# Watson High Desert Logistics-West

**A 45-acre Industrial Development**
**In the Town of Apple Valley**

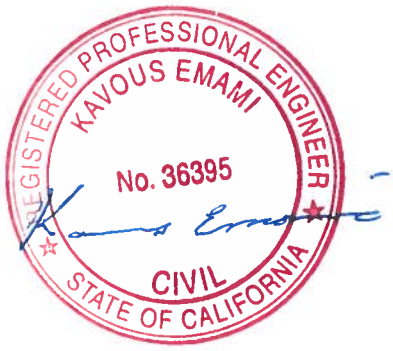
## Sanitary Sewer Feasibility Study

**Developer:**

Watson Land
22010 Wilmington Avenue
Carson, CA. 90745

**Consultant:**

KEC ENGINEERS, INC.
13201 9th Street
Chino, CA. 91710
(714) 401-4695




April 2024
(Edited Jan. 2025)

# ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| AVWD | Apple Valley Water District |
| d/D | depth over diameter |
| DI | ductile iron |
| du | dwelling units |
| EDU | equivalent dwelling unit |
| EIR | Environmental Impact Report |
| fps | feet per second |
| gpd | gallons per day |
| gpm | gallons per minute |
| JPA | Joint Powers Authority |
| LF | linear Feet |
| LS | lift Station |
| MBR | membrane bioreactor |
| MG | million gallon |
| n | Manning's Roughness Coefficient |
| NAVISP | North Apple Valley Industrial Specific Plan |
| PVC | polyvinyl chloride |
| R-M | multi-family residential |
| sf | square foot |
| SSMP | Sewer System Management Plan |
| SSO | sanitary sewer overflow |
| URS | URS Corporation |
| VCP | vitrified clay pipe |
| VVWRA | Victor Valley Wastewater Reclamation Authority |

## Introduction:

Watson High Desert Logistics-West is a 45-acre site in the Town of Apple Valley. This site is located in the North Apple Valley Industrial Specific Plan (NAVISP) which was adopted by the Town Council on October 24, 2006. The EIR for the NAVISP was certified on October 10, 2006. The project site currently being evaluated is bounded by Navajo Road to the east, Johnson Road to the north, and vacant land to the south and west. The approximately 45-acre site would be developed with a 896,500-square foot (sf) warehouse building (See schematic site plan).

**PROPOSED NEW DEVELOPMENT :**

**Project Name:**

Watson High Desert Logistics-West
In the Town of Apple Valley

**Developer/Owner:**

Watson Land Company
22010 Wilmington Ave.
Carson, CA 90745

**Project Architect:**

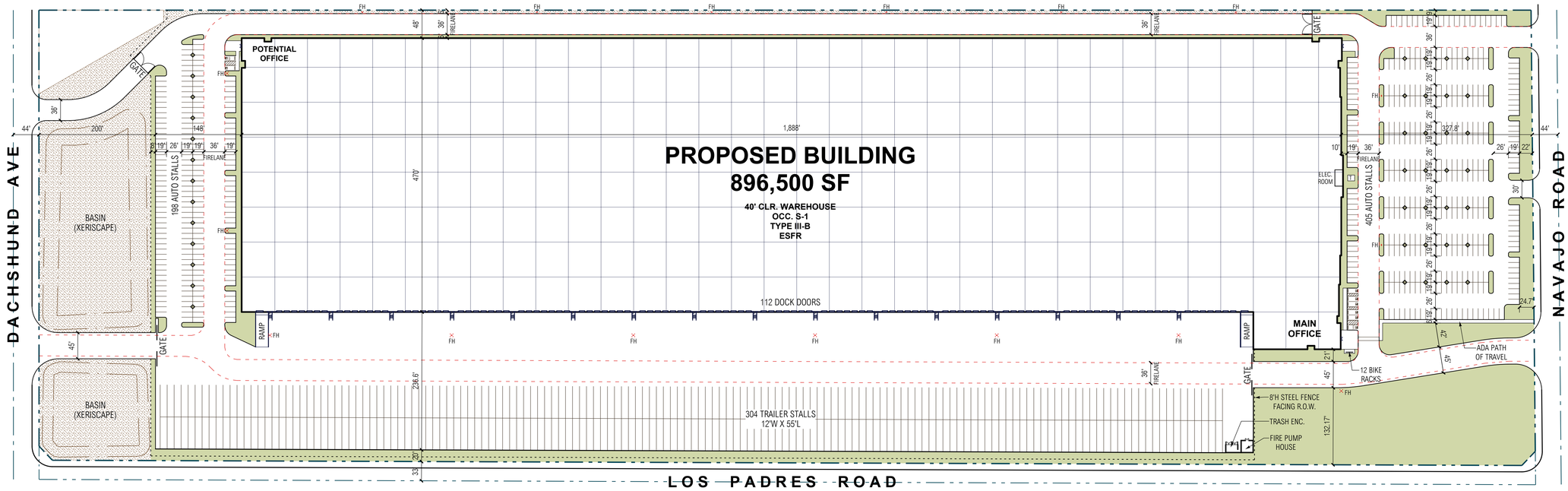
RGA Office of Architectural Design
15231 Alton Parkway, Suite #100
Irvine, CA. 92618
Tel: (949) 341-0920

**Project Civil Engineer:**

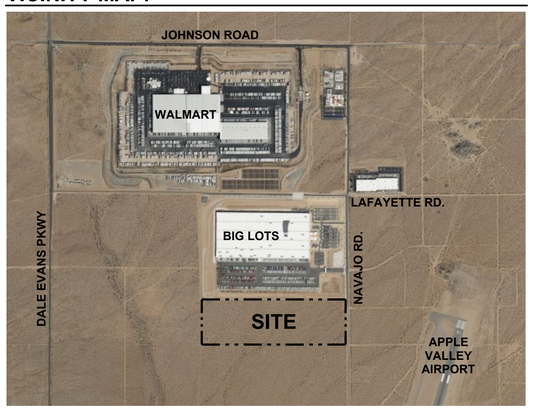
Westland Group
4150 Concourse, Suit 100
Ontario, CA. 91764

# WATSON 45 ACRE SITE- APPLE VALLEY, CALIFORNIA


N.T.S




## VICINITY MAP:




## SITE LEGEND:

- PROPERTY / ROW LINE
- ADA PATH OF TRAVEL
- 8'H BLACK TUBE STEEL FENCE
- 8'H CHAIN LINK FENCE
- LANDSCAPE AREA
- XERISCAPE AREA
- FIRE HYDRANT
- PAD-MOUNT UTILITY TRANSFORMER
- TYPICAL PARKING STALLS - 9' X 19' STRIPED PER CITY STANDARDS
- TYPICAL TRAILER PARKING STALLS 12'W X 55'L - 6" WIDE PAINT STRIPE

## PROJECT INFORMATION:

| | |
|---|---|
| APN: | 0463-231-62-0000 |
| ZONE: | SPECIFIC PLAN |
| USE: | WAREHOUSE (S-1) |
| CONSTRUCTION TYPE: | III-B |
| MAX. ROOF DECK HEIGHT: | 47' |
| MAX. BLDG HEIGHT AT ARCHITECTURAL FEATURES | 52' |

## SHEET INDEX


| | |
|---|---|
| ARCHITECTURAL | |
| A1-1-P | OVERALL SITE PLAN |
| A1-2-P | SITE PLAN DETAILS |
| A2-1-P | FLOOR PLAN |
| A2-2-P | ROOF PLAN |
| A3-1-P | ELEVATIONS |
| A3-2-P | ELEVATIONS |
| CIVIL | |
| 1-2 | CONCEPTUAL GRADING PLAN |
| 3 | SECTIONS |
| 4-5 | CONCEPTUAL UTILITY PLAN |
| LANDSCAPE | |
| 1 OF 1 | CONCEPTUAL PLANTING PLAN |


## PROJECT DATA:

| | |
|---|---|
| GROSS SITE AREA: | 2,077,935 SF / 47.70 AC |
| LOS PADRES STREET DEDICATION: | 85,346 SF |
| NET SITE AREA: | 1,992,586 SF / 45.76 AC |
| BUILDING AREA: | 896,500 SF |
| F.A.R. | .449 |
| PARKING REQUIRED: | |
| 1ST 10,000 SF @ 1/500 SF | 20 STALLS |
| > 10,000 SF @ 1/1000 SF | 887 STALLS |
| TOTAL REQUIRED: | 907 STALLS |
| PARKING PROVIDED: | |
| AUTO STALLS | 603 STALLS |
| TRAILER STALLS | 304 STALLS |
| TOTAL PROVIDED: | 907 STALLS |
| DOCK LOADING POSITIONS: | 112 DOCKS |
| NET LANDSCAPE AREA: | |
| LANDSCAPE REQUIRED: | 10 % / 199,314 SF |
| LANDSCAPE PROVIDED: | 14.3 % 285,000 SF |

SCALE: 1" = 80'-0" (0' 20' 50' 100' 200')


PREPARED BY:

RGA
Office of Architectural Design
15231 Alton Parkway, Suite 100
Irvine, CA 92618
T 949-341-0920
FX 949-341-0922

DEVELOPER / OWNER:

WATSON
LAND COMPANY


# WATSON HIGH DESERT LOGISTICS - WEST

APPLE VALLEY, CA

SCHEMATIC SITE PLAN

| MARK | DATE | DESCRIPTION |
|---|---|---|
| | 11/15/23 | 3RD PLANNING SUBMITTAL |
| | 9/6/23 | SIDELOAD REVISION |
| | 6/5/23 | 2ND PLOT PLAN SUBMITTAL |
| | 4/3/22 | REVISED SITE PLAN |
| | 9/21/22 | PRELIMINARY SITE PLAN |

| | |
|---|---|
| RGA PROJECT NO: | 22074.00 |
| CAD FILE NAME: | 22074-00-A1-01 |
| DRAWN BY: | CS |
| CHK'D BY: | CS |
| COPYRIGHT: RGA, OFFICE OF ARCHITECTURAL DESIGN | |
| SHEET TITLE | |

A1-1-P

## Sanitary Sewer Feasibility Study Objectives:

The Town of Apple Valley is responsible for knowing the project's additional wastewater flows which at a point or time could cause capacity constraint or could substantially or incrementally exceed the future scheduled capacity of their existing sewer trunk line or interceptors. Furthermore, the Town of Apple Valley is required to coordinate and collaborate with the Victor Valley Wastewater Reclamation Authority which under contract treats the Town's sewer flow. This report will also be used as a reference by the Developer and the Town of Apple Valley to assess the availability of the existing sewer collection system (gravity and/or force main) and the nearest functional connection point. The Sewer Feasibility Study is the official process for properly sizing the sanitary sewer for each catchment (tributary) area and their flow impact on the sewer trunk line and the interceptors. The completed Sewer Feasibility Study must address and analyze the sewer capacity in the existing system and must include mitigation measures.

## Town of Apple Valley Sewer System Master Plan Update:

The latest available Sewer Master Plan for the Town of Apple Valley was updated by URS Corporation in August 2013. The sewer hydraulic modeling portion of the Plan is not available for our review and we are not certain if it would contain highly accurate information that could be relied on 10 years later, as there have been significant changes in the Town of Apple Valley. Victor Valley Wastewater Reclamation Authority which is responsible for the expansion of the wastewater treatment plants in this region was aware of the overloading of the VVWRA interceptor during buildout. The 2013 Sewer Master Plan pointed out the fact that the VVWRA sewer needed upgrading or construction of a subregional treatment plant near Dale Evens Parkway and Otoe Road which was necessary to alleviate the projected overtaxing of VVWRA interceptor. Subsequently, the Sewer System Analysis of August 2013 was the catalyst for the construction of a 1-MG subregional membrane bioreactor (MBR) wastewater treatment plant. The Watson High Desert Logistics - West is tabled to discharge its sanitary sewer flow to this 1-MG subregional treatment plant.


**VICINITY MAP**

N

**N.T.S.**

**Sewer System Management Plan (SSMP):**

The latest Town of Apple Valley Sewer System Management Plan (SSMP), which was completed in 2019, intended to provide a plan and schedule to properly manage, operate, and maintain all parts of the sanitary sewer system. Additionally, it outlined a protocol to help reduce and prevent sanitary sewer overflows (SSO) as well as mitigate any SSOs that do occur. The Town uses the "San Bernardino County Special Districts Department Standards for Sanitary Sewer" as the basis for designing the sewer improvement plans. The required design standards detail the pipe sizing for sufficient sewer capacity to handle the current and future baseflow, including peak and wet weather flow.

**Wastewater Collection System Design Criteria:**

In compliance with having a sewer collection system that is compatible with other municipalities and meets practical and achievable design standards for proper operation and maintenance; URS Corporation, in their 2013 Sewer Master Plan for the Town of Apple Valley, developed the sewer design criteria as a tool for future sewer collection system design. The recommended design standards require the new sewer lines to be of polyvinyl chloride (PVC) pipes. In addition, there are other minimum requirements which are identified in the following tables:

(Tables from Final Report Sewer System Master Plan Update, Town of Apple Valley, CA by URS Corporation)

**Table 2-1: d/D Criteria**

| Ratio | <15 inches | >15 inches |
|---|---|---|
| d/D | 0.5 | 0.75 |

**Table 2-2: Velocity Criteria**

| Criteria | Velocity (fps) |
|---|---|
| Minimum | 2 |
| Desired | 3-5 |
| Maximum | 10 |

**Table 2-3: Manning's Roughness Coefficient (n)**

| Material | n |
|---|---|
| PVC | 0.009 |
| DI | 0.013 |
| VCP | 0.011 |

**Table 2-4: Slope and Flow Depths Criteria**

| Sewer Pipe Size (in) | Slope (ft/ft) | Design Flow Depths at Peak Flow (%) |
|---|---|---|
| 6 | 0.0060 | 50 |
| 8 | 0.0040 | 50 |
| 10 | 0.0029 | 75 |
| 12 | 0.0022 | 75 |
| 15 | 0.0016 | 75 |
| 18 | 0.0012 | 75 |
| 21 | 0.0010 | 75 |
| 24 or larger | 0.0008 | 75 |

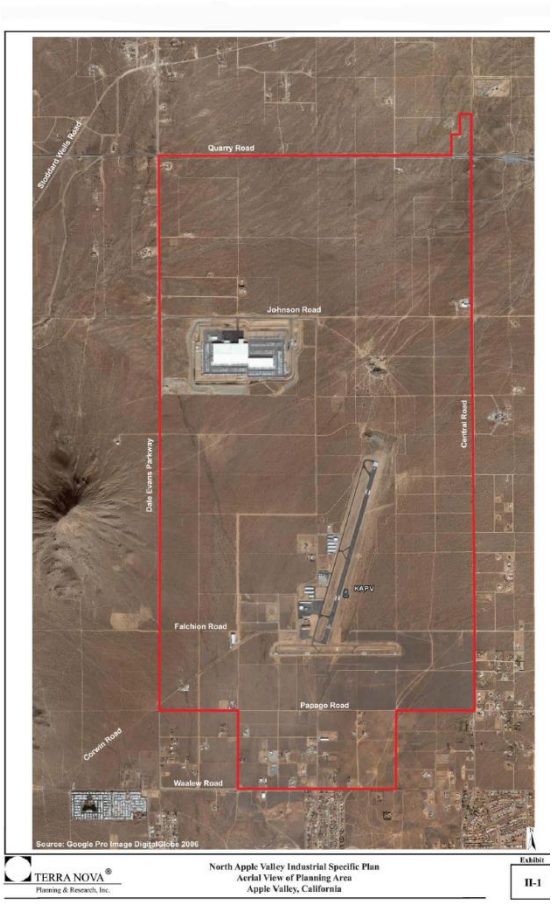
(Table from Final Report Sewer System Master Plan Update, Town of Apple Valley, CA by URS Corporation)

**Sewer flow capacity and discharge analysis:**

One of the most challenging issues in designing a sewer collection system and sewer treatment facility is the technique, sizing, and timing of the required infrastructure to be constructed to handle the sewer flow from minimum development to the ultimate build out. The assessment of the existing wastewater treatment capacity to handle the waste discharge from Watson High Desert Logistics - West (45-acre Industrial Development) is not within the scope of this study. However, as indicated earlier in this report, the Victor Valley Wastewater Reclamation Authority in collaboration with the Town of Apple Valley and other entities within the High Desert Region manages the overall sewer treatment plant expansions and interceptors discharging into the treatment plants. VVWRA has constructed a 1-MG subregional membrane bioreactor (MBR) treatment plant in the vicinity of Dale Evans Parkway and Otoe Road to handle the waste discharge from the North Apple Valley Industrial Specific Plan (NAVISP). Based on the flow monitoring data measured in 2013, the 1-MG subregional MBR plant has enough capacity to handle the proposed Watson High Desert Logistics - West project.

## North Apple Valley Industrial Specific Plan:

In accordance with the Certified EIR (November 1, 2006) for the North Apple Valley Industrial Specific Plan, the total project site including developed and undeveloped lands, encompasses 4,937.5 acres with a total commercial square footage of 2,500,257 and a total industrial square footage of 36,938,444. However, the Sanitary Sewer Master Plan Update of August 2013 states that the total area in North Apple Valley Specific Plan is to be 6,220 acres which includes the Airport Influence Area, the Dry Lake Flood Area, the Apple Valley Village Area located west of Central Avenue, Highway 18 Improvement Area, the I-15 Corridor, and the Bear Valley Road Improvement Area. They defined the specific plan area to be bounded by Langley Road on the north, Waalew Road on the south, Dale Evans Parkway on the west, and Joshua Road on the east.



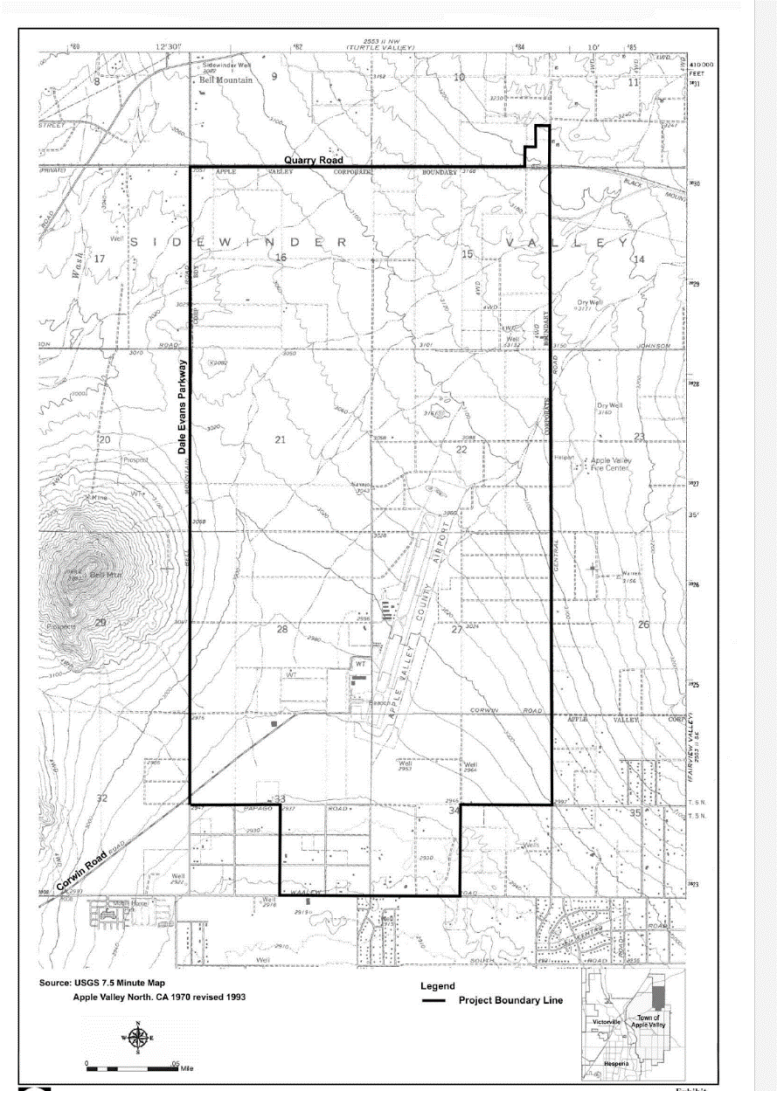

Quarry Road
Dale Evans Parkway
Corwin Road
SIDEWINDER VALLEY
Bell Mountain
Bell Mtn
Apple Valley Airport
Source: USGS 7.5 Minute Map
Apple Valley North, CA 1970 revised 1993
Legend
Project Boundary Line

**Table 5-10: North Apple Valley Specific Plan Land Use Designation Buildout Summary**

| Designation | Vacant Acres | Developed Acres | Total Acres | Existing Sq. Footage[5] | Potential Sq. Footage[6] | Total Sq. Footage |
|---|---|---|---|---|---|---|
| General Commercial | 265.7 | 4.9 | 270.6 | 46,958 | 2,546,256 | 2,593,214 |
| Industrial - Airport | 329.5 | 410.6 | 740.1 | N/A | N/A | N/A |
| Industrial - Specific Plan | 4445.2 | 343.3 | 4788.5 | 3,287,037 | 42,599,240 | 45,886,277 |
| Industrial-General | 334 | 6.1 | 340.1 | 58,458 | 3,200,789 | 3,259,246 |
| High Desert Corridor | 73.7 | 8 | 81.7 | N/A | N/A | N/A |
| **Total** | **5,448.1** | **772.9** | **6,221** | **3,392,453** | **48,346,285** | **51,738,737** |

(Table from Final Report Sewer System Master Plan Update, Town of Apple Valley, CA by URS Corporation)

The Town of Apple Valley Planning Department sewer generation criteria is based on:

**1 EDU = 210 gallons per day per household**

The 210 gpd/household is derived from the Multi-Family Residential (R-M) land use densities which is based on 2 to 20-du/1 acre. Thus, the total sewer flow from the North Apple Valley Industrial Specific Plan is calculated by multiplying the vacant land by 210-gpd.

**Table 5-13: Build Out Summary of EDUs for Areas Designated as Specific Plan**

| Land Designation | Bridle Path Estates | Deep Creek Estates | Jess Ranch | LCER | Meadowbrook | North Apple Valley Industrial | North Pointe | Golden Triangle |
|---|---|---|---|---|---|---|---|---|
| Low Density Residential | - | - | 25 | - | - | - | - | - |
| Medium Density Residential | - | - | - | - | - | - | - | 10.4 |
| Estate Residential | - | - | - | - | - | - | - | 1.5 |
| Equestrian Residential | 194 | 81 | - | - | - | - | - | - |
| Single Family Residential | 904 | 55 | - | - | 92 | - | 518 | - |
| Commercial | - | - | 344 | - | 24 | 334 | 46 | 3,692 |
| Industrial | - | - | - | - | - | 9,864 | - | - |
| Public Facilities/School | - | - | - | 86 | 1 | - | - | - |
| Senior Living | - | - | 1,966 | - | 250 | - | - | - |
| Mixed Used | - | - | - | - | - | - | 290 | 9 |
| **Total EDUs** | **1,098** | **136** | **2,335** | **86** | **367** | **10,198** | **854** | **3,713** |
| **Total Flow (gpd)** | **230,580** | **28,560** | **254,379** | **18,000** | **47,472** | **2,141,531** | **179,322** | **779,655** |

(Table from Final Report Sewer System Master Plan Update, Town of Apple Valley, CA by URS Corporation)

Applying the same criteria to calculate the flow generation from Watson High Desert Logistics-West, we get:

896,500 S.F. proposed warehouse

896,500 S.F x (1acre / 43,560 S.F) → 20.6 Acre warehouse

building 20.6 acre x *1,500 GPD/ acre = 30,900 GPD

30,900 (1 Day/24 hour x 1 hour/60 minutes) = 21.4 gpm

21x 1.8 (**Peaking factor) ≈ 38 gpm ( peak flow)

**August 2013 Sewer Master Plan section 7.1.3, estimated industrial flow = 1,500 gpd/acre, Building space*

**August 2013 Sewer Master Plan section 6.2.3, shows a peaking factor of 4.8 for NAVI, However, this peaking factor is not realistic because the measured .02 MGD for NAVI (Year 2013 ) is a very small fraction of the ultimate flow. We used 1.8 peaking factor in our report because it is more in line with the sewer Master Plan Report.

## Apple Valley Industrial Specific Plan

## Watson High Desert Logistics-West Sanitary Sewer Catchment area

Upon discusson with the Town of Apple Valley Engineering Department, and based on the flow monitoring report provided to the Town by the Victor Valley Wastewater Reclamation Authority (VVWRA), the average sewer flow through Comache Road was recorded at 121,593 gpd while the average sewer flow through Dale Evans Parkway sewer line for the same period was recorded at 168,321 gpd (See Town of Apple Valley Flow Study from 6/16/23 to 7/9/23 in the Appendix).

The existing 12” sewer line in Navajo Road, upstream of the Comanche Road and Dale Evans Parkway sewer lines, begins at the intersection of Johnson and Navajo Road; traverses southerly to Needham; then Easterly to Dachshund Avenue; then southerly to Corwin Rd.; and subsequently joins the Dale Evans Parkway sewer via Comanche Rd. and Waallow, and terminates at the 1MG subregional MBR Wastewater Treatment Plant in Otoe Rd. via an 18” trunk line in Otoe Road.

The Town of Apple Valley has determined that the most southerly reach of the 10” sewer line in Dale Evans Parkway (3,000 feet) is at capacity (currently surcharging) and that the town plans to construct a parallel sewer to alleviate the surcharging problem

The following is the hydraulic analysis of the existing 12-inch VCP pipe in Navajo Road to determine its capacity flowing at 50% full. Our calculation is based on the average slope along the Navajo Road stretch (Slope=0.01):

**Analysis of the 12” Sanitary Sewer in Navajo Road.**

***Manhole #2 at the intersection of Johnson Road and Navajo Rd., Station 148 + 20: (invert elevation: 3,070.22 ft.)***

***Downstream Manhole #22, Sta. 81+56.10 (invert elevation: 3,000.50 ft.)***
***Distance = 6,666 ft.***

***Slope (S) = (3070.22- 3,000.50)/(6666) → S= 0.010***

$\eta = 0.012$ ***Coefficient of roughness***

$A = \pi r^2$

***Area =*** $\pi(6/12)^2$ ***→ 3.14 x (0.25) = 0.785 FT*2***

***At 50% full : Area of the pipe (50% flow)= 0.785 ÷ 2 → Area of 1/2 full pipe 0.392FT*2***

***Hydraulic Radius (R) = D/4 → R= (12/4) ÷12 → R= 0.25***

***Manning Formula: Q =*** $\frac{1.486\,(A)(R)*2/3(s)½}{\eta}$ → ***Q=*** $\frac{1.486\,(0.392)(0.25)*2/3(0.01)½}{0.012}$

***Q=*** $\frac{1.486\,(0.392)(0.4)(0.1)}{0.012}$ ***Q= 1.94 FT*3/ sec. flow capacity of 12" pipe (1/2 full)***

Based on the above hydraulic analysis, the existing 12" VCP sewer in Navajo Road can theoretically handle an average flow of 1.94 Cu. Ft /sec or 871 gpm or 1.25 MG per day under dry weather condition with pipe flowing at 50% full.

***Based on the August 2013 Sewer System Master Plan Update (Table 5-13), the estimated total flow from the North Apple Valley Specific Plan Area at buildout will be 2,141,531 gallons per day (gpd). This value is based on the assumption of 1,500 gpd/acre of building space, and the building space is based on 22% lot coverage. The 22% lot coverage does not apply in the Watson High Desert Logics case. The building size of 896,500 S.F. on a 45 acre lot is approximately 48% of the lot. We reached out to other municipalities with big warehouse buildings similar to Watson's proposed High Desert Logistics, and found 7 warehouses to study for the lot coverage as well as the domestic water demands based on the meter reads. We learned that the majority of the buildings we studied were at over 40% lot coverage and the domestic water demands were substantially lower than 1,500 GPD per acre of the building space. The highest domestic water demand in our study proved to be at 206 GPD per acre (0.0047 GPD per one S.F. of building area). It must be noted that the domestic water demand for a warehouse is the most relevant method of measuring the sewer generation flow. We are providing the meter reads we obtained for this study in Appendix "A" of this report; however, we changed the actual name of the businesse, addresses, and the meter numbers for privacy purposes. If requested, we will share the detailed information of our research to the Town of Apple Valley's Officials.***

***Using the highest sewer generation value from our survey, the sewer flow from Watson High Desert logistics - West is:***

***896,500 S.F x 0.0047 GPD/ S.F = 4,214 GPD sewer flow***

***However, the Town of Apple Valley recommended using 0.0225 gpd/sf, as the sewer flow discharge rate, this value is based on the existing actual sewer flow discharge from the Walmart facility (gpd/sf) in the Town of Apple Valley. In compliance with the Town of Apple Valley sewer discharge flow requirements, the anticipated sewer flow from Watson High Desert Logistics-West is:***

***896,500 x 0.0225 gpd/s.f. = 20,171 gpd sewer flow***

## Conclusion:

The Project would discharge to the 1-MG subregional MBR plant located in the Vicinity of Dale Evans Parkway and Otoe Road via the Town's 10-inch, 12-inch, and 15-inch collection system and the existing 18-inch interceptor in Otoe Road. The Town's existing system has adequate available capacity to service the Project with the exception of the existing 10-inch sewer in Dale Evans Parkway. This 3,000 linear feet segment of 10-inch sewer is at capacity, and the town of Apple Valley as part of their Capital Improvement Project is planning to construct a parallel sewer in the bottleneck segment of the Dale Evans Parkway sewer to alleviate the problem.

# APPENDIX

**Industrial Water Use (2022-2023)**

| Customer List | Address | AF/YR | GPD | Bldg SF | Parcel (Ac) |
|---|---|---|---|---|---|
| XYZ Inc | XYZ Drive | 1.15 | 1,029.44 | 1,053,224 | 41.86 |
| | | 4.40 | 3,929.14 | | |
| W.G. LLC | W.G. Street | 0.29 | 260.23 | 138,784 | 7.79 |
| A B S LLC | ABS Avenue | 0.53 | 470.88 | 552,345 | 24.57 |
| | | 0.97 | 862.43 | | |
| KMT LLC | KMT Street | 1.82 | 1,620.96 | 397,927 | 19.1 |
| MW Corp | MW PKWY | 0.48 | 430.55 | 127,687 | 7.25 |
| KMC Corp | KMC Blvd. | 0.46 | 406.38 | 154,753 | 9.71 |
| Best LLC | Best Road | 1.49 | 1,326.43 | 573,112 | 32.33 |
| | | 0.84 | 745.77 | | |

**Survey of large warehouses Potable water usage for calculating the sewer flow**

| Customer List | Address | AF/YR | GPD | Bldg SF | Parcel (Ac) | GPD/Bldg. S.F |
|---|---|---|---|---|---|---|
| XYZ Inc. | XYZ Drive | 1.15 | 1,029.44 | 1,053,224 | 41.86 | *0.0047 |
| | | 4.40 | 3,929.14 | | | |
| W.G. LLC | W.G. Street | 0.29 | 260.23 | 138,784 | 7.79 | 0.0019 |
| ABS LLC | ABS Avenue | 0.53 | 470.88 | 552,345 | 24.57 | 0.0024 |
| | | 0.97 | 862.43 | | | |
| KMT LLC | KMT Street | 1.82 | 1,620.96 | 397,927 | 19.1 | 0.0041 |
| MW Corp | MW PKWY | 0.48 | 430.55 | 127,687 | 7.25 | 0.0034 |
| KMC Corp | KMC Blvd. | 0.46 | 406.38 | 154,753 | 9.71 | 0.0026 |
| Best LLC | Best Road | 1.49 | 1,326.43 | 573,112 | 32.33 | 0.0036 |
| | | 0.84 | 745.77 | | | |

* XYZ is a distribution center warehouse working around the clock.

**Business:** XYZ Inc

**Facility Address:** XYZ Drive

**Water Account Number:** Not available

**Meter Number:** Not available

| Read Date | Days | Current Reading | Consumption (CCF) |
|---|---|---|---|
| 6/22/2023 | 34 | 1594.00 | 37.00 |
| 5/19/2023 | 29 | 1557.40 | 34.40 |
| 4/20/2023 | 30 | 1523.00 | 34.00 |
| 3/21/2023 | 26 | 1489.10 | 29.10 |
| 2/23/2023 | 29 | 1460.80 | 33.80 |
| 1/25/2023 | 35 | 1427.30 | 41.30 |
| 12/21/2022 | 29 | 1386.20 | 46.20 |
| 11/22/2022 | 29 | 1340.40 | 44.40 |
| 10/24/2022 | 31 | 1296.30 | 41.30 |
| 9/23/2022 | 31 | 1255.30 | 41.30 |
| 8/23/2022 | 28 | 1214.70 | 35.70 |
| 7/26/2022 | 34 | 1179.10 | 44.10 |
| 6/22/2022 | 0 | 1135.70 | 39.70 |
| **2 years** | **365** | **1594.00** | **502.30** |
| **Water Consumption (GPD)** | | | **1,029** |
| **AF/YR** | | | **1.15** |

| | |
|---|---|
| **Business:** | XYZ Inc |
| **Facility Address:** | XYZ Drive |
| **Water Account Number:** | N/A |
| **Meter Number:** | XXXX |

| Read Date | Days | Current Reading | Consumption (CCF) |
|---|---|---|---|
| 5/30/2023 | 11 | 6584.90 | 154.90 |
| 5/19/2023 | 29 | 6542.30 | 112.30 |
| 4/20/2023 | 30 | 6430.90 | 131.90 |
| 3/20/2023 | 25 | 6299.50 | 97.50 |
| 2/23/2023 | 29 | 6202.50 | 113.50 |
| 1/25/2023 | 35 | 6089.60 | 146.60 |
| 12/21/2022 | 29 | 5943.80 | 150.80 |
| 11/22/2022 | 29 | 5793.70 | 152.70 |
| 10/24/2022 | 31 | 5641.10 | 147.10 |
| 9/23/2022 | 31 | 5494.10 | 148.10 |
| 8/23/2022 | 28 | 5346.60 | 130.60 |
| 7/26/2022 | 34 | 5216.00 | 155.00 |
| 6/22/2022 | 0 | 5061.10 | 150.10 |
| **2 years** | **341** | **6584.90** | **1791.10** |
| **Water Consumption (GPD)** | | | **3,929** |
| **AF/YR** | | | **4.40** |

**Business:** W. G. LLC

**Facility Address:** W.G. Street

**Water Account Number:** N/A

**Meter Number:** N/A

| Read Date | Days | Current Reading | Consumption (CCF) |
|---|---|---|---|
| 7/24/2023 | 32 | 587.60 | 9.60 |
| 6/22/2023 | 34 | 578.70 | 10.70 |
| 5/19/2023 | 29 | 568.60 | 9.60 |
| 4/20/2023 | 30 | 559.90 | 9.90 |
| 3/21/2023 | 26 | 550.80 | 9.80 |
| 2/23/2023 | 29 | 541.79 | 9.79 |
| 1/25/2023 | 35 | 532.10 | 10.10 |
| 12/21/2022 | 29 | 522.29 | 9.29 |
| 11/22/2022 | 29 | 513.10 | 9.10 |
| 10/24/2022 | 31 | 504.80 | 8.80 |
| 9/23/2022 | 31 | 496.20 | 10.20 |
| 8/23/2022 | 28 | 486.80 | 8.80 |
| 7/26/2022 | 0 | 478.60 | 10.60 |
| **2 years** | **363** | **587.60** | **126.28** |
| **Water Consumption (GPD)** | | | **260** |
| **AF/YR** | | | **0.29** |

| | |
|---|---|
| **Business:** | ABS LLC |
| **Facility Address:** | ABS Avenue |
| **Water Account Number:** | N/A |
| **Meter Number:** | XXXX |

| Read Date | Days | Current Reading | Consumption (CCF) |
|---|---|---|---|
| 7/24/2023 | 32 | 856.10 | 16.10 |
| 6/22/2023 | 34 | 840.60 | 17.60 |
| 5/19/2023 | 29 | 823.60 | 13.60 |
| 4/20/2023 | 30 | 810.50 | 45.50 |
| 3/21/2023 | 26 | 765.70 | 15.70 |
| 2/23/2023 | 29 | 750.10 | 16.10 |
| 1/25/2023 | 35 | 734.40 | 17.40 |
| 12/21/2022 | 29 | 717.00 | 18.00 |
| 11/22/2022 | 29 | 699.30 | 15.30 |
| 10/24/2022 | 31 | 684.80 | 16.80 |
| 9/23/2022 | 31 | 668.40 | 13.40 |
| 8/23/2022 | 28 | 655.00 | 10.00 |
| 7/26/2022 | 0 | 645.00 | 13.00 |
| **2 years** | **363** | **856.10** | **228.50** |
| **Water Consumption (GPD)** | | | **471** |
| **AF/YR** | | | **0.53** |

**Business:** ABS LLC

**Facility Address:** ABS Ave.

**Water Account Number:** N/A

**Meter Number:** N/A

| Read Date | Days | Current Reading | Consumption (CCF) |
|---|---|---|---|
| 7/24/2023 | 32 | 1593.30 | 32.30 |
| 6/22/2023 | 34 | 1561.30 | 37.30 |
| 5/19/2023 | 29 | 1524.00 | 29.00 |
| 4/20/2023 | 30 | 1495.50 | 34.50 |
| 3/21/2023 | 26 | 1461.60 | 29.60 |
| 2/23/2023 | 29 | 1432.30 | 33.30 |
| 1/25/2023 | 35 | 1399.10 | 37.10 |
| 12/21/2022 | 29 | 1362.50 | 36.50 |
| 11/22/2022 | 29 | 1326.90 | 37.90 |
| 10/24/2022 | 31 | 1289.70 | 41.70 |
| 9/23/2022 | 31 | 1248.90 | 38.90 |
| 8/23/2022 | 28 | 1210.90 | 30.90 |
| 7/26/2022 | 34 | 1180.70 | 38.70 |
| **2 years** | **397** | **1593.30** | **457.70** |
| **Water Consumption (GPD)** | | | **862** |
| **AF/YR** | | | **0.97** |

**Business:** KMT LLC

**Facility Address:** KMT Street

**Water Account Number:** N/A

**Meter Number:** N/A

| Read Date | Days | Current Reading | Consumption (CCF) |
|---|---|---|---|
| 7/24/2023 | 32 | 2199.40 | 26.40 |
| 6/22/2023 | 34 | 2173.30 | 35.30 |
| 5/19/2023 | 29 | 2138.30 | 43.30 |
| 4/20/2023 | 30 | 2095.90 | 45.90 |
| 3/21/2023 | 26 | 2050.19 | 39.19 |
| 2/23/2023 | 29 | 2011.80 | 97.80 |
| 1/25/2023 | 35 | 1914.60 | 111.60 |
| 12/21/2022 | 29 | 1803.30 | 60.30 |
| 11/22/2022 | 29 | 1743.90 | 66.90 |
| 10/24/2022 | 31 | 1677.80 | 64.80 |
| 9/23/2022 | 31 | 1613.80 | 65.80 |
| 8/23/2022 | 28 | 1548.20 | 62.20 |
| 7/26/2022 | 0 | 1486.10 | 67.10 |
| **2 years** | **363** | **2199.40** | **786.59** |
| **Water Consumption (GPD)** | | | **1,621** |
| **AF/YR** | | | **1.82** |

**Business:** MW Corp

**Facility Address:** MW PKWY

**Water Account Number:** N/A

**Meter Number:** N/A

| Read Date | Days | Current Reading | Consumption (CCF) |
|---|---|---|---|
| 7/24/2023 | 32 | 662.30 | 14.30 |
| 6/22/2023 | 34 | 648.00 | 15.00 |
| 5/19/2023 | 29 | 633.30 | 13.30 |
| 4/20/2023 | 30 | 620.40 | 15.40 |
| 3/21/2023 | 26 | 605.50 | 13.50 |
| 2/23/2023 | 29 | 592.10 | 15.10 |
| 1/25/2023 | 35 | 577.20 | 19.20 |
| 12/21/2022 | 29 | 558.60 | 18.60 |
| 11/22/2022 | 29 | 540.10 | 16.10 |
| 10/24/2022 | 31 | 524.50 | 14.50 |
| 9/23/2022 | 31 | 510.20 | 14.20 |
| 8/23/2022 | 28 | 496.30 | 13.30 |
| 7/26/2022 | 0 | 483.70 | 14.70 |
| **2 years** | **363** | **662.30** | **197.20** |
| **Water Consumption (GPD)** | | | **406** |
| **AF/YR** | | | **0.46** |

**Business:** Best LLC

**Facility Address:** Best Road

**Water Account Number:** N/A

**Meter Number:** N/A

| Read Date | Days | Current Reading | Consumption (CCF) |
|---|---|---|---|
| 7/24/2023 | 32 | 1548.70 | 22.70 |
| 6/22/2023 | 34 | 1526.10 | 23.10 |
| 5/19/2023 | 29 | 1503.40 | 23.40 |
| 4/20/2023 | 30 | 1480.70 | 23.70 |
| 3/21/2023 | 26 | 1457.00 | 21.00 |
| 2/21/2023 | 27 | 1436.00 | 26.00 |
| 1/25/2023 | 35 | 1410.90 | 34.90 |
| 12/21/2022 | 29 | 1376.20 | 29.20 |
| 11/22/2022 | 29 | 1347.50 | 29.50 |
| 10/24/2022 | 31 | 1318.10 | 32.10 |
| 9/23/2022 | 31 | 1286.20 | 32.20 |
| 8/23/2022 | 28 | 1254.20 | 29.20 |
| 7/26/2022 | 0 | 1225.90 | 32.90 |
| **2 years** | **361** | **1548.70** | **359.90** |
| **Water Consumption (GPD)** | | | **746** |
| **AF/YR** | | | **0.84** |

**Business:** Best LLC

**Facility Address:** Best Rd.

**Water Account Number:** N/A

**Meter Number:** N/A

| Read Date | Days | Current Reading | Consumption (CCF) |
|---|---|---|---|
| 7/24/2023 | 32 | 2483.60 | 48.60 |
| 6/22/2023 | 34 | 2435.10 | 46.10 |
| 5/19/2023 | 29 | 2389.10 | 43.10 |
| 4/20/2023 | 30 | 2346.00 | 48.00 |
| 3/21/2023 | 26 | 2298.90 | 38.90 |
| 2/23/2023 | 29 | 2260.30 | 51.30 |
| 1/24/2023 | 34 | 2209.70 | 53.70 |
| 12/21/2022 | 29 | 2156.69 | 50.69 |
| 11/22/2022 | 29 | 2106.90 | 52.90 |
| 10/24/2022 | 31 | 2054.80 | 51.80 |
| 9/23/2022 | 31 | 2003.40 | 57.40 |
| 8/23/2022 | 28 | 1946.90 | 43.90 |
| 7/26/2022 | 0 | 1903.50 | 55.50 |
| **2 years** | **362** | **2483.60** | **641.89** |
| **Water Consumption (GPD)** | | | **1,326** |
| **AF/YR** | | | **1.49** |

**Town of Apple Valley Flow Study**

**6/16/23 to 7/9/23**

| Manhole Location | Dale Evans Pkwy | Comanche Rd | Difference |
|---|---|---|---|
| Date and Time | Average Flow (Gallons/Day | Average Flow (Gallons/Day | (Gallons/Day) |
| 6/16/2023 14:01 | 137893 | 129261 | 8632 |
| 6/17/2023 14:01 | 173932 | 125032 | 48900 |
| 6/18/2023 14:01 | 136263 | 96666 | 39597 |
| 6/19/2023 14:01 | 149478 | 117223 | 32255 |
| 6/20/2023 14:01 | 168367 | 129086 | 39281 |
| 6/21/2023 14:01 | 153812 | 138494 | 15318 |
| 6/22/2023 14:01 | 151841 | 110859 | 40982 |
| 6/23/2023 14:01 | 168006 | 113571 | 54435 |
| 6/24/2023 14:01 | 163580 | 85409 | 78171 |
| 6/25/2023 14:01 | 153383 | 105281 | 48102 |
| 6/26/2023 14:01 | 112647 | 91266 | 21381 |
| 6/27/2023 14:01 | 143170 | 124568 | 18602 |
| 6/28/2023 14:01 | 202445 | 138126 | 64319 |
| 6/29/2023 14:01 | 256412 | 137869 | 118543 |
| 6/30/2023 14:01 | 215757 | 115306 | 100451 |
| 7/1/2023 14:01 | 158425 | 127677 | 30748 |
| 7/2/2023 14:01 | 155617 | 92309 | 63308 |
| 7/3/2023 14:01 | 171389 | 107266 | 64123 |
| 7/4/2023 14:01 | 143929 | 129663 | 14266 |
| 7/5/2023 14:01 | 157420 | 92208 | 65212 |
| 7/6/2023 14:01 | 170696 | 159263 | 11433 |
| 7/7/2023 14:01 | 259778 | 170424 | 89354 |
| 7/8/2023 14:01 | 194479 | 165276 | 29202 |
| 7/9/2023 14:01 | 140991 | 116133 | 24858 |
| **Average Flow** | **168321** | **121593** | **46728** |