WATER SUPPLY ASSESSMENT and VERIFICATION REPORT

Midway Rising Specific Plan and Midway-Pacific Highway Community Plan Amendment (PRJ-1106734 / SAP No. 24009733) July 2024

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Section 1. PURPOSE

On January 1, 2002, Senate Bill 610 (SB 610) and Senate Bill 221 (SB 221) took effect. The intent of SB 610 and SB 221 was to improve the link between information on water supply availability and certain land-use decisions made by cities and counties. Under SB 610 (codified in the Water Code beginning at Section 10910), a water supply assessment (WSA) must be furnished to cities and counties for inclusion in any environmental documentation of projects (defined in the Water Code) that propose to construct 500 or more residential units, or that will use an amount of water equivalent to what would be used by 500 residential units, and are subject to the California Environmental Quality Act (CEQA). Under SB 221, approval by a city or county of certain residential subdivisions requires an affirmative written verification of sufficient water supply or water supply verification (WSV). SB 221 is intended as a mechanism to ensure that collaboration finding the needed water supplies to serve a large new subdivision occurs before construction begins.

Not every project that is subject to the requirements of SB 610 is also subject to the mandatory water verification of SB 221 (e.g., if subdivision map approval is not required). Conversely, not every project that is subject to the requirements of SB 221 must also obtain an SB 610 water supply assessment.

A foundational document for compliance for both SB 610 and SB 221 is the Urban Water Management Plan (UWMP) of the relevant water agency. Both statutes repeatedly identify the UWMP as a planning document that can be used by a water supplier to meet the standards set forth in both statutes. Thorough and complete UWMPs will allow water suppliers to use UWMPs as a foundation to fulfill the specific requirements of the two statutes. Cities, counties, water districts, property owners and developers utilize this document when planning for and proposing new projects. It is crucial that cities, counties, and water suppliers work closely when developing and updating these planning documents. The City of San Diego's (City's) 2020 UWMP, which is used as the basis for this report (WSA and WSV), was adopted by the City Council in June 2021.

In developing forecast data for the 2020 UWMP, the City Public Utilities Department (PUD) utilized a hybrid approach that combined data including but not limited to current metered water use by billing code, projected variables based on the San Diego Association of Governments (SANDAG) Series 14 Growth Forecast, and geospatial analysis of developable and re-developable land areas. This new approach was a direct result of improvements in geospatial data matching metered water use to parcels, along with land use and demographic/socioeconomic data at the individual pressure zone level for the service area. This robust methodology provided the PUD with a water demand forecast to utilize for internal processes such as facility analysis and planning.

The City Development Services Department (DSD) requested the PUD prepare this WSA and WSV Report as part of the environmental review for the Midway Rising Specific Plan and Midway-Pacific Highway Community Plan Amendment (Project). A more detailed description of the Project is provided in Section 2. This WSA and WSV Report evaluates water supply that is or will be available during normal, single-dry, and multiple-dry water years during a 20-year projection to meet the projected demand of the Project, in addition to existing and planned future water demand of PUD. This WSA and WSV Report provides an assessment of the availability of sufficient water supply for the Project only and does not constitute approval of the Project.

This WSA and WSV Report also includes the identification of existing water supply entitlements, water rights, water service contracts, or agreements relevant to the identified water supply for the Project and quantities of water received in prior years pursuant to those entitlements, rights, contracts, and agreements.

This report has been prepared in compliance with the requirements under SB 610 and SB 221 by PUD in coordination with the City DSD and in conjunction with the San Diego County Water Authority's (Water Authority's) 2020 UWMP.

Section 2. PROJECT DESCRIPTION

The existing Midway-Pacific Highway Community Plan (Midway CP) is an urbanized community that encompasses approximately 1,324 acres, situated north of Downtown San Diego as shown on **Figure 2-1**. The community is comprised of three areas: the relatively flat Midway Area, the linear Pacific Highway corridor, and the Marine Corps Recruit Depot. The Midway Rising Specific Plan (Specific Plan) area is located within the Midway Area. The Midway CP was adopted by the San Diego City Council in 2018, and envisioned a mix of land uses, organized into districts and villages to create distinct urban activity nodes. The goals and policies for the village areas were guided by the City of San Diego's General Plan City of Villages concept. Consistent with this concept, the Midway CP called for the development of the Sports Arena site into a Sports Arena Community Village, with a mix of entertainment, office, retail, residential, public, and park uses.

The Specific Plan area encompasses approximately 52.04 acres of developed land generally bounded by Kurtz Street to the north, Sports Arena Boulevard to the south, Hancock Street to the northwest, and commercial properties to the east, near the intersection of Greenwood Street. (See **Figure 2-2** Midway Rising Specific Plan Boundary). Interstate 8 is directly north of the site (along Hancock Street) and separates the site from the San Diego River channel, levy and Mission Bay. The Specific Plan site includes a 49.2-acre city-owned property and approximately 2.9 acres of private property and is proposed to be a mixed-use community village.

The buildout of the Specific Plan is planned to be realized by 2035 and allows for approximately 4,627 housing units, including 2,000 affordable units, 15-acres of public parks and open space, a multi-purpose entertainment center, and up to 140,000 square feet of commercial and retail uses.

The site is zoned CC-3-6 and CC-3-8 (Community Commercial) and designated for Community Commercial-Residential Permitted (0-44 dwelling units (DU)/acre) and Mixed Commercial Residential (0-73 DU/acre) in the Midway-Pacific Highway Community Plan area. The developer of the Specific Plan is requesting an amendment to the Community Plan to increase the density of the two Commercial zones included in the Specific Plan. The request is to rezone all Commercial-Community parcels to Mixed-Use (0 to 74 DU/acre). Mixed-use land use designations allow commercial uses that include retail sales, commercial services, personal services, entertainment, parks and open spaces, assembly, and visitor accommodation uses that serve residents and workers in the community and adjacent communities. Residential uses at a density of 0 to 74 DU/acre are allowed as a primary use of mixed-use development that features ground floor commercial uses or development that provides a horizontal mix of uses connected by public space. No single-family residential units are included in the Specific Plan.

The California Density Bonus Law (Government Code Sections 65915 – 65918) is a state mandate that encourages applicants such as developers to construct affordable housing units in exchange for an increase in density in a residential or mixed-use housing project, as long as the project includes a certain percentage of affordable units at specified levels of affordability. In exchange for providing affordable housing units, developers may exceed the maximum number of dwelling units, depending on the amount and type of below-market-rate homes provided. To take advantage of the California Density Bonus Law, the Specific Plan proposes to add 2,000 dwelling units of affordable housing and the developer has applied for a 20% bonus in dwelling units, per the development of affordable housing.

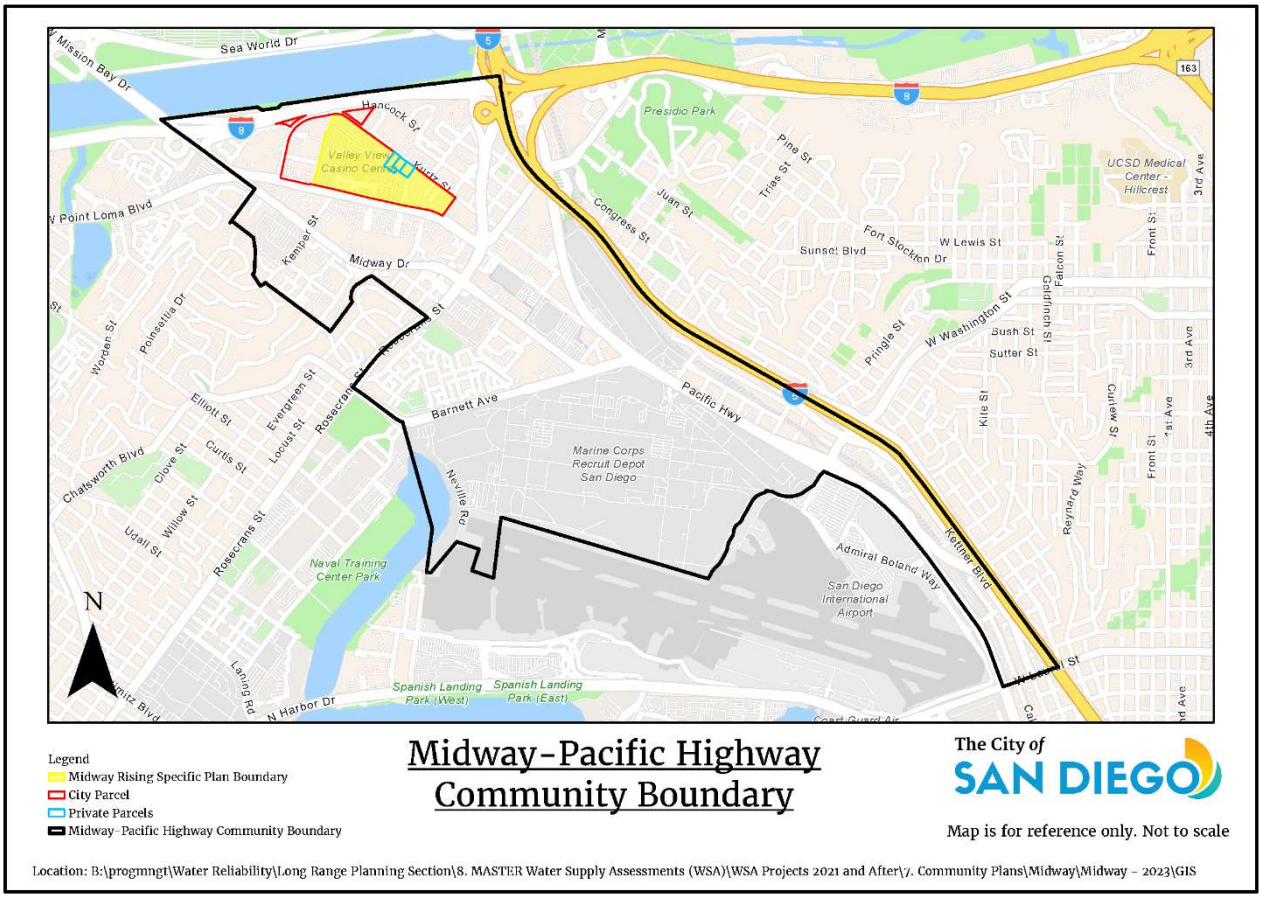

Figure 2-1 Midway-Pacific Highway Community Boundary

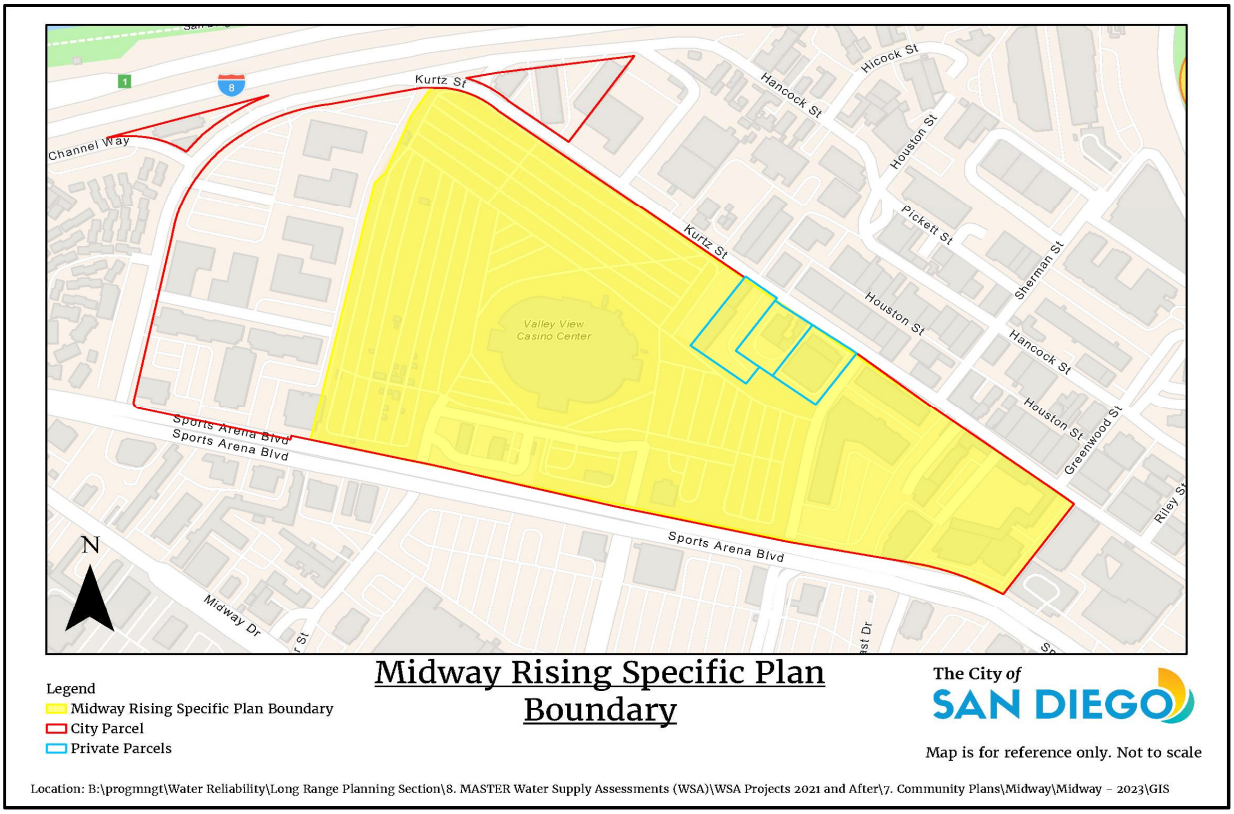

Figure 2-2 Midway Rising Specific Plan Boundary

As discussed in Section 1, the City's 2020 UWMP assumes the SANDAG Series 14 Growth Forecast and uses a hybrid approach to allocate the total water demand among the various pressure zones and community plans. As shown in Table 2-1, for the years 2025 to 2050, the SANDAG Series 14 Forecast indicates that the Midway-Pacific Highway Community could have 5,077 multifamily homes and 526 single-family homes by the year 2035.

According to SANDAG's Planned Land Use GIS dataset, approximately 229 acres of the existing Midway-Pacific Highway Community is zoned for multifamily residential use. Of these, the entire area within the Specific Plan has a total of 48 acres also zoned for multifamily residential use. Therefore, the Specific Plan area accounts for approximately 21% of the total area of multifamily residential land use within the Community Plan. Since there is no single-family residential zoning in the Specific Plan, the existing baseline for residential units is obtained using the total number of multifamily housing units the Midway-Pacific Highway Community is projected to have in the year 2035 (the Specific Plan buildout year) and multiplying by the 21% for the Specific Plan. Therefore, it is projected that there will be 1,066 multifamily homes (5,077 multifamily homes times 21%) in the year 2035, per SANDAG Series 14 projections. According to the Midway Rising Specific Plan, the project will include 4,627 dwelling units which is 3,561 more units than is projected by the SANDAG Series 14 Forecast for 2035. This is shown in **Table 2-2** as a comparison of the existing and proposed residential development within the Project (Specific Plan and Midway CP amendment). For non-residential development, **Table 2-3** summarizes the change for the proposed Project.

Table 2-1 Midway-Pacific Highway Community Plan: Series 14 Housing Unit Projections

	SANDAG Series 14 Baseline Forecast [1]						
	2020	2025	2030	2035	2040	2045	2050
Total Housing Units	**2,006**	**2,886**	**3,883**	**5,603**	**6,049**	**6,378**	**6,601**
Multifamily	1,480	2,360	3,357	5,077	5,523	5,852	6,075
Single-Family	526	526	526	526	526	526	526
Mobile Home	-	-	-	-	-	-	-

[1] City of San Diego 2020 UWMP and SANDAG Series 14 Growth Forecast.

Table 2-2 Existing and Proposed Residential Development for Midway Rising Specific Plan

Development Type	Baseline Residential 2035 [1] (DUs)	Proposed Project 2035 [2] (DUs)
Residential Units	1,066	4,627
Total	**1,066**	**4,627**

[1] The Midway Rising Specific Plan accounts for approximately 21% of the total area of land uses with a multifamily residential component within the Midway-Pacific Highway Community. The Midway Rising Specific Plan is estimated to have 1,066 DUs in 2035 (SANDAG Series 14 Forecast of 5,077 multifamily DUs in 2035 multiplied by 21%). Source: City of San Diego 2020 UWMP and SANDAG Series 14 Growth Forecast; SANDAG Series 14 Forecast by Community Planning Area, October 6, 2022; SANDAG LANDUSE_PLANNED shapefile, October 2, 2014.

[2] The Midway Rising Specific Plan will include 4,627 multifamily dwelling units (maximum 74 DUs per acre plus a 20% bonus allowed by the California Density Bonus Law). Source: City of San Diego DSD, Water Supply Assessment Determination - Midway Rising Specific Plan (PRJ-1106734 / SAP No. 24009733), December 7, 2023. City of San Diego DSD, Draft Specific Plan 2nd Review (email communication, March 13, 2024).

Table 2-3 Existing and Proposed Non-Residential Development for Midway Rising Specific Plan

Non-Residential Development Type	Baseline Non-Residential Area 2035 [1] (SF)	Proposed Non-Residential Area 2035 [2] (SF)
Commercial and Retail	2,266,862	140,000
Entertainment Center	N/A	380,500
Parks	N/A	653,400
Total	**2,266,862**	**1,173,900**

[1] The baseline non-residential area is estimated using the Midway-Pacific Highway Community Plan zoning map dated December 12, 2023, which categorizes the Project site as a Commercial-Community (CC) zone where 95% of the site is zoned CC-3-6 and the remainder of the site is CC-3-8 (City of San Diego. Grid Tile: 18 Official Zoning Map. December 12, 2023; City of San Diego. 2022). The baseline non-residential area at the Project site is 2,266,862 square feet when applying the maximum floor area ratio (FAR) bonus for mixed use (San Diego Municipal Code, Chapter 13: Zones, Section 131.0546 - Maximum Floor Area Ratio. Amended January 27, 2022).
[2] The proposed Project will include 140,000 square feet of commercial/retail uses, an approximate 380,500 square-foot/16,000 seats entertainment center, and 653,400 square feet (15 acres) of parks. Source: City of San Diego DSD, Water Supply Assessment Determination - Midway Rising Specific Plan (PRJ-1106734 / SAP No. 24009733), December 7, 2023. City of San Diego DSD, Draft Specific Plan 2nd Review (email communication, March 13, 2024).
N/A = not applicable.

Section 3. WSA AND WSV FINDINGS

As discussed further in this section and seen previously in **Tables 2-2** and **2-3**, the Project is proposing more residential units and less non-residential square footage than anticipated in the site specific forecasts. Although the Project includes a total water demand that is higher than forecasted for the Project site, there is additional water supply in the pressure zone and within the broader community plan area, available to serve the project. This WSA and WSV Report finds that the proposed water demand projections for the Project are included in the regional water resource planning documents of the City and the Water Authority. Current and future water supplies, as well as actions necessary to develop future water supplies, have been identified. This WSA and WSV Report demonstrates that there will be sufficient water supplies available during normal, single-dry, and multiple-dry water years over a 20-year projection to meet the demand of the Project.

As demonstrated in **Tables 3-1, 3-2, and 3-3** of this WSA and WSV Report, prepared by PUD in compliance with the requirements of SB 610 and SB 221, using the City's 2020 UWMP based upon SANDAG Series 14 Forecast land use, there is sufficient water planned to supply the Project's estimated annual average usage. The projected water demand of the Project is 784,618 gallons per day (GPD), or 879 acre-feet per year (AFY) (**Table 3-3**). Water demand for the Project assumes all mandatory water efficiency standards are met and results in more water efficient buildings and landscapes as compared to older developments.

As **Table 3-4** details, the 2020 UWMP establishes existing water demand and net capacity for future development. The University Heights 1 Pressure Zone affiliated with the Project location has a planned net supply/capacity of 1,501 AFY, which includes adequate supplies for the Project. Following the buildout of the Project, the University Heights 1 Pressure Zone will have a remaining net capacity of 622 AFY to serve future development.

The City's 2020 UWMP demonstrates there will be sufficient water supply available to meet demand for existing and planned future developments that are projected to occur by 2045. Based on a normal water supply year, the estimated water supply projected in five-year increments for a 20-year projection will meet the City's projected water demand of 202,865 acre-feet (AF) in 2025 to 228,865 AF in 2045 (**Table 6-2**) for existing and planned future developments. Similarly, based on a single-dry year forecast (**Table 6-6**), the estimated water supply will meet the projected water demand of 236,274 AF (2045). Based on a multiple-dry year forecast (**Table 6-7**), the estimated water supply will meet the projected demand of 233,538 AF (Dry Year 5 for 2045). Therefore, based on the findings from the City's 2020 UWMP, this Project falls within an expected range of forecasted demand and independently, will not result in unanticipated demand.

In summary, these findings substantiate that there is sufficient water supply planned to serve this Project's future water demand within the PUD service area in normal, single-dry, and multiple-dry water year forecasts.

Table 3-1 Planned Residential Water Demand for the Midway Rising Specific Plan

Residential	Proposed Project 2035 (DUs)	Water Demand Factor [1]	Water Use, gpd	Water Use, AFY
Housing Units	4,627	160	740,320	829

[1] Reference Table 2-2 of this WSA **and WSV Report**.
[2] For multifamily residential demand, PUD is using demand factors from the 2020 UWMP, which equals 60 gallons per capita per day times 2.67 persons per household = 160 gallons per day per DU. These demand factors include landscaping water demand.

Table 3-2 Planned Non-Residential Water Demand for the Midway Rising Specific Plan

Development Type	Land Use Category	Proposed Additions [1] (sf)	Water Demand Factor [2]	Water Use, gpd	Water Use, AFY
Commercial & Residential	Retail Stores	140,000	0.06	8,400	9
Entertainment Center	Retail Stores	380,500	0.06	22,830	26
Parks	Parks & Rec	653,400	0.02	13,068	15
	Total	**1,173,900**	**N/A**	**44,298**	**50**

[1] Reference Table 2-3.
[2] For non-residential demand, PUD is using demand factors from Table 3 of the City of San Diego's 2020 Water Demand Forecast Report. These demand factors include landscaping water demand.

Table 3-3 Water Demand for the Midway Rising Specific Plan

Demand Type	Proposed Water Use, gpd	Proposed Water Use, AFY
Residential	740,320	829
Non-Residential	44,298	50
WSA and WSV Demand	**784,618**	**879**

Source: Tables 3-1 and 3-2.

Table 3-4 Potential Water Supply for the Pressure Zone

Pressure Zone/Community Plan	Water Potentially Available	
	gpd	AFY
Existing Midway-Pacific Highway CP [1]	1,340,000	1,501
Previously Approved WSA Projects (since 2020 UWMP approved)	0	0
Midway Rising Specific Plan and Midway-Pacific Highway CP Amendment	784,618	879
Potential Remaining Supply/Capacity	**555,382**	**622**

[1] The City of San Diego 2020 UWMP establishes existing water demand and potential net capacity for future development.

Section 4. CITY OF SAN DIEGO PUBLIC UTILITIES DEPARTMENT

The City purchased its initial water system in 1901 from the privately-owned San Diego Water & Telephone Company. Since then, continual expansion of the water system has been required to meet the demand of the growing population of the City. To meet the demand, the PUD purchased several reservoirs between 1913 and 1935 to supplement local water supplies. Despite low annual precipitation in the area (approximately 10 inches per year), these reservoirs supplied the City's growing demand until the year of 1940.

The need to import water emerged with the increased demand generated by the presence of the United States Navy prior to and during World War II, and the ensuing population growth. As a result, the PUD and other local retail water distributors formed the Water Authority in 1944 for the purpose of purchasing Colorado River water from Metropolitan Water District of Southern California (MWD). The PUD and other local retail water distributors began receiving imported water from the Colorado River in 1947.

Purchased water from the Water Authority is the largest portion of the City's overall water supply. In 2015, a significant drought year, Water Authority water accounted for 97 percent of the City's total water supply as the availability of local surface water was lower than in normal hydrologic years. Imported water from the Water Authority accounted for about 89 percent on average from 2016 to 2020.

Today, the PUD treats and delivers a current average of 175,000 AFY of water to approximately 1.4 million residents. The water system extends over 400 square miles, including 340 square miles in the City. The PUD potable water system serves the City and certain surrounding areas, including both retail and wholesale customers. The Midway-Pacific Highway Community Plan Amendment and Midway Rising Specific Plan is located within the PUD's water service area of the Alvarado Water Treatment Plant, discussed in the next section.

In addition to delivering potable water, the City has a recycled water program. Its objectives are to optimize the use of local water supplies, lessen reliance on imported water, and free up capacity in the potable water system. Recycled water provides the City a dependable, year-round, locally produced, and controlled water resource.

4.1 Overview of Potable System Facilities

The City's current and approved future water supplies consist of: (1) water purchased from the Water Authority, either directly delivered to treatment plants or stored in various reservoirs; (2) local supply including groundwater, capture of local runoff from rainfall primarily within its surface reservoirs, and Pure Water which is approved and in progress; and (3) recycled water for non-potable water use.

The City's water system is made up of nine reservoirs that capture runoff from rainfall within local watersheds, three water treatment plants (WTPs), and a small portion from local groundwater. To offset potable (drinking) water demand, the City owns and operates two water reclamation plants and a recycled water distribution system that delivers recycled water for non-potable water uses.

The City's nine local surface water reservoirs have a combined capacity of 566,239 AF. The native water captured in these reservoirs provides approximately 11% of the City's total supply (based on average data from 2016 to 2020). These reservoirs not only capture local supply, but many of them store imported water and are connected to the regional Water Authority's system, providing the City with reliability and redundancy during seismic and other system emergencies. **Table 4-1** provides the storage capacity for the City's reservoirs and current storage levels (April 2024).

Table 4-1 City Reservoirs

Reservoir	Storage Capacity (AF) [1]	Current Storage (AF) [2]
Barrett	34,806	31,822
El Capitan	112,807 [50,732]	39,434
Hodges	30,633 [13,401]	5,725
Miramar	6,682	5,860
Morena	50,694 [16,742]	12,817
Murray	4,684 [3,884]	3,527
Lower Otay	47,067	46,703
San Vicente	249,358	216,031
Sutherland	29,508	6,275
Total Capacity	**566,239 [84,759]**	**368,194**

[1] Total potential capacity shown at dam spillway crest. El Capitan, Hodges, and Morena Reservoirs operating with water level restrictions per Division of Safety of Dams. [] = Capacity at level restriction.
[2] Storage as of April 2, 2024
Source: City of San Diego - Public Utilities Department, Water Production Division (2023).

The Lower Otay, Barrett and Morena Reservoirs provide water to the Otay Water Treatment Plant (Otay WTP) in south San Diego; El Capitan, San Vicente, Sutherland, and Lake Murray Reservoirs provide water to the Alvarado Water Treatment Plant (Alvarado WTP) in central San Diego; and the Miramar Reservoir services the Miramar Water Treatment Plant (Miramar WTP) in north San Diego. Hodges Reservoir is connected to the Olivenhain Reservoir, which is owned by the Water Authority. Olivenhain Reservoir is connected to the Water Authority's second aqueduct, as detailed in Section 5.2. Through this connection, Hodges Reservoir water can be delivered to all City WTPs and can be delivered to San Vicente Reservoir for storage.

The City's three WTPs – Alvarado, Miramar and Otay – provide safe and reliable drinking water and have a combined permitted total rated capacity of 378 million gallons per day (mgd). **Table 4-2** summarizes the water treatment plant capacities in the City.

Table 4-2 Water Treatment Plant Current Permitted Capacities

Water Treatment Plant	Original Construction	Current Capacity (mgd)	Geographic Area Served
Miramar WTP	1962	144	North of the San Diego River
Alvarado WTP	1951	200	Central San Diego
Otay WTP	1914	34	South San Diego

Source: City of San Diego 2020 UWMP.

The three WTPs are located in such a way that there is flexibility in providing supply to the City's geographic areas; some areas of the City can be supplied by more than one of the treatment plants. To distribute potable water produced at these WTPs, the PUD maintains and operates numerous water pump stations within over 130 pressure zones (within the City's retail service area), and numerous treated water storage facilities with more than 200 million gallons of potable water capacity.

The PUD also maintains several emergency connections to and from neighboring water agencies, including the Santa Fe Irrigation District (connected to Miramar WTP), the City of Poway (connected to Miramar WTP), Olivenhain Municipal Water District (connected to Miramar WTP), the Cal-American Water Company (connected to Alvarado and Otay WTPs), Sweetwater Authority (connected to Otay WTP), and the Otay Water District (connected to Otay WTP).

4.2 Overview of Recycled System Facilities

Recycled water is produced at the City's North City Water Reclamation Plant (North City WRP) and South Bay Water Reclamation Plant (South Bay WRP) and is used for non-potable use, such as landscape irrigation.

The City's recycled water system has a combined total wastewater treatment capacity of 50,406 AFY (45.0 mgd), three (3) recycled water storage facilities with over 12 million gallons of storage capacity, and approximately 100 miles of recycled water pipelines.

The North City WRP, with an ultimate capacity of 30.0 mgd, was the first large-scale water reclamation plant in San Diego; its operations commenced at the facility in 1997. The WRP, located in the Miramar area, serves the northern San Diego region, including the cities of Del Mar and Poway, as well as City neighborhoods of Mira Mesa, Rancho Peñasquitos, Scripps Ranch, Carmel Valley, Sorrento Valley, and southern Rancho Bernardo.

The South Bay WRP has an ultimate capacity of 15.0 mgd and began operation in 2002. Located at the end of Dairy Mart Road near the International Border with Mexico, the majority of the South Bay WRP recycled water is sold to the Otay Water District.

4.3 Pure Water Program

The Pure Water San Diego Program will provide a safe, secure and sustainable local drinking water supply for San Diego. It will use advanced water purification technology to produce potable water from recycled water. For more details on the Pure Water San Diego Program, see Section 5.

Section 5. EXISTING AND PROJECTED SUPPLY

The PUD relies on purchased water from the Water Authority as a water supply source. The City is a Water Authority member agency, and the Water Authority is a member agency of the MWD. The statutory relationships between the Water Authority, the MWD and its member agencies, respectively, establish the scope of the City's entitlements to water from these two agencies. Due to the City's reliance on these two agencies, this WSA and WSV Report relies upon and includes information on the existing and projected supplies, supply programs, and related projects of the Water Authority and the MWD.

The City relies on the long-term water resources planning documents of the Water Authority and the MWD to support the work on this WSA and WSV Report. These documents are available at the following websites:

San Diego County Water Authority

https://www.sdcwa.org/wp-content/uploads/2021/08/2020-UWMP_Final-Print-Version-July-2021-1.pdf

Metropolitan Water District of Southern California

https://www.mwdh2o.com/media/21641/2020-urban-water-management-plan-june-2021.pdf

A brief overview of the Water Authority and the MWD, including the City's relationship to these agencies, is included below.

A description of local surface, local groundwater and local recycled water supplies available to the City can be found in Section 5.3.1 of this WSA and WSV Report.

This information is current at the time this document was prepared.

5.1 Metropolitan Water District of Southern California

The Metropolitan Water District (MWD) was created in 1928, under the authority of the Metropolitan Water District Act (California Statutes 1927, Chapter 429, as reenacted in 1969 as Chapter 209, as amended) (the "MWD Act"). The MWD's primary purpose is to provide a supplemental supply of wholesale water for domestic and municipal uses to its constituent agencies. The MWD service area comprises approximately 5,200 square miles and includes portions of the six counties of Los Angeles, Orange, Riverside, San Bernardino, San Diego, and Ventura.

There are 26 member agencies of the MWD, including 14 cities, 11 municipal water districts and the Water Authority. A Board of Directors, currently numbering 38 members, governs the MWD. Each constituent agency has at least one representative on the MWD Board.

The MWD's existing water supplies have been historically sufficient to meet demand within its service area during years of normal precipitation. Although the MWD plans and manages reserve supply to account for normal occurrences of drought conditions, regulatory actions, including but not limited to restrictions under the Federal and California Endangered Species Acts, have at times placed limitations on the MWD's ability to provide water to its member agencies. In the future, population growth, regulatory restrictions, increased competition for low-cost water supply, and other factors such as climate change could impact the MWD's ability to supply its member agencies.

The MWD's two major sources of water are the Colorado River and the State Water Project (SWP).

Colorado River Water: The Colorado River was the MWD's original source of water after its establishment in 1928. The MWD owns and operates the Colorado River Aqueduct (CRA), which is 242 miles long, starting at Lake Havasu and terminating at Lake Mathews in Riverside County.

In 2003, a Quantification Settlement Agreement (QSA) was completed to ensure that California stays within its 4.4 million acre-feet (MAF) annual apportionment of Colorado River water. The QSA provides the means to implement water transfers and supply programs between water agencies that use Colorado River water in California. Of the 4.4 MAF annual apportionment of Colorado River water, the MWD has a 550,000 AFY apportionment. Additionally, the MWD has developed several water transfers, irrigation conservation measures and storage programs with irrigation water districts that have more senior water rights to Colorado River water within California. Through these and other programs, MWD's goal is to keep its CRA nearly full at its capacity of 1.2 MAF.

The existing conditions of the Colorado River is that it has been in a decade-long, severe drought. Despite some recent improvements to snowpack in the Upper Colorado River Basin, the Lake Mead water surface elevation has only recently recovered from the long drought between 2014 and 2019. The Lower Basin States, including California, recognized that Lake Mead levels could quickly fall to 1,000 feet and trigger a formal shortage declaration. In April 2019, the U.S. Congress passed a finalized Drought Contingency Plan (DCP) agreed upon and produced by the U.S.'s three Lower Basin States (Arizona, California and Nevada) and Mexico. As defined in the DCP, California takes shortages beginning at a Lake Mead trigger elevation of 1045 feet; those shortages increase as the lake's water elevation decrease. Within California, Palo Verde Irrigation District and Coachella Valley Water District take 8 percent and 7 percent of the California DCP shortage, respectively.

In dry, below-normal conditions, the MWD has increased the supply received from the California Aqueduct by developing flexible Central Valley/SWP storage and transfer programs. Over the years, under the pumping restrictions of the SWP, the MWD has collaborated with the other contractors to develop numerous voluntary Central Valley/SWP storage and transfer programs. The goal of these storage/transfer programs is to develop additional dry-year supplies that can be conveyed through the California Aqueduct during dry hydrologic conditions and regulatory restrictions.

State Water Project: As the largest of 29 contractors for water from the SWP, the MWD holds a contract for a maximum of 1,911 thousand acre-feet (TAF) per year, or 46 percent of the total SWP contract. The maximum amount of the contract is rarely met because the California Department of Water Resources (DWR) determines annual allocations of SWP contract amounts based on hydrologic and regulatory conditions.

The SWP is owned by the State of California and operated by the DWR. The MWD receives water pumped from the Harvey O. Banks Pumping Plant in the southern portion of the Sacramento-San Joaquin River Delta, via the 444-mile-long California Aqueduct, to four delivery points near the northern and eastern boundaries of the MWD. Water supply from the SWP has also been significantly reduced because of the most recent California drought and environmental regulations protecting the Delta. Political and environmental concerns may also limit imported water supply from Northern California. In 2007, the SWP pumps were shut down to protect the Delta smelt population.

As discussed above, the quantity of SWP water available for delivery each year is controlled by hydrology, environmental and operational considerations. The original State Water Contract called for an ultimate delivery capacity of 4.2 MAF, with 1,911 TAF allocated to the MWD pursuant to its participation in the SWP. For decades, the Bay-Delta has experienced water quality and supply reliability challenges and conflicts due to variable hydrology and environmental standards that limit pumping operations. SWP deliveries in the most recent critically dry years lagged these projections and were 5 percent of contractual amounts in 2014 and 20 percent of contractual amounts in 2015. Dry conditions in 2020 also supported a supply allocation of only 20 percent. Consequently, MWD's key concern is the continual deterioration of water supply reliability.

To augment its imported water from the Colorado River and Delta, the MWD has developed water banking programs, agricultural efficiency and land fallowing programs, and water transfers. These supplemental supplies are used mainly during dry years and droughts, and are located in Riverside County, Imperial County, and the Central Valley region. Additionally, the MWD has developed groundwater storage programs with water agencies in its service area and provides financial incentives for local water agencies in its service area to implement projects for recycled water, groundwater recovery and seawater desalination.

5.2 San Diego County Water Authority

The Water Authority is the countywide water wholesaler comprised of 23 public member agencies and governed by a 35-member Board of Directors. It owns and operates five large-diameter pipelines to deliver imported water to its member agencies. The City, with a population of 1.4 million served, is the Water Authority's largest member agency and customer. The Water Authority's service area is a semi-arid region where the natural occurrence of water from rainfall and groundwater provides a firm water supply for only a small portion of the water demand of the current population. Since 1990, the Water Authority has provided an average of 85 percent of the

water supply within its service area. As a wholesaling entity, the Water Authority has no retail customers, and only serves its member agencies.

Historically, the principal source of supply for the Water Authority's service area has been water purchased from the MWD for sale to the Water Authority's member agencies. However, drought conditions and population growth in the Water Authority's service area have highlighted the need for diversification of the region's water supplies. The Water Authority has actively pursued a strategy of supply diversification that includes the acquisition and importation of additional water supplies, the development of additional local water supply projects and augmentation of its water supply via local and regional water storage capacity. In fiscal year 2020, total local water sources provided 28% of the water used in the Water Authority's service area.

The Water Authority receives most of its water supply from transfers with high-priority Colorado River contractors. In 2020, the Water Authority received 144,000 AF (31 percent of total water supply) from a conservation and transfer agreement with the Imperial Irrigation District (IID) and 86,000 AF (19 percent of its water supply) from the All-American Canal and Coachella Canal Lining Projects. By 2040, almost 8 percent of the Water Authority supply portfolio will be potable reuse, and 9 percent will be seawater desalination, which are drought-proof supplies.

5.3 Public Utilities Department

The City currently purchases approximately 85 to 90 percent of its water from the Water Authority, which supplies the water (raw and treated) through two aqueducts consisting of five pipelines. While the City imports a majority of its water, it uses local supply sources to meet some of its demand. Additionally, non-potable recycled water is used to offset potable demand.

The availability of sufficient imported and regional water supply to serve existing and planned uses within the PUD service area is demonstrated in the prior discussion on the water supply reliability of the MWD and the Water Authority. The City has been receiving water from the Water Authority since 1947, and during the last 20 years purchased between 139,000 and 235,500 AFY. For FY2021, water purchases totaled approximately 144,708 AF. Depending upon demand, growth, and the success of local water supply initiatives, the imported supply demand will decrease with the construction of Pure Water San Diego Phases 1 and 2 and most likely be a maximum of 149,778 AFY in 2025 (as shown in **Table 6-2**) during normal years and decreases through 2035. Once both phases of the Pure Water Program are installed, from 2035 to 2045, the imported supply demand will increase again for the City.

For the purpose of this analysis the maximum is used.

5.3.1 Demonstrating the Availability of Sufficient Supply

Water Supply from Water Authority (Purchased Water): Section 5, subdivision 11 of the County Water Authority Act states that the Water Authority "as far as practicable, shall provide each of its member agencies with adequate supplies of water to meet their expanding and increasing needs." Depending on local weather and supply conditions, the Water Authority provides between 75 to 95 percent of the total supplies used by its 23-member agencies. As mentioned in Section 4, the PUD and other local retail water distributors formed the Water Authority in 1944 for the purpose of purchasing Colorado River water from the MWD.

Local Surface Water Supplies: The City maintains and operates nine local surface raw water storage reservoirs which are connected directly or indirectly to water treatment operations. In the San Diego region, local precipitation produces surface runoff to streams that supply PUD

reservoirs. A portion of this runoff is used for the municipal water supply, while the remainder evaporates during reservoir storage. In very wet years, the runoff remainder may spill over the reservoir dams and return to the Pacific Ocean. Average rainfall produces less than half of the average runoff in San Diego. The local climate requires about average rainfall to saturate the soil sufficiently for significant surface runoff to occur. Therefore, most of the runoff to reservoirs is produced in years with much greater than average rainfall. Some flooding may occur during average or below average rainfall years if the annual rainfall is concentrated in a few intense storms.

Seven of the City's nine reservoirs, as listed in **Table 5-1**, provide a local water supply to the City, while the other two reservoirs (Miramar and Murray) serve as the water treatment plant forebay and emergency storage. The median of historical reservoir supply from 1948 to 2020 was used as the projection for years 2025 to 2045 as shown in **Table 5-1** and is assumed to remain constant over the forecasted period.

Table 5-1 Current and Projected Local Surface Water

Reservoirs Providing Local Supply	Water Supply (AFY)					
	2020	2025	2030	2035	2040	2045
Barrett, El Capitan, Hodges, Lower Otay, Morena, San Vicente, Sutherland	19,286	22,015	22,015	22,015	22,015	22,015
City-Lake Cuyamaca Interagency Agreement	400.2	400	400	400	400	400
Total Local Reservoir Supply	**19,686**	**22,415**	**22,415**	**22,415**	**22,415**	**22,415**

Source: City of San Diego 2020 UWMP.

The use of local water is affected by availability and water resource management policies. The City's policy is to use local water first to reduce imported water purchases and costs. The City also operates emergency and seasonal storage programs in conjunction with its policy.

The purpose of emergency storage is to increase the reliability of the imported water aqueduct system. This is accomplished by maintaining an accessible amount of stored water that could provide an uninterrupted supply of water to the City's water treatment facilities, should an interruption to the supply of imported water occur. The management of reservoirs is guided by Council Policy 400-04, which outlines the City's Emergency Water Storage Program. The policy mandates that the Department store sufficient water in active, available storage to meet six-tenths of the normal annual (7.2 months) City water demand requirements (conservation is not included). Active, available storage is that portion of the water that is above the lowest usable outlet of each reservoir.

The monthly emergency storage requirement changes from month-to-month and is based on the upcoming seven months' water demand. This results in a seasonally fluctuating emergency storage requirement, generally peaking in April and reaching its minimum in October. This seasonally fluctuating requirement makes a portion of the required emergency storage capacity available for impounding or seasonal storage.

Local Groundwater Supply: The City has rights, jurisdiction, and municipal water supply development interests in four groundwater basins in the San Diego region: The San Pasqual

Valley, Mission Valley, San Diego River Valley, and Coastal Plain of San Diego Groundwater Basins. None of the groundwater basins are adjudicated, meaning managed by the courts to ensure that water rights are protected, and safe yields are adhered to. The California Supreme Court decreed in 1930 that the City has Pueblo water rights to all the water (surface and underground) of the San Diego River. The City is committed to protecting its groundwater resources and preserving its established Pueblo water rights. This right includes the use of all surface water and groundwater of the streams that flowed through the original pueblo, including their tributaries, from their source to the mouth.

The San Diego River Valley Basin (also known as the Santee/El Monte Basin) is primarily located outside the City's municipal boundary but within San Diego County. It is situated in the eastern portion of the San Diego River watershed near the cities of Santee, La Mesa, and El Cajon, and the unincorporated community of Lakeside. In accordance with requirements from the Sustainable Groundwater Management Act (SGMA), the basin is designated a very low priority basin and has an estimated capacity that ranges from 24,000 to 97,000 AF.

The City has two production wells in the San Diego River Valley Basin that deliver water to the potable supply. The first well is the San Vicente production well installed in 2004 with a maximum capacity estimated at 600 gallons per minute (gpm), or approximately 1,000 AFY. Due to issues with pump operations, the average annual production from this well is approximately 50 AFY. In March 2010, the City drilled the second production well, about a quarter mile downstream of its El Capitan Reservoir. Currently the groundwater available for beneficial use is approximately 50 AFY from the existing El Capitan production well. **Table 5-2** and **Table 5-3** detail historical and projected supply (respectively) from the San Diego River Valley (Santee/El Monte) Basin. The water produced from both of these wells is sent to the Alvarado WTP for distribution.

Table 5-2 Historical Groundwater Supply to City from 2016-2020

Groundwater Well	Groundwater Supply (AFY)				
	2016	2017	2018	2019	2020
Santee/El Monte: San Vicente GW Production Well	0.0	0.0	0.0	0.0	0.0
Santee/El Monte: El Capitan GW Production Well	0.0	18.8	38.0	25.8	51.6
Source: City of San Diego 2020 UWMP.					

Table 5-3 Projected Groundwater Supply to City

Groundwater Well	Groundwater Supply (AFY)				
	2025	2030	2035	2040	2045
Santee/El Monte: San Vicente GW Production Well	50	50	50	50	50
Santee/El Monte: El Capitan GW Production Well	50	50	50	50	50
Source: City of San Diego 2020 UWMP.					

The San Pasqual Valley, the Mission Valley, and the Coastal Plain of San Diego Groundwater Basins do not currently contribute to the City's potable water supply and the PUD has no current plans to pursue any groundwater from them for contribution to the potable water supply.

Recycled Water Supply: As detailed in the PUD's 2020 Recycled Water Master Plan Update, the City provides recycled water service to more than 700 recycled water retail customers and three wholesale customers, including the City of Poway, Olivenhain Municipal Water District and Otay Water District. The 2017 top ten retail customers included the City of San Diego Biosolids Center, the Torrey Pines Golf Course, Marine Corps Air Station- Miramar, the Santaluz Golf Course, El Camino Memorial Park, Qualcomm, Village Nurseries, the Verrezzano HOA, and the San Diego Community College District.

The PUD, in cooperation with the Park & Recreation Department, has aggressively pursued the retrofitting of City parkland, street landscaping and open space to use recycled water for irrigation; sites fronting recycled water distribution pipelines were targeted. In 2007 only 23 recycled water meters were serving City sites and expanded to 96-meter connections by December of 2014.

Conservation: The City achieves year-round water savings through a water conservation ethic by adopting programs, policies and ordinances designed to promote water conservation practices and supporting public information and education campaigns. Examples of the programs and policies include turf replacement, water use efficient device rebates, commercial and residential water surveys and year-round permanent water use restrictions.

Over the past 30 years, the City has achieved substantial water savings by:

- Developing innovative, customer-oriented water conservation programs
- Creating policies and ordinances designed to prevent water waste
- Implementing comprehensive public information and education campaigns that foster behavior change and a water conservation ethic.

5.3.2 Plans for Acquiring Additional Supplies

Pure Water Program: The Pure Water Program is the largest integrated infrastructure program the City of San Diego has ever undertaken. Phase 1 is comprised of several projects that will deliver an annual average of 30 mgd of purified water for San Diego. The purified water will be piped to the Miramar Reservoir for storage and then will be treated again at the Miramar Water Treatment Plant before it is distributed to the public.

Phase 1 is expected to be online in Calendar Year (CY) 2025. Production is expected to be a staged ramp-up in flow with 30 mgd produced by the end of CY 2027. This will allow the City to reduce the amount of water it purchases.. Infrastructure components associated with the initial 30 mgd Phase 1 of the Pure Water Program are currently under construction.

Currently, Phase 2 of the Pure Water Program is planned to be online by 2035 and to expand advanced purified water production from 30 to 83 mgd on an annual average basis. The City has initiated early planning studies and plans to achieve this goal.

5.3.3 Summary of Supplies

Historic purchased water deliveries from the Water Authority to the PUD and local surface water, groundwater and recycled water deliveries are shown in **Table 5-4.**

Table 5-4 PUD Historic Purchased, Local Surface, Groundwater and Recycled Water Demand (AFY)

Fiscal Year	Water Authority Purchased Water	Local Surface Water	Local Groundwater	Recycled Water [1]	Total
2000	207,874	39,098	--	3,250	**250,222**
2005	204,144	26,584	--	4,294	**235,022**
2010	188,337	13,117	500	7,951	**209,905**
2015	173,754	6,779	500	8,195	**199,527** [2]
2020	150,577	19,686	52	10,393	**180,708**

[1] Only includes "In-City" Recycled Water use and no sales to other agencies.
[2] Includes 10,229 AF of surface water deliveries to Cal Am that are not included in the Surface Water, or the Water Authority Purchased Water reported here.
Source: City of San Diego 2015 and 2020 UWMPs.

Section 6. PROJECTED DEMAND

The City completes an updated UWMP and Water Demand Forecast for the PUD service area every five years. A computer model is used to forecast future water use based on SANDAG regional growth forecasts as well as per-capita demand factors and empirical water use trends. The result is a detailed demand forecast by water use sector (residential, commercial, industrial, irrigation, institutional, etc.) and by hydraulic pressure zone. The demand forecast is provided in five-year increments through the end of the UWMP horizon that can be applied by sector, by hydraulic pressure zone or on a Citywide basis.

The City's 2020 UWMP compares future water demand and water supply under multiple hydrologic conditions. It is based on historical runoff in the State with data ranging from 1901 to 2020.

In addition to the PUD, the Water Authority and the MWD use regional growth forecasts to calculate projected water demand within their respective service areas. This provides for consistency between the retail and wholesale agencies' projected water demand, thereby ensuring that adequate supplies are being planned for the PUD's existing and future water users. The SANDAG forecasts are based on adopted community plan land use, but not citywide zoning. SANDAG forecasts the number of residents, dwelling units, and employees in an area, but not square footage, hotel rooms, or visitors (non-residents or non-employees). For urban areas, the smallest forecast geography is typically at the block level, but the forecast geography can be larger for suburban and less developed areas. SANDAG typically updates the regional growth forecast every three (3) to four (4) years.

The City's water demand projections, based on the SANDAG Series 14 Forecast land use, were incorporated in the City's 2020 UWMP. The 2020 UWMP was completed and adopted in June 2021.

The projections with the City's 2020 UWMP were forwarded to the Water Authority for use in the preparation of the Water Authority's UWMP, which is subsequently incorporated into the MWD's UWMP to calculate the ultimate water demand of the region.

The demand from the 2020 UWMP is used throughout this WSA and WSV Report. The historical and projected water demand for a normal year is shown in **Table 6-1**.

Future non-potable recycled water is assumed to remain constant, as the City shifts its recycled water strategy to the development of its Pure Water Program.

Table 6-1 Past, Current, And Projected Water Deliveries

Sector	Type of Use	Treatment Level	2015		2020	
			Meters	Use (AFY)	Meters	Use (AFY)
Single-Family Residential	Indoor and outdoor uses	Drinking Water	224,162	60,573	249,761	54,228
Multifamily Residential	Indoor and outdoor uses	Drinking Water	30,471	37,799	32,215	35,370
CII	Indoor and outdoor uses	Drinking Water	17,064	46,072	18,501	38,615
Irrigation	Landscape irrigation	Drinking Water	7,679	22,668	8,127	17,175
Other	Dust mitigation, cleaning	Drinking Water	464	0	0	0
Sub-Total (Retail Area)			**279,840**	**167,112**	**308,604**	**145,388**

Sector	Projected Water Use (AFY)				
	2025	2030	2035	2040	2045
Single-family Residential	54,814	54,360	53,794	54,197	55,159
Multifamily Residential	40,623	45,491	49,607	52,854	54,464
CII	47,401	50,089	52,784	55,239	56,873
Large Irrigation	17,718	17,606	17,375	17,133	16,991
Sub-Total (Retail Area)	**160,556**	**167,547**	**173,560**	**179,423**	**183,488**

Source: City of San Diego 2020 UWMP.

The analysis in **Table 6-2** compares the projected normal water supply and customer demand from 2025 to 2045, in five-year increments.

Table 6-2 Normal Year Demand vs. Supply for the City

Demand/Supply	Demand and Supply (AFY)				
	2025	2030	2035	2040	2045
Water Demand (with wholesale and conservation) [1]	202,865	210,547	217,156	223,598	228,065
Local Water Supply					
Recycled Water (City service area only, non-potable)	13,773	13,773	13,773	13,773	13,773
Pure Water Phase 1	16,800 [2]	33,600	33,600	33,600	33,600
Pure Water Phase 2			59,360	59,360	59,360
Local Surface Supply	22,015	22,015	22,015	22,015	22,015
City-Lake Cuyamaca Interagency Agreement	400	400	400	400	400
Groundwater	100	100	100	100	100
Sub-total Local Supply	**53,088**	**69,888**	**129,248**	**129,248**	**129,248**
Water Supply from Water Authority (purchased water)	149,778	140,660	87,907	94,350	98,816
Total City Water Supply	**202,865**	**210,547**	**217,156**	**223,598**	**228,065**
Estimated Water Shortages	0	0	0	0	0

[1] Includes consumptive use (retail and wholesale), non-revenue water, conservation, and non-potable recycled water demand.
[2] The exact amount of production expected to be available at the end of CY 2025 is only estimated at this time. The total 33,600 AFY (30 mgd) is expected to be online by the end of CY 2027.
Source: City of San Diego 2020 UWMP.

6.1 Water Sales to Other Agencies

6.1.1 Potable Water

The PUD, through past agreements, sells treated water to the California American Water Company (Cal-Am), which provides water service to the cities of Coronado, Imperial Beach, and the Naval Air Station North Island. The population of the Naval Air Station North Island is located within the City of Coronado, whereas the other military bases that the City serves are within the City.

Per the agreement between the City and Cal-Am, only local surface water is sold to Cal-Am to provide water to supply Cal-Am customers. A portion of City residents in the South Bay area are also served by Cal-Am and can be served by imported water as well. Per the agreement between the City and the City of Del Mar, the City takes deliveries of water which the City of Del Mar purchases from the Water Authority through the Second Aqueduct Connection at Miramar. This water is then treated at the City's Miramar WTP and transported to the City of Del Mar through several interconnections. **Table 6-3** presents the water sales to other agencies.

The City has agreements to provide surplus treated water to Otay Water District and untreated exchange water to the Ramona Municipal Water District. These water deliveries occur infrequently and for short periods of time and are therefore not shown in **Table 6-3**.

Table 6-3 Sales to Other Agencies-Potable

Sector	Water Use (AFY)				
	2025	2030	2035	2040	2045
Wholesale Water Sales	11,518	11,518	11,518	11,518	11,518
Source: City of San Diego 2020 UWMP.					

6.1.2 Recycled and Non-Revenue Water

The City has three (3) separate agreements to sell recycled water. The Olivenhain Municipal Water District and the City of Poway are provided recycled water from the City's North City WRP while Otay Water District receives recycled water from the City's South Bay WRP.

Non-Revenue Water (NRW) is the difference between the potable water supplied to the system (also known as potable water production) and the potable water sold to customers (also known as metered water deliveries). NRW typically includes legitimate uses that are not metered, such as street cleaning, line flushing and fire suppression as well as unaccounted for water. Unaccounted for water can be attributed to unauthorized consumption, meter inaccuracies, data errors, leakage on mains, leakage and overflow at storage and leakage at service connections. Typically, NRW is presented as a percentage of total potable water production. Beginning in 2013, the City has estimated non-revenue water utilizing the American Water Works Association's (AWWA) Water Audit software. An estimate of 9 percent is used in the Water Demand Forecast for 2020 and beyond. Using these values, the City's forecast of these additional water uses and losses to 2045 is presented in **Table 6-4**.

Table 6-4 Additional Water Uses and Losses

Use	Water Use (AFY)				
	2025	2030	2035	2040	2045
Non-Revenue Water	17,018	17,710	18,304	18,884	19,286
Recycled Water [1]	13,773	13,773	13,773	13,773	13,773
[1] Excludes wholesale recycled water that the City provides outside of its service area. Source: City of San Diego 2020 UWMP.					

6.2 Total Water Use

The City's total water demand forecast represents retail potable water consumption, wholesale water sales, non-revenue water, and non-potable recycled water. These demand categories, aggregated from the previous tables, are summarized in **Table 6-5**.

Table 6-5 PUD's Projected Total Water Use

Use	Water Demand (AFY)				
	2025	2030	2035	2040	2045
Retail Potable Water Consumption (Table 6-1)	160,556	167,547	173,560	179,423	183,488
Wholesale Potable Water Sales (Table 6-3)	11,518	11,518	11,518	11,518	11,518
Non-Revenue Water (Table 6-4)	17,018	17,710	18,304	18,884	19,286
Total Potable Water Production	**189,092**	**196,774**	**203,383**	**209,825**	**214,292**
Non-Potable Recycled Water (Table 6-4)	13,773	13,773	13,773	13,773	13,773
Total Water Demand Forecast	**202,865**	**210,547**	**217,156**	**223,598**	**228,065**
Source: City of San Diego 2020 UWMP.					

6.3 Projected Single-Dry Year Water Supply and Demand

As part of the requirement for complying with SB 610, **Table 6-6,** and **Table 6-7**, show the single-dry year and consecutive multiple-dry year demand. All tables in this section are based on data from the City's 2020 UWMP.

Table 6-6 provides a comparison of a single-dry year water supply with projected total water demand in five-year increments through 2045. The City's demand in single-dry years is projected to be higher, similar in proportion to the increase in regional water demand projected in the Water Authority's 2020 UWMP. An increase in demand for landscape irrigation accounts for most of the increase in demand. It is assumed that recycled water demand would not increase in single-dry years.

The wholesale water supplies from the Water Authority are assumed to decrease overall during this 20-year projection due to the completion of the City's Pure Water Phase 1 and 2 installations. This will offset the City's increased water demand and increase local water supply.

Table 6-6 Single-Dry Year Demand vs. Supply for the City

Demand/Supply	Demand and Supply (AFY)				
	2025	2030	2035	2040	2045
Water Demand (with wholesale and conservation) [1]	210,169	218,128	224,973	231,648	236,274
Local Water Supply					
Recycled Water (City service area only, non-potable)	13,773	13,773	13,773	13,773	13,773
Pure Water Phase 1	16,800 [2]	33,600	33,600	33,600	33,600
Pure Water Phase 2			59,360	59,360	59,360
Local Surface Supply	23,858	23,858	23,858	23,858	23,858
City-Lake Cuyamaca Interagency Agreement	400	400	400	400	400
Groundwater	100	100	100	100	100
Sub-total Local Supply	**54,931**	**71,731**	**131,091**	**131,091**	**131,091**
Water Supply from Water Authority (purchased water)	155,238	146,397	93,882	100,557	105,183
Total City Water Supply	**210,169**	**218,128**	**224,973**	**231,648**	**236,274**
Estimated Water Shortages	0	0	0	0	0

[1] Includes consumptive use (retail and wholesale), NRW, conservation, and non-potable recycled water demand.
[2] The exact amount of production expected to be available at the end of CY 2025 is only estimated at this time. The total 33,600 AFY (30 mgd) is expected to be online by the end of CY 2027.
Source: City of San Diego 2020 UWMP.

6.4 Projected Multiple-Dry Year Water Supply and Demand

Table 6-7 presents the sequential five-year dry year hydrology comparison of demand and supply at five-year increments through 2045. The City's demand in multiple-dry years is projected to be higher, similar in proportion to the increase in regional water demand projected in the Water Authority's 2020 UWMP. It is presumed that recycled water demand would not increase in multiple-dry years.

Unlike the single-dry year water supply discussed in Section 6.3, the wholesale water supply from the Water Authority is assumed to decrease overall during this 20-year projection due to the completion of the City's Pure Water Phase 1 and 2 installations. This will offset the City's increased water demand and increase local water supply.

Table 6-7 Multiple Dry Year Demand vs Supply for City

Dry Year 1 (2013) Demand/Supply	Demand and Supply (AFY)				
	2025	2030	2035	2040	2045
Water Demand (with wholesale and conservation) [1]	202,865	210,547	217,156	223,598	228,065
Local Water Supply					
Recycled Water (City service area only, non-potable)	13,773	13,773	13,773	13,773	13,773
Pure Water Phase 1	16,800 [2]	33,600	33,600	33,600	33,600
Pure Water Phase 2			59,360	59,360	59,360
Local Surface Supply	20,963	20,963	20,963	20,963	20,963
City-Lake Cuyamaca Interagency Agreement	400	400	400	400	400
Groundwater	100	100	100	100	100
Sub-Total Local Supply	52,036	68,836	128,196	128,196	128,196
Water Supply from Water Authority (purchased water)	150,830	141,712	88,959	95,402	99,868
Total City Water Supply	**202,865**	**210,547**	**217,156**	**223,598**	**228,065**
Estimated Water Shortages	0	0	0	0	0
Dry Year 2 (2014) Demand/Supply	**Demand and Supply (AFY)**				
	2025	**2030**	**2035**	**2040**	**2045**
Water Demand (with wholesale and conservation) [1]	210,169	218,128	224,973	231,648	236,274
Local Water Supply					
Recycled Water (City service area only, non-potable)	13,773	13,773	13,773	13,773	13,773
Pure Water Phase 1	16,800 [2]	33,600	33,600	33,600	33,600
Pure Water Phase 2			59,360	59,360	59,360
Local Surface Supply	23,858	23,858	23,858	23,858	23,858
City-Lake Cuyamaca Interagency Agreement	400	400	400	400	400
Groundwater	100	100	100	100	100
Sub-Total Local Supply	54,931	71,731	131,091	131,091	131,091
Water Supply from Water Authority (purchased water)	155,238	146,397	93,881	100,556	105,183
Total City Water Supply	**210,169**	**218,128**	**224,973**	**231,648**	**236,274**
Estimated Water Shortages	0	0	0	0	0

Table 6-7 Multiple Dry Year Demand vs Supply for City

Dry Year 3 (2015) Demand/Supply	Demand and Supply (AFY)				
	2025	2030	2035	2040	2045
Water Demand (with wholesale and conservation) [1]	210,169	218,128	224,973	231,648	236,274
Local Water Supply					
Recycled Water (City service area only, non-potable)	13,773	13,773	13,773	13,773	13,773
Pure Water Phase 1	16,800 [2]	33,600	33,600	33,600	33,600
Pure Water Phase 2			59,360	59,360	59,360
Local Surface Supply	6,280	6,280	6,280	6,280	6,280
City-Lake Cuyamaca Interagency Agreement	400	400	400	400	400
Groundwater	100	100	100	100	100
Sub-Total Local Supply	37,353	54,153	113,513	113,513	113,513
Water Supply from Water Authority (purchased water)	172,817	163,975	111,460	118,135	122,762
Total City Water Supply	**210,169**	**218,128**	**224,973**	**231,648**	**236,274**
Estimated Water Shortages	0	0	0	0	0
Dry Year 4 (2016) Demand/Supply	**Demand and Supply (AFY)**				
	2025	**2030**	**2035**	**2040**	**2045**
Water Demand (with wholesale and conservation) [1]	207,735	215,601	222,367	228,964	233,538
Local Water Supply					
Recycled Water (City service area only, non-potable)	13,773	13,773	13,773	13,773	13,773
Pure Water Phase 1	16,800 [2]	33,600	33,600	33,600	33,600
Pure Water Phase 2			59,360	59,360	59,360
Local Surface Supply	16,464	16,464	16,464	16,464	16,464
City-Lake Cuyamaca Interagency Agreement	400	400	400	400	400
Groundwater	100	100	100	100	100
Sub-Total Local Supply	47,537	64,337	123,697	123,697	123,697
Water Supply from Water Authority (purchased water)	160,198	151,264	98,670	105,267	109,840
Total City Water Supply	**207,735**	**215,601**	**222,367**	**228,964**	**233,538**
Estimated Water Shortages	0	0	0	0	0

Table 6-7 Multiple Dry Year Demand vs Supply for City

Dry Year 5 (2017) Demand/Supply	Demand and Supply (AFY)				
	2025	2030	2035	2040	2045
Water Demand (with wholesale and conservation) [1]	207,735	215,601	222,367	228,964	233,538
Local Water Supply					
Recycled Water (City service area only, non-potable)	13,773	13,773	13,773	13,773	13,773
Pure Water Phase 1	16,800 [2]	33,600	33,600	33,600	33,600
Pure Water Phase 2			59,360	59,360	59,360
Local Surface Supply	18,547	18,547	18,547	18,547	18,547
City-Lake Cuyamaca Interagency Agreement	400	400	400	400	400
Groundwater	100	100	100	100	100
Sub-Total Local Supply	49,620	66,420	125,780	125,780	125,780
Water Supply from Water Authority (purchased water)	158,114	149,181	96,586	103,184	107,757
Total City Water Supply	**207,735**	**215,601**	**222,367**	**228,964**	**233,538**
Estimated Water Shortages	0	0	0	0	0

[1] Includes consumptive use (retail and wholesale), NRW, conservation, and non-potable water demand.
[2] The exact amount of production expected to be available at the end of CY 2025 is only estimated at this time. The total 33,600 AFY is expected to be online by the end of CY 2027.
Source: City of San Diego 2020 UWMP

Section 7. CONCLUSION

The Midway Rising Specific Plan and the Midway-Pacific Highway Community Plan Amendment includes water demand assumptions that are covered in the regional water resource planning documents of the City, the Water Authority, and the MWD. The MWD's 2020 UWMP and the Water Authority's 2020 UWMP include projects that meet long-term supply needs through securing water from the State Water Project, Colorado River, local water supply development, conservation, and water reuse.

In summary, this WSA and WSV Report demonstrates there is sufficient water supply over a 20-year planning horizon to meet the projected demand of the Project, as well as the existing and other planned development projects within the PUD service area in normal, dry and multiple-dry year forecasts.

Section 8. REFERENCES

California Department of Water Resources, Guidebook for Implementation of Senate Bill 1610 and Senate Bill 221 of 2001 to assist water suppliers, cities, and counties in integrating water and land use planning (2003). California Agencies. Paper 95.

City of San Diego, 2018 Midway-Pacific Highway Community Plan Update Revised Final Program Environmental Impact Report, San Diego, California (SCH #2015111013). Prepared by AECOM, May 2018.

City of San Diego, 2020 Recycled Water Master Plan Update, June 2020.

City of San Diego Development Services Department, Draft Specific Plan 2nd Review (email communication, March 13, 2024).

City of San Diego Development Services Department, Water Supply Assessment Determination – Midway Rising Specific Plan (PRJ-1106734 / SAP No. 24009733), December 7, 2023.

City of San Diego, 2022, Grid Tile: 18 Official Zoning Map, December 12, 2023.

City of San Diego Municipal Code, Chapter 13: Zones, Section 131.0546 - Maximum Floor Area Ratio. Amended January 27, 2022.

City of San Diego Public Utilities Department, 2020 Urban Water Management Plan, June 2021.

City of San Diego Public Utilities Department, 2020 Water Demand Forecast Report, January 2021.

City of San Diego Public Utilities Department, 2015 Urban Water Management Plan, June 2016.

City of San Diego Pure Water San Diego, 2021 Annual Report: A Year in Review, 2022.

Metropolitan Water District of Southern California, 2020 Regional Urban Water Management Plan, June 2021.

San Diego Association of Governments (SANDAG), 2022. Series 14 Growth Forecasts Housing Units by Community Planning Area. October 6, 2022.

SANDAG, 2014. LANDUSE_PLANNED. Shapefile. October 2, 2014.

San Diego County Water Authority, 2020 Urban Water Management Plan, May 2021.