CITY OF SANTA ANA

Bristol Specific Plan

WATER SUPPLY ASSESSMENT

ORANGE COUNTY, CALIFORNIA

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ACRONYMS & ABBREVIATIONS

AF	Acre-Feet
AFY	Acre-Feet per Year
BEA	Basin Equity Assessment
BPP	Basin Production Percentage
CDR	Center for Demographic Research
CEQA	California Environmental Quality Act
cfs	cubic feet per second
CRA	Colorado River Aqueduct
DU	Dwelling Unit
DWR	Department of Water Resources
GPCD	Gallons per Capita per Day
gpd	gallons per day
gsf	gross square-feet
GWRS	Groundwater Replenishment System
LTFP	Long Term Facilities Plan
M&I	Municipal and Industrial
MG	Million Gallons
OCWD	Orange County Water District
PPH	Persons Per Household
QSA	Quantification Settlement Agreement
RA	Replenishment Assessment
SANDAG	San Diego Association of Governments
SAR	Santa Ana River
SB	Senate Bill
SCAG	Southern California Association of Governments
SF	Square Feet
SWP	State Water Project
UWMP	Urban Water Management Plan
WSA	Water Supply Assessment

1. WSA PURPOSE AND REQUIREMENTS

This Water Supply Assessment (WSA) was prepared for RCR Bristol LLC as the project sponsor/applicant, and the City of Santa Ana ("City" or "Santa Ana") as the lead agency under the California Environmental Quality Act (CEQA), by Fuscoe Engineering, Inc. (Fuscoe), as the consultant, regarding the Bristol Specific Plan Project ("Bristol Specific Plan" or "Project"). This study is a requirement of California law, specifically Senate Bill 610 (referred to as SB 610). SB 610 is an act that amended Section 21151.9 of the Public Resources Code, and Sections 10631, 10656, 10910, 10911, 10912, and 10915 of the Water Code. SB 610 repealed Section 10913 and added and repealed Section 10657 of the Water Code. SB 610 was approved by the Governor and filed with the Secretary of State on October 9, 2001, and became effective January 1, 2002.

Under SB 610, WSAs must be furnished to local governments for inclusion in environmental documentation for certain projects (as defined in Water Code 10912 [a]) subject to CEQA. Due to increased population, land use changes, and water demands, this water bill seeks to improve the link between information on water availability and certain land use decisions made by cities and counties. SB 610 takes a significant step toward managing the demand of California's water supply as it provides regulations and incentives to preserve and protect future water needs. The intent of this bill is to coordinate local water supply and land use decisions to help provide California's cities, farms, and industrial developments with adequate water supplies.

With the introduction of SB 610, any project under CEQA shall provide a WSA if the project meets the definition of the Water Code Section 10912. "Project'' means any of the following:

- 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 proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.
- A proposed hotel or motel, or both, having more than 500 rooms.
- A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.
- A mixed-use project that includes one or more of the projects specified in this subdivision.
- A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500-dwelling unit project.
- If a public water system has fewer than 5,000 service connections, then ''project'' means any proposed residential, business, commercial, hotel or motel, or industrial development that would account for an increase of 10 percent or more in the number of the public water system's existing service connections, or a mixed-use project that would demand an amount of water equivalent to, or greater than, the amount of water required by residential development that would represent an increase of 10 percent or more in the number of the public water system's existing service connections.

After review of Water Code Section 10912, the Bristol Specific Plan Project is deemed a

"Project" because it proposes a residential development of more than 500 dwelling units.

In addition, it is also necessary to include the passing (September 24, 2016) of Senate Bill 1262 (Chapter 594) which acts to amend Section 66473.7 of the Government Code, and to amend Section 10910 of the Water Code, relating to land use[1] and the Sustainable Groundwater Management Act (SGMA) that was passed by California's Governor on September 16, 2014. Pursuant to SB 1262, as of January 1, 2017, WSAs are now required to include certain SGMA-related information if water supply for a proposed project includes groundwater. Specifically, if a water supply for a proposed project includes groundwater, the following additional information shall be included in the water supply assessment:

- A description of any groundwater basin or basins from which the proposed project will be supplied.
- For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has the legal right to pump under the order or decree.
- For a basin that has not been adjudicated that is a basin designated as high- or medium-priority pursuant to Section 10722.4, information regarding the following:
    - Whether the department has identified the basin as being subject to critical conditions of overdraft pursuant to Section 12924.
    - If a groundwater sustainability agency has adopted a groundwater sustainability plan or has an approved alternative, a copy of that alternative or plan.
- For a basin that has not been adjudicated that is a basin designated as low- or very low priority pursuant to Section 10722.4, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current bulletin of the department that characterizes the condition of the groundwater basin, and a detailed description by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), of the efforts being undertaken in the basin or basins to eliminate the long-term overdraft condition.

As described in more detail throughout this WSA, the proposed Project will utilize water from the Orange County Groundwater Basin that is designated as a medium priority basin. Therefore, additional information regarding groundwater supply and management will be included in this WSA to satisfy the requirements of SB 1262.

[1] Senate Bill No. 1262, CHAPTER 594, found here:
http://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201520160SB1262

2. BACKGROUND

The General Plan Update (GPU) approved by City of Santa Ana City Council on April 19, 2022, included five Focus Areas suited for new growth and development. These included Grand Avenue/17th Street, 55 Freeway/Dyer Road, South Bristol Street, South Main Street, and West Santa Ana Boulevard. The five focus areas and other land use changes resulted in a net increase of over 36,000 allowable multifamily residential units as part of the GPU.

The GPU and EIR process was initiated in 2018 and was a multi-year process with initial public draft documents (GPU/DREIR) being released in August 2020 through October 2021. The 2015 Urban Water Management Plan was the current most UWMP for the duration of the process and was used as the basis for evaluation for the GPU and EIR. The 2015 Urban Water Management Plan (UWMP) and the City's Final EIR determined that the City has adequate water supplies for the projected water demand among the five Focus Areas. This increase in water demand accommodated for the buildout of the South Bristol Street Focus Area which included the Bristol Specific Plan. Although the 2020 Urban Water Management Plan was approved by the City in June 2021, technical appendices related to the GPU/EIR were already completed by this time and the final EIR continued to rely on the 2015 UWMP.

For purposes of the Bristol Specific Plan, the WSA will evaluate water supply utilizing the 2020 Urban Water Management Plan as it is now the most current UWMP available.

3. INTRODUCTION

3.1 PROJECT DESCRIPTION

The Bristol Specific Plan Project is currently a 41.1-acre commercial project located in the City of Santa Ana consisting of retail shops and restaurants. The Project address is bounded by Sunflower Avenue and S. Bear Street to the south and east, and W MacArthur Boulevard and S. Bristol Street to the north and west. See Figure 1 for a vicinity map of the proposed Project.

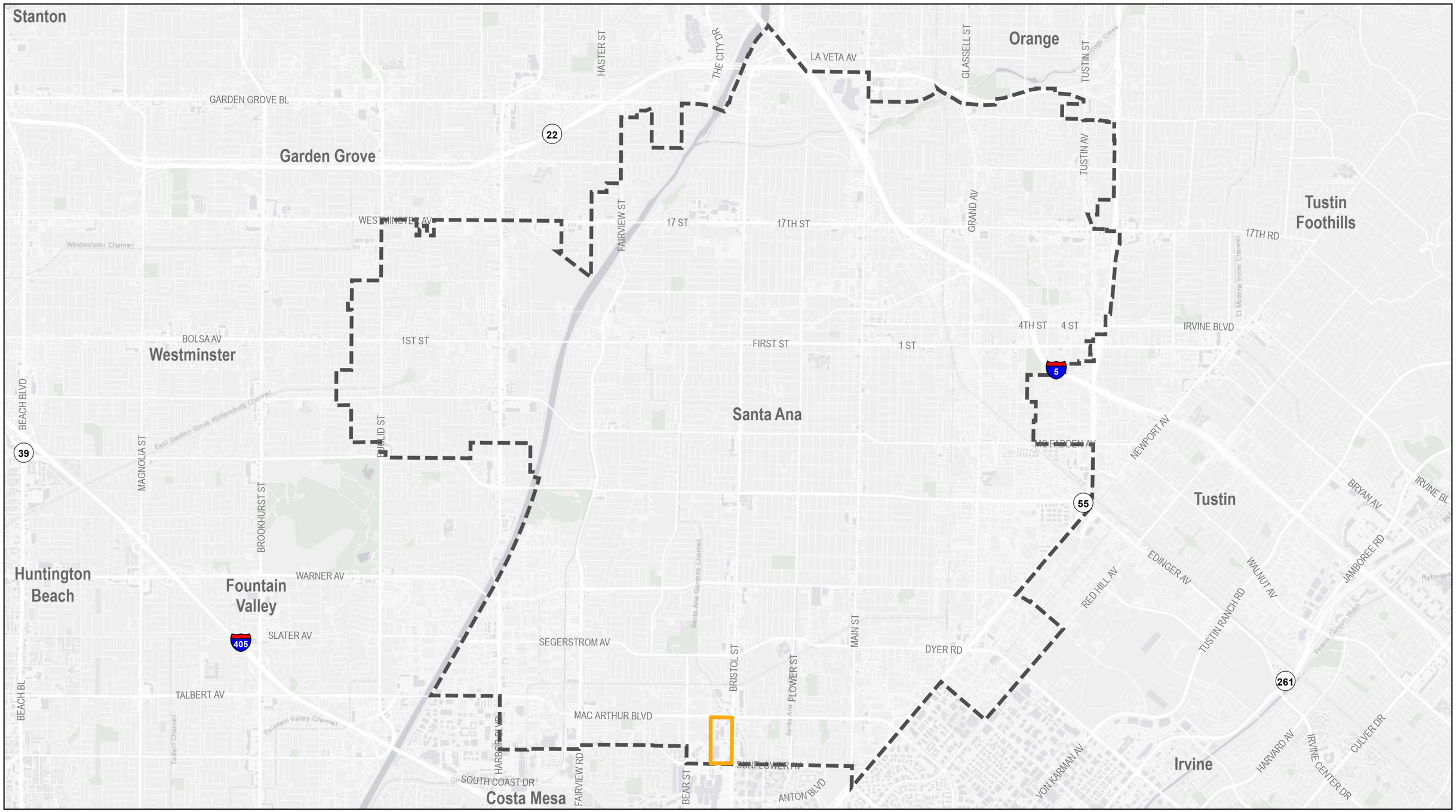
The Project includes the re-development of the existing 465,063 square-feet (SF) of retail, restaurant, and surface parking space. The proposed Project will include 3,750 multi-family residential dwelling units (DU's), 200 senior living units, 250 hotel rooms, 350,000 SF of commercial, and 13.1 acres of open space provided through common areas and courtyards. See Table 1 below for additional specifications related to the proposed Project.

Table 1 Proposed Project Land Use Type

Proposed Land Use	Proposed Development	Existing Development
Multi-Family Residential	3,750 du	
Senior Living/Continuum of Care	200 units	
Hospitality	250 keys	
Commercial	350,000 gsf	465,063 sf
Open Space	13.1 acres[1]	

du = dwelling unit; gsf = gross square feet; sf = square feet
1. Of the 13.1 acres of open space only 6.6 acres will be landscaped as shown in Appendix C.

The purpose of this project specific WSA is to provide information to confirm that the City of Santa Ana has sufficient water supply to provide for the proposed Project in addition to other service area demands now and into the future. This WSA utilizes the 2020 UWMP and compares the existing water demand of the Project site to the proposed water demand of the Project and evaluates the ability of the City of Santa Ana's regional water supplies and demands to supply water to the project through 2045.



Bristol Specific Plan Water Supply Assessment

City of Santa Ana

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full circle thinking

City of Santa Ana Boundary

Bristol Location

Figure 1

Vicinity Map

7/20/2022

0 4,000 8,000 Feet

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3.1.1 Existing Water Use

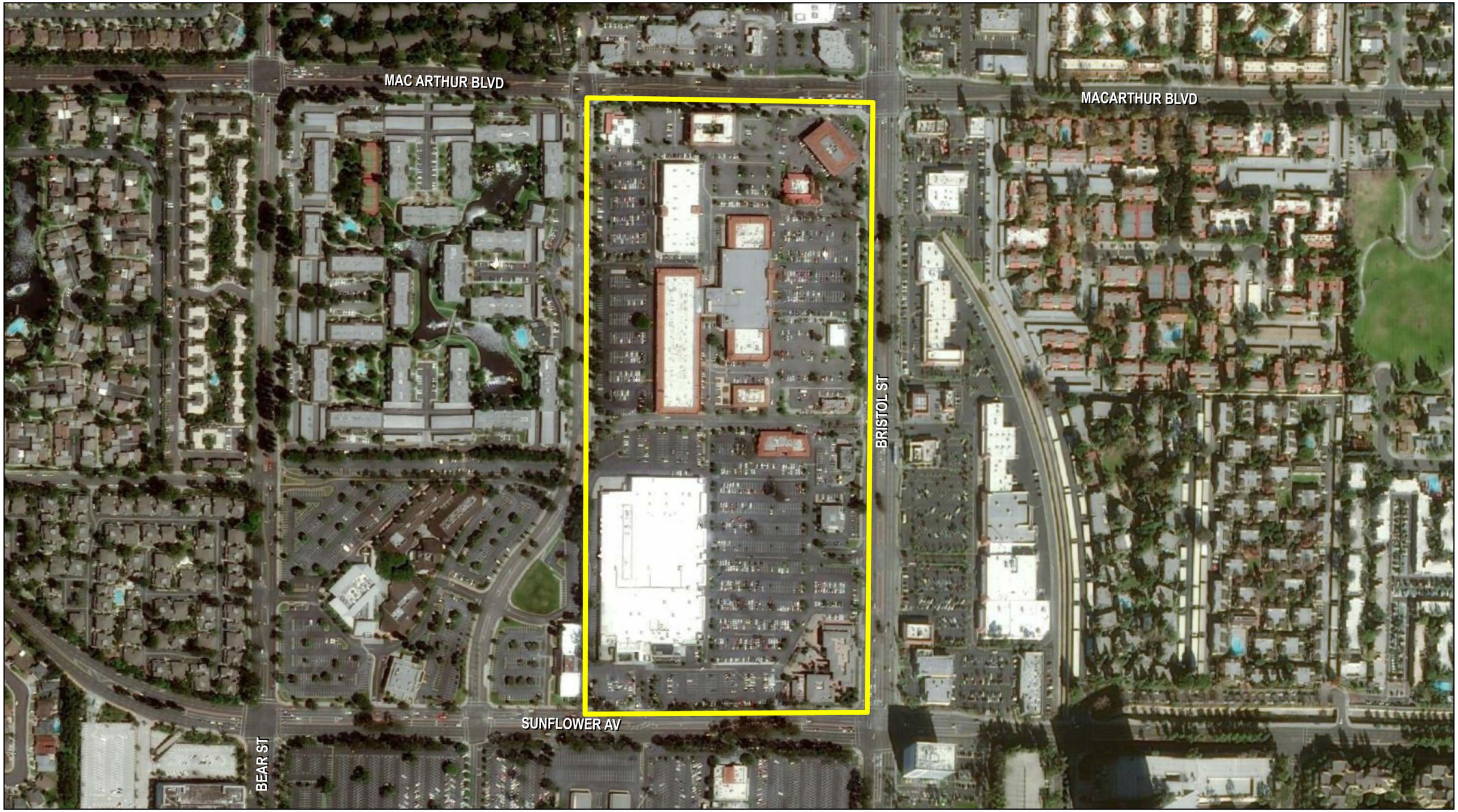
The existing land use of the Project site is occupied by a shopping center with 16 commercial buildings including restaurants, retail shops, and parking lots. Therefore, there is an existing water demand at the Project site. See Table 2 for the existing water demands and Figure 2 for an aerial image of the existing land uses at the proposed Project site.

Table 2 Existing Water Demands

Land Use	SF	SF to Acres	Water Demand Factor[1]	Daily Water Use (GPD)	Annual Water Use (AFY)
Commercial	465,063	11	2,500 gpd/acre	27,500	30

Notes
1 City of Santa Ana Design Guidelines for Water and Sewer Facilities (November 2020)

An estimated annual difference between existing water demands and proposed water demands resulting from the proposed Project are calculated and shown in Section 3.1.2 below.



Basemap Aerial (World Imagery)

Bristol Specific Plan Water Supply Assessment

City of Santa Ana

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full circle thinking

Bristol Location

Figure 2
Project Aerial

7/20/2022

0 300 600 Feet

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3.1.2 Proposed Water Use

The proposed Project includes a total of 3,750 multi-family residential units, 200 senior living units, and 250 hospitality units. In addition, 350,000 SF of commercial retail space will be provided and approximately 6.6 acres of irrigated landscaping is included through common areas and the courtyards. See Figure 3 below for the proposed site plan of the Project.

The total water demands for the Project estimates both outdoor and indoor water use. Indoor water demands include toilet flushing, showers/baths, dishwashers, washing machines, faucets, and leakage. Outdoor water demands consist of landscape irrigation estimates. The estimates for multi-family residential water demands were referenced from the Orange County Water Reliability Study by MWDOC (2016). Hospitality and commercial were estimated by implementing water demand factors from the City of Santa Ana Design Guidelines for Water and Sewer Facilities (November 2020). See Table 3 below for the Project's proposed water demands.

Table 3 Proposed Water Demands

Land Use	Proposed		Water Duty Factor		Proposed Daily Water Usage (GPD)	Proposed Annual Water Usage (AFY)
Multi-Family Residential[1]	3,750	units	190	gpd/unit[2]	712,500	798
Senior Living/ Continuum of Care[1]	200	units	190	gpd/unit[2]	38,000	43
Hospitality	250	keys	180	gpd/room[3]	45,000	50
Commercial	350,000	gsf	2,500	gpd/acre[3]	20,087	23
Landscaping[5]	6.6	acres	ETWU equation[4]		13,463	15
				Proposed Water Demands	829,050	929
				Existing Water Demands (Commercial)	26,691	30
				Net Water Demand (Proposed – Existing)	**802,359**	**899**

Notes

1. According to the Related Bristol Specific Plan Draft EIR approximately 70% of the multi-family residential units are planned to be studios/1 bedroom and 30% to be 2 bedroom/3 bedroom.
2. Municipal Water District of Orange County – Orange County Water Reliability Study (December 2016).
3. City of Santa Ana Design Guidelines for Water and Sewer Facilities (November 2020)
4. Estimate Irrigation System Water Use Using ETWU Gallons Per Year= (annual ETo x 0.62 x PF x HA ÷ IE)
5. See Appendix C for a figure of the landscaped areas.

Using MWDOC's water duty factors, the proposed Project will result in an annual water demand of 929 AFY, which is an overall net water demand increase of approximately 899 AFY when accounting for the Project's existing water demands. The multi-family residential units and senior

living account for approximately 90% of the total water demand. These demand projections are considered to be conservative for the following reasons:

- All multi-family residential and senior living/continuum of care units are assumed to use the same amount of water although 70% of the planned units are studios and 1-bedroom apartments, which are typically occupied by fewer persons and use less water. The unit breakdowns are consistent with the assumptions in the EIR. The 2020 UWMP identified that on average the City used 66 gallons per capita per day (gpcd) in 2020. This number represents the average of all residential units (single family, multifamily, and potable water used for landscaping), so it is reasonable to expect a smaller gpd/unit water demand from the Project's largely studio and 1-bedroom breakdown.

- The MWDOC's 2016 Water Reliability Study utilizes an average water demand per unit calculation which does not account for the number of residents per unit or unit size. An alternative method incorporates the number of persons per household and the gpcd to establish an overall water demand per unit. This methodology is more suitable considering the high proportion of studio and 1-bedroom units in the proposed Project.

    - The City of Santa Ana's recent General Plan Update projects that an average household will contain 2.41 persons/household[2]. Additionally, the City requires water efficient fixtures and appliances for new development, promotes conservation rebates and incentives for existing development, and implements permanent water conservation requirements[3]. Likewise, the California Senate Bill (SB) 606 and Assembly Bill (AB) 1668 established guidelines for efficient water use and a framework for the implementation and oversight of new standards that require urban water agencies to establish an indoor residential water use standard of 55 gpcd[4]. Using the City's average 2.41 persons per household and applying the indoor water use standard of 55 gpcd, the Projects residential water demand amounts to 133 gpd/unit and a net increase of 645 AFY, as shown in Appendix A. This is approximately 30% less than the MWDOC methodology (referred to in Table 3 above).

- In recent years, a number of current water usage demand factors for high density multi-family residential projects have become available. The lower water demand of 133 gpd/unit aligns more with water demand factors obtained from the high density multifamily residential units across Irvine, Newport Beach, Tustin, Lake Forest, Orange, Anaheim, and the City of Carson. These local jurisdictions utilize an average water use of 110 gpd/unit for high density multi-family units. Refer to Appendix B for a list of local water demand references.

[2] City of Santa Ana's GPU PEIR – Buildout Methodology, Table 4. Found here: https://storage.googleapis.com/proudcity/santaanaca/uploads/2022/04/Appendix-B-b-Santa-Ana-Buildout-Methodology.pdf

[3] City of Santa Ana Municipal Code, Chapter 39 Section 39-99

[4] SB 606 and AB 1668 Water Conservation and Drought Planning. Found here: https://www.waterboards.ca.gov/water_issues/programs/conservation_portal/docs/enrolled_ab1668_sb606.pdf

Altogether, when factoring in the smaller unit ratio, water efficient fixtures and appliances, state limitations on per capita water use, and local high density multi-family demand factors the proposed net water demand increase could be up to 30% less than 899 AFY. For EIR purposes, the projected net increase of 899 AFY will remain as the projected water demand increase while the net increase of 645 AFY will be used as an alternative lower demand increase. For the remainder of the document, the project's demands will be represented as a net increase ranging from 645 AFY - 899 AFY.

Figure 3 Proposed Bristol Specific Plan Site Plan

Illustrative Ground Floor Plan

Illustrative Upper Floor Plan

4. REGIONAL WATER SUPPLIES AND DEMANDS

4.1 CITY WATER SUPPLIES

The City's water supply comes from a combination of imported water, local groundwater, and recycled water to satisfy water demands. The City purchases these water supplies from Metropolitan Water District of Southern California (Metropolitan) and the Orange County Water District (OCWD). The City is a member agency of Metropolitan and receives imported water from the State Water Project and the Colorado River under agreements with Metropolitan. OCWD manages the Orange County Groundwater Basin ("OC Basin" or "Basin") and provides groundwater resources to the City.

The City maintains 510 miles of transmission and distribution mains, ten reservoirs with a storage capacity of 49 million gallons, seven pumping stations, 21 groundwater wells, and seven imported water connections. The City's Water Utility provides water service within a 27.5-square mile service area. The service area includes the City of Santa Ana and a small neighborhood in the City of Orange, near Tustin Avenue and Fairhaven by the northeast corner of Santa Ana. See Table 4 which shows the City's projected and actual water supply.

Table 4 Actual and Projected Water Supply (Acre-feet)

Water Supply	Source	2020	2025	2030	2035	2040	2045
Groundwater (not desalinated)	Orange County Groundwater Basin	25,591	28,588	29,024	28,799	28,551	28,541
Purchased or Imported Water	MET	7,649	5,045	5,122	5,082	5,038	5,037
Recycled Water	Green Acres Project (OCWD)	249	249	249	249	249	249
	TOTAL	33,489	33,882	34,395	34,130	33,838	33,827
Source: City of Santa Ana 2020 UWMP							

Currently, 76% of the City's water supply is groundwater from the OC Basin, 23% is from Metropolitan imported water and 1% is from recycled water by the year 2045 the City's water supply portfolio is expected to change slightly with an increase to 84% from OC Basin groundwater, decrease to 15% from Metropolitan imported water, and 1% recycled water. Based on regional and long-term planning, additional sources of recycled water are anticipated to remain constant at 1% with the focus being placed on the final expansion of the Groundwater Replenishment System. Additional details on the strategic management of these resources are explained below.

OCWD Groundwater

The primary source of water for the City is the Orange County Groundwater Basin ("OC Basin") which is managed by the Orange County Water District (OCWD). The OC Basin underlies the north half of Orange County beneath broad lowlands. The OC Basin 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, the Pacific Ocean to the southwest, and terminates at the Orange County line to the northwest, where its aquifer systems continue into the Central Basin of Los Angeles County.

The OC Basin storage capacity is estimated to be 66 million AF[5], of which only a fraction is available for use to prevent against physical damage to the Basin such as seawater intrusion or land subsidence. To ensure the Basin is not overdrawn, OCWD recharges the Basin with local and imported water. The Basin is recharged primarily by four sources including local rainfall, storm and base flows from the Santa Ana River (SAR), purchased Metropolitan imported water; and highly treated recycled wastewater. Basin recharge occurs largely in the following recharge basins that are located in or adjacent to the City of Anaheim:

- Warner Basin: A 50-foot-deep recharge basin located next to the SAR at the intersection of the 55 and 91 freeways.
- Burris Basin: Located between Lincoln Avenue and Ball Road in the City of Anaheim.
- Kraemer Basin: Located adjacent to Burris Pit.
- Santiago Creek: Located in the City of Orange between Villa Park Road and E. Bond Avenue.

As mentioned above, SB 1262 amended Section 10910 of the Water Code and requires the inclusion of SGMA-related information in WSAs. Specifically, following the SGMA basin prioritization and designations[6], for a non-adjudicated basin that is designated as high- or medium-priority pursuant to Section 10722.4, information regarding the following must be included:

- Whether the department has identified the basin as being subject to critical conditions of overdraft pursuant to Section 12924.
- If a groundwater sustainability agency has adopted a groundwater sustainability plan or has an approved alternative, a copy of that alternative or plan.

The OC Basin (also referred to as Basin 8-1)[7] has been designated as a medium-priority basin which requires this WSA to address or include information regarding the bullets above. As mentioned, SGMA provides authority for agencies like OCWD to develop and implement Groundwater Sustainability Plans or alternative plans ("Alternatives") that demonstrate the basin has operated within its sustainable yield over a period of at least 10 years. OCWD decided to submit an Alternative for evaluation by the California Department of Water Resources (DWR). An Alternative is required to be submitted to DWR for review no later than January 1, 2017, and every 5 years thereafter. In general, Alternatives must be consistent with one of the following (Water Code §10733.6(b)):

- A plan developed pursuant to Part 2.75 (commencing with Section 10750) or other law authorizing groundwater management.

[5] OCWD Groundwater Management Plan 2015 Update. June 17, 2015.
[6] SGMA Groundwater Information Center Interactive Map Application, found here: https://gis.water.ca.gov/app/gicima/
[7] OCWD Sustainable Groundwater Management Act Alternative Plan Basin 8-1 Alternative. January 1, 2017. Found here: https://www.ocwd.com/wp-content/uploads/basin-8-1-alternative-final-report-1.pdf

- Management pursuant to an adjudication action.
- An analysis of basin conditions that demonstrates that the basin has operated within its sustainable yield over a period of at least 10 years. The submission of an alternative described by this paragraph shall include a report prepared by a registered professional engineer or geologist who is licensed by the state and submitted under that engineer's or geologist's seal.

OCWD prepared an Alternative that satisfies the third bullet point above to prove the OC Basin has operated within its sustainable yield over a period of at least 10 years. This Alternative was approved at the by DWR level in July 2019.[8] The Alternative states that Basin 8-1 has operated within its sustainable yield for more than 10 years without experiencing significant and unreasonable (1) lowering of groundwater levels, (2) reduction in storage, (3) water quality degradation, (4) seawater intrusion, (5) inelastic land subsidence, or (6) depletions of interconnected surface water that have significant and unreasonable adverse impacts on beneficial uses of the surface water. In addition, Basin 8-1 has not been in conditions of critical overdraft. DWR has one year to evaluate the Basin 8-1 Alterative. The paragraphs below will further explain how OCWD successfully manages the OC Basin to meet these new groundwater monitoring and management requirements.

OCWD manages the Basin through the Basin Production Percentage (BPP) which is determined each water year. The BPP is set based on groundwater conditions, availability of imported water supplies, water year precipitation, SAR runoff, and basin management objectives. The BPP represents an established percentage identifying the amount of groundwater all pumpers in the Basin can pump without paying a "pumping tax" or Basin Equity Assessment (BEA) to OCWD. For example, if the BPP is set to 75%, all pumpers within the Basin, including the City, can supply 75% of their water needs from groundwater supplies at a cost significantly less than the cost of imported water. If groundwater production is equal to or less than the BPP (i.e.: less than 75% in the example above), all producers within the Basin pay a replenishment assessment (RA) fee which is used to fund groundwater replenishment and recharge programs aimed at ensuring the long-term viability and stability of the Basin. If groundwater production is greater than the established BPP for that water year (i.e. greater than 75% in the example above), the BEA is determined for the producer of that amount of groundwater provided in excess of the BPP. The BEA is an additional fee paid on each AF of water pumped above the BPP, making the total cost of that additional water equal to the higher cost of imported water from Metropolitan.

According to OCWD's Engineer's Report for fiscal year 2020/21, the actual BPP was 77% as shown in Table 5 below. Total water demands within OCWD were 406,992 AF for the water year (July 1, 2020, to June 30, 2021). Groundwater production for the water year totaled 281,793 AF including any available In-Lieu Program water and excluding Metropolitan Groundwater Storage Program extractions. Groundwater stored in the basin decreased by 48,000 AF. For the water year, the "annual overdraft" (annual basin storage decrease without supplemental replenishment water) was 149,800 AF. The accumulated overdraft was 248,000 AF on June 30, 2021.[9] The table below shows the water production data from 2020/21 for the City of Santa Ana.

[8] State Approves OCWD Alternative Groundwater Management Plan, July 2019. https://www.ocwd.com/news-events/newsletter/2019/july-2019/state-approves-ocwd-alternative-groundwater-management-plan/
[9] OCWD. Engineer's Report, 2020/21, February 2022.

Table 5 City of Santa Ana Groundwater Production Data 2020-21

Groundwater Producer	Groundwater			Supplemental Water (AF)			(AF)	Actual BPP
	Non-Irrigation Pumping	Metropolitan CUP	Total	Delivery	Conservation Credit	Total	Grand Total	Non-Irrigation Only
City of Santa Ana	26,104	0	26,104	7,737	0	7,737	33,842	77.1%
Source: OCWD 2020-21 Engineer's Report								

Over the recent past, production capability of the Basin has increased as a result of increased wastewater reclamation at the Groundwater Replenishment System (GWRS) located in Fountain Valley. The GWRS, which is designed to convert wastewater into drinking water, is one of the most technologically advanced wastewater treatment plants in the world. A treatment plant expansion of 30 million gallons per day was recently put online by OCWD increasing the recharge capacity of the GWRS to 100 million gallons per day. This equates to the recycling of over 110,000 AFY of wastewater back into the Basin for future extraction and potable use. A final expansion of the treatment system is being designed to have a total capacity of 130 million gallons per day which is over 145,600 AF of annual capacity. Expansion projects to the GWRS increase local water supply reliability and ensure low-cost water supplies throughout northern Orange County, including the City of Santa Ana.

Metropolitan Imported Water

The City of Santa Ana is one of only three retail member agencies of Metropolitan in Orange County. As a member agency, pursuant to the Metropolitan Act, the City has preferential rights to a certain percentage of water delivered to Metropolitan each year primarily from the State Water Project and/or the Colorado River Aqueduct as well as other Metropolitan storage programs. Being a member agency of Metropolitan puts the City in a stronger position relative to receiving water directly from Metropolitan, as opposed to other agencies in Orange County which obtain their imported Metropolitan water through Municipal Water District of Orange County (MWDOC). The main sources of water Metropolitan provides to the City include water from northern California delivered via the State Water Project (SWP) and water from the Colorado River Basin delivered via the Colorado River Aqueduct. More details on these sources of imported water are explained below.

<u>Colorado River</u>

The Colorado River was Metropolitan's original source of water after Metropolitan's establishment in 1928. Lake Mead and Lake Powell, the two largest reservoirs in the United States, can store 4 times the annual flow of the Colorado River. River flows are primarily generated from snowpack in the Rocky Mountains. Colorado River water is allocated and delivered to seven states in the US including Colorado, Utah, Wyoming, New Mexico, Arizona, Nevada and California. Mexico also has an allocation of 1.5 million acre-feet (MAF) along the Colorado River each year.

California's urban water allocation is managed by Metropolitan and imported from the Colorado River via the Colorado River Aqueduct (CRA) which is stored at Diamond Valley Lake and Lake Mathews in Riverside County. The CRA includes supplies from the implementation of the Quantification Settlement Agreement (QSA) and related agreements to transfer water from agricultural agencies in Imperial County to urban uses throughout Southern California including Los Angeles, Orange County and San Diego. The 2003 QSA enabled California to implement major Colorado River water conservation and transfer programs, stabilizing water supplies for 75 years and reducing the state's demand on the river to its 4.4 MAF entitlement. Colorado River transactions are potentially available to supply additional water up to the CRA capacity of 1.25 MAF on an as-needed basis.

California is apportioned the largest allocation on the River of 4.4 MAF of water from the Colorado River each year plus one-half of any surplus that may be available for use collectively in Arizona, California, and Nevada. In addition, California has historically been allowed to use Colorado River water apportioned to but not used by Arizona or Nevada. Metropolitan has a basic entitlement of 550,000 AFY of Colorado River water, plus surplus water up to an additional 662,000 AFY if certain conditions exist. The remainder of California's allocation goes to Imperial County, primarily to the Imperial Irrigation District, and is used mainly for agriculture production.

Over the past 22 years, system storage was at its lowest during 2020 with minimal buffers to avoid shortage due to prolonged dry conditions.[10] The long-term imbalance in future supply and demand is projected to be approximately 3.2 MAF by the year 2060. Actions are currently being taken and planned in the future to resolve the imbalance between water supply and demand in areas that use Colorado River water. Such actions include the resolution of uncertainties related to water conservation, reuse, water banking, and weather modification concepts.[11]

State Water Project

The State Water Project (SWP) collects water from rivers in Northern California and redistributes it to the water-scarce but populous central and southern portions of California through a network of aqueducts, pumping stations and power plants. Approximately 70% of the water provided by the SWP is used for urban areas and industry in Southern California and the San Francisco Bay Area, and 30% is used for irrigation in the Central Valley. The availability of water supplies from the SWP can be highly variable. A wet water year may be followed by a dry water year which restricts the amount of water that can be delivered throughout California. Metropolitan's SWP imported water is stored at Castaic Lake on the western side of Metropolitan's service area and at Silverwood Lake near San Bernardino, as well as in Diamond Valley Lake.

The Sacramento-San Joaquin River Delta (Delta) is key to the SWP's ability to deliver water to its agricultural and urban contractors. The Delta faces many challenges concerning its long-term sustainability such as climate change posing a threat of increased variability in floods and droughts. Sea level rise complicates efforts in managing salinity levels and preserving water quality in the Delta to ensure a suitable water supply for urban and agricultural use.

[10] 2020 Metropolitan UWMP.
[11] 2012 USBR Colorado River Basin Water Supply and Demand Study.

Furthermore, other challenges include continued subsidence of Delta islands, many of which are below sea level, and the related threat of a catastrophic levee failure as the water pressure increases, or as a result of a major seismic event.

Metropolitan's Board approved a Delta Action Plan in June 2007 that provides a framework for staff to pursue actions with other agencies and stakeholders to build a sustainable Delta and reduce conflicts between water supply conveyance and the environment. The Delta action plan aims to prioritize immediate short-term actions to stabilize the Delta while an ultimate solution is selected, and mid-term steps to maintain the Delta while a long-term solution is implemented. Currently, Metropolitan is working towards addressing three basic elements: Delta ecosystem restoration, water supply conveyance, and flood control protection and storage development.

In April 2015, the Brown Administration announced California WaterFix, as well as a separate ecosystem restoration effort called California EcoRestore (formerly known as the Bay Delta Conservation Plan). Together, the California WaterFix and California EcoRestore would make significant contributions toward achieving the coequal goals of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem. The WaterFix was aimed at making physical and operational improvements to the SWP system in the Delta necessary to restore and protect ecosystem health, south-of-Delta SWP water supplies, and water quality.

In May 2019, the Newsom Administration revised their stance on the WaterFix in response to multiple legal challenges. The revised project would include the construction of one tunnel instead of the previously proposed two-tunnel system. At this time, the DWR and the US Bureau of Reclamation (BOR) have withdrawn their water rights petition (the WaterFix Petition) and the project has been postponed indefinitely.

Recycled Water

The City depends on OCWD for its recycled water supply for non-potable uses such as irrigation. OCWD provided 249 AF of recycled water to the City of Santa Ana in 2020 as part of the Green Acres Project (GAP). OCWD owns and operates the GAP, a water recycling system that provides up to 8,400 AFY of recycled water as an alternate source of water that is mainly delivered to parks, golf courses, greenbelts, cemeteries, and nurseries in the cities of Costa Mesa, Fountain Valley, Newport Beach, in addition to Santa Ana. The City maintains an agreement with OCWD to supply GAP water to customers where available. It is anticipated that recycled water supplied to the City will maintain around 249 AFY through 2045.

4.2 CITY WATER DEMANDS

In 2020, the City's Water Utility provided water service within its 27-square mile radius to a population of 335,086. Approximately 65.5% of the City's water demand is residential single family and multi-family residential units. Commercial, Industrial, and Institutional (CII) land uses, and dedicated landscape, accounts for the remaining 24.5% of the City's total demand. Over the past decade the City's water has averaged 36,245 AF and remained relatively stable. Based on projections in the 2020 UWMP, the population is expected to grow by a total of 2.9% by 2045. As shown below in Table 6, actual water demand in 2020 decreased by approximately 9% in comparison to the projected 2020 water demand identified in the 2015 UWMP. In accordance with the Center of Demographics Research (CDR)[12], the population of Santa Ana decreased by 1% from 2015 – 2020. Therefore, it's reasonable for 2020 actual demands to be lower than the 2020 projected demands in the UWMP based on an overall minor decrease in population and water conservation efforts.

Table 6 2020 Projected and Actual Water Demand (Acre-feet)

Land Use Type	2015 UWMP Projected 2020 Demand	Actual 2020 Demand
Single Family	14,093	11,916
Multi-Family	10,406	9,872
Other (CII)	12,033	8,163
Landscape	147	1,349
Losses	N/A	1,940
Total	**36,676 AF**	**33,240 AF**
Source: 2015 and 2020 City of Santa Ana UWMPs		

Although it is not uncommon for UWMPs to observe actual demand to be lower than projected demands due to conservative planning strategies, water conservation efforts have helped. Conservation is due to the Executive Order mandated by California Governor Edmund "Jerry" Brown in April 2015 in response to the drought that started in 2011. The order required a collective reduction in statewide urban water use of 25% which also influenced Citywide demands. In addition, Senate Bill (SB) X7-7 required the State of California to reduce urban water use by 20% by the year 2020 as described in more detail below.

In April 2015, Governor Brown issued an Executive Order as a result of one of the most severe droughts in California's history, requiring a collective reduction in statewide urban water use of 25% by February 2018, with each agency in the state given a specific reduction target by DWR. In response to the Governor's mandate, the City began to track its water wasting prohibition enforcement activities. On June 2, 2015, the City declared a Phase 2 water supply shortage in Resolution No. 2015-025 by formally requiring all water consumers to reduce use by 12% relative to their 2013 consumption. Additionally, on August 4, 2015, a water wasting penalty rate was established by Resolution No. 2015-047. This new penalty rate permits City staff to penalize those users not meeting their water use reduction targets of 12%. The City of Santa Ana as a whole met its State mandated target; as a result, the City did not have to impose any monetary penalties on any of its users.

[12] Center of Demographics Research (CDR) at California State University, Fullerton, 2020

As of April 7, 2017, Governor Brown ended the drought State of Emergency in most of California, while maintaining water reporting requirements and prohibitions on wasteful practices such as watering during or right after rainfall.[13] The City continues to promote water use efficiency and currently has a goal to continue to reduce water demands by 3% compared to 2013 consumption. In addition, the City only allows outdoor watering to two days per week and only between the hours of 6 PM and 6 AM.[14]

Such restrictions have significantly reduced water demands throughout California. In addition to these mandated restrictions, cities must follow the Water Conservation Act of 2009, also known as Senate Bill (SB) x7-7. This law required the State of California to reduce urban water use by 20% by the year 2020. The City must determine baseline water use during their baseline period and water use targets for the years 2015 and 2020 to meet the state's water reduction goal. The City's 2015 target was 123 gallons per capita per day (GPCD) and the 2020 target is 116 GPCD. The 2020 UWMP reports that the City met both the 2015 and 2020 water use targets with an actual use of 66 GPCD in 2020. It should be noted that this actual usage of 66 GPCD includes indoor usage and outdoor usage (primarily landscaping). This reduction is due to increased conservation as required by the Governor's Executive Order during severe drought conditions throughout California.

The Department of Water Resources (DWR) continues to support conservation efforts throughout the state and this is evident with the passing of the most recent urban Water Use Objectives (WUO). Specifically, Senate Bill 1157 (effective September 28, 2022) requires retail water suppliers to reduce indoor residential water use to 47 GPCD starting in 2025. If DWR deems the economic and environmental impacts of the WUO as beneficial, water use will further decrease to 42 GPCD after 2030. These initiatives are generally considered feasible because new infrastructure will include the most water efficient fixtures including water efficient showers, toilets, dishwashers, washing machines, faucets and leak detection. Similarly, the City of Santa Ana promotes the installation of water efficient fixtures and appliances through a number of conservation rebates and incentives. All new development projects are subject to water efficiency requirements. Based on these trends of decreased population, limited population growth in the future and water conservation/water efficiency efforts, the UWMP identified that water demands are only expected to increase by 1% from 2020 to 2045 as shown in Table 7 below.

Table 7 City of Santa Ana Projected Total Water Demands

Water Demand Type	2020	2025	2030	2035	2040	2045
Potable and Raw Water	33,240	33,633	34,146	33,881	33,589	33,578
Recycled Water	249	249	249	249	249	249
Total Water Demand	**33,489**	**33,882**	**34,395**	**34,130**	**33,838**	**33,827**

[13] SWRCB Water Conservation Portal – Emergency Conservation Regulation, accessed on 08/11/2022. Found here: http://www.waterboards.ca.gov/water_issues/programs/conservation_portal/emergency_regulation.shtml
[14] City of Santa Ana – Water Conservation Website, accessed 08/11/2022. Found here: https://www.santa-ana.org/water-conservation/

Source: 2020 City of Santa Ana UWMP

As shown above, it is projected that water demands will increase from 33,489 AF in 2020 to 33,827 AF in year 2045 with minor fluctuations in the 5-year intervals. The addition of the Bristol Project would increase average demands by a net increase of 645 AFY to 899 AFY or 1.9% to 2.7% increase over the next 25 years. Although the City projects demand will only increase by 1%, the Project's net increase of 1.9% to 2.7% falls within the accuracy and limits of estimating water demands and supplies up to 25 years out. Notably, the UWMP's minor water demand increases are based on historical population growth trends and conservation requirements, and not reflective of the City's maximum development potential.

The population growth and water demands identified in the UWMP do not account for all of the City-approved Specific Plans, Special Zoning, Housing Element of the General Plan (approved September 2022), and Focus Areas within the most recent General Plan Update (2022) and for a valid reason. Full implementation and buildout of all the Specific Plans, Special Zoning, Housing Element, and Focus Areas would result in higher water demands as thousands of more units and residents are implemented throughout the City. However, long-term population trends and actual growth rates do not support such rapid growth as UWMP's are intended to provide reasonable estimates based on recent growth trends, not maximum development potential.

However, the City recognizes tracking larger projects within these development areas is very important and evaluates specific projects as they undergo entitlement, which includes WSA preparation when the threshold is met. WSA's approved after the completion of the most recent UWMP are incorporated into the following update of the UWMP. Since the UWMP is updated every five years, the Project will be included in the 2025 UWMP.

In addition, the 2020 Metropolitan UWMP states that Metropolitan will be able to meet the demands of its member agencies, including the City of Santa Ana, through 2045 with projected surpluses. Therefore, imported water demands for the City are projected to be met through the 20-year requirements of SB 610, SB 1157, and beyond. The City of Santa Ana 2020 UWMP also confirms the ability of the local supplies and the OC Basin to meet the growing demands of the City. The ability for the City to meet these growing demands in multiple climate scenarios is explained in the sections below.

5. REGIONAL WATER SUPPLY RELIABILITY

The City of Santa Ana currently depends on Metropolitan and local groundwater resources to provide the majority of its water supply. This section provides a description of the ability of Metropolitan, OCWD, and the City to ensure that adequate water supplies will be available to satisfy the City's growing water demands including the proposed Project through 2045 during normal, single dry year, and multiply dry year scenarios.

5.1 METROPOLITAN WATER DISTRICT REGIONAL WATER SUPPLY RELIABILITY

Metropolitan's 2020 Urban Water Management Plan (UWMP) was finalized in June 2021 and has been prepared in compliance with Water Code Sections 10608.36 of SB X7-7 and Sections 10610 through 10656 of the Urban Water Management Planning Act (Act). The information included in the 2020 UWMP represents the most current and available planning projections of supply capability and demand developed through a collaborative process with the member agencies, including the City of Sana Ana. The Act requires reporting agencies to describe their water reliability under a single dry-year, multiple dry-year, and average year conditions, with projected information in five-year increments for 20 years.

Metropolitan updates its retail municipal and industrial (M&I) projection periodically based on the release of official regional demographic and economic projections. The projections of retail M&I water demands used in the 2020 UWMP are based on data from the Southern California Association of Governments (SCAG) 2021 Regional Transportation Plan/Sustainable Community Strategy (March 2021) and the San Diego Association of Governments (SANDAG) Series 13: 2050 Regional Growth Forecast (October 2013). The projected regional water demand is adjusted to account for water conserved by Best Management Practices from active, code-based, and price-effect conservation.

Supply analysis includes Colorado River supplies, SWP supplies and existing and proposed storage programs through Metropolitan's service area. Colorado River Aqueduct (CRA) supplies include supplies that would result from existing and committed programs and from implementation of the Quantification Settlement Agreement (QSA) and related agreements. State Water Project (SWP) supplies are estimated using the 2019 SWP Delivery Capability Report distributed by DWR in August 2020. In regard to storage, Metropolitan assumed 2020 storage levels at the start of simulation and used the median storage levels going into each of the five-year increments based on the balances of supplies and demands. See Table 8 below showing Metropolitan's ability to meet growing demands in normal, single-dry, and multiple-dry year climate scenarios.

Table 8 Metropolitan Multiple Climate Scenario Water Supply Capability and Projected Demands Comparison from 2025-2045 (AF)

Forecast Year	2025	2030	2035	2040	2045
Normal Year					
Capability of Current Supply	3,899,000	3,893,000	3,890,000	3,888,000	3,885,000
Total Demands	1,427,000	1,388,000	1,362,000	1,378,000	1,403,000
Supply Programs Under Development	13,000	13,000	13,000	13,000	13,000
Total Potential Surplus	2,485,000	2,518,000	2,541,000	2,523,000	2,495,000
Single -Dry Year					
Capability of Current Supply	2,772,000	2,761,000	2,760,000	2,760,000	2,757,000
Total Demands	1,544,000	1,500,000	1,473,000	1,496,000	1,525,000
Supply Programs Under Development	0	0	0	0	0
Total Potential Surplus	1,228,000	1,261,000	1,287,000	1,264,000	1,232,000
Multiple-Dry Year					
Capability of Current Supply	2,178,800	2,219,000	2,241,000	2,263,000	2,239,000
Total Demands	1,592,000	1,570,000	1,537,000	1,539,000	1,564,000
Supply Programs Under Development	0	0	0	0	0
Total Potential Surplus	586,800	649,000	704,000	724,000	675,000
Source: 2020 Metropolitan UWMP					

The findings of the 2020 Metropolitan UWMP highlight that Metropolitan has supply capabilities that would be sufficient to meet expected demands from 2025 through 2045 under the normal, single dry-year and multiple dry-year conditions with surpluses projected in all scenarios. Metropolitan also has proposed programs in place to ensure against water shortages in the future. These programs include projects along the California Aqueduct and the Colorado River Aqueduct in addition to demand reduction projects. In all climate scenarios, Metropolitan estimates potential surpluses in water supply through 2045.

The Metropolitan 2020 UWMP was made public in early 2021 and shared with Metropolitan's member agencies. Once these findings were finalized, the Metropolitan member agencies could finalize their own 2020 UWMP findings. The City of Santa Ana published their 2020 UWMP in June 2021 after determining Metropolitan would be able to meet the City's imported water demands through 2045. The City also maintains the ability to provide significantly higher supply quantities identified in the 2015 UWMP and these supply projections are still valid. The City of Santa Ana and OCWD local water supply reliability is summarized below in Section 5.2.

5.2 OCWD AND CITY OF SANTA ANA LOCAL WATER SUPPLY RELIABILITY

Like Metropolitan, the City of Santa Ana is also required to assess the reliability of their water service to its customers under normal, single-dry, and multiple-dry water years. As mentioned, the City depends on a combination of imported water from Metropolitan and local groundwater supplies from OCWD to meet its water demands. The City has taken numerous steps to ensure it has adequate supplies to provide for growing demands.

The City has several water demand reduction requirements and resources on their website that informs its customers on how to save water. Some of the main requirements are summarized below[15]:

- Residential
  - Outdoor watering is restricted to no more than two days per week, and only between the hours of 6 p.m. and 6 a.m.
  - Leaks must be repaired within 48 hours of notification by the City.
  - No washing down sidewalks or driveways with a hose.
  - No excessive water flow or runoff that causes water to flow onto an adjoining sidewalk, driveway, street, alley, gutter, or ditch.
  - No washing vehicles with a hose unless the hose is fitted with a shut-off nozzle.
  - No operating a fountain or decorative water feature unless the water is part of a recirculating system.
  - No outdoor watering during and 48 hours following measurable rainfall.

- Businesses
  - Restaurants, cafes, and bars can only serve water to customers on request.
  - Hotels and motels must prominently display a notice providing guests with the option of choosing not to have towels and linens laundered daily.
  - No outdoor watering of non-functional or decorative turf at commercial, industrial, and institutional sites. Outdoor watering of trees and other perennial non-turf plants is permitted.

In addition, landscape policies have also been modified to allow drought tolerant landscape throughout the City[16]. These programs have been successful in reducing water demands throughout the City's service area.

OCWD is also taking strides to ensure local water supplies will meet growing demands now and into the future. As mentioned, OCWD manages the City's groundwater supply and the entire OC Basin utilizing the BPP approach. In 2013, OCWD's Board of Directors adopted a policy to establish a stable BPP with the intention to work toward achieving and maintaining a 75 percent BPP by FY 2015-16. Although BPP is set at 75 percent, based on discussions with OCWD a conservative BPP of 85 percent is assumed through 2045 for supply projection analysis in the City's 2020 UWMP. Principles of this policy include:

[15] City of Santa Ana – Water Conservation Website. Found here: https://www.santa-ana.org/water-conservation
[16] City of Santa Ana – Landscape Design Guidelines. Found here: https://www.santa-ana.org/city-landscape-design-guidelines/

- OCWD's goal is to achieve a stable 75 percent BPP, while maintaining the same process of setting the BPP on an annual basis (BPP will be set in April of each year after a public hearing has been held and based upon the public hearing testimony, presented data, and reports provided at that time).
- OCWD's transition to the 75 percent BPP was due to construction of the GWRS Initial Expansion Project, which was completed in 2015. This expansion provided an additional 31,000 AFY of water for recharging the groundwater basin.
- A higher BPP at 85% is expected starting 2025 due to the completion of the GWRS Final Expansion in 2023 and relatively lower water demands.
- OCWD must manage the OC Basin in a sustainable manner for future generations. The BPP will be reduced if future conditions warrant the change.
- Each project and program to achieve the 75 percent BPP goal will be reviewed individually and assessed for their economic viability.

The BPP goals mentioned above coincide with other management strategies as shown in OCWD's Long Term Facilities Plan (LTFP), the 2015 Groundwater Management Plan and the Watermaster Report 2018-19. These documents highlight OCWD's plans to ensure groundwater supply will be available into the future to support growing demands of its service area.

As shown in Table 9 below, the City's available supply, including OCWD groundwater and Metropolitan imported water, will meet projected demand during normal, single dry, and multiple dry years. For the City's 2020 UWMP, the normal dry year was selected as the City's 2020 demand. A single-dry year is defined as a single year of no to minimal rainfall within a period that average precipitation is expected to occur. The City has documented that it is 100% reliable for single dry year demands from 2025 through 2045 with a demand increase of 6% using FY 2013-14 as the single dry-year. Multiple-dry years are defined as three or more years with minimal rainfall within a period of average precipitation. The City is capable of meeting all customers' demands with significant reserves held by Metropolitan, local groundwater supplies, and conservation in multiple dry years from 2025 through 2045 with a demand increase of 6% using FY 2013-14 as the driest years.

Table 9 City of Santa Ana Multiple Climate Scenario Water Supply and Demand Comparison from 2025-2045 (AF)

Forecast Year	2025	2030	2035	2040	2045
Normal Year					
Supply totals[1]	33,882	34,395	34,130	33,838	33,827
Demand totals	33,882	34,395	34,130	33,838	33,827
Single -Dry Year					
Supply totals[1]	35,915	36,459	36,178	35,868	35,857
Demand totals	35,915	36,459	36,178	35,868	35,857
Multiple-Dry Year					
First year					
Supply totals[1]	35,581	36,024	36,403	36,116	35,866

Forecast Year	2025	2030	2035	2040	2045
Demand totals	35,581	36,024	36,403	36,116	35,866
Second Year					
Supply totals[1]	35,665	36,133	36,347	36,054	35,864
Demand totals	35,665	36,133	36,347	36,054	35,864
Third Year					
Supply totals[1]	35,748	36,241	36,290	35,992	35,861
Demand totals	35,748	36,241	36,290	35,992	35,861
Fourth Year					
Supply totals[1]	35,831	36,350	36,234	35,930	35,859
Demand totals	35,831	36,350	36,234	35,930	35,859
Fifth Year					
Supply totals[1]	35,915	36,459	36,178	35,868	35,857
Demand totals	35,915	36,459	36,178	35,868	35,857

Note: [1] For simplicity, the table shows supply to balance the modeled demand. However, based on the purchase agreement the City has with MET, the City is contractually able to purchase more water (City of Santa Ana, 2020 UWMP) if needed.

As shown in Table 9 above, in all climate scenarios analyzed in the 2020 UWMP, the City is demonstrating sufficient supply to meet projected demands. Reliability of local water supplies will be ensured through continued implementation of the OCWD Groundwater Management Plan, OCWD's LTFP, and the combined efforts and programs among member agencies of Metropolitan.

To simplify the water reliability analysis for normal dry, single dry, and multiple dry year conditions the City shows that supply is balanced to match the modeled demand projections shown in Table 9. This does not reflect the total supply available to the City for each of these scenarios. The City of Santa Ana has additional supply and resources available from Metropolitan and sustainable management practices. See Table 10 below for a comparison of supply projections in the 2015 and 2020 UWMPs.

Table 10 City of Santa Ana 2015 UWMP and 2020 UWMP Supply Comparison (AFY)

Forecast Year	2020	2025	2030	2035	2040	2045
Supply Normal Year						
2015 UWMP	36,998	39,717	39,989	39,978	40,036	
2020 UWMP		33,882	34,395	34,130	33,838	33,827
Difference		5,835	5,594	5,848	6,198	
Supply Single -Dry Year						
2015 UWMP	39,218	42,100	42,388	42,377	42,438	
2020 UWMP		35,915	36,459	36,178	35,868	35,857
Difference		6,185	5,929	6,199	6,570	
Supply Multiple-Dry Years						
First Year						
2015 UWMP	39,218	42,100	42,388	42,377	42,438	
2020 UWMP		35,581	36,024	36,403	36,116	35,866
Difference		6,519	6,364	5,974	6,322	
Second Year						
2015 UWMP	39,218	42,100	42,388	42,377	42,438	
2020 UWMP		35,665	36,133	36,347	36,054	35,864
Difference		6,435	6,255	6,030	6,384	
Third Year						
2015 UWMP	39,218	42,100	42,388	42,377	42,438	
2020 UWMP		35,748	36,241	36,290	35,992	35,861
Difference		6,352	6,147	6,087	6,446	
Source: 2015 & 2020 City of Santa Ana UWMP						

As mentioned previously, the 2015 UWMP, which estimated supply through 2040, demonstrates the City has a greater supply than shown in the 2020 UWMP with a range of 5,500 to 6,500 AFY higher than the 2020 UWMP projections. As noted, the City's projection tables are simplified to show that supply is balanced to the modeled demands. Based on the purchase agreement the City has with MET, the City is contractually able to purchase more water[17]. Although not shown in the 2020 UWMP there is surplus supply available to the City that still exists and is available should the need arise.[18]

The Project is anticipated to be constructed in three major phases including the following:

Phase I: 2026 – 2030
Phase II: 2030 – 2035
Phase III: 2033 – 2036

These dates are subject to change but demonstrates the project is assuming an approximately a 10-year buildout beginning in 2026 and will be included in the 2025 UWMP in more detail. The Bristol Specific Plan's net increase of 645 AFY to 899 AFY will result in a 1.9% to 2.7% increase in the demand projections from 2025 through 2045, which is well within the normal fluctuations for water demand estimates. This increase in demand falls well within the 5,500 to 6,500 AFY supply surpluses previously identified.

[17] City of Santa Ana 2020 UWMP (Section 6.2)
[18] Personal Communication with City of Santa Ana, Public Works Agency

6. CONCLUSION

The City of Santa Ana depends on local and regional water supplies from OCWD and Metropolitan to satisfy growing demands. OCWD has managed the OC Basin for over 75 years and has plans to sustainably manage the groundwater system under the new California SGMA policies and guidelines. Metropolitan has stated in its 2020 UWMP that its water supply portfolio will be able to satisfy regional growth and water demands through 2045 with sufficient supply projections and surpluses in all scenarios. The same findings were concluded in the City of Santa Ana's 2020 UWMP as both Metropolitan and OCWD supplies are projected to meet future water demands.

The proposed Project water demand will result in a net increase of approximately 645 AFY to 899 AFY at full buildout (anticipated 2036), which results in an increase of 1.9% to 2.7% when compared to the City's projected water demands. The 2020 UWMP projected that water demands would grow in a rather limited fashion from 33,489 AF to 33,827 AF from 2020 to 2045 based on limited population growth and water conservation. As a result of recent state and local actions to reduce water usage, the City's actual 2020 water demand decreased by 9% from the projected 2020 water demand in the 2015 UWMP (a reduction of approximately 3,436 AFY), as a result of a minor population decline of 1% and citywide conservation efforts. This trend is expected to continue, consistent with applicable regulations that seek to further reduce water usage. Therefore, the 2020 City UWMP is conservative with projections of water supplies needed to satisfy demands through 2045. The 2025 UWMP will account for any approved WSA's within the past 5 years to ensure any projects that are not yet built will be tracked accordingly within the demand and supply projections.

Being a member agency of Metropolitan strengthens the City's water supply reliability and the City is able to provide significantly higher supply quantities, as identified in the 2015 UWMP. Similarly, continued conservation efforts will improve with the addition of the Department of Water Resources' most recent urban water use regulation, SB 1157, which is currently 55 gpcd and calls for a reduction of indoor water use to 47 gpcd by 2025.

The Project's net increase of 645 AFY to 899 AFY of water demand falls within the range of planned water supplies and allows for potential further reductions due to water efficiency and water restrictions. Therefore, this WSA is able to conclude that adequate supplies are available to provide for the demands of the proposed Project as well as other service area demands within the City of Santa Ana.

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8. TECHNICAL APPENDICES

Appendix A – Proposed Project Water Demand Calculations
Appendix B – Local Water Demand References
Appendix C – Landscaped Area Figure

APPENDIX A

PROPOSED PROJECT WATER DEMAND CALCULATIONS – MWDOC DEMAND FACTORS

Proposed Project Water Demands

Land Use	Proposed		Water Duty Factor		Proposed Daily Water Usage (GPD)	Proposed Annual Water Usage (AFY)
Multi-Family Residential[1]	3,750	units	190	gpd/unit[2]	712,500	798
Senior Living/ Continuum of Care[1]	200	units	190	gpd/unit[2]	38,000	43
Hospitality	250	keys	180	gpd/room[3]	45,000	50
Commercial	350,000	gsf	2,500	gpd/acre[3]	20,087	23
Landscaping[5]	6.6	acres	ETWU equation[4]		13,463	15
				Proposed Water Demands	829,050	929
				Existing Water Demands (Commercial)	26,691	30
				Net Water Demand (Proposed – Existing)	**802,359**	**899**

Notes

1. According to the Related Bristol Specific Plan Draft EIR approximately 70% of the multi-family residential units are planned to be studios/1 bedroom and 30% to be 2 bedroom/3 bedroom.
2. Municipal Water District of Orange County – Orange County Water Reliability Study (December 2016).
3. City of Santa Ana Design Guidelines for Water and Sewer Facilities (November 2020)
4. Estimate Irrigation System Water Use Using ETWU Gallons Per Year= (annual ETo x 0.62 x PF x HA ÷ IE)
5. See Appendix C for a figure of the landscaped areas.

PROPOSED PROJECT WATER DEMAND CALCULATIONS – SB 606 AND AB 1668 FACTORS (PERSONS PER HOUSEHOLD X 55 GPCD)

Proposed Project Water Demands

Land Use	Proposed		Density[2]		Water Use[3]		Water Duty Factor		Proposed Daily Water Usage (GPD)	Proposed Annual Water Usage (AFY)
Multi-Family Residential[1]	3,750	units	2.41	pph	55	gpcd	133	gpd/unit	49,063	557
Senior Living/Continuum of Care[1]	200	units	2.41	pph	55	gpcd	133	gpd/unit	26,510	30
Hospitality	250	keys					180	gpd/room	45,000	50
Commercial	350,000	gsf					2,500	gpd/acre	20,087	23
Landscaping[4]	6.6	acres	ETWU equation[5]						13,463	15
								Proposed Water Demands	602,122	674
								Existing Water Demands (Commercial)	26,691	30
								Net Water Demand (Proposed – Existing)	**575,431**	**645**

Notes

1. According to the Related Bristol Specific Plan Draft EIR approximately 70% of the multi-family residential units are planned to be studios/1 bedroom and 30% to be 2 bedroom/3 bedroom.
2. City of Santa Ana's GPU PEIR – Buildout Methodology, Table 4. Found here: https://storage.googleapis.com/proudcity/santaanaca/uploads/2022/04/Appendix-B-b-Santa-Ana-Buildout-Methodology.pdf
3. SB 606 and AB 1668 Water Conservation and Drought Planning. Found here: https://www.waterboards.ca.gov/water_issues/programs/conservation_portal/docs/enrolled_ab1668_sb606.pdf
4. See Appendix C for a figure of the landscaped areas
5. Estimate Irrigation System Water Use Using ETWU Gallons Per Year= (annual ETo x 0.62 x PF x HA ÷ IE)

APPENDIX B

LOCAL WATER DEMAND REFERENCES

Appendix C - Local Demand References				
Land Use Category	City/ Jurisdiction	Average Density (DU/Acre)	Indoor Water Use (GPD/DU)	Source
Residential - High Density	Irvine	32.5	120	Irvine Ranch Water District, 2019, Water Resources Master Plan, Table 3-1
Residential - High Density	Newport Beach	12.3	110	Irvine Ranch Water District, 2019, Water Resources Master Plan, Table 3-1
Residential - High Density	Tustin	17.4	100	Irvine Ranch Water District, 2019, Water Resources Master Plan, Table 3-1
Residential - High Density	Lake Forest	32.5	100	Irvine Ranch Water District, 2019, Water Resources Master Plan, Table 3-1
Residential - High Rise Density	Orange	35	115	Irvine Ranch Water District, 2019, Water Resources Master Plan, Table 3-1
Residential - High Rise Density	Irvine	40	120	Irvine Ranch Water District, 2019, Water Resources Master Plan, Table 3-1
Multifamily Residential	Carson	44.4	103	California Water Service, - Imperial Avalon Water Supply Assessment. Found here: https://ci.carson.ca.us/content/files/pdfs/planning/docs/projects/ImperialAvalon/Imperial%20Avalon%20Mixed-Use%20Project%20Draft%20Environmental%20Impact%20Report.pdf
Multifamily Residential	Anaheim	N/A; 853 DUs	105	PSOMAS, 2022, OC V!BE Water Supply Verification. Found here: https://www.anaheim.net/DocumentCenter/View/46116/CEQA-App-N-Water-Supply-Verification?bidId=

APPENDIX C

LANDSCAPED AREA FIGURE

MACARTHUR BLVD.

PLAZA DR.

S BRISTOL ST.

SUNFLOWER AVE.

Landscape Areas Table		
Streetscape	85,934 SF	2.0 Acres
Park	56,697 SF	1.3 Acres
Amenity	130,306 SF	3.0 Acres
Greenlink	11,578 SF	0.3 Acres
Plaza Planters	2,526 SF	0.06 Acres
Total	287,041 SF	6.6 Acres

NORTH

0 50 100 150 200 feet

1" = 100'