PALM GOLDENWEST SPECIFIC PLAN AMENDMENT

WATER SUPPLY ASSESSMENT

CITY OF HUNTINGTON BEACH
ORANGE COUNTY, CALIFORNIA

PREPARED FOR:

Palm Goldenwest Specific Plan Amendment
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1. OVERVIEW

1.1. BACKGROUND & SCOPE OF WORK

This Water Supply Assessment (WSA) has been prepared by Fuscoe Engineering, Inc. for the proposed Palm Goldenwest Specific Plan Amendment ("project"). The project is located within the City of Huntington Beach along Pacific Coast Highway between Goldenwest St. and Seapoint St. The original Specific Plan (SP) was approved in 2000 and allows for up to 1,658,000 square feet of commercial use. The project would involve an amendment to the original SP approval that will introduce up to 800 residential units and include up to 348,480 square feet of commercial use consisting of hotel, retail and restaurants.

As the water provider for the Palm Goldenwest Specific Plan Amendment (SPA) area, the City of Huntington Beach serves as the lead agency in reviewing and approving the project's water demands. The purpose of this WSA is to analyze the sufficiency of Huntington Beach's existing and planned water supplies to meet the projected demands of the project. This analysis considers water demand projections associated with the currently approved SP, the updated water demands associated with the proposed SPA, the most current water usage and regional water demand and supply projections under normal, single dry, and multiple dry year conditions, which is consistent with the requirements of the 2002 Senate Bill 610. This WSA evaluates proposed land use changes and associated water demands with regional and City water supply resources.

The WSA does not address or evaluate the water system itself or evaluate onsite and offsite improvements related to the water system. That analysis is handled separately through Public Works. Approval of the WSA is only related to the ability of the City to provide sufficient water supply to the project now and in the future without impacting supply to existing residents and businesses and does not address the water infrastructure system itself.

1.2. SUMMARY OF FINDINGS

As discussed, in the sections below, the City of Huntington Beach in collaboration with regional agencies and water purveyors, manages water supplies within the City including the Palm Goldenwest Specific Plan area. Provided below is a summary of the estimated water demands for the currently approved Palm Goldenwest SP, along with proposed development associated with the Palm Goldenwest SPA.

1.2.1. WATER DEMAND

The projected water demand for the proposed project was dervived using water data from the 2024 City of Huntington Beach Sewer System Master Plan Update (SSMPU) prepared by GHD.

The use of the 2024 SSMPU was identified as the most appropriate resource for the planned residential and commercial development for estimating water demands. The SSMMPU is based on actual water usage per land use, along with the "return-to-sewer" ratios to estimate the sewer demands for the various development types. Removing the return-to-sewer ratios allow for water demands to be established for the proposed development plan and allows for an overall water demand estimate to be calculated for the current SP, and the proposed SPA.

The total water demand for the current SP is estimated at 542 AFY while the proposed SPA is estimated at approximately 347-acre feet per year (AFY) resulting in a demand decrease of 195 AFY (36%). The proposed demand includes water needs for the proposed 800 dwelling units (DUs), 350-room hotel, commercial uses and associated landscape irrigation including the

buffer. This demand estimate based on per unit water use per land use accurately reflects the anticipated intensity in development proposed for the SPA.

The potable water demand associated with the existing uses within the specific plan area has been accounted for through a review of site-specific water bills and is estimated at 14 AFY. When factoring in existing water usage, the increase in water demand for the SPA is reduced to a net increase of 333 AFY.

As part of the UWMP process, projected water demands are supposed to account for all approved general plan land uses and specific plans. The City of HB's 2005 UWMP and all future UWMP's following should have accounted for the projected water demand of the entire approved SP. Water Supply Assessments (WSA) were not required until 2002, so the original approval of the Palm Goldenwest SP would not have required a WSA since it was approved prior in 2002.

This WSA will take a conservative approach to water supply evaluation and evaluate the development of the SPA as a stand-alone project. The evaluation will compare the proposed SPA water demands against three conditions: the existing water usage of the site, the water demands of the approved SP and the projected water demand and supply in the 2020 UWMP. As previously noted, implementation of the SPA will result in a lower annual water demand as compared to the currently approved SP land uses.

The City is in the process of updating it's UWMP in 2025 (due by June 30, 2026) and the proposed project, along with other developments will be included in the update. Additionally, the proposed project will incorporate water efficient fixtures and implement conservation practices aligned with the City and region's sustainability goals. This proactive approach will help manage the increased demands associated with the development while supporting the City's overall water conservation efforts.

1.2.2. WATER SUPPLY

As discussed in Section 5 of this WSA, the City of Huntington Beach's water supply is sourced from a combination of local groundwater and imported water. The City purchases imported water through the Municipal Water District of Orange County (MWDOC), which receives its water from the Metropolitan Water District of Southern California (MET). MET sources water from both the Colorado River and the State Water Project (SWP), utilizing extensive infrastructure and storage to ensure reliability across member agencies. Huntington Beach relies primarily on groundwater from the Orange County Groundwater Basin, which is managed by the Orange County Water District (OCWD). This basin benefits from replenishment efforts through OCWD's Groundwater Replenishment System (GWRS), which utilizes treated wastewater to support groundwater sustainability.

In 2020, the City's water supply portfolio was comprised of approximately 70% groundwater and 30% imported water. There is currently no recycled water usage within the City's service area. This diversified supply supports local and regional planning efforts throughout Huntington Beach and ensures that the City can meet both current and anticipated future water demands, including the proposed Palm Goldenwest SPA.

1.2.3. WATER SUPPLY RELIABILITY

As discussed in the City's 2020 UWMP, the 2023 Water Master Plan Update and this WSA, Huntington Beach has sufficient supply to meet anticipated projected demands from 2025 through 2045 under the normal, single dry-year and multiple dry-year conditions, including the proposed project The City's documentation and analysis demonstrates the City has

sufficient supply to supply the proposed project, all other known development projects currently in the pipeline and full construction and occupancy of the Regional Needs Housing Assessment (RNHA) units. Further, in the event of significant supply shortfalls, the City's Water Shortage Contingency Plan (WSCP) provides a structured response. The WSCP outlines six stages of action, each progressively enforcing conservation and reduction measures based on the severity of the shortage. For instance, Stage 1 encourages voluntary conservation, while Stage 6 mandates emergency measures to address supply reductions exceeding 50%.

2. Legal Requirements and Determinations

2.1. SB 610, Water Demand Threshold

In 2002 California's SB 610 amended the California Water Code to require preparation of a "water supply assessment" (WSA) for proposed development project's meeting one or more specified water demand thresholds. The Water Code's provisions regarding preparation of WSAs have subsequently been amended several times to, among other things, revise the thresholds for WSA preparation and expand WSA analysis requirements related to the use of groundwater to meet project demands.

Pursuant to SB 610, a water supply assessment is required for any project subject to CEQA that is one or more of the following:

1) A proposed residential development of more than 500-dwelling units.
2) A proposed shopping center or business establishment employing over 1,000 persons or having over 500,000 square feet of floor space.
3) A proposed commercial office building employing over 1,000 persons or over 250,000 square feet of floor space.
4) A proposed hotel or motel, or both, having more than 500 rooms.
5) A proposed industrial, manufacturing, or processing plant, or industrial park planned to house over 1,000 persons, occupying over 40 acres of land or over 650,000 square feet of floor area.
6) A mixed-use project that includes one or more of the projects specified in this subdivision.
7) 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. (Water Code § 10912(a).)

The proposed SPA would allow for an addition of more than 500-dwelling units and 348,480 SF of commercial, thereby requiring a WSA.

3. Project Description

3.1. Existing Land Use

The Palm Goldenwest SP area is an oil production facility, located in the City of Huntington Beach. The project site includes several small buildings that support production operations, along with roads and parking for employee use.

3.2. Proposed Land Use

The proposed Palm Goldenwest SPA will allow for the introduction of 800 residential units and include up to 348,480 square feet of commercial consisting of a 350-room-hotel, retail and restaurants. The project also incorporates a significant amount of landscaping (approximately 42.5 acres), including a park, integrated landscaping within the residential and commercial components and a landscape buffer surrounding the entire site. The percentage landscaping

is a slight increase compared to the originally approved SP. See Appendix A for the Palm Goldenwest SPA area.

3.3. WATER SYSTEM

3.3.1. REGIONAL WATER SYSTEM, THE CITY OF HUNTINGTON BEACH

The City of Huntington Beach's water service area spans approximately 27 square miles along the Orange County coast of Southern California. This area is bounded by the Pacific Ocean to the west Newport Beach and Costa Mesa to the east, Fountain Valley and Westminster to the north and northeast, and Seal Beach to the northwest.

The City's water system is managed collaboratively by the Utilities Division. In 1964 the City's Water Division was established as Division of the Public Works Department. In 2003, the Public Works Wastewater Section was incorporated into the Water Division to form the Utilities Division.. The Utilities Division is responsible for the operation and maintenance of the City's water and wastewater systems. Meanwhile, the Public Works Department provides engineering services, including capital project delivery, bay water quality, environmental services, and transportation and development services. Together, these departments ensure the effective planning and improvement of the City's water supply and distribution systems through master planning and capital improvement projects.

Huntington Beach's water infrastructure includes a wellfield with a total capacity of 10,900 gallons per minute (GPM), 15 recycled water connections, and six inter-agency emergency interconnections. The City's water distribution network consists of approximately 300 miles of pipelines, serving 26,765 connections. This distribution system is divided into five main pressure zones (Zones 1 through 5) and 16 minor zones. Zones 1 and 2 are the largest and meet the majority of City's demands, while Zones 3, 4, and 5 are smaller pumped zones. Supporting this system are four wells, three storage reservoirs, five pump stations, and 43 pressure-reducing stations (PRS) that manage water pressure across the network.

3.3.2. LOCAL WATER SYSTEM, PALM GOLDENWEST SPECIFIC PLAN AMENDMENT

The Palm Goldenwest SP area is located within the City of Huntington Beach along Pacific Coast Highway between Goldenwest Street and Seapoint Street, with a small open-space parcel located just north of Seapoint Street. It is also bounded to the northwest by Palm Avenue along with residential developments. The City's service area is comprised of two pressure zones, Zone 1 and Zone 2. The project is located within Pressure Zone 1. Ground elevations in Zone 1 vary between 5 feet below and 80 feet above sea level. Zone 1 is served by the Overmyer, Peck, and Edwards Hill Booster Pump Stations. These pump stations boost water from their respective reservoirs into the Zone 1 distribution system. The Overmyer Pump Station, located at about 1 ½ miles northeast of the Specific Plan area, near the Garfield Street /Main Street intersection, includes four pumps with capacities ranging from -3,500 to 6,500 GPM and a design head of 180 feet. The Peck Pump Station, located about 5 miles north of the project, on Springdale Street north of Bolsa Avenue, includes four pumps with capacities of 4,635 gpm and a design head of 185 feet. The Edwards Hill Pump Station, located about 1 ½ miles north of the project, on Edward Street, just south of Ellis Avenue, includes four pumps with capacities of 2,500 gpm, and a design head of 180 feet. This infrastructure ensures reliable water supply and pressure management for the Palm Goldenwest SP area, which has historically received water from the City of Huntington Beach's Public Works and Utilities Department.

4. WATER DEMANDS

4.1. EXISTING REGIONAL WATER DEMANDS, CITY OF HUNTINGTON BEACH

Water use within the City of Huntington Beach's service area has remained relatively stable over the past decade, with an annual average consumption of approximately 27,753-acre feet (AF). This stability reflects the City's land use growth and implementation of water conservation measures. See Table 1 below for a view of the City's actual water demands from 2020 broken into land use types.

Table 1 – City of Huntington Beach Actual Water Demands 2020 (AFY)

Land Use Type	2020
Single Family	12,197
Multi-Family	6,009
Institutional/Governmental	130
Commercial	3,240
Industrial	612
Landscape	2,141
Losses	1,638
Total Potable	**25,966**

Source: City of Huntington Beach, 2020 UWMP, Table 4-1: Retail: Demands for Potable and Non-Potable Water – Actual

As shown above in Fiscal Year (FY) 2019-20, the City's actual total water demand was 25,966 AF. During this time, the potable water use profile consisted of 70.1% residential consumption, 15.3% commercial, institutional, and industrial uses, and 8.2% for large landscape irrigation. Non-revenue water and other uses made up about 6.4% of the total potable water consumption.

4.1.1. SBX7-7 BASELINE AND TARGETS

The Water Conservation Act of 2009, also known as SBx7-7 (Senate Bill 7), was signed into law in 2010 and mandated that the State of California reduce urban water use by 20% by the year 2020, using a 2013 baseline. To comply with SBx7-7, retail water suppliers, such as the City, had to determine their baseline water use and set targets for 2015 and 2020. Compliance for suppliers could be achieved individually or as part of a regional collaboration with other retail water suppliers. The City of Huntington Beach achieved their SBx7-7 target both individually and as a member of the Orange County 20x2020 Regional Alliance, which is a coalition of MWDOC and its retail member agencies, as well as the Cities of Anaheim, Fullerton, and Santa Ana.

To determine the regional water use target of the Orange County 20x2020 Regional Alliance a weighted average (based on population) of individual agency targets was taken. In 2020, the regional water use target for the Orange County 20x2020 Regional Alliance was 159 gallons per capita per day (GPCD), and the actual water use in the region was 109 GPCD, demonstrating that the region successfully met its goal. Similarly, the City of Huntington Beach met its water conservation goals, with an actual water use of 88 GPCD in 2020, which was well below its target of 142 GPCD.

4.1.1. EXISTING DEMANDS FROM 2021 TO 2024

In addition to the water use reported in the 2020 UWMP, the City also tracks its annual FY water use under varying land use categories and for FY 21/22 through FY 23/24, water use ranged from approximately 23,837 AF in 22/22 to 21,428 AF in 23/24. This trend demonstrates further reductions in water demand and increased effectiveness of water conservation.

Table 2 – City of Huntington Beach Actual Water Usage FY 2021 – FY 2023 (AFY)

Meter Type	FY 21/22	FY 22/23	FY 23/24
Single Family	11,988	11,058.7	10,845.4
Multi-Family	5,460	5,313.0	5,136.6
Commercial	3,167	2,889.5	2,762.9
Industrial	491	414.7	403.2
Irrigation	1,668	1,202.0	1,297.4
Residential Irrigation	273	239.4	236.7
Municipal Irrigation	667	620.4	631.7
Municipal Facilities	124	111.6	114.1
Total Potable	**23,837**	**21,849**	**21,428**

Source: City of Huntington Beach, "Email to Fuscoe Engineering." 26 June 2025

As shown above the City's existing total potable water demands have ranged from as low as 21,428 AF in FY 23/24 to 23,837 AF in FY 21/22. When comparing water usage from the past three years (2021-2023) the City has experienced a decrease in water use. From FY 21/22 to FY 23/24, there was an average decrease in water use of approximately 9% for residential and 13% for commercial land uses. The significant above-average rainfall in 2022/2023 and slightly above-average rainfall in 2023/2024 may also have contributed to the recent reduction in water usage. Water usage data through April of FY 24/25 2024 (83% of the FY) continues to be consistent with the past 3 reporting years[1].

4.2. PROPOSED REGIONAL WATER DEMANDS, CITY OF HUNTINGTON BEACH

Looking ahead, the City's projected water demand values in the 2020 UWMP were developed in collaboration with MWDOC as part of the City's UWMP. MWDOC, as the regional wholesale supplier for much of Orange County, works closely with its retail agencies, including Huntington Beach, and with its wholesaler, MET, to develop accurate demand projections for imported water.

The City's future water demand projections consider several factors, including ongoing water conservation strategies and projected growth areas. While single-family and multi-family residential water use is projected to decrease due to increased water use efficiency measures, the demand for non-residential water uses is expected to increase. Projections for non-residential water use from 2025 through 2045 have been separated into commercial, industrial, and institutional/governmental categories based on the proportions reported for each billing sector. Landscape water demands are anticipated to remain consistent, while non-revenue water, which includes water losses within the system, is projected to vary slightly. See Table 3 for the breakdown of the City's proposed water demand by land use.

[1] City of Huntington Beach, "Email to Fuscoe Engineering." July 2025. Fiscal Year Water Use.

Table 3 – City of Huntington Beach Projected Water Demands 2025-2045 (AF)

Land Use Type	2025	2030	2035	2040	2045
Single Family	11,714	11,525	11,339	11,127	11,090
Multi-Family	5,950	5,826	5,731	5,603	5,603
Commercial	3,115	3,465	3,551	3,640	3,640
Industrial	588	654	670	687	687
Institutional/ Governmental	125	139	142	146	146
Landscape	3,412	3,412	3,412	3,412	3,412
Losses	1,496	1,503	1,492	1,478	1,476
TOTAL	**26,399**	**26,524**	**26,399**	**26,093**	**26,054**

Source: Table 4-3 Use of Potable and Non-Potable Water - Projected, City of Huntington Beach 2020 UWMP.

The City's total water demand is projected to increase by approximately 0.3% from 2020 to 2045, increasing from 25,966 AF (Table 1) to 26,054 AF (Table 3). The majority of this growth is anticipated to come from commercial and institutional/governmental water use, while residential water demands are expected to decline due to continued water use efficiency measures that occur throughout the 25-year projection. As shown in Table 2 from CY21 to CY23 actual water demands ranged from approximately 23,837AF in 2021 to 21,428 AF in 2023, which is approximately 10-18% below the projected 26,399 AF that the UWMP anticipated for 2025.

It is also worth noting the 2020 UWMP did not incorporate water demands associated with specific projects including any near-term projects going through entitlement, permitting or construction nor did the UWMP account for implementation of any RNHA units. In 2021, the City was allocated 13,368 RHNA units to zone for and encourage development by 2029.

4.2.1. CUMULATIVE DEVELOPMENT TRACKING AND DEMAND ESTIMATES

In order to account for other projected water demands beyond the proposed SPA, this WSA has compiled a list of all Major Projects tracked by the City's Community Development Department including those in planning, plan check (permits) and under construction. Table 4 summarizes the current status.

Table 4 – City of Huntington Beach Major Projects Summary

Status	Number of Developments	Commercial Square Footage	Residential DU	Bed/Hotel	Water Demand (GPD)	Water Demand (AFY)
Planning	12	459,626	329	374	253,894	284
Plan Check	5	404,018	349	12	178,738	200
Under Construction	6	48,113	476	226	150,543	169
TOTAL	**23**	**911,757**	**1,154**	**612**	**583,175**	**653**

Notes: DU = dwelling unit, GPD = gallons per day, AFY = acre-feet per year

As shown above, there are 23 projects in planning, plan check or construction. When completed and occupied, these projects would collectively generate a projected water demand of up to 653 AFY.

4.3. EXISTING LOCAL WATER DEMANDS, PALM GOLDENWEST SPECIFIC PLAN AMENDMENT

Under the existing condition, the facility serves as an oil production facility with buildings, parking lots, oil wells and associated equipment. Water usage bills were collected to evaluate potable water usage for the site. Under the existing condition, annual water usage is estimated at 14 AFY for the 2024-2025 FY.

4.4. WATER DEMAND METHODOLOGY

The projected water demand for the proposed project was derived utilizing data out of the 2024 City of Huntington Beach Sewer System Master Plan Update (SSMPU) prepared by GHD. Prior to the selection of the SSMPU, both the 2020 UWMP and City's Water Master Plan were reviewed and evaluated for water use factors (demand factors) associated with the various land uses. Neither report provided water use factors and only provided per capita water usage data. Reliance on city-wide per capita water values does not characterize differences between single family homes versus multi-family and does not account for water efficiency measures associated with new building codes. Therefore, the 2024 SSMPU was utilized to determine water demand factors for various land uses.

The 2024 SSMPU utilized current water billing records to determine water demands per land use and unit factors and then evaluated "return-to-sewer" ratios to establish sewer demand factors. This study utilizes the water demand factors without factoring in the "return-to-sewer" discount factor. The water demand factors were also compared against IRWD's published 2019 Water Use Factors for similar residential densities and non-residential commercial uses and were found to be within 10% of each other. This study uses the slightly higher water use demand factors associated with the 2024 SSMPU to be the most conservative. Using these demand factors with the proposed development plan allows for an overall water demand estimate to be calculated for the current SP, and the proposed SPA.

4.5. WATER DEMANDS EXISTING PALM GOLDENWEST SPECIFIC PLAN

The existing Palm Goldenwest SP allows for the development of 1,658,000 SF of general commercial and 135,036 SF of open space land uses. The existing SP also requires a variety of setbacks that will include landscaping throughout the SP area that would all sum up to 1,049,206 SF. The following tables represent a detailed analysis of the local water use factors and the California Department of Water Resources (DWR) Maximum Applied Water Allowance (MAWA) model for landscape irrigation to determine the existing SP's anticipated water usage.

Table 5 – Water Use Factors

HUNTINGTON BEACH SEWER SYSTEM MASTER PLAN UPDATE (2024) WATER USE FACTORS	
Land Use Designation	**Water Use Factor**
Single Family Residential – Detached & Attached	205 GPD/DU
Multi-Family Residential	163 GPD/DU
Hotel	179 GPD/Room
Commercial – Office	0.12 GPD/SF
Commercial – General	0.26 GPD/SF
Notes: GPD = gallons per day, DU = dwelling unit Water Demand Factors based on Return-to-Sewer Factor Sources: *City of Huntington Beach Sewer System Master Plan Update (2024).*	

As shown above, the water demand factors were developed using the City's Return-to-Sewer ratio factors that were used in the City's 2024 SSMPU.

MAXIMUM APPLIED WATER ALLOWANCE (MAWA)

The MAWA is the maximum amount of water allocated to a landscaped area, calculated based on specific parameters such as the evapotranspiration rate (ET_o) and the size of the landscaped area. This calculation ensures that landscapes are designed to use water efficiently according to the area's climate conditions. California's MAWA requirements are a fundamental component of the state's water conservation regulations, particularly under the Model Water Efficient Landscape Ordinance (MWELO). In response to droughts and the growing demand for sustainable water use, the state implemented MAWA as a standard to guide the design and management of landscapes in both residential and non-residential developments.

In practice, MAWA should be used in conjunction with the Estimated Total Water Use (ETWU) to ensure that proposed or rehabilitated landscapes do not exceed the allowable water budget. California's requirements also incentivize the use of efficient irrigation systems, native or drought-tolerant plants, and other water-saving measures to ensure compliance. This comprehensive approach through MWELO reduces water consumption and enhances the resilience of landscapes during periods of drought. Thus, using MAWA to estimate the maximum water allowance of landscaped areas on site is an effective approach to complying with the state's long-term water management strategy. The total open space and landscaping buffer for the existing SP is 1,184,241 SF, however, impervious areas (i.e., pathways) are expected to be located throughout green space areas. For MAWA calculations, a 25% impervious area is assumed which results in a total irrigated landscaping area of 1,006,605 SF (23.1 acres).

Using the general commercial land use water factor and MAWA calculations, the full development of the approved SP including the landscape buffer would result in an average annual water demand of 542 acre-feet per year (AFY).

Table 6 – Existing Palm Goldenwest Specific Plan Water Demands

Land Use	Existing SP Areas (SF)	Water Demand Factor (GPD/SF)	Proposed Daily Water Use (GPD)	Proposed Daily Water Use (AFY)
Commercial	1,658,000	0.26[1]	436,316	489
Landscape	1,006,605	MAWA[2]	47,211	53
TOTAL	**2,664,605**		**483,527**	**542**

1. City of Huntington Beach Sewer System Master Plan Update – Return to Sewer Factor
2. California Department of Water Resources. 2017 June 13 Water Budget Workbook for New and Rehabilitated Non-Residential Landscapes, Beta Version 1.30.
Note: GPD = gallons per day, AFY = Acre-Feet per Year

See Appendix B for detailed water demand calculations for the existing Palm Goldenwest SP.

4.6. WATER DEMANDS PROPOSED PALM GOLDENWEST SPECIFIC PLAN AMENDMENT

The approved Palm Goldenwest SPA proposed changes to the existing land use include introducing residential and additional non-residential land uses. A total of 800 DUs are proposed and is broken down by single family detached, single family attached, and multi-family uses. The non-residential land uses are broken down by 350 hotel rooms, 25,000 SF of commercial – office (includes meeting rooms within the hotel), 83,480 commercial – general (excludes hotel room and hotel meeting rooms) and 42.5 acres of open space/landscaping which includes the landscape buffer surrounding the project area.

See Table 7 below for an estimate of the proposed water demands based on local water factors from the City's SSMPU and MAWA. For MAWA calculations, a 25% impervious area is assumed for pathways located within the open space and landscape buffer areas which results in a total irrigated landscaping area of 36.2 acres. See Appendix B for further water demand calculation information.

Table 7 – Palm Goldenwest Specific Plan Amendment Water Demands

Land Use	Proposed SP		Water Demand Factor[1]		Proposed Daily Water Use (GPD)	Proposed Daily Water Use (AFY)
Single Family Residential - Detached	186	DU	205	GPD/DU	38,096	43
Single Family Residential - Detached	249	DU	205	GPD/DU	51,000	57
Multi-Family Residential	365	DU	163	GPD/DU	59,367	67
Hotel	350	Rooms	179	GPD/Room	62,500	70
Commercial - Office	25,000	SF	0.12	GPD/SF	3,049	3
Commercial - General	83,480	SF	0.26	GPD/SF	21,968	25

Land Use	Proposed SP		Water Demand Factor[1]	Proposed Daily Water Use (GPD)	Proposed Daily Water Use (AFY)
Open Spacing & Landscaping	19.4	Acres	MAWA[2]	39,594	44
Landscape Buffer	16.8	Acres	MAWA[2]	34,280	38
			SUB-TOTAL	**309,854**	**347**

1. City of Huntington Beach Sewer System Master Plan Update – Return to Sewer Factor
2. California Department of Water Resources. 2017 June 13 Water Budget Workbook for New and Rehabilitated Non-Residential Landscapes, Beta Version 1.30.
Note: GPD = gallons per day, AFY = Acre-Feet per Year

As shown in the table above the Palm Goldenwest SPA will include residential and additional non-residential land uses compared to the existing approved SP. The proposed SPA has a total water demand of 309,854 GPD (347 AFY) which is approximately a 36% decrease from the approved SP. When factoring in the existing water usage onsite (Section 4.3; 14 AFY), the net water demand associated with the SPA is 333 AFY.

When factoring in the cumulative water demand from the City's current projects in Table 4 (Section 4.2.1) including the SPA, the total projected water demand would be approximately 986 AFY.

5. WATER SUPPLIES

5.1. EXISTING REGIONAL WATER SUPPLIES, CITY OF HUNTINGTON BEACH

The City of Huntington Beach meets its water demands through a combination of imported water and local groundwater[2]. The City collaborates closely with two primary agencies, the MWDOC and the OCWD, to ensure a reliable water supply, even during periods of drought and shortage. The City's main source of water is groundwater from the Orange County Basin, which accounted for 70% of the total water supply in FY 2019-20. Imported water, making up 30% of the supply, is from the Colorado River and the State Water Project (SWP), provided by the MET and delivered through MWDOC. These sources of supply are summarized below and discussed in more detail in the City of Huntington Beach's 2020 UWMP.

5.1.1. GROUNDWATER

OC Basin groundwater has historically been the most cost-effective and reliable source of water for the City of Huntington Beach. The OC Basin spans approximately 350 square miles and holds around 66 million acre-feet (MAF) of water across three aquifer systems: the Shallow, Principal, and Deep Aquifers. Over 90% of groundwater is extracted from the Principal Aquifer system, located between 200 and 1,300 feet. The OCWD monitors groundwater levels, water quality, and regulates recharge operations to prevent overdraft and seawater intrusion. The basin is not adjudicated, so pumping is managed through financial incentives rather than legal mandates.

[2] Section 6.1 Water Supply Overview. City of Huntington Beach 2020 Urban Water Management Plan

The City operates eight active wells within the OC Basin and supplied 18,296 AF of groundwater or 70% of its total water supply in FY 2019-20. The City's wellfield has a total capacity of 26,300 GPM. Groundwater from the wellfield is transported via 24 to 42-inch pipelines to the City's four storage and distribution reservoirs and then distributed throughout the City. The City's groundwater supply is subject to the Basin Production Percentage (BPP) and the capacity of the eight wells the City uses. The City also benefits from OCWD's Groundwater Replenishment System (GWRS), which treats wastewater to replenish the OC Basin and improve the overall sustainability of the groundwater supply by preventing seawater intrusion and supporting non-potable uses. Aside from a decrease in groundwater volume pumped in FY 2017-18, the City has experienced relative stability in groundwater volume pumped as shown in Table 8.

Table 8 – Groundwater Volume Pumped 2016-2020 (AFY)

Type	Basin	2016	2017	2018	2019	2020
Alluvial Basin	Orange County Groundwater Basin	18,657	19,730	11,682	20,975	18,296
	TOTAL	**18,657**	**19,730**	**11,682**	**20,975**	**18,296**
Source: Table 6-4, City of Huntington Beach 2020 UWMP.						

As shown above the fluctuations in City's groundwater pumping are influenced by a combination of factors, including annual water demand, conservation efforts, and water availability in the OC Basin. The overall trend suggests that the City has maintained stable groundwater use in recent years, with 2020 levels being consistent with those of 2016.

SUSTAINABLE GROUNDWATER MANAGEMENT ACT (SGMA)

SGMA's goal is to ensure the long-term sustainability of California's groundwater resources. Under SGMA, local agencies are required to form Groundwater Sustainability Agencies (GSAs) and develop Groundwater Sustainability Plans (GSPs) for basins classified as medium or high priority. There are multiple components that go into categorizing a priority level for the basins such as; current population and projected growth overlying the basin, number of public and private wells that draw from the basin, the irrigated acreage overlying the basin, the degree to which individuals rely on the groundwater as their primary source in the basin, and any other external impacts on the basin. The OC Basin, where Huntington Beach sources a significant portion of its water, is classified as a medium priority basin due to the heavy regional reliance on its groundwater as a primary water supply[3].

Although the OC Basin is not in overdraft, OCWD manages the basin and has taken proactive steps to comply with SGMA requirements. In 2017, OCWD and other local agencies within Basin 8-1 collaborated to submit an Alternative to a GSP, known as the "Basin 8-1 Alternative[4]," to meet SGMA compliance. This plan outlines the management strategies and measures implemented to ensure the sustainable use of groundwater in the basin. OCWD's management approach under SGMA includes monitoring groundwater levels and quality, regulating annual pumping through the BPP, and maintaining recharge operations using water from the Santa Ana River, recycled water from the GWRS, and other sources[5]. These efforts are designed to prevent issues such as land subsidence and seawater intrusion,

[3] State of California, Department of Water Resources SGMA Basin Prioritization Dashboard. Found here: https://gis.water.ca.gov/app/bp-dashboard/final/#
[4] Orange County Water District, 2022. Basin 8-1 Alternative 2022 Update. Found here: https://www.ocwd.com/wp-content/uploads/05cbasin-8-1-alternative-2022-update.pdf
[5] Orange County Water District, 2015. Groundwater Management Plan. Found here: https://www.ocwd.com/wp-content/uploads/groundwatermanagementplan2015update_20150624.pdf

ensuring that the OC Basin remains a reliable source of water for Huntington Beach and surrounding communities.

In addition to the Basin 8-1 Alternative, OCWD's broader groundwater management plans address various aspects of basin sustainability, including hydrogeology, water supply monitoring, and the operation of recharge facilities. These plans are integral to maintaining the health of the OC Basin and ensuring that it can continue to meet the water demands of the region under SGMA's requirements[6].

5.1.1. PURCHASED OR IMPORTED WATER

The City supplements its local groundwater supply with imported water purchased from MET through MWDOC. In FY 2019-20, the City relied on approximately 7,670 AFY, which is 30% of the City's water supply portfolio. MET's principal sources of water are the Colorado River via the CRA and Lake Oroville watershed in Northern California through the SWP. For Orange County, the water obtained from these sources is treated at the Robert B. Diemer Filtration Plant located in Yorba Linda. Typically, the Diemer Filtration Plant receives a blend of Colorado River water from Lake Mathews through the MET Lower Feeder and SWP water through the Yorba Linda Feeder. The City currently maintains three connections to the MET system with a total available capacity of 49 cfs.

5.1.2. WASTEWATER AND RECYCLED WATER

The City does not own or operate its own wastewater treatment facilities but sends all collected wastewater to the Orange County Sanitation District (OC San) for treatment and disposal. OC San then provides treated water to the OCWD. The City plays a role in recycled water production by supplying wastewater for indirect potable reuse (IPR) and collaborates with agencies like OCWD to expand and manage recycled water resources.

A portion of the City's combined stormwater and wastewater is treated by OCWD's Green Acres Project (GAP) and the GWRS to produce recycled water, which is used for irrigation and other non-potable purposes. OCWD's GAP is a water recycling system that provides up to 8,400 AFY of recycled water for irrigation and industrial uses. This recycled water is then distributed to parks, golf courses, greenbelts, cemeteries, and nurseries across Costa Mesa, Fountain Valley, Huntington Beach, Newport Beach, and Santa Ana. A small portion of recycled water is used in the City of Huntington Beach but the City does have any direct recycled water uses.

5.2. PROPOSED REGIONAL WATER SUPPLIES, CITY OF HUNTINGTON BEACH

Looking ahead, the City's water supply portfolio is expected to remain consistent through 2045 with groundwater expected to provide approximately 85% of the total supply and imported water at 15%. This aligns with projected demands, and the City has the capability to purchase additional MET water through MWDOC, if necessary. In addition to its primary water resources, the City has established inter-agency emergency interconnections to ensure water supply during shortages or outages. There are five emergency connections including City of Westminster, City of Fountain Valley and Golden State Water Company providing additional security for the City's water system. See Table 9 below, which shows projected supply sources for the City of Huntington Beach.

[6] Orange County Water District. Accessed August 2025. Groundwater Management Plan. Found here: https://www.ocwd.com/what-we-do/groundwater-management/groundwater-management-plan/

Table 9 - Projected Water Supplies 2025 -2045 (AFY)

Water Supply Source	2020	2025	2030	2035	2040	2045
OC Groundwater Basin (not desalinated)	18,296	22,439	22,545	22,388	22,179	22,146
Purchased or Imported Water (MWDOC)	7,670	3,960	3,979	3,951	3,914	3,908
TOTAL	**25,966**	**26,399**	**26,524**	**26,339**	**26,093**	**26,054**

Source: Table 6-1 and 6-2, City of Huntington Beach 2020 UWMP.

As shown above the City projects that their water supply profile by 2045 will consist of 85% non-desalinated groundwater, and 15% purchased or imported water.

5.2.1. CAPITAL IMPROVEMENT PROJECTS

The capital improvement programs within the City of Huntington Beach include those managed by OCWD, and the City's Public Works Department. These capital improvement programs are essential to maintaining, improving, and expanding the regions water supply and infrastructure. See Table 10 for a list of the most recent capital improvement projects aimed at improving the City's long-term water supply management.

Table 10 – Proposed Capital Improvement Projects (CIP)

Project Name	CIP Fiscal Year	Project Summary
Huntington Beach Well 3A PFAS Treatment System[1]	FY 2024/2025 through 2029	Design and construction of PFAS treatment vessel systems to remove the PFAS contaminant from the water prior to individual Producers serving to customers. These projects are part of the "Round 2" PFAS Program to be implemented once MCL is established.
Huntington Beach Well 6 PFAS Treatment System[1]	FY 2024/2025 through 2029	Design and construction of PFAS treatment vessel systems to remove the PFAS contaminant from the water prior to individual Producers serving to customers. These projects are part of the "Round 2" PFAS Program to be implemented once MCL is established.
Bolsa Gap Seawater Intrusion Monitoring Well[1]	FY 2023/2024 through 2029	Construct a 4-well cluster of monitoring wells to a maximum depth of approximately 400 feet to investigate seawater intrusion in the Bolsa Gap.
New Project No. 58A – 58K: City Wells & Booster Pump Stations Sodium Hypochlorite On-Site Generation[2]	FY 2025 through 2029	The City currently disinfects all of its well water through the injection of gaseous chlorine (CL_2), typically at a rate of about 1.0 milligrams per liter (mg/l) residual. This project will convert all well sites to on-site sodium hypochlorite generation. Additionally, all booster pump sites will be fitted with on-site sodium hypochlorite generation. On-site generation of hypochlorite from inert feedstock will reduce hazards and costs associated with chemical storage and handling.

Project Name	CIP Fiscal Year	Project Summary
New Project No. 59A – 59K: City Wells & Booster Pump Stations Hydrofluorosilicic Acid On-Site Generation[2]	FY 2025 through 2029	The City currently injects Fluoride at all of its well sites. The project will convert all well sites to on-site generation of hydrofluorosilicic acid.
New Project No. 60: Independent Review of all City Well Sites by Engineering Firm[2]	FY 2025	The engineering firm will perform an evaluation and produce a report with recommendations to enhance reliability, uniformity, and functionality of all City well sites. Note that the purpose of this study is to assess existing well sites, and it is not a water supply study. The report should not attempt to recommend any additional supply sources.
New Project No. 61: Lead and Copper Rule Revision (LCRR) Inventory Study & GIS Update[2]	FY 2024	The LCRR requires public water systems to develop an initial inventory of all lead service lines in their distribution system by October 16, 2024. This project will assess the City's service lateral lines and provide an inventory of materials of all lines. The project will also update the City's GIS to include material information for all City service laterals.
New Project No. 62: Well No. 8 Replacement / Rehabilitation[2]	FY 2024 through 2025	Well No. 8 has been out of service since 1980 due to presence of hydrogen sulfide and color in the water. The project will salvage the existing well site and rehabilitate the well to place it back in active service. Rehabilitation of Well No. 8 will be a more cost-effective means of providing additional supply to the system than new well construction.
New Project No. 63: New Water Well No. 16 (Location TBD)[2]	FY 2025 through 2026	A third new well is required to provide redundancy within the HB well field. Design capacity TBD. Construction of this new well is expected to offsite the supply capacity that was recently lost from the well casing failure at Well No. 12, and the shut-down of Well No. 4. Well No. 12 was permanently capped and abandoned in 2015. Well No. 4 has been temporarily placed out of commission with a rehabilitation project scheduled for FY 23/24.
New Project No. 64: Water Facilities/SCADA Cybersecurity Improvements[2]	FY 2023 through 2024	In response to an uptick in worldwide cybersecurity threats, the City will conduct an IT security audit and implement cybersecurity measures to prevent cyberattacks and modernize existing IT infrastructure.
New Project No. 65: Well Quality Emergency Mitigation/ Treatment Program[2]	FY 2024	In light of new regulations regarding PFAS and recent water quality issues at several City wells (H2S, sand, manganese, PFAS), the City is in-need of a systematic program for the quick and efficient design and construction of well head treatment on an as-needed basis. When wells are impacted by sand, odor, manganese, PFAS,

Project Name	CIP Fiscal Year	Project Summary
		and other constituents of concern, this program will allow staff to immediately begin design of mitigation/treatment. The program should include studies for initial testing, pre-design, bench-scale, and pilots. Program should also include quick deployment of temporary interim solutions, as needed, to maintain normal production of the wells.
New Project No. 66: Electric Vehicle Charging Stations at Utilities Yard[2]	FY 2029	To keep up with the growing trend of sustainable technologies, the City is proposing to provide level 2 charging stations at the utilities yard for City fleet vehicles.
New Project No. 67: Manganese Treatment System at Well 3A[2]	FY 2024	Well 3A has been taken out of service for exceedance of MCL for Manganese. The City proposes to install well head treatment to lower Manganese levels and place Well 3A back into service immediately.
New Project No. 68: Well 4 Rehabilitation[2]	FY 2024	Well 4 was taken out of service due to poor production, and the City proposes to rehabilitate the well to place it back online.

[1] OCWD Budget Report Fiscal Year 2024-2025 https://www.ocwd.com/wp-content/uploads/FY24-25-Budget-Report-Final.pdf
[2] City of Huntington Beach, Capital Improvement Program Proposed for Fiscal Year 2024-25 through 2029-30. Found here: https://www.newportbeachca.gov/government/departments/public-works/capital-improvement-program

These projects reflect the City's efforts to ensure water quality and reliable water supply for its service area which includes the proposed project area.

6. Regional Water Supply Reliability

To ensure the proposed project is adequately supported, it is important to understand the City's forecast of water supplies to meet future demands. The City of Huntington Beach's 2020 UWMP uses current and projected population data, approved land uses and specific plans, water supply sources, demand estimates, and factors affecting water demand to forecast supply and demand into the future. This comprehensive approach allows the City to evaluate its ability to meet water needs through 2045 under various conditions, including normal, single dry-year, and multiple dry-year scenarios.

The findings of the 2020 UWMP indicate that the City has sufficient supply to meet its projected demands from 2020 through 2045 under the normal, single dry-year and multiple dry-year conditions. The City's WSCP also outlines specific actions to address droughts and other supply challenges, including conservation measures and demand reduction strategies. The WSCP, along with regional collaborations such as the GWRS, ensures the City has the capacity to manage both normal, single, and multiple dry-year conditions through 2045.

6.1. NORMAL AND SINGLE DRY YEAR WATER RELIABILITY

For both normal and single dry year scenarios the City's UWMP assures that water demands and supplies will be met and for simplicity shows that supply is equal to demand. As noted in previous discussions the City does have access to additional water supplies from MET and MWDOC, should the need arise and was demonstrated through higher supply availability in the 2015 UWMP which projected out to 2040. Thus, when determining dry year supply and demand reliability the normal year represents the water supplies a supplier considers available during normal conditions. While 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. See Table 11 for a view of the City's water supply and demand projections during normal and single dry years.

Table 11 – Single and Normal Dry Year Supply & Demand Comparison (AFY)

NORMAL-DRY YEAR						
	2025	**2030**	**2035**	**2040**	**2045**	**UWMP Projected Change**
Supply Totals (AF)	26,399	26,524	26,339	26,093	26,054	**(-345) AFY**
Demand Totals (AF)	26,399	26,524	26,339	26,093	26,054	
DIFFERENCE (AF)	**0**	**0**	**0**	**0**	**0**	
Palm Goldenwest Net Water Demand						**333**
SINGLE-DRY YEAR						
	2025	**2030**	**2035**	**2040**	**2045**	**UWMP Projected Change**
Supply Totals (AF)	27,983	28,115	27,919	27,658	27,617	**(-366) AFY**
Demand Totals (AF)	27,983	28,115	27,919	27,658	27,617	
DIFFERENCE (AF)	**0**	**0**	**0**	**0**	**0**	
Palm Goldenwest Net Water Demand						**333**

Source: Table 7-2 and 7-3 City of Huntington Beach 2020 UWMP.

As outlined in the table above the City's demands during normal dry year conditions are anticipated to decrease by 345 AFY from 2025 to 2045 and up to 366 AFY during a single dry year. The City shows a decrease in projected water demand due to conservation, water savings technology and limited growth. This is contrary to the 2015 UWMP which demonstrated projected water demand of 30,396 AFY and supply of 31,580 AFY in 2040.

During the single dry year demands and supplies are anticipated to increase by an average of 6% because the City conservatively assumed that a single dry year demand is 6% greater than each respective year's normally projected total water demand.

6.2. MULTIPLE DRY YEAR WATER RELIABILITY

The City describes an extended multiple drought year (5 years) as the driest five-year historical sequence, which may be the lowest average water supply available for five years in a row. Although water use may decrease in the later years of a multiple year drought due to implementation of conservation measures and drought messaging, the assessment is based on a 106% increase throughout the 5-year drought to be conservative. See Table 12 for an outline of the City's projected supply and demand during five consecutive dry years.

Table 12 - Multiple Dry Years Supply and Demand Comparison (AFY)

MULTIPLE-DRY YEARS						
FIRST YEAR	**2025**	**2030**	**2035**	**2040**	**2045**	**UWMP Projected Change**
Supply Totals (AF)	27,616	28,009	28,076	27,867	27,650	**34 AFY**
Demand Totals (AF)	27,616	28,009	28,076	27,867	27,650	
DIFFERENCE (AF)	**0**	**0**	**0**	**0**	**0**	
Palm Goldenwest Net Water Demand						**333**
SECOND YEAR	**2025**	**2030**	**2035**	**2040**	**2045**	**UWMP Projected Change**
Supply Totals (AF)	27,708	28,036	28,037	27,815	27,642	**(-66) AFY**
Demand Totals (AF)	27,708	28,036	28,037	27,815	27,642	
DIFFERENCE (AF)	**0**	**0**	**0**	**0**	**0**	
Palm Goldenwest Net Water Demand						**333**
THIRD YEAR	**2025**	**2030**	**2035**	**2040**	**2045**	**UWMP Projected Change**
Supply Totals (AF)	27,799	28,062	27,998	27,763	27,634	**(-165) AFY**
Demand Totals (AF)	27,799	28,062	27,998	27,763	27,634	
DIFFERENCE (AF)	**0**	**0**	**0**	**0**	**0**	
Palm Goldenwest Net Water Demand						**333**
FOURTH YEAR	**2025**	**2030**	**2035**	**2040**	**2045**	**UWMP Projected Change**
Supply Totals (AF)	27,891	28,089	27,958	27,710	27,625	**(-266) AFY**
Demand Totals (AF)	27,891	28,089	27,958	27,710	27,625	
DIFFERENCE (AF)	**0**	**0**	**0**	**0**	**0**	
Palm Goldenwest Net Water Demand						**333**
FIFTH YEAR	**2025**	**2030**	**2035**	**2040**	**2045**	**UWMP Projected Change**
Supply Totals (AF)	27,983	28,115	27,919	27,658	27,617	**(-366) AFY**
Demand Totals (AF)	27,983	28,115	27,919	27,658	27,617	
DIFFERENCE (AF)	**0**	**0**	**0**	**0**	**0**	
Palm Goldenwest Net Water Demand						**333**

Source: Table 7-4, City of Huntington Beach 2020 UWMP.

As shown above the City's demand varies from 2025 to 2045 with demands reaching as low as 27,617 AF (5th year 2045) to 28,115 AF (5th year 2030). Overall, from 2025 to 2045 in each dry year scenario growth in demands are anticipated to slightly decrease in the range of 367 AF (1st multiple dry year) a slight decrease off 33 AF (5th multiple dry year). The UWMP confirms that the supply is available to meet this changing demand. Similar to the single dry year analysis, the City shows an overall decrease in projected water demand due to conservation, water savings technology and limited growth. This is contrary to the 2015 UWMP which demonstrated projected water demand of 30,396 SFY and a supply of 31,580 AFY in 2040 for the multi-year analysis.

6.3. 2023 WATER MASTER PLAN UPDATED WATER SUPPLY EVALUATION

As stated previously, the 2020 UWMP did not account for any of the 13,368 RNHA units by 2029. To remedy this, the 2023 City's Water Master Plan (WMP) Update accounted for full implementation (construction and occupancy) of the 13,368 RHNA units by 2029 and re-evaluated the maximum water demand and water supply for 2025 and 2045 (consistent with UWMP time frames) including all RNHA units. The 2023 WMP utilized the 2020 UWMP water demand and supply projections but added the projected water demand for all 13,368 RHNA units. The 2023 WMP assumed a conservative water demand per unit similar to single family homes versus multi-family units. Due to the RNHA requirements and income criteria, single family homes don't typically count towards RNHA while multi-family units do and almost all RNHA units will be multi-family complexes. Therefore, using demand factors associated with multi-family are the most appropriate factor to use. The 2023 WMP assumed all RNHA units would be constructed and occupied by 2030. The water supply analysis was performed for 2025 (assuming about half were implemented) and 2045 (all units were implemented). Both the 2025 and 2045 evaluations identified water supply surpluses in groundwater production and imported water. Table 13 contains the 2025 Monthly Demand/Supply Projections (AF) and shows the groundwater surplus was projected at 9,544 AF and the imported water surplus was projected at 31,208 AF yielding a total surplus of 40,752 AF. Table 14 contains the 2045 Monthly Demand/Supply Projections (AF) and shows the groundwater surplus was projected at 5,846 AF and the imported water surplus was projected at 30,939 AF yielding a total surplus of 36,785 AF.

Table 13 – Huntington Beach Water Master Plan 2025 Monthly Demand/Supply Projections

CITY OF HUNTINGTON BEACH
Water Master Plan Update

Table 3-8
2025 Monthly Demand/Supply Projections
(acre-feet)

	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
Peaking Ratio	1.23	1.24	1.14	1.08	0.94	0.85	0.79	0.72	0.81	0.96	1.1	1.14	
2025 Demand	2,924	2,947	2,710	2,567	2,234	2,020	1,878	1,711	1,925	2,282	2,615	2,710	28,523
Supply Source													
Groundwater	2,262	2,281	2,097	1,986	1,729	1,563	1,453	1,324	1,490	1,766	2,023	2,097	22,071
Imported	439	442	406	385	335	303	282	257	289	342	392	406	4,278
Groundwater (Operating Capacity)													
Well 1	372	375	345	327	284	257	239	218	245	290	333	345	3,629
Well 3A	289	292	268	254	221	200	186	169	191	226	259	268	2,823
Well 4	0	0	0	0	0	0	0	0	0	0	0	0	0
Well 5	496	500	460	436	379	343	319	290	327	387	444	460	4,839
Well 6	413	417	383	363	316	286	265	242	272	323	370	383	4,033
Well 7	562	567	521	494	430	388	361	329	370	439	503	521	5,484
Well 9	248	250	230	218	190	171	159	145	163	194	222	230	2,420
Well 10	446	450	414	392	341	308	287	261	294	348	399	414	4,355
Well 13	413	417	383	363	316	286	265	242	272	323	370	383	4,033
Total GW Capacity	3,241	3,267	3,003	2,845	2,477	2,239	2,081	1,897	2,134	2,529	2,898	3,003	31,615
GW Surplus	**978**	**986**	**907**	**859**	**748**	**676**	**628**	**573**	**644**	**764**	**875**	**907**	**9,544**
Imported Water (Operating Capacity)													
Imported Water	2,957	2,957	2,957	2,957	2,957	2,957	2,957	2,957	2,957	2,957	2,957	2,957	35,486
Imported Surplus	**2,519**	**2,515**	**2,551**	**2,572**	**2,622**	**2,654**	**2,676**	**2,700**	**2,668**	**2,615**	**2,565**	**2,551**	**31,208**
Total Water (Operating Capacity)													
Total Capacity	6,198	6,224	5,961	5,803	5,434	5,197	5,039	4,854	5,091	5,486	5,855	5,961	67,101
Total Surplus	3,497	3,501	3,457	3,431	3,370	3,330	3,304	3,273	3,313	3,378	3,440	3,457	40,752

Table 14 - Huntington Beach Water Master Plan 2045 Monthly Demand/Supply Projections

CITY OF HUNTINGTON BEACH
Water Master Plan Update

Table 3-9
2045 Monthly Demand/Supply Projections
(acre-feet)

	JUL	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
Peaking Ratio	1.23	1.24	1.14	1.08	0.94	0.85	0.79	0.72	0.81	0.96	1.1	1.14	
2045 Demand	3,107	3,133	2,880	2,728	2,375	2,147	1,996	1,819	2,046	2,425	2,779	2,880	30,316
Supply Source													
Groundwater	2,641	2,663	2,448	2,319	2,019	1,825	1,696	1,546	1,739	2,061	2,362	2,448	25,769
Imported	466	470	432	409	356	322	299	273	307	364	417	432	4,547
Groundwater (Operating Capacity)													
Well 1A	372	375	345	327	284	257	239	218	245	290	333	345	3,629
Well 3A	289	292	268	254	221	200	186	169	191	226	259	268	2,823
Well 4	0	0	0	0	0	0	0	0	0	0	0	0	0
Well 5	496	500	460	436	379	343	319	290	327	387	444	460	4,839
Well 6	413	417	383	363	316	286	265	242	272	323	370	383	4,033
Well 7	562	567	521	494	430	388	361	329	370	439	503	521	5,484
Well 9	248	250	230	218	190	171	159	145	163	194	222	230	2,420
Well 10	446	450	414	392	341	308	287	261	294	348	399	414	4,355
Well 13	413	417	383	363	316	286	265	242	272	323	370	383	4,033
Total GW Capacity	3,241	3,267	3,003	2,845	2,477	2,239	2,081	1,897	2,134	2,529	2,898	3,003	31,615
GW Surplus	**599**	**604**	**555**	**526**	**458**	**414**	**385**	**351**	**395**	**468**	**536**	**555**	**5,846**
85Projected Import Water vs Operating Capacity													
Imported Water	2,957	2,957	2,957	2,957	2,957	2,957	2,957	2,957	2,957	2,957	2,957	2,957	35,486
Imported Surplus	**2,491**	**2,487**	**2,525**	**2,548**	**2,601**	**2,635**	**2,658**	**2,684**	**2,650**	**2,593**	**2,540**	**2,525**	**30,939**
Total Capacity and Surplus Capacity (After Adjustments)													
Total Capacity	6,198	6,224	5,961	5,803	5,434	5,197	5,039	4,854	5,091	5,486	5,855	5,961	67,101
Total Surplus	3,090	3,091	3,081	3,074	3,059	3,049	3,043	3,035	3,045	3,061	3,076	3,081	36,785

The report identified the RHNA units would demand approximately 4,484 AFY which equates to 300 GPD/unit. Using multi-family demand factors from the 2024 Sewer Master Plan Update and this report, the total estimated annual water demand associated with the full build out of RHNA would be approximately 2,436 AFY.

The City's updated water supply analysis in 2023 incorporated groundwater pumping (operating capacity per well), imported water (operating capacity), peaking ratios, seasonal variations by month and Basin Production Percentage (BPP) pumping limits. The analysis within Table 14 identified there is more than sufficient supply in 2045 for all RNHA units plus additional supply capacity for all cumulative projects currently under design (including design, construction and completion) including the proposed Specific Plan Amendment which totals 986 AFY. Based on the City's supplemental water supply analysis, there is sufficient supply capacity for the proposed project now and into the future.
which

6.4. THE IMPLICATIONS OF PALM GOLDENWEST SPECIFIC PLAN AMENDMENT ON FUTURE WATER DEMANDS & SUPPLY RELIABILITY

The Palm Goldenwest SP was first approved by the City and the California Coastal Commission in 2000. The 94-acre portion covered by this WSA was approved for an active commercial space including restaurants, hotels, offices and retail shops. Implementation of the existing Palm Goldenwest Specific Plan land uses would result in an average water demand of 542 AFY as noted in Section 4.5. Urban Water Management Plans prepared after 2000 would have factored in the updated land use in future water demand projections.

The proposed SPA changes the land use to residential and a reduced commercial component resulting in an average water demand of 347 AFY, a decrease of 36% compared to the existing approved land use.

The 2020 UWMP identified that the projected supplies will meet the projected demands. The projected demands range from as low as 26,399 AF in 2025 to as high as 26,650 AF in 2045. When comparing actual water demands from 2021 to 2024 and the current 2025 projected demand it is evident that the water demands from the proposed SPA will not exceed projected demands and supplies identified in the UWMP. For example, the average water usage for 2021-2024 is 22,371 AF, and 2025 usage is tracking similarly with 2024. Adding the total demand from all the projected developments and the proposed SP Amendment (986 AFY) to the City's average usage of 23,371 AF in the past three years results in a total of 24,357 AFY, which is below the UWMP 2025 projected demand of 26,399 AF. Thus, the City's normal year projection horizon out to 2045, which anticipates a demand of up to 26,054 AF, would be projected to accommodate future developments including the proposed SPA. In addition, the 2025 UWMP provides an opportunity for all development projects in the pipeline (planning, permitting and construction) to be accurately accounted for in the demand and supply projections out to 2050.

In summary, there are three primary factors that demonstrate there is sufficient water supply for the proposed project. The proposed SPA will use less water than the currently approved project by 36%; the 2020 UWMP identifies there is sufficient supply for all current development projects including the proposed SPA based on the past 4 years of water usage; and the 2023 Water Master Plan Update validated a significantly larger supply availability out to 2045 that would provide water for all projects in the pipeline, the proposed SPA and all RHNA units with projected surpluses. Based on these factors, there is sufficient water supply for the proposed

project without negatively affecting the City's future water demands and supply projections through 2045.

6.5. LOCAL WATER CONSERVATION & SUPPLY SHORTAGE PROGRAM

The City's 2020 WSCP is designed to manage water demand through both long-term conservation measures and responsive actions during times of water shortages. The program aims to reduce water consumption, prevent waste, and ensure a reliable supply of water for public health and safety. This is achieved by establishing permanent mandatory water conservation requirements, as well as implementing specific restrictions during declared water supply shortages.

6.5.1. STANDARD WATER CONSERVATION REQUIREMENTS

To promote efficient water, use at all times, the City enforces several permanent mandatory water conservation measures. These include the following limits[7]:

- No automatic irrigation should be used between the hours of 9 a.m. and 5 p.m.
- Irrigation is limited to no more than 10 minutes per station per day
- Watering outdoor landscapes in a manner that causes runoff onto adjoining sidewalk, driveway, alley, or gutter is prohibited
- Irrigating lawn, shrubs, or ornamental landscape during and 48 hours after a measurable rainfall is prohibited
- Washing a vehicle (including cars, trucks, boats, trailers, and recreational vehicles) requires the use of a handheld bucket or hose equipped with an auto shut-off nozzle
- Water fountains or decorative features are required to use recirculation systems
- Washing down hard or paved surfaces, including, but not limited to, sidewalks, walkways, driveways, parking areas, tennis courts, patios or alleys, is prohibited
- Watering non-functional grass on commercial properties is prohibited

6.5.2. WATER SUPPLY SHORTAGE LEVELS

In times of water shortages, the City can declare different levels of water supply shortages, ranging from Level One (up to 10% reduction) to Level Six (over 50% reduction). As the severity of the shortage increases, the restrictions on water use become more stringent. A Level Six catastrophic shortage includes additional prohibitions, such as the suspension of new water connections and restrictions on non-essential water uses.

6.5.3. EMERGENCY INTERCONNECTIONS AND EXEMPTIONS

To ensure water supply reliability during emergencies, the City has established inter-agency emergency interconnections with neighboring water districts, such as Golden State Water District, City of Fountain Valley, and City of Westminster. Certain water uses necessary for public health and safety are exempt from restrictions, and customers who face unique hardships can apply for relief from compliance through a water conservation plan, which must demonstrate the maximum feasible reduction in water consumption.

6.5.4. ENFORCEMENT AND COMPLIANCE

The City enforces its water conservation regulations through a structured implementation plan, which includes public notifications, fines, and penalties for violations. For willful or continued non-compliance, the City may install water flow restrictors or even terminate water

[7] City of Huntington Beach, Water Conservation. Found here: https://www.huntingtonbeachca.gov/departments/public_works/water_and_sewer/water_conservation.php

service. The City Council may also adjust the regulations in response to changes in water supply conditions or mandates from state authorities during declared emergencies.

By adopting these comprehensive measures, the City of Huntington Beach manages its water demands effectively, and ensures long-term water supply reliability for its residents and businesses.

6.6. REGIONAL WATER SUPPLY RELIABILITY CONCLUSIONS

As discussed, and evaluated in the updated 2023 water supply evaluation, the City projects sufficient supply, with no expected shortages. Groundwater storage, coupled with conservation efforts will ensure that Huntington Beach's water resources remain sustainable and reliable through 2045.

The City's WSCP assessment also identifies potential limitations on water availability, including the effects of droughts on imported water supplies. However, Huntington Beach's access to groundwater allows the City to shift its reliance to groundwater during single dry years and consecutive dry years. The local groundwater basins act as a large reservoir, storing water during wet years and allowing the City to meet its demands during dry periods. The City's proactive management and regional collaboration with the OCWD and MWD will also provide flexibility and security in maintaining adequate water supplies, even in the face of prolonged drought conditions. As a result, with the proposed Palm Goldenwest SPA, the City's water supplies are not significantly impacted during any of the normal, single, or multiple dry year conditions.

7. CONCLUSION

The following is a summary of the key findings and conclusions that were discussed in further detail throughout the report. This summary focuses on the proposed project's impact on water demand and supplies and highlights some of the regulations and projects that will support the City's regional water system and the proposed project;

- **Water Demand**: The projected water demand for the proposed project is estimated to be approximately 347 AFY, which encompasses the demands for the project's proposed 800 residential units, 348,480 square feet of commercial use and landscaping. This estimate is based on established water use factors sourced from the 2024 Sewer Master Plan Update and the California Department of Water Resources guidance on efficient landscaping. Refer to Section 4 for more details.

- **Water Supply**: The primary water sources available to the Goldenwest Palm SPA includes groundwater and imported water. The total available water supply from these sources is projected to be sufficient to meet the demands of the proposed project under normal, single-dry, and multiple- dry year scenarios based on the 2023 Water Master Plan Update evaluation, current water usage and anticipated development. Refer to Section 5 for more details.

- **Groundwater Management**: The groundwater basin serving the SPA is the Coastal Plain of Orange County groundwater basin also known as Basin 8-1 "OC Basin" or "Basin." The Basin is currently managed by the Orange County Water District (OCWD) and under the Sustainable Groundwater Management Act (SGMA), is classified as a medium priority basin, due to the regional reliance on the Basin's groundwater supplies. The Basin is not currently experiencing overdraft conditions, and the

proposed project's groundwater use is expected to be sustainable under the basin's existing management plans. Refer to Section 5.1.1 for more details.

- **Future Water Supply Improvements**: The City of Huntington Beach alongside other stakeholders using the regional water supplies has identified future capital improvement program (CIP) projects that will support the regional water supply and reliability. These projects include City and OCWD improvements, which will further enhance the water system. Refer to Section 5.2.1 for more details.

Overall, the analysis in this WSA demonstrates that the proposed Goldenwest Palm SPA water demands are anticipated to be met by the City under various drought scenarios ranging from normal, single-dry, and multiple dry years. With the incorporation of water sustainability measures and ongoing infrastructure improvements managed by the City's Utility Department, the City can meet the proposed project's demand without causing adverse effects on its water supplies or supplies available to its other customers.

8. Appendices

Appendix A Palm Goldenwest Specific Plan Amendment Exhibit
Appendix B Water Demand Calculations
Appendix C City of Huntington Beach Major Project Tracking

APPENDIX A

PALM GOLDENWEST SPECIFIC PLAN AMENDMENT SITE PLAN

LAND USE ENTITLEMENT

LEGEND

Net Developable Land

Open Space

Park

OPEN SPACE/PARK: 22.8 AC

NET DEVELOPABLE LAND: 69.2 AC

COMMERCIAL VISITOR:
16.0 AC
FAR: 0.5:1
GFA: 348,480 sf

RESIDENTIAL:
53.2 AC
DU: 798



CALIFORNIA RESOURCES CORPORATION

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February 12, 2025
#202409

APPENDIX B

WATER DEMAND CALCULATIONS

CURRENT SPECIFIC PLAN WATER USE (CITY OF HB SEWER MASTER PLAN METHODOLOGY)

Land Use	Proposed		Sewer Demand Factor(4)		Return to Sewer Factor(5)	Water Demand Factor (Sewer Demand Factor/Return to Sewer Factor)(6)		Proposed Daily Water Usage (GPD)	Proposed Annual Water Usage (AFY)
Commercial[1]	1,658,000	sf	200	gpd/1,000sf	0.76	0.26	gpd/sf	436,316	489
Buffer (Landscape) [2,3]	23.1	acres						47,211	53
								483,527	542

[1] Palm Goldenwest Specific Plan Amendment (May 2025)

[2] Net landscape/open space area with 0.85 factor applied to account for impervious surfaces (i.e. pathways) within the green space areas

[3] Estimate Irrigation System Water Use Using ETWU Gallons Per Year= (annual ETo x 0.62 x PF x HA ÷ IE)

[4] Table 5 of City of Huntington Beach Sewer System Master Plan Update (7/5/2024)

[5] Table 5.6 of City of Huntington Beach Sewer System Master Plan Update (7/5/2024)

[6] Water Demand based on Return-to-Sewer Factor based on Water Billing Records (City of Huntington Beach Sewer System Master Plan Update 7/5/2024 - page 46

Current Specific Plan Areas		
Land Use Type	**Areas (sf)**	**Areas (acres)**
Commercial (Existing Specific Plan)	1,658,000	38.06
Esplanade (+ 35' setback area)	240,317	5.5
Greenbelt Buffer (+ 75' setback area)	713,319	16.4
PLC2 Parcel Buffer (+ 40' setback area)	95,569	2.2
Open Space	135,036	3.1
Total (Landscaping + Open Space)	1,184,242	27.2
Total Site Area		92.44

Gross Landscaping + Open Space	1,184,241.62	27.19
Net Landscaping + Open Space	1,006,605.38	23.11

* 0.85 factor applied to account for impervious surfaces within open space/landscaping

PROPOSED SPECIFIC PLAN AMENDMENT WATER USE (CITY OF HB SEWER MASTER PLAN METHODOLOGY)

Land Use	Proposed		Sewer Demand Factor(4)		Return to Sewer Factor(5)	Water Demand Factor (Sewer Demand Factor/Return to Sewer Factor)(6)		Proposed Daily Water Usage (GPD)	Proposed Annual Water Usage (AFY)
Single-Family Detached Residential[1]	186	du	170	gpd/du	0.83	205	gpd/du	38,096	43
Single-Family Attached Residential[1]	249	du	170	gpd/du	0.83	205	gpd/du	51,000	57
Multi-Family Residential[1]	365	du	135	gpd/du	0.83	163	gpd/du	59,367	67
Hotel (occupancy rooms)[1]	350	rooms	150	gpd/room	0.84	179	gpd/room	62,500	70
Commercial- Office(meeting rooms within hotel)[1]	25,000	sf	100	gpd/1,000sf	0.82	0.12	gpd/sf	3,049	3
Commercial - General (excluding hotel & hotel meeting rooms)[1]	83,480	sf	200	gpd/1,000sf	0.76	0.26	gpd/sf	21,968	25
Open Space & Landscaping[1,2,3]	19.4	acres						39,594	44
Landscape Buffer[1,2,3]	16.78	acres						34,280	38
Total Proposed Specific Plan Amendment Water Demand								**309,854**	**347**
Curent Specific Plan Water Demand (Commercial)								436,316	489
Current Specific Plan Water Demand (Landscape Buffer)								47,211	53
Total Current Specific Plan Water Demand								**483,527**	**542**
Proposed Specific Plan Amendment - Current Specific Plan Water Demand								**(173,672)**	**(195)**

[1] Palm Goldenwest Specific Plan Amendment (May 2025)

[2] Net landscape/open space area with 0.85 factor applied to account for impervious surfaces (i.e. pathways) within the green space areas

[3] Estimate Irrigation System Water Use Using ETWU Gallons Per Year= (annual ETo x 0.62 x PF x HA ÷ IE)

4 Table 5 of City of Huntington Beach Sewer System Master Plan Update (7/5/2024)

5 Table 5.6 of City of Huntington Beach Sewer System Master Plan Update (7/5/2024)

6 Water Demand based on Return-to-Sewer Factor based on Water Billing Records (City of Huntington Beach Sewer System Master Plan Update 7/5/2024 - page 46

Proposed SP Amendment Development	
Land Use Type	**# of Units**
Single Family Detached	186
Single-Family Attached	249
Multi-Family	365
Hotel Rooms	350
Commercial (Proposed Specific Plan)	348480 sf

APPENDIX C

THE CITY OF HUNTINGTON BEACH MAJOR PROJECT TRACKING

The City of Huntington Beach Project Tracking List

Project Name	Land Use	Status	Commercial Square Footage	Residential Dwelling Units	Beds/Hotel Rooms
PLANNING					
Bolsa Chica Senior Care Community	Residential	Planning	-	-	159
Garfield Residential	Residential	Planning	-	10	-
Harmony Cove Marina Development	Commercial	Planning	99,317	-	-
Hebrew Academy Expansion	Educational Institution	Planning	1,550	-	-
Magnolia Tank Farm	Mixed Use	Planning	-	250	215
Pearce Drive Condos	Residential	Planning	-	18	-
Ralph's Commercial Center	Commercial	Planning	2,700	-	-
Redondo Circle Industrial	Industrial	Planning	176,712	-	-
Wave Pool	Commercial	Planning	2,635	-	-
New Industrial Buildings	Industrial	Planning	176,712	-	-
Midway Concepts Mixed Use Project	Mixed Use	Planning	-	15	-
Windward Residential Development	Residential	Planning	-	36	-
Planning Total			**459,626**	**329**	**374**
PLAN CHECK					
Bella Terra Residential	Residential	Plan Check	-	300	-
Ellis Avenue Mixed Use Development	Mixed Use	Plan Check	41,600	48	-
Huntington Gateway Business Park Phase III	Industrial	Plan Check	351,200	-	-
PCH Mixed Use Building	Mixed Use	Plan Check	9,418	1	-
Sunset Beach Hotel	Commercial	Plan Check	1,800	-	12
Plan Check Total			**404,018**	**349**	**12**
UNDER CONSTRUCTION					
The Isles	Residential	Under Construction	-	130	-
Delaware Housing Project	Residential	Under Construction	-	346	-
Hilltop Market Expansion	Commercial	Under Construction	6,240	-	-
OC Water District Groundwater Replenishment System	Utility	Under Construction	4,700	-	-
Pierside Pavilion Expansion	Mixed Use	Under Construction	37,173	-	-
Seacliff at Huntington Beach Inspired Senior Living Facility	Residential	Under Construction	-	-	226
Under Construction Total			**48,113**	**476**	**226**
PROJECT TRACKING TOTAL			**1,775,400**	**1,832**	**998**

Source: City of Huntington Beach's Major Project Portal: https://www.huntingtonbeachca.gov/departments/community_development/major_projects.php. Accessed August 2025.

Status	Number of Developments	Commercial Square Footage	Residential DU	Bed/Hotel	GPD	AFY
Planning	12	459,626	329	374	253,894	284
Plan Check	5	404,018	349	12	178,738	200
Under Construction	6	48,113	476	226	150,543	169
TOTAL	**23**	**911,757**	**1,154**	**612**	**583,175**	**653**

Water Use Factors		
Land Use	**Water Demand**	**Units**
Single Family Residential	205	GPD/DU
Commercial	0.26	GPD/SF
Hotel	179	GPD/Room