



CITY OF LANCASTER

WATER SUPPLY ASSESSMENT

FOR

Forbes and Market Street Warehouses

DRAFT No. 3

September 2022

Prepared for:



Prepared by:



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Draft No. 3

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Attention: Raman Gaur
Vice President / Project Director

Subject: Water Supply Assessment for Forbes and Market Street Warehouses
(SB 610 Requirements)

Dear Raman:

We are pleased to submit this Water Supply Assessment (WSA) report for the Forbes and Market Street warehouses project. This report is intended to satisfy the requirements of SB 610 by evaluating the impact of this project on existing and future water supplies.

This report quantifies the project's water supply requirements, potential impact on the City's supply availability, discussions on the supply reliability, and supply vs. demand comparisons.

We are extending our thanks to Daniel Bradbury, Civil Engineer with the Los Angeles County Public Works, and Roger Deitos, Principal at GAA Architects, for their guidance and valuable input and reviews during the completion of this study.

Sincerely,

AKEL ENGINEERING GROUP, INC.

Tony Akel, P.E.
Principal

Enclosure: Report

**City of Lancaster
Water Supply Assessment
For Forbes and Market Street Warehouses**

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Definitions and Abbreviations

af	acre-foot/feet
afy	acre-foot/feet per year
afy/ac	acre-foot/feet per year per acre
AVEK	Antelope Valley East Kern Water Agency
AVWB	Antelope Valley Water Bank
CEQA	California Environmental Quality Act
County	County of Los Angeles
District	Los Angeles County Waterworks District 40
LACSD	Los Angeles County Sanitation District
LACWD	Los Angeles County Waterworks
LWRP	Lancaster Water Reclamation Plant
MOU	Memorandum of Understanding
PWRP	Palmdale Water Reclamation Plan
RWWTP	Rosamond Wastewater Treatment Plant
SB	Senate Bill
sqft	square foot
SWP	State Water Project
UWMP	Urban Water Management Plan
WSA	Water Supply Assessment
WSCP	Water Shortage Contingency Plan

WATER SUPPLY ASSESSMENT FOR FORBES AND MARKET STREET WAREHOUSES

1.0 PURPOSE

Law

10910 (a)	<i>...Any city or county that determines that a project, as defined in Section 10912, is subject to the California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) under Section 21080 of the Public Resources Code shall comply with this part.</i>
10912 (a)(3)	<i>... "Project" means any of the following: A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.</i>
SB 610 (2)	<i>...The bill would require the assessment to include, among other information, an identification of existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project and water received in prior years pursuant to those entitlements, rights, and contracts. The bill would require the city or county, if it is not able to identify any public water system that may supply water for the project, to prepare the water supply assessment after a prescribed consultation.</i>

This Water Supply Assessment (WSA) report is intended to satisfy the requirements of Senate Bills (SB) 610, which was adopted by the California State Legislature to address some of the uncertainties in the water supply and gain a more detailed understanding of the water availability for different projects.

The study objective of this WSA is the proposed warehouse development (Project) within the Los Angeles County Waterworks (LACWD) District 40 (District) area. This WSA assesses the water supply sufficiency to the projected water demands by evaluating the impact of this Project's water demands on the water supplies through a 20-year horizon, as stipulated in the SB 610 requirements.

Pursuant to the California Water Code Division 6, Part 2.10, Sections 10910-10915, any city or county, which has proposed larger developments or land use plans that are subject to California Environmental Quality Act (CEQA), is required to prepare Water Supply Assessment (WSA) to document potential environmental impacts of the projects.

The gross site area of the proposed warehouse development is estimated as 515,466 square feet, which consists of a ground floor office, warehouse, and parking lot development. Therefore, the proposed development qualifies as a *Project* and requires a WSA pursuant to Sections 10912(a)(3). The WSA must be included in the environmental document addressing

the potential environmental impacts of the project. In order for the project to be approved, the Water Supply Assessment must conclude that the supply of domestic water available to the development is adequate and will continue to be adequate over the next 20 years during normal, single-dry, and multiple-dry years.

This WSA is produced for the LACWD, District 40 to meet the requirements of SB 610. The District was formed to supply water for urban use throughout the Antelope Valley.

2.0 PROJECT BACKGROUND

The following section includes a description of the proposed light industrial project as well as the relevant documentation.

2.1 Project Description

Forbes and Market Street Warehouses is a proposed development of approximately 11.83 acres, located in the Antelope Valley within the City of Lancaster, California. The Project's conceptual site plan separates the Project into two buildings: Building 1 of 7.33 acres and Building 2 of 4.51 acres.

The Project is bounded by Sierra Highway on the east, L8 Avenue on the south, Enterprise Parkway on the north, and Market Street to the west. The Project consists of two (2) 2,500 sqft ground floor offices, two (2) 2,500 sqft mezzanines, one (1) 153,000 sqft warehouse, and one (1) 79,000 sqft warehouse (see [Appendix A](#)).

2.2 Relevant Documentation

The District has completed several special studies intended to secure water sufficiency. These reports were referenced and used in this water supply assessment.

- [2020 Urban Water Management Plan, October 2021 \(2020 UWMP\)](#): This report includes a summary of the District's current water supply and demand conditions, water shortage contingency plan, and detailed documentation of the District's future water supply and demand strategies for Antelope Valley. The report also includes the recycled water discussion and future planning.
- [2015 Urban Water Management Plan, February 2017 \(2015 UWMP\)](#): This report documents District 40's Water Use Duty Factor by different land use types. The duty factor is utilized to estimate the Project's water demand in this WSA.
- [Water Supply Assessment for Lancaster Health District Master Plan, December 2020](#): This report includes the strategy of conducting water supply and demand assessment, discussion of water rights, and the impact of climate changes.

- [Conceptual Site Plan Scheme C.3 for Forbes and Market Street Warehouses, June 2022](#): This plan provides the Project’s location, site area, building area, and land use designation.
- [Los Angeles County Waterworks Districts, Drought Alert Notice, July 2022](#): This notice documents the impact of the prolonged third-year drought in Los Angeles County and issues new mandatory water restrictions.

3.0 PROJECT WATER DEMAND

This chapter includes a summary of water use demand factors and project water demand estimation.

3.1 Water Use Demand Factors

Domestic water demand unit factors are coefficients commonly used in planning level analysis to estimate future average daily demands for areas’ predetermined land uses. The unit factors are multiplied by the number of net acreages to yield the average daily demand projections.

The 2015 UWMP identifies water use duty factors by different land use types that, if utilized, will allow the District to meet the water demand reduction targets mandated by SB X7-7 (20% demand reduction by the year 2020). According to the 2020 UWMP, the District successfully achieved the 2020 reduction target. The water use factors from the 2015 UWMP were applied in this analysis since no updated water duty factors were included in the 2020 UWMP. The water demand factors for the different land use types are summarized in [Table 1](#).

3.2 Project Water Demand

The development information provided by the City of Lancaster and Sikand Engineering Group identified the project site would develop as a light industrial land use designation. The LACWD staff confirmed that the Project’s demand is not documented in the 2020 UWMP ([Table 4-2A, Water Demand Commitment Summary](#)). It is assumed that the project water demand will increase the 2020 UWMP demand projection.

The water duty factor for the light industrial was identified as 1.10 afy/ac. The Project’s gross area is 7.33 acres for Building 1 and 4.51 acres for Building 2. As such, the total water demand for this Project would be approximately 13 afy, which is shown in [Table 2](#).

4.0 DISTRICT 40 PROJECTED SUPPLY AND DEMAND

This chapter includes the District water demand and supply projection under different water years (normal, single-dry, and multiple-dry years). The District’s drought planning effort is also summarized in this chapter.

4.1 District Water Demand

District 40 serves water to eight regions, encompassing approximately 232 square miles within the Antelope Valley. The cities of Lancaster and Palmdale (Region 4 and 34) are integrated and are operated as a single system. Similarly, Pearblossom (Region 24), Littlerock (Region 27), Sun Village (Region 33), Rock Creek (Region 39), Northeast Los Angeles County (Region 35), and Lake Los Angeles (Region 38) are integrated and are operated as one single system. District 40 served 48,818 afy of water to 58,607 connections and to approximately 205,000 population in 2020.

Table 3 documents the District's water demand projection through 2045, consistent with the 2020 UWMP. **Table 3** also includes the projected water demand of Forbes and Market Street Warehouses (13 afy).

4.2 District Water Supply (Normal Year)

District 40 uses purchased (imported) water, groundwater, and recycled water as supply sources. The District purchases water from AVEK, which receives the majority of its water supplies from the SWP. Groundwater, pumped from the Antelope Valley Groundwater Basin, is the secondary source of the District's potable water supply. Water use declined in 2020 as a result of the Governor's mandated demand reductions. In 2020, District received 68% of its supply from imported State Water Project water, 32% from groundwater pumping, and the other 1% from recycled water.

According to the 2020 UWMP,

The District can potentially receive up to 58,800 afy of SWP water from AVEK in a normal year..... and up to 35,820 afy of total groundwater right..... However, actual supply projections for groundwater return flow credits are based on the amount of import water purchased from AVEK from the previous 5 years. For the purposes of the water supply projection, it's assumed that this right will be applicable for all water year types. If not, groundwater banked in previous years will be used.

To maximize the use of SWP supplies, AVEK has developed and is planning several groundwater banking facilities (including the Westside Water Bank, Antelope Valley Water Bank, and the Water Supply Stabilization Project 2) within its service area. The District purchases excess imported water from AVEK and banks it in the local groundwater basin to use in the future dry years. The projected water supply during normal water years through 2045 is summarized in **Table 4**.

4.3 Drought Planning

This section summarizes the District's effort to increase drought resiliency, which includes the response to climate change, recycled water, and water shortage contingency plan. This section also summarizes the District's projected water supply under single and multiple-dry years.

4.3.1 Response to Climate Change

According to 2020 Health District WSA,

The 2012-2016 drought in California had made water supply deficiencies a major concern, prompting former Governor Brown proclaim of a State of Emergency in January 2014 and an Executive Order requiring a statewide reduction in water use of 25% in 2015. To achieve this reduction, each agency was assigned a mandated water reduction target. The District's mandated water reduction target was 32%. Governor Brown lifted the drought emergency in April 2017.

As of 2022, California has entered its third year of drought, and its water resources are critically low. In March 2022, Governor Newsom issued California Executive Order N-7-22 to address the impacts of drought. This executive order also aims to bolster California's drought resiliency and ability to respond to future climate challenges, such as more frequent, prolonged, and intense drought. In July 2022, the County issued a Drought Alert, which contains new mandatory watering restrictions and aims to cut back its water usage by 30%.

4.3.2 Recycled Water

Recycled water is proven to be a reliable water source for all weather types, and it helps the District increase its drought resilience. Recycled water is currently part of the District water supply portfolio and is expected to become a greater portion of the supply. The recycled water distribution infrastructure, Antelope Valley Backbone, conveys recycled water to the users. Currently, only a portion of the Antelope Valley Backbone (Phase 1) is constructed. Phase 2 of the Backbone project is still in the design phase. When the funding sources become available, the Antelope Valley Backbone will link Lancaster WRP and Palmdale WRP and provide reliable recycled water sources to the District.

LWRP, PWRP, and RWWTP are the wastewater treatment plants serving the area that would provide tertiary treated water to supply recycled water demands.

4.3.3 Water Shortage Contingency Plan

In October 2021, the LA County Board of Supervisors adopted its 2020 Water Shortage Contingency Plan (2020 WSCP). The report provides guidance for managing water supplies, mitigating water shortages, improving preparedness for droughts, and other impacts on water supplies. It also enables the District to efficiently manage future response actions due to water

shortages. Furthermore, the report outlines the District’s water shortage response actions, communication protocols, financial consequences, monitoring and reporting procedures, and discusses future reevaluations of the WSCP.

In 2020 WSCP, the District updated its water shortage levels from legacy ten shortage levels to DWR recommended six shortage levels. The tables for water shortage levels, demand reduction actions, and supply augmentation are extracted from the 2020 District and included in [Appendix B](#).

Shortage Level	Percentage Shortage Range
1	Up to 10%
2	Up to 20%
3	Up to 30%
4	Up to 40%
5	Up to 50%
6	>50%

4.3.4 District Water Supply (Dry-Years)

The District’s water supply is composed of groundwater, purchased water from AVEK, and recycled water.

The District’s groundwater and recycled water are unimpacted by dry-year conditions. Consistent with the 2020 UWMP, the District’s groundwater and recycled water remain constant during all year types.

The SWP supply availability is known to vary in different water years (wet, normal, and dry years). According to the 2020 UWMP, *‘It (SWP supply) fluctuates from year to year depending on precipitation, regulatory restrictions, legislative restrictions, and operational conditions and can be particularly unreliable during dry years.’*

AVEK has developed and continues to develop groundwater banking facilities to ensure water supply availability during dry years. AVEK banks extra SWP supply into groundwater storage facilities during the wet years for use in dry years. During the dry year, when the SWP supply decreases significantly, groundwater (banked supplies) is utilized to mitigate the supply shortage.

Table 5 presents the District water supply availability under single and multiple dry years, extracted from the 2020 UWMP. 13 afy is added to the Groundwater (Banked Supplies) to mitigate the Project water demand, which is not included in the 2020 UWMP.

4.4 Demand and Supply Comparison

District water supplies and demands comparison during normal, single-dry, and multiple-dry years are summarized in **Table 6**. The analysis shows that the District’s total water supplies are sufficient to meet the District water demands with Forbes and Market Street Warehouses Development under different water years. Because of the increased project water demand from the 2020 UWMP, the supplies during single-dry and multiple-dry years were increase by 13 afy.

5.0 DISTRICT 40 WATER SUPPLY ENTITLEMENTS, RIGHTS, SERVICE CONTRACTS, AND MOU'S

In 2020, District 40 received an estimated 45,818 af of water that was a combination of groundwater and SWP water (2020 UWMP Table 6-8). The District's current sources are as follows:

- Imported SWP Water - purchased from AVEK.
- Banked Groundwater - purchased from AVEK for use in future dry years.
- Groundwater - the District operates production wells with supply from the Antelope Valley Groundwater Basin, a sub-basin of the South Lahontan Hydrologic Region Basin.
- Recycled Water - the District does not currently provide recycled water for irrigation purposes, although recycled water is used and sold by others within the service area.

Water supply sources are provided in the 2020 UWMP and are summarized below. The District provides retail water service to customers within its service area, all of which are located within AVEK's boundary. The sources of supply include groundwater and imported water, which AVEK has obtained from the SWP for delivery on a wholesale basis to retail water purveyors within AVEK's boundaries, such as District 40.

5.1 Purchased Water

The District purchases water from AVEK, which is a regional water agency formed in 1959 to supplement Antelope Valley groundwater supplies with surface water supplies. In 1962, AVEK's Board of Directors signed a contract with the state to secure the delivery of water supplies. AVEK became the 3rd largest State Water Contractor with an entitlement of 144,844 afy, the Table A Water.

Table A Water is a term that refers to the maximum amount of water each State Water Project (SWP) contractor can receive each year.

On average, the contractors receive approximately 60% of their Table A amount each year. The District is not a SWP contractor and cannot obtain additional "Table A" entitlements from SWP. In the 2020 UWMP, AVEK indicated that the long-term average is 58% of their Table A allocation, which is 84,010 afy. The District typically purchases about 70% of that value, which is 58,800 afy.

To maximize the use of SWP supplies, AVEK has developed and is planning several groundwater banking projects, including Westside Water Bank, Antelope Valley Water Bank (AVWB), and Water Supply Stabilization Project 2. AVEK is also a participant in the Semitropic

water bank. Through these banking facilities, the District can purchase excess imported water from AVEK and “bank” it in the groundwater basin for future dry-year uses.

5.2 Groundwater

Historically, groundwater has been the secondary source of potable water supply for the District. The groundwater basin underlying the District is the Antelope Valley Groundwater Basin (6-44). The District is bounded on the northwest by the base of the Tehachapi Mountains; on the southwest by the San Gabriel Mountains, on the east by ridges, buttes, and low hills; and on the north by the Fremont Valley Groundwater Basin.

According to the 2020 UWMP,

In December 2015, the Superior Court of California (Court) entered a judgment in the Antelope Valley Groundwater Cases (Appendix E). The Court found that the Antelope Valley Groundwater Basin was in overdraft. As of 2020, the groundwater adjudication judgment provides non-overlying production rights of 6,789 ac-ft, approximately 3,500 ac-ft of unused federal reserve rights, and return flows equivalent to 39% of the District’s 5-year average of purchased SWP water supply (39 percent of 26,657 ac-ft or 10,400 ac-ft). The District also has the right to lease 2,600 ac-ft of groundwater rights from AVEK, for a total of 23,289 ac-ft.

Groundwater projections from the 2020 UWMP allow for a total groundwater right of 23,289 afy. For the purposes of water supply projections, the 2020 UWMP assumed that this right will be applicable for all water year types. If not, groundwater banked in previous years will be used.

5.3 Memorandum of Understanding (MOU) between AVEK and the District

In August 2013, AVEK and the District signed a 2013 Memorandum of Understanding (2013 MOU). The MOU requested developers who applied a water service commitment to execute a New Water Supply Entitlement Acquisition Agreement with the District. Based on the agreement, the applicant would pay fees equal to the costs of importing water from AVEK. The fee includes the water purchase price, process costs, California Environmental Quality Act Compliance costs, and attorney’s fees, which were estimated to equal \$10,000 for each acre-foot (af) of water.

In June 2020, the District signed a 2020 MOU with AVEK to implement a new Water Supply Entitlement Acquisition program for new developments that will be used to acquire additional imported water supplies. The developers may work with the District to determine the needed new water supply for the proposed project, then pay AVEK the current water supply fee to secure the entitlements.

6.0 CONCLUSION

1. The Los Angeles County Waterworks Districts (LACWD), District 40 has been identified as the public water distributor for the Lancaster Forbes and Market Street Warehouses.
2. The gross acreage and proposed land use for the project are extracted from the Warehouse site plan scheme C.3.
3. The net increase in the calculated water demand for the Lancaster Forbes and Market Street Warehouses is estimated as 13 afy. The Project is not a planned development that has been accounted for in the 2020 UWMP.
4. Through a combination of existing supply, groundwater banking, new supply, and recycled water, the 2020 UWMP projects that total supply will meet demand, including the demand generated by the Lancaster Forbes and Market Street Warehouses, through 2045 under normal, single-dry, and multiple-dry year water conditions.

This WSA has shown that the District's total projected water supplies available during normal, single-dry, and multiple-dry water years will meet the projected water demand for the Lancaster Forbes and Market Street Warehouses project over the next 23 years (through 2045).

Table 1 Average Day Water Demand Factors

Water Supply Assessment for Forbes and Market Street Warehouses
City of Lancaster

PRELIMINARY

Land Use Category	Water Use Duty Factor	Unit
Single-family	3.90	afy/ac
Multi-family	2.50	afy/ac
Commercial	2.25	afy/ac
Heavy industry	0.30	afy/ac
Light industry	1.10	afy/ac
Institutional / Governmental	2.60	afy/ac
Mixed Use	2.50	afy/ac

Notes:

1. Source: LACWD D40 Antelope Valley 2015 Urban Water Management Plan Final, Table 3-2.
2. Water Use Duty Factor is not available in the District's 2020 UWMP.

Table 2 Proposed Development and Projected Potable Water Demand

Water Supply Assessment for Forbes and Market Street Warehouses
 City of Lancaster

PRELIMINARY

Proposed Development ¹	Area ¹ (gross acre)	Water Duty Factor ² (afy/ac)	Water Demand (afy)
Forbes and Market Street Warehouse Building 1	7.33	1.10	8
Forbes and Market Street Warehouse Building 2	4.51		5
Total	11.84		13



8/18/2022

Notes:

1. Proposed warehouse development information received from Sikand staff on 8/2/2022.
2. Water Use Duty Factor extracted from LACWD D40 2015 UWMP Final Report, Table 3-2.

Table 3 Future Water Demand Projections

Water Supply Assessment for Forbes and Market Street Warehouses
City of Lancaster

PRELIMINARY

Land Use	Projected Future Water Demand ¹				
	2025 (AFY)	2030 (AFY)	2035 (AFY)	2040 (AFY)	2045 (AFY)
D40 2020 UWMP¹					
Single Family	40,919	43,706	46,599	49,601	52,116
Multi Family	2,212	2,364	2,518	2,683	2,819
Commercial	3,112	2,617	2,178	1,780	1,870
Industrial	3,315	3,546	3,777	4,022	4,226
Institutional/Governmental	1,035	870	726	595	625
Losses	3,808	3,998	4,202	4,419	4,643
Subtotal (Potable)	54,400	57,100	60,000	63,100	66,300
Recycled Water Demand	764	902	1,102	1,302	1,302
Total Water Demand	55,164	58,002	61,102	64,402	67,602
Forbes and Market Street Warehouses (Light Industrial)²					
Demand Increased from 2020 UWMP Projection - Buildings 1 and 2	13	13	13	13	13
Total	55,177	58,015	61,115	64,415	67,615



9/8/2022

Notes:

1. Source: LACWD D40 2020 Urban Water Management Plan Final Report, Table 6-9.
2. The proposed project is not included in the District 40' 2020 UWMP.

Table 4 Future Water Supply Projections for Normal Year

Water Supply Assessment for Forbes and Market Street Warehouses
 City of Lancaster

PRELIMINARY

Water Supply Source	Projected Future Water Supply ¹				
	2025 (AFY)	2030 (AFY)	2035 (AFY)	2040 (AFY)	2045 (AFY)
Purchased or Imported Water (AVEK SWP)	57,300	55,800	54,200	52,700	52,700
District's Groundwater Production Rights	6,789	6,789	6,789	6,789	6,789
District's Unused Federal Reserve Right	3,500	3,500	3,500	3,500	3,500
District's Imported Water Return Flows	10,400	10,400	10,400	10,400	10,400
District/AVEK Lease	2,600	2,600	2,600	2,600	2,600
New Supply Purchased or Imported from AVEK	1,733	1,733	1,733	1,733	1,733
Recycled Water	764	902	1,102	1,302	1,302
Total	83,086	81,724	80,324	79,024	79,024



9/8/2022

Note:

1. Source: LACWD D40 2020 Urban Water Management Plan Final Report, Table 7-2.

Table 5 Future Water Supply Projections for Single-Dry and Multiple-Dry Water Years
 Water Supply Assessment for Forbes and Market Street Warehouses
 City of Lancaster

PRELIMINARY

	2025	2030	2035	2040	2045
	(AFY)	(AFY)	(AFY)	(AFY)	(AFY)
Projected Supply - Single-Dry Water Year					
Purchased/Imported Water (AVEK SWP)	5,000	5,000	5,000	5,000	5,000
Groundwater ¹	23,289	23,289	23,289	23,289	23,289
Groundwater (Banked Supplies) ²	25,155	27,993	31,093	34,393	37,593
New Supply Purchased/Imported from AVEK	1,733	1,733	1,733	1,733	1,733
Recycled Water	764	902	1,102	1,302	1,302
Total Water Supply	55,177	58,015	61,115	64,415	67,615
Projected Supply - Multiple-Dry Water Years First Year					
Purchased/Imported Water (AVEK SWP)	12,500	12,500	12,500	12,500	12,500
Groundwater ¹	23,289	23,289	23,289	23,289	23,289
Groundwater (Banked Supplies) ²	17,655	20,493	23,593	26,893	30,093
New Supply Purchased/Imported from AVEK	1,733	1,733	1,733	1,733	1,733
Recycled Water	764	902	1,102	1,302	1,302
Total Water Supply	55,177	58,015	61,115	64,415	67,615
Projected Supply - Multiple-Dry Water Years Second Year					
Purchased/Imported Water (AVEK SWP)	32,700	32,700	32,700	32,700	32,700
Groundwater ¹	23,289	23,289	23,289	23,289	23,289
Groundwater (Banked Supplies) ²	0	0	3,393	6,693	9,893
New Supply Purchased/Imported from AVEK	1,733	1,733	1,733	1,733	1,733
Recycled Water	764	902	1,102	1,302	1,302
Total Water Supply	58,486	58,624	61,115	64,415	67,615

Table 5 Future Water Supply Projections for Single-Dry and Multiple-Dry Water Years (cont.)
 Water Supply Assessment for Forbes and Market Street Warehouses
 City of Lancaster

PRELIMINARY

	2025	2030	2035	2040	2045
	(AFY)	(AFY)	(AFY)	(AFY)	(AFY)
Projected Supply - Multiple-Dry Water Years Third Year					
Purchased/Imported Water (AVEK SWP)	13,500	13,500	13,500	13,500	13,500
Groundwater ¹	23,289	23,289	23,289	23,289	23,289
Groundwater (Banked Supplies) ²	16,655	19,493	22,593	25,893	29,093
New Supply Purchased/Imported from AVEK	1,733	1,733	1,733	1,733	1,733
Recycled Water	764	902	1,102	1,302	1,302
Total Water Supply	55,177	58,015	61,115	64,415	67,615
Projected Supply - Multiple-Dry Water Years Fourth Year					
Purchased/Imported Water (AVEK SWP)	25,900	25,900	25,900	25,900	25,900
Groundwater ¹	23,289	23,289	23,289	23,289	23,289
Groundwater (Banked Supplies) ²	4,255	7,093	10,193	13,493	16,693
New Supply Purchased/Imported from AVEK	1,733	1,733	1,733	1,733	1,733
Recycled Water	764	902	1,102	1,302	1,302
Total Water Supply	55,177	58,015	61,115	64,415	67,615
Projected Supply - Multiple-Dry Water Years Fifth Year					
Purchased/Imported Water (AVEK SWP)	18,200	18,200	18,200	18,200	18,200
Groundwater ¹	23,289	23,289	23,289	23,289	23,289
Groundwater (Banked Supplies) ²	11,955	14,793	17,893	21,193	24,393
New Supply Purchased/Imported from AVEK	1,733	1,733	1,733	1,733	1,733
Recycled Water	764	902	1,102	1,302	1,302
Total Water Supply	55,177	58,015	61,115	64,415	67,615



9/9/2022

Notes:

1. Groundwater Supply = District's Groundwater Production Rights + Unused Federal Reserve Right + Imported Water Return Flows + District/AVEK Lease in Table 4.
2. 13 AFY is added to the Groundwater (Banked Supplies) to mitigate the Project's demand, which is not included in the 2020 UWMP.

Table 6 Projected Water Demand vs. Supply Comparison
 Water Supply Assessment for Forbes and Market Street Warehouses
 City of Lancaster

PRELIMINARY

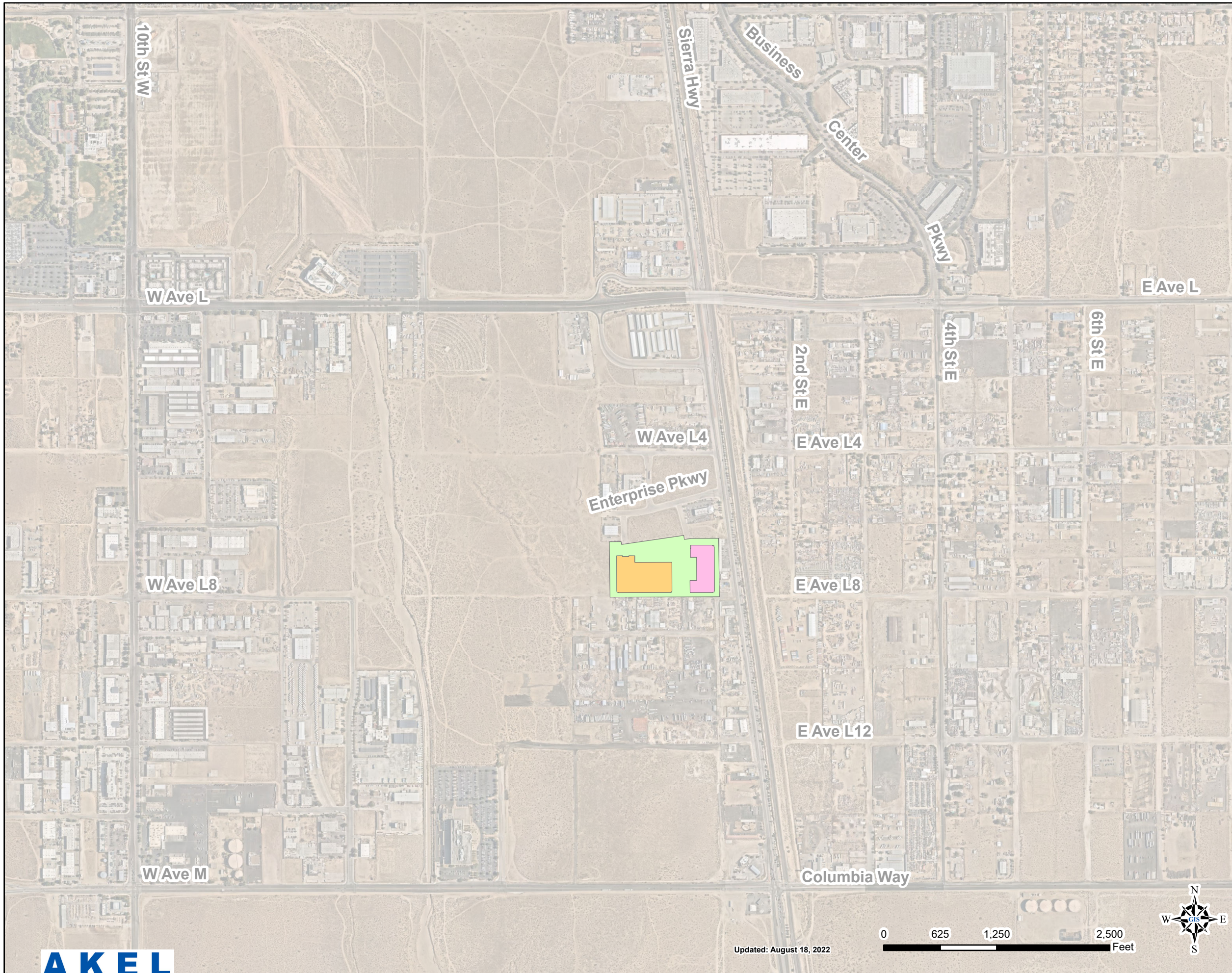
	2025	2030	2035	2040	2045
	(AFY)	(AFY)	(AFY)	(AFY)	(AFY)
Projected Demand					
Water Demand ¹	55,177	58,015	61,115	64,415	67,615
Projected Supply vs. Demand					
Normal Water Year					
Water Supply	83,086	81,724	80,324	79,024	79,024
Comparison (Supply - Demand)	27,909	23,709	19,209	14,609	11,409
Single-Dry Water Year					
Water Supply ²	55,177	58,015	61,115	64,415	67,615
Comparison (Supply - Demand)	0	0	0	0	0
1st Multiple-Dry Water Years					
Water Supply ²	55,177	58,015	61,115	64,415	67,615
Comparison (Supply - Demand)	0	0	0	0	0
2nd Multiple-Dry Water Years					
Water Supply ²	58,486	58,624	61,115	64,415	67,615
Comparison (Supply - Demand)	3,309	609	0	0	0
3rd Multiple-Dry Water Years					
Water Supply ²	55,177	58,015	61,115	64,415	67,615
Comparison (Supply - Demand)	0	0	0	0	0
4th Multiple-Dry Water Years					
Water Supply ²	55,177	58,015	61,115	64,415	67,615
Comparison (Supply - Demand)	0	0	0	0	0
5th Multiple-Dry Water Years					
Water Supply ²	55,177	58,015	61,115	64,415	67,615
Comparison (Supply - Demand)	0	0	0	0	0



9/9/2022

Notes:

1. 13 AFY potable water demand from the Project is added to the district potable water demand, which is not included in the 2020 UWMP.
2. 13 AFY is added to the total supply to mitigate the Project's demand, which is not included in the 2020 UWMP.



Legend

Forbes and Market St Warehouses Area

- Development Area
- Warehouse 1
- Warehouse 2

PRELIMINARY

Figure 1
Location Map
 Forbes and Market St Warehouses
 Water Supply Assessment
 City of Lancaster

 SIKAND <small>Engineering Planning Surveying</small>	15230 Burbank Blvd.
	Van Nuys, CA 91411
	Tel: (818) 787-8550
	Fax: (818) 901-7451
info@sikand.com	

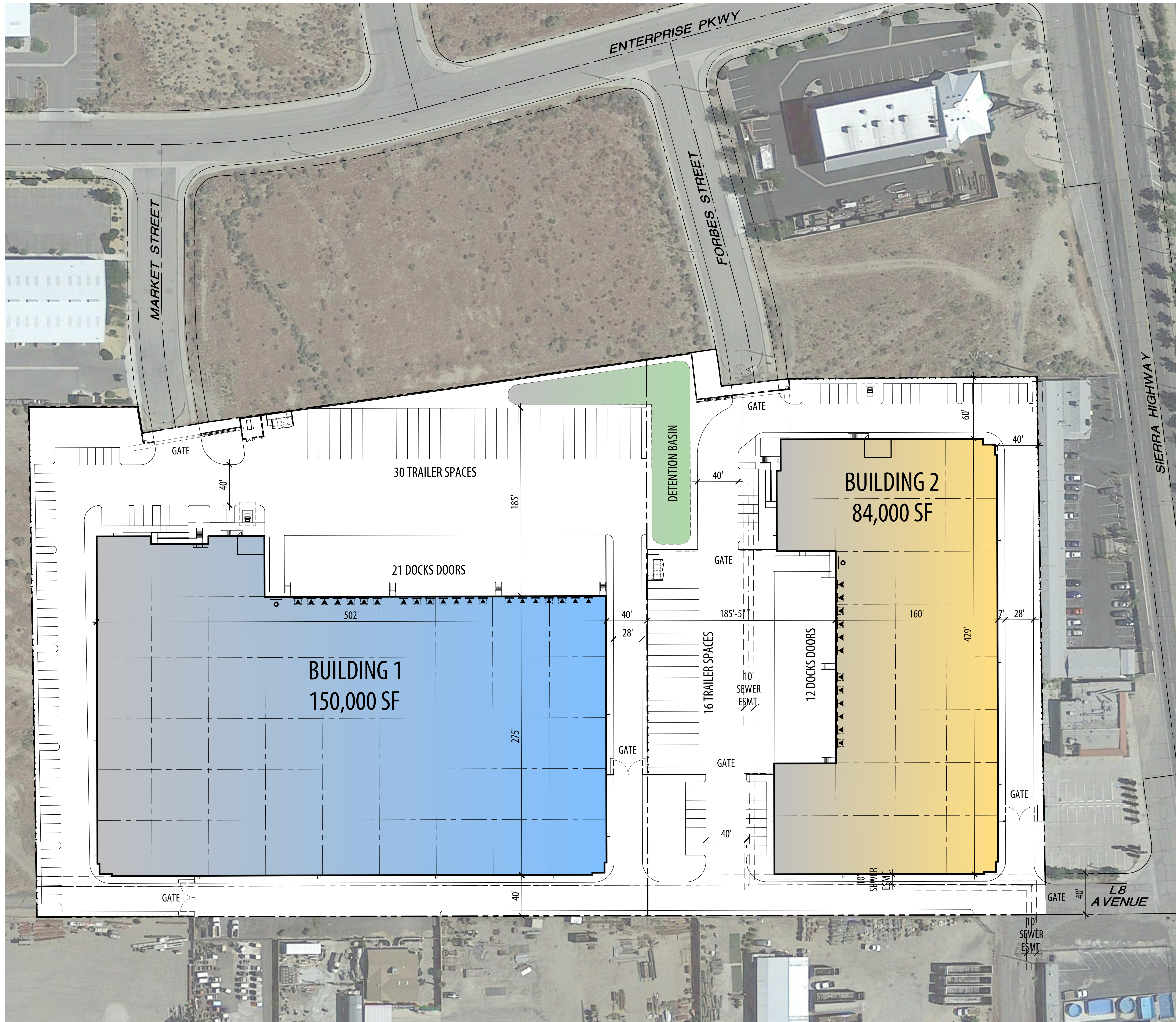
Updated: August 18, 2022

0 625 1,250 2,500
 Feet



Appendix A

Forbes and Market Street Warehouses Conceptual Site Plan Scheme C.3



TABULATIONS

SITE AREA	BUILDING 1	BUILDING 2	TOTAL
Gross Site Area	319,091	196,375	515,466
Street Dedication	0	0	0
Net Site Area (SF)	319,091	196,375	515,466
Net Site Area (Acres)	7.33	4.51	11.83
BUILDING AREA	BUILDING 1	BUILDING 2	TOTAL
Ground Floor Office	2,500	2,500	5,000
Warehouse	153,000	79,000	232,000
Total Building Footprint	147,500	81,500	229,000
Mezzanine	2,500	2,500	5,000
TOTAL BUILDING AREA	150,000	84,000	234,000
COVERAGE (50% Max)	46.2%	41.5%	44.4%
FAR (50% Max)	47.0%	42.8%	45.4%
PARKING REQUIRED			
Office	1/250	20	20
Warehouse			
0 - 25,000 sf		5	5
25,000 sf +	1/5000	26	11
TOTAL PARKING REQUIRED		51	36
PARKING PROVIDED		63	44
PARKING RATIO		0.4/1000	0.5/1000
DOCK DOORS	21	12	33
GRADE DOORS	1	1	2
TRAILER STALLS	30	16	46



FORBES AND MARKET STREET WAREHOUSE
LANCASTER, CA
CD002.01
6/30/2022



SITE PLAN - SCHEME C.3

SITE AREA	BUILDING 1	BUILDING 2	TOTAL
Gross Site Area	319,091	196,375	515,466
Street Dedication	0	0	0
Net Site Area (SF)	319,091	196,375	515,466
Net Site Area (Acres)	7.33	4.51	11.83
BUILDING AREA	BUILDING 1	BUILDING 2	TOTAL
Ground Floor Office	2,500	2,500	5,000
Warehouse	153,000	79,000	232,000
Total Building Footprint	147,500	81,500	229,000
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FAR (50% Max)	47.0%	42.8%	45.4%
PARKING REQUIRED			
Office	1/250	20	20
Warehouse			
0 - 25,000 sf		5	5
25,000 sf +	1/5000	26	11
TOTAL PARKING REQUIRED		51	36
PARKING PROVIDED	63	44	107
PARKING RATIO	0.4/1000	0.5/1000	0.5/1000
DOCK DOORS	21	12	33
GRADE DOORS	1	1	2
TRAILER STALLS	30	16	46

Appendix B

Water Shortage Levels, Demand Reduction, and Supply Augmentation Tables

Extracted from 2020 WSCP

Table 3-2 (DWR Submittal Table 8-1)

WSCP Levels

Shortage Level	Percentage Shortage Range <i>Numerical value as a percent</i>	Water Shortage Condition <i>Narrative description</i>
1	Up to 10%	District engineer determines over consumption of water, loss of pressure in a system, breakdown, drought conditions or any similar occurrence; Board of Supervisors determines that the Districts will suffer a 10% shortage of supplies.
2	Up to 20%	Board of Supervisors determines that the Districts will suffer a 10%–20% shortage of supplies.
3	Up to 30%	Board of Supervisors determines that the Districts will suffer a 20%–30% shortage of supplies.
4	Up to 40%	Board of Supervisors determines that the Districts will suffer a 30%–40% shortage of supplies.
5	Up to 50%	Board of Supervisors determines that the Districts will suffer a 40%–50% shortage of supplies.
6	> 50%	Board of Supervisors determines that the Districts will suffer a shortage of supplies greater than 50%.

Table 4-1 (DWR Submittal Table 8-2): Demand Reduction Actions

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap?	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
Normal	Other - Prohibit use of potable water for washing hard surfaces	Up to 10%	Exception for benefit of public health and safety.	Yes
Normal	Landscape - Limit landscape irrigation to specific times	Up to 10%	Limit landscape irrigation to specific times. Prohibition from 10 a.m. to 5 p.m.	Yes
Normal	Landscape - Other landscape restriction or prohibition	Up to 10%	Prohibit lawn watering more than once a day and irrigation causing runoff.	Yes
Normal	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Up to 10%	Customers must repair leaks, breaks, and malfunctions in a timely manner (required for renters and owners).	Yes
Normal	Other - Require automatic shutoff hoses	Up to 10%	Require automatic shutoff hoses for car washing	Yes
Normal	CII - Restaurants may only serve water upon request	Up to 10%	CII-Restaurants may only serve water upon request.	Yes
Normal	Water Features - Restrict water use for decorative water features, such as fountains	Up to 10%	Restrict water use for decorative water features, such as fountains. Prohibit cleaning, filling, or maintaining levels.	Yes
Normal	Provide Rebates on Plumbing Fixtures and Devices	Up to 10%	Rebates for high efficiency clothes washers, weather-based sprinkler controllers, and rotary sprinkler nozzles.	No
Normal	Provide Rebates for Landscape Irrigation Efficiency	Up to 10%	Rebates for removing water-inefficient grass with drought-tolerant landscaping.	No
1 through 6	Expand Public Information Campaign	Up to 50%	Website and social media outreach and advertising for water conservation awareness and rebate programs. Direct mail postcards and bill inserts to customers.	No
1 through 6	Other - Prohibit use of potable water for construction and dust control	Up to 50%	New meters for construction water service to be removed. No new meters installed. Prohibit use of potable water for construction and dust control.	Yes
1 through 6	Landscape - Limit landscape irrigation to specific days	Up to 50%	Limit landscape irrigation to specific days. Irrigation to occur every other day.	Yes
1 through 6	Landscape - Limit landscape irrigation to specific days	Up to 50%	Limit landscape irrigation to specific days. Irrigation to occur 3 times per week in the summer, 2 times per week in the winter.	Yes
1 through 6	CII - Other CII restriction or prohibition	Up to 50%	CII-Lodging establishment must offer opt out of linen service.	Yes
1 through 6	Decrease Line Flushing	Up to 50%	Line flushing and fire flow testing as-needed only.	No
2 through 6	Implement or Modify Drought Rate Structure or Surcharge	Up to 50%	Conservation surcharges in effect.	Yes

Table 4-2 (DWR Submittal Table 8-3): Supply Augmentation and Other Actions

Shortage Level	Supply Augmentation Methods and Other Actions by Water Supplier	How much is it going to reduce the shortage gap?	Additional Explanation or Reference
All	Stored Emergency Supply	Up to 87,000 AF	Purchase Banked water in dry years
All	Transfers	Up to 2,600 AFY	AVEK lease agreement
All	Stored Emergency Supply	Up to 20,000 AFY	Pump carry-over water in dry years
All	Emergency Supply	Quartz Hill Water District-1 MGD; Palmdale Water District-2 MGD; Las Virgenes Municipal Water District -1.29 MGD; Los Angeles Department of Water and Power-3.45 MGD	Use interconnections with other Agencies (District No. 40: Quartz Hill Water District and Palmdale Water District; District No. 29: Las Virgenes Municipal Water District and Los Angeles Department of Water and Power)