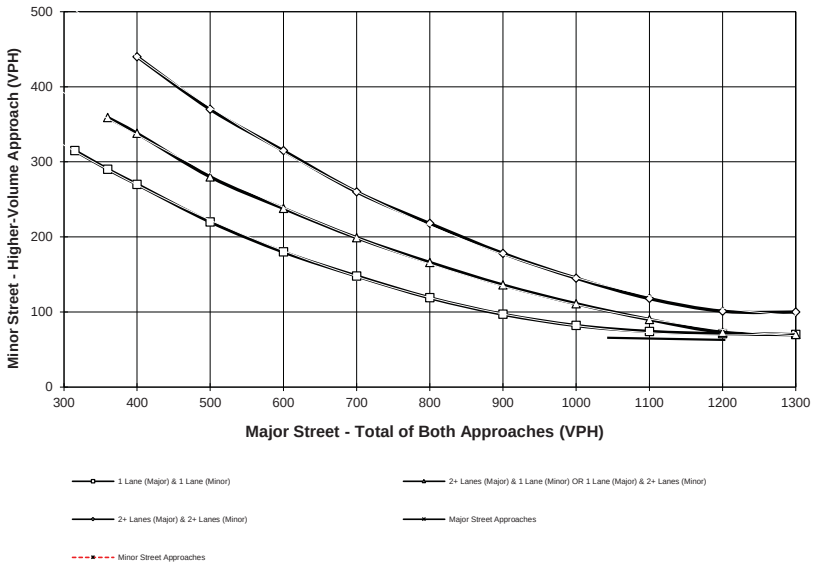
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING (2024) AM Peak Hour Warrants**

Major Street Name = **Ramona Rd.** Total of Both Approaches (VPH) = **1**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Fresno Rd.** High Volume Approach (VPH) = **1**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #2

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Warrants\01 - Existing\02R_AM.xls\Fig 4C-4 (Rural Peak)

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

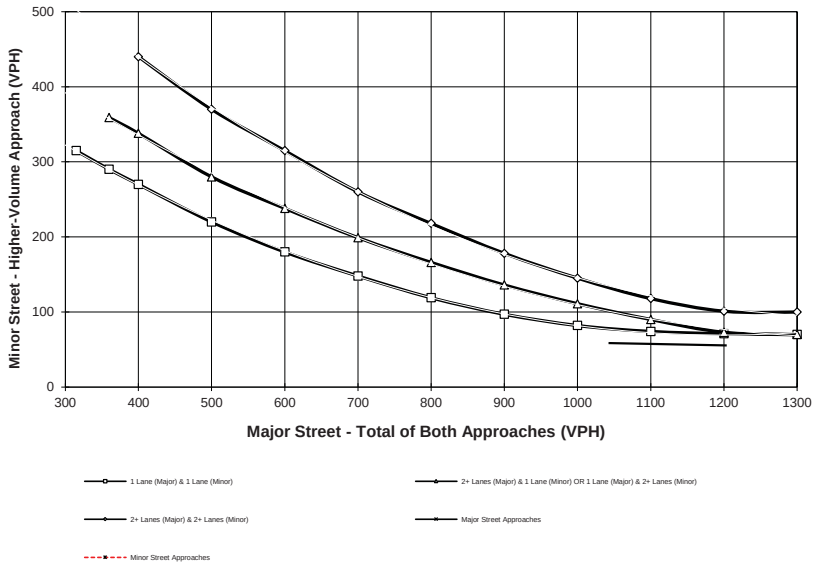
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING (2024) PM Peak Hour Warrants**

Major Street Name = **Fresno Rd.** Total of Both Approaches (VPH) = **2**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Ramona Rd.** High Volume Approach (VPH) = **1**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #2

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Warrants\01 - Existing\02R_PM.xls\Fig 4C-4 (Rural Peak)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

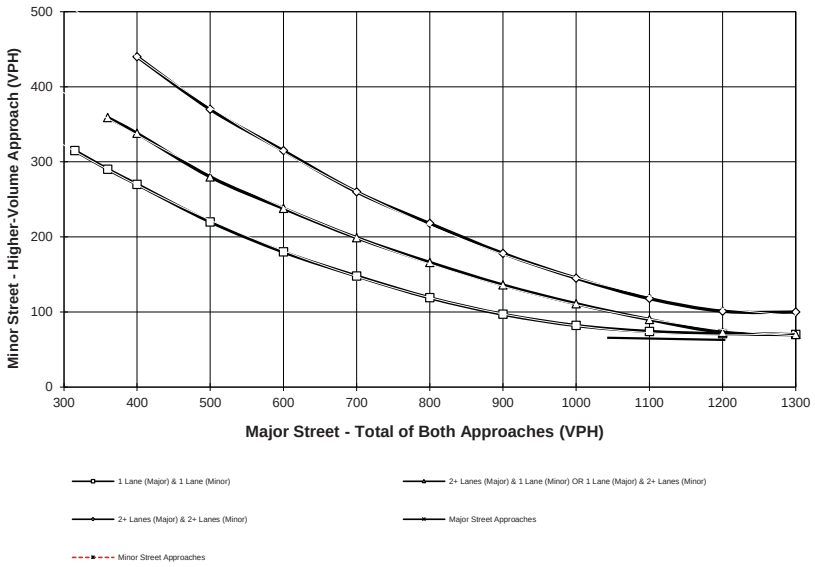
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING (2024) AM Peak Hour Warrants**

Major Street Name = **Navajo Rd.** Total of Both Approaches (VPH) = **11**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Altadena St.** High Volume Approach (VPH) = **9**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #3

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

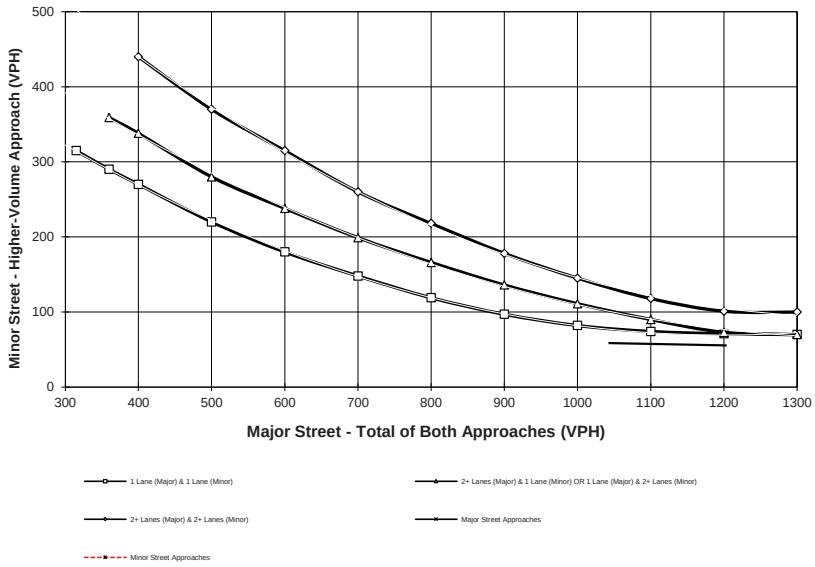
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING (2024) PM Peak Hour Warrants**

Major Street Name = **Navajo Rd.** Total of Both Approaches (VPH) = **28**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Altadena St.** High Volume Approach (VPH) = **21**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #3

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

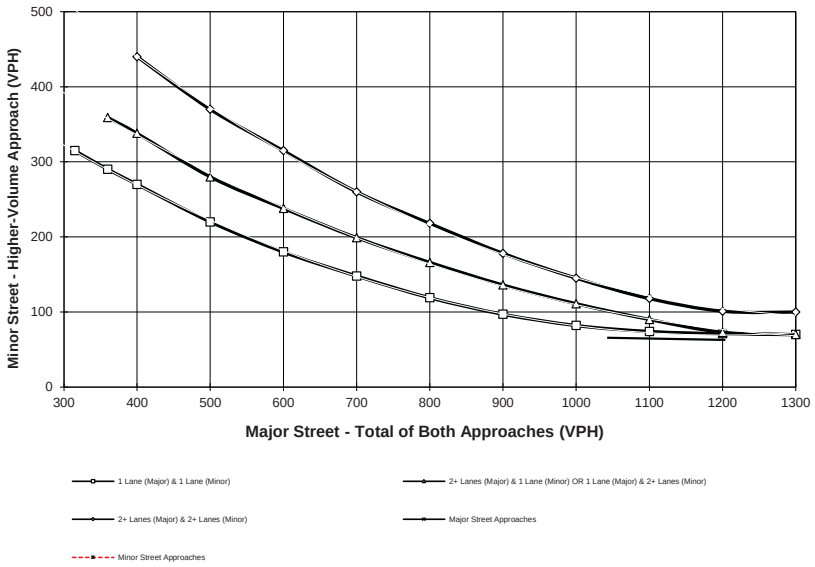
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING (2024) AM Peak Hour Warrants**

Major Street Name = **Johnson Rd.** Total of Both Approaches (VPH) = **111**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Navajo Rd.** High Volume Approach (VPH) = **20**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #4

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

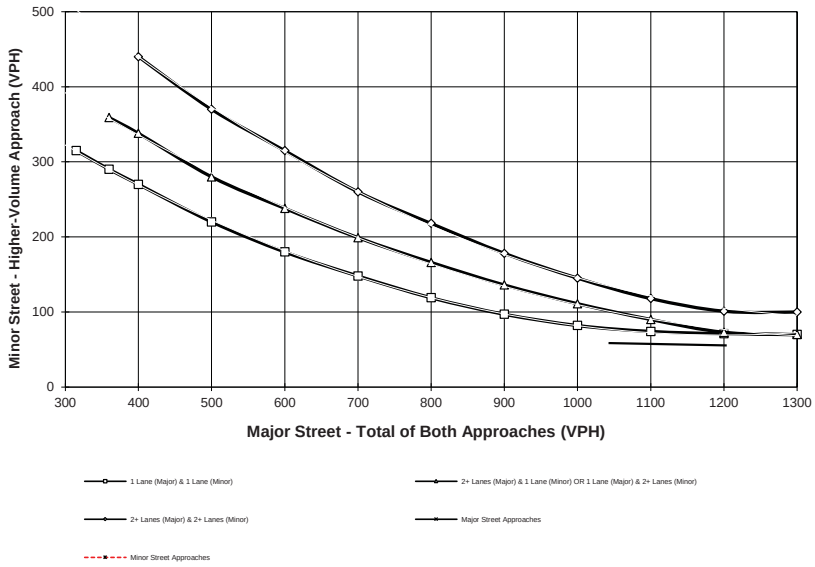
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING (2024) PM Peak Hour Warrants**

Major Street Name = **Johnson Rd.** Total of Both Approaches (VPH) = **172**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Navajo Rd.** High Volume Approach (VPH) = **55**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #4

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

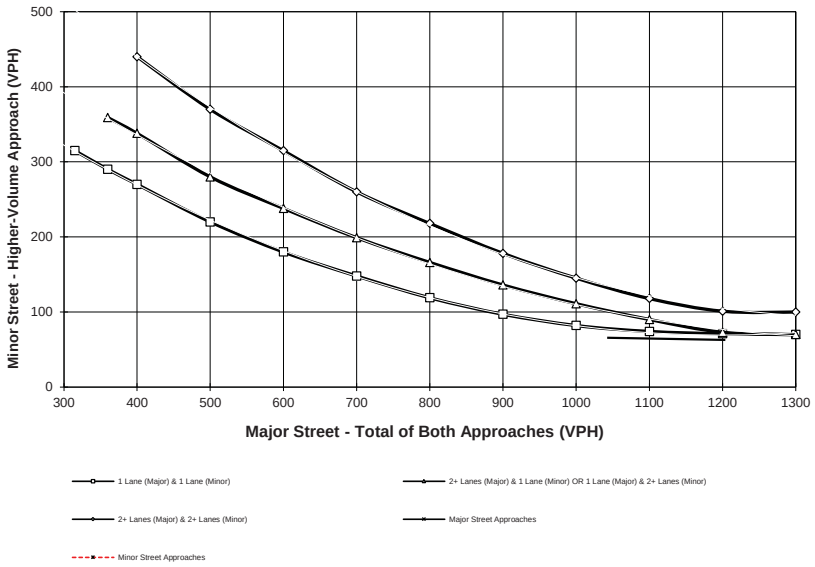
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING (2024) AM Peak Hour Warrants**

Major Street Name = **Dale Evans Pkwy.** Total of Both Approaches (VPH) = **256**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Johnson Rd.** High Volume Approach (VPH) = **142**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #5

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

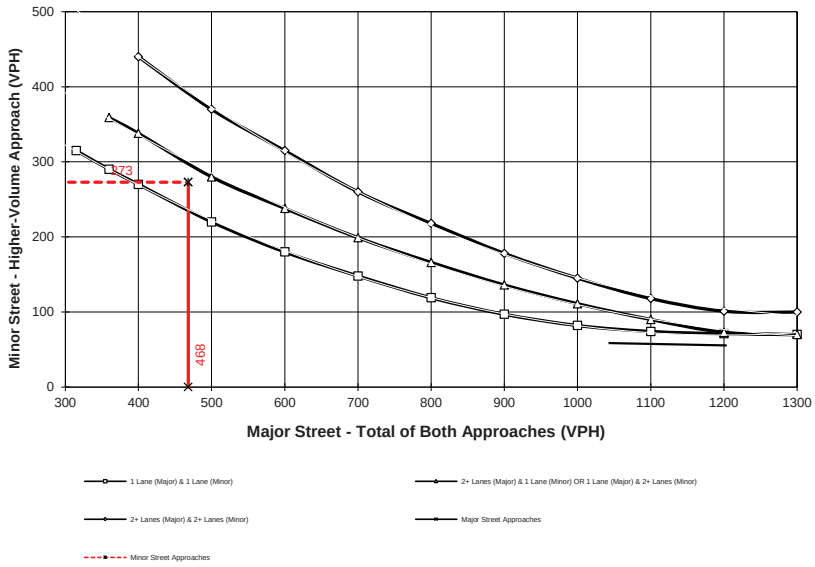
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING (2024) PM Peak Hour Warrants**

Major Street Name = **Johnson Rd.** Total of Both Approaches (VPH) = **468**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Dale Evans Pkwy.** High Volume Approach (VPH) = **273**
Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #5

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

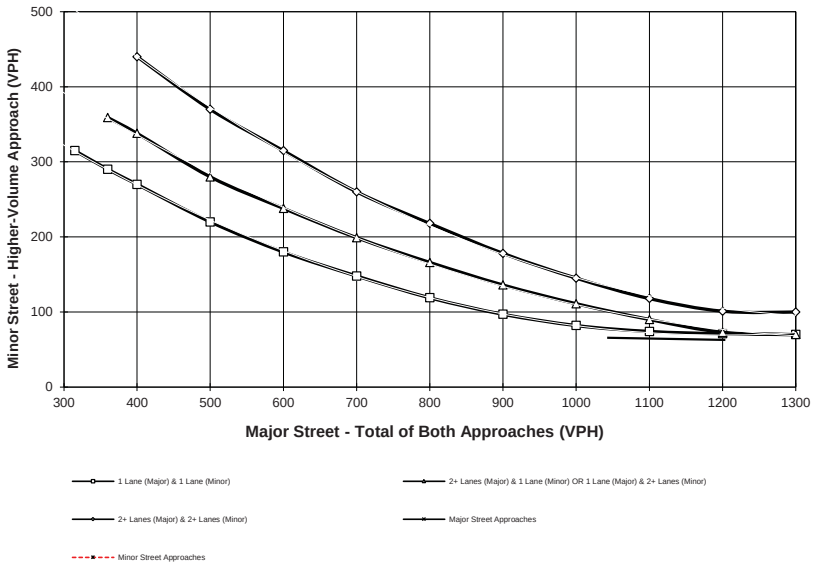
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING (2024) AM Peak Hour Warrants**

Major Street Name = **Stoddard Wells Rd.** Total of Both Approaches (VPH) = **189**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Johnson Rd.** High Volume Approach (VPH) = **97**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #6

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

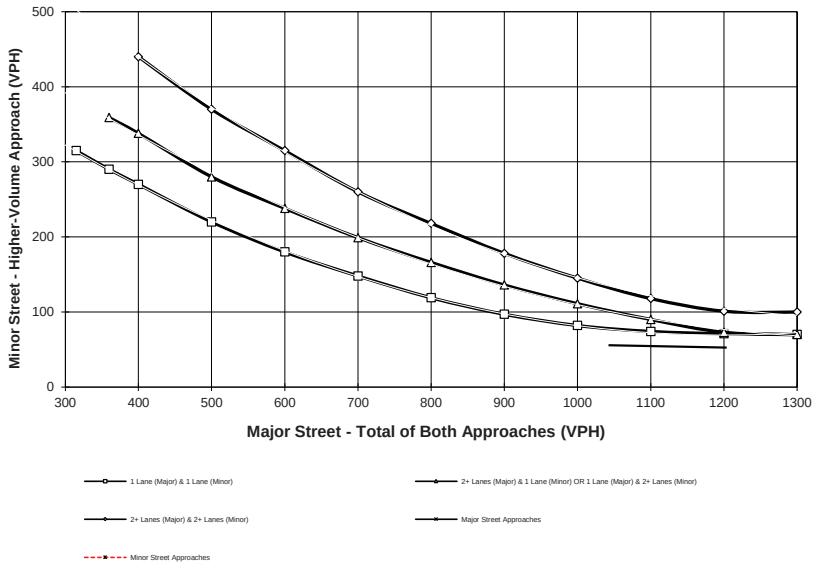
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING (2024) PM Peak Hour Warrants**

Major Street Name = **Stoddard Wells Rd.** Total of Both Approaches (VPH) = **253**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Johnson Rd.** High Volume Approach (VPH) = **197**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #6

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

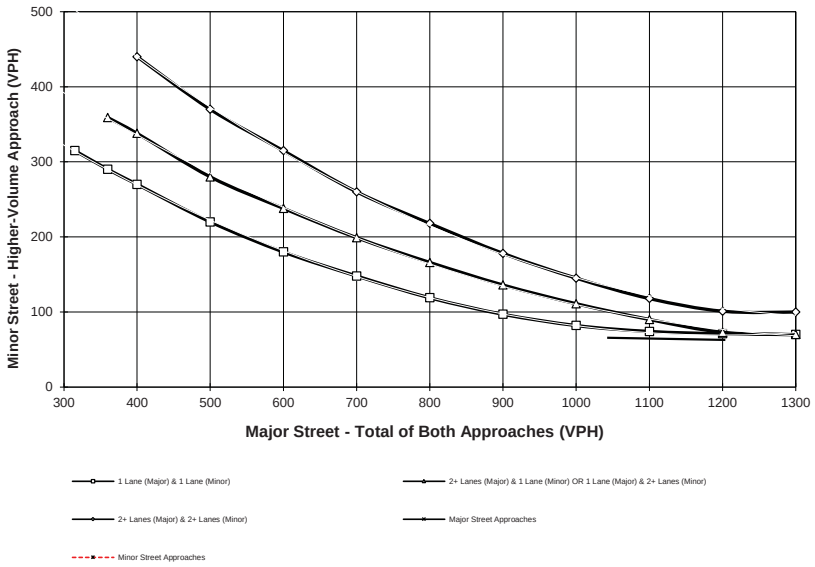
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING (2024) AM Peak Hour Warrants**

Major Street Name = **Stoddard Wells Rd.** Total of Both Approaches (VPH) = **196**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **I-15 NB Ramps - Outer Hwy. 15** High Volume Approach (VPH) = **145**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #7

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

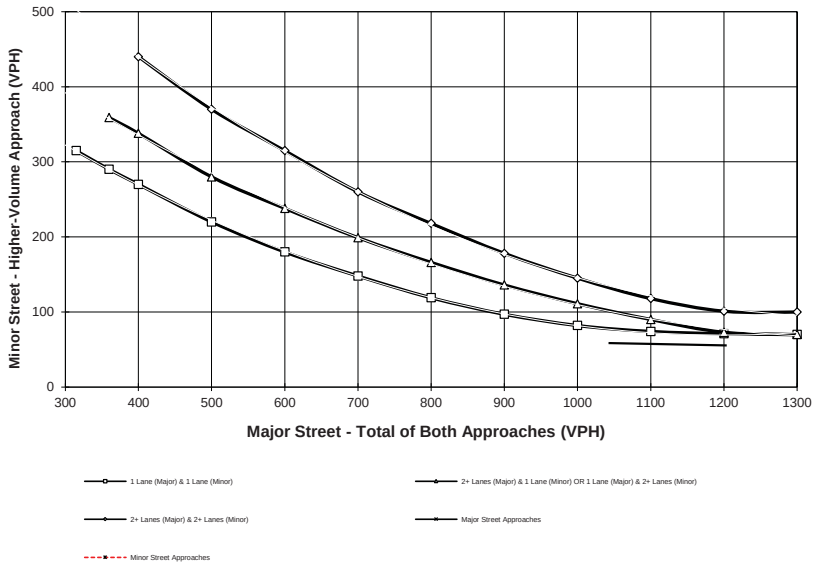
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING (2024) PM Peak Hour Warrants**

Major Street Name = **Stoddard Wells Rd.** Total of Both Approaches (VPH) = **288**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **I-15 NB Ramps - Outer Hwy. 15** High Volume Approach (VPH) = **217**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #7

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

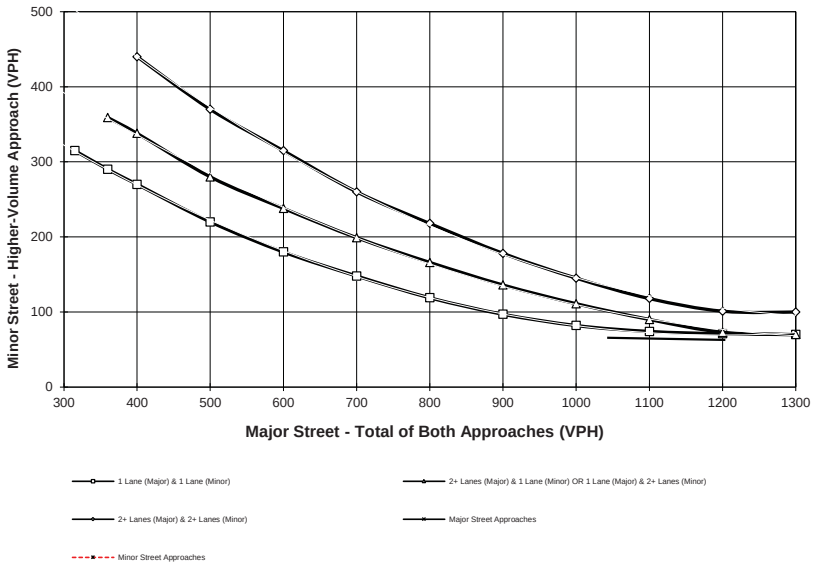
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING (2024) AM Peak Hour Warrants**

Major Street Name = **Stoddard Wells Rd.** Total of Both Approaches (VPH) = **185**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Quarry Rd.** High Volume Approach (VPH) = **37**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #8

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

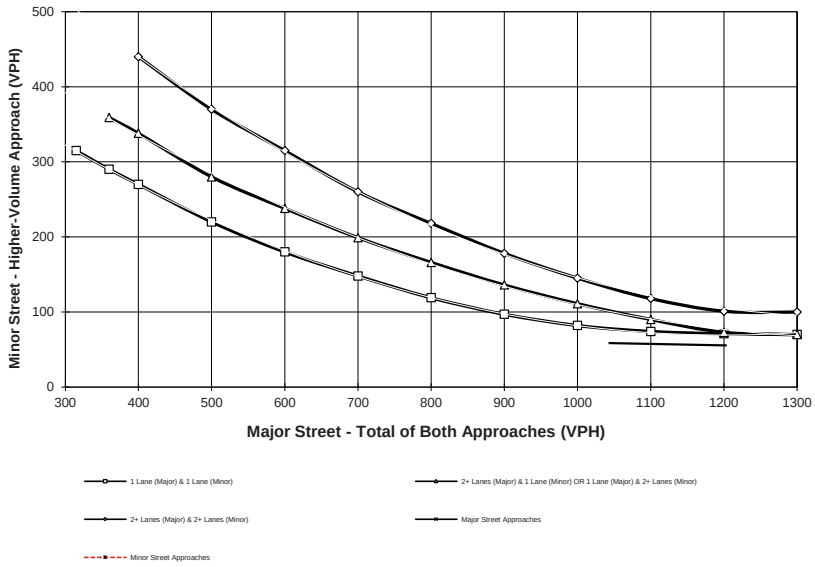
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING (2024) PM Peak Hour Warrants**

Major Street Name = **Stoddard Wells Rd.** Total of Both Approaches (VPH) = **264**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Quarry Rd.** High Volume Approach (VPH) = **45**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #8

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

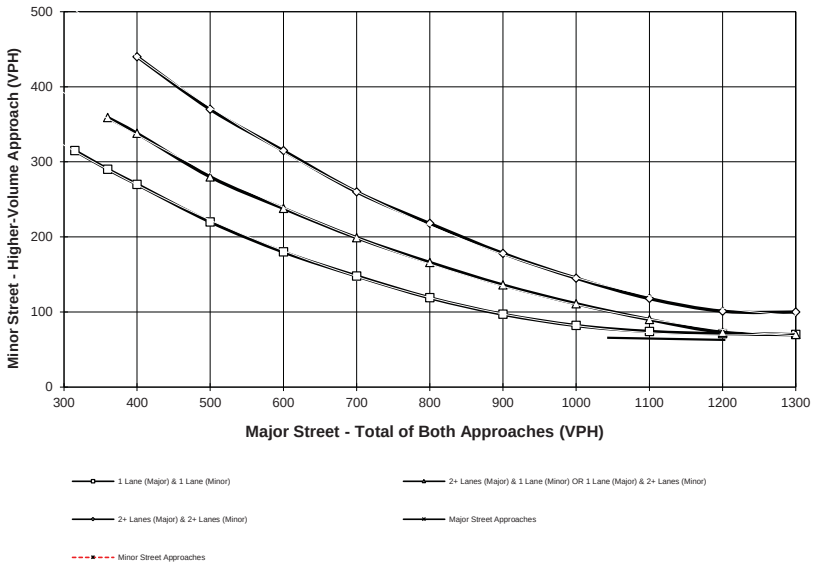
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING (2024) AM Peak Hour Warrants**

Major Street Name = **Quarry Rd.** Total of Both Approaches (VPH) = **128**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **I-15 SB Ramps** High Volume Approach (VPH) = **36**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #9

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

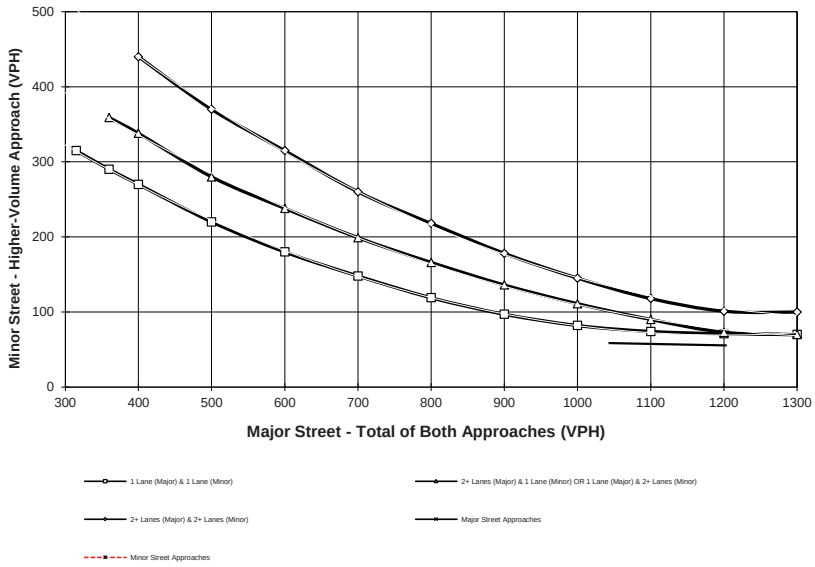
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING (2024) PM Peak Hour Warrants**

Major Street Name = **Quarry Rd.** Total of Both Approaches (VPH) = **213**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **I-15 SB Ramps** High Volume Approach (VPH) = **46**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #9

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

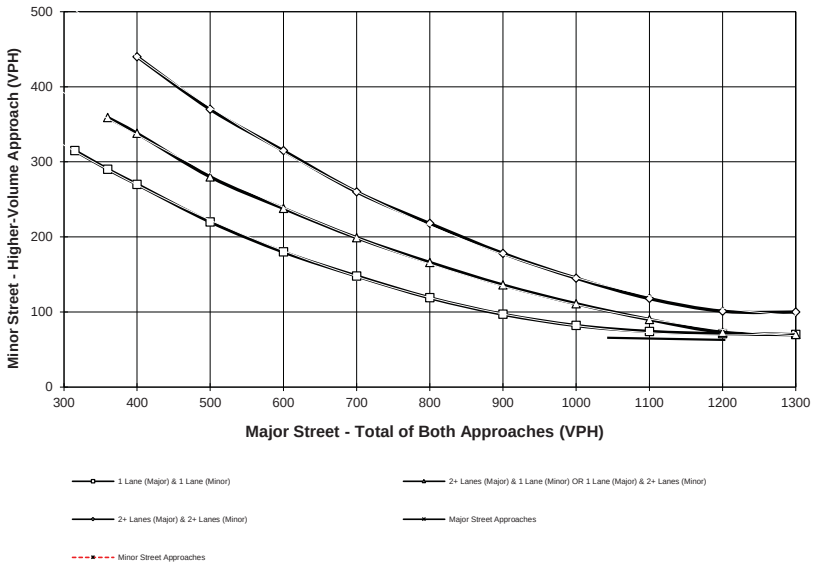
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING (2024) AM Peak Hour Warrants**

Major Street Name = **Dale Evans Pkwy.** Total of Both Approaches (VPH) = **237**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Corwin Rd.** High Volume Approach (VPH) = **33**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #10

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

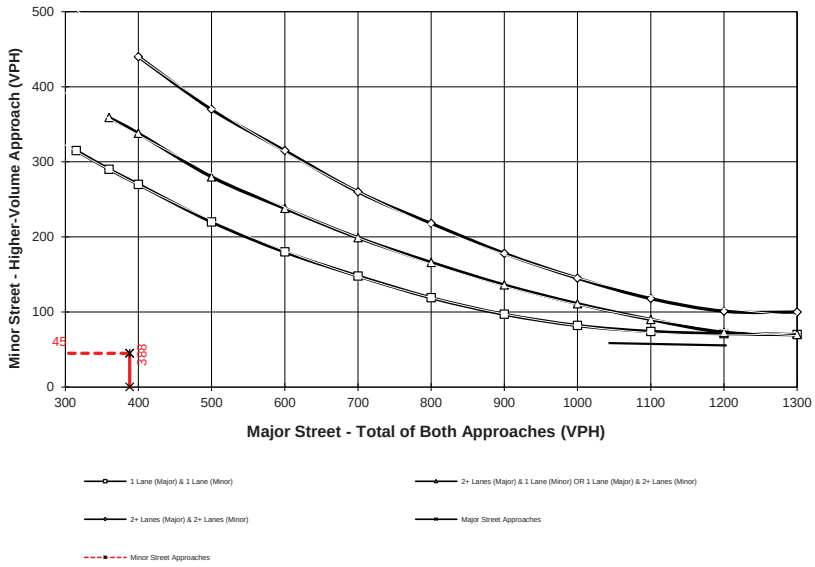
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING (2024) PM Peak Hour Warrants**

Major Street Name = **Dale Evans Pkwy.** Total of Both Approaches (VPH) = **388**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Corwin Rd.** High Volume Approach (VPH) = **45**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #10

APPENDIX 3.4: EXISTING (2024) CONDITIONS QUEUING ANALYSIS WORKSHEETS

This Page Intentionally Left Blank

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	9	10	28	6	142	1	7	30	3	123	0	22
Future Vol, veh/h	9	10	28	6	142	1	7	30	3	123	0	22
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	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	9	10	29	6	148	1	7	31	3	128	0	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	149	0	0	40	0	0	204	205	25	206	219	148
Stage 1	-	-	-	-	-	-	44	44	-	161	161	-
Stage 2	-	-	-	-	-	-	160	161	-	45	58	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1445	-	-	1583	-	-	758	695	1057	756	683	904
Stage 1	-	-	-	-	-	-	976	862	-	846	769	-
Stage 2	-	-	-	-	-	-	846	768	-	974	850	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1445	-	-	1583	-	-	731	687	1057	712	675	904
Mov Cap-2 Maneuver	-	-	-	-	-	-	731	687	-	712	675	-
Stage 1	-	-	-	-	-	-	969	857	-	842	765	-
Stage 2	-	-	-	-	-	-	821	765	-	930	845	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	1.44	0.29	10.36	11.15
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	713	300	-	-	72	-	-	736
HCM Lane V/C Ratio	0.058	0.006	-	-	0.004	-	-	0.205
HCM Control Delay (s/veh)	10.4	7.5	0	-	7.3	0	-	11.2
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.8

Intersection	
Int Delay, s/veh	2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	35	1	1	124	1	2
Future Vol, veh/h	35	1	1	124	1	2
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	79	79	79	79	79	79
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	44	1	1	157	1	3

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	85	80	0	0	158	0
Stage 1	80	-	-	-	-	-
Stage 2	5	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	922	986	-	-	1434	-
Stage 1	948	-	-	-	-	-
Stage 2	1023	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	921	986	-	-	1434	-
Mov Cap-2 Maneuver	921	-	-	-	-	-
Stage 1	948	-	-	-	-	-
Stage 2	1022	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	9.11	0	2.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	922	600	-
HCM Lane V/C Ratio	-	-	0.049	0.001	-
HCM Control Delay (s/veh)	-	-	9.1	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	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	5	16	45	8	213	1	4	25	10	198	0	19
Future Vol, veh/h	5	16	45	8	213	1	4	25	10	198	0	19
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	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	7	24	66	12	313	1	6	37	15	291	0	28

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	315	0	0	90	0	0	408	410	57	394	442	314
Stage 1	-	-	-	-	-	-	71	71	-	337	337	-
Stage 2	-	-	-	-	-	-	337	338	-	57	104	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1257	-	-	1518	-	-	557	535	1015	569	513	731
Stage 1	-	-	-	-	-	-	943	839	-	681	644	-
Stage 2	-	-	-	-	-	-	682	644	-	960	813	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1257	-	-	1518	-	-	528	526	1015	514	505	731
Mov Cap-2 Maneuver	-	-	-	-	-	-	528	526	-	514	505	-
Stage 1	-	-	-	-	-	-	938	834	-	675	638	-
Stage 2	-	-	-	-	-	-	649	638	-	899	808	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.6	0.27	11.62	21.7
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	601	119	-	-	65	-	-	528
HCM Lane V/C Ratio	0.095	0.006	-	-	0.008	-	-	0.605
HCM Control Delay (s/veh)	11.6	7.9	0	-	7.4	0	-	21.7
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	4

Intersection	
Int Delay, s/veh	1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	45	1	1	210	1	1
Future Vol, veh/h	45	1	1	210	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	56	56	56	56	56	56
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	80	2	2	375	2	2

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	195	189	0	0	377	0
Stage 1	189	-	-	-	-	-
Stage 2	5	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	799	858	-	-	1193	-
Stage 1	848	-	-	-	-	-
Stage 2	1023	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	798	858	-	-	1193	-
Mov Cap-2 Maneuver	798	-	-	-	-	-
Stage 1	848	-	-	-	-	-
Stage 2	1021	-	-	-	-	-

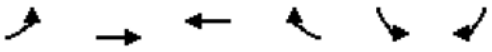
Approach	WB	NB	SB
HCM Control Delay, s/v	10.02	0	4.01
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	799	900	-
HCM Lane V/C Ratio	-	-	0.103	0.001	-
HCM Control Delay (s/veh)	-	-	10	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0	-

APPENDIX 5.1: OPENING YEAR CUMULATIVE (2027) WITHOUT PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

This Page Intentionally Left Blank

1: Corwin Rd. & Dakota Av.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	10	15	7	2	2	6
Future Volume (vph)	10	15	7	2	2	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		55	55		45	
Link Distance (ft)		3330	1344		1769	
Travel Time (s)		41.3	16.7		26.8	
Peak Hour Factor	0.64	0.64	0.64	0.64	0.64	0.64
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	3.3

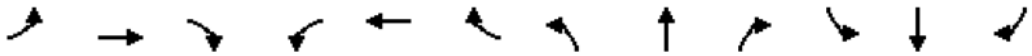
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	15	7	2	2	6
Future Vol, veh/h	10	15	7	2	2	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	64	64	64	64	64	64
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	16	23	11	3	3	9

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	14	0	-	0	67	13
Stage 1	-	-	-	-	13	-
Stage 2	-	-	-	-	55	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1617	-	-	-	943	1074
Stage 1	-	-	-	-	1016	-
Stage 2	-	-	-	-	973	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1617	-	-	-	934	1074
Mov Cap-2 Maneuver	-	-	-	-	934	-
Stage 1	-	-	-	-	1006	-
Stage 2	-	-	-	-	973	-

Approach	EB	WB	SB
HCM Control Delay, s/v	2.9	0	8.52
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	720	-	-	-	1035
HCM Lane V/C Ratio	0.01	-	-	-	0.012
HCM Control Delay (s/veh)	7.2	0	-	-	8.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

2: Ramona Rd. & Fresno Rd.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	1	0	0	0	1	1	0	0	0
Future Volume (vph)	0	0	0	1	0	0	0	1	1	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1354			321			1023			285	
Travel Time (s)		20.5			4.9			15.5			4.3	
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	1	0	0	0	1	1	0	0	0
Future Vol, veh/h	0	0	0	1	0	0	0	1	1	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	50	50	50	50	50	50	50	50	50
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	0	2	0	0	0	2	2	0	0	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	4	6	2	5	5	3	2	0	0	4	0	0
Stage 1	2	2	-	3	3	-	-	-	-	-	-	-
Stage 2	2	4	-	2	2	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	1022	893	1088	1021	894	1087	1634	-	-	1631	-	-
Stage 1	1026	898	-	1025	897	-	-	-	-	-	-	-
Stage 2	1026	897	-	1026	898	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	1022	893	1088	1021	894	1087	1634	-	-	1631	-	-
Mov Cap-2 Maneuver	1022	893	-	1021	894	-	-	-	-	-	-	-
Stage 1	1026	898	-	1025	897	-	-	-	-	-	-	-
Stage 2	1026	897	-	1026	898	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	8.53	0	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1634	-	-	-	1021	1631	-	-
HCM Lane V/C Ratio	-	-	-	-	0.002	-	-	-
HCM Control Delay (s/veh)	0	-	-	0	8.5	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0	0	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	4	5	2	1	4	4
Future Volume (vph)	4	5	2	1	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			55	55	
Link Distance (ft)	2664			475	6664	
Travel Time (s)	60.5			5.9	82.6	
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

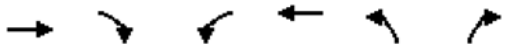
Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	5	2	1	4	4
Future Vol, veh/h	4	5	2	1	4	4
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	71	71	71	71	71	71
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	6	7	3	1	6	6

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	15	8	11	0	-	0
Stage 1	8	-	-	-	-	-
Stage 2	7	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	1008	1079	1621	-	-	-
Stage 1	1020	-	-	-	-	-
Stage 2	1021	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1006	1079	1621	-	-	-
Mov Cap-2 Maneuver	1006	-	-	-	-	-
Stage 1	1018	-	-	-	-	-
Stage 2	1021	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.49	4.82	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1200	-	1046	-	-
HCM Lane V/C Ratio	0.002	-	0.012	-	-
HCM Control Delay (s/veh)	7.2	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1128	234	58	391	93	11
Future Volume (vph)	1128	234	58	391	93	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	0		0	100
Storage Lanes		0	0		1	0
Taper Length (ft)			90		90	
Link Speed (mph)	45			45	55	
Link Distance (ft)	5327			1835	6664	
Travel Time (s)	80.7			27.8	82.6	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	93

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1128	234	58	391	93	11
Future Vol, veh/h	1128	234	58	391	93	11
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	76	76	76	76	76	76
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1484	308	76	514	122	14

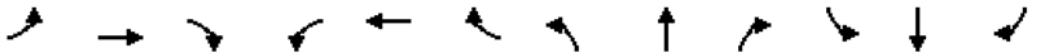
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1792	0	2305	1638
Stage 1	-	-	-	-	1638	-
Stage 2	-	-	-	-	667	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	350	-	~ 43	125
Stage 1	-	-	-	-	176	-
Stage 2	-	-	-	-	514	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	350	-	~ 30	125
Mov Cap-2 Maneuver	-	-	-	-	~ 30	-
Stage 1	-	-	-	-	176	-
Stage 2	-	-	-	-	357	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	2.34	$ 1703.09
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	32	-	-	233	-
HCM Lane V/C Ratio	4.23	-	-	0.218	-
HCM Control Delay (s/veh)	$ 1703.1	-	-	18.1	0
HCM Lane LOS	F	-	-	C	A
HCM 95th %tile Q(veh)	16.2	-	-	0.8	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

5: Dale Evans Pkwy. & Johnson Rd.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	1201	100	91	442	176	50	149	282	406	85	7
Future Volume (vph)	17	1201	100	91	442	176	50	149	282	406	85	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		165	100		0	325		0
Storage Lanes	0		0	0		1	1		1	1		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		45			45			55			55	
Link Distance (ft)		7616			5327			4005			1074	
Travel Time (s)		115.4			80.7			49.6			13.3	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	985.4
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	1201	100	91	442	176	50	149	282	406	85	7
Future Vol, veh/h	17	1201	100	91	442	176	50	149	282	406	85	7
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	21	1483	123	112	546	217	62	184	348	501	105	9
Number of Lanes	0	1	0	0	1	1	1	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	3	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	2	2	1
HCM Control Delay, s/veh	1885.2	403.7	94.6	292.3
HCM LOS	F	F	F	F

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	1%	17%	0%	100%	0%
Vol Thru, %	0%	100%	0%	91%	83%	0%	0%	92%
Vol Right, %	0%	0%	100%	8%	0%	100%	0%	8%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	50	149	282	1318	533	176	406	92
LT Vol	50	0	0	17	91	0	406	0
Through Vol	0	149	0	1201	442	0	0	85
RT Vol	0	0	282	100	0	176	0	7
Lane Flow Rate	62	184	348	1627	658	217	501	114
Geometry Grp	6	6	6	6	6	6	6	6
Degree of Util (X)	0.194	0.554	0.981	5.113	2.006	0.615	1.613	0.348
Departure Headway (Hd)	25.59	25.017	24.214	14.204	22.581	21.656	22.265	21.601
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	141	147	153	277	171	169	170	168
Service Time	23.29	22.717	21.914	11.904	20.281	19.356	19.965	19.301
HCM Lane V/C Ratio	0.44	1.252	2.275	5.874	3.848	1.284	2.947	0.679
HCM Control Delay, s/veh	34.3	55.1	126.1	1885.2	519.2	53.9	350.5	35.4
HCM Lane LOS	D	F	F	F	F	F	F	E
HCM 95th-tile Q	0.7	2.8	7.2	133.9	24.9	3.4	17.9	1.4



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	497	1	30	1317	1	55
Future Volume (vph)	497	1	30	1317	1	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	45		45			45
Link Distance (ft)	7616		549			661
Travel Time (s)	115.4		8.3			10.0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	102.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	497	1	30	1317	1	55
Future Vol, veh/h	497	1	30	1317	1	55
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	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	578	1	35	1531	1	64

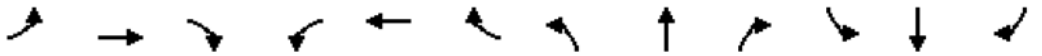
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	867	801	0	0	1566	0
Stage 1	801	-	-	-	-	-
Stage 2	66	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	~ 326	388	-	-	427	-
Stage 1	~ 445	-	-	-	-	-
Stage 2	962	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 325	388	-	-	427	-
Mov Cap-2 Maneuver	~ 325	-	-	-	-	-
Stage 1	~ 445	-	-	-	-	-
Stage 2	959	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	$ 391.13	0	0.24
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	325	32	-
HCM Lane V/C Ratio	-	-	1.781	0.003	-
HCM Control Delay (s/veh)	-	-	$ 391.1	13.5	0
HCM Lane LOS	-	-	F	B	A
HCM 95th %tile Q(veh)	-	-	37.5	0	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

7: Frontage Rd./I-15 NB Ramps & Stoddard Wells Rd.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	87	85	25	614	56	7	48	45	1354	0	23
Future Volume (vph)	10	87	85	25	614	56	7	48	45	1354	0	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		889			1144			979			330	
Travel Time (s)		13.5			17.3			22.3			7.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	1562

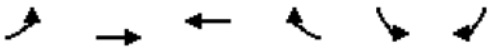
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	87	85	25	614	56	7	48	45	1354	0	23
Future Vol, veh/h	10	87	85	25	614	56	7	48	45	1354	0	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	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	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	10	91	89	26	640	58	7	50	47	1410	0	24

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	698	0	0	179	0	0	847	906	135	857	921	669
Stage 1	-	-	-	-	-	-	156	156	-	721	721	-
Stage 2	-	-	-	-	-	-	692	750	-	136	200	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	908	-	-	1409	-	-	284	278	919	~ 280	273	461
Stage 1	-	-	-	-	-	-	851	773	-	~ 422	435	-
Stage 2	-	-	-	-	-	-	438	422	-	~ 872	739	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	908	-	-	1409	-	-	258	266	919	~ 208	261	461
Mov Cap-2 Maneuver	-	-	-	-	-	-	258	266	-	~ 208	261	-
Stage 1	-	-	-	-	-	-	840	763	-	~ 409	422	-
Stage 2	-	-	-	-	-	-	402	409	-	~ 763	730	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.5	0.27	17.56	$ 2668.72
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	390	90	-	-	64	-	-	210
HCM Lane V/C Ratio	0.267	0.011	-	-	0.018	-	-	6.837
HCM Control Delay (s/veh)	17.6	9	0	-	7.6	0	-	$ 2668.7
HCM Lane LOS	C	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	1.1	0	-	-	0.1	-	-	156.5

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1	36	58	587	144	3
Future Volume (vph)	1	36	58	587	144	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0	0	25
Storage Lanes	0			0	1	0
Taper Length (ft)	90				90	
Link Speed (mph)		45	45		45	
Link Distance (ft)		1552	889		1482	
Travel Time (s)		23.5	13.5		22.5	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	36	58	587	144	3
Future Vol, veh/h	1	36	58	587	144	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	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, %	0	0	0	0	0	0
Mvmt Flow	1	43	69	699	171	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	69	0	-	0	464	418
Stage 1	-	-	-	-	418	-
Stage 2	-	-	-	-	45	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1545	-	-	-	560	639
Stage 1	-	-	-	-	668	-
Stage 2	-	-	-	-	982	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1545	-	-	-	560	639
Mov Cap-2 Maneuver	-	-	-	-	560	-
Stage 1	-	-	-	-	668	-
Stage 2	-	-	-	-	982	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.2	0	14.29
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	49	-	-	-	561
HCM Lane V/C Ratio	0.001	-	-	-	0.312
HCM Control Delay (s/veh)	7.3	0	-	-	14.3
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	1.3



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	145	1	1	587	1	2
Future Volume (vph)	145	1	1	587	1	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		45			45
Link Distance (ft)	263		1482			525
Travel Time (s)	6.0		22.5			8.0
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

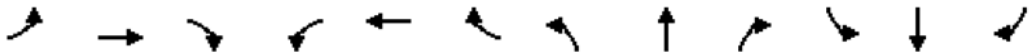
Intersection	
Int Delay, s/veh	2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	145	1	1	587	1	2
Future Vol, veh/h	145	1	1	587	1	2
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	79	79	79	79	79	79
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	184	1	1	743	1	3

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	378	373	0	0	744	0
Stage 1	373	-	-	-	-	-
Stage 2	5	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	628	678	-	-	873	-
Stage 1	701	-	-	-	-	-
Stage 2	1023	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	627	678	-	-	873	-
Mov Cap-2 Maneuver	627	-	-	-	-	-
Stage 1	701	-	-	-	-	-
Stage 2	1022	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	13.12	0	3.04
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	627	600	-
HCM Lane V/C Ratio	-	-	0.295	0.001	-
HCM Control Delay (s/veh)	-	-	13.1	9.1	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.2	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	169	12	2	7	1	3	6	345	21	1	109	58
Future Volume (vph)	169	12	2	7	1	3	6	345	21	1	109	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1375			3330			1135			747	
Travel Time (s)		17.0			41.3			14.1			9.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other

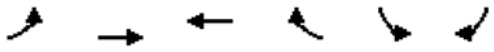
Control Type: Unsignalized

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	169	12	2	7	1	3	6	345	21	1	109	58
Future Vol, veh/h	169	12	2	7	1	3	6	345	21	1	109	58
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	188	13	2	8	1	3	7	383	23	1	121	64
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, s/veh	11	8.8	13.1	9.4
HCM LOS	B	A	B	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	92%	64%	1%
Vol Thru, %	93%	7%	9%	65%
Vol Right, %	6%	1%	27%	35%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	372	183	11	168
LT Vol	6	169	7	1
Through Vol	345	12	1	109
RT Vol	21	2	3	58
Lane Flow Rate	413	203	12	187
Geometry Grp	1	1	1	1
Degree of Util (X)	0.538	0.308	0.019	0.248
Departure Headway (Hd)	4.685	5.459	5.713	4.776
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	765	651	630	745
Service Time	2.749	3.554	3.713	2.856
HCM Lane V/C Ratio	0.54	0.312	0.019	0.251
HCM Control Delay, s/veh	13.1	11	8.8	9.4
HCM Lane LOS	B	B	A	A
HCM 95th-tile Q	3.3	1.3	0.1	1



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	22	5	20	2	2	25
Future Volume (vph)	22	5	20	2	2	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		55	55		45	
Link Distance (ft)		3330	1344		1769	
Travel Time (s)		41.3	16.7		26.8	
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	5.2

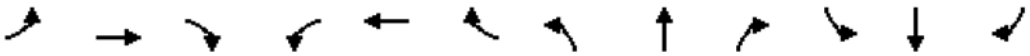
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	22	5	20	2	2	25
Future Vol, veh/h	22	5	20	2	2	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	69	69	69	69	69	69
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	32	7	29	3	3	36

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	32	0	-	0	101	30
Stage 1	-	-	-	-	30	-
Stage 2	-	-	-	-	71	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1593	-	-	-	902	1050
Stage 1	-	-	-	-	997	-
Stage 2	-	-	-	-	957	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1593	-	-	-	884	1050
Mov Cap-2 Maneuver	-	-	-	-	884	-
Stage 1	-	-	-	-	977	-
Stage 2	-	-	-	-	957	-

Approach	EB	WB	SB
HCM Control Delay, s/v	5.95	0	8.61
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1467	-	-	-	1035
HCM Lane V/C Ratio	0.02	-	-	-	0.038
HCM Control Delay (s/veh)	7.3	0	-	-	8.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

2: Ramona Rd. & Fresno Rd.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	2	0	0	0	1	1	0	0	0
Future Volume (vph)	0	0	0	2	0	0	0	1	1	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1354			321			1023			285	
Travel Time (s)		20.5			4.9			15.5			4.3	
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	2	0	0	0	1	1	0	0	0
Future Vol, veh/h	0	0	0	2	0	0	0	1	1	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	50	50	50	50	50	50	50	50	50
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	0	4	0	0	0	2	2	0	0	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	4	6	2	5	5	3	2	0	0	4	0	0
Stage 1	2	2	-	3	3	-	-	-	-	-	-	-
Stage 2	2	4	-	2	2	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	1022	893	1088	1021	894	1087	1634	-	-	1631	-	-
Stage 1	1026	898	-	1025	897	-	-	-	-	-	-	-
Stage 2	1026	897	-	1026	898	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	1022	893	1088	1021	894	1087	1634	-	-	1631	-	-
Mov Cap-2 Maneuver	1022	893	-	1021	894	-	-	-	-	-	-	-
Stage 1	1026	898	-	1025	897	-	-	-	-	-	-	-
Stage 2	1026	897	-	1026	898	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	8.54	0	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1634	-	-	-	1021	1631	-	-
HCM Lane V/C Ratio	-	-	-	-	0.004	-	-	-
HCM Control Delay (s/veh)	0	-	-	0	8.5	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0	0	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	21	1	2	1	3	23
Future Volume (vph)	21	1	2	1	3	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			55	55	
Link Distance (ft)	2664			475	6664	
Travel Time (s)	60.5			5.9	82.6	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

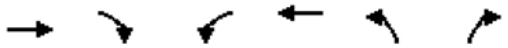
Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	21	1	2	1	3	23
Future Vol, veh/h	21	1	2	1	3	23
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	73	73	73	73	73	73
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	29	1	3	1	4	32

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	27	20	36	0	-	0
Stage 1	20	-	-	-	-	-
Stage 2	7	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	994	1064	1588	-	-	-
Stage 1	1008	-	-	-	-	-
Stage 2	1021	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	992	1064	1588	-	-	-
Mov Cap-2 Maneuver	992	-	-	-	-	-
Stage 1	1006	-	-	-	-	-
Stage 2	1021	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.73	4.85	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1200	-	995	-	-
HCM Lane V/C Ratio	0.002	-	0.03	-	-
HCM Control Delay (s/veh)	7.3	0	8.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	689	144	38	1026	282	43
Future Volume (vph)	689	144	38	1026	282	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	0		0	100
Storage Lanes		0	0		1	0
Taper Length (ft)			90		90	
Link Speed (mph)	45			45	55	
Link Distance (ft)	5327			1835	6664	
Travel Time (s)	80.7			27.8	82.6	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1011.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	689	144	38	1026	282	43
Future Vol, veh/h	689	144	38	1026	282	43
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	76	76	76	76	76	76
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	907	189	50	1350	371	57

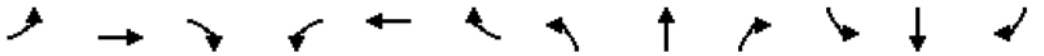
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1096	0	2451	1001
Stage 1	-	-	-	-	1001	-
Stage 2	-	-	-	-	1450	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	644	-	~ 35	297
Stage 1	-	-	-	-	~ 358	-
Stage 2	-	-	-	-	~ 218	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	644	-	~ 24	297
Mov Cap-2 Maneuver	-	-	-	-	~ 24	-
Stage 1	-	-	-	-	~ 358	-
Stage 2	-	-	-	-	~ 150	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.39	$ 6913.96
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	27	-	-	64	-
HCM Lane V/C Ratio	15.75	-	-	0.078	-
HCM Control Delay (s/veh)	$ 6914	-	-	11.1	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	53.1	-	-	0.3	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

5: Dale Evans Pkwy. & Johnson Rd.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	759	79	313	1257	361	139	101	181	263	220	17
Future Volume (vph)	9	759	79	313	1257	361	139	101	181	263	220	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		165	100		0	325		0
Storage Lanes	0		0	0		1	1		1	1		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		45			45			55			55	
Link Distance (ft)		7616			5327			4005			1074	
Travel Time (s)		115.4			80.7			49.6			13.3	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	1309.2
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	759	79	313	1257	361	139	101	181	263	220	17
Future Vol, veh/h	9	759	79	313	1257	361	139	101	181	263	220	17
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	11	949	99	391	1571	451	174	126	226	329	275	21
Number of Lanes	0	1	0	0	1	1	1	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	3	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	2	2	1
HCM Control Delay, s/veh	1190.2	1957.1	6.8	105.3
HCM LOS	F	F	A	F

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	1%	20%	0%	100%	0%
Vol Thru, %	0%	100%	0%	90%	80%	0%	0%	93%
Vol Right, %	0%	0%	100%	9%	0%	100%	0%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	139	101	181	847	1570	361	263	237
LT Vol	139	0	0	9	313	0	263	0
Through Vol	0	101	0	759	1257	0	0	220
RT Vol	0	0	181	79	0	361	0	17
Lane Flow Rate	174	126	226	1059	1963	451	329	296
Geometry Grp	6	6	6	6	6	6	6	6
Degree of Util (X)	0.572	0.398	0.67	3.554	6.154	1.315	1.078	0.926
Departure Headway (Hd)	2.453	1.897	1.12	16.164	16.876	15.979	15.871	15.248
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	1470	1900	3217	244	236	230	230	240
Service Time	0.153	-0.403	-1.18	13.864	14.576	13.679	13.571	12.948
HCM Lane V/C Ratio	0.118	0.066	0.07	4.34	8.318	1.961	1.43	1.233
HCM Control Delay, s/veh	8.4	5.8	6.1	1190.2	2358.9	209.9	125.6	82.7
HCM Lane LOS	A	A	A	F	F	F	F	F
HCM 95th-tile Q	3.8	2	5.8	75.1	140.9	15.9	10.7	8

6: Stoddard Wells Rd. & Johnson Rd.



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1410	3	13	845	2	29
Future Volume (vph)	1410	3	13	845	2	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	45		45			45
Link Distance (ft)	7616		549			661
Travel Time (s)	115.4		8.3			10.0
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	1171.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1410	3	13	845	2	29
Future Vol, veh/h	1410	3	13	845	2	29
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	67	67	67	67	67	67
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	2104	4	19	1261	3	43

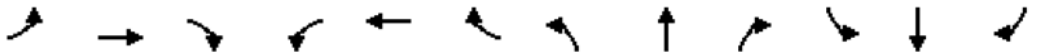
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	699	650	0	0	1281	0
Stage 1	650	-	-	-	-	-
Stage 2	49	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	~ 409	473	-	-	549	-
Stage 1	~ 523	-	-	-	-	-
Stage 2	~ 978	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 407	473	-	-	549	-
Mov Cap-2 Maneuver	~ 407	-	-	-	-	-
Stage 1	~ 523	-	-	-	-	-
Stage 2	~ 973	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	$ 1907.84	0	0.75
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	407	116	-
HCM Lane V/C Ratio	-	-	5.185	0.005	-
HCM Control Delay (s/veh)	-	-	$ 1907.8	11.6	0
HCM Lane LOS	-	-	F	B	A
HCM 95th %tile Q(veh)	-	-	216.4	0	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

7: Frontage Rd./I-15 NB Ramps & Stoddard Wells Rd.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	93	69	49	1484	61	4	79	39	889	0	20
Future Volume (vph)	5	93	69	49	1484	61	4	79	39	889	0	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		889			1144			979			330	
Travel Time (s)		13.5			17.3			22.3			7.5	
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	12514

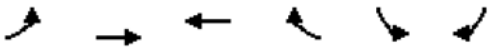
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	93	69	49	1484	61	4	79	39	889	0	20
Future Vol, veh/h	5	93	69	49	1484	61	4	79	39	889	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	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	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	7	137	101	72	2182	90	6	116	57	1307	0	29

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2272	0	0	238	0	0	2529	2618	188	2581	2624	2227
Stage 1	-	-	-	-	-	-	202	202	-	2371	2371	-
Stage 2	-	-	-	-	-	-	2326	2416	-	210	253	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	228	-	-	1341	-	-	19	~ 25	860	~ 17	24	55
Stage 1	-	-	-	-	-	-	804	738	-	~ 47	68	-
Stage 2	-	-	-	-	-	-	50	~ 65	-	~ 797	701	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	228	-	-	1341	-	-	8	~ 24	860	~ 16	23	55
Mov Cap-2 Maneuver	-	-	-	-	-	-	8	~ 24	-	~ 16	23	-
Stage 1	-	-	-	-	-	-	774	710	-	~ 47	68	-
Stage 2	-	-	-	-	-	-	24	~ 65	-	~ 599	675	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.64	0.24	$ 2358.55	$ 38119.68
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	32	50	-	-	~ 55	-	-	16
HCM Lane V/C Ratio	5.687	0.032	-	-	0.054	-	-	84.683
HCM Control Delay (s/veh)	$ 2358.6	21.3	0	-	7.8	0	-	$ 38119.7
HCM Lane LOS	F	C	A	-	A	A	-	F
HCM 95th %tile Q(veh)	21.6	0.1	-	-	0.2	-	-	168.1

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	6	36	54	1455	130	2
Future Volume (vph)	6	36	54	1455	130	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0	0	25
Storage Lanes	0			0	1	0
Taper Length (ft)	90				90	
Link Speed (mph)		45	45		45	
Link Distance (ft)		1552	889		1482	
Travel Time (s)		23.5	13.5		22.5	
Peak Hour Factor	0.58	0.58	0.58	0.58	0.58	0.58
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	25.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	36	54	1455	130	2
Future Vol, veh/h	6	36	54	1455	130	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	58	58	58	58	58	58
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	10	62	93	2509	224	3

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	93	0	-	0	1430	1347
Stage 1	-	-	-	-	1347	-
Stage 2	-	-	-	-	83	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1514	-	-	-	~ 150	187
Stage 1	-	-	-	-	245	-
Stage 2	-	-	-	-	946	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1514	-	-	-	~ 149	187
Mov Cap-2 Maneuver	-	-	-	-	~ 149	-
Stage 1	-	-	-	-	243	-
Stage 2	-	-	-	-	946	-

Approach	EB	WB	SB
HCM Control Delay, s/v	1.06	0	$ 322.07
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	257	-	-	-	149
HCM Lane V/C Ratio	0.007	-	-	-	1.525
HCM Control Delay (s/veh)	7.4	0	-	-	$ 322.1
HCM Lane LOS	A	A	-	-	F
HCM 95th %tile Q(veh)	0	-	-	-	15.4

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	132	1	1	1460	1	1
Future Volume (vph)	132	1	1	1460	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		45			45
Link Distance (ft)	263		1482			525
Travel Time (s)	6.0		22.5			8.0
Peak Hour Factor	0.56	0.56	0.56	0.56	0.56	0.56
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	20.3

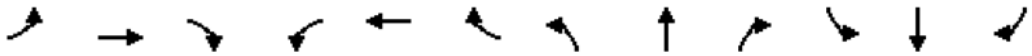
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	132	1	1	1460	1	1
Future Vol, veh/h	132	1	1	1460	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	56	56	56	56	56	56
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	236	2	2	2607	2	2

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1311	1305	0	0	2609	0
Stage 1	1305	-	-	-	-	-
Stage 2	5	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	~ 177	198	-	-	168	-
Stage 1	256	-	-	-	-	-
Stage 2	1023	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 175	198	-	-	168	-
Mov Cap-2 Maneuver	~ 175	-	-	-	-	-
Stage 1	256	-	-	-	-	-
Stage 2	1012	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/veh	242.95	0	13.35
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	175	168	-
HCM Lane V/C Ratio	-	-	1.355	0.011	-
HCM Control Delay (s/veh)	-	-	242.9	26.7	0
HCM Lane LOS	-	-	F	D	A
HCM 95th %tile Q(veh)	-	-	14.1	0	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	6	2	29	17	2	3	212	17	4	418	197
Future Volume (vph)	92	6	2	29	17	2	3	212	17	4	418	197
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1375			3330			1135			747	
Travel Time (s)		17.0			41.3			14.1			9.3	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	21.3
Intersection LOS	C

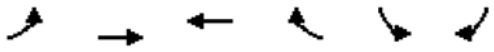
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	92	6	2	29	17	2	3	212	17	4	418	197
Future Vol, veh/h	92	6	2	29	17	2	3	212	17	4	418	197
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	99	6	2	31	18	2	3	228	18	4	449	212
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, s/veh	10.9	10.1	11.1	27.7
HCM LOS	B	B	B	D

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	1%	92%	60%	1%
Vol Thru, %	91%	6%	35%	68%
Vol Right, %	7%	2%	4%	32%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	232	100	48	619
LT Vol	3	92	29	4
Through Vol	212	6	17	418
RT Vol	17	2	2	197
Lane Flow Rate	249	108	52	666
Geometry Grp	1	1	1	1
Degree of Util (X)	0.36	0.189	0.092	0.85
Departure Headway (Hd)	5.188	6.337	6.416	4.597
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	694	566	557	792
Service Time	3.223	4.388	4.471	2.597
HCM Lane V/C Ratio	0.359	0.191	0.093	0.841
HCM Control Delay, s/veh	11.1	10.9	10.1	27.7
HCM Lane LOS	B	B	B	D
HCM 95th-tile Q	1.6	0.7	0.3	10.1

APPENDIX 5.2: OPENING YEAR CUMULATIVE (2027) WITH PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

This Page Intentionally Left Blank



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	45	36	13	1	1	17
Future Volume (vph)	45	36	13	1	1	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		55	55		45	
Link Distance (ft)		3330	1344		1769	
Travel Time (s)		41.3	16.7		26.8	
Peak Hour Factor	0.64	0.64	0.64	0.64	0.64	0.64
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

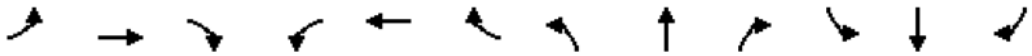
Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	45	36	13	1	1	17
Future Vol, veh/h	45	36	13	1	1	17
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	64	64	64	64	64	64
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	70	56	20	2	2	27

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	22	0	-	0	218	21
Stage 1	-	-	-	-	21	-
Stage 2	-	-	-	-	197	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1607	-	-	-	775	1062
Stage 1	-	-	-	-	1007	-
Stage 2	-	-	-	-	841	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1607	-	-	-	740	1062
Mov Cap-2 Maneuver	-	-	-	-	740	-
Stage 1	-	-	-	-	961	-
Stage 2	-	-	-	-	841	-

Approach	EB	WB	SB
HCM Control Delay, s/v	4.08	0	8.57
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1000	-	-	-	1037
HCM Lane V/C Ratio	0.044	-	-	-	0.027
HCM Control Delay (s/veh)	7.3	0	-	-	8.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1	1	1	1	1	1	21	1	1	6	1
Future Volume (vph)	1	1	1	1	1	1	1	21	1	1	6	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1354			321			1023			285	
Travel Time (s)		20.5			4.9			15.5			4.3	
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	1	1	1	1	1	21	1	1	6	1
Future Vol, veh/h	1	1	1	1	1	1	1	21	1	1	6	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	50	50	50	50	50	50	50	50	50
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	2	2	2	2	2	2	2	42	2	2	12	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	64	65	13	64	65	43	14	0	0	44	0	0
Stage 1	17	17	-	47	47	-	-	-	-	-	-	-
Stage 2	47	48	-	17	18	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	935	830	1073	935	830	1033	1617	-	-	1577	-	-
Stage 1	1008	885	-	972	860	-	-	-	-	-	-	-
Stage 2	972	859	-	1008	884	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	929	827	1073	929	827	1033	1617	-	-	1577	-	-
Mov Cap-2 Maneuver	929	827	-	929	827	-	-	-	-	-	-	-
Stage 1	1006	884	-	970	859	-	-	-	-	-	-	-
Stage 2	966	858	-	1002	883	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	8.89	8.93	0.31	0.91
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	78	-	-	932	922	219	-	-
HCM Lane V/C Ratio	0.001	-	-	0.006	0.007	0.001	-	-
HCM Control Delay (s/veh)	7.2	0	-	8.9	8.9	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	16	5	2	1	4	43
Future Volume (vph)	16	5	2	1	4	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			55	55	
Link Distance (ft)	2664			475	6664	
Travel Time (s)	60.5			5.9	82.6	
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	16	5	2	1	4	43
Future Vol, veh/h	16	5	2	1	4	43
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	71	71	71	71	71	71
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	23	7	3	1	6	61

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	43	36	66	0	-	0
Stage 1	36	-	-	-	-	-
Stage 2	7	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	973	1042	1548	-	-	-
Stage 1	992	-	-	-	-	-
Stage 2	1021	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	971	1042	1548	-	-	-
Mov Cap-2 Maneuver	971	-	-	-	-	-
Stage 1	990	-	-	-	-	-
Stage 2	1021	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.76	4.89	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1200	-	987	-	-
HCM Lane V/C Ratio	0.002	-	0.03	-	-
HCM Control Delay (s/veh)	7.3	0	8.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1128	265	65	391	103	13
Future Volume (vph)	1128	265	65	391	103	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	0		0	100
Storage Lanes		0	0		1	0
Taper Length (ft)			90		90	
Link Speed (mph)	45			45	55	
Link Distance (ft)	5327			1835	6664	
Travel Time (s)	80.7			27.8	82.6	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	132

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1128	265	65	391	103	13
Future Vol, veh/h	1128	265	65	391	103	13
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	76	76	76	76	76	76
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1484	349	86	514	136	17

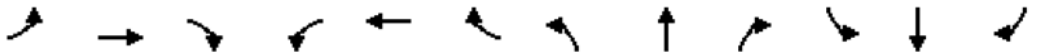
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1833	0	2344	1659
Stage 1	-	-	-	-	1659	-
Stage 2	-	-	-	-	686	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	337	-	~ 40	122
Stage 1	-	-	-	-	172	-
Stage 2	-	-	-	-	504	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	337	-	~ 26	122
Mov Cap-2 Maneuver	-	-	-	-	~ 26	-
Stage 1	-	-	-	-	172	-
Stage 2	-	-	-	-	325	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	2.75	$ 2224.75
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	29	-	-	241	-
HCM Lane V/C Ratio	5.333	-	-	0.254	-
HCM Control Delay (s/veh)	$ 2224.7	-	-	19.3	0
HCM Lane LOS	F	-	-	C	A
HCM 95th %tile Q(veh)	18.6	-	-	1	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

5: Dale Evans Pkwy. & Johnson Rd.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	1232	116	91	452	176	55	151	282	406	93	7
Future Volume (vph)	17	1232	116	91	452	176	55	151	282	406	93	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		165	100		0	325		0
Storage Lanes	0		0	0		1	1		1	1		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		45			45			55			55	
Link Distance (ft)		7616			5327			4005			1074	
Travel Time (s)		115.4			80.7			49.6			13.3	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	1038.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	1232	116	91	452	176	55	151	282	406	93	7
Future Vol, veh/h	17	1232	116	91	452	176	55	151	282	406	93	7
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	21	1521	143	112	558	217	68	186	348	501	115	9
Number of Lanes	0	1	0	0	1	1	1	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	3	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	2	2	1
HCM Control Delay, s/veh	1978.5	421.8	95.5	290.9
HCM LOS	F	F	F	F

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	1%	17%	0%	100%	0%
Vol Thru, %	0%	100%	0%	90%	83%	0%	0%	93%
Vol Right, %	0%	0%	100%	8%	0%	100%	0%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	55	151	282	1365	543	176	406	100
LT Vol	55	0	0	17	91	0	406	0
Through Vol	0	151	0	1232	452	0	0	93
RT Vol	0	0	282	116	0	176	0	7
Lane Flow Rate	68	186	348	1685	670	217	501	123
Geometry Grp	6	6	6	6	6	6	6	6
Degree of Util (X)	0.214	0.563	0.983	5.32	2.053	0.618	1.617	0.38
Departure Headway (Hd)	25.994	25.419	24.614	14.304	22.965	22.038	22.673	22.012
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	139	144	153	270	168	167	165	165
Service Time	23.694	23.119	22.314	12.004	20.665	19.738	20.373	19.712
HCM Lane V/C Ratio	0.489	1.292	2.275	6.241	3.988	1.299	3.036	0.745
HCM Control Delay, s/veh	35.6	56.7	127.9	1978.5	540.7	55	353.3	37.6
HCM Lane LOS	E	F	F	F	F	F	F	E
HCM 95th-tile Q	0.8	2.8	7.2	139.5	25.4	3.4	17.7	1.6

6: Stoddard Wells Rd. & Johnson Rd.



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	512	1	30	1364	1	55
Future Volume (vph)	512	1	30	1364	1	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	45		45			45
Link Distance (ft)	7616		549			661
Travel Time (s)	115.4		8.3			10.0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	116.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	512	1	30	1364	1	55
Future Vol, veh/h	512	1	30	1364	1	55
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	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	595	1	35	1586	1	64

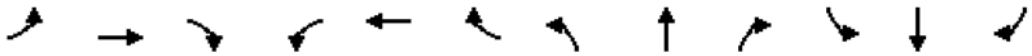
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	894	828	0	0	1621	0
Stage 1	828	-	-	-	-	-
Stage 2	66	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	~ 314	374	-	-	407	-
Stage 1	~ 433	-	-	-	-	-
Stage 2	962	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 313	374	-	-	407	-
Mov Cap-2 Maneuver	~ 313	-	-	-	-	-
Stage 1	~ 433	-	-	-	-	-
Stage 2	959	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	$ 446.33	0	0.25
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	313	32	-
HCM Lane V/C Ratio	-	-	1.904	0.003	-
HCM Control Delay (s/veh)	-	-	$ 446.3	13.9	0
HCM Lane LOS	-	-	F	B	A
HCM 95th %tile Q(veh)	-	-	40.9	0	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

7: Frontage Rd./I-15 NB Ramps & Stoddard Wells Rd.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	87	85	25	629	56	7	48	45	1401	0	23
Future Volume (vph)	10	87	85	25	629	56	7	48	45	1401	0	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		889			1144			979			330	
Travel Time (s)		13.5			17.3			22.3			7.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	1693.2

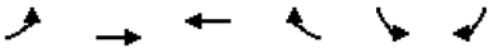
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	87	85	25	629	56	7	48	45	1401	0	23
Future Vol, veh/h	10	87	85	25	629	56	7	48	45	1401	0	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	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	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	10	91	89	26	655	58	7	50	47	1459	0	24

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	714	0	0	179	0	0	863	921	135	873	936	684
Stage 1	-	-	-	-	-	-	156	156	-	736	736	-
Stage 2	-	-	-	-	-	-	707	766	-	136	200	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	896	-	-	1409	-	-	277	272	919	~ 273	267	452
Stage 1	-	-	-	-	-	-	851	773	-	~ 414	428	-
Stage 2	-	-	-	-	-	-	429	415	-	~ 872	739	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	896	-	-	1409	-	-	251	261	919	~ 202	255	452
Mov Cap-2 Maneuver	-	-	-	-	-	-	251	261	-	~ 202	255	-
Stage 1	-	-	-	-	-	-	840	762	-	~ 401	415	-
Stage 2	-	-	-	-	-	-	394	402	-	~ 763	730	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.5	0.27	17.87	$ 2871.26
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	383	90	-	-	62	-	-	204
HCM Lane V/C Ratio	0.272	0.012	-	-	0.018	-	-	7.285
HCM Control Delay (s/veh)	17.9	9.1	0	-	7.6	0	-	$ 2871.3
HCM Lane LOS	C	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	1.1	0	-	-	0.1	-	-	163.4

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1	36	58	602	144	3
Future Volume (vph)	1	36	58	602	144	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0	0	25
Storage Lanes	0			0	1	0
Taper Length (ft)	90				90	
Link Speed (mph)		45	45		45	
Link Distance (ft)		1552	889		1482	
Travel Time (s)		23.5	13.5		22.5	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	36	58	602	144	3
Future Vol, veh/h	1	36	58	602	144	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	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, %	0	0	0	0	0	0
Mvmt Flow	1	43	69	717	171	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	69	0	-	0	473	427
Stage 1	-	-	-	-	427	-
Stage 2	-	-	-	-	45	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1545	-	-	-	554	632
Stage 1	-	-	-	-	662	-
Stage 2	-	-	-	-	982	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1545	-	-	-	553	632
Mov Cap-2 Maneuver	-	-	-	-	553	-
Stage 1	-	-	-	-	662	-
Stage 2	-	-	-	-	982	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.2	0	14.45
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	49	-	-	-	555
HCM Lane V/C Ratio	0.001	-	-	-	0.315
HCM Control Delay (s/veh)	7.3	0	-	-	14.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	1.3



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	145	1	1	602	1	2
Future Volume (vph)	145	1	1	602	1	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		45			45
Link Distance (ft)	263		1482			525
Travel Time (s)	6.0		22.5			8.0
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

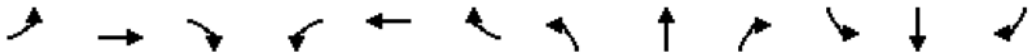
Intersection	
Int Delay, s/veh	2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	145	1	1	602	1	2
Future Vol, veh/h	145	1	1	602	1	2
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	79	79	79	79	79	79
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	184	1	1	762	1	3

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	387	382	0	0	763	0
Stage 1	382	-	-	-	-	-
Stage 2	5	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	620	669	-	-	858	-
Stage 1	694	-	-	-	-	-
Stage 2	1023	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	619	669	-	-	858	-
Mov Cap-2 Maneuver	619	-	-	-	-	-
Stage 1	694	-	-	-	-	-
Stage 2	1022	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	13.26	0	3.07
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	619	600	-
HCM Lane V/C Ratio	-	-	0.298	0.001	-
HCM Control Delay (s/veh)	-	-	13.3	9.2	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.2	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	169	29	2	12	6	10	6	345	36	25	109	58
Future Volume (vph)	169	29	2	12	6	10	6	345	36	25	109	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1375			3330			1135			747	
Travel Time (s)		17.0			41.3			14.1			9.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	12.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	169	29	2	12	6	10	6	345	36	25	109	58
Future Vol, veh/h	169	29	2	12	6	10	6	345	36	25	109	58
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	188	32	2	13	7	11	7	383	40	28	121	64
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, s/veh	11.9	9.2	14.8	10.3
HCM LOS	B	A	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	85%	43%	13%
Vol Thru, %	89%	15%	21%	57%
Vol Right, %	9%	1%	36%	30%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	387	200	28	192
LT Vol	6	169	12	25
Through Vol	345	29	6	109
RT Vol	36	2	10	58
Lane Flow Rate	430	222	31	213
Geometry Grp	1	1	1	1
Degree of Util (X)	0.589	0.353	0.05	0.302
Departure Headway (Hd)	4.934	5.723	5.833	5.091
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	735	629	612	706
Service Time	2.934	3.759	3.884	3.124
HCM Lane V/C Ratio	0.585	0.353	0.051	0.302
HCM Control Delay, s/veh	14.8	11.9	9.2	10.3
HCM Lane LOS	B	B	A	B
HCM 95th-tile Q	3.9	1.6	0.2	1.3

11: Dachshund Av. & Gustine Rd.



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1	5	18	1	17	29
Future Volume (vph)	1	5	18	1	17	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	45		45			45
Link Distance (ft)	1365		225			1301
Travel Time (s)	20.7		3.4			19.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	2.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	5	18	1	17	29
Future Vol, veh/h	1	5	18	1	17	29
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1	5	20	1	18	32

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	89	20	0	0	21	0
Stage 1	20	-	-	-	-	-
Stage 2	68	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	917	1064	-	-	1608	-
Stage 1	1008	-	-	-	-	-
Stage 2	959	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	906	1064	-	-	1608	-
Mov Cap-2 Maneuver	906	-	-	-	-	-
Stage 1	1008	-	-	-	-	-
Stage 2	948	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	8.5	0	2.68
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1034	665	-
HCM Lane V/C Ratio	-	-	0.006	0.011	-
HCM Control Delay (s/veh)	-	-	8.5	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	4	5	13	14	15	14
Future Volume (vph)	4	5	13	14	15	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		45			45
Link Distance (ft)	352		891			225
Travel Time (s)	8.0		13.5			3.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	5	13	14	15	14
Future Vol, veh/h	4	5	13	14	15	14
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	4	5	14	15	16	15

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	70	22	0	0	29	0
Stage 1	22	-	-	-	-	-
Stage 2	48	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	940	1061	-	-	1597	-
Stage 1	1006	-	-	-	-	-
Stage 2	980	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	930	1061	-	-	1597	-
Mov Cap-2 Maneuver	930	-	-	-	-	-
Stage 1	1006	-	-	-	-	-
Stage 2	970	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	8.64	0	3.76
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	999	931	-
HCM Lane V/C Ratio	-	-	0.01	0.01	-
HCM Control Delay (s/veh)	-	-	8.6	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

13: Dachshund Av. & Access 2



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	7	2	25	21	7	11
Future Volume (vph)	7	2	25	21	7	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		45			45
Link Distance (ft)	362		283			891
Travel Time (s)	8.2		4.3			13.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	2	25	21	7	11
Future Vol, veh/h	7	2	25	21	7	11
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	8	2	27	23	8	12

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	66	39	0	0	50	0
Stage 1	39	-	-	-	-	-
Stage 2	27	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	945	1039	-	-	1570	-
Stage 1	989	-	-	-	-	-
Stage 2	1001	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	940	1039	-	-	1570	-
Mov Cap-2 Maneuver	940	-	-	-	-	-
Stage 1	989	-	-	-	-	-
Stage 2	996	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	8.79	0	2.84
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	960	700	-
HCM Lane V/C Ratio	-	-	0.01	0.005	-
HCM Control Delay (s/veh)	-	-	8.8	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

14: Dakota Av./Dachshund Av. & Fresno Rd.



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1	1	46	1	1	18
Future Volume (vph)	1	1	46	1	1	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	45		45			45
Link Distance (ft)	1354		1769			283
Travel Time (s)	20.5		26.8			4.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	1	46	1	1	18
Future Vol, veh/h	1	1	46	1	1	18
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1	1	50	1	1	20

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	72	51	0	0	51	0
Stage 1	51	-	-	-	-	-
Stage 2	22	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	937	1023	-	-	1568	-
Stage 1	977	-	-	-	-	-
Stage 2	1006	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	936	1023	-	-	1568	-
Mov Cap-2 Maneuver	936	-	-	-	-	-
Stage 1	977	-	-	-	-	-
Stage 2	1005	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	8.69	0	0.38
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	978	95	-
HCM Lane V/C Ratio	-	-	0.002	0.001	-
HCM Control Delay (s/veh)	-	-	8.7	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	17	5	0	0	0
Future Volume (vph)	0	17	5	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	45			45	30	
Link Distance (ft)	1365			207	187	
Travel Time (s)	20.7			3.1	4.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	7.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	17	5	0	0	0
Future Vol, veh/h	0	17	5	0	0	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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	18	5	0	0	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	12	1	1	0	-	0
Stage 1	1	-	-	-	-	-
Stage 2	11	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	1013	1089	1635	-	-	-
Stage 1	1027	-	-	-	-	-
Stage 2	1017	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1009	1089	1635	-	-	-
Mov Cap-2 Maneuver	1009	-	-	-	-	-
Stage 1	1024	-	-	-	-	-
Stage 2	1017	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.36	7.21	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1635	-	1089	-	-
HCM Lane V/C Ratio	0.003	-	0.017	-	-
HCM Control Delay (s/veh)	7.2	0	8.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	4	1	5	1	3	14
Future Volume (vph)	4	1	5	1	3	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			45	45	
Link Distance (ft)	342			891	207	
Travel Time (s)	7.8			13.5	3.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	1	5	1	3	14
Future Vol, veh/h	4	1	5	1	3	14
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	4	1	5	1	3	15

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	23	11	18	0	-	0
Stage 1	11	-	-	-	-	-
Stage 2	12	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	999	1076	1611	-	-	-
Stage 1	1017	-	-	-	-	-
Stage 2	1016	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	995	1076	1611	-	-	-
Mov Cap-2 Maneuver	995	-	-	-	-	-
Stage 1	1014	-	-	-	-	-
Stage 2	1016	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.58	6.03	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1500	-	1010	-	-
HCM Lane V/C Ratio	0.003	-	0.005	-	-
HCM Control Delay (s/veh)	7.2	0	8.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1	5	16	5	1	3
Future Volume (vph)	1	5	16	5	1	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			45	45	
Link Distance (ft)	367			285	891	
Travel Time (s)	8.3			4.3	13.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

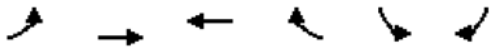
Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	5	16	5	1	3
Future Vol, veh/h	1	5	16	5	1	3
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1	5	17	5	1	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	43	3	4	0	-	0
Stage 1	3	-	-	-	-	-
Stage 2	40	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	973	1087	1630	-	-	-
Stage 1	1026	-	-	-	-	-
Stage 2	987	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	963	1087	1630	-	-	-
Mov Cap-2 Maneuver	963	-	-	-	-	-
Stage 1	1015	-	-	-	-	-
Stage 2	987	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.4	5.51	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1371	-	1064	-	-
HCM Lane V/C Ratio	0.011	-	0.006	-	-
HCM Control Delay (s/veh)	7.2	0	8.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	40	15	47	1	1	69
Future Volume (vph)	40	15	47	1	1	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		55	55		45	
Link Distance (ft)		3330	1344		1769	
Travel Time (s)		41.3	16.7		26.8	
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

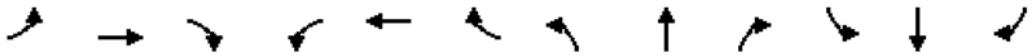
Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	40	15	47	1	1	69
Future Vol, veh/h	40	15	47	1	1	69
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	69	69	69	69	69	69
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	58	22	68	1	1	100

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	70	0	-	0	207	69
Stage 1	-	-	-	-	69	-
Stage 2	-	-	-	-	138	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1544	-	-	-	786	1000
Stage 1	-	-	-	-	959	-
Stage 2	-	-	-	-	894	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1544	-	-	-	757	1000
Mov Cap-2 Maneuver	-	-	-	-	757	-
Stage 1	-	-	-	-	923	-
Stage 2	-	-	-	-	894	-

Approach	EB	WB	SB
HCM Control Delay, s/v	5.4	0	9.03
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1309	-	-	-	995
HCM Lane V/C Ratio	0.038	-	-	-	0.102
HCM Control Delay (s/veh)	7.4	0	-	-	9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1	1	2	1	1	1	10	1	1	27	1
Future Volume (vph)	1	1	1	2	1	1	1	10	1	1	27	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1354			321			1023			285	
Travel Time (s)		20.5			4.9			15.5			4.3	
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	1	2	1	1	1	10	1	1	27	1
Future Vol, veh/h	1	1	1	2	1	1	1	10	1	1	27	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	50	50	50	50	50	50	50	50	50
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	2	2	2	4	2	2	2	20	2	2	54	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	84	85	55	84	85	21	56	0	0	22	0	0
Stage 1	59	59	-	25	25	-	-	-	-	-	-	-
Stage 2	25	26	-	59	60	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	908	809	1018	908	809	1062	1562	-	-	1607	-	-
Stage 1	958	850	-	998	878	-	-	-	-	-	-	-
Stage 2	998	878	-	958	849	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	901	807	1018	901	807	1062	1562	-	-	1607	-	-
Mov Cap-2 Maneuver	901	807	-	901	807	-	-	-	-	-	-	-
Stage 1	956	849	-	997	877	-	-	-	-	-	-	-
Stage 2	993	876	-	952	848	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	9.02	8.99	0.61	0.25
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	147	-	-	900	909	62	-	-
HCM Lane V/C Ratio	0.001	-	-	0.007	0.009	0.001	-	-
HCM Control Delay (s/veh)	7.3	0	-	9	9	7.2	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	71	1	2	1	3	42
Future Volume (vph)	71	1	2	1	3	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			55	55	
Link Distance (ft)	2664			475	6664	
Travel Time (s)	60.5			5.9	82.6	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

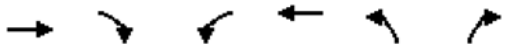
Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	71	1	2	1	3	42
Future Vol, veh/h	71	1	2	1	3	42
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	73	73	73	73	73	73
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	97	1	3	1	4	58

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	40	33	62	0	-	0
Stage 1	33	-	-	-	-	-
Stage 2	7	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	977	1046	1554	-	-	-
Stage 1	995	-	-	-	-	-
Stage 2	1021	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	975	1046	1554	-	-	-
Mov Cap-2 Maneuver	975	-	-	-	-	-
Stage 1	993	-	-	-	-	-
Stage 2	1021	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	9.1	4.88	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1200	-	976	-	-
HCM Lane V/C Ratio	0.002	-	0.101	-	-
HCM Control Delay (s/veh)	7.3	0	9.1	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	689	160	42	1026	322	52
Future Volume (vph)	689	160	42	1026	322	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	0		0	100
Storage Lanes		0	0		1	0
Taper Length (ft)			90		90	
Link Speed (mph)	45			45	55	
Link Distance (ft)	5327			1835	6664	
Travel Time (s)	80.7			27.8	82.6	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1419.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	689	160	42	1026	322	52
Future Vol, veh/h	689	160	42	1026	322	52
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	76	76	76	76	76	76
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	907	211	55	1350	424	68

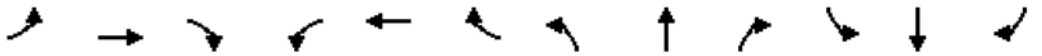
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1117	0	2472	1012
Stage 1	-	-	-	-	1012	-
Stage 2	-	-	-	-	1461	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	633	-	~ 34	293
Stage 1	-	-	-	-	~ 354	-
Stage 2	-	-	-	-	~ 215	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	633	-	~ 22	293
Mov Cap-2 Maneuver	-	-	-	-	~ 22	-
Stage 1	-	-	-	-	~ 354	-
Stage 2	-	-	-	-	~ 140	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.44	$ 8693.38
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	25	-	-	71	-
HCM Lane V/C Ratio	19.657	-	-	0.087	-
HCM Control Delay (s/veh)	$ 8693.4	-	-	11.2	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	61.4	-	-	0.3	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

5: Dale Evans Pkwy. & Johnson Rd.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	775	87	313	1297	361	159	111	181	263	224	17
Future Volume (vph)	9	775	87	313	1297	361	159	111	181	263	224	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		165	100		0	325		0
Storage Lanes	0		0	0		1	1		1	1		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		45			45			55			55	
Link Distance (ft)		7616			5327			4005			1074	
Travel Time (s)		115.4			80.7			49.6			13.3	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	1371.8
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	775	87	313	1297	361	159	111	181	263	224	17
Future Vol, veh/h	9	775	87	313	1297	361	159	111	181	263	224	17
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	11	969	109	391	1621	451	199	139	226	329	280	21
Number of Lanes	0	1	0	0	1	1	1	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	3	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	2	2	1
HCM Control Delay, s/veh	1260.8	2059	+	104.8
HCM LOS	F	F	-	F

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	1%	19%	0%	100%	0%
Vol Thru, %	0%	100%	0%	89%	81%	0%	0%	93%
Vol Right, %	0%	0%	100%	10%	0%	100%	0%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	159	111	181	871	1610	361	263	241
LT Vol	159	0	0	9	313	0	263	0
Through Vol	0	111	0	775	1297	0	0	224
RT Vol	0	0	181	87	0	361	0	17
Lane Flow Rate	199	139	226	1089	2013	451	329	301
Geometry Grp	6	6	6	6	6	6	6	6
Degree of Util (X)	-	-	-	3.709	6.403	1.336	1.091	0.954
Departure Headway (Hd)	-	-	-	16.667	17.205	16.307	14.408	13.783
Convergence, Y/N	-	-	-	Yes	Yes	Yes	Yes	Yes
Cap	-	-	-	229	242	226	256	265
Service Time	-	-	-	14.367	14.905	14.007	12.108	11.483
HCM Lane V/C Ratio	-	-	-	4.755	8.318	1.996	1.285	1.136
HCM Control Delay, s/veh	+	+	+	1260.8	2471.5	219.2	124.1	83.7
HCM Lane LOS	-	-	-	F	F	F	F	F
HCM 95th-tile Q	-	-	-	77	144.8	16.1	11.6	8.9

Notes
HCM 7th Edition AWSC methodology error - negative departure headway

6: Stoddard Wells Rd. & Johnson Rd.



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1470	3	13	869	2	29
Future Volume (vph)	1470	3	13	869	2	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	45		45			45
Link Distance (ft)	7616		549			661
Travel Time (s)	115.4		8.3			10.0
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	1276.1

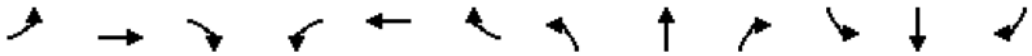
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1470	3	13	869	2	29
Future Vol, veh/h	1470	3	13	869	2	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	67	67	67	67	67	67
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	2194	4	19	1297	3	43

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	717	668	0	0	1316	0
Stage 1	668	-	-	-	-	-
Stage 2	49	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	~ 399	462	-	-	532	-
Stage 1	~ 513	-	-	-	-	-
Stage 2	~ 978	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 397	462	-	-	532	-
Mov Cap-2 Maneuver	~ 397	-	-	-	-	-
Stage 1	~ 513	-	-	-	-	-
Stage 2	~ 973	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	$ 2067.09	0	0.76
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	397	116	-
HCM Lane V/C Ratio	-	-	5.538	0.006	-
HCM Control Delay (s/veh)	-	-	$ 2067.1	11.8	0
HCM Lane LOS	-	-	F	B	A
HCM 95th %tile Q(veh)	-	-	228.8	0	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	93	69	49	1544	61	4	79	39	913	0	20
Future Volume (vph)	5	93	69	49	1544	61	4	79	39	913	0	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		889			1144			979			330	
Travel Time (s)		13.5			17.3			22.3			7.5	
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	14907.8

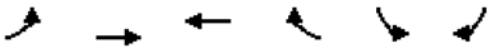
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	5	93	69	49	1544	61	4	79	39	913	0	20
Future Vol, veh/h	5	93	69	49	1544	61	4	79	39	913	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	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	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	7	137	101	72	2271	90	6	116	57	1343	0	29

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2360	0	0	238	0	0	2617	2707	188	2669	2713	2315
Stage 1	-	-	-	-	-	-	202	202	-	2460	2460	-
Stage 2	-	-	-	-	-	-	2415	2504	-	210	253	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	210	-	-	1341	-	-	16	~ 21	860	~ 15	21	49
Stage 1	-	-	-	-	-	-	804	738	-	~ 42	61	-
Stage 2	-	-	-	-	-	-	45	~ 58	-	~ 797	701	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	210	-	-	1341	-	-	6	~ 21	860	~ 13	20	49
Mov Cap-2 Maneuver	-	-	-	-	-	-	6	~ 21	-	~ 13	20	-
Stage 1	-	-	-	-	-	-	771	708	-	~ 42	61	-
Stage 2	-	-	-	-	-	-	18	~ 58	-	~ 596	673	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.68	0.23	$ 2831.17	$ 45582.89
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	27	50	-	-	~ 53	-	-	14
HCM Lane V/C Ratio	6.654	0.035	-	-	0.054	-	-	101.103
HCM Control Delay (s/veh)	$ 2831.2	22.7	0	-	7.8	0	-	$ 45582.9
HCM Lane LOS	F	C	A	-	A	A	-	F
HCM 95th %tile Q(veh)	22.1	0.1	-	-	0.2	-	-	172.8

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	6	36	54	1515	130	2
Future Volume (vph)	6	36	54	1515	130	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0	0	25
Storage Lanes	0			0	1	0
Taper Length (ft)	90				90	
Link Speed (mph)		45	45		45	
Link Distance (ft)		1552	889		1482	
Travel Time (s)		23.5	13.5		22.5	
Peak Hour Factor	0.58	0.58	0.58	0.58	0.58	0.58
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	28.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	36	54	1515	130	2
Future Vol, veh/h	6	36	54	1515	130	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	58	58	58	58	58	58
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	10	62	93	2612	224	3

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	93	0	-	0	1482	1399
Stage 1	-	-	-	-	1399	-
Stage 2	-	-	-	-	83	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1514	-	-	-	~ 139	174
Stage 1	-	-	-	-	231	-
Stage 2	-	-	-	-	946	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1514	-	-	-	~ 138	174
Mov Cap-2 Maneuver	-	-	-	-	~ 138	-
Stage 1	-	-	-	-	229	-
Stage 2	-	-	-	-	946	-

Approach	EB	WB	SB
HCM Control Delay, s/v	1.06	0	$ 374.69
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	257	-	-	-	139
HCM Lane V/C Ratio	0.007	-	-	-	1.64
HCM Control Delay (s/veh)	7.4	0	-	-	$ 374.7
HCM Lane LOS	A	A	-	-	F
HCM 95th %tile Q(veh)	0	-	-	-	16.3

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	132	1	1	1520	1	1
Future Volume (vph)	132	1	1	1520	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		45			45
Link Distance (ft)	263		1482			525
Travel Time (s)	6.0		22.5			8.0
Peak Hour Factor	0.56	0.56	0.56	0.56	0.56	0.56
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	23.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	132	1	1	1520	1	1
Future Vol, veh/h	132	1	1	1520	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	56	56	56	56	56	56
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	236	2	2	2714	2	2

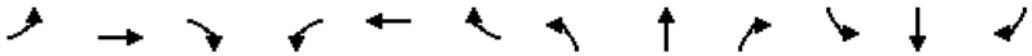
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1364	1359	0	0	2716	0
Stage 1	1359	-	-	-	-	-
Stage 2	5	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	~ 164	184	-	-	152	-
Stage 1	241	-	-	-	-	-
Stage 2	1023	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 162	184	-	-	152	-
Mov Cap-2 Maneuver	~ 162	-	-	-	-	-
Stage 1	241	-	-	-	-	-
Stage 2	1011	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/veh	$290.34	0	14.47
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	162	152	-
HCM Lane V/C Ratio	-	-	1.462	0.012	-
HCM Control Delay (s/veh)	-	-	290.3	28.9	0
HCM Lane LOS	-	-	F	D	A
HCM 95th %tile Q(veh)	-	-	15.2	0	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

10: Dale Evans Pkwy. & Corwin Rd.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	14	2	48	39	32	3	212	25	16	418	197
Future Volume (vph)	92	14	2	48	39	32	3	212	25	16	418	197
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1375			3330			1135			747	
Travel Time (s)		17.0			41.3			14.1			9.3	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	28.6
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	92	14	2	48	39	32	3	212	25	16	418	197
Future Vol, veh/h	92	14	2	48	39	32	3	212	25	16	418	197
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	99	15	2	52	42	34	3	228	27	17	449	212
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, s/veh	11.7	11.5	12.4	40.8
HCM LOS	B	B	B	E

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	1%	85%	40%	3%
Vol Thru, %	88%	13%	33%	66%
Vol Right, %	10%	2%	27%	31%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	240	108	119	631
LT Vol	3	92	48	16
Through Vol	212	14	39	418
RT Vol	25	2	32	197
Lane Flow Rate	258	116	128	678
Geometry Grp	1	1	1	1
Degree of Util (X)	0.402	0.217	0.23	0.931
Departure Headway (Hd)	5.611	6.734	6.468	4.94
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	637	530	551	733
Service Time	3.682	4.826	4.556	2.99
HCM Lane V/C Ratio	0.405	0.219	0.232	0.925
HCM Control Delay, s/veh	12.4	11.7	11.5	40.8
HCM Lane LOS	B	B	B	E
HCM 95th-tile Q	1.9	0.8	0.9	13.1

11: Dachshund Av. & Gustine Rd.



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1	21	51	1	8	38
Future Volume (vph)	1	21	51	1	8	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	45		45			45
Link Distance (ft)	1365		225			1301
Travel Time (s)	20.7		3.4			19.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	2.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	21	51	1	8	38
Future Vol, veh/h	1	21	51	1	8	38
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1	23	55	1	9	41

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	115	56	0	0	57	0
Stage 1	56	-	-	-	-	-
Stage 2	59	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	887	1016	-	-	1561	-
Stage 1	972	-	-	-	-	-
Stage 2	969	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	881	1016	-	-	1561	-
Mov Cap-2 Maneuver	881	-	-	-	-	-
Stage 1	972	-	-	-	-	-
Stage 2	963	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	8.65	0	1.27
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1009	313	-
HCM Lane V/C Ratio	-	-	0.024	0.006	-
HCM Control Delay (s/veh)	-	-	8.7	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	17	19	32	7	7	31
Future Volume (vph)	17	19	32	7	7	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		45			45
Link Distance (ft)	352		891			225
Travel Time (s)	8.0		13.5			3.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	3.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	17	19	32	7	7	31
Future Vol, veh/h	17	19	32	7	7	31
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	18	21	35	8	8	34

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	88	39	0	0	42	0
Stage 1	39	-	-	-	-	-
Stage 2	49	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	918	1039	-	-	1580	-
Stage 1	989	-	-	-	-	-
Stage 2	979	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	914	1039	-	-	1580	-
Mov Cap-2 Maneuver	914	-	-	-	-	-
Stage 1	989	-	-	-	-	-
Stage 2	974	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	8.84	0	1.34
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	976	332	-
HCM Lane V/C Ratio	-	-	0.04	0.005	-
HCM Control Delay (s/veh)	-	-	8.8	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

13: Dachshund Av. & Access 2



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	27	9	30	11	4	44
Future Volume (vph)	27	9	30	11	4	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		45			45
Link Distance (ft)	362		283			891
Travel Time (s)	8.2		4.3			13.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	2.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	27	9	30	11	4	44
Future Vol, veh/h	27	9	30	11	4	44
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	29	10	33	12	4	48

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	95	39	0	0	45	0
Stage 1	39	-	-	-	-	-
Stage 2	57	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	909	1039	-	-	1577	-
Stage 1	989	-	-	-	-	-
Stage 2	971	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	907	1039	-	-	1577	-
Mov Cap-2 Maneuver	907	-	-	-	-	-
Stage 1	989	-	-	-	-	-
Stage 2	968	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	9.01	0	0.61
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	937	150	-
HCM Lane V/C Ratio	-	-	0.042	0.003	-
HCM Control Delay (s/veh)	-	-	9	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

14: Dakota Av./Dachshund Av. & Fresno Rd.



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1	1	41	1	1	71
Future Volume (vph)	1	1	41	1	1	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	45		45			45
Link Distance (ft)	1354		1769			283
Travel Time (s)	20.5		26.8			4.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	1	41	1	1	71
Future Vol, veh/h	1	1	41	1	1	71
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1	1	45	1	1	77

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	124	45	0	0	46	0
Stage 1	45	-	-	-	-	-
Stage 2	79	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	875	1030	-	-	1575	-
Stage 1	983	-	-	-	-	-
Stage 2	949	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	875	1030	-	-	1575	-
Mov Cap-2 Maneuver	875	-	-	-	-	-
Stage 1	983	-	-	-	-	-
Stage 2	948	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	8.81	0	0.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	946	25	-
HCM Lane V/C Ratio	-	-	0.002	0.001	-
HCM Control Delay (s/veh)	-	-	8.8	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	8	21	0	0	0
Future Volume (vph)	0	8	21	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	45			45	30	
Link Distance (ft)	1365			207	165	
Travel Time (s)	20.7			3.1	3.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	7.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	8	21	0	0	0
Future Vol, veh/h	0	8	21	0	0	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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	9	23	0	0	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	47	1	1	0	-	0
Stage 1	1	-	-	-	-	-
Stage 2	46	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	968	1089	1635	-	-	-
Stage 1	1027	-	-	-	-	-
Stage 2	982	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	955	1089	1635	-	-	-
Mov Cap-2 Maneuver	955	-	-	-	-	-
Stage 1	1013	-	-	-	-	-
Stage 2	982	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.33	7.23	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1635	-	1089	-	-
HCM Lane V/C Ratio	0.014	-	0.008	-	-
HCM Control Delay (s/veh)	7.2	0	8.3	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	18	6	2	3	1	7
Future Volume (vph)	18	6	2	3	1	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			45	45	
Link Distance (ft)	342			891	207	
Travel Time (s)	7.8			13.5	3.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	18	6	2	3	1	7
Future Vol, veh/h	18	6	2	3	1	7
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	20	7	2	3	1	8

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	13	5	9	0	-	0
Stage 1	5	-	-	-	-	-
Stage 2	8	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	1012	1084	1625	-	-	-
Stage 1	1023	-	-	-	-	-
Stage 2	1021	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1011	1084	1625	-	-	-
Mov Cap-2 Maneuver	1011	-	-	-	-	-
Stage 1	1022	-	-	-	-	-
Stage 2	1021	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.59	2.89	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	720	-	1028	-	-
HCM Lane V/C Ratio	0.001	-	0.025	-	-
HCM Control Delay (s/veh)	7.2	0	8.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	3	21	8	2	6	1
Future Volume (vph)	3	21	8	2	6	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			45	45	
Link Distance (ft)	367			285	891	
Travel Time (s)	8.3			4.3	13.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	6.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	21	8	2	6	1
Future Vol, veh/h	3	21	8	2	6	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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	3	23	9	2	7	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	27	7	8	0	-	0
Stage 1	7	-	-	-	-	-
Stage 2	20	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	994	1081	1626	-	-	-
Stage 1	1021	-	-	-	-	-
Stage 2	1008	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	988	1081	1626	-	-	-
Mov Cap-2 Maneuver	988	-	-	-	-	-
Stage 1	1016	-	-	-	-	-
Stage 2	1008	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.45	5.78	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1440	-	1069	-	-
HCM Lane V/C Ratio	0.005	-	0.024	-	-
HCM Control Delay (s/veh)	7.2	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

APPENDIX 5.3: OPENING YEAR CUMULATIVE (2027) WITHOUT PROJECT CONDITIONS TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS

This Page Intentionally Left Blank

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

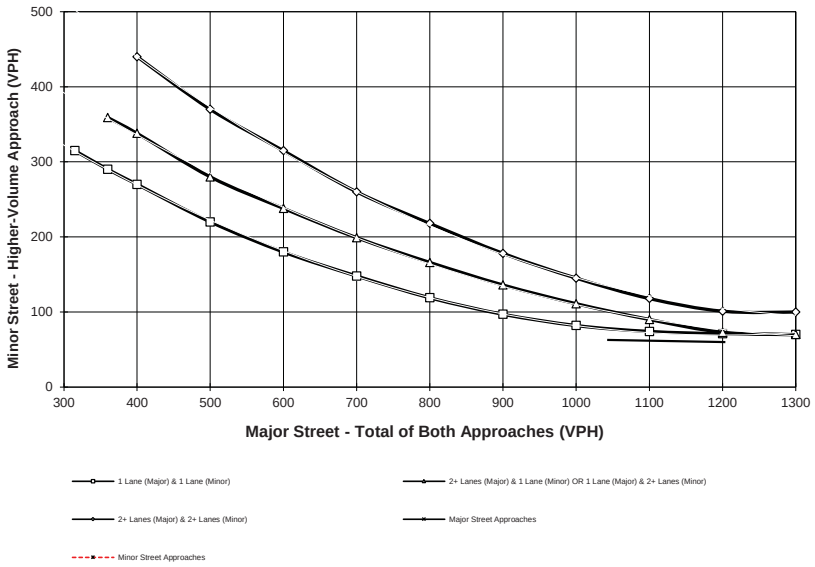
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAC AM PEAK HOUR WARRANTS**

Major Street Name = **Corwin Rd.**
Total of Both Approaches (VPH) = **34**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Dakota Av.**
High Volume Approach (VPH) = **8**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #1

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

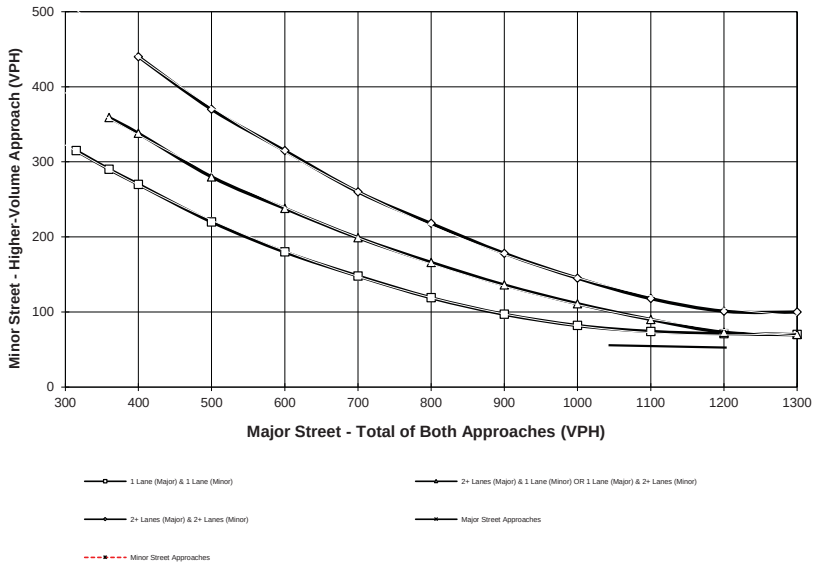
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAC PM PEAK HOUR WARRANTS**

Major Street Name = **Corwin Rd.**
Total of Both Approaches (VPH) = **49**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Dakota Av.**
High Volume Approach (VPH) = **27**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #1

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

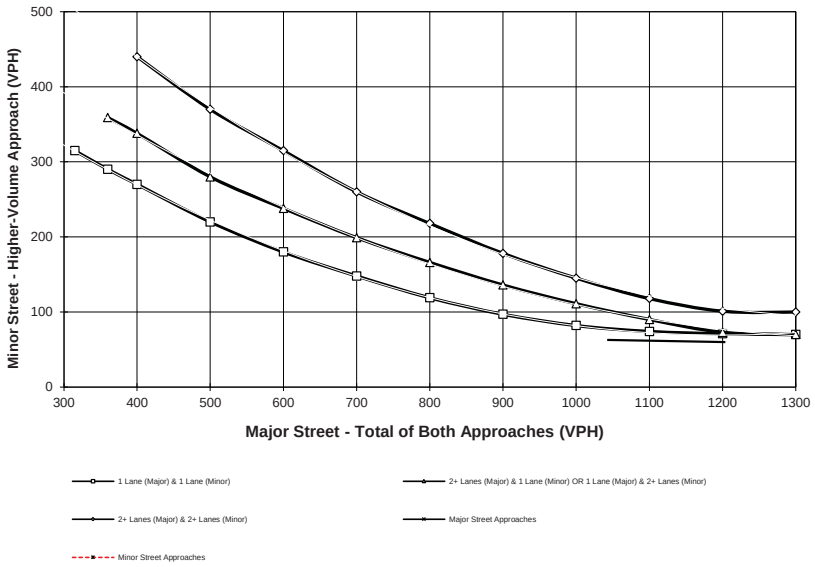
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAC AM PEAK HOUR WARRANTS**

Major Street Name = **Ramona Rd.**
Total of Both Approaches (VPH) = **2**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Fresno Rd.**
High Volume Approach (VPH) = **1**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #2

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Warrants\02 - EAC\02R_AM.xls\Fig 4C-4 (Rural Peak)

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

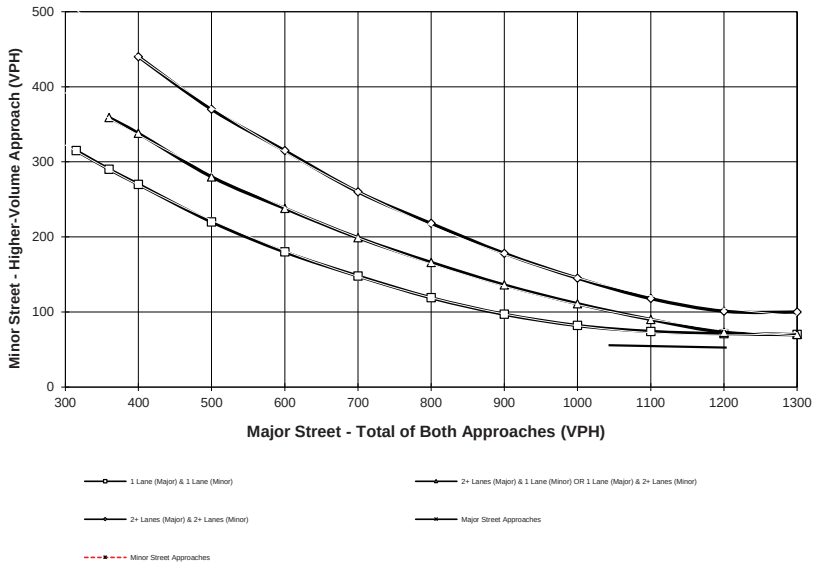
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAC PM PEAK HOUR WARRANTS**

Major Street Name = **Ramona Rd.**
Total of Both Approaches (VPH) = **2**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Fresno Rd.**
High Volume Approach (VPH) = **2**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #2

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Warrants\02 - EAC\02R_PM.xls\Fig 4C-4 (Rural Peak)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

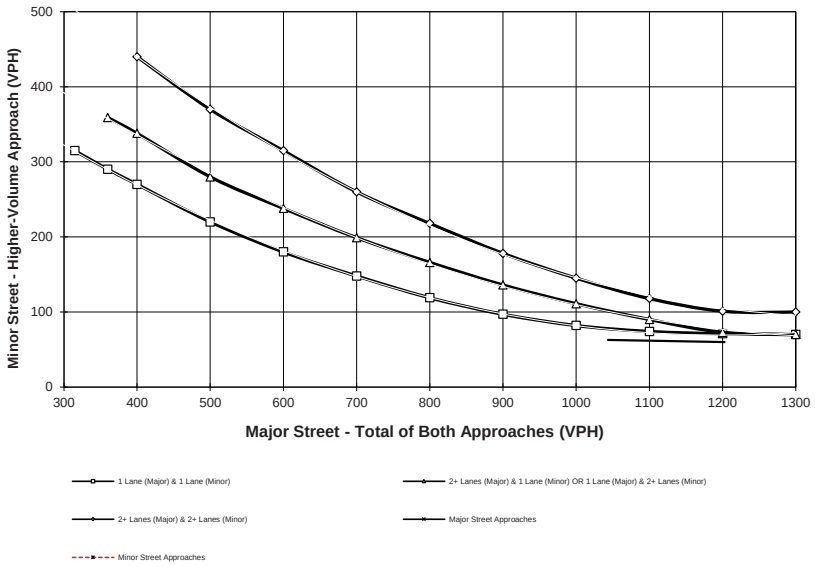
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAC AM PEAK HOUR WARRANTS**

Major Street Name = **Navajo Rd.**
Total of Both Approaches (VPH) = **11**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Altadena St.**
High Volume Approach (VPH) = **9**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #3

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

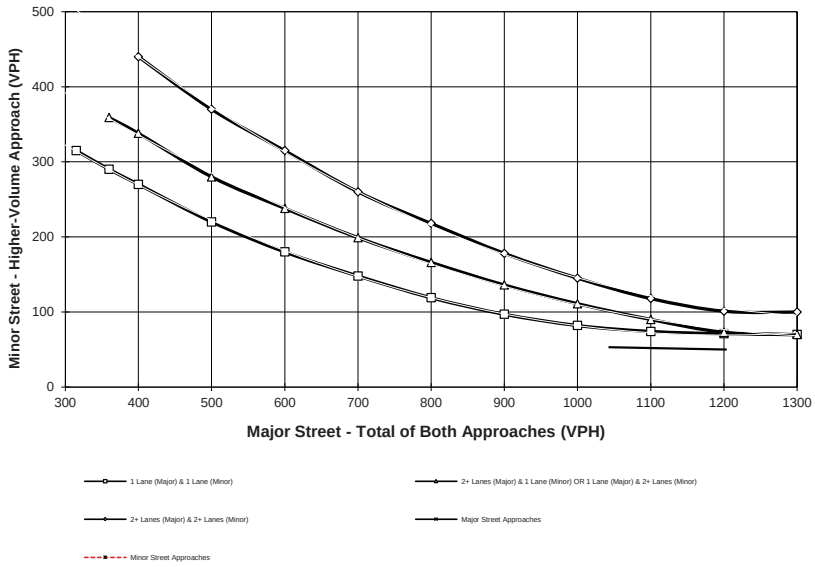
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAC PM PEAK HOUR WARRANTS**

Major Street Name = **Navajo Rd.**
Total of Both Approaches (VPH) = **29**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Altadena St.**
High Volume Approach (VPH) = **22**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #3

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

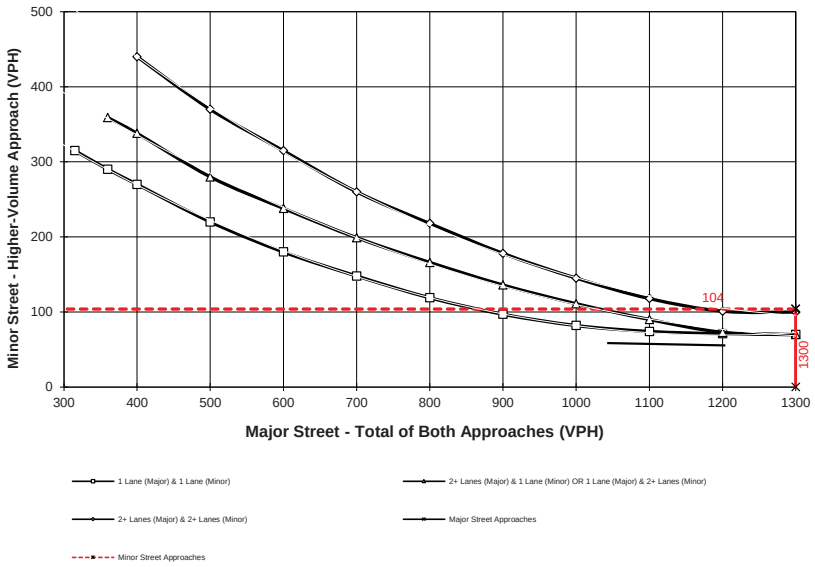
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAC AM PEAK HOUR WARRANTS**

Major Street Name = **Johnson Rd.**
Total of Both Approaches (VPH) = **2,041**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Navajo Rd.**
High Volume Approach (VPH) = **104**
Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #4

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

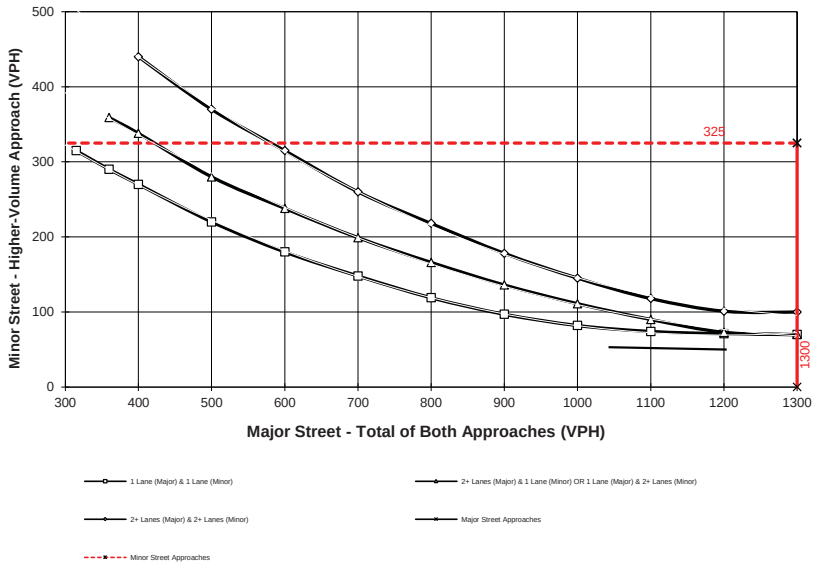
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAC PM PEAK HOUR WARRANTS**

Major Street Name = **Johnson Rd.**
Total of Both Approaches (VPH) = **1,984**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Navajo Rd.**
High Volume Approach (VPH) = **325**
Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #4

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

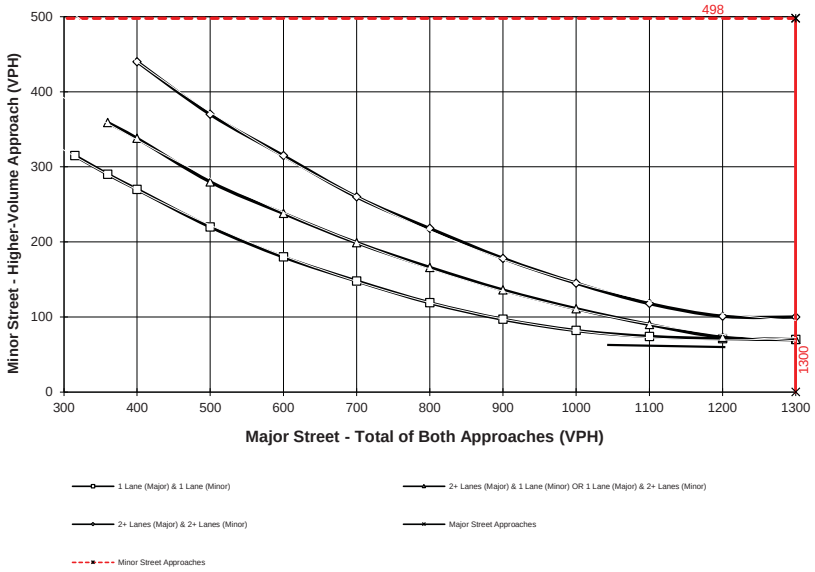
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAC AM PEAK HOUR WARRANTS**

Major Street Name = **Stoddard Wells Rd.** Total of Both Approaches (VPH) = **1,403**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Johnson Rd.** High Volume Approach (VPH) = **498**
Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #6

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Warrants\02 - EAC\06R_AM.xls\Fig 4C-4 (Rural Peak)

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

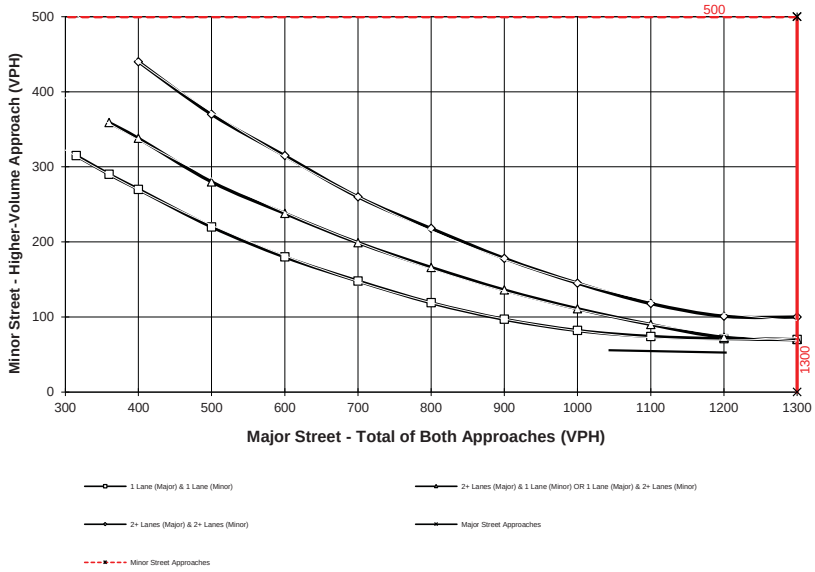
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAC PM PEAK HOUR WARRANTS**

Major Street Name = **Johnson Rd.** Total of Both Approaches (VPH) = **1,413**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Stoddard Wells Rd.** High Volume Approach (VPH) = **858**
Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #6

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Warrants\02 - EAC\06R_PM.xls\Fig 4C-4 (Rural Peak)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

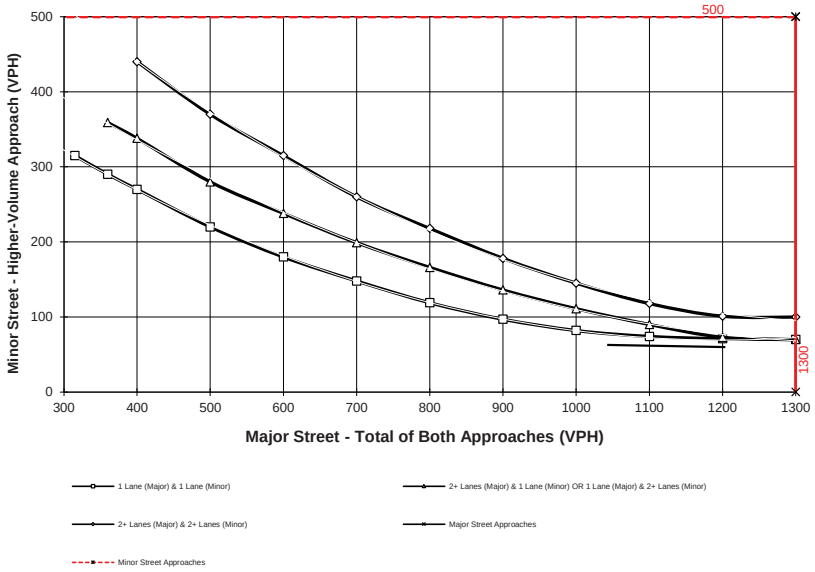
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAC AM PEAK HOUR WARRANTS**

Major Street Name = **I-15 NB Ramps - Outer Hwy. 15** Total of Both Approaches (VPH) = **1,477**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Stoddard Wells Rd.** High Volume Approach (VPH) = **695**
Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #7

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Warrants\02 - EAC\07R_AM.xls\Fig 4C-4 (Rural Peak)

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

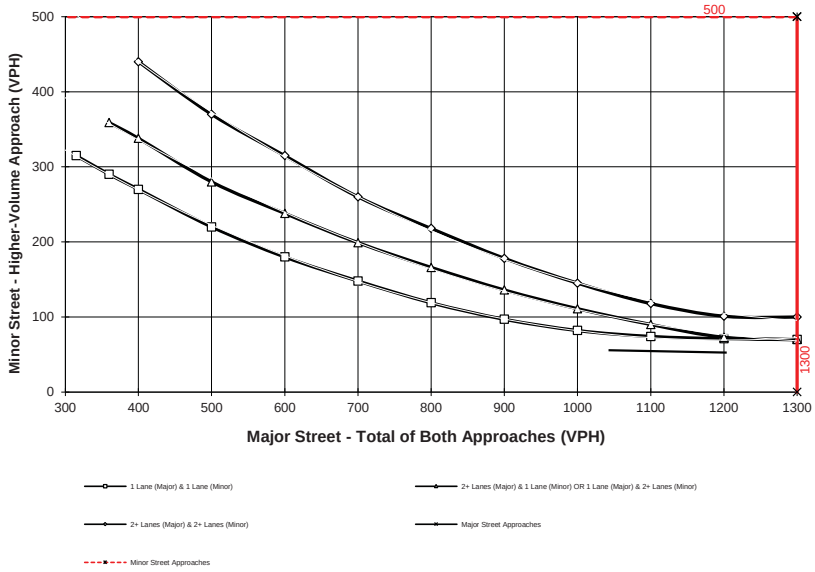
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAC PM PEAK HOUR WARRANTS**

Major Street Name = **Stoddard Wells Rd.** Total of Both Approaches (VPH) = **1,761**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **I-15 NB Ramps - Outer Hwy. 15** High Volume Approach (VPH) = **909**
Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #7

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Warrants\02 - EAC\07R_PM.xls\Fig 4C-4 (Rural Peak)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

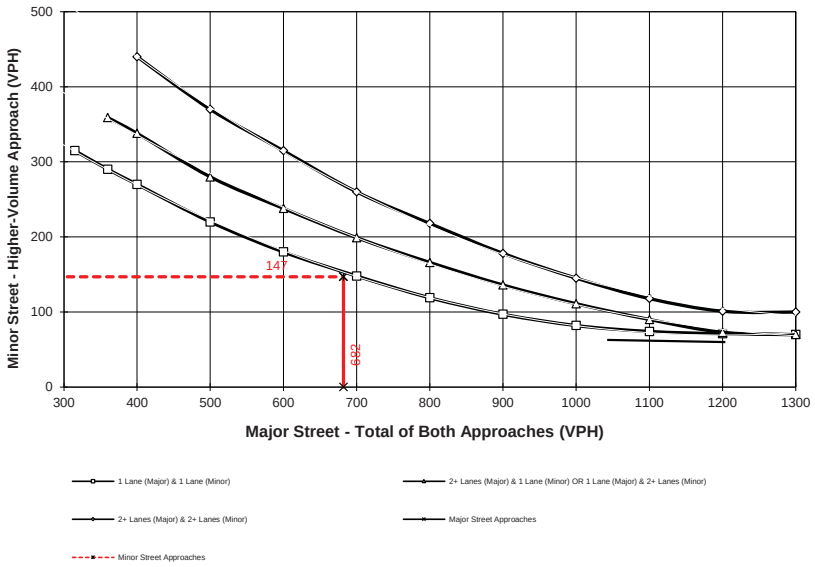
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAC AM PEAK HOUR WARRANTS**

Major Street Name = **Stoddard Wells Rd.** Total of Both Approaches (VPH) = **682**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Quarry Rd.** High Volume Approach (VPH) = **147**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #8

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Warrants\02 - EAC\08R_AM.xls\Fig 4C-4 (Rural Peak)

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

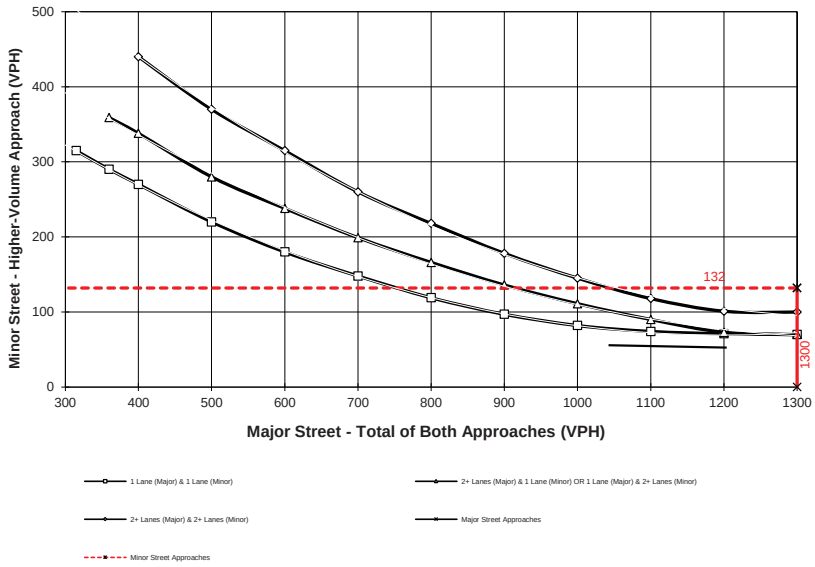
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAC PM PEAK HOUR WARRANTS**

Major Street Name = **Stoddard Wells Rd.** Total of Both Approaches (VPH) = **1,551**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Quarry Rd.** High Volume Approach (VPH) = **132**
Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #8

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Warrants\02 - EAC\08R_PM.xls\Fig 4C-4 (Rural Peak)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

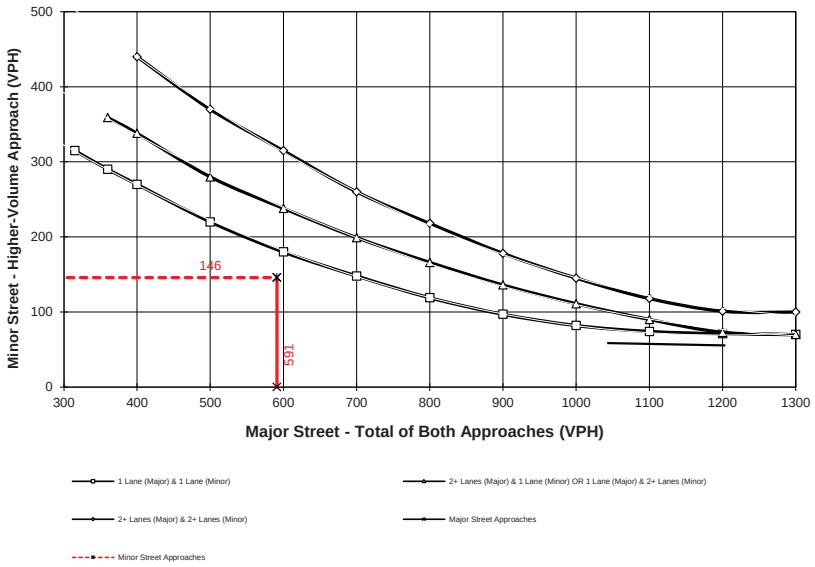
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAC AM PEAK HOUR WARRANTS**

Major Street Name = **Quarry Rd.** Total of Both Approaches (VPH) = **591**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **I-15 SB Ramps** High Volume Approach (VPH) = **146**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #9

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Warrants\02 - EAC\09R_AM.xls\Fig 4C-4 (Rural Peak)

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

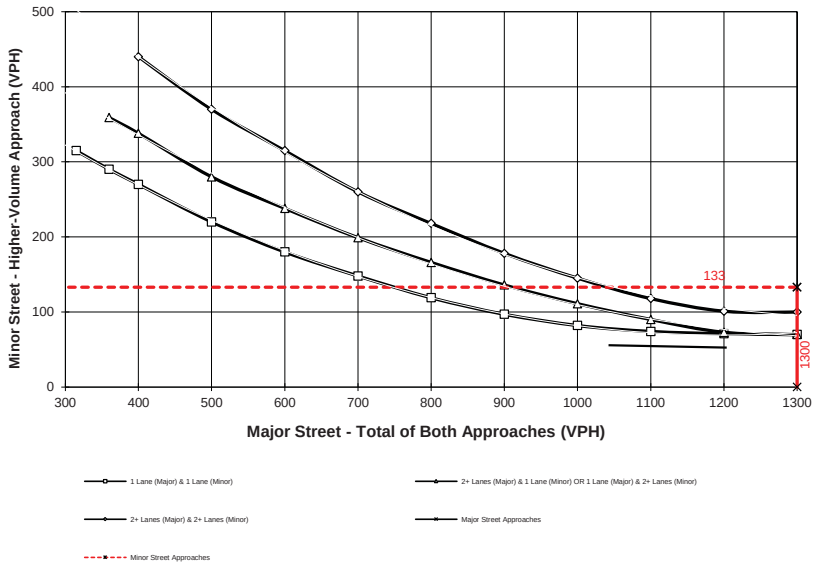
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAC PM PEAK HOUR WARRANTS**

Major Street Name = **Quarry Rd.** Total of Both Approaches (VPH) = **1,463**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **I-15 SB Ramps** High Volume Approach (VPH) = **133**
Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #9

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Warrants\02 - EAC\09R_PM.xls\Fig 4C-4 (Rural Peak)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

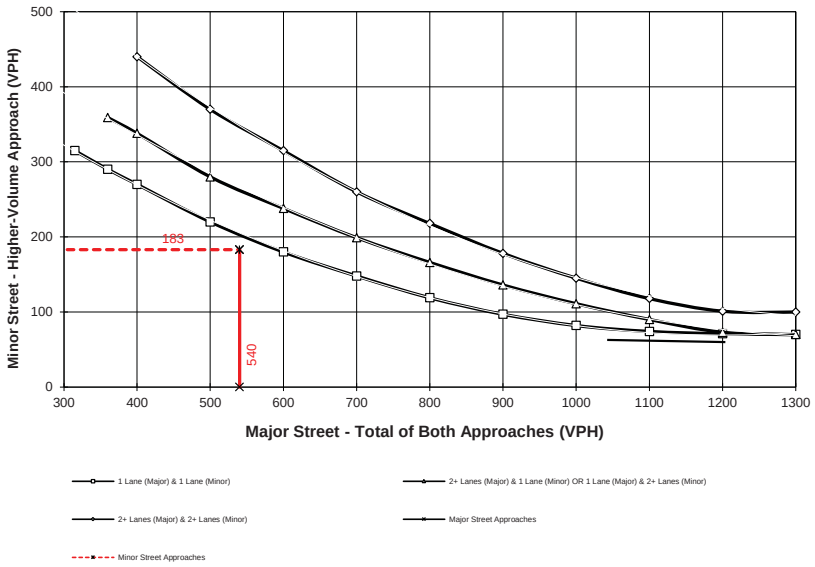
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAC AM PEAK HOUR WARRANTS**

Major Street Name = **Dale Evans Pkwy.** Total of Both Approaches (VPH) = **540**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Corwin Rd.** High Volume Approach (VPH) = **183**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #10

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Warrants\02 - EAC\10R_AM.xls\Fig 4C-4 (Rural Peak)

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

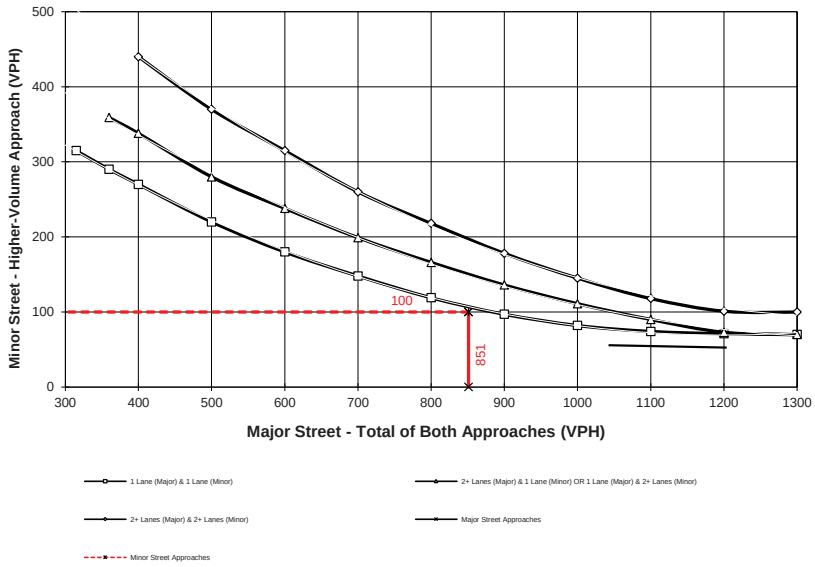
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAC PM PEAK HOUR WARRANTS**

Major Street Name = **Dale Evans Pkwy.** Total of Both Approaches (VPH) = **851**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Corwin Rd.** High Volume Approach (VPH) = **100**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #10

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Warrants\02 - EAC\10R_PM.xls\Fig 4C-4 (Rural Peak)

This Page Intentionally Left Blank

APPENDIX 5.4: OPENING YEAR CUMULATIVE (2027) WITH PROJECT CONDITIONS TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS

This Page Intentionally Left Blank

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

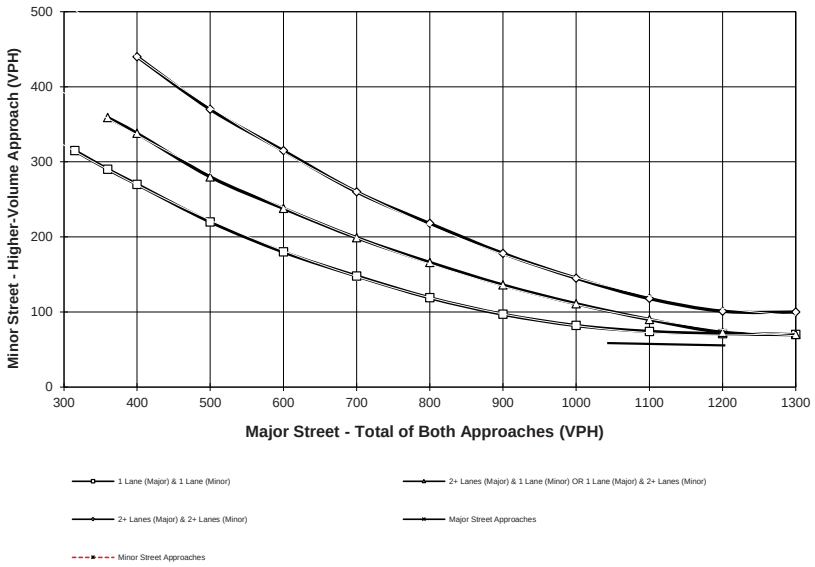
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAPC (2027) AM PEAK HOUR WARRANTS**

Major Street Name = **Corwin Rd.** Total of Both Approaches (VPH) = **95**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Dakota Av.** High Volume Approach (VPH) = **18**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #1

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

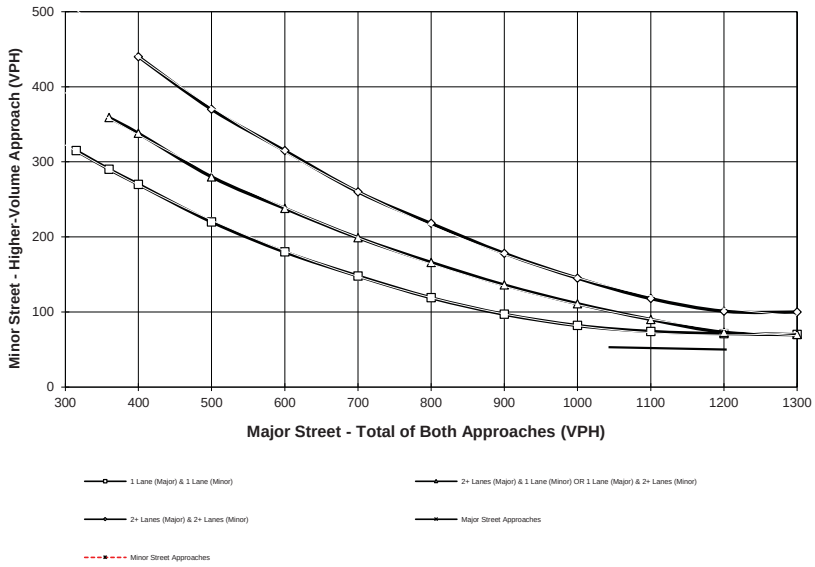
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAPC (2027) PM PEAK HOUR WARRANTS**

Major Street Name = **Corwin Rd.** Total of Both Approaches (VPH) = **103**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Dakota Av.** High Volume Approach (VPH) = **70**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #1

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

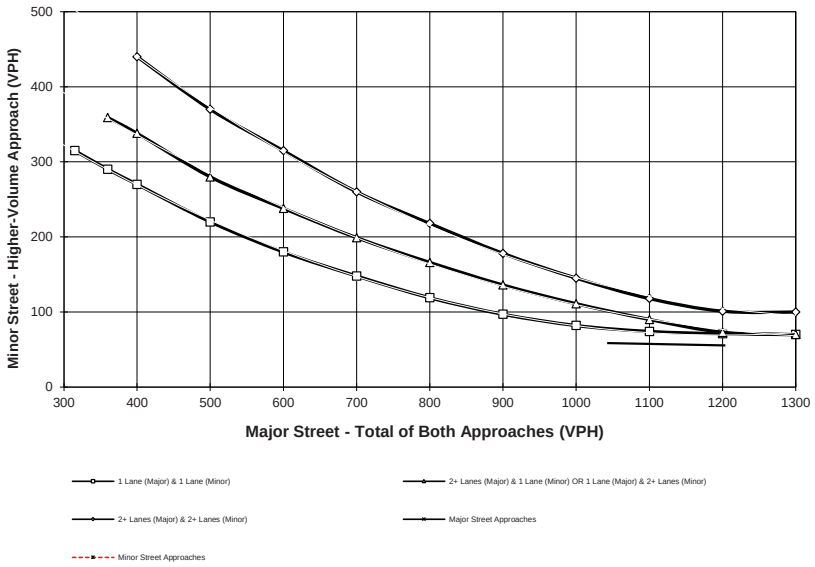
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAPC (2027) AM PEAK HOUR WARRANTS**

Major Street Name = **Ramona Rd.**
Total of Both Approaches (VPH) = **31**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Fresno Rd.**
High Volume Approach (VPH) = **3**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #2

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Warrants\03 - EAPC\02R_AM.xls\Fig 4C-4 (Rural Peak)

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

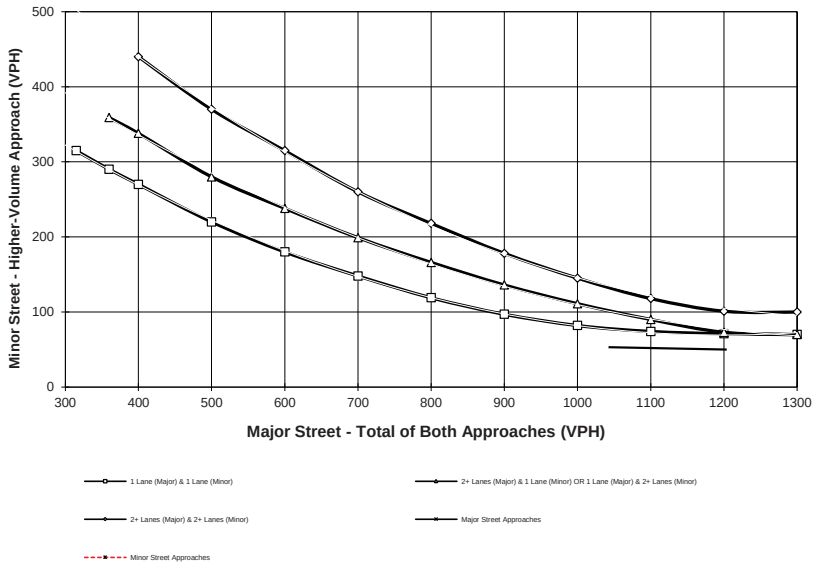
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAPC (2027) PM PEAK HOUR WARRANTS**

Major Street Name = **Ramona Rd.**
Total of Both Approaches (VPH) = **41**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Fresno Rd.**
High Volume Approach (VPH) = **4**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #2

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Warrants\03 - EAPC\02R_PM.xls\Fig 4C-4 (Rural Peak)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

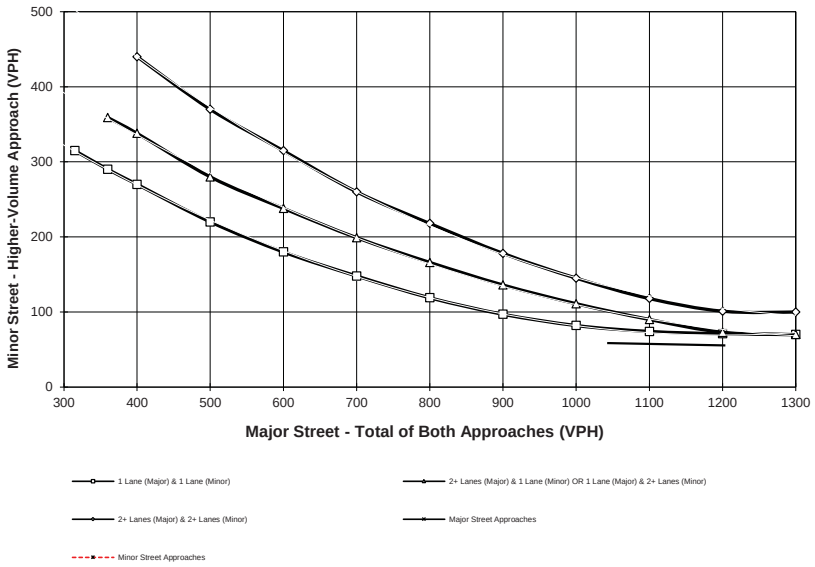
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAPC (2027) AM PEAK HOUR WARRANTS**

Major Street Name = **Navajo Rd.** Total of Both Approaches (VPH) = **50**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Altadena St.** High Volume Approach (VPH) = **21**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #3

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Warrants\03 - EAPC\03R_AM.xls\Fig 4C-4 (Rural Peak)

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

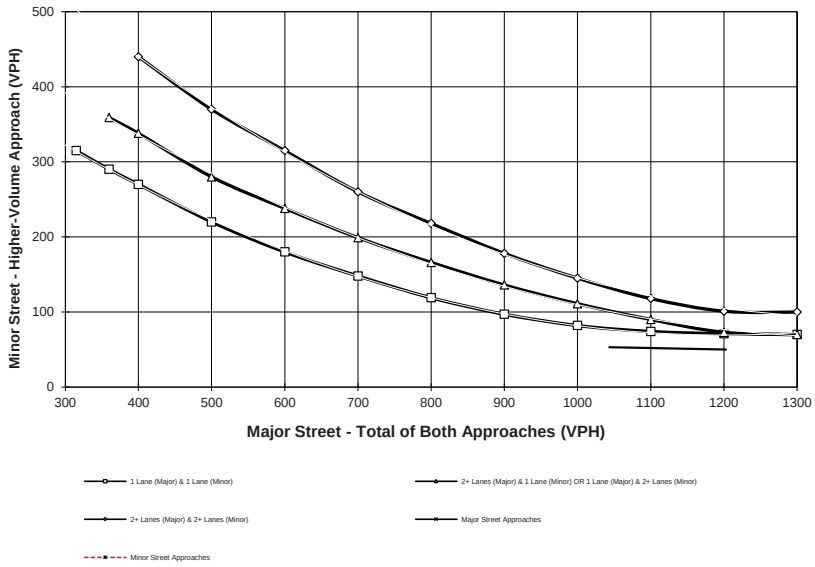
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAPC (2027) PM PEAK HOUR WARRANTS**

Major Street Name = **Altadena St.** Total of Both Approaches (VPH) = **72**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Navajo Rd.** High Volume Approach (VPH) = **45**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #3

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Warrants\03 - EAPC\03R_PM.xls\Fig 4C-4 (Rural Peak)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

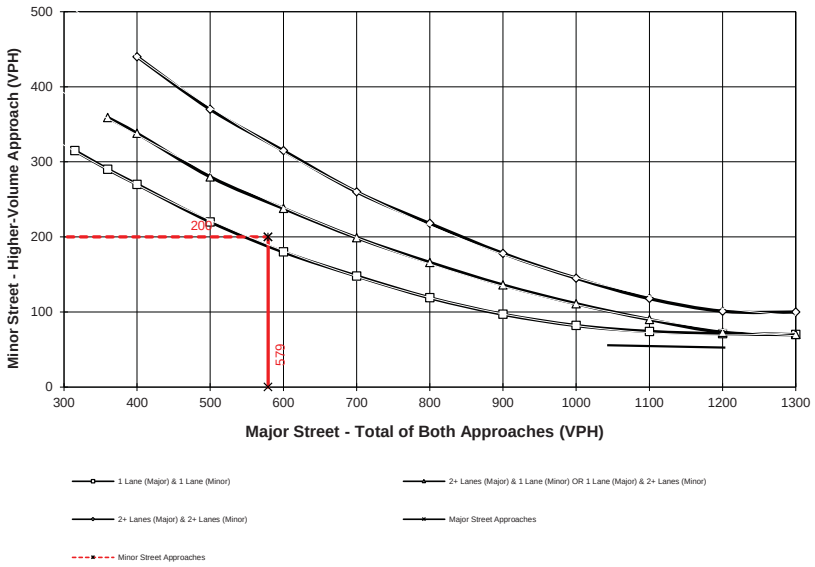
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAPC (2027) AM PEAK HOUR WARRANTS**

Major Street Name = **Dale Evans Pkwy.** Total of Both Approaches (VPH) = **579**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Corwin Rd.** High Volume Approach (VPH) = **200**
Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #10

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Warrants\03 - EAPC\10R_AM.xls\Fig 4C-4 (Rural Peak)

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

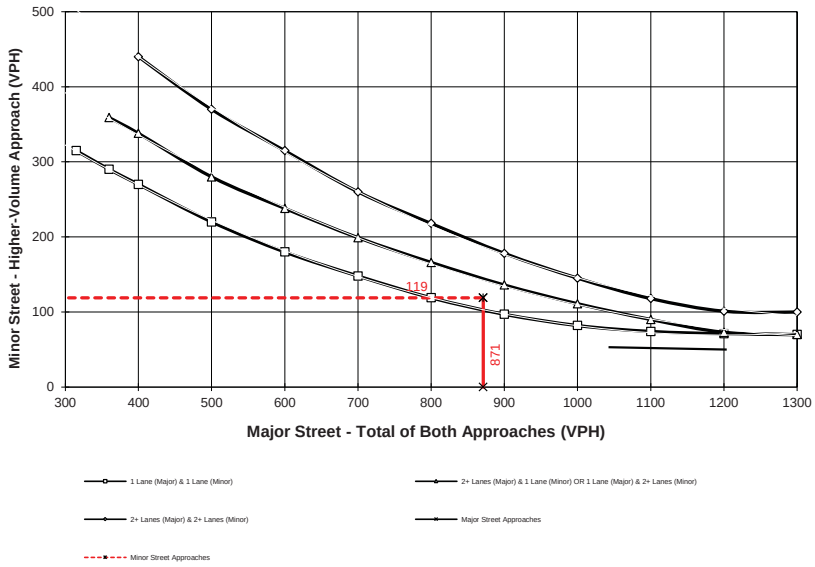
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAPC (2027) PM PEAK HOUR WARRANTS**

Major Street Name = **Dale Evans Pkwy.** Total of Both Approaches (VPH) = **871**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Corwin Rd.** High Volume Approach (VPH) = **119**
Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #10

F:\UXRjobs_15600_16000_16000\16091\02_LOS\Warrants\03 - EAPC\10R_PM.xls\Fig 4C-4 (Rural Peak)

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)

DIST	CO	RTE	PM	TRAFFIC CONDITIONS	EAPC (2027)
				CALC JC	DATE 10/07/24
				CHK	DATE

Jurisdiction: **Town of Apple Valley**

Major Street: **Dachshund Av.** — Critical Approach Speed (Major) 45 mph

Minor Street: **Gustine Rd.** — Critical Approach Speed (Minor) 35 mph

Major Street Approach Lanes = **1** lane — Minor Street Approach Lanes **1** lane

Major Street Future ADT = **1,091** vpd — Minor Street Future ADT = **190** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); ……... [√]

or

In built up area of isolated community of < 10,000 population …….. [ ]

RURAL (R)

(Based on Estimated Average Daily Traffic - See Note)

URBAN / RURAL — XX

CONDITION A - Minimum Vehicular Volume

Satisfied / Not Satisfied — XX

Number of lanes for moving traffic on each approach

Major Street	Minor Street	Minimum Requirements ADT: Vehicles Per Day on Major Street (Total of Both Approaches) Urban	Rural	Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only) Urban	Rural
1 **1,091**	1 **190**	8,000	5,600	2,400	1,680
2 +	1	9,600	6,720	2,400	1,680
2 +	2 +	9,600	6,720	3,200	2,240
1	2 +	8,000	5,600	3,200	2,240

CONDITION B - Interruption of Continuous Traffic

Satisfied / Not Satisfied — XX

Number of lanes for moving traffic on each approach

Major Street	Minor Street	Vehicles Per Day on Major Street (Total of Both Approaches) Urban	Rural	Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only) Urban	Rural
1 **1,091**	1 **190**	12,000	8,400	1,200	850
2 +	1	14,400	10,080	1,200	850
2 +	2 +	14,400	10,080	1,600	1,120
1	2 +	12,000	8,400	1,600	1,120

Combination of CONDITIONS A + B

Satisfied / Not Satisfied — XX

No one condition satisfied, but following conditions fulfilled 80% of more ….. **A** 11% **B** 13%

2 CONDITIONS 80%

2 CONDITIONS 80%

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)

DIST	CO	RTE	PM	TRAFFIC CONDITIONS	EAPC (2027)
				CALC JC	DATE 10/07/24
				CHK	DATE

Jurisdiction: **Town of Apple Valley**

Major Street: **Dachshund Av.** — Critical Approach Speed (Major) 45 mph

Minor Street: **Access 1** — Critical Approach Speed (Minor) 35 mph

Major Street Approach Lanes = **1** lane — Minor Street Approach Lanes **1** lane

Major Street Future ADT = **888** vpd — Minor Street Future ADT = **321** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); ……... [√]

or

In built up area of isolated community of < 10,000 population …….. [ ]

RURAL (R)

(Based on Estimated Average Daily Traffic - See Note)

URBAN / RURAL — XX

CONDITION A - Minimum Vehicular Volume

Satisfied / Not Satisfied — XX

Number of lanes for moving traffic on each approach

Major Street	Minor Street	Minimum Requirements ADT: Vehicles Per Day on Major Street (Total of Both Approaches) Urban	Rural	Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only) Urban	Rural
1 **888**	1 **321**	8,000	5,600	2,400	1,680
2 +	1	9,600	6,720	2,400	1,680
2 +	2 +	9,600	6,720	3,200	2,240
1	2 +	8,000	5,600	3,200	2,240

CONDITION B - Interruption of Continuous Traffic

Satisfied / Not Satisfied — XX

Number of lanes for moving traffic on each approach

Major Street	Minor Street	Vehicles Per Day on Major Street (Total of Both Approaches) Urban	Rural	Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only) Urban	Rural
1 **888**	1 **321**	12,000	8,400	1,200	850
2 +	1	14,400	10,080	1,200	850
2 +	2 +	14,400	10,080	1,600	1,120
1	2 +	12,000	8,400	1,600	1,120

Combination of CONDITIONS A + B

Satisfied / Not Satisfied — XX

No one condition satisfied, but following conditions fulfilled 80% of more ….. **A** 16% **B** 11%

2 CONDITIONS 80%

2 CONDITIONS 80%

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)

DIST	CO	RTE	PM	TRAFFIC CONDITIONS	EAPC (2027)
				CALC JC	DATE 10/07/24
				CHK	DATE

Jurisdiction: **Town of Apple Valley**

Major Street: **Dachshund Av.** — Critical Approach Speed (Major) 45 mph

Minor Street: **Access 2** — Critical Approach Speed (Minor) 35 mph

Major Street Approach Lanes = **1** lane — Minor Street Approach Lanes **1** lane

Major Street Future ADT = **1,028** vpd — Minor Street Future ADT = **321** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); ……... [√]

or

In built up area of isolated community of < 10,000 population …….. [ ]

RURAL (R)

(Based on Estimated Average Daily Traffic - See Note)

URBAN / RURAL: XX

CONDITION A - Minimum Vehicular Volume

Satisfied / Not Satisfied: XX

Number of lanes for moving traffic on each approach

Major Street	Minor Street	Minimum Requirements ADT: Vehicles Per Day on Major Street (Total of Both Approaches) Urban	Rural	Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only) Urban	Rural
1 **1,028**	1 **321**	8,000	5,600	2,400	1,680
2 +	1	9,600	6,720	2,400	1,680
2 +	2 +	9,600	6,720	3,200	2,240
1	2 +	8,000	5,600	3,200	2,240

CONDITION B - Interruption of Continuous Traffic

Satisfied / Not Satisfied: XX

Number of lanes for moving traffic on each approach

Major Street	Minor Street	Vehicles Per Day on Major Street (Total of Both Approaches) Urban	Rural	Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only) Urban	Rural
1 **1,028**	1 **321**	12,000	8,400	1,200	850
2 +	1	14,400	10,080	1,200	850
2 +	2 +	14,400	10,080	1,600	1,120
1	2 +	12,000	8,400	1,600	1,120

Combination of CONDITIONS A + B

Satisfied / Not Satisfied: XX

No one condition satisfied, but following conditions fulfilled 80% of more ….. **A** 18% **B** 12%

2 CONDITIONS 80%

2 CONDITIONS 80%

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)

DIST	CO	RTE	PM	TRAFFIC CONDITIONS	EAPC (2027)
				CALC JC	DATE 10/07/24
Jurisdiction: **Town of Apple Valley**				CHK	DATE
Major Street: **Dachshund Av.**				Critical Approach Speed (Major)	45 mph
Minor Street: **Fresno Rd.**				Critical Approach Speed (Minor)	35 mph

Major Street Approach Lanes = **1** lane Minor Street Approach Lanes **1** lane

Major Street Future ADT = **1,181** vpd Minor Street Future ADT = **0** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); …….. √

or

In built up area of isolated community of < 10,000 population ……..

RURAL (R)

(Based on Estimated Average Daily Traffic - See Note)

URBAN RURAL
XX

CONDITION A - Minimum Vehicular Volume

Satisfied Not Satisfied
XX

Number of lanes for moving traffic on each approach

Major Street	Minor Street	Minimum Requirements ADT: Vehicles Per Day on Major Street (Total of Both Approaches) Urban	Rural	Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only) Urban	Rural
1 **1,181**	*1* **0**	8,000	5,600	2,400	1,680
2 +	*1*	9,600	6,720	2,400	1,680
2 +	*2* +	9,600	6,720	3,200	2,240
1	*2* +	8,000	5,600	3,200	2,240

CONDITION B - Interruption of Continuous Traffic

Satisfied Not Satisfied
XX

Number of lanes for moving traffic on each approach

Major Street	Minor Street	Vehicles Per Day on Major Street (Total of Both Approaches) Urban	Rural	Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only) Urban	Rural
1 **1,181**	*1* **0**	12,000	8,400	1,200	850
2 +	*1*	14,400	10,080	1,200	850
2 +	*2* +	14,400	10,080	1,600	1,120
1	*2* +	12,000	8,400	1,600	1,120

Combination of CONDITIONS A + B

Satisfied Not Satisfied
XX

No one condition satisfied, but following conditions fulfilled 80% of more ….. **A** 21% **B** 14%

2 CONDITIONS 80% 2 CONDITIONS 80%

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)

DIST	CO	RTE	PM	TRAFFIC CONDITIONS	EAPC (2027)
				CALC JC	DATE 10/07/24
				CHK	DATE

Jurisdiction: **Town of Apple Valley**

Major Street: **Ramona Rd.** — Critical Approach Speed (Major) 45 mph

Minor Street: **Gustine Rd.** — Critical Approach Speed (Minor) 35 mph

Major Street Approach Lanes = **1** lane — Minor Street Approach Lanes **1** lane

Major Street Future ADT = **190** vpd — Minor Street Future ADT = **190** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); ……... [√]

or **RURAL (R)**

In built up area of isolated community of < 10,000 population …….. [ ]

(Based on Estimated Average Daily Traffic - See Note)

URBAN / RURAL	Number of lanes for moving traffic on each approach: Major Street	Minor Street	Minimum Requirements ADT: Vehicles Per Day on Major Street (Total of Both Approaches) Urban	Rural	Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only) Urban	Rural
CONDITION A - Minimum Vehicular Volume						
Satisfied / Not Satisfied XX						
	1 **190**	*1* **190**	8,000	5,600	2,400	1,680
	2 +	*1*	9,600	6,720	2,400	1,680
	2 +	*2* +	9,600	6,720	3,200	2,240
	1	*2* +	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic						
Satisfied / Not Satisfied XX						
	1 **190**	*1* **190**	12,000	8,400	1,200	850
	2 +	*1*	14,400	10,080	1,200	850
	2 +	*2* +	14,400	10,080	1,600	1,120
	1	*2* +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B						
Satisfied / Not Satisfied XX			2 CONDITIONS 80%		2 CONDITIONS 80%	
No one condition satisfied, but following conditions fulfilled 80% of more …..	**A** 3%	**B** 2%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)

DIST	CO	RTE	PM	TRAFFIC CONDITIONS	EAPC (2027)
				CALC JC	DATE 10/07/24
				CHK	DATE

Jurisdiction: **Town of Apple Valley**

Major Street: **Ramona Rd.** — Critical Approach Speed (Major) 45 mph

Minor Street: **Access 3** — Critical Approach Speed (Minor) 35 mph

Major Street Approach Lanes = **1** lane — Minor Street Approach Lanes **1** lane

Major Street Future ADT = **273** vpd — Minor Street Future ADT = **213** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); ……... [√]

or **RURAL (R)**

In built up area of isolated community of < 10,000 population …….. [ ]

(Based on Estimated Average Daily Traffic - See Note)

URBAN	RURAL	Minimum Requirements ADT			
	XX				
CONDITION A - Minimum Vehicular Volume		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied	Not Satisfied XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **273**	*1* **213**	8,000	5,600	2,400	1,680
2 +	*1*	9,600	6,720	2,400	1,680
2 +	*2* +	9,600	6,720	3,200	2,240
1	*2* +	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied	Not Satisfied XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **273**	*1* **213**	12,000	8,400	1,200	850
2 +	*1*	14,400	10,080	1,200	850
2 +	*2* +	14,400	10,080	1,600	1,120
1	*2* +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B					
Satisfied	Not Satisfied XX	2 CONDITIONS 80%		2 CONDITIONS 80%	
No one condition satisfied, but following conditions fulfilled 80% of more …..	**A** 5% **B** 3%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)

DIST	CO	RTE	PM	TRAFFIC CONDITIONS	EAPC (2027)
				CALC JC	DATE 10/07/24
				CHK	DATE

Jurisdiction: **Town of Apple Valley**

Major Street: **Ramona Rd.** — Critical Approach Speed (Major) 45 mph

Minor Street: **Access 4** — Critical Approach Speed (Minor) 35 mph

Major Street Approach Lanes = **1** lane — Minor Street Approach Lanes **1** lane

Major Street Future ADT = **320** vpd — Minor Street Future ADT = **214** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); ……... [√]

or **RURAL (R)**

In built up area of isolated community of < 10,000 population …….. [ ]

(Based on Estimated Average Daily Traffic - See Note)

URBAN / RURAL: XX

CONDITION A - Minimum Vehicular Volume

Satisfied / Not Satisfied: XX

Number of lanes for moving traffic on each approach

Major Street	Minor Street	Minimum Requirements ADT: Vehicles Per Day on Major Street (Total of Both Approaches) Urban	Rural	Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only) Urban	Rural
1 **320**	*1* **214**	8,000	5,600	2,400	1,680
2 +	*1*	9,600	6,720	2,400	1,680
2 +	*2* +	9,600	6,720	3,200	2,240
1	*2* +	8,000	5,600	3,200	2,240

CONDITION B - Interruption of Continuous Traffic

Satisfied / Not Satisfied: XX

Number of lanes for moving traffic on each approach

Major Street	Minor Street	Vehicles Per Day on Major Street (Total of Both Approaches) Urban	Rural	Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only) Urban	Rural
1 **320**	*1* **214**	12,000	8,400	1,200	850
2 +	*1*	14,400	10,080	1,200	850
2 +	*2* +	14,400	10,080	1,600	1,120
1	*2* +	12,000	8,400	1,600	1,120

Combination of CONDITIONS A + B

Satisfied / Not Satisfied: XX

No one condition satisfied, but following conditions fulfilled 80% of more ….. **A** 6% **B** 4%

2 CONDITIONS 80% (Urban) — 2 CONDITIONS 80% (Rural)

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

This Page Intentionally Left Blank

APPENDIX 5.5: OPENING YEAR CUMULATIVE (2027) WITHOUT PROJECT CONDITIONS OFF-RAMP QUEUEING ANALYSIS WORKSHEETS

This Page Intentionally Left Blank

Intersection	
Int Delay, s/veh	1562

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	87	85	25	614	56	7	48	45	1354	0	23
Future Vol, veh/h	10	87	85	25	614	56	7	48	45	1354	0	23
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	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	10	91	89	26	640	58	7	50	47	1410	0	24

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	698	0	0	179	0	0	847	906	135	857	921	669
Stage 1	-	-	-	-	-	-	156	156	-	721	721	-
Stage 2	-	-	-	-	-	-	692	750	-	136	200	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	908	-	-	1409	-	-	284	278	919	~ 280	273	461
Stage 1	-	-	-	-	-	-	851	773	-	~ 422	435	-
Stage 2	-	-	-	-	-	-	438	422	-	~ 872	739	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	908	-	-	1409	-	-	258	266	919	~ 208	261	461
Mov Cap-2 Maneuver	-	-	-	-	-	-	258	266	-	~ 208	261	-
Stage 1	-	-	-	-	-	-	840	763	-	~ 409	422	-
Stage 2	-	-	-	-	-	-	402	409	-	~ 763	730	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.5	0.27	17.56	$ 2668.72
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	390	90	-	-	64	-	-	210
HCM Lane V/C Ratio	0.267	0.011	-	-	0.018	-	-	6.837
HCM Control Delay (s/veh)	17.6	9	0	-	7.6	0	-	$ 2668.7
HCM Lane LOS	C	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	1.1	0	-	-	0.1	-	-	156.5

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	145	1	1	587	1	2
Future Vol, veh/h	145	1	1	587	1	2
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	79	79	79	79	79	79
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	184	1	1	743	1	3

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	378	373	0	0	744	0
Stage 1	373	-	-	-	-	-
Stage 2	5	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	628	678	-	-	873	-
Stage 1	701	-	-	-	-	-
Stage 2	1023	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	627	678	-	-	873	-
Mov Cap-2 Maneuver	627	-	-	-	-	-
Stage 1	701	-	-	-	-	-
Stage 2	1022	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	13.12	0	3.04
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	627	600	-
HCM Lane V/C Ratio	-	-	0.295	0.001	-
HCM Control Delay (s/veh)	-	-	13.1	9.1	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.2	0	-

Intersection	
Int Delay, s/veh	12514

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	93	69	49	1484	61	4	79	39	889	0	20
Future Vol, veh/h	5	93	69	49	1484	61	4	79	39	889	0	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	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	7	137	101	72	2182	90	6	116	57	1307	0	29

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2272	0	0	238	0	0	2529	2618	188	2581	2624	2227
Stage 1	-	-	-	-	-	-	202	202	-	2371	2371	-
Stage 2	-	-	-	-	-	-	2326	2416	-	210	253	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	228	-	-	1341	-	-	19	~ 25	860	~ 17	24	55
Stage 1	-	-	-	-	-	-	804	738	-	~ 47	68	-
Stage 2	-	-	-	-	-	-	50	~ 65	-	~ 797	701	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	228	-	-	1341	-	-	8	~ 24	860	~ 16	23	55
Mov Cap-2 Maneuver	-	-	-	-	-	-	8	~ 24	-	~ 16	23	-
Stage 1	-	-	-	-	-	-	774	710	-	~ 47	68	-
Stage 2	-	-	-	-	-	-	24	~ 65	-	~ 599	675	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.64	0.24	$ 2358.55	$ 38119.68
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	32	50	-	-	~ 55	-	-	16
HCM Lane V/C Ratio	5.687	0.032	-	-	0.054	-	-	84.683
HCM Control Delay (s/veh)	$ 2358.6	21.3	0	-	7.8	0	-	$ 38119.7
HCM Lane LOS	F	C	A	-	A	A	-	F
HCM 95th %tile Q(veh)	21.6	0.1	-	-	0.2	-	-	168.1

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	20.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	132	1	1	1460	1	1
Future Vol, veh/h	132	1	1	1460	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	56	56	56	56	56	56
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	236	2	2	2607	2	2

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1311	1305	0	0	2609	0
Stage 1	1305	-	-	-	-	-
Stage 2	5	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	~ 177	198	-	-	168	-
Stage 1	256	-	-	-	-	-
Stage 2	1023	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 175	198	-	-	168	-
Mov Cap-2 Maneuver	~ 175	-	-	-	-	-
Stage 1	256	-	-	-	-	-
Stage 2	1012	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/veh	242.95	0	13.35
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	175	168	-
HCM Lane V/C Ratio	-	-	1.355	0.011	-
HCM Control Delay (s/veh)	-	-	242.9	26.7	0
HCM Lane LOS	-	-	F	D	A
HCM 95th %tile Q(veh)	-	-	14.1	0	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

APPENDIX 5.6: OPENING YEAR CUMULATIVE (2027) WITH PROJECT CONDITIONS OFF-RAMP QUEUEING ANALYSIS WORKSHEETS

This Page Intentionally Left Blank

Intersection	
Int Delay, s/veh	1693.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	87	85	25	629	56	7	48	45	1401	0	23
Future Vol, veh/h	10	87	85	25	629	56	7	48	45	1401	0	23
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	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	10	91	89	26	655	58	7	50	47	1459	0	24

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	714	0	0	179	0	0	863	921	135	873	936	684
Stage 1	-	-	-	-	-	-	156	156	-	736	736	-
Stage 2	-	-	-	-	-	-	707	766	-	136	200	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	896	-	-	1409	-	-	277	272	919	~ 273	267	452
Stage 1	-	-	-	-	-	-	851	773	-	~ 414	428	-
Stage 2	-	-	-	-	-	-	429	415	-	~ 872	739	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	896	-	-	1409	-	-	251	261	919	~ 202	255	452
Mov Cap-2 Maneuver	-	-	-	-	-	-	251	261	-	~ 202	255	-
Stage 1	-	-	-	-	-	-	840	762	-	~ 401	415	-
Stage 2	-	-	-	-	-	-	394	402	-	~ 763	730	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.5	0.27	17.87	$ 2871.26
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	383	90	-	-	62	-	-	204
HCM Lane V/C Ratio	0.272	0.012	-	-	0.018	-	-	7.285
HCM Control Delay (s/veh)	17.9	9.1	0	-	7.6	0	-	$ 2871.3
HCM Lane LOS	C	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	1.1	0	-	-	0.1	-	-	163.4

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	145	1	1	602	1	2
Future Vol, veh/h	145	1	1	602	1	2
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	79	79	79	79	79	79
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	184	1	1	762	1	3

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	387	382	0	0	763	0
Stage 1	382	-	-	-	-	-
Stage 2	5	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	620	669	-	-	858	-
Stage 1	694	-	-	-	-	-
Stage 2	1023	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	619	669	-	-	858	-
Mov Cap-2 Maneuver	619	-	-	-	-	-
Stage 1	694	-	-	-	-	-
Stage 2	1022	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	13.26	0	3.07
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	619	600	-
HCM Lane V/C Ratio	-	-	0.298	0.001	-
HCM Control Delay (s/veh)	-	-	13.3	9.2	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.2	0	-

Intersection	
Int Delay, s/veh	14907.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	93	69	49	1544	61	4	79	39	913	0	20
Future Vol, veh/h	5	93	69	49	1544	61	4	79	39	913	0	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	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	7	137	101	72	2271	90	6	116	57	1343	0	29

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2360	0	0	238	0	0	2617	2707	188	2669	2713	2315
Stage 1	-	-	-	-	-	-	202	202	-	2460	2460	-
Stage 2	-	-	-	-	-	-	2415	2504	-	210	253	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	210	-	-	1341	-	-	16	~ 21	860	~ 15	21	49
Stage 1	-	-	-	-	-	-	804	738	-	~ 42	61	-
Stage 2	-	-	-	-	-	-	45	~ 58	-	~ 797	701	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	210	-	-	1341	-	-	6	~ 21	860	~ 13	20	49
Mov Cap-2 Maneuver	-	-	-	-	-	-	6	~ 21	-	~ 13	20	-
Stage 1	-	-	-	-	-	-	771	708	-	~ 42	61	-
Stage 2	-	-	-	-	-	-	18	~ 58	-	~ 596	673	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.68	0.23	$ 2831.17	$ 45582.89
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	27	50	-	-	~ 53	-	-	14
HCM Lane V/C Ratio	6.654	0.035	-	-	0.054	-	-	101.103
HCM Control Delay (s/veh)	$ 2831.2	22.7	0	-	7.8	0	-	$ 45582.9
HCM Lane LOS	F	C	A	-	A	A	-	F
HCM 95th %tile Q(veh)	22.1	0.1	-	-	0.2	-	-	172.8

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	23.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	132	1	1	1520	1	1
Future Vol, veh/h	132	1	1	1520	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	56	56	56	56	56	56
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	236	2	2	2714	2	2

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1364	1359	0	0	2716	0
Stage 1	1359	-	-	-	-	-
Stage 2	5	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	~ 164	184	-	-	152	-
Stage 1	241	-	-	-	-	-
Stage 2	1023	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 162	184	-	-	152	-
Mov Cap-2 Maneuver	~ 162	-	-	-	-	-
Stage 1	241	-	-	-	-	-
Stage 2	1011	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/veh	$290.34	0	14.47
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	162	152	-
HCM Lane V/C Ratio	-	-	1.462	0.012	-
HCM Control Delay (s/veh)	-	-	290.3	28.9	0
HCM Lane LOS	-	-	F	D	A
HCM 95th %tile Q(veh)	-	-	15.2	0	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

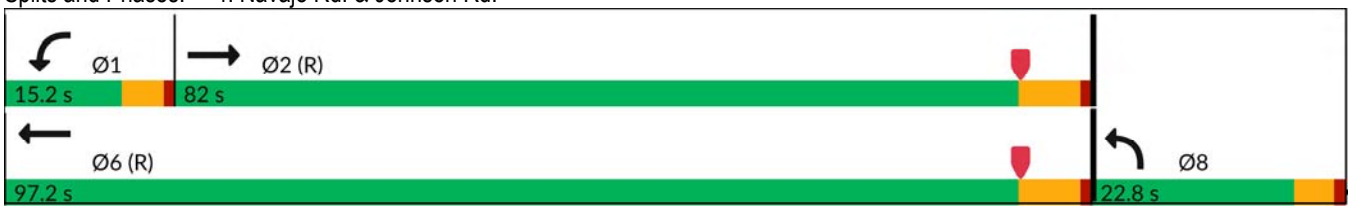
APPENDIX 5.7: OPENING YEAR CUMULATIVE (2027) WITH PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS WITH IMPROVEMENTS

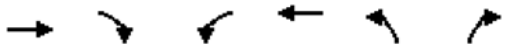
This Page Intentionally Left Blank

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1128	265	65	391	103	13
Future Volume (vph)	1128	265	65	391	103	13
Ideal Flow (vphpl)	1800	1800	1700	1800	1700	1800
Storage Length (ft)		0	150		200	0
Storage Lanes		0	1		1	0
Taper Length (ft)			90		90	
Right Turn on Red		Yes				Yes
Link Speed (mph)	45			45	55	
Link Distance (ft)	5327			1835	6664	
Travel Time (s)	80.7			27.8	82.6	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Shared Lane Traffic (%)						
Turn Type	NA		Prot	NA	Prot	
Protected Phases	2		1	6	8	
Permitted Phases						
Detector Phase	2		1	6	8	
Switch Phase						
Minimum Initial (s)	10.0		5.0	10.0	5.0	
Minimum Split (s)	24.5		9.6	24.5	22.6	
Total Split (s)	82.0		15.2	97.2	22.8	
Total Split (%)	68.3%		12.7%	81.0%	19.0%	
Maximum Green (s)	75.5		10.6	90.7	18.2	
Yellow Time (s)	5.5		3.6	5.5	3.6	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	6.5		4.6	6.5	4.6	
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		2.0	3.0	2.0	
Recall Mode	C-Max		None	C-Max	None	
Walk Time (s)	7.0			7.0	7.0	
Flash Don't Walk (s)	11.0			11.0	11.0	
Pedestrian Calls (#/hr)	10			10	10	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 14.7 (12%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	

Splits and Phases: 4: Navajo Rd. & Johnson Rd.





Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1128	265	65	391	103	13
Future Volume (veh/h)	1128	265	65	391	103	13
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1800	1800	1700	1800	1700	1800
Adj Flow Rate, veh/h	1484	217	86	514	146	0
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	2226	321	106	1522	200	94
Arrive On Green	0.74	0.74	0.07	0.85	0.06	0.00
Sat Flow, veh/h	3090	433	1619	1800	3238	1525
Grp Volume(v), veh/h	837	864	86	514	146	0
Grp Sat Flow(s),veh/h/ln	1710	1722	1619	1800	1619	1525
Q Serve(g_s), s	29.7	31.2	6.3	7.4	5.3	0.0
Cycle Q Clear(g_c), s	29.7	31.2	6.3	7.4	5.3	0.0
Prop In Lane		0.25	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1269	1278	106	1522	200	94
V/C Ratio(X)	0.66	0.68	0.81	0.34	0.73	0.00
Avail Cap(c_a), veh/h	1269	1278	143	1522	491	231
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	7.8	8.0	55.4	2.0	55.3	0.0
Incr Delay (d2), s/veh	0.2	0.3	16.5	0.6	1.9	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.4	8.9	3.0	1.4	2.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	8.1	8.3	71.9	2.6	57.2	0.0
LnGrp LOS	A	A	E	A	E	
Approach Vol, veh/h	1701			600	146	
Approach Delay, s/veh	8.2			12.5	57.2	
Approach LOS	A			B	E	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	12.4	95.6				108.0	12.0
Change Period (Y+Rc), s	4.6	6.5				6.5	4.6
Max Green Setting (Gmax), s	10.6	75.5				90.7	18.2
Max Q Clear Time (g_c+I1), s	8.3	33.2				9.4	7.3
Green Ext Time (p_c), s	0.0	17.3				3.3	0.2

Intersection Summary	
HCM 7th Control Delay, s/veh	12.2
HCM 7th LOS	B

Notes

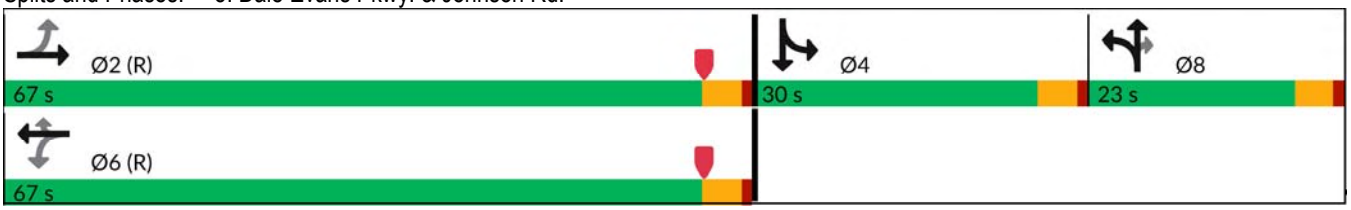
User approved volume balancing among the lanes for turning movement.

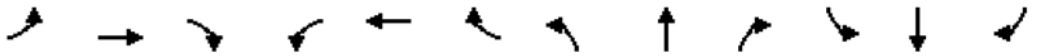
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	1232	116	91	452	176	55	151	282	406	93	7
Future Volume (vph)	17	1232	116	91	452	176	55	151	282	406	93	7
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Storage Length (ft)	150		0	300		165	100		150	325		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	90			120			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			45			55			55	
Link Distance (ft)		7616			5327			4005			1074	
Travel Time (s)		115.4			80.7			49.6			13.3	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases		2			6		8	8		4	4	
Permitted Phases	2			6		6			8			
Detector Phase	2	2		6	6	6	8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	22.5	22.5		22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	
Total Split (s)	67.0	67.0		67.0	67.0	67.0	23.0	23.0	23.0	30.0	30.0	
Total Split (%)	55.8%	55.8%		55.8%	55.8%	55.8%	19.2%	19.2%	19.2%	25.0%	25.0%	
Maximum Green (s)	62.5	62.5		62.5	62.5	62.5	18.5	18.5	18.5	25.5	25.5	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max	C-Max	Max	Max	Max	Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0	0	0	0	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated

Splits and Phases: 5: Dale Evans Pkwy. & Johnson Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	1232	116	91	452	176	55	151	282	406	93	7
Future Volume (veh/h)	17	1232	116	91	452	176	55	151	282	406	93	7
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	21	1521	81	112	558	118	68	186	175	501	115	9
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	388	1720	91	115	1781	794	250	527	235	344	683	53
Arrive On Green	0.78	0.78	0.78	0.78	0.78	0.78	0.23	0.31	0.23	0.43	0.32	0.32
Sat Flow, veh/h	693	3303	175	288	3420	1525	1619	3420	1525	1619	3216	249
Grp Volume(v), veh/h	21	785	817	112	558	118	68	186	175	501	61	63
Grp Sat Flow(s),veh/h/ln	693	1710	1768	288	1710	1525	1619	1710	1525	1619	1710	1755
Q Serve(g_s), s	1.1	38.6	39.6	22.9	5.7	2.3	4.1	5.1	12.8	25.5	3.1	3.1
Cycle Q Clear(g_c), s	6.8	38.6	39.6	62.5	5.7	2.3	4.1	5.1	12.8	25.5	3.1	3.1
Prop In Lane	1.00		0.10	1.00		1.00	1.00		1.00	1.00		0.14
Lane Grp Cap(c), veh/h	388	891	921	115	1781	794	250	527	235	344	363	373
V/C Ratio(X)	0.05	0.88	0.89	0.97	0.31	0.15	0.27	0.35	0.74	1.46	0.17	0.17
Avail Cap(c_a), veh/h	388	891	921	115	1781	794	250	527	235	344	363	373
HCM Platoon Ratio	1.50	1.50	1.50	1.50	1.50	1.50	1.50	2.00	1.50	2.00	1.50	1.50
Upstream Filter(I)	0.09	0.09	0.09	0.93	0.93	0.93	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	7.9	10.5	10.6	38.7	6.9	6.5	40.6	36.9	43.9	34.5	33.2	33.3
Incr Delay (d2), s/veh	0.0	1.3	1.4	74.0	0.4	0.4	2.7	1.8	19.1	220.8	1.0	1.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	5.9	6.2	5.5	1.8	0.8	1.7	2.1	5.5	27.8	1.3	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	7.9	11.8	12.0	112.7	7.3	6.9	43.3	38.7	63.0	255.3	34.2	34.2
LnGrp LOS	A	B	B	F	A	A	D	D	E	F	C	C
Approach Vol, veh/h		1623			788			429			625	
Approach Delay, s/veh		11.8			22.2			49.3			211.5	
Approach LOS		B			C			D			F	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		67.0		30.0		67.0		23.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		62.5		25.5		62.5		18.5				
Max Q Clear Time (g_c+I1), s		41.6		27.5		64.5		14.8				
Green Ext Time (p_c), s		11.3		0.0		0.0		0.6				

Intersection Summary												
HCM 7th Control Delay, s/veh			54.9									
HCM 7th LOS			D									

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	512	1	30	1364	1	55
Future Volume (vph)	512	1	30	1364	1	55
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800
Right Turn on Red		Yes		Yes		
Link Speed (mph)	45		45			45
Link Distance (ft)	7616		549			661
Travel Time (s)	115.4		8.3			10.0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Shared Lane Traffic (%)						
Turn Type	Prot		NA	pm+ov	Perm	NA
Protected Phases	8		2	8		6
Permitted Phases				2	6	
Detector Phase	8		2	8	6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	22.5		22.5	22.5	22.5	22.5
Total Split (s)	96.0		24.0	96.0	24.0	24.0
Total Split (%)	80.0%		20.0%	80.0%	20.0%	20.0%
Maximum Green (s)	91.5		19.5	91.5	19.5	19.5
Yellow Time (s)	3.5		3.5	3.5	3.5	3.5
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0		0.0
Total Lost Time (s)	4.5		4.5	4.5		4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		C-Max	None	C-Max	C-Max
Walk Time (s)	7.0		7.0	7.0	7.0	7.0
Flash Don't Walk (s)	11.0		11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0		0	0	0	0

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	

Splits and Phases: 6: Stoddard Wells Rd. & Johnson Rd.





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	512	1	30	1364	1	55
Future Volume (veh/h)	512	1	30	1364	1	55
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1700	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	596	0	35	772	1	64
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	688	324	1282	1411	36	1268
Arrive On Green	0.21	0.00	0.71	0.71	0.71	0.71
Sat Flow, veh/h	3238	1525	1800	1525	7	1780
Grp Volume(v), veh/h	596	0	35	772	65	0
Grp Sat Flow(s),veh/h/ln	1619	1525	1800	1525	1787	0
Q Serve(g_s), s	21.3	0.0	0.7	9.2	0.0	0.0
Cycle Q Clear(g_c), s	21.3	0.0	0.7	9.2	1.3	0.0
Prop In Lane	1.00	1.00		1.00	0.02	
Lane Grp Cap(c), veh/h	688	324	1282	1411	1303	0
V/C Ratio(X)	0.87	0.00	0.03	0.55	0.05	0.00
Avail Cap(c_a), veh/h	2469	1163	1282	1411	1303	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	45.6	0.0	5.1	0.7	5.1	0.0
Incr Delay (d2), s/veh	3.3	0.0	0.0	1.5	0.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.6	0.0	0.2	10.0	0.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	48.9	0.0	5.1	2.2	5.2	0.0
LnGrp LOS	D		A	A	A	
Approach Vol, veh/h	596		807			65
Approach Delay, s/veh	48.9		2.3			5.2
Approach LOS	D		A			A

Timer - Assigned Phs		2				6	8
Phs Duration (G+Y+Rc), s		90.0				90.0	30.0
Change Period (Y+Rc), s		4.5				4.5	4.5
Max Green Setting (Gmax), s		19.5				19.5	91.5
Max Q Clear Time (g_c+I1), s		11.2				3.3	23.3
Green Ext Time (p_c), s		2.3				0.2	2.2

Intersection Summary	
HCM 7th Control Delay, s/veh	21.4
HCM 7th LOS	C

Notes

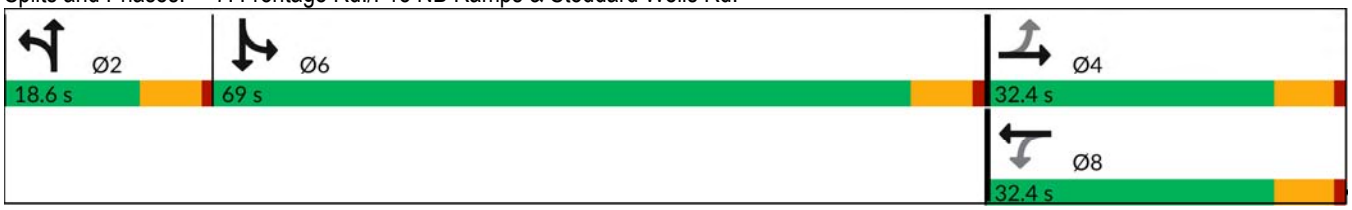
User approved volume balancing among the lanes for turning movement.

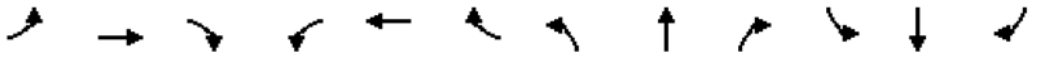
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	87	85	25	629	56	7	48	45	1401	0	23
Future Volume (vph)	10	87	85	25	629	56	7	48	45	1401	0	23
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1800	1800	1800	1700	1800	1800
Lane Width (ft)	12	14	14	12	14	14	12	14	14	13	14	14
Storage Length (ft)	150		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	90			90			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		889			1144			979			330	
Travel Time (s)		13.5			17.3			22.3			7.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Shared Lane Traffic (%)										49%		
Turn Type	Perm	NA		Perm	NA		Split	NA		Split	NA	
Protected Phases		4			8		2	2		6	6	
Permitted Phases	4			8								
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	24.5	24.5		24.5	24.5		16.5	16.5		16.5	16.5	
Total Split (s)	32.4	32.4		32.4	32.4		18.6	18.6		69.0	69.0	
Total Split (%)	27.0%	27.0%		27.0%	27.0%		15.5%	15.5%		57.5%	57.5%	
Maximum Green (s)	25.9	25.9		25.9	25.9		12.1	12.1		62.5	62.5	
Yellow Time (s)	5.5	5.5		5.5	5.5		5.5	5.5		5.5	5.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.5	6.5			6.5		6.5	6.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0							
Flash Don't Walk (s)	11.0	11.0		11.0	11.0							
Pedestrian Calls (#/hr)	10	10		10	10							

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 111.5
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Frontage Rd./I-15 NB Ramps & Stoddard Wells Rd.





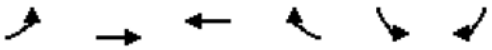
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	87	85	25	629	56	7	48	45	1401	0	23
Future Volume (veh/h)	10	87	85	25	629	56	7	48	45	1401	0	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.04	1.04	1.00	1.04	1.04	1.00	1.04	1.04	1.04	1.04	1.04
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1872	1872	1700	1872	1872	1800	1872	1872	1768	1872	1872
Adj Flow Rate, veh/h	10	91	47	26	655	32	7	50	26	1481	0	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	124	266	138	272	807	39	15	110	57	1463	813	0
Arrive On Green	0.23	0.34	0.23	0.34	0.46	0.34	0.10	0.15	0.10	0.87	0.00	0.00
Sat Flow, veh/h	686	1163	601	1137	3522	172	149	1063	553	3368	1872	0
Grp Volume(v), veh/h	10	0	138	26	344	343	83	0	0	1481	0	0
Grp Sat Flow(s),veh/h/ln	686	0	1764	1137	1853	1841	1765	0	0	1684	1872	0
Q Serve(g_s), s	1.2	0.0	5.1	1.5	13.4	13.5	3.6	0.0	0.0	36.3	0.0	0.0
Cycle Q Clear(g_c), s	15.7	0.0	5.1	7.0	13.4	13.5	3.6	0.0	0.0	36.3	0.0	0.0
Prop In Lane	1.00		0.34	1.00		0.09	0.08		0.31	1.00		0.00
Lane Grp Cap(c), veh/h	124	0	404	272	425	422	182	0	0	1463	813	0
V/C Ratio(X)	0.08	0.00	0.34	0.10	0.81	0.81	0.46	0.00	0.00	1.01	0.00	0.00
Avail Cap(c_a), veh/h	179	0	546	364	574	570	255	0	0	2517	1399	0
HCM Platoon Ratio	1.00	1.50	1.00	1.50	2.00	1.50	1.00	1.50	1.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	37.9	0.0	24.2	25.6	21.1	21.5	34.0	0.0	0.0	5.5	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.5	0.2	6.3	6.4	1.8	0.0	0.0	17.1	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	2.0	0.4	4.7	4.8	1.6	0.0	0.0	5.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	38.2	0.0	24.7	25.7	27.4	28.0	35.8	0.0	0.0	22.6	0.0	0.0
LnGrp LOS	D		C	C	C	C	D			F		
Approach Vol, veh/h		148			713			83			1481	
Approach Delay, s/veh		25.6			27.6			35.8			22.6	
Approach LOS		C			C			D			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		15.1		25.3		47.4		25.3				
Change Period (Y+Rc), s		6.5		6.5		6.5		6.5				
Max Green Setting (Gmax), s		12.1		25.9		62.5		25.9				
Max Q Clear Time (g_c+I1), s		5.6		17.7		38.3		15.5				
Green Ext Time (p_c), s		0.2		0.4		7.2		2.9				

Intersection Summary												
HCM 7th Control Delay, s/veh			24.7									
HCM 7th LOS			C									

Notes

User approved volume balancing among the lanes for turning movement.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1	36	58	602	144	3
Future Volume (vph)	1	36	58	602	144	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0	0	25
Storage Lanes	0			1	1	0
Taper Length (ft)	90				90	
Link Speed (mph)		45	45		45	
Link Distance (ft)		1552	889		1482	
Travel Time (s)		23.5	13.5		22.5	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	36	58	602	144	3
Future Vol, veh/h	1	36	58	602	144	3
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	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1	43	69	717	171	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	786	0	-	0	114	69
Stage 1	-	-	-	-	69	-
Stage 2	-	-	-	-	45	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	842	-	-	-	887	1000
Stage 1	-	-	-	-	959	-
Stage 2	-	-	-	-	982	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	842	-	-	-	886	1000
Mov Cap-2 Maneuver	-	-	-	-	886	-
Stage 1	-	-	-	-	957	-
Stage 2	-	-	-	-	982	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.25	0	10.05
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	49	-	-	-	888
HCM Lane V/C Ratio	0.001	-	-	-	0.197
HCM Control Delay (s/veh)	9.3	0	-	-	10
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.7



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	145	1	1	602	1	2
Future Volume (vph)	145	1	1	602	1	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		300	0	
Storage Lanes	1	0		1	0	
Taper Length (ft)	90				90	
Link Speed (mph)	30		45			45
Link Distance (ft)	263		1482			525
Travel Time (s)	6.0		22.5			8.0
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	145	1	1	602	1	2
Future Vol, veh/h	145	1	1	602	1	2
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	-	-	300	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	184	1	1	762	1	3

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	6	1	0	0	763	0
Stage 1	1	-	-	-	-	-
Stage 2	5	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	1020	1089	-	-	858	-
Stage 1	1027	-	-	-	-	-
Stage 2	1023	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	1019	1089	-	-	858	-
Mov Cap-2 Maneuver	1019	-	-	-	-	-
Stage 1	1027	-	-	-	-	-
Stage 2	1022	-	-	-	-	-

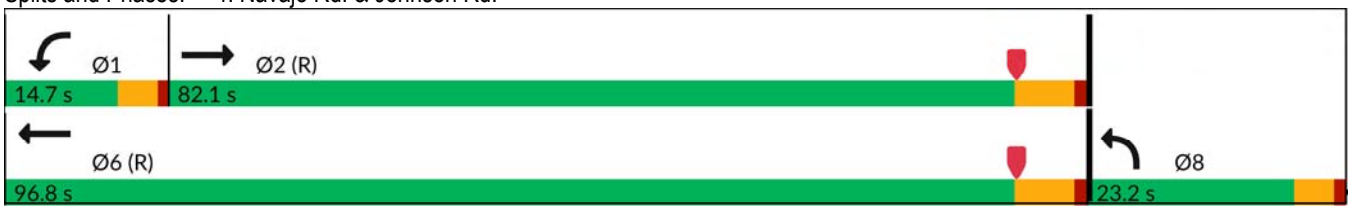
Approach	WB	NB	SB
HCM Control Delay, s/v	9.31	0	3.07
HCM LOS	A		

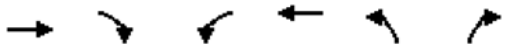
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1019	600	-
HCM Lane V/C Ratio	-	-	0.181	0.001	-
HCM Control Delay (s/veh)	-	-	9.3	9.2	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.7	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	689	160	42	1026	322	52
Future Volume (vph)	689	160	42	1026	322	52
Ideal Flow (vphpl)	1800	1800	1700	1800	1700	1800
Storage Length (ft)		0	150		200	0
Storage Lanes		0	1		1	0
Taper Length (ft)			90		90	
Right Turn on Red		Yes				Yes
Link Speed (mph)	45			45	55	
Link Distance (ft)	5327			1835	6664	
Travel Time (s)	80.7			27.8	82.6	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Shared Lane Traffic (%)						
Turn Type	NA		Prot	NA	Prot	
Protected Phases	2		1	6	8	
Permitted Phases						
Detector Phase	2		1	6	8	
Switch Phase						
Minimum Initial (s)	10.0		5.0	10.0	5.0	
Minimum Split (s)	24.5		9.6	24.5	22.6	
Total Split (s)	82.1		14.7	96.8	23.2	
Total Split (%)	68.4%		12.3%	80.7%	19.3%	
Maximum Green (s)	75.6		10.1	90.3	18.6	
Yellow Time (s)	5.5		3.6	5.5	3.6	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	6.5		4.6	6.5	4.6	
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		2.0	3.0	2.0	
Recall Mode	C-Max		None	C-Max	None	
Walk Time (s)	7.0			7.0	7.0	
Flash Don't Walk (s)	11.0			11.0	11.0	
Pedestrian Calls (#/hr)	10			10	10	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 14.7 (12%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	

Splits and Phases: 4: Navajo Rd. & Johnson Rd.





Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	689	160	42	1026	322	52
Future Volume (veh/h)	689	160	42	1026	322	52
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1800	1800	1700	1800	1700	1800
Adj Flow Rate, veh/h	907	145	55	1350	487	0
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	1984	317	69	1355	502	236
Arrive On Green	0.67	0.67	0.04	0.75	0.16	0.00
Sat Flow, veh/h	3043	472	1619	1800	3238	1525
Grp Volume(v), veh/h	525	527	55	1350	487	0
Grp Sat Flow(s),veh/h/ln	1710	1715	1619	1800	1619	1525
Q Serve(g_s), s	17.5	17.5	4.0	89.1	17.9	0.0
Cycle Q Clear(g_c), s	17.5	17.5	4.0	89.1	17.9	0.0
Prop In Lane		0.28	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1149	1152	69	1355	502	236
V/C Ratio(X)	0.46	0.46	0.80	1.00	0.97	0.00
Avail Cap(c_a), veh/h	1149	1152	136	1355	502	236
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	9.3	9.3	57.0	14.7	50.4	0.0
Incr Delay (d2), s/veh	0.1	0.1	7.8	23.7	32.4	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	5.6	1.8	34.2	9.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	9.4	9.4	64.8	38.4	82.8	0.0
LnGrp LOS	A	A	E	D	F	
Approach Vol, veh/h	1052			1405	487	
Approach Delay, s/veh	9.4			39.4	82.8	
Approach LOS	A			D	F	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	9.7	87.1				96.8	23.2
Change Period (Y+Rc), s	4.6	6.5				6.5	4.6
Max Green Setting (Gmax), s	10.1	75.6				90.3	18.6
Max Q Clear Time (g_c+I1), s	6.0	19.5				91.1	19.9
Green Ext Time (p_c), s	0.0	7.7				0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	35.9
HCM 7th LOS	D

Notes

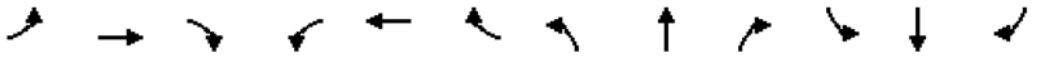
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	775	87	313	1297	361	159	111	181	263	224	17
Future Volume (vph)	9	775	87	313	1297	361	159	111	181	263	224	17
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Storage Length (ft)	150		0	300		165	100		150	325		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	90			120			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			45			55			55	
Link Distance (ft)		7616			5327			4005			1074	
Travel Time (s)		115.4			80.7			49.6			13.3	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6			8			
Detector Phase	5	2		1	6	6	3	8	8	7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	9.5	22.5		9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	
Total Split (s)	9.5	40.5		31.0	62.0	62.0	23.8	22.5	22.5	26.0	24.7	
Total Split (%)	7.9%	33.8%		25.8%	51.7%	51.7%	19.8%	18.8%	18.8%	21.7%	20.6%	
Maximum Green (s)	5.0	36.0		26.5	57.5	57.5	19.3	18.0	18.0	21.5	20.2	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lag	Lead	Lead	Lag	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	Max	Max	None	Max	
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	
Flash Don't Walk (s)		11.0			11.0	11.0		11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0			0	0		0	0		0	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 31 (26%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	

Splits and Phases: 5: Dale Evans Pkwy. & Johnson Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	775	87	313	1297	361	159	111	181	263	224	17
Future Volume (veh/h)	9	775	87	313	1297	361	159	111	181	263	224	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	11	969	59	391	1621	264	199	139	132	329	280	21
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	21	982	60	358	1738	775	260	513	229	290	543	40
Arrive On Green	0.01	0.45	0.30	0.22	0.76	0.51	0.16	0.22	0.15	0.18	0.25	0.17
Sat Flow, veh/h	1619	3275	199	1619	3420	1525	1619	3420	1525	1619	3226	240
Grp Volume(v), veh/h	11	506	522	391	1621	264	199	139	132	329	148	153
Grp Sat Flow(s),veh/h/ln	1619	1710	1764	1619	1710	1525	1619	1710	1525	1619	1710	1757
Q Serve(g_s), s	0.8	35.1	35.1	26.5	46.8	6.0	14.1	4.0	6.3	21.5	8.9	9.1
Cycle Q Clear(g_c), s	0.8	35.1	35.1	26.5	46.8	6.0	14.1	4.0	6.3	21.5	8.9	9.1
Prop In Lane	1.00		0.11	1.00		1.00	1.00		1.00	1.00		0.14
Lane Grp Cap(c), veh/h	21	513	529	358	1738	775	260	513	229	290	288	296
V/C Ratio(X)	0.53	0.99	0.99	1.09	0.93	0.34	0.76	0.27	0.58	1.13	0.51	0.52
Avail Cap(c_a), veh/h	67	513	529	358	1738	775	260	513	229	290	288	296
HCM Platoon Ratio	1.00	1.50	1.00	1.00	1.50	1.00	1.00	1.50	1.00	1.00	1.50	1.00
Upstream Filter(I)	0.42	0.42	0.42	0.09	0.09	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.9	32.8	33.8	46.8	12.6	4.1	48.2	41.1	20.2	49.2	40.6	41.3
Incr Delay (d2), s/veh	8.6	22.7	22.3	46.9	1.2	0.1	12.6	1.3	10.2	94.1	6.4	6.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	15.0	15.8	14.9	7.6	3.5	6.3	1.7	4.0	15.8	3.9	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	67.5	55.4	56.1	93.6	13.8	4.2	60.8	42.4	30.4	143.3	47.0	47.7
LnGrp LOS	E	E	E	F	B	A	E	D	C	F	D	D
Approach Vol, veh/h		1039			2276			470			630	
Approach Delay, s/veh		55.9			26.4			46.8			97.5	
Approach LOS		E			C			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	31.0	40.5	23.8	24.7	6.0	65.5	26.0	22.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	26.5	36.0	19.3	20.2	5.0	57.5	21.5	18.0
Max Q Clear Time (g_c+I1), s	28.5	37.1	16.1	11.1	2.8	48.8	23.5	8.3
Green Ext Time (p_c), s	0.0	0.0	0.1	0.9	0.0	6.6	0.0	0.7

Intersection Summary	
HCM 7th Control Delay, s/veh	45.7
HCM 7th LOS	D

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1470	3	13	869	2	29
Future Volume (vph)	1470	3	13	869	2	29
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800
Right Turn on Red		Yes		Yes		
Link Speed (mph)	45		45			45
Link Distance (ft)	7616		549			661
Travel Time (s)	115.4		8.3			10.0
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67
Shared Lane Traffic (%)						
Turn Type	Prot		NA	pm+ov	Perm	NA
Protected Phases	8		2	8		6
Permitted Phases				2	6	
Detector Phase	8		2	8	6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	22.5		22.5	22.5	22.5	22.5
Total Split (s)	94.0		26.0	94.0	26.0	26.0
Total Split (%)	78.3%		21.7%	78.3%	21.7%	21.7%
Maximum Green (s)	89.5		21.5	89.5	21.5	21.5
Yellow Time (s)	3.5		3.5	3.5	3.5	3.5
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0		0.0
Total Lost Time (s)	4.5		4.5	4.5		4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		C-Max	None	C-Max	C-Max
Walk Time (s)	7.0		7.0	7.0	7.0	7.0
Flash Don't Walk (s)	11.0		11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0		0	0	0	0

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	

Splits and Phases: 6: Stoddard Wells Rd. & Johnson Rd.





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	1470	3	13	869	2	29
Future Volume (veh/h)	1470	3	13	869	2	29
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1700	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	2198	0	19	849	3	43
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	2290	1079	392	1411	40	368
Arrive On Green	0.71	0.00	0.22	0.22	0.22	0.22
Sat Flow, veh/h	3238	1525	1800	1525	37	1691
Grp Volume(v), veh/h	2198	0	19	849	46	0
Grp Sat Flow(s),veh/h/ln	1619	1525	1800	1525	1728	0
Q Serve(g_s), s	74.2	0.0	1.0	11.3	0.0	0.0
Cycle Q Clear(g_c), s	74.2	0.0	1.0	11.3	2.5	0.0
Prop In Lane	1.00	1.00		1.00	0.07	
Lane Grp Cap(c), veh/h	2290	1079	392	1411	408	0
V/C Ratio(X)	0.96	0.00	0.05	0.60	0.11	0.00
Avail Cap(c_a), veh/h	2415	1138	392	1411	408	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.39	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	16.0	0.0	37.1	0.8	37.7	0.0
Incr Delay (d2), s/veh	4.9	0.0	0.2	1.9	0.6	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	22.8	0.0	0.5	26.0	1.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	20.9	0.0	37.3	2.7	38.2	0.0
LnGrp LOS	C		D	A	D	
Approach Vol, veh/h	2198		868			46
Approach Delay, s/veh	20.9		3.4			38.2
Approach LOS	C		A			D

Timer - Assigned Phs		2				6	8
Phs Duration (G+Y+Rc), s		30.6				30.6	89.4
Change Period (Y+Rc), s		4.5				4.5	4.5
Max Green Setting (Gmax), s		21.5				21.5	89.5
Max Q Clear Time (g_c+I1), s		13.3				4.5	76.2
Green Ext Time (p_c), s		2.5				0.1	8.7

Intersection Summary	
HCM 7th Control Delay, s/veh	16.3
HCM 7th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

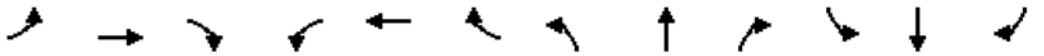
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	93	69	49	1544	61	4	79	39	913	0	20
Future Volume (vph)	5	93	69	49	1544	61	4	79	39	913	0	20
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1800	1800	1800	1700	1800	1800
Lane Width (ft)	12	14	14	12	14	14	12	14	14	13	14	14
Storage Length (ft)	150		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	90			90			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		889			1144			979			330	
Travel Time (s)		13.5			17.3			22.3			7.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)										49%		
Turn Type	Perm	NA		Perm	NA		Split	NA		Split	NA	
Protected Phases		4			8		2	2		6	6	
Permitted Phases	4			8								
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	24.5	24.5		24.5	24.5		16.5	16.5		16.5	16.5	
Total Split (s)	59.0	59.0		59.0	59.0		17.6	17.6		43.4	43.4	
Total Split (%)	49.2%	49.2%		49.2%	49.2%		14.7%	14.7%		36.2%	36.2%	
Maximum Green (s)	52.5	52.5		52.5	52.5		11.1	11.1		36.9	36.9	
Yellow Time (s)	5.5	5.5		5.5	5.5		5.5	5.5		5.5	5.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.5	6.5			6.5		6.5	6.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0							
Flash Don't Walk (s)	11.0	11.0		11.0	11.0							
Pedestrian Calls (#/hr)	10	10		10	10							

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 119.8
Natural Cycle: 130
Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Frontage Rd./I-15 NB Ramps & Stoddard Wells Rd.





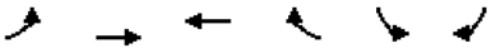
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	93	69	49	1544	61	4	79	39	913	0	20
Future Volume (veh/h)	5	93	69	49	1544	61	4	79	39	913	0	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.04	1.04	1.00	1.04	1.04	1.00	1.04	1.04	1.04	1.04	1.04
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1872	1872	1700	1872	1872	1800	1872	1872	1768	1872	1872
Adj Flow Rate, veh/h	5	101	37	53	1678	33	4	86	20	1009	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	61	581	213	528	1618	32	5	117	27	1038	577	0
Arrive On Green	0.44	0.67	0.44	0.67	0.89	0.67	0.08	0.12	0.08	0.62	0.00	0.00
Sat Flow, veh/h	259	1307	479	1137	3641	71	66	1415	329	3368	1872	0
Grp Volume(v), veh/h	5	0	138	53	852	859	110	0	0	1009	0	0
Grp Sat Flow(s),veh/h/ln	259	0	1786	1137	1853	1859	1809	0	0	1684	1872	0
Q Serve(g_s), s	0.0	0.0	4.0	2.3	52.5	52.5	6.9	0.0	0.0	33.9	0.0	0.0
Cycle Q Clear(g_c), s	52.5	0.0	4.0	6.3	52.5	52.5	6.9	0.0	0.0	33.9	0.0	0.0
Prop In Lane	1.00		0.27	1.00		0.04	0.04		0.18	1.00		0.00
Lane Grp Cap(c), veh/h	61	0	794	528	824	826	149	0	0	1038	577	0
V/C Ratio(X)	0.08	0.00	0.17	0.10	1.03	1.04	0.74	0.00	0.00	0.97	0.00	0.00
Avail Cap(c_a), veh/h	61	0	794	528	824	826	170	0	0	1052	585	0
HCM Platoon Ratio	1.00	1.50	1.00	1.50	2.00	1.50	1.00	1.50	1.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	59.1	0.0	13.7	12.8	6.6	7.1	51.1	0.0	0.0	22.2	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	0.1	0.1	40.7	41.9	13.6	0.0	0.0	21.2	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	1.5	0.5	12.0	12.5	3.6	0.0	0.0	11.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	59.6	0.0	13.8	12.9	47.3	49.0	64.7	0.0	0.0	43.4	0.0	0.0
LnGrp LOS	E		B	B	F	F	E			D		
Approach Vol, veh/h		143			1764			110			1009	
Approach Delay, s/veh		15.4			47.1			64.7			43.4	
Approach LOS		B			D			E			D	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		16.2		59.0		42.9		59.0				
Change Period (Y+Rc), s		6.5		6.5		6.5		6.5				
Max Green Setting (Gmax), s		11.1		52.5		36.9		52.5				
Max Q Clear Time (g_c+I1), s		8.9		54.5		35.9		54.5				
Green Ext Time (p_c), s		0.1		0.0		0.5		0.0				

Intersection Summary												
HCM 7th Control Delay, s/veh			45.0									
HCM 7th LOS			D									

Notes

User approved volume balancing among the lanes for turning movement.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	6	36	54	1515	130	2
Future Volume (vph)	6	36	54	1515	130	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0	0	25
Storage Lanes	0			1	1	0
Taper Length (ft)	90				90	
Link Speed (mph)		45	45		45	
Link Distance (ft)		1552	889		1482	
Travel Time (s)		23.5	13.5		22.5	
Peak Hour Factor	0.58	0.58	0.58	0.58	0.58	0.58
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	36	54	1515	130	2
Future Vol, veh/h	6	36	54	1515	130	2
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	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	58	58	58	58	58	58
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	10	62	93	2612	224	3

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	2705	0	-	0	176	93
Stage 1	-	-	-	-	93	-
Stage 2	-	-	-	-	83	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	154	-	-	-	819	970
Stage 1	-	-	-	-	936	-
Stage 2	-	-	-	-	946	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	154	-	-	-	761	970
Mov Cap-2 Maneuver	-	-	-	-	761	-
Stage 1	-	-	-	-	870	-
Stage 2	-	-	-	-	946	-

Approach	EB	WB	SB
HCM Control Delay, s/v	4.3	0	11.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	148	-	-	-	764
HCM Lane V/C Ratio	0.067	-	-	-	0.298
HCM Control Delay (s/veh)	30.1	0	-	-	11.7
HCM Lane LOS	D	A	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	1.2



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	132	1	1	1520	1	1
Future Volume (vph)	132	1	1	1520	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		300	0	
Storage Lanes	1	0		1	0	
Taper Length (ft)	90				90	
Link Speed (mph)	30		45			45
Link Distance (ft)	263		1482			525
Travel Time (s)	6.0		22.5			8.0
Peak Hour Factor	0.56	0.56	0.56	0.56	0.56	0.56
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	132	1	1	1520	1	1
Future Vol, veh/h	132	1	1	1520	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	-	-	300	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	56	56	56	56	56	56
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	236	2	2	2714	2	2

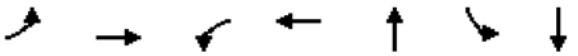
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	7	2	0	0	2716	0
Stage 1	2	-	-	-	-	-
Stage 2	5	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	1019	1088	-	-	152	-
Stage 1	1027	-	-	-	-	-
Stage 2	1023	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	1007	1088	-	-	152	-
Mov Cap-2 Maneuver	1007	-	-	-	-	-
Stage 1	1027	-	-	-	-	-
Stage 2	1011	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	9.67	0	14.47
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1008	152	-
HCM Lane V/C Ratio	-	-	0.236	0.012	-
HCM Control Delay (s/veh)	-	-	9.7	28.9	0
HCM Lane LOS	-	-	A	D	A
HCM 95th %tile Q(veh)	-	-	0.9	0	-

APPENDIX 5.8: OPENING YEAR CUMULATIVE (2027) WITH PROJECT CONDITIONS OFF-RAMP QUEUEING ANALYSIS S WORKSHEETS WITH IMPROVEMENTS

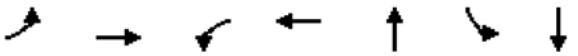
This Page Intentionally Left Blank



Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	10	180	26	713	104	744	739
v/c Ratio	0.17	0.43	0.13	0.87	0.51	0.89	0.77
Control Delay (s/veh)	46.0	34.7	39.5	54.8	47.1	39.2	25.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	46.0	34.7	39.5	54.8	47.1	39.2	25.8
Queue Length 50th (ft)	6	94	16	264	56	473	377
Queue Length 95th (ft)	24	167	43	#365	115	#750	556
Internal Link Dist (ft)		809		1064	899		250
Turn Bay Length (ft)	150		150				
Base Capacity (vph)	66	447	224	890	222	938	1064
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.40	0.12	0.80	0.47	0.79	0.69

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	5	176	53	1744	132	506	508
v/c Ratio	0.09	0.22	0.11	1.05	0.73	1.00	0.82
Control Delay (s/veh)	24.8	16.8	20.9	70.4	70.7	80.9	43.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	24.8	16.8	20.9	70.4	70.7	80.9	43.7
Queue Length 50th (ft)	2	63	24	~745	89	394	309
Queue Length 95th (ft)	12	111	51	#881	#184	#625	#486
Internal Link Dist (ft)		809		1064	899		250
Turn Bay Length (ft)	150		150				
Base Capacity (vph)	56	809	473	1658	183	508	618
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.22	0.11	1.05	0.72	1.00	0.82

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Intersection: 7: Frontage Rd./I-15 NB Ramps & Stoddard Wells Rd.

Movement	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	TR	L	T	TR	LTR	L	LTR
Maximum Queue (ft)	33	162	163	438	494	99	292	292
Average Queue (ft)	7	90	32	335	385	58	284	260
95th Queue (ft)	29	174	122	523	588	107	324	358
Link Distance (ft)		816		1106	1106	931	277	277
Upstream Blk Time (%)							22	12
Queuing Penalty (veh)							0	0
Storage Bay Dist (ft)	150		150					
Storage Blk Time (%)		2		44				
Queuing Penalty (veh)		0		12				

Intersection: 9: Quarry Rd. & I-15 SB Ramps

Movement	WB	NB	SB
Directions Served	LR	R	LT
Maximum Queue (ft)	48	4	5
Average Queue (ft)	34	1	1
95th Queue (ft)	55	6	8
Link Distance (ft)	222		503
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		300	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Frontage Rd./I-15 NB Ramps & Stoddard Wells Rd.

Movement	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	TR	L	T	TR	LTR	L	LTR
Maximum Queue (ft)	9	64	240	1121	1121	190	292	292
Average Queue (ft)	3	21	86	1114	1118	106	288	272
95th Queue (ft)	14	77	269	1163	1144	183	309	329
Link Distance (ft)		816		1106	1106	931	277	277
Upstream Blk Time (%)				82	79		34	24
Queuing Penalty (veh)				0	0		0	0
Storage Bay Dist (ft)	150		150					
Storage Blk Time (%)		1		76				
Queuing Penalty (veh)		0		40				

Intersection: 9: Quarry Rd. & I-15 SB Ramps

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	117	11
Average Queue (ft)	73	6
95th Queue (ft)	199	27
Link Distance (ft)	222	503
Upstream Blk Time (%)	17	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		