

# Appendix K

## **Water Demand Assessment**



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# WATER DEMAND ASSESSMENT

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## PACIFIC SQUARE PROJECT CITY OF SAN GABRIEL

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## 1. INTRODUCTION

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The City of San Gabriel (City) is the lead agency preparing an Environmental Impact Report (EIR) for the proposed Pacific Square Project. As part of the EIR and in response to environmental guidelines, the City is also considering a Water Demand Assessment (WDA) to confirm the total water demand and if water supply assessment is needed. The California Water Code section 10910 (also termed Senate Bill 610 or SB610) requires that a WSA be prepared for projects that are subject to the California Environmental Quality Act (CEQA) and are of a specified type and size or equivalent in water demand to 500 dwelling units. An objective of this document is to ascertain if the project meets the size requirement for a WSA. Even if not required, the City still may choose to develop a WSA.

The proposed project, Pacific Square San Gabriel, is a mixed-use project on approximately 5.85 acres on South San Gabriel Avenue. The Pacific Square project includes two plazas that contain a total of 76,046 square feet of commercial space and 419,498 square feet of residential space with landscaped public areas in between the plazas. The general footprint of the project is shown in **Figure 1**. The project will include basement parking, street-level landscaping and commercial space.

The primary foundational document for preparation of the WSA is the 2015 Urban Water Management Plan (UWMP) (Stetson Engineers Inc., 2016) prepared for San Gabriel County Water District (SGCWD). The SGCWD UWMP projects water demand through 2040 for normal and dry years, describes the water supplies, and outlines the water shortage contingency plan and water conservation measures enacted by SGCWD.

The purpose of this WDA is to document the City's existing and future water supplies for its service area and compare them to the area's future water demand including that of the proposed project. This comparison, conducted for both normal and drought conditions, is the basis for an assessment of water supply sufficiency in accordance with the requirements of California Water Code section 10910 (Senate Bill 610).

## **1.1. REQUIREMENT**

In order to be subject to Senate Bill 610 requirements for a water supply assessment, a proposed development must qualify as a “project.” Under the California Water Code Section 10912, a residential or commercial “project” must be any of the following:

- A proposed residential development of more than 500 dwelling units
- A proposed shopping center or business establishment employing more than 1000 persons or having more than 500,000 units square feet of floor space
- A mixed-use project that includes one or more of the projects specified in Section 10912
- A project that would demand an amount of water equal to, or greater than, the amount of water required by a 500-dwelling unit project.

Assuming that one dwelling unit typically consumes 0.3 to 0.5 acre-foot of water per year, then the annual water consumption of 500 dwelling units would be 150-250 acre-feet per year. The proposed development would have 251 dwelling units, 76,046 square feet of commercial space, and an estimated water demand of 97.8 AFY (Section 2.4). Accordingly, the proposed development is not subject to Senate Bill 610, even under the most conservative estimates.

A WSA is not needed for the Pacific Square Project; however, to provide background information for the EIR, we have included more information about water demand and supply for the City of San Gabriel and its primary water retailer San Gabriel County Water District (SGCWD).

## **1.2. ACKNOWLEDGEMENTS**

This assessment was prepared by Maureen Reilly, Senior Engineer, Iris Priestaf, President, and Arden Wells, Staff Geologist, on behalf of the City of San Gabriel. Ms. Reilly and Dr. Priestaf have completed numerous WSAs for clients throughout California. We appreciate the valuable assistance provided by ESA.

## 2. PROJECT WATER DEMAND

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The proposed project would be built on land that is currently vacant after an act of arson in 2018. This section addresses water demands for the proposed project which consists of two plazas: the northern 700 Plaza and the southern 800 Plaza.

The 700 Plaza will contain:

- Multifamily housing- 182,330 square feet (106 units)
  - 20 one-bedroom units
  - 58 two-bedroom units
  - 24 three-bedroom units
  - 3 live/work one-bedroom units
  - 1 live/work two-bedroom unit
- Live/Work unit “work” component – 3,383
- Sit-down restaurants- 2,086 square feet
- Fast casual restaurants-3,150 square feet
- Fitness center- 25,233 square feet
- Bakery- 2,500 square feet
- 2nd floor terrace- 21,800 square feet
- Parking- 418 spaces

The 800 Plaza will contain:

- Multifamily housing- 237,168 square feet (145 units)
  - 20 one-bedroom units
  - 93 two-bedroom units
  - 24 three-bedroom units
  - 3 live/work one-bedroom units
  - 1 live/work two-bedroom unit
- Live/Work unit “work” component – 3,383
- Sit-down restaurants- 2,914 square feet
- Fast casual restaurants- 2,910 square feet
- Retail- 7,115 square feet
- Café- 3,042 square feet
- Market – 20,330 square feet
- 2<sup>nd</sup> floor terrace – 30,500 square feet
- Parking- 565 spaces

In between the two plazas there will be the following publicly accessible open spaces:

- Central Park – 33,543 square feet



- Plaza/Landscape- 24,280 square feet

## **2.1. EXISTING WATER USE**

Until an act of arson in February 2018, the existing area contained greenhouses used by the nursery across the street. Since the fire, this land has been vacant and uses no water. To provide a conservative estimate for this assessment, no existing water use was considered.

## **2.2. ESTIMATED FUTURE WATER DEMAND FOR PROJECT**

The proposed project would require an estimated 93.7 acre feet per year (AFY) of potable water for commercial and residential buildings (**Table 1**) and as much as an additional AFY for landscape irrigation (**Table 2**) for a total water demand of 97.8 AFY.

The potable water demand value was calculated using sewage generation factors, which is based on the volume of wastewater generated per unit by residential and commercial facilities, from the Sanitation Districts of Los Angeles County to calculate estimated wastewater generation and to compute water demand with a factor of 110%. For residential spaces and commercial spaces, the water use was calculated per dwelling unit or per square foot. For example, each residential unit was estimated to have a sewage generation factor of 156 gallons per day (gpd) per dwelling unit, and all restaurants have a factor of 1000 gpd per 1000 square feet (sf).

Several assumptions were made in the calculations. Live/work units are not included in the LA sewage generation factor list, so the residential portions were assumed to have the same water demand as a residential unit (156 gpd/ dwelling unit) and the work portions had the same water demand as an office (200 gpd/1000 sf). The fitness center was estimated to have the same water demand as a health spa with showers (600 gpd/1000 sf). Bakeries and cafes were assumed to have the same water demand as restaurants (1000 gpd/1000 sf). As shown in Table 1, these computations resulted in an estimated average daily demand of 83,612 gpd or 93.7 acre-feet per year (afy). An estimated peak water demand, which is estimated as 2.5 times the average daily demand, of 209,030 gpd was calculated and included in the table to account for firefighting purposes. However, only the average demand will be included in this assessment as it is representative of the total annual water use.

Water demand estimates for landscaping are calculated using the estimated total water use per year (ETWU) equation from the California State Water Budget Calculator for the publicly accessible park and plaza (57,823 square feet) and the average annual evaporation value of 50.0 in/year (from **Table 3**). Information on the respective areas of landscaping and

hardscaping (paving) is not readily available. For the purposes of a conservative estimate (maximum water demand), the entire park and plaza are assumed to be landscaping. If the park and plaza are entirely turfgrass with best management practices for irrigation, the irrigation water demand would be 4.8 AFY. If the landscaping area was entirely trees requiring moderate water and using drip irrigation, the demand would be 3.4 AFY. For this estimate, the park and plaza are assumed to be 50% turf grass and 50% trees, resulting in a total water demand of 4.1 AFY. Water demand will be lower if landscapers use native or low-water vegetation or hardscaping.

The project includes some landscaping and planters along the streets and terraced areas are planned to have a few small planters and a small fountain. These areas are not expected to use a significant amount of water and are not specified in this water demand estimate.

### **2.3. ESTIMATED FUTURE RECYCLED WATER USE FOR PROJECT**

The 2015 San Gabriel County Water District UWMP states that recycled water is not expected to be available before 2040. If recycled water becomes available, all landscape irrigation water demands, 4.1 AFY (**Table 2**), could be met using non-potable water.

### **2.4. TOTAL FUTURE PROJECT DEMAND FOR PROJECT**

**Tables 1 and 2** show the estimated future project demand for indoor potable and outdoor landscaping, respectively. The property currently uses no water, so the net water demand on the site would increase by 97.8 AFY. Because recycled water is not expected to become available, landscaping irrigation water demands were included in this estimated demand. As discussed in Section 1.1, this conservative estimate is less than the annual consumption of 500 dwelling units (150-250 AFY). The Pacific Square Project is not subject to Senate Bill 610.

## **3. CITY OF SAN GABRIEL WATER DEMAND**

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This section summarizes water demands for SGCWD, the water provider for most of the City of San Gabriel. SGCWD will be the water provider at the proposed site.

The first part describes the factors affecting total water demand, including climate, population, and employment, plus the mix of customer types, such as residential, commercial, and industrial. The second part documents water demands not only under normal climatic conditions, but also during drought.

### **3.1. CLIMATE**

Climate has a significant influence on water demand on a seasonal and annual basis. This influence increases with the portion of water demand for outside uses, specifically landscape irrigation.

**Table 3** summarizes representative climate data for the City, including rainfall and temperature data measured at the San Gabriel Fire Station (Western Regional Climate Center) and evapotranspiration (ETO) measured by the California Irrigation Management Information System Station (CIMIS). Temperature and precipitation data are provided from 1939 through 2015, due to data reporting inconsistency after 2015. CIMIS data are from 2000-2018. The City has a Mediterranean climate, characterized by dry summers and wet winters with year-round moderate-to-warm temperatures. Reflecting this pattern, water demand in the City is greater in the summer than in the winter. Climate change may affect future water supply availability for the City of San Gabriel by reducing water availability, changing local precipitation patterns, and increasing water demands.

### **3.2. SGCWD POPULATION**

City population, a key factor in water demand, is analyzed in the 2015 UWMP. Approximately 60% of the SGCWD service area is in the City of San Gabriel, and 40% is in the City of Rosemead, City of Temple City, and unincorporated Los Angeles County. **Table 4** reproduces the UWMP population value for the water service area for 2015 with projections to 2040. A 13% net population increase is projected, from 39,500 to 44,700 people.

### **3.3. CURRENT SGCWD WATER USE SECTORS AND WATER DEMAND**

SGCWD had 9,115 metered service connections in 2015. **Table 5** documents the water demand for the service area in 2015 and the projected demand through 2040. The water use sectors (customer types) are listed on the left. Water loss is typical in all water distribution systems due to small leaks, firefighting activities, and system testing and maintenance activities. All water delivered was treated to drinking water standards. Residential and commercial demands account for over 90% of water demand in SGCWD.

### **3.4. PROJECTED SGCWD WATER DEMAND**

**Table 5** summarizes projected water demands for the entire service area for 2020-2040. These values are from the 2015 UWMP and account for increased water use in every sector. This projection accounted for water savings over time, with a targeted per capita water use of 144 gallons per capita per day for 2020.

### **3.5. SGCWD WATER DEMAND IN NORMAL AND DROUGHT PERIODS**

Southern California faces periods of severe drought, and SGCWD recognizes that water conservation is critical to sustainability. Outlined in the 2015 UWMP, SGCWD developed a 4-stage water shortage contingency plan to decrease water demand during periods of water shortage. Ordinance No. 2015-44 was adopted and approved on June 9, 2015, during the 2013-2015 drought. Stage 1 requires a 15-20% reduction in water use, Stage 2 requires a 20-30% reduction, Stage 3 requires a 30-40% reduction, and Stage 4 requires a 40-50% reduction. Each stage requires specific water use restrictions for activities such as landscape irrigation, commercial uses, swimming pools, and domestic uses. Customers who violate water use efficiency requirements first receive a written notice and are then fined for repeated violations. During normal periods, SGCWD is working to decrease water demand through water conservation mandates and educational programs, as discussed below. The average per capita water use during 1998-2008 was 174 gallons per capita per day. In 2014-2015, the third year in a multi-year drought, the per capita water use was 118 gallons per capita per day.

### **3.6. WATER CONSERVATION**

The SGCWD promotes water conservation both through regulations, conservation pricing, outreach, and education. Along with the adoption of Ordinance 2015-44 for drought periods, water conservation is supported through year-round mandates and practices. New development and homes are required to have water efficient appliances and irrigation systems, and all SGCWD client must prevent water leaks. Limits on watering days are set. Water waste patrols in the region investigate high consumption water use. Water pricing operates on a two-tiered system to promote water conservation. SGCWD works with social groups, notifies consumers when water conservation is needed, and organizing water awareness events.

SGCWD is a member of the Upper District Water Agency, which provides educational programs and materials to promote water conservation. Programs involve presentations, workshops, and an annual water awareness festival (Water Fest). Education materials, including fliers, children's activity books, and stickers are provided by the Upper District. The Upper District also sponsors water awareness advertising campaigns.

## 4. CITY OF SAN GABRIEL WATER SUPPLY

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The City of San Gabriel receives potable water primarily from groundwater. Imported water from the Metropolitan Water District of Southern California (MWD) is used to recharge the groundwater basins from which municipal wells draw supply. Imported water is used as an emergency water supply. The historical water supply from these sources is shown in **Table 6**.

### 4.1. GROUNDWATER

SGCWD depends on groundwater as its primary source of water. SGCWD has adjudicated rights to the Main San Gabriel Basin and the Raymond Basin, shown on **Figure 2**. The entire water demand is met with groundwater from eight wells in the Main Basin and one well in the Raymond Basin. The screened intervals of these wells range from 50 to 1,320 feet below the ground surface. The historical supply from each basin is shown in **Table 6**, and the projected supply from each basin is shown in **Table 7**.

Under the Main Basin adjudication, SGCWD has the annual pumping right of 5,395.8 acre-feet and 2.73% of the Operating Safe Yield. The Operating Safe Yield is set by the Watermaster, and it determines the quantity of water that can be pumped from the basin without a Replacement Water Assessment (Los Angeles Superior Court of California, 2012). SGCWD may purchase Replacement Water from the Upper District to recharge the basin. During 2014-2015, during a multi-year drought, the Operating Safe Yield for the Main Basin was 6,512.6 acre-feet.

The Main Basin makes up most of the valley floor of the San Gabriel Valley and forms a bowl-shaped depression filled with alluvium from the San Gabriel Mountains that ranges in texture from coarse gravel to fine silts and clays. Aquifer sediments are coarser towards the mountains and become finer towards the basin's center. Thick layers of coarse gravel to fine-grained sands are the primary water-bearing formations in the Main Basin. These formations range from 200-300 feet in the northeastern portion of the basin (DPW, 1934, pg 141) to almost 4000 feet in the South El Monte region (DWR 1996, pg 31). Groundwater generally flows from the San Gabriel Mountains in the north towards the Wittier Narrows in the southwest. The Main Basin is an unconfined aquifer; while clay lenses are present throughout the region, they do not form an areally-extensive single confining layer.

The Main Basin is naturally recharged by stream runoff from surrounding mountains, precipitation, inflow from surrounding basins, and return flow. The Main Basin is also recharged with imported water. The total storage in the basin is estimated to be 9.5 million acre-feet. As of 2016, the historical low for water levels in the basin occurred in November

2015, with an elevation of 174 feet. This historical low occurred during the statewide severe multi-year drought 2014-2016 and likely the result of decreased precipitation. Storage was estimated to be 7.4 million acre-feet at this time. The historical high was recorded in 1916 with an elevation of 329.1 feet and an estimated storage of 8.7 million-acre feet.

The Raymond Basin (Figure 2) is a triangle-shaped basin in the northwestern region of the San Gabriel Valley and is separated from the Main basin by the Raymond Fault. The Raymond Basin is adjudicated and managed under the Raymond Basin Judgement (Los Angeles Superior Court of California, 1944). During 2014-2015, SGCWD has the Decreed Right of 763.7 acre-feet per year.

The Raymond Basin's water-bearing layers are unconsolidated gravel, sand, and silt from the San Gabriel Mountains that range from 150 to 1,140 feet thick. There have been no recent estimates of storage in the Raymond Basin, but a 1970 study estimated that it stored one million acre-feet of groundwater. The Raymond Fault obstructs groundwater flow in the western end but is a less effective barrier towards the east. In the eastern portion of the basin, groundwater flows from the Raymond Basin into the Main Basin. The Raymond Basin is recharged by precipitation and ephemeral streams flowing from the San Gabriel Mountains.

## **4.2. IMPORTED WATER**

SGCWD utilizes imported water for groundwater replenishment and emergency water supplies. Groundwater replenishment through imported water is considered Replacement Water by the Main Basin Judgement. SGCWD purchases untreated imported water from the Upper District to offset withdrawal when demands exceed the Operating Safe Yield volume. The Upper District is a wholesaler that supplies water from MWD to its member agencies. MWD imports water from the Colorado River and the Sacramento-San Joaquin Delta through the State Water Project. Imported water is percolated in spreading grounds and along streams channels.

The SGCWD is interconnected with the California American Water Company and the City of Alhambra for emergency water supply. If one water supplier is unable to supply water, the interconnections can be activated manually to transfer water. This emergency supply has not been activated and would only be used if a major emergency required their activation.

### **4.3. RECYCLED WATER**

SGCWD does not currently use recycled water within its service area. SGCWD has identified 14 potential customers (likely large irrigation water users) for future recycled use with a demand of 87 AFY. Recycled water use is not expected to become available before 2040.

### **4.4. WATER SUPPLY IN NORMAL AND DROUGHT PERIODS**

The California Water Code requires a WSA to include discussion of how supply will meet demand during normal, single dry, and multiple dry years during a 20-year projection. The 2015 UWMP provides discussion of water supply and demand in normal and drought periods, included herein by reference.

SGCWD relies on groundwater as the primary source of water, and groundwater production has historically remained stable and fulfilled water demand during both single and multiple dry year periods. If groundwater is overdrawn beyond water rights, imported water can replenish the aquifer.

In the 2015 UWMP, water supply estimates for future single dry years and multiple dry year periods were derived by calculating the ratios of water supply during dry years to a normal year and adjusting for increasing populations and developments. The ratios of single dry year and multiple dry year supplies to normal year supplies were calculated by comparing water supplies during 2013-2014 and 2011-2015, respectively, to water supplies during 2009-2010, a normal year. **Tables 8-10** show the expected water demand during normal, single dry year, and multiple dry year periods. A 2% increase in water demand is expected during single dry year periods and a slight increase and then decrease is expected during four-year dry periods. Future dry periods may see a relatively decreased supply due to Ordinance 2015-44 and other recent efforts by SGCWD to decrease water demand.

## **5. COMPARISON OF SUPPLY AND DEMAND**

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The SGCWD Urban Water Management Plan projects that both the population and water demand will grow over the next 20 years. The water resources available in the San Gabriel Basin are sufficient to meet the water demand for this development and future developments. The net water demand increase for the proposed project is 97.8 AFY water, which is 1.5% of the projected SGCWD water demand for 2020.

The estimated water demand of this project is proportional to the housing and commercial space it will provide. The proposed project will have water-efficient appliances and landscape irrigation practices, as mandated by SGCWD. The UWMP projects that the San

Gabriel population will increase by 1,015 people and the water demand will increase by 161 AFY during 2020-2025. With three people per residential unit, this project would house and estimated 753 people, providing housing for 74% of the 5-year population growth projection. The estimated water demand of the development is 60.7% of the projected 5-year water demand increase.

SGCWD has adequate resources to meet the water demands for its growing population and has taken measures to decrease its per capita water use. There are enough water resources for the proposed project for normal, single dry and multiple dry years during a 20-year projection.



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**Table 1. Project Water Demand Indoors**

Project Type	Size	Unit	Average Daily Sewage Generation (gpd/Unit) <sup>1</sup>	Average Daily Demand (gpd) <sup>2</sup>	Average Annual Demand (afy)	Peak Daily Demand (gpd) <sup>3</sup>
<b>700 Plaza</b>						
One-Bedroom Residential	20	du	156	3,432.0	3.8	8,580
Two-Bedroom Residential	58	du	156	9,952.8	11.1	24,882
Three-Bedroom Residential	24	du	156	4,118.4	4.6	10,296
Live/Work	4	du	156	686.4	0.8	1,716
Live/Work Office Component	3,383	sf	0.2	744.3	0.8	1,861
Fitness	25,233	sf	0.6	16,653.8	18.7	41,634
Sit-Down Restaurants	2,086	sf	1	2,294.6	2.6	5,737
Fast Casual Restaurant	3,150	sf	1	3,465.0	3.9	8,663
Bakery	2,500	sf	1	2,750.0	3.1	6,875
<b>Subtotal</b>				<b>44,097.2</b>	<b>49.4</b>	<b>110,243</b>
<b>800 Plaza</b>						
One-Bedroom Residential	20	du	156	3,432.0	3.8	8,580
Two-Bedroom Residential	93	du	156	15,958.8	17.9	39,897
Three-Bedroom Residential	24	du	156	4,118.4	4.6	10,296
Four Bedroom Residential	4	du	156	686.4	0.8	1,716
Live/Work	4	du	156	686.4	0.8	1,716
Live/Work Office Component	3,383	sf	0.2	744.3	0.8	1,861
Retail	7,115	sf	0.1	782.7	0.9	1,957
Fast Casual Restaurant	2,910	sf	1	3,201.0	3.6	8,003
Sit-Down Restaurants	2,914	sf	1	3,205.4	3.6	8,014
Café	3,041	sf	1	3,345.1	3.7	8,363
Market	20,330	sf	0.15	3,354.5	3.8	8,386
<b>Subtotal</b>				<b>39,514.9</b>	<b>44.3</b>	<b>98,787</b>
<b>Total</b>				<b>83,612.1</b>	<b>93.7</b>	<b>209,030</b>

1. Average Daily Sewer Flow factors from Los Angeles County Sanitation District Sanitation District sewage generation factors

2. Calculated sewer generation based on LA County factors with application of a 1.1 ratio to estimate potable supply.

3. Peak water demand is the average daily demand multiplied by 2.5 reflects the range in water demand use over the course of a day.

**Table 2. Project Water Demand - Landscaping**

Landscaping	Total Area (square feet) <sup>1</sup>	Reference Evapotranspiration (in/year)	Plant Factor (Kc)	Drip Irrigation Efficiency	Estimated Annual Total Water Usage (gpy) <sup>2</sup>	Estimated Annual Total Water Usage (AFY)
Moderate Trees	57,823	50.5	0.5	0.81	1,117,554	3.43
Turfgrass	57,823	50.5	0.7	0.81	1,564,576	4.80
<b>Average</b>					1,341,065	4.12

1. Area is for entire plaza and Central Park

2. Calculated using the Estimated Total Water Use Equation for irrigation efficiency

**Table 3. Local Climate Data**

Month	Average Total Monthly Evapotranspiration (2000-2018) <sup>1</sup>	Average Total Monthly Precipitation (in) (1939-2015) <sup>2</sup>	Average Temperature (F) (1939-2015) <sup>2</sup>	Average Minimum Temperature (F) (1939-2015) <sup>2</sup>	Average Maximum Temperature (F) (1939-2015) <sup>2</sup>
January	2.2	3.7	55.6	41.9	69.1
February	2.5	3.9	57.0	43.7	70.2
March	3.9	3.0	58.9	45.9	71.7
April	4.6	1.2	62.1	49.1	75.2
May	5.2	0.3	65.7	53.5	77.7
June	5.9	0.1	69.9	57.2	82.5
July	6.8	0.0	74.9	61.1	88.7
August	6.4	0.1	75.6	61.6	89.7
September	5.0	0.3	73.9	59.5	88.1
October	3.6	0.6	68.2	53.8	82.2
November	2.5	1.7	61.0	46.4	75.3
December	1.9	2.3	55.9	41.9	69.8
<b>Annual</b>	<b>50.5</b>	<b>17.2</b>	<b>64.9</b>	<b>51.3</b>	<b>78.4</b>

1. Data is from the Western Regional Climate Center ([wrcc.dri.edu](http://wrcc.dri.edu)) and was collected at Station 047785 (San Gabriel Fire Department)

2. Data is from the California Irrigation Management Information Systems (<https://cimis.water.ca.gov/>) from Station 159

**Table 4. San Gabriel Water District Service Area Population**

	2015	2020	2025	2030	2035	2040	Percent Increase
<b>Population</b>	39,485	40,487	41,502	42,542	43,608	44,701	13%

Source: SGCWD UWMP

**Table 5. SGCWD Current and Projected Water Use**

Predicted Water Demand	Level of Treatment	Current Water Demand (AFY)	Predicted Water Demand (AFY)				
Use	Drinking Water	2015	2020	2025	2030	2035	2040
Single Family	Drinking Water	2,502	3,246	3,327	3,411	3,496	3,583
Multi-Family	Drinking Water	888	1,153	1,182	1,211	1,242	1,273
Commercial	Drinking Water	1,124	1,458	1,494	1,532	1,570	1,610
Institutional/Governmental	Drinking Water	233	302	310	317	325	333
Landscape	Drinking Water	217	281	288	296	303	311
Other	Drinking Water	0	0	0	0	0	0
<b>Total Water Demand</b>		<b>4,964</b>	<b>6,440</b>	<b>6,601</b>	<b>6,767</b>	<b>6,936</b>	<b>7,110</b>

Source: SGCWD UWMP

**Table 6. Historical Groundwater Supply by Basin**

<b>Basin Name</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>
Main San Gabriel Basin	6,090	5,720	5,761	5,822	5,203
Raymond Basin	67	529	716	681	599
<b>Total Water Supply</b>	6,157	6,260	6,477	6,503	5,802

Source: SGCWD UWMP

**Table 7. Projected Groundwater Supply by Basin**

	Projected Water Supply (AFY)				
Basin	2020	2025	2030	2035	2040
Main San Gabriel	5,676.3	5,837.3	6,003.3	6,172.3	6,346.3
Raymond Basin	763.7	763.7	763.7	763.7	763.7
<b>Total Water Supply</b>	6,440.0	6,601.0	6,767.0	6,936.0	7,110.0

Source: SGCWD UWMP



**Table 8. Normal Year Supply and Demand Comparison**

	2020	2025	2030	2035	2040
Available Supply (AFY)	6,440	6,601	6,767	6,936	7,110
Normal Year Demand (AFY)	6,440	6,601	6,767	6,936	7,110
<b>Supply/Demand Difference</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

Source: SGCWD UWMP

**Table 9. Single Dry Year Supply and Demand Comparison**

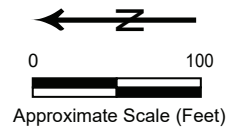
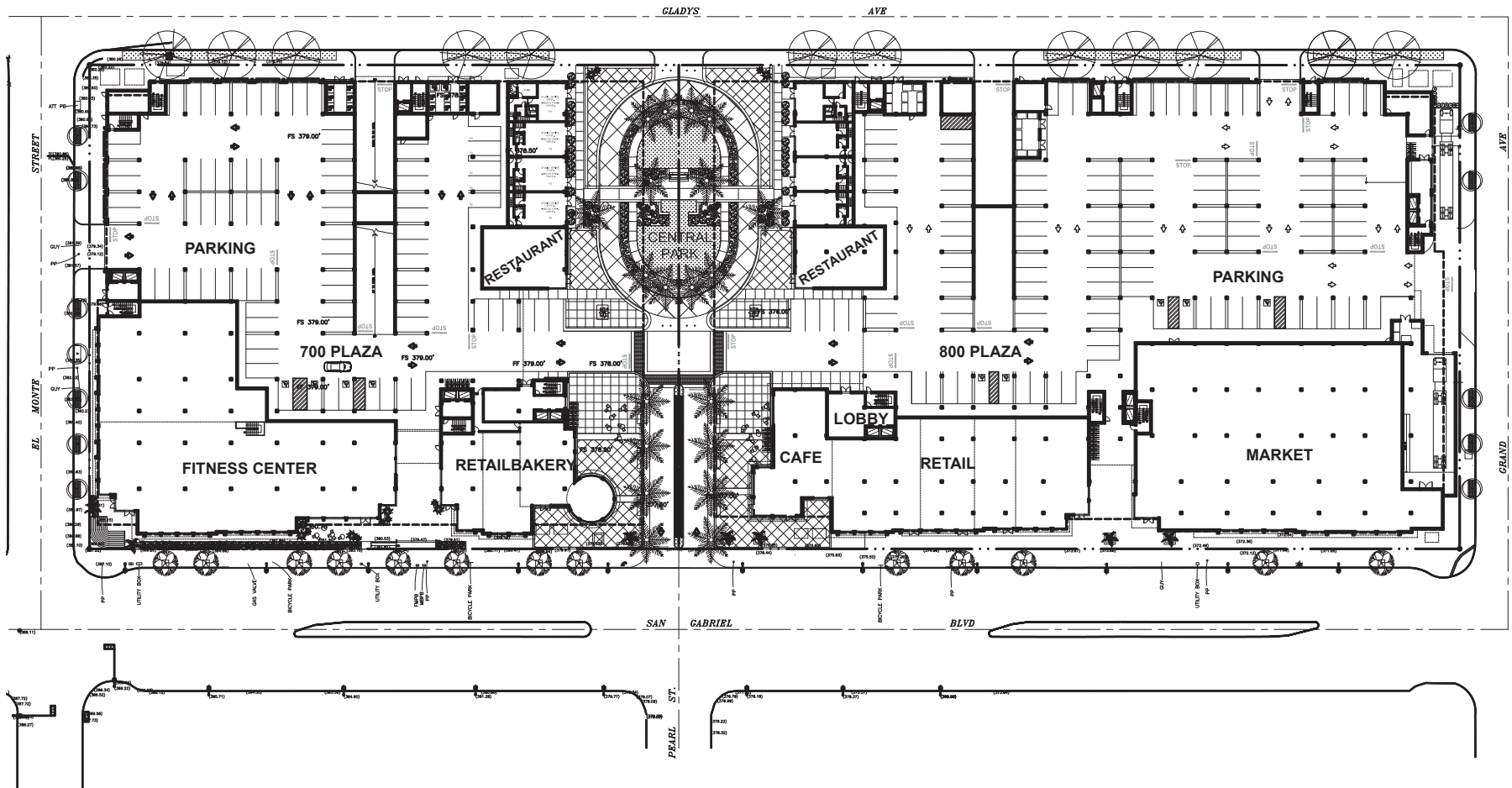
	2020	2025	2030	2035	2040
Available Supply (AFY)	6,566	6,730	6,900	7,072	7,249
% of Normal Year Supply	102%	102%	102%	102%	102%
Single Dry Year Demand (AFY)	6,566	6,730	6,900	7,072	7,249
% of Normal Year Demand	102%	102%	102%	102%	102%
<b>Supply/Demand Difference</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

Source: SGCWD UWMP

**Table 10. Multiple Dry Years Supply and Demand Comparison**

Water Sources	2020	2025	2030	2035	2040
<b>First Year</b>					
Available Supply (AFY)	6,321	6,479	6,642	6,808	6,978
Demand (AFY)	6,321	6,479	6,642	6,808	6,978
<b>Supply/Demand Difference</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
% of Normal Year Supply/Demand	98%	98%	98%	98%	98%
<b>Second Year</b>					
Available Supply (AFY)	6,540	6,703	6,872	7,044	7,220
Demand (AFY)	6,540	6,703	6,872	7,044	7,220
<b>Supply/Demand Difference</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
% of Normal Year Supply/Demand	102%	102%	102%	102%	102%
<b>Third Year</b>					
Available Supply (AFY)	6,566	6,730	6,900	7,072	7,249
Demand (AFY)	6,566	6,730	6,900	7,072	7,249
<b>Supply/Demand Difference</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
% of Normal Year Supply/Demand	102%	102%	102%	102%	102%
<b>Fourth Year</b>					
Available Supply (AFY)	5,858	6,005	6,156	6,310	6,468
Demand (AFY)	5,858	6,005	6,156	6,310	6,468
<b>Supply/Demand Difference</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
% of Normal Year Supply/Demand	91%	91%	91%	91%	91%

Source: SGCWD UWMP



January 2020

**TODD**  
GROUNDWATER

**Figure 1**  
**Proposed**  
**Project Layout**

