

Water Supply Assessment

Euclid and Heil

Prepared for:
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Appendix A Correspondence with Alex Heide, MWDOC Senior Water Resource Analyst

Introduction

This Water Supply Assessment (WSA) analyzes the sufficiency of the City of Fountain Valley's (City) water supplies for the proposed Euclid and Heil Multi-Family Development Project (the Project) consisting of 304 market-rate apartment units, 219 townhomes and single-family triplexes, and 83 senior affordable units, totaling 606 units. The Project is located on an existing 18.09-acre site at the corner of Euclid Street and Heil Avenue in Fountain Valley, CA. Market-rate apartment units and affordable housing senior living units will occupy 4.02 acres of the lot and the remainder 14.07-acres will contain a combination of 3-story for-sale townhomes and single-family residences. The Project applicants proposes to obtain water and sewer service for the Project from the City of Fountain Valley.

Regulatory Background

Senate Bill (SB) 610, also known as the California Water Code, establishes the primary legal standards for assessing the sufficiency of water supplies for new development projects. In accordance with the SB Section 10190, the Project meets the criteria as a proposed residential development of more than 500 dwelling units, thus is subject to the California Environmental Quality Act (CEQA). As part of the environmental review process pursuant to the CEQA, these statutes require the applicant to prepare a WSA of the reliability of water supplies for the project, considering normal, single dry, and multiple dry years over a 20-year horizon. The basic requirement is that a WSA must "include a discussion with regard to whether the public water system's total projected water supplies available during normal, single dry, and multiple dry water years during a 20-year projection will meet the projected water demand associated with the proposed project, in addition to the water system's existing and planned future uses, including agricultural and manufacturing uses."

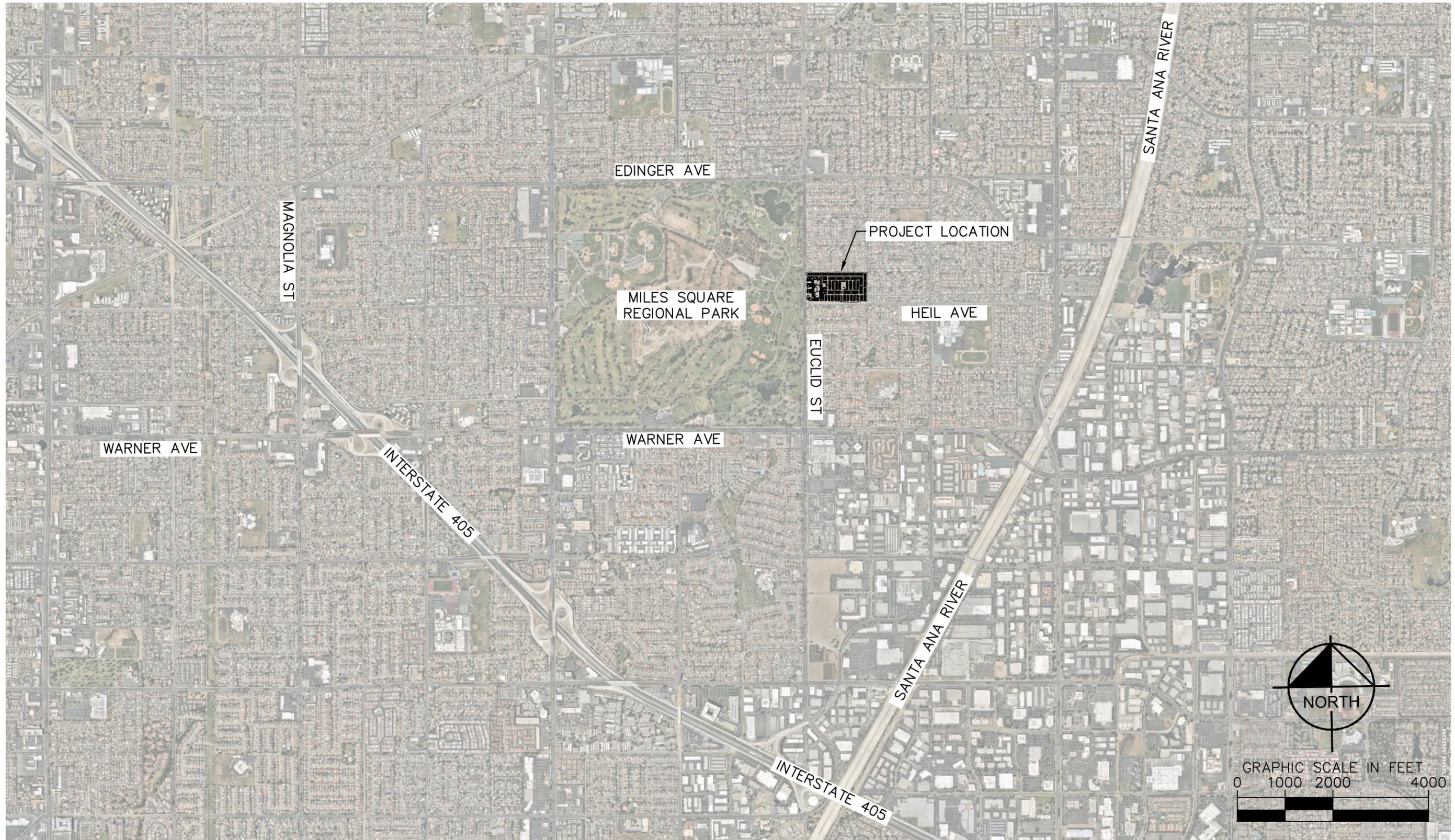
References used in preparing this document include the following:

- 2020 City of Fountain Valley Urban Water Management Plan (UWMP)
- 2020 City of Fountain Valley Water Shortage Contingency Plan (WSCP)
- 2018 Final Fountain Valley Crossings Specific Plan
- Fountain Valley Municipal Code Chapter 14.18 - Water Conservation
- 2020 Municipal Water District of Orange County Urban Water Management Plan
- 2020 Metropolitan Water District of Southern California Urban Water Management Plan

Project Location

The 18.09-acre Project site (APN 144-111-01) is located at the NE corner of Euclid Street and Heil Avenue in Fountain Valley, CA (*Figure 1*). The City is situated along I-405 in unincorporated Orange County (the County). The Project is bounded by single-family residences to the north, south, and east, and Miles Square Regional Park to the west of Euclid Street.

Figure 1 Regional Location Map



Existing Conditions

The project site is currently undeveloped agricultural land zoned for Low Density Residential per the City's General Plan. Currently, there is no potable water supply to the Project. However, the Project currently contains a single irrigation well (WPF # 108-16-3-A) for agricultural use.

Proposed Project

The requested general plan aims to redesignate and rezone the Project site to R-4 – High Density Multiple Dwelling Residential (30 units/acre) per the City zoning code. The Euclid and Heil development is envisioned as an 18.09-acre multi-family development providing a combination of 606 market-rate apartments, senior living units, and for-sale townhomes, and single-family triplexes (*Figure 2*). At full buildout, the Project will provide housing for approximately 1,782 residents.

With the completion of this WSA, the Client aims to secure potable water service from the City of Fountain Valley. The Client also aims to use recycled water in common areas and right of ways with the existing recycled water infrastructure in both Euclid Street and Heil Avenue.

Estimated Water Demand for the Project

Per City guidance, water demand generated by the Project was estimated on a per-capita basis. The Project will require the use of both potable and recycled water supplies to satisfy on-site demands.

The estimated domestic potable water demand for the Project is a product of the water demand per resident and the total number of residents. The City's 2020 water demand per capita was 91 gpcd (gallons per capita per day) which was used in the following water demand calculations. The water demand per capita value does not include recycled water delivered within the service area, indirect recycled water, water placed in long term storage, water conveyed to another supplier, agricultural use water, and process water.

To determine the number of residents, the Project Conceptual Site Plan (*Figure 2*) was used in conjunction with a planning value of 2.94 residents per dwelling unit, provided by the City. This value was obtained by dividing the total number of residents in the City by the total number of households based on 2020 Census data.

In addition to domestic demand, the Project will require potable water for two recreational swimming pools. The potable water demand required for the pools assumes an average of 4-foot depth and one full refill due to evaporation and backwashing per year.

Table 1 displays the estimated number of residents for the Project and their corresponding water demand. *Table 2* displays the potable swimming pool water demand for the Project and *Table 3* displays the total potable water demand for the Project.

Table 1 Estimated Total Water Demand for the Project

Project Domestic Potable Demand	
Total Dwelling Units	606
Residents/Dwelling Unit ¹	2.94
Total Residents	~1,782
Water Demand per Capita ²	91 GPCD
Total Domestic Potable Demand	162,162 Gallons per Day (GPD)
	59,189,130 Gallons per Year (GPY)
	181.66 Acre-Feet per Year (AFY)

¹ Provided by the City of Fountain Valley, derived from 2020 Census data

² Source: City of Fountain Valley 2020 UWMP, Table 5-2

Table 2 Estimated Total Potable Pool Water Demand for the Project

Project Swimming Pool Potable Demand	
Total Pool Surface Area	3,000 Square Feet
Assumed Average Depth	4 Feet
Total Volume	12,000 Cubic Feet
Annual Refill Rate	100%
Total Swimming Pool Potable Demand	24,000 Cubic Feet per Year (CFY)
	179,520 GPY
	0.55 AFY

Table 3 Estimated Total Potable Water Demand for the Project

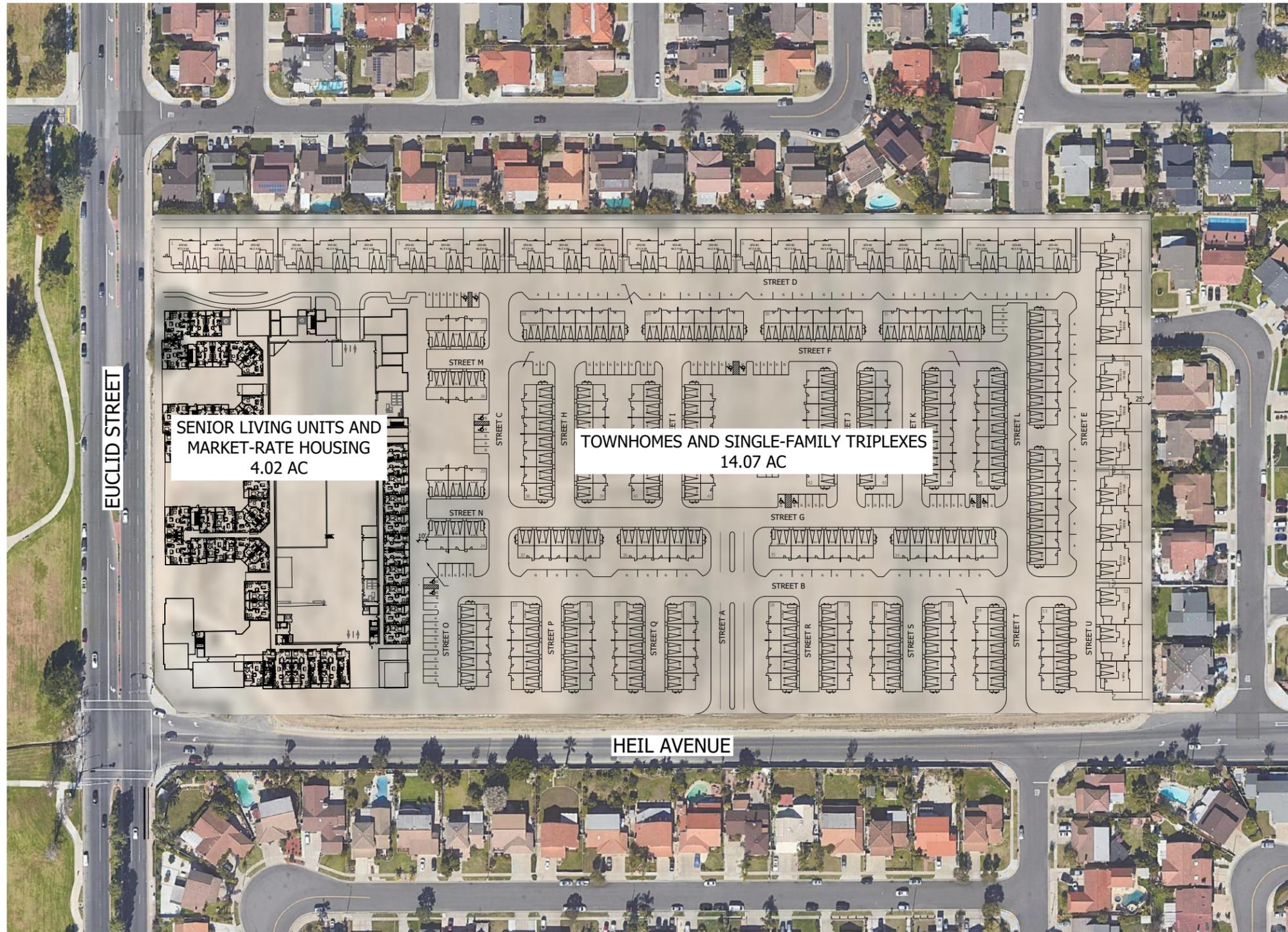
Project Potable Demand	
Total Domestic Potable Demand	59,189,130 GPY
Total Swimming Pool Potable Demand	179,520 GPY
Total Project Potable Demand	59,368,50 GPY
	182.21 AFY

The Project will also contain various landscape and turf areas, requiring irrigation. As a result, the City's recycled water supply will be utilized to service these non-potable water demands. The irrigation, or recycled water demand, was calculated as estimated total water use (ETWU), which is a product of the landscape type, area, and irrigation efficiency. Table 4 outlines the Project recycled water demand and provides ETWU for each proposed planting type.

Table 4 Estimated Total Recycled Water Demand for the Project

Project Recycled Water Demand	
Tree ETWU	64,000 GPY
Palm ETWU	65,000 GPY
Shrub/Vine ETWU	1,371,000 GPY
Total Project Recycled Water Demand	1,500,000 GPY
	4.60 AFY

Figure 2 Conceptual Site Plan

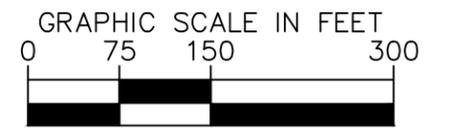
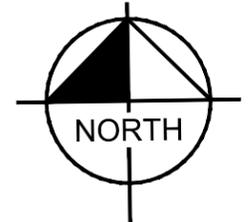


EUCLID STREET

SENIOR LIVING UNITS AND
MARKET-RATE HOUSING
4.02 AC

TOWNHOMES AND SINGLE-FAMILY TRIPLEXES
14.07 AC

HEIL AVENUE



Water Supply

The City sources its water from local groundwater, imported water, and recycled water. The City's main source of water supply is groundwater from the Orange County Groundwater Basin, which currently satisfies all potable water demands. Recycled water from the Orange County Water District (OCWD) meets excess demand for non-potable uses such as irrigation, commercial use, and industrial water processes. When groundwater cannot satisfy the demand alone, the City has the ability to import water from the Colorado River Authority (CRA) and the State Water Project (SWP) provided by the Metropolitan Water District of Southern California (MET) and delivered by the Municipal Water District of Orange County (MWDOC).

In the FY 2019-2020, the City's water supply consisted of 88% groundwater, 12% recycled water and 0% imported water. By 2045, the City's water supply portfolio is projected to be 73% groundwater, 14% recycled water and 13% imported water. *Table 5* lists the City's water supply from 2020-2045. This section summarizes the various sources based off descriptions from the City's 2020 UWMP.

Table 5 Past and Future City Water Supply

Water Supply	Past Water Supply (AFY)	Projected Water Supply (AFY)				
	2020	2025	2030	2035	2040	2045
Groundwater (not desalinated) ¹	8,686	7,301	7,234	7,330	7,410	7,410
Purchased or Imported Water	0	1,288	1,277	1,294	1,308	1,308
Recycled Water	1,184	1,400	1,400	1,400	1,400	1,400
Total	9,870	9,989	9,911	10,024	10,118	10,118

Source: City of Fountain Valley 2020 UWMP, Table 6-2

¹ Groundwater volumes assume OCWD's basin product percentage (BPP) to be 85% for all years. Volumes of groundwater and imported water may vary depending on OCWD's actual BPP projections, which are established annually.

Groundwater

The City's water supply is predominantly sourced from the Orange County Groundwater Basin. The Orange County Groundwater Basin spans approximately 250 square miles with an approximate volume of 66 million acre-feet (MAF). The City operates a series of six operating wells varying in depth from 864 feet to 1,120 feet which provide groundwater to the City at a rate of approximately 34 cubic feet per second (cfs). Groundwater has played a vital role in providing the City with a reliable and affordable potable water supply. *Table 6* provides the groundwater volume pumped by the City between 2016-2020.

Table 6 Past Groundwater Volume Pumped

Type	Location or Basin Name	2016	2017	2018	2019	2020
Groundwater	Orange County Groundwater Basin	5,962	7,860	4,992	8,195	8,686
Total (AFY)		5,962	7,860	4,992	8,195	8,686

Source: City of Fountain Valley 2020 UWMP, Table 6-4

The City’s groundwater pumping is regulated by the OCWD, who monitors the Orange County Groundwater Basin’s water elevation, water quality, production, and recharge. The OCWD manages basin groundwater levels by regulating the annual pumping on a basin production percentage (BPP) basis. The BPP is the ratio of potable groundwater produced within the City to all potable water used within the City from both supplemental and groundwater sources, excluding recycled water. The intent of the BPP is to determine how much water will be pumped from the basin each year and how that affects the basin’s volume.

Despite the City’s groundwater wells being unaffected by contaminants such as seawater intrusion and PFAS, other agencies reliant on the Orange County Groundwater Basin have been required to temporarily deactivate their groundwater wells to prevent the extraction of contaminated water. As the affected agencies have become less reliant on groundwater, the City has been able to pump above with BPP without adversely affecting the groundwater basin level. The City anticipates groundwater being a predominant source of potable water for the foreseeable future. Table 5 outlines the projected groundwater supply between 2025-2045 assuming a BPP of 85% according to the City’s 2020 UWMP.

Imported Water

The City has the option to use imported water as a supplementary source to groundwater, however, they currently do not use imported water. Imported water is delivered to the City by MET through MWDOC. MET treats and conveys water from the State Water Project (SWP) and the Colorado River Aqueduct (CRA). The MET receives water from Colorado River Authority (CRA) and the State Water Project (SWP).

The SWP is a state-level water management project overseen by the state’s Department of Water Resources (DWR) consisting of pump stations, reservoirs, aqueducts, tunnels, and power plants. The SWP conveys water from the Feather River to the Central Valley, South Bay Area, and Southern California via the 444-mile-long California Aqueduct. Approximately 30% of SWP is used for irrigation and 70% is used for residential, commercial, and industrial needs in Southern California and the Bay Area.

The CRA, owned and operated by the MET, conveys water from the Colorado River at Lake Havasu to Lake Mathews in Riverside, CA. The CRA stretches 242-miles long and consists of a series of tunnels, canals, conduits, siphons, and pumping station. The aqueduct has the capacity to deliver more than 1.25 MAF to its users on an as-needed basis. The amount of water that can be conveyed through the CRA to the MET is subject to the availability of Colorado River water. In 2020, MET was entitled to 550,000 AFY of Colorado River water with an optional 662,000 AFY of surplus water, contingency on various conditions.

Water from the SWP and CRA is further treated at the Robert B. Deimer Filtration Plant located in Yorba Linda prior to distribution to its Orange County users, including the City. The City only has one connection to MET's imported water, OC-32A, with a capacity of 10 cubic feet per second (cfs).

Multi-year droughts and record low rainfalls at CRA and SWP sources have impacted MET's water availability. MET continues to implement conservation measures and improve its storage methods to ensure long-term water needs are met for its customers. Despite not importing water from 2019-2021, the City considers imported water an essential potable water source to be used as a supplementary source to groundwater on an as-needed basis. Imported water is included in the City's projected water supply between 2025-2045 as shown in *Table 5*.

Recycled Water

The City sources recycled water from treated wastewater to satisfy non-potable water demands such as irrigation, and commercial and industrial process water per Title 22 requirements. Orange County Sanitation District (OCSD) treats and disposes of the City's wastewater and delivers the treated water to Orange County Water District (OCWD) with its treated water. OCWD further treats the water through its Green Acre Project (GAP) and Groundwater Replenishment System (GWRS). OCWD's GAP is a water recycling facility that provides recycled, non-potable water for irrigation and industrial demands. OCWD's GWRS is an advanced water treatment facility that produces potable water meeting state and federal drinking water standards. The treated water is used for groundwater recharge at various locations throughout Orange County, including as a seawater intrusion barrier into the OC Basin.

In FY 2019-2020, the City used 1,184 acre-feet (AF) of recycled water from OCWD's GAP which made up approximately 12% of the City's annual water supply. The GAP supplies the City with a valuable source of non-potable, recycled water to meet the City's landscape irrigation demands. Additionally, the GWRS ensures sustainable supply and quality of the Orange County Groundwater Basin which is the City's main drinking water source. The City's projected recycled water demand between 2025-2045 is displayed in *Table 5*.

Other Potential Sources of Water Supply

Water Transfers and Exchanges

In addition to the MET imported water interconnect, the City maintains two emergency connections to the surrounding agencies of Huntington Beach and Santa Ana. Each connection has the capacity to convey 1,500 gallons per minute (gpm), providing the City with 3,000 gpm in the event of an emergency. The City does not currently plan on any additional interconnections for water transfers and exchanges.

Water Storage and Distribution System

Water distribution within the Project area is provided by the Fountain Valley Water Division, who operates as a division of the Public Works Department. The City's water service area covers 9.87 square miles and contains 205-miles of distribution piping serving approximately 17,171 service connections. The City also maintains 6,000 isolating valves and 2,070 fire hydrants for fire protection and 2,020 backflow preventers for water quality protection.

The City operates two 5-million-gallon storage and distribution reservoirs. Reservoir No. 1 is located at Euclid Street and Ellis Avenue and Reservoir No. 2 is located in Cordata Park off Tanager Avenue. Reservoir capacity throughout the day is approximately 50%, which provides more than two days' average use with enough storage to accommodate peak demands and fire protection needs. The stored

water is distributed by seven booster pumps located at the reservoirs. With a total pumping capacity of 15,100 gpm, the pumps provide adequate water pressure throughout the distribution system.

Water Demand

This section summarizes the future potable and recycled water demands for the City. The descriptions below for the City’s water demand have been taken from the City’s 2020 UWMP, which provides a comprehensive assessment of past and future water demand separated by use-types for potable and recycled water. Future projections are provided in 5-year increments from 2025-2045. Projected water demand is equivalent to projected water supply as the City anticipates available water supplies to satisfy future water demands. This is achieved through improved water conservation methods and MWDOC’s ability to meet the demands of its agencies during normal, dry, and multiple dry years. If demand exceeds anticipated supply, additional water can be purchased from MET.

The following water demand projection is the summation of the City’s residential water demand, CII demands, large landscape recycled water demands, and water losses between 2025-2045.

Potable Water Demand

The City’s 2020 UWMP used demand factors based on water use per unit and a variety of growth-rate estimates for various land use sectors to determine anticipated demand. Demand factors for residential zones were based on the number of single family and multi-family units and were based on total water accounts for Commercial, Industrial, and Institutional/Government (CII) customers. *Table 7* shows the City’s 2020 actual water demand and projected potable demand between 2025-2045.

Table 7 Past and Projected Potable Water Use

Potable Water Use Type	Past Water Demand (AFY)	Projected Water Demand (AFY)				
	2020	2025	2030	2035	2040	2045
Residential ¹	5,261	5,325	5,240	5,181	5,092	5,093
Commercial	1,168	1,159	1,164	1,252	1,346	1,346
Industrial	228	227	228	245	263	263
Institutional/Governmental	824	817	821	883	949	949
Landscape ²	569	652	652	652	652	652
Losses	590	409	405	411	415	415
Other	46	-	-	-	-	-
Total	8,686	8,589	8,510	8,624	8,718	8,718

Source: City of Fountain Valley 2020 UWMP, table 4-3

¹Includes both single-family and multi-family residential water use

The future water demands displayed in *Table 7* indicate minimal new developments between 2025-2045. As the City is nearing full build-out, the average increase in potable water demand is approximately 1% every 5-years. As single-family and multi-family residential projected water demand

declines between 2025-2045 due to water conservation measures, the slight increase in overall City water demand can be attributed to CII uses. The decline in residential projected water demand is attributed minimal population growth and continued water conservation measures implemented within the City.

The plan to resume importing water into the City’s domestic water supply assumes a BPP of 85% for all years. The BPP determines the volume of groundwater that the City is allotted and is established annually. As previously stated in the *Water Supply – Groundwater* section, the City has been permitted by the OCWD to pump above their BPP over the past years to allow agencies affected by PFAS-impacted groundwater and seawater intrusion more access to MET imported water.

Recycled Water Demand

The City has no significant plans of expanding existing or constructing additional landscaped areas requiring recycled water use, therefore projected recycled water demand is stagnant between 2025-2045. *Table 8* displays the City’s projected recycled water demand.

Table 8 Past and Projected Recycled Water Demand

	2020	2025	2030	2035	2040	2045
Recycled Water Demand (AFY)	1,184	1,400	1,400	1,400	1,400	1,400

Source: City of Fountain Valley 2020 UWMP, Table 4-4

OCWD’s GAP will continue to supply and satisfy the City’s recycled water demands.

Water Loss

The City closely monitors water losses within its distribution system by performing annual water loss audits. The audits identify the various types of water losses and assist the City in determining how to mitigate losses. The City’s water losses were separated into three categories: real losses (e.g., leaks in mains and service lines), apparent losses (e.g., unauthorized consumption, metering inaccuracies, and data handling errors), and unbilled water (e.g., hydrant flushing, firefighting, and blow-off water from well start-ups). *Table 7* displays the City’s anticipated water losses between 2025-2045.

Dry Year Water Demand

This section discusses the reliability of the City’s water supply sources under ‘normal year’, ‘single dry year’, and ‘multiple dry year’ scenarios in 5-year increments through 2045. Recycled water is considered fully reliable under all scenarios and is not considered in the dry year demand analysis. Potable demand, on the other hand, will vary by the year type. The following analysis assumes local groundwater supplies are available to the City through OCWD at a BPP of 85%. Potable water demand that exceeds the allowable groundwater supply at a BPP of 85% will be supplemented with imported water through the City’s MET interconnect. *Table 9* summarizes the available water supply under ‘normal year’, ‘single dry year’ scenarios based on reported reliability percentages.

Normal Year Reliability

With groundwater providing the City with a sustainable supply of potable water and access to a supplementary supply of imported water from the MET, the UWMP concludes that future supply is available to meet anticipated demand in ‘normal year’ scenarios through 2045.

Single Dry Year Reliability

A 'single dry year' is defined as a single year of minimal to no rainfall within a period where average precipitation is expected to occur (UWMP, 2020). The 'single dry year' model projects a 6% increase for the Orange County Groundwater Basin. The City anticipates it will remain 100% reliable with the 6% demand increase. The increase in supply to satisfy the demand is attributed to MET's water reserves, the City's option to purchase additional MET water, and improved conservation methods.

Multiple Dry Year Reliability

The 'multiple dry year' scenario assesses the reliability to meet the City's water demand for five consecutive dry years, experiencing a 6% increase over the course of five years instead of one year as seen in the 'single dry year'. Even with the conservative demand increase, the City remains 100% reliable and can adequately meet the demands.

Table 9 Projected Water Supply and Demand without Project

Source	2025			2030			2035			2040			2045		
	Normal Year	Single Dry Year	Multiple Dry Years ¹	Normal Year	Single Dry Year	Multiple Dry Years ¹	Normal Year	Single Dry Year	Multiple Dry Years ¹	Normal Year	Single Dry Year	Multiple Dry Years ¹	Normal Year	Single Dry Year	Multiple Dry Years ¹
Total Supply (AFY)	9,989	10,588	10,588	9,911	10,505	10,505	10,024	10,625	10,625	10,118	10,725	10,725	10,118	10,725	10,725
Total Demand (AFY)	9,989	10,588	10,588	9,911	10,505	10,505	10,024	10,625	10,625	10,118	10,725	10,725	10,118	10,725	10,725
Difference (AFY)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Source: City of Fountain Valley 2020 UWMP, Table 7-4

¹ Multiple Dry Years scenario is assumed to be a repeat of a Single Dry Year (106% of projected normal year values) over the course of five consecutive years. The supply and demand of both scenarios is 106% of the Normal Year supply and demand.

Water Demand with Proposed Project

This section analyzes the City's future potable and recycled water demands including the proposed Project water demands. Future demands are provided in 5-year increments from 2025-2045. See the *Introduction – Estimated Water Demand for the Project* for the methodology used to determine the projected water demand for the Project.

Potable Water Demand with Project

Potable water demand from the previous section was used in conjunction with the Project's potable water demand to determine the City's adjusted potable water demand with the inclusion of the Project. The anticipated increase of the City's annual potable water demand from the Project is approximately 162,654 gpd, or 182.21 AFY.

The City's 2020 UWMP accounts for approximately 1,000 AFY of imported potable water from MET through MWDOC from 2025 – 2045. If MWDOC permits the City to pump groundwater above their BPP from their wells located outside of PFAS impacted areas, this allows previously planned imported water to be supplemented to satisfy the increase in demand from the Project.

Per the City's 2020 UWMP, and confirmed in the MET 2020 UWMP and MWDOC 2020 UWMP, the City's imported water is available to close any potable local, groundwater supply gap. It is assumed that the City has the supply capacity to satisfy the increased demand in potable water as result of the Project. The City can supplement the adjusted demand with groundwater, if allowed to continue pumping above the BPP, or increase the imported water supply from the MET through MWDOC's purchase agreement with MET which has substantial room to accommodate new developments.

Based on conversations between Kimley-Horn and Alex Heide, MWDOC Senior Water Resource Analyst, MWDOC has purchase agreement with MET that allows them to purchase water form the MET at a set price. MWDOC can exceed that limit, though at a higher cost. MDWOC indicated that there is substantial capacity within that purchase agreement to accommodate new developments within MWDOC member agencies, including the City of Fountain Valley. The 2020 MET UWMP indicates sufficient capacity to satisfy their member agencies' purchase agreements, including MWDOC purchase agreement. *Appendix A* includes email correspondence between Kimley-Horn and Alex Heide.

Recycled Water Demand with Project

The Project proposes a recycled water demand of 4,110 gpd, or 4.60 AFY, as shown in *Table 4*. The City only uses recycled water for large, landscaped areas such as parks and golf courses and is not planning on expanding to any large landscape applications, resulting in sufficient supply of City recycled water to meet the demand of the Project and does not require an increase in City supply from OCWD. The City's anticipated increase in recycled water demand from 1,184 AFY to 1,400 AFY as shown in *Table 8* will accommodate the Project's recycled water demand.

Dry Year Water Demand with Project

Dry year analyses were also performed with projected Project water demands to determine the City's water supply reliability with the increase in demand. This section discusses the reliability of the City's water supply sources under 'normal year', 'single dry year', and 'multiple dry year' scenarios in 5-year increments through 2045. The following analysis assumes local groundwater supplies are available to the City through OCWD at a BPP of 85%. Potable water demand that exceeds the allowable groundwater

supply at a BPP of 85% will be supplemented with imported water through the City's MET interconnect. *Table 10* summarizes the City's available water supply under 'normal year', 'single dry year', and 'multiple dry years' scenarios with the Project total water demands included. For a description of the different scenarios, see *Water Demand – Dry Year Water Demand*.

MET has taken numerous steps to ensure its member agencies, including MWDOC, have adequate supplies. The water supplies available to MWDOC, and as a result the City, are projected to meet full-service demands based on the City's, MWDOC's, and the MET's 2020 UWMPs through 2045 during normal year, single dry year, and five consecutively dry years.

Table 10 Projected Water Supply and Demand with Project

Source	2025			2030			2035			2040			2045		
	Normal Year	Single Dry Year	Multiple Dry Years ¹	Normal Year	Single Dry Year	Multiple Dry Years ¹	Normal Year	Single Dry Year	Multiple Dry Years ¹	Normal Year	Single Dry Year	Multiple Dry Years ¹	Normal Year	Single Dry Year	Multiple Dry Years ¹
Total Supply (AFY)	10,171	10,770	10,770	10,093	10,687	10,687	10,206	10,807	10,807	10,300	10,907	10,907	10,300	10,907	10,907
Total Demand (AFY)	10,171	10,770	10,770	10,093	10,687	10,687	10,206	10,807	10,807	10,300	10,907	10,907	10,300	10,907	10,907
Difference (AFY)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Source: City of Fountain Valley 2020 UWMP, Table 7-4

¹ Multiple Dry Years scenario is assumed to be a repeat of a Single Dry Year (106% of projected normal year values) over the course of five consecutive years. The supply and demand of both scenarios is 106% of the Normal Year supply and demand.

Meeting Dry Year Potable Demands

This section expands on the available options that may need to be implemented by the City in order to reconcile any short falls in supply that may occur during any of the dry year scenarios described in the previous section of this report.

Water Shortage Contingency Plan

It is critical that during dry years, especially extreme drought conditions, the City implements continued preventive actions and demand-reducing measures to its customers. While water efficiency measures and voluntary conservation should be maintained at all times, the City has the right to implement strict demand-reducing measures with potential penalties during extreme dry conditions to ensure water security for essential needs within its service area. This section summarizes Section 8 of the 2020 UWMP, titled Water Shortage Contingency Planning. For more detailed information on the City’s approach to mitigating supply deficits and water shortages, please refer to the UWMP and the City’s 2020 Water Shortage Contingency Plan (WSCP) for further detail.

Water shortages may occur due to several reasons such as population growth, climate change, drought, and natural disasters. The WSCP addresses the necessary steps for the City to take in the event of a water shortage. The WSCP outlines six measures that the City will take for water shortage percentages ranging from 10%-50%. The six shortage levels are summarized in *Table 11*.

Table 11 Water Shortage Levels

Shortage Level	Percent Shortage Range	Shortage Response Actions
1	Up to 10%	The City identifies the need for consumer water demand reduction up to 10%. The City shall implement Level 1 conservation/demand management measures in accordance with the City’s Water Conservation Ordinance and notify customers according to the City’s WSCP.
2	11% to 20%	The City identifies the need for consumer water demand reduction up to 20%. The City shall implement Level 2 conservation/demand management measures in accordance with the City’s Water Conservation Ordinance and notify customers according to the City’s WSCP.
3	21% to 30%	The City identifies the need for consumer water demand reduction up to 30%. The City shall implement Level 3 conservation/demand management measures in accordance with the City’s Water Conservation Ordinance and notify customers according to the City’s WSCP.
4	31% to 40%	The City identifies the need for consumer water demand reduction up to 40%. The City shall implement Level 4 conservation/demand management measures in accordance with the City’s Water Conservation Ordinance and notify customers according to the City’s WSCP.
5	41% to 50%	The City identifies the need for consumer water demand reduction up to 50%. The City shall implement Level 5 conservation/demand management measures in accordance with the City’s Water Conservation Ordinance and notify customers according to the City’s WSCP.

6	Over 50%	<p>A Level 6 Water Supply Shortage, also known as an “Emergency” shortage, exists when the City determines there is a water supply shortage emergency and identifies the need for a consumer demand reduction of greater than 50%. The City shall implement Level 6 conservation/demand management measures in accordance with the City’s Water Conservation Ordinance and notify customers according to the City’s WSCP. Any and all measures necessary to meet basic health and safety needs shall be undertaken, while all other water uses shall be significantly reduced or prohibited.</p>
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Source: City of Fountain Valley 2020 Water Shortage Contingency Plan

Findings

In summary, this WSA determines that there is sufficient water supply to meet the Project demands for all scenarios up to 2045. The analysis assumes a groundwater supply based on an 85% BPP, with remaining demand met by imported water from MET through MWDOC. The MET’s commitment to the region is to provide its service area with adequate supplies to meet expanding and increasing needs in the years ahead, allowing any member agency to purchase an unspecified amount. This approach ensures the City of Fountain Valley can meet its water needs under various conditions.

If the City is allowed by OCWD to pump above the 85% BPP, the demand for imported water will decrease, further securing the City’s water supply.

Additionally, the projected recycled water demand for the Project fits within the City’s anticipated water supply up to 2045. The combination of local potable and recycled water sources, along with strategic use of imported water, provides a reliable framework to meet in the increase in demands from the Project.

Appendix A Correspondence with Alex Heide, MWDOC Senior Water Resource Analyst

Wuellner, Sam

From: Alex Heide <AHeide@mwdoc.com>
Sent: Tuesday, July 2, 2024 10:29 AM
To: Wuellner, Sam
Subject: RE: [EXTERNAL] Euclid & Heil WSA (City of Fountain Valley)
Attachments: 08162021 WPS 6c Presentation.pdf; Laguna Declaration.pdf

Categories: External

Hi Sam,

No problem. Linked [here](#) is our Board packet from 2015, where we authorized entering into a purchase order with both OCWD and Metropolitan (Item #8).

Purchase Orders allow agencies to stay within Metropolitan's Tier 1 for their supply rate, which is substantially cheaper than their Tier 2 supply rate.

Due to a variety of reasons, including droughts and overall decreased demands from water conservation. MWDOC is barely hitting our Purchase Order Commitment, meaning that we have substantial capacity to increase demands within our Tier 1 allotment.

To be clear, this is all about pricing and has very little to do with fountain valley's ability to pull more water. They can continue to take deliveries, even if we were in Tier 2, it would just be at a higher cost.

Some additional things that may help:

I've attached a presentation on preferential rights, which each member agency of Metropolitan has. Its essentially a right of first refusal to take water supplies. Its a very complicated framework, and doesn't exactly constitute a water right, but it essentially gives MWDOC the ability to purchase a pro-rata share of Metropolitan's supplies in any given year. MWDOC currently stands at 12.05%, which gives us substantive capacity to purchase additional supplies.

Lastly, I've attached the laguna declaration which is a formal policy adopted by Metropolitan. This is MET's commitment to the region to provide "its service area with adequate supplies of water to meet expanding and increasing needs in the years ahead". This is the policy that allows any member agency to purchase an unspecified amount.

Hopefully these help.



Alex Heide
Sr. Water Resources Analyst
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A: [18700 Ward Street, Fountain Valley, CA 92708](https://www.mwdoc.com/18700-Ward-Street-Fountain-Valley-CA-92708)



From: Wuellner, Sam <Sam.Wuellner@kimley-horn.com>
Sent: Tuesday, July 2, 2024 9:51 AM

To: Alex Heide <AHeide@mwdoc.com>
Subject: [EXTERNAL] Euclid & Heil WSA (City of Fountain Valley)

Hi Alex,

It was great chatting with you on the phone. Thank you for answering my questions!

Could you please share the purchase order we discussed that indicates MWDOC has substantial water supply from MWD to meet the development demands in Fountain Valley? That would be a helpful reference in my WSA.

Thanks,

Sam Wuellner
Kimley-Horn | 401 B St, Suite 600, San Diego, CA 92101
Direct: 619 821 1360 | Main: 619 234 9411

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