

Appendix 5.10-2 Water Supply Assessment

Appendices

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April 2020

Water Supply Assessment Westminster Mall Specific Plan

for City of Westminster

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1. Introduction

1.1 INTRODUCTION

This Water Supply Assessment (WSA) has been prepared for the City of Westminster to meet the requirements of Senate Bill (SB) 610. The water demand for the Westminster Mall Specific Plan (“proposed project”) is calculated and the adequacy of water supplies to meet the proposed land use changes, in addition to the future water demand of the rest of the City, is evaluated.

SB 610 established the legal standards for assessing the sufficiency of water supplies for new development projects. As part of the environmental review conducted for a qualifying project pursuant to the California Environmental Quality Act (CEQA), the public water supplier– in this case the City of Westminster – must prepare a WSA that documents “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.”¹

Under Water Code Section 10912, WSAs are required to be prepared if the project meets certain criteria. The proposed project meets the following criteria:

- A proposed residential development of more than 500 dwelling units
- A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space
- A mixed-use project that includes one or more of the projects specified in this subdivision.

The proposed project will be a mixed-use project with more than 500 dwelling units and more than 500,000 square feet of floor space and therefore meets the criteria for preparation of a WSA. Further details regarding the project are provided in Section 1.2.

References used in preparing this document include the following:

- City of Westminster, 2016. *2015 Urban Water Management Plan (UWMP)*. Prepared by Arcadis. Dated May 2016.
- City of Westminster, 2019. *Water Master Plan*. Prepared by Richard Brady & Associates. Dated October 2019.

¹ California Water Code Section 10910(c)(3).

- The Municipal Water District of Orange County (MWDOC), 2016. *2015 Urban Water Management Plan*. Prepared by Arcadis for MWDOC. Dated May 2016.
- Orange County Water District, 2019. *2017-2018 Engineer’s Report on the Groundwater Conditions, Water Supply and Basin Utilization on the Orange County Water District*. Prepared by the Orange County Water District.
- Fuscoe Engineering, April 8, 2020. *Westminster Mall Specific Plan Infrastructure Technical Report for Hydrology, Sewer, Water, and Water Quality*
- Fuscoe Engineering, 2016. *Westminster General Plan Update Infrastructure Technical Report*. Dated April 11, 2016.

1.2 SITE LOCATION AND PROJECT DESCRIPTION

The project site is located within the City of Westminster. The site covers 100 acres and is bounded by Interstate 405 (I-405) to the north and east, Edwards Street to the west, Bolsa Avenue to the south, and Goldenwest Street to the east. Regional location and local vicinity maps are provided in Figure 1, *Regional Location Map* and Figure 2, *Local Area Map*, respectively.

The project site currently contains an operational mall. The mall covers approximately 1,360,000 square feet and consists of retail stores, major department stores and restaurants.

The proposed Westminster Mall Specific Plan would accommodate a variety of mixed retail, professional office, hotel, and residential development (which would vary in housing type and affordability). A maximum of 3,000 dwelling units, 425 hotel rooms, 1.2 million square feet of non-residential uses (retail and office) are proposed for the site. Table 1, Existing and Proposed Land Use Development, shows the existing mall configuration and the proposed number of dwelling units, hotel rooms, and retail and office space. Also included are the existing and proposed landscaping acreage, which are included in the water demand calculations.

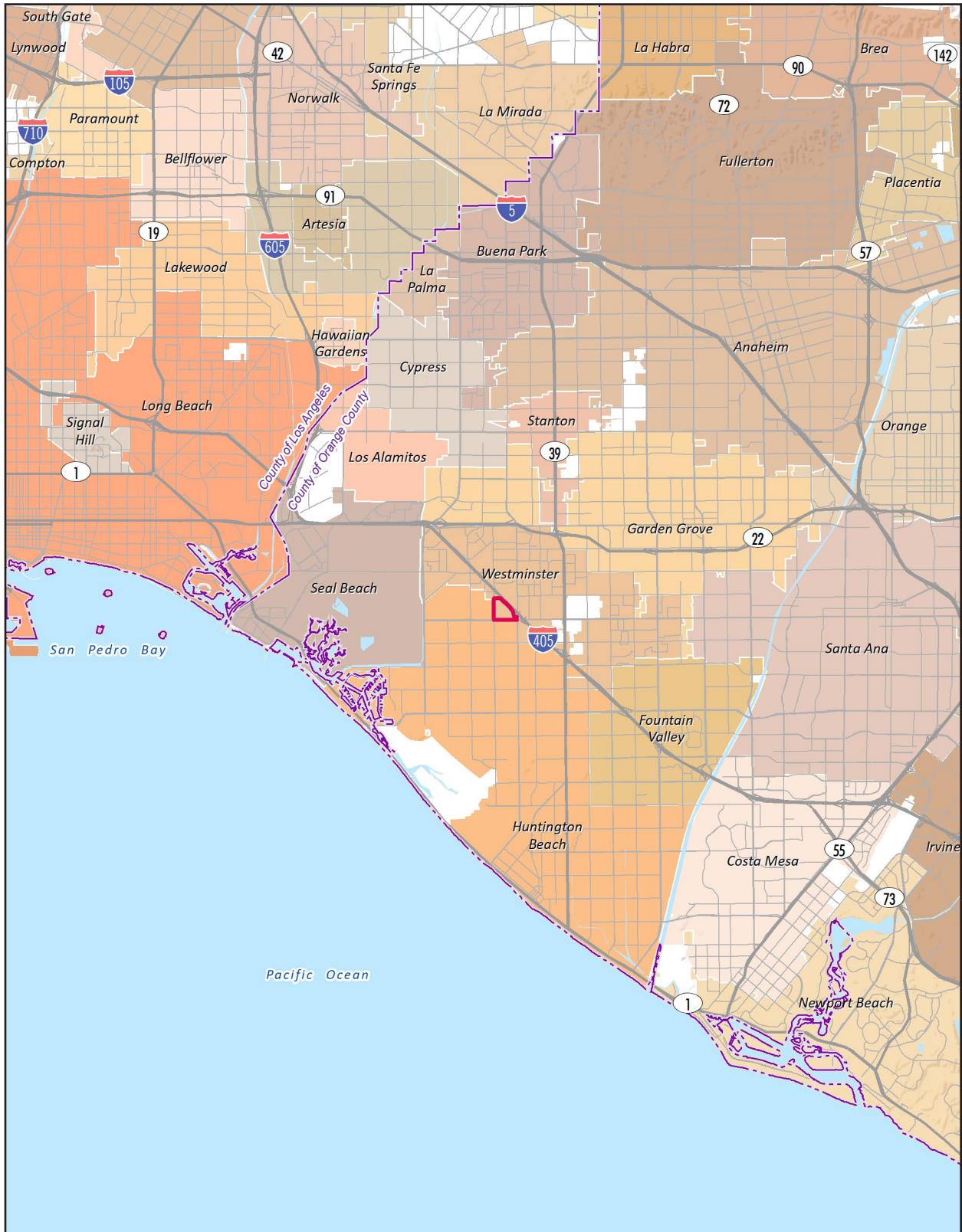
Table 1 –Existing and Proposed Project Development

Land Use Designation	Existing DU	Proposed DU	Existing Hotel Rooms	Proposed Hotel Rooms	Existing SF	Proposed SF
Retail	-	-	-	-	1,360,000	1,020,000
Office	-	-	-	-	-	180,000
Hotel	-	-	-	425	-	-
Multi-Family Residential	-	3,000	-	-	-	-
Landscaping	-	-	-	-	319,614	381,150

Notes: DU – Dwelling Unity, SF - Square Feet

The Westminster Specific Plan is a long-term plan used to guide future land use, mobility, and design as the Mall is converted into a mixed-use site. Future development may occur in phases over a period of months or years, as different property owners have different perspectives and timelines.

Figure 1 - Regional Location Map



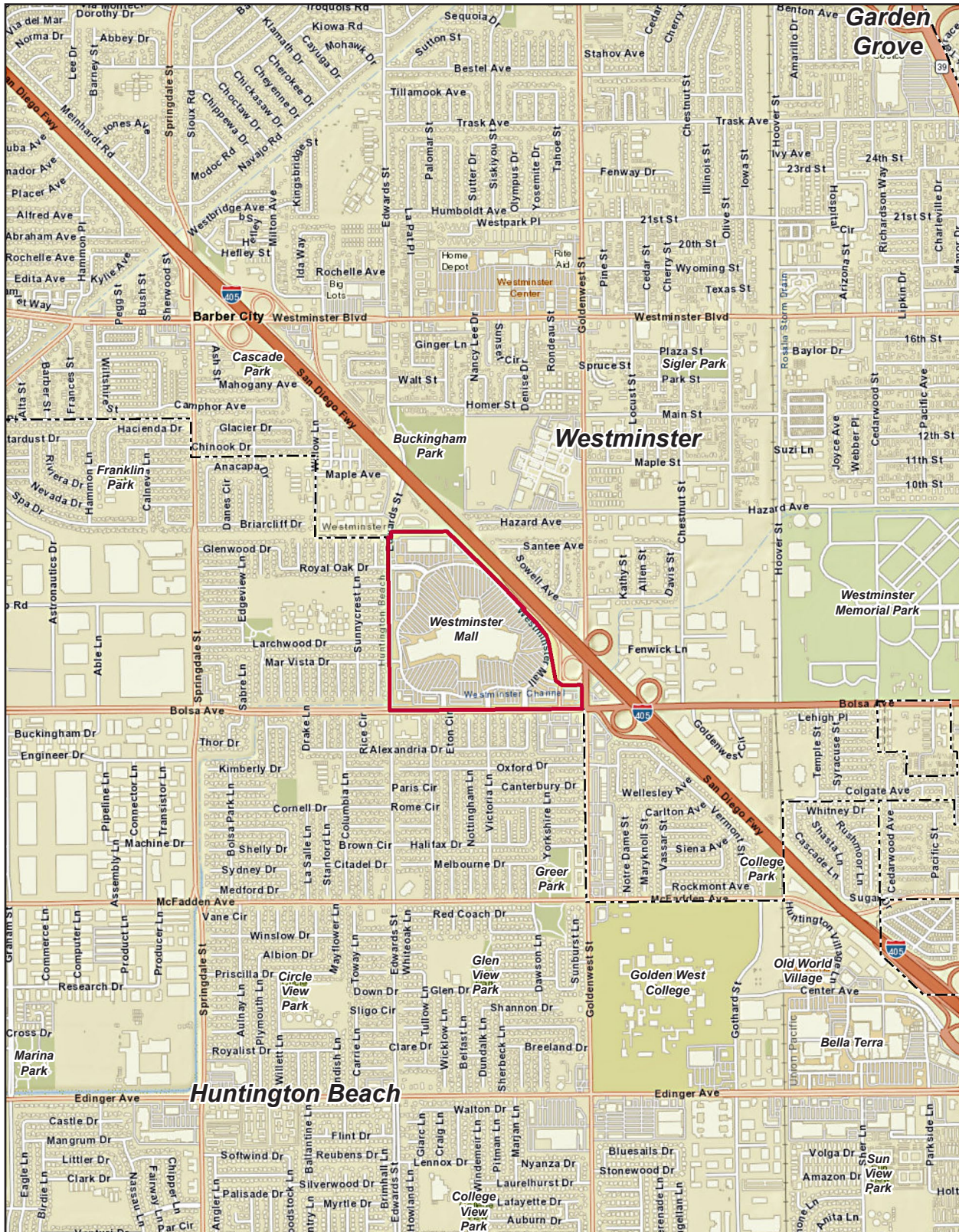
— Westminister Mall Specific Plan

Note: Unincorporated county areas are shown in white.
Source: ESRI, 2019



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Figure 2 - Local Area Map



— Westminister Mall Specific Plan

- - - City Boundary



Source: ESRI, 2019

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2. Water Supply Assessment

2.1 WATER PURVEYOR

The City of Westminster provides water to residents, businesses, and other users in the City, including the project site. The City receives its water from two main sources: 1) groundwater from the Orange County Groundwater Basin, which is managed by the Orange County Water District (OCWD), and 2) imported surface water from the Municipal Water District of Orange County (MWDOC). MWDOC is Orange County's wholesale supplier and is a member agency of the Metropolitan Water District of Southern California (MWD). There are currently no recycled water uses within the City's service area and there is no source of recycled water supply in proximity to the City. Therefore, there are no current plans to provide recycled water in the near future.

The City currently owns and operates 10 active groundwater wells, a 16 million gallon storage facility that consists of two eight-million gallon storage tanks, and four booster pumps, each with a 3,100 gallons per minute (gpm) capacity.² As of 2017, the City provided water to 24,781 connections.

Currently, approximately 75 to 80 percent of the City's water comes from the 10 groundwater wells located within the City boundaries. The City also maintains three import connections to supplement the local groundwater supply. These connections are used primarily during the summer months or in an emergency. These three connections can supply a total of approximately 11,900 gallons per minute (gpm).³

Although the 2015 UWMP states that the City's total demand was 11,622 acre-feet per year (AFY), the recently published 2019 Westminster Water Master Plan states that the City has experienced lower per capita water use from 2015 to 2017 due to economics, water conservation measures, and water use education.⁴ As a result, the estimated water usage for the City for 2017 was 9.2 million gallons per day, or 10,305 AFY. Approximately 74 percent of the demand was residential and 18 percent was non-residential, with 6 percent of the water demand for landscaping. According to the 2015 UWMP, the total water demand in the year 2040 is projected to be 12,527 AFY.⁵

It is required that every urban water supplier assess the reliability to provide water service to its customers under normal, single dry, and multiple dry years. As discussed in the City's Urban Water Management Plan (UWMP), the City is capable of meeting the water demands of its customers in normal, single dry, and multiple dry years between 2015 and 2040.

² City of Westminster, 2019. Water Master Plan. Prepared by Richard Brady & Associates.

³ City of Westminster, 2019. Water Master Plan. Prepared by Richard Brady & Associates

⁴ City of Westminster, 2019. Water Master Plan. Prepared by Richard Brady & Associates

⁵ City of Westminster, 2015 Urban Water Management Plan. Prepared by Arcadis.

2.2 LEGAL REQUIREMENTS

SB 610 established the primary legal standards for assessing the sufficiency of water supplies for new development projects. Affected land developments are those that meet certain size thresholds. As discussed previously in Section 1.1, the proposed project meets the threshold for a proposed residential development with more than 500 dwelling units. The proposed project also meets the threshold for a proposed shopping center or business establishment having more than 500,000 square feet of floor space. It also meets the threshold for a mixed-use project that includes one or more of the project components specified above. Therefore, the proposed project, as described in Section 1.2, meets the criteria for preparation of a WSA.

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.” In the following sections, this WSA estimates the additional water demand as a result of implementation of the proposed Westminster Mall Specific Plan. The WSA also estimates the future water demands of the City with the proposed buildout described in the General Plan Update and documents if there are sufficient water supplies to meet these demands over the next 20 years.

The WSA must include additional analysis if any portion of the water purveyor's water supplies include groundwater. The analysis must include a description of any groundwater basin or basins from which the proposed project will be supplied in addition to a detailed description and analysis of the amount and location of groundwater pumped by the public water system for the past five years. The WSA must also include an analysis of the sufficiency of the groundwater from the basin or basins from which the proposed project will be supplied to meet the projected water demand associated with the proposed project.

Upon adoption, the WSA is incorporated into the CEQA document being prepared for the project, and the lead agency must determine, based on the entire record, whether projected water supplies will be sufficient to satisfy demands for the project, in addition to existing and future uses.⁶

2.3 WATER DEMAND ANALYSIS

As per Section 10910 (c) (2) of the California Water Code:

“if the projected water demand associated with the proposed project was accounted for in the most recently adopted urban water management plan, the public water system may incorporate the requested information from the urban water management plan in preparing the elements of the assessment required to comply with subdivisions (d), (e), (f), and (g).”

Although the proposed land use changes for the Westminster Mall and the other five planned mixed-use redevelopment projects were included in the City’s General Plan Update, the General Plan Update was prepared

⁶ California Water Code Section 10910 (b) and (c).

after the preparation and publication of the City’s 2015 UWMP. Therefore, the changes in land use and water demand were not included in the UWMP but have been characterized and analyzed in the following sections.

2.3.1 City of Westminster Water Demands

The primary source of water for the proposed project would be existing water supplies provided by the City to its customers. The current water supply consists primarily of groundwater from ten City wells (75 to 80 percent) supplemented by imported water purchased through MWDOC.

Based on the City’s 2015 UWMP, the current and projected potable water demands by customer class are presented in Table 2. The City’s total 2015 demand was 11,622 AFY. The projected 2040 potable water demand is 12,527 AFY. As noted previously, these water demands likely overestimate actual water usage within the City, as indicated in the City’s 2019 Water Master Plan. Based on metered data, the 2017 water demand for the City was determined to be 9.2 million gallons/day, or 10,305 AFY.⁷ With future water conservation efforts and water-efficient fixtures in accordance with CalGreen new building codes, the future water demand is likely to be lower than these listed amounts.

Table 2 – Current and Projected Potable Water Demands for the City of Westminster (AFY)

Use Type	2015	2020	2025	2030	2035	2040
Single Family	5,645	5,623	6,036	6,077	6,076	6,085
Multi-Family	2,602	2,592	2,782	2,801	2,801	2,805
Commercial	2,062	2,054	2,205	2,220	2,219	2,223
Industrial	273	272	292	294	294	294
Landscape	773	770	827	832	832	832
Other	267	266	285	287	287	288
Total	11,622	11,577	12,427	12,512	12,509	12,527

AFY = Acre-feet/year⁵⁰⁹

Source: City of Westminster 2015 UWMP, 2016.

2.3.2 Existing and Proposed Project Water Demands

The proposed project consists of an approximately 100-acre mixed-use redevelopment within the boundaries of the existing Westminster Mall. Buildout of the Specific Plan would include 3,000 dwelling units, 425 hotel rooms, and 1,200,000 square feet of retail and office uses. The proposed development would connect to the City’s water main for domestic water use. The project site currently contains an operational mall with 1,360,000 square feet of retail space.

2.3.2.1 EXISTING WATER DEMAND

The indoor water demand factor for the existing mall was calculated using the water demand rate of 1,500 gallons per day per acre for commercial land use, as specified in the City’s 2019 Water Master Plan Update.

⁷ City of Westminster, 2019. Water Master Plan Update. Prepared by Richard Brady & Associates.

Outdoor water use for landscaping was calculated using the Estimated Total Water Use (ETWU) methodology, as described in the 2020 Fuscoe Westminster Mall Specific Plan Infrastructure Technical Report. Annual irrigation demands are based on the ETWU equation:

$$Demand = \frac{ETo \times Plant \text{ Factor} \times Landscaped \text{ Area (SF)} \times 0.62}{Irrigation \text{ Efficiency}}$$

The Fuscoe Report used an evapotranspiration factor (Eto) of 49.7 inches per year, a plant factor of 0.7, and an irrigation efficiency of 0.81 for existing condition.⁸ The areal extent of landscaping was determined by Fuscoe based on aerial imagery. Table 3 shows the total water demand estimate for the existing mall.

Table 3 – Existing Water Demand

Land Use	Units	Water Demand Rate	Total Water Usage (gal/day)
Retail	31.22 ac (1,360,000 SF)	1,500 gpd/ac	46,832
Landscaping	319,614 SF	-	23,318
Total			70,150

The existing water demand for the Westminster Mall is estimated to be approximately 70,150 gallons/day or 78.6 AFY. This correlates well with the reported water usage of 64.8 gallons per minute (gpm) for Westminster Mall in 2017, as reported in the City’s Water Master Plan Update. Assuming water usage at the Mall for up to 18 hours per day, this equates to 69,984 gallons/day, which is very similar to the calculated water demand for existing conditions.

2.3.2.2 PROPOSED WATER DEMAND

The indoor water demand for the proposed project was calculated, using the commercial water use factor of 1,500 gpd and multi-family residential of 59 gallons per capita per day from the 2019 City’s Water Master Plan Update. The number of people per unit (3.14 people for the 3-story rowtown, 2.78 people for the 4-6 story wrap, and 2.42 people for the 8-10 story podium) was taken from Chapter 3 of the Westminster Mall Specific Plan DEIR (Table 3-3). The hotel water demand factor of 125 gallons/day/room was based on meter records from hotels in Anaheim that recorded average inside water demands of 125 gpd/room and 111 gpd/room. The larger number was used in these calculations to be conservative. The water demand for landscaping was calculated by multiplying the proposed irrigated area for the Westminster Mall Specific Plan by the ETWU equation described in Section 2.3.2.1.

Table 4 – Proposed Water Demand

Land Use	Units	Water Demand Rate	Total Water Usage (gal/day)
Retail/Office	27.55 ac (1,200,000 SF)	1,500 gpd/ac	41,323

⁸ Fuscoe Engineering, April 8, 2020. *Westminster Mall Specific Plan Infrastructure Technical Report for Hydrology, Sewer, Water, and Water Quality.*

Table 4 – Proposed Water Demand

Land Use	Units	Water Demand Rate	Total Water Usage (gal/day)
Residential - 3-Story Rowtown	942 residents ^a (300 DU)	59 gpcd	55,578
Residential - 4-6 Story Wrap	3,336 residents ^a (1,200 DU)	59 gpcd	196,824
Residential - 8-10 Story Podium	3,630 residents ^a (1,500 DU)	59 gpcd	214,170
Hotel	425 Rooms	125 gpd/room ^c	53,125
Landscaping	381,147 SF	-	27,808 ^b
Total			588,828

Source: City of Westminster Water Master Plan, 2019. Fuscoe Engineering, Westminster Mall Specific Plan Infrastructure Technical Report for Hydrology, Sewer, Water, and Water Quality, 2020. PlaceWorks, Westminster Mall Specific Plan Draft Environmental Impact Report, 2020..

^a Conversion rates are from Chapter 3 of the Westminster Mall Specific Plan Draft Environmental Impact Report for and are as follows:

3-Story rowtown: 3.14 people per unit;
4-6 Story wrap: 2.78 people per unit;
8 – 10 story podium: 2.42 people per unit.

^b From Appendix B of the Westminster Mall specific Plan Infrastructure Report

^c Based on meter data from hotels in Anaheim that recorded average indoor water usage of 125 gpd/room and 111 gpd/room. The higher number was used to be conservative.

Notes:

gpcd = Gallons per capita per day

gpd/ac = Gallons per day per acre

DU = Dwelling Unit

SF = square feet

As shown in Table 4, the total water demand for the proposed project is estimated to be 588,828 gal/day (660 AFY). The increase in water demand is 518,678 gal/day (581 AFY). This increase is driven by the proposed residential land use. These results are conservative because they do not account for the 20% reduction in water use with new construction, as per CALGreen Building Code Standards, and the reduction in outdoor water use per the City’s Landscape Standards, as specified in Municipal Code Chapter 17.310.

2.4 WATER SUPPLY ANALYSIS

This section identifies the sources of water used by the City of Westminster and evaluates the water supplies that could be used by the City and the proposed project during normal, single dry, and multiple dry years through the year 2040.

The City relies on a combination of imported water and local groundwater to meet its water needs. The City works together with MWDOC and OCWD to ensure a safe and reliable water supply that will continue to serve the community in periods of drought and shortage. The sources of imported water supplies include the Colorado River and the State Water Project (SWP), which is provided by the Metropolitan Water District (MWD) and delivered by MWDOC.

The City’s main source of water supply is groundwater from the Orange County Groundwater Basin. Currently, approximately 75 to 80 percent of the City’s water comes from the 10 groundwater wells located within the City boundaries. The imported water is supplied through three connections and is primarily used as supplemental water during the summer months or in an emergency. This supply mix is expected to remain consistent through 2040. Projected water supplies provided to the City are summarized in Table 4.

Table 4– Water Supply Sources for the City of Westminster

Water Source	2020	2025	2030	2035	2040
Groundwater	8,104	8,699	8,758	8,756	8,769
Imported Water	3,473	3,728	3,754	3,753	3,758
Total	11,577	12,427	12,512	12,509	12,527

Source: City of Westminster, 2016. 2015 Urban Water Management Plan
AFY = Acre-feet per year

It is required that every urban water supplier assess the reliability to provide water service to its customers under normal, dry, and multiple dry water years. The City depends on a combination of imported and groundwater supplies to meet its water demands and has taken numerous steps to ensure that it has adequate supplies. Water supplies available to the City are projected to meet full-service demands. The UWMP states that the City will be able to meet with projected supplies between 2020 and 2040 during normal years, single dry years, and multiple dry years (see Table 5).⁹

Table 5 – Normal, Single Dry, and Multiple Dry Year Supply and Demand (AFY)

	2020	2025	2030	2035	2040	
Normal Year						
Supply Totals	11,577	12,427	12,512	12,509	12,527	
Demand Totals	11,577	12,427	12,512	12,509	12,527	
Difference	0	0	0	0	0	
Single Dry Year						
Supply Totals	12,272	13,173	13,263	13,260	13,279	
Demand Totals	12,272	13,173	13,263	13,260	13,279	
Difference	0	0	0	0	0	
Multiple Dry Year						
First Year	Supply Totals	12,272	13,173	13,263	13,260	13,279
	Demand Totals	12,272	13,173	13,263	13,260	13,279
	Difference	0	0	0	0	0
Second Year	Supply Totals	12,272	13,173	13,263	13,260	13,279
	Demand Totals	12,272	13,173	13,263	13,260	13,279
	Difference	0	0	0	0	0
Third Year	Supply Totals	12,272	13,173	13,263	13,260	13,279
	Demand Totals	12,272	13,173	13,263	13,260	13,279
	Difference	0	0	0	0	0

Source: City of Westminster 2015 UWMP, 2016.

Table 5 reflects a 6 percent increase in water demand during single and multiple dry years. As documented in the 2015 UWMP, the City is able to meet all customers’ demands with significant reserves held by MWD, local groundwater supplies, and conservation measures in multiple dry years from 2020 to 2040. Table 5 shows that

⁹ City of Westminster, 2016. 2015 Urban Water Management Plan. Prepared by Arcadis.

the water demand would increase from 11,577 AFY to 12,272 AFY in 2020 under drought conditions and would increase from 12,527 AFY to 13,279 AFY under drought conditions in 2040.

For normal years, the City has entitlements to receive imported water from MWD, which is delivered by MWDOC via connections to MWD's regional distribution system. Although pipeline and connection capacity rights do not guarantee the availability of water, per se, they do guarantee the ability to convey water when it is available to the MWD distribution system. All imported water supplies are assumed available to the City from existing water transmission facilities.

The supplies also include local groundwater supplies that are available to the City through OCWD by a pre-determined pumping percentage. For single dry and multiple dry years, the City would supplement a demand increase of six percent from normal demand with significant reserves held by MWD, local groundwater supplies, and conservation.¹⁰

2.4.1 Surface Water Analysis

Imported surface water represents approximately 20 to 25 percent of the City's total water supply. The principal sources of water are the Colorado River via the Colorado River Aqueduct (CRA) and the Lake Oroville watershed in Northern California through the State Water Project (SWP). The raw water obtained from these sources is treated locally at the Robert B. Diemer Filtration Plant located north of Yorba Linda. Typically, the Diemer Filtration Plant receives a blend of Colorado River water from Lake Mathews through the Metropolitan Lower Feeder and SWP water through the Yorba Linda Feeder.

MWD provides imported water supplies to the City through its member agency, MWDOC. MWD is the wholesale water agency that serves supplemental imported water from the Colorado River and SWP to its 26 member agencies in Los Angeles, Orange, Riverside, San Bernardino, San Diego, and Ventura Counties. The Colorado River was MWD's original source of water after MWD's establishment in 1928. The CRA, which is owned and operated by MWD, transports water from the Colorado River to its terminus at Lake Mathews in Riverside County. The actual amount of water per year that may be conveyed through the CRA to MWD's member agencies is subject to the availability of Colorado River water for delivery.

The SWP transports Feather River water stored in and released from Oroville Dam and conveyed through the Bay-Delta, as well as unregulated flows diverted directly from the Bay-Delta south via the California Aqueduct. The SWP consists of a series of pump stations, reservoirs, aqueducts, tunnels, and power plants operated by the Department of Water Resources (DWR). This statewide water supply infrastructure provides water to 29 urban and agricultural agencies throughout California.¹¹

Through the 1996 Integrated Resources Plan and subsequent updates, MWD has worked toward identifying and developing water supplies to provide 100 percent reliability. MWD has recently increased its ability to supply water, particularly in dry years, through implementation of storage and transfer programs.

¹⁰ City of Westminster, 2016. 2015 Urban Water Management Plan. Prepared by Arcadis.

¹¹ California Department of Water Resources, July 1, 2015. State Water Project Delivery Capability Report 2015.

MWDOC was formed in 1951 to provide imported water to much of Orange County. MWDOC is the second largest member agency of MWD, providing imported water to 30 retail water agencies and cities. Imported water represents approximately 35 percent of the total water supply within the MWDOC service area. MWDOC and its retail agencies work together to improve the water reliability within the service area by developing additional local supplies and by implementing water use efficiency programs. According to the MWDOC's 2015 UWMP, MWDOC has the capacity to meet demands under normal, single dry, and multiple dry years through the year 2040.¹²

2.4.2 Groundwater Analysis

Since most of the potable water supplied by the City comes from groundwater, SB610 requires a groundwater analysis to be included as part of the WSA. The Water Code requires that the WSA include:

- Groundwater information from the 2015 UWMP
- Groundwater basin description, including the legal rights to pump
- Historic use of groundwater from the 2015 UWMP
- Projected use of groundwater
- Sufficiency of groundwater

2.4.2.1 GROUNDWATER INFORMATION FROM THE 2015 UWMP

The City's 2015 UWMP prepared by Arcadis and adopted by the City in June 2016, contains a description of the Orange County (OC) Groundwater Basin, the reliability of the groundwater supply, the MWD groundwater replenishment program, groundwater recharge facilities, the MWD Conjunctive Use Program with OCWD, groundwater historical extraction, and a discussion of overdraft conditions.

2.4.2.2 GROUNDWATER BASIN DESCRIPTION

The OC Groundwater Basin underlies the northerly half of Orange County and is managed by OCWD. It covers an area of approximately 350 square miles bordered by the Coyote and Chino Hills to the north, the Santa Ana Mountains to the northeast, and the Pacific Ocean to the southwest. The OC Groundwater Basin boundary extends to the Orange County-Los Angeles Line to the northwest, where groundwater flows across the county line into the Central Groundwater Basin of Los Angeles County.

The OCWD was formed in 1933 by a special legislative act of the California State Legislature to manage the OC Groundwater Basin. Groundwater levels are managed within a safe basin operating range to protect the long-term sustainability of the OC Groundwater Basin and to protect against land subsidence. OCWD regulates groundwater levels in the OC Groundwater Basin by regulating the annual amount of pumping.¹³

¹² MWDOC, 2016. 2015 Urban Water Management Plan. Prepared by Arcadis.

¹³ City of Westminster, 2016. 2015 Urban Water Management Plan. Prepared by Arcadis.

2.4.2.1 LEGAL RIGHTS TO PUMP

The OC Basin is not adjudicated and as such, pumping from the OC Groundwater Basin is managed through a process that uses financial incentives to encourage groundwater producers to pump a sustainable amount of water. The framework for the financial incentives is based on establishing the basin production percentage (BPP), the percentage of each producer's total water supply that comes from groundwater pumped from the OC Groundwater Basin. Groundwater production at or below the BPP is assessed a Replenishment Assessment (RA). While there is no legal limit as to how much an agency pumps from the OC Groundwater Basin, there is a financial disincentive to pump above the BPP. Agencies that pump above the BPP are charged the RA plus the Basin Equity Assessment (BEA), which is calculated so that the cost of groundwater production is greater than MWDOC's full-service rate. The BEA can be increased to discourage production above the BPP. The BPP is set uniformly for all producers by OCWD on an annual basis. The BPP is a major factor in determining the cost of groundwater production from the OC Groundwater Basin for that year.

OCWD's goal is to achieve and maintain a stable 75 percent BPP. However, OCWD reevaluates the BPP annually, based on groundwater conditions, availability of imported water supplies, and OC Groundwater Basin management objectives. The BPP typically will not change if the groundwater storage levels are between 100,000 and 300,000 AF from full capacity. If the OC Groundwater Basin is less than 100,000 AF below full capacity, the BPP will be raised. If the OC Groundwater Basin is more than 350,000 AF below full capacity, the BPP will be lowered. In this manner, OCWD encourages reduced pumping during wet years when surface water supplies are plentiful and encourages increased pumping during dry years.

According to the latest OCWD's Engineer Report, a BPP of 77 percent is currently being proposed for the water year 2019-2020. Analysis of groundwater conditions, available supplies to the OC Groundwater Basin, and the project pumping demands indicate that this level of pumping could be sustained for 2019-2020 without detriment to the Basin.¹⁴In some cases, OCWD encourages treating and pumping groundwater that does not meet drinking water standards in order to protect water quality. This is achieved by using a financial incentive called the BEA Exemption. A BEA Exemption is used to clean up and contain the spread of poor-quality water. OCWD uses a partial or total exemption of the BEA to compensate a qualified participating agency or producer for the costs of treating poor quality groundwater. When OCWD authorizes a BEA Exemption for a project, it is obligated to provide the replenishment water for the production above the BPP and forgoes the BEA revenue that OCWD would otherwise receive from the producer.¹⁵

¹⁴ OCWD, 2019. 2017-2018 Engineer's Report on Groundwater Conditions, Water Supply and Basin Utilization in the Orange County Water District.

¹⁵ City of Westminster, 2016. 2015 Urban Water Management Plan. Prepared by Arcadis.

2.4.2.2 HISTORIC USE OF GROUNDWATER

The City owns and operates 10 groundwater wells. The amount of groundwater pumped by the City of Westminster from 2011 to 2015 is listed below in Table 6.

Calendar Year	Groundwater produced (AFY)
2011	6,803
2012	7,560
2013	8,471
2014	8,863
2015	9,371
Average	8,214

Source: City of Westminster 2015 UWMP, 2016.

2.4.2.3 PROJECTED USE OF GROUNDWATER

According to the City’s 2015 UWMP, the project use of groundwater through the year 2040 is provided in the Table 6.

	2020	2025	2030	2035	2040
Water Supply					
Groundwater	8,104	8,699	8,758	8,754	8,769
Purchases or Imported Water	3,473	4,728	3,754	3,753	3,758
Total	11,577	12,427	12,512	12,509	12,527

Source: City of Westminster 2015 UWMP, 2016.

The projected use of groundwater by the City from 2020 through 2040 is based on a 70 percent BPP. As noted in Section 2.4.2.1, OCWD is currently using a BPP of 77 percent for water year 2019-2020, which means that more groundwater most likely could be pumped in future years, if the BPP is above 70 percent.

2.5 SUPPLY AND DEMAND ANALYSIS

The existing and proposed water demand for the Westminster Mall are provided in Sections 2.3.2.1 and 2.3.2.2. However, to evaluate water supply vs. demand on a City-wide basis, the proposed water demand for this project should be included with the proposed buildout in the other five redevelopment areas of the City as well as any anticipated future development. The Infrastructure Technical Report for the Westminster General Plan Update (GPU) includes statistics for the existing land use of the six redevelopment areas of the City as well as the projected land use at full buildout (assumed to be 2040 for this WSA). The numbers in that report were modified to reflect the latest land use configuration for the Westminster Mall. In addition, the increase in population growth for year 2040 was calculated, based on the City’s Water Master Plan growth rate of 0.68%. These values were used to calculate the increase in the City’s water demand for the year 2040. It should be noted

that while the proposed project increases the number of residential units within the Westminster Mall Specific Plan area and other redevelopment areas of the City, some of the new residences in these areas will be relocations of people from other areas of the City. The Westminster Mall Specific Plan does not increase the allowable development capacity for the City. The number of residential units in the year 2040 is estimated to be 31,404. Assuming 3.4 people per dwelling unit, this equates to a City-wide population in 2040 of approximately 106,773 people.

Water demand rates for residential and non-residential land uses were obtained from the City’s Water Master Plan. The Water Master Plan reports a demand rate of 200 gpd/DU and 1,500 gpd/ac for commercial land uses. Since new construction in the City will be required to comply with the CALGreen Building Code Standards, this will result in a 20 percent reduction in water use for both residential and non-residential development. Therefore, the water demand rates for new construction were modified to account for the 20 percent reduction. The water demand rates used in this analysis were 160 gpd/DU and 1,200 gpd/ac for new residential and commercial land uses, respectively. In addition, a standard water demand rate of 125 gpd/room was used for the proposed 425-room hotel within the Westminster Mall Specific Plan area.

The projected increase in water demand for the year 2040 is summarized in Table 7. The detailed calculations are provided in Appendix A.

Table 7 – Projected Increase in Water Demand for the City of Westminster (Year 2040)

	2019 Existing Residential Units	2040 Projected Residential Units	Increase in Water Demand (gpd)	2019 Existing Non-Residential SF	2040 Proposed Non-Residential SF	Increase in Water Demand (gpd)
Mixed-Use Civic Center	521	628	17,120	529,111	1,823,119	35,648
Mixed-Use Westminster Boulevard/Downtown	222	951	116,640	739,403	604,110	-3,727
Mixed-Use Corridor	263	407	23,040	316,758	551,201	6,459
Mixed-Use Westminster Mall	0	3,000	480,000	1,195,000	1,200,000	53,263 ^b
Mixed-Use Little Saigon	855	1,944	174,240	1,293,522	3,292,670	55,073
Mixed-Use Northwest District	811	1,060	39,840	0	673,075	18,542
Remainder of the City	25,277	23,414	-298,080	7,957,222	10,859,283	79,947
Total	27,949^a	31,404	552,800	12,031,016	19,003,458	245,205
Available Water Supply (2020)						11,5777 AFY
Total Increase in Water Demand (2040)						894 AFY
Total Water Demand (2040)						12,471 AFY
Available Water Supply (2040)						12,527 AFY

Source: City of Westminster, 2016. Westminster General Plan Update Infrastructure Technical Report. City of Westminster, 2019. Water Master Plan. PlaceWorks, Westminster Mall Specific Plan Draft Environmental Impact Report, 2020. California Department of Finance, 2019. Report E-5 Population and Housing Estimates for Cities, Counties, and the State, January 1, 2011-2019, with 2010 Benchmark.

^a The total number of dwelling units for the year 2019 was obtained from the California Department of Finance.

^b The water demand for the hotel rooms amounts to 53,125 gpd and is included in this number.

SF = Square Feet
DU = Dwelling Units
gpd = Gallons per day per
AFY = Acre-feet per year

As shown in Table 7, the total increase in water demand for the year 2040 is 798,005 gpd (894 AFY). Adding 894 AFY to the available water supply for 2020 results in a total water demand of 12,421 AFY in 2040. The 2015 UWMP predicts an available water supply of 12,577 AFY. Therefore, the City can accommodate the proposed project's water demand, in addition to the water demand of future development within the City, in the year 2040.

2.6 WATER SHORTAGE CONTINGENCY PLANNING

Recent water supply challenges throughout the Southwest and the State of California have resulted in the development of various policy actions that water agencies would implement in the event of a water shortage. In southern California, the development of such policies has occurred at both the wholesale and retail level. This section describes new and existing policies that MWD, MWDOC, and the City have in place to respond to water supply shortages, including a catastrophic interruption and up to a 50 percent reduction in water supply.

2.6.1 Metropolitan Water District

Water supply challenges have impacted the reliability of MWD's imported supplies. In response, MWD has documented the stages of actions that it would undertake in response to water supply shortages, including up to a 50 percent reduction in available water supplies. MWD has documented this planning in its Water Surplus and Drought Management (WSDM) Plan, which guides MWD's planning and operations during both shortage and surplus conditions. Furthermore, MWD developed the Water Supply Allocation Plan (WSAP), which provides a standardized methodology for allocating supplies during times of shortage.¹⁶

2.6.2 MWDOC

To prepare for the potential allocation of imported water supplies from MWD, MWDOC worked collaboratively with its 28 member agencies to develop its own WSAP, adopted January 2009 and amended in 2015, to allocate imported water supplies at the retail level. The MWDOC WSAP lays out the essential components of how MWDOC will determine and implement each member agency's allocation during a time of shortage. The MWDOC WSAP uses a similar method and approach as MWD's WSAP. However, MWDOC's plan remains flexible to use an alternative approach if MWD's method produces a significant unintended result for the member agencies.¹⁷

¹⁶ The Metropolitan Water District of Southern California, 2016. 2015 Urban Water Management Plan.

¹⁷ Municipal Water District of Orange County, 2016. 2015 Urban Water Management Plan. Prepared by Arcadis.

2.6.3 City of Westminster

The City of Westminster adopted its Water Conservation Ordinance No. 2449 on May 27, 2009, which established a staged water conservation program that would encourage reduced water consumption within the City through conservation, enable effective water supply planning, assure reasonable and beneficial use of water, prevent waste of water, and maximize the efficient use of water within the City. Along with permanent water conservation requirements, the City’s Water Conservation Program consists of three stages to respond to a reduction in potable water available to the City for distribution to its customers (as shown in Table 8). The City does not have set percent supply reductions for each water shortage stage but rather implements the percent supply reduction at its own discretion for each water shortage stage.¹⁸

Table 8– Stages of Water Shortage Contingency Plan

Stage	Water Supply Condition
1	A Level 1 water supply shortage exists when the City Council determines, in its sole discretion, a water supply shortage or threatened shortage exists, and a consumer demand reduction is necessary to make more efficient use of water and appropriately respond to existing water conditions.
2	A Level 2 water supply shortage exists when the City Council determines, in its sole discretion, a water supply shortage or threatened shortage exists, and a consumer demand reduction is necessary to make more efficient use of water and appropriately respond to existing water conditions.
3	A Level 3 water supply shortage condition is also referred to as an "emergency" condition. A Level 3 condition exists when the City Council declares a water shortage emergency and notifies its residents and businesses that a significant reduction in consumer demand is necessary to maintain sufficient water supplies for public health, safety, and welfare.

Source: City of Westminster 2015 UWMP, 2016.

2.6.4 Catastrophic Supply Interruption

MWD has comprehensive plans for stages of actions it would undertake to address a catastrophic interruption in water supplies through its WSDM Plan and WSAP. MWD also developed an Emergency Storage Requirement to mitigate against potential interruption in water supplies resulting from catastrophic occurrences within the southern California region, including seismic events along the San Andreas Fault.

In 1983, the Orange County water community identified a need to develop a plan on how agencies would respond effectively to disasters impacting the regional water distribution system. The collective efforts of these agencies resulted in the formation of the Water Emergency Response Organization of Orange County (WEROC) to coordinate emergency response on behalf of all Orange County water and wastewater agencies, develop an emergency plan to respond to disasters, and conduct disaster training exercises for the Orange County water community. Within the Orange County Operational Area, WEROC is the recognized contact for emergency response for the water community, including the City.

The City has identified vulnerabilities to its water supply due to disaster events and has developed a list of actions that can be taken in preparation of such events. These events include non-drought related emergencies such as earthquakes, acts of terrorism, and regional power outages.

¹⁸ City of Westminster, 2016. 2015 Urban Water Management Plan. Prepared by Arcadis.

In the event of an earthquake, the City Emergency Operations Center may be activated. City staff will assess all water facilities and damage to the system. Priorities will be set according to Emergency Operations Center (EOC) guidelines. If the EOC needs to be activated, the Police Dispatch Center will notify the Public Works Director. The City Emergency Management Plan and the Westminster Water Emergency Response Plan will be used in the event of a disaster. Furthermore, the Westminster Water Division has prepared for regional power outages by constructing a new reservoir and booster station located at the intersection of Hoover Street and Hazard Avenue. Located at the site is a backup generator capable of running the entire plant for several days. The reservoir also has a storage capacity supply of 16 million gallons, a well which produces 2800 gpm and is pumped directly into the reservoir, and a 9,000 gpm booster station.¹⁹

2.7 WATER EFFICIENCY STRATEGIES

There are many water efficiency strategies that have been implemented by the City that would also reduce water demands for the Westminster Mall Specific Plan and other planned development within the City. Some of the programs, which are implemented with the assistance of MWDOC, are described below.

2.7.1 Residential Programs

2.7.1.1 IRRIGATION TIMER PROGRAMMING

The City meets with homeowners and adjusts timers in accordance with irrigation restrictions implemented by Ordinance 2449 – Emergency Water Management Program. Employees train residents on how to use their timers and offer information on new timers, as necessary.

2.7.1.2 WATER CONSERVATION KITS

The City Water Division also offers free water conservation kits to supply residents with the necessary tools to save water. Kits include positive shut-off nozzle, bathroom aerator, kitchen sink aerator, moisture probe, shower timer, shower head, toilet flapper, low flush toilet bag, and conservation informational guides. The kits are provided with a 2-gallon bucket to be used for capturing reusable water.

2.7.1.3 WATER SMART HOME SURVEY PROGRAM

This program provides free home water surveys that include indoor and outdoor evaluation. The program uses a Site Water Use Audit program format to perform comprehensive, single-family home audits. Residents choose to have indoor or outdoor audits to identify opportunities for water savings. A customized home water audit report is provided after each site audit is completed and provides the residents with their survey results, rebate information, and an overall water score.

2.7.1.4 HIGH EFFICIENCY CLOTHES WASHER REBATE PROGRAM

This program provides residential customers with rebates for purchasing and installing WaterSense labeled High Efficiency Clothes Washes (HECWs). HECWs use 35 to 50 percent less water than standard washer models,

¹⁹ City of Westminster, 2016. 2015 Urban Water Management Plan. Prepared by Arcadis.

with savings of approximately 9,000 gallons per year per device. Devices must have a water factor of 4.0 or less, and a listing of qualified products can be found at ocwatersmart.com. There is a maximum of one rebate per household.

2.7.1.5 HIGH EFFICIENCY TOILET REBATE PROGRAM

The largest amount of water used inside a home, 30 percent, is associated with flushing the toilet. The High Efficiency Toilet (HET) Rebate Program offers incentives to residential customers for replacing their standard, water-guzzling toilet with HETs. HETs use just 1.28 gallons of water or less per flush, which is 20 percent less water than standard toilets. In addition, HETs save an average of 30 gallons of water per day while maintaining high performance standards.

2.7.2 CII Programs

2.7.2.1 WATER SMART HOTEL PROGRAM

Water used in hotels and other lodging businesses accounts for approximately 15 percent of the total water uses in commercial and institutional facilities in the United States. The Water Smart Hotel Program provides water use surveys, customized facility reports, technical assistance, and enhanced incentives to hotels that invest in water use efficiency improvements. Rebates available include high efficiency toilets, ultralow volume urinals, air-cooled ice machines, weather-based irrigation controllers, and rotating nozzles.

2.7.2.2 SOCIAL WATER\$MART REBATE PROGRAM FOR CII

The City through MWDOC offers financial incentives under the SoCal Water\$mart Rebate Program, which offers rebates for various water efficient devices to CII customers, such as high efficiency toilets, ultralow volume urinals, connectionless food steamers, air-cooled ice machines, pH-cooling tower controllers, and dry vacuum pumps.

2.7.3 Landscape Programs

2.7.3.1 TURF REMOVAL PROGRAM

The Orange County Turf Removal Program offers incentives to remove non-recreational turf grass from commercial properties throughout the County. The program is a partnership with MWDOC, MWD, and local retail water agencies. The goals of this program are to increase water use efficiency within Orange County, reduce runoff leaving properties, and evaluate the effectiveness of turf removal as a water saving practice. Participants are encouraged to replace their turf grass with drought-tolerant landscaping, diverse plant palettes, and artificial turf, and they are encouraged to retrofit their irrigation systems with Smart Timers and drip irrigation.

2.7.3.2 WATER SMART LANDSCAPE PROGRAM

MWDOC's Water Smart Landscape Program is a free water management tool for homeowner associations, landscapers, and property managers. Participants in the program use the internet to track their irrigation meter's

monthly water use and compare it to a custom water budget established by the program. This enables property managers and landscapers to easily identify areas that are over or under watered and enhances their accountability to homeowner association boards.

2.7.3.3 SMART TIMER REBATE PROGRAM

Smart Timers are irrigation clocks that are either weather-based irrigation controllers (WBICs) or soil moisture sensor systems. WBICs adjust automatically to reflect changes in local weather and site-specific landscape needs, such as soil type, slopes, and plant materials. When WBICs are properly programmed, turf and plants receive the proper amount of water throughout the year. During the fall months, when property owners and landscape professionals often overwater, Smart Timers can save significant amounts of water.

2.7.3.4 ROTATING NOZZLES REBATE PROGRAM

The Rotating Nozzles Rebate Program provides incentives to residential and commercial properties for the replacement of high-precipitation rate spray nozzles with low-precipitation rate multi-stream, multi-trajectory rotating nozzles. The rebate offered through this program aims to offset the cost of the device and installation.

2.7.3.5 SPRAY TO DRIP REBATE PROGRAM

This program offers residential and commercial customers rebates for converting planting areas irrigated by spray heads to drip irrigation. Drip irrigation systems are very water efficient. Rather than spraying wide areas, drip systems use point emitters to deliver water to specific locations at or near the plant root zones. Water drips slowly from the emitters either onto the soil surface or below ground. As a result, less water is lost to wind and evaporation.

2.7.3.6 SOCIAL WATER\$MART REBATE PROGRAM FOR LANDSCAPE

The City through MWD DOC also offers financial incentives under the SoCal Water\$mart Rebate Program for a variety of water efficient landscape devices, such as Central Computer Irrigation Controllers, large rotary nozzle, and in-stem flow regulators.

With adherence to these water efficiency strategies and rebate programs, the City's water demand should be reduced from the values calculated in the City's UWMP for the years 2020 to 2040. Therefore, the water demand for 2040, as calculated in Section 2.5, will likely be lower than the reported values, with implementation of these water efficiency strategies.

2.8 SUMMARY

A Water Supply Assessment (WSA) was prepared to assess the water demand and supply conditions with implementation of the proposed project. As shown in Table 4, the total water demand for the proposed project is estimated to be 588,828 gal/day (581 AFY).

According to the City's UWMP, the City has adequate supplies to serve 100% of its customers during normal, dry year, and multiple dry year demand through 2040 with projected population increases and accompanying

increases in water demand. However, the City's General Plan was updated in 2016 and included land uses for the project as well as other redevelopment areas within the City that were not included in the 2015 UWMP. Therefore, projected water demand for the City at buildout in 2040, including the proposed project, was estimated based on the 2016 General Plan Update land use designations. As discussed in Section 2.5, implementation of the proposed project, as well as buildout of the other redevelopment areas within the City, will not obstruct the City's ability to meet water demands of its customers in normal, single dry, and multiple dry years. In addition, redevelopment within the City would occur over a period of 20 to 30 years and therefore the incremental increases in water demand would not overtax the City's ability to supply water to all of its customers.

This WSA concludes that the City will have sufficient water supplies available during normal, single dry, and multiple dry years through the year 2040 to meet all projected water demands associated with its existing and future customers, including the proposed project. In the unlikely event of a water shortage, implementation of the City's Water Conservation Program and water efficiency strategies would ensure that sufficient water supplies were available to serve its customers, including the project and existing and future users.

Appendix A Projected Increase in Water Demand for the City of Westminster (Year 2040)

Appendix A
Projected Increase in Water Demand for the City of Westminster (Year 2040)

	2019 Existing DU	2040 Proposed DU	Increase in DU	Water Demand Rate (gpd/DU)	Increase in Water Demand (gpd)	2019 Existing Non-Res. SF	2040 Proposed Non-Res. SF	Increase in Non-Res. SF	Increase in Non-Res. Acres	Water Demand Rate (gpd/ac)	Increase in Water Demand	Increase in Hotel Rooms	Water Demand Rate (gpd/room)	Increase in Water Demand (gpd)
Mixed Use Civic Center	521	628	107	160	17,120	529,111	1,823,119	1,294,008	30	1,200	35,648			
Mixed-Use Westminster Boulevard/ Downtown	222	951	729	160	116,640	739,403	604,110	(135,293)	(3)	1,200	(3,727)			
Mixed-Use Corridor	263	407	144	160	23,040	316,758	551,201	234,443	5	1,200	6,459			
Mixed-Use Westminster Mall	-	3,000	3,000	160	480,000	1,195,000	1,200,000	5,000	0	1,200	138	425	125	53,125
Mixed-Use Little Saigon	855	1,944	1,089	160	174,240	1,293,522	3,292,670	1,999,148	46	1,200	55,073			
Mixed-Use Northwest District	811	1,060	249	160	39,840	-	673,075	673,075	15	1,200	18,542			
Remainder of City	25,277	23,414	(1,863)	160	(298,080)	7,957,222	10,859,283	2,902,061	67	1,200	79,947			
	27,949	31,404	31,404		552,800	12,031,016	19,003,458	6,972,442	160		192,080	425	125	53,125

TOTAL INCREASE IN WATER DEMAND - 2040

798,005 gpd
894 AFY

Available Water Supply - 2020

11,577 AFY

Additional Water Demand in City in 2040 with buildout

894 AFY

Total Water Demand in 2040

12,471 AFY

Available Water Supply - 2040

12,527 AFY

FOOTNOTES:

Assume starting year is 2019. From Department of Finance website - 2019 population is 92,610 and number of dwelling units is 27,949.

Assume buildout year is 2040.

Use Westminster's Water Master Plan growth rate of 0.68%. Population at buildout year would be 106,773 and dwelling units would be 31,404, assuming 3.4 people per DU

The DUs in the remainder of the City were calculated as the 2040 buildout number of 31,404 minus the DUs in the specific plan areas. The negative number reflects infill in the SP areas.

Water demand rate for new construction was assumed to be 160 gpd/DU, using City's Water Master Plan rate of 200 gpd/DU with a 20% reduction in indoor water use due to CAL Green requirements

Water demand rate for residential new construction would be 160 gpd/DU, using the City's Water Master Plan rate of 200 gpd/DU with 20% reduction in indoor water use due to CAL Green requirements

Water demand rate for non-residential land use was assumed to be 1200 gpd/ac, using the City's Water Master Plan rate of 1500 gpd/acre with 20% reduction in indoor water use due to CalGreen requirements

It was assumed that irrigation demand would be the same in 2040 as 2019 (6% of the total demand) because most of the City is built out and adherence to MWELo for new development and water conservation measures for existing development would decrease the amount of irrigation water used.