City of San Diego

2025 Urban Water Management Plan

City of San Diego
Public Utilities Department

Public Review Draft / February 2026

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List of Abbreviations and Acronyms

AB	Assembly Bill
AC	asbestos cement
Act	Urban Water Management Planning Act
AF	acre-feet
AFY	acre-feet per year
AMI	Advanced Metering Infrastructure
AWWA	American Water Works Association
BMP	best management practice
BPS	Building Performance Standards
Cal-Am	California American Water Company
CAP	Climate Action Plan
CCR	Consumer Confidence Report
CEQA	California Environmental Quality Act
CI	cast iron
CII	commercial, institutional, and industrial
CIMIS	California Irrigation Management Information System
City	City of San Diego
CLSP	Commercial Landscape Survey Program
County	County of San Diego
CRA	Colorado River Aqueduct
CY	calendar year
DDW	Division of Drinking Water
deg F	degrees Fahrenheit
Delta	Sacramento-San Joaquin Delta
DMM	demand management measure
DRA	drought risk assessment
DSOD	Division of Safety of Dams
DWR	Department of Water Resources
EIR	Environmental Impact Report
EPA	United States Environmental Protection Agency
ETo	evapotranspiration
FY	fiscal year
GHG	greenhouse gas
GIS	geographical information system
gpcd	gallons per capita per day
gpd	gallons per day
gpm	gallons per minute
gpscd	gallons per service connection per day
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
IID	Imperial Irrigation District
kWh	kilowatt-hour
M	magnitude
MAF	million acre-feet
Metropolitan	Metropolitan Water District of Southern California
Metro JPA	Metropolitan Wastewater Joint Powers Authority
Metro System	Metropolitan Sewerage System
MFR	multifamily residential
MG	million gallons
mgd	million gallons per day
mg/L	milligrams per liter
MJHMP	Multi-Jurisdictional Hazard Mitigation Plan
MT CO_2e	metric tons of carbon dioxide emissions
Muni System	Municipal Sanitary Sewer System
MWELO	Model Water Efficient Landscape Ordinance
N/A	not applicable
NCWRP	North City Water Reclamation Plant

NCPWF	North City Pure Water Facility
n/d	non-detect
NRW	Non-Revenue Water
NSA	North Service Area
PLWTP	Point Loma Wastewater Treatment Plant
ppl/HH	persons per household
PUD	City of San Diego Public Utilities Department
PV	photovoltaic
PVC	polyvinyl chloride
QSA	Quantification Settlement Agreement
RWMP	Recycled Water Master Plan
S15	SANDAG Series 15: 2050 Regional Growth Forecast
SANDAG	San Diego Association of Governments
SB	Senate Bill
SBWRP	South Bay Water Reclamation Plant
SDCWA	San Diego County Water Authority
SDCP	San Diego Community Power
SDMC	San Diego Municipal Code
SFR	single-family residential
SSA	South Service Area
SWP	State Water Project
SWRCB	State Water Resources Control Board
TAF	thousand acre-feet
TDS	total dissolved solids
US	United States
USBR	United States Bureau of Reclamation
UWMP	Urban Water Management Plan
UWUO	Urban Water Use Objective
WBIC	weather-based irrigation controller
WRCC	Western Regional Climate Center
WRP	water reclamation plant
WSA	water supply assessment
WSCP	Water Shortage Contingency Plan
WSRA	water supply reliability assessment
WTP	water treatment plant
WUE	water use efficiency

SECTION

1 Introduction and Plan Requirements

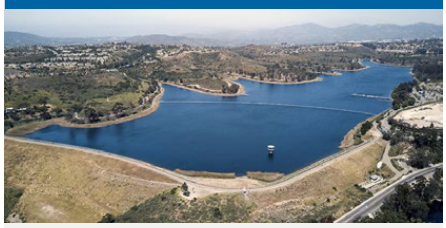
As part of the California Urban Water Management Planning Act (Act) and the California Water Code, an urban water supplier must prepare, adopt, and submit an Urban Water Management Plan (UWMP) to the California Department of Water Resources (DWR) every five years. The Act requires urban water suppliers servicing 3,000 or more connections or supplying more than 3,000 acre-feet (AF) of water annually to prepare a UWMP. The UWMP must describe the water supplier's service area, water demands and supplies, and water conservation activities. It must also assess the reliability of water sources over a 20-year planning time frame.

This document, the City of San Diego's (City) 2025 UWMP, was prepared in accordance with the 2025 Urban Water Management Plan Guidebook for Urban Water Suppliers established by the DWR, the Act (California Water Code §10610-10656 and §10608 et seq.), and the Water Conservation Bill of 2009 (Senate Bill [SB] X7-7). The DWR UWMP Checklist is included in **Appendix A** and the UWMP Compliance Tables are included in **Appendix B**.

The units of measurement and the reporting year types are consistent throughout the UWMP. The following elements apply:

- For all compliance tables showing water demands, conservation, and supplies, the unit of measurement is AF.
- When reporting water treatment and wastewater treatment flows, as well as treatment capacities, the measurement unit used is million gallons per day (mgd).
- Unless otherwise noted, reporting years are Fiscal Year (FY), which runs from July 1 through June 30 for the City.

Key Highlights



Miramar Reservoir

- Per state law, the City updates its Urban Water Management Plan every five years. This update is for 2025-2030. Its planning horizon is out to 2050.
- This plan supports the City's Climate Action Plan, Water Supply Assessments, Water Conservation Goals, and General Plan.
- The City has a diverse water supply portfolio including local surface water, groundwater, imported water, and recycled water for non-potable use. In the future the City will significantly reduce its imported water use through the Pure Water San Diego Program.

This section provides the purpose of the UWMP and an overview of the City, water resources, and summarizes the UWMP requirements, its preparation and coordination with other agencies, as well as public notification and UWMP adoption.

1.1 PURPOSE OF THE 2025 UWMP

The purpose of the UWMP is to maintain the efficient use of urban water supplies, confirm that sufficient water supplies are available for future beneficial use, and provide a mechanism for response during water drought conditions. The City will utilize the UWMP to support long-term water resource planning and ensure adequate water supplies are available to meet existing and future water demands.

The City recognizes the importance of maintaining a high-quality, reliable water supply. Although water is a renewable resource, its availability is limited. The City's Public Utilities Department (PUD) is committed to safeguard the quality, reliability, and sustainability of water, wastewater, and recycled water services for the benefit of the ratepayers and residents served.

The UWMP integrates data and projects water demand and supply to help inform other City and state planning efforts. This includes the City's various plans and assessments described in this section and State Water Resources Control Board (SWRCB) reporting and water resources planning. The public will have access to the UWMP and its appendices to inform water supply and demand assessments that are needed for development plans. **Figure 1-1** illustrates the interaction between the City's UWMP and other City and state planning efforts.

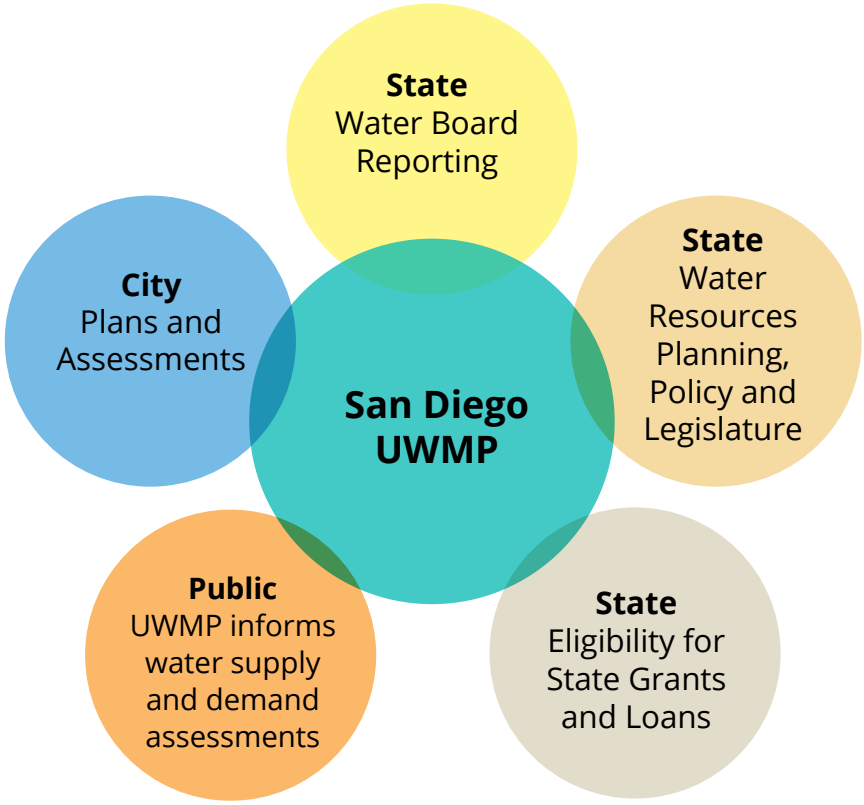


Figure 1-1 Interaction Between the City of San Diego UWMP and Other City and State Planning Efforts

The City developed the 2025 UWMP with the following implementation goals in mind:

IMPLEMENTATION GOAL 1

Develop a credible and balanced 20-year projection of water demand

- Utilize the City's latest geographic information system geospatial data, billing data, and land use data sets.
- Confirm the latest population data and anticipated growth is credible through 2050.
- Update the City's geospatial water demand forecast database for future utilization.
- Analyze statistical Water Use Factor data sets factoring in potential impacts from climate change and water conservation regulations.

IMPLEMENTATION GOAL 2

Update and refine water demand modeling approach for more accurate projections

- Develop a credible water demand forecast model accounting for future densification and growth due to state and regional housing policies.
- Improve geospatial water use profiles and projections in the City's communities and hydraulic zones.
- Refine and develop supplemental supporting data/material/tools for Senate Bill (SB) 610 Water Supply Assessments (WSAs) conducted at the PUD for large scale private developments that are subject to the California Environmental Quality Act (CEQA)*
- Develop alternative demand forecasts to better understand factors impacting demand, such as change in population or additional conservation, to enable better infrastructure planning.

IMPLEMENTATION GOAL 3

Analyze system reliability and integrate a Water Shortage Contingency Plan (WSCP)

- Assess water supply reliability under multiple hydrologic conditions including normal years, a single dry year, and a five-year drought scenario.
- Analyze and update the Water Shortage Contingency Plan (WSCP) shortage response actions to meet water demand reductions goals.

IMPLEMENTATION GOAL 4

Utilize and build on City's Climate Action Plan (CAP) and water conservation goals

- Build on the Climate Action Plan (CAP) energy intensity and greenhouse gas emission updates.
- Provide data in gallons per capita day (GPCD), historical trends, and water use objectives to help inform the City's CAP gpcd reduction target and water conservation program efforts.

IMPLEMENTATION GOAL 5

Prepare for future inclusion and expansion of local water supply development

- Evaluate future water supply reliability under the Pure Water Program.
- Refine local supply projections for the City (surface water, Pure Water, recycled water, groundwater).

**SB 610 WSA's are included in Environmental Impact Reports (EIRs) evaluated by the City's Development Services, Environmental Analysis Section)*

1.2 OVERVIEW OF THE CITY WATER AND WASTEWATER SYSTEM

The City is located on the coast of California in the County of San Diego (County). The City is in the southwestern corner of the state and the nation. It is bound on the west by the Pacific Ocean, to the south by the international border with Mexico, and to the east and north by developed neighboring cities. As of the 2020 United States (US) Census, the City ranked by population as the eighth most populous city in the US and the second most populous in California. The City's main industries of tourism, defense, cutting-edge technology, and international trade attract businesses and employees to the area, leading to opportunities for its residents and a desired lifestyle.

The City covers approximately 340 square miles and stretches nearly 40 miles from north to south. It has 93 miles of shoreline, including bays, lagoons, and the Pacific Ocean. Elevations mostly range from sea level to 600 feet. High points include Mt. Soledad in La Jolla and Cowles Mountain in the eastern part of the City, which is nearly 1,600 feet high.

Topography varies in the City, ranging from coastal shores to inland mesas, each with its own distinct microclimate. The City's climate can be characterized as a mild year-round Mediterranean climate with cycles of multi-year droughts. Historical rainfall does not provide adequate local water supplies for the City. Sources of supply include local surface water from the City's reservoirs, groundwater, imported water from the San Diego County Water Authority (SDCWA), and recycled water (non-potable). The potable reuse from the Pure Water San Diego Program Phase 1 is anticipated to start-up in late Calendar Year (CY) 2026 ramping up to full capacity of 30 mgd by late CY 2027. Phase 2 is under development. The Pure Water San Diego Program will provide a drought-proof, locally sourced water supply.

For more than 100 years, the City has continually and proactively invested in its water supply system to maintain a reliable water supply for residents and businesses. The City's evaluation of demand and supply in this UWMP reflects an integrated approach to water resource management, as shown in **Figure 1-2**, where the full cycle of water, and wastewater is presented.

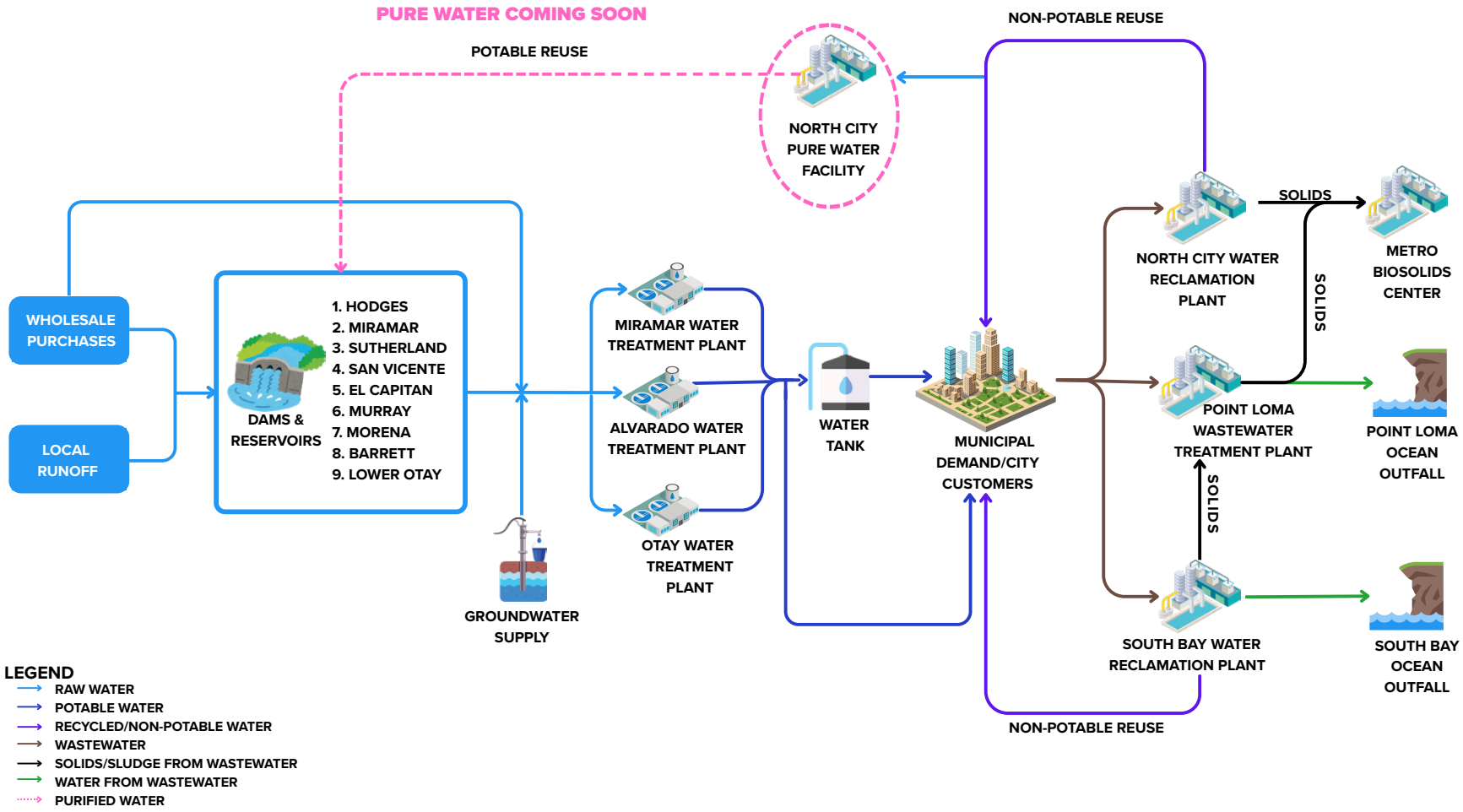


Figure 1-2 Integrated Urban Water Resources Management

The City's water system is maintained and operated by the PUD. The City serves one public water system (CA3710020) with approximately 321,369 service connections and a potable water production of 174,838 AF in FY 2025. The PUD water service area (not including the service areas of its wholesale water customers) is equivalent to the City's jurisdictional boundary. PUD provides potable water and recycled water to City customers and wholesale customers inside and outside of the City boundary. Water demands include Single-Family Residential (SFR) and Multifamily Residential (MFR), Commercial, Industrial, Institutional/Governmental (CII), Irrigation, and Sales to other agencies.

Some key characteristics of the City's potable water system are:

- City's retail service area covers 340 square miles with a population of approximately 1.4 million residents.
- The distribution system extends more than 404 square miles, including the service areas of its wholesale water customers.
- It includes an extensive raw water system with nine surface water reservoirs that capture local runoff from rainfall and some can store purchased imported water, which is then sent to its three water treatment plants (WTP) for treatment and distribution.
- Potable water is delivered to the City's retail customers through an extensive distribution system with 127 pressure zones, 49 pump stations, 29 treated water storage facilities, and approximately 3,700 miles of pipeline.

The City's wastewater system consists of two sub-systems: The Municipal Sanitary Sewer System (Muni System) and the Metropolitan Sewerage System (Metro System). The Muni is responsible for collecting and conveying wastewater from residences and businesses within the City. The Metro System provides wastewater treatment and disposal services for both the City and 15 additional agencies and districts. The City collects and treats approximately 171 mgd of wastewater that is generated within a 450-square-mile area made up of the City's boundaries, as well as the jurisdictions of the other agencies that form the Metro Wastewater Joint Powers Authority (Metro JPA) serving more than 2.2 million people.

The Metro JPA is a state-authorized Joint Powers Authority that shares the use of the City of San Diego's regional wastewater facilities.

Wastewater is treated at three treatment plants, all within City limits: North City Water Reclamation Plant (NCWRP), South Bay Water Reclamation Plant (SBWRP), and Point Loma Wastewater Treatment Plant (PLWTP). The PLWTP treats wastewater for discharge to the Pacific Ocean, and the SBWRP has provisions to discharge to the ocean if needed, which is currently used on a daily basis.

Recycled water is produced at both the NCWRP and the SBWRP to meet non-potable (not for drinking) water demands. The City's recycled water system includes three recycled water storage facilities with over 12 million gallons (MG) of storage capacity, approximately 99 miles of recycled water pipelines, and three recycled water pump stations.

In FY 2025, the City provided nearly 9,272 AF of recycled water within the City and to three wholesale recycled water customers.

In the near future, Pure Water San Diego will provide a safe, secure, and sustainable local water supply by turning recycled water into drinkable water, further expanding the City's water supply portfolio.

1.3 URBAN WATER MANAGEMENT PLANNING AND THE CALIFORNIA WATER CODE

The California Water Code sections applicable to UWMPs prepared for DWR are summarized in the sections below.

1.3.1 URBAN WATER MANAGEMENT PLANNING ACT

In 1983, State Assembly Bill (AB) 797 modified the California Water Code Division 6 by creating the Act. Several amendments to the original Act, which were introduced since 1983, have increased the data requirements and planning elements to be included in the UWMPs.

Initial amendments to the Act required that total projected water use be compared to water supply sources over the next 20 years, in five-year increments. DWR guidelines also suggest projecting through a 25-year planning horizon to maintain a 20-year timeframe until the next UWMP update has been completed.

Other amendments require that UWMPs include provisions for recycled water use, demand management measures (DMM), and a Water Shortage Contingency Plan (WSCP). Recycled water was added to the reporting requirements for water usage and figures prominently in the requirements for evaluation of alternative water supplies when future projections predict the need for additional water supplies.

To the extent practicable, each urban water purveyor must coordinate the preparation of the WSCP with other urban water purveyors in the area. Water suppliers must also describe their water DMMs that are being implemented or are scheduled for implementation.

1.3.2 NEW REQUIREMENTS SINCE THE 2020 UWMP

The major new requirements since the 2020 UWMP cycle are summarized in **Table 1-1**.

Table 1-1 Applicable Changes Since 2020 UWMP

Topic	Summary
Making Conservation a California Way of Life	Effective January 1, 2025, this regulation sets annual "urban water use objectives" for urban retail water suppliers. The water budgets are based on a supplier's specific factors, such as indoor and outdoor residential use, commercial and industrial irrigation, and water loss.
Water Loss Control	Regulations for urban retail water suppliers to develop performance standards for minimizing water system leaks became effective on July 1, 2023.
Monthly Water Conservation Reports	Since October 1, 2020, urban water suppliers have been required to submit monthly conservation reports to the SWRCB.
Prohibition on Nonfunctional Turf Irrigation	AB 1572, signed in October 2023, bans the use of potable water for irrigating "nonfunctional turf" in commercial, industrial, and institutional areas. The ban will be phased between 2027 and 2029.

1.4 RELATED WATER POLICIES AND PLANS

The following related water policies and plans were reviewed for the development of this UWMP.

1.4.1 CITY'S COMPREHENSIVE POLICY FOR A SUSTAINABLE WATER SUPPLY IN SAN DIEGO

Policy CP-400-15, adopted by the City Council in October 2011, has several relevant goals related to the UWMP:

- Support the use of SB 610 water supply assessments (WSAs) related to land-use decisions.
- Support and encourage low-water use plumbing, landscaping, and irrigation materials in public and private development.
- Support economically sound activities that reduce the City's reliance on imported water sources and increase local supplies.

The policy states that implementation of this policy and any updates are to be informed by the latest UWMP every five years in conjunction with updates to the UWMP. The City is currently reviewing CP-400-15 and it will be updated in the future.

Policy CP-400-04 outlines the City's Emergency Water Storage Program. The purpose of the policy is to guide management of the reservoirs to maintain an accessible amount of stored water that increases reliability and provides an uninterrupted supply of water to the City's WTPs, should there be an interruption to the supply of imported water or another emergency that disrupts the water supply. The City is currently reviewing CP-400-04 and it will be updated in the future.

1.4.2 CITY'S 2025 WATER SHORTAGE CONTINGENCY PLAN

Due to increasing strain caused by more frequent and extreme droughts, the City must be prepared for potential constraints on its local and imported water supply. The City's WSCP provides the plan in the event of a declared water emergency or enactment of more stringent restrictions on water use. The WSCP details six potential levels of water shortage and the specific actions the City would take to reduce water use and increase additional supplies to address the water shortage. A plan for communicating water use mandates to the public is also presented within the document. The 2025 WSCP is included in **Appendix C**.

1.4.3 CITY'S GENERAL PLAN AND COMMUNITY PLANS

The City's General Plan is its constitution for development, creating the foundation upon which all land use decisions within its jurisdiction are based. It expresses community vision and values, and it embodies public policy for the distribution of future land use, both public and private. The 2008 General Plan was amended in 2024 to align with the City's adopted Climate Action Plan (CAP) as well as the new goals, policies, and discussion that support the City's objectives for climate action, fair housing, and equity. Key changes include updated goals and discussions reflecting the importance of climate goals and balanced communities.

The Blueprint SD initiative approved by the City Council in 2024 (Resolution R-315702) included amendments to elements of the General Plan.

The General Plan contains the following elements (chapters): Land Use and Community Planning; Mobility; Urban Design; Economic Prosperity; Public Facilities, Services and Safety; Recreation; Conservation; Noise; Historic Preservation; Environmental Justice; and Housing. The Housing Element of the General Plan is available under separate cover, due to the need for frequent updates and to facilitate compliance with state reporting requirements.

In the 2008 General Plan, the City of Villages strategy focused growth into mixed-use activity centers that are pedestrian-friendly districts linked to an improved regional transit system. This strategy envisions a city composed of distinct villages, each with its own character and identity, but all connected by a robust transit network. Adding to this, the 2024 update focused on increasing the amount of travel that San Diegans do by walking/rolling, biking, and transit by investing in infrastructure and programs designed to help people use these other travel modes safely, conveniently, and enjoyably.

To provide greater detail, the 2024 General Plan amendment identifies 40 recommended community land use designations, which are further grouped into seven General Plan land use categories. A community plan contains a land use map and classifications, and tailored goals and policies, and serves as a long-range development guide along with the city-wide General Plan. As part of the ongoing program, the City has been updating the community plans to be consistent with the General Plan goals and polices.

The Conservation Element in the 2024 General Plan contains goals and policies that address water resources management. It focuses on approaches to conserve water resources and protect drinking water sources. The Element also addresses the need to integrate water resource planning into the land use planning process and plan with regional and statewide water agencies. The assessment of impacts under the California Environmental Quality Act (CEQA) may be aided by an understanding of supplies and demands as presented in a UWMP or similar other supply and demand assessments, such as SB 610 WSAs, that allow the entity preparing the Environmental Impact Report (EIR) to assess impacts to water supplies, as well as impacts to drainage, wastewater, reclamation/reuse, and water quality.

1.4.4 CITY'S CLIMATE ACTION PLAN

The 2022 CAP update builds on the 2015 CAP and sets aggressive goals to significantly reduce greenhouse gases (GHG) and make San Diego a leader in clean technology, renewable energy, and green jobs. Targets for 2030 and 2035 related to the water-energy nexus in the plan include:

1. Phase out 100 percent of natural gas usage in municipal facilities by 2035.
2. To use 100 percent renewable or GHG-free power provided by San Diego Community Power (SDCP) for all SDCP customers in the City by 2030.
3. To provide 33,000 AF of local water supply from the Pure Water San Diego Program by 2030.
4. To increase the local water supply from the Pure Water San Diego Program to 93,000 AF by 2035.

Specific actions and supporting actions related to the water-energy nexus, water conservation, and sustainability include:

- Developing local water supply and reducing dependence on imported water.
- Supporting ongoing gallons per capita per day (gpcd) water use targets.

- Developing a comprehensive roadmap to achieve decarbonization of the existing building stock and developing a Building Performance Standards (BPS) policy.
- Developing and adopting a Building Electrification policy, through code update or other mechanism, requiring new residential and commercial buildings to eliminate the use of natural gas, increase energy efficiency, increase distributed energy generation and storage and increase electric vehicle charging stations, engaging with residents of communities of concern, workers, and builders.
- Exploring opportunities to increase on-site water reuse and irrigation for buildings as part of the overall building decarbonization roadmap.
- Partnering with SDCP to increase customer adoption of 100 percent renewable energy supply and incentivize local generation of renewable energy resources.
- Capturing methane from wastewater treatment with the goal of 95 percent by 2035.

1.4.5 CLIMATE ACTION IMPLEMENTATION PLAN

The Climate Action Implementation Plan (2023) organizes the City's processes and government structure around achieving net-zero emissions, centering equity, accountability, and transparency. The Implementation Plan includes cost estimates to align the City's future budgeting decisions with the CAP. Furthermore, the implementation plan lays out the tasks and responsibilities to be carried forward by departments and reported on through annual workplans. This will be a necessary tool to clearly define each City department's CAP implementation work every FY and further integrate equity into climate action-related projects and initiatives.

1.4.6 CLIMATE RESILIENT SD

The Climate Resilient SD (2024) is the City's comprehensive climate adaptation and resilience plan, which implements the CAP goal for a standalone climate adaptation plan to identify vulnerabilities, take early action, capitalize on co-benefits, increase local resilience, and integrate and build upon the strategies and measures in the CAP. It also builds upon the social equity goals in the CAP by prioritizing communities of concern to ensure that investments and resources are prioritized for those with the greatest needs and vulnerabilities.

The City seated two new advisory boards in 2024 to work on tackling climate risk and protecting the natural environment. The Climate Advisory Board, will advise the Mayor, City Council, and City departments on issues related to climate, environmental justice, climate equity, sustainability, and energy policy. Actions will include developing recommendations on how the City can engage residents, communities, and non-governmental organizations to guide the implementation of the CAP and looking at how the City can engage in climate issues at the state and federal levels. The Resiliency Advisory Board will advise the Mayor and Council on natural resource conservation, climate resiliency and adaptation, wetlands, habitat preservation, biodiversity, and the Climate Resilient SD Plan. The Board will help develop a cooperative and supportive relationship between the City and stakeholders in the resiliency, open space, indigenous, and environmental justice communities.

The Climate Change Vulnerability Assessment (2020) assessed the vulnerability of water and wastewater infrastructure assets, such as dams, pipes, pump stations, reservoirs, and treatment plants.

1.4.7 SDCWA 2025 UWMP

The SDCWA is the regional wholesale provider of imported water that supplements local water supplies for 22 retail water purveyors in San Diego County, including the City. This makes SDCWA a vital partner in ensuring water supply reliability for the City's water customers. The California Water Code requires coordination in the preparation of UWMPs with any wholesale water providers or other agencies that share common infrastructure for the delivery of water, wastewater, and recycled water services. Thus, the SDCWA's 2025 UWMP is to be considered a supplemental reference to the City's 2025 UWMP. As a member of the SDCWA, the City will assist the SDCWA as needed in working with the Metropolitan Water District of Southern California (Metropolitan), DWR, and other relevant local water agencies in the region.

1.5 PLAN COORDINATION

Preparation of this 2025 UWMP was coordinated with multiple local and regional agencies, as shown in **Table 1-2**. As part of this coordination, the City provided its 2025 UWMP to its wholesale water provider, SDCWA. Availability of imported water, regional water demands, and conservation were also coordinated with the SDCWA. Wastewater and recycled water use data were coordinated within PUD. To prepare the City's water demand forecast, coordination with the San Diego Association of Governments (SANDAG) was necessary to obtain the most recent demographic projections for the City.

Table 1-2 City of San Diego UWMP Coordination With Outside Agencies

Agency	Coordination
San Diego County Water Authority (SDCWA)	Imported water availability, regional water demands, and conservation
San Diego Association of Governments (SANDAG)	Demographic data
City of San Diego Wholesale Water Customers(1)	Public meeting announcement
Department of Water Resources (DWR)	UWMP requirements

Notes:
(1) California American Water Company and the City of Del Mar.

A 60-day notice of preparation of the 2025 UWMP was sent to the SDCWA, California American Water Company, and the City of Del Mar. Copies of these notices are provided in **Appendix D**.

1.6 PUBLIC PARTICIPATION AND UWMP ADOPTION

Prior to adoption, the public was invited to provide input on the public review draft 2025 UWMP and water shortage contingency plan (WSCP). The City issued a public notice on February 27, 2026, describing the 2025 UWMP and inviting the public to comment between February 27, 2026, and March 30, 2026. On April 27, 2026, and May 4, 2026, the City placed a notice in The Daily Transcript (local newspaper) stating that its UWMP was being updated and that a public hearing was to be conducted. The notice stated that a public review period was scheduled through May 11, 2026, for

comments. This notice included the location where the UWMP and WSCP was available for public review. A copy of this public notice is included in **Appendix D**.

The 2025 UWMP will be presented and adopted by the City Council at a public hearing, at the Council Chambers of the City Administration Building, 202 C Street, 12th Floor; the City Council will also adopt the WSCP at that time. After adoption the City Adoption Resolution will be included as **Appendix E**.

The hearing provided an opportunity for the City's customers, residents, and employees to learn and ask questions about the current and future water supply of the City.

The 2025 UWMP will be submitted to DWR (electronically), the California State Library, and any cities or counties that the City provides water supplies to within 30 days of adoption and will be made available to the public on the City's website (see Commitment to Distribute in **Appendix D**).

The UWMP may be updated at any time when the urban water supplier believes significant changes have occurred in population, land use, and/or water sources that may affect the contents of the UWMP. Copies of amendments or changes to the UWMP shall be submitted electronically to DWR, the California State Library, and any cities or counties that the City provides water supplies to within 30 days of adoption.

Public Hearing

Outside of the 2025 UWMP preparation process, the City also continually provides multiple opportunities for the public to learn about and comment on water supply issues. The City's PUD proactively reaches out to the public through its annual Drinking Water Quality Report, also known as a Consumer Confidence Report (CCR), that provides information on how customers' drinking water meets and exceeds state standards. It also engages customers by conducting public presentations and staffing informational tables at community events. The City continually updates the City's website related to water use and regularly works with media outlets to secure accurate and complete coverage of its water programs.

1.7 UWMP ORGANIZATION

This UWMP contains eight sections. The sections are briefly described below:

SECTION 1

Introduction and Plan Requirements:

- This section presents the purpose of this UWMP and an overview of the City, water resources, and information on the process for developing the UWMP including coordination efforts with local agencies, measures used to solicit public participation, and steps taken to adopt, submit, and implement the UWMP and make it publicly available.

SECTION 2

Service Area:

- This section presents a description of the service area and its characteristics including climate, population, and other demographic factors. This section also presents a description of the potable water system, recycled water system, and wastewater system.

SECTION 3

Historical and Projected Water Use:

- This section presents a description of current and projected water uses within the service area in five-year increments.

SECTION 4

Water Supplies:

- This section presents a description of the current and projected potable and non-potable water supply sources including information on the usage of surface water, groundwater, imported water, and recycled water. This section also includes information on the future indirect potable reuse program.

SECTION 5

Demand Management Measures:

- This section presents conservation baselines and targets, calculated baseline daily per capita water use, and compliance with conservation goals. This section summarizes water conservation efforts including drought response, conservation programs, incentives, and sub-metering ordinance requirements.

SECTION 6

Water Supply Reliability Assessment:

- This section presents the reliability of the water system and includes a discussion on future water reliability. In addition, there is an analysis of supply availability in a normal, single dry year and in five consecutive dry years. This section also includes a drought risk assessment (DRA).

SECTION 7

Energy Intensity:

- This section includes information on the energy required to produce and distribute the water supply, in addition to information on recycled water and wastewater energy use and greenhouse gas emissions.

SECTION 8

References:

- This section provides the sources for data that was relied upon to create this UWMP.

In addition, there are 10 appendices in this 2025 UWMP that: 1) document the UWMP's public involvement/review; 2) provide a UWMP checklist for DWR use; 3) provide DWR compliance tables; 4) document the City's WSCP and emergency policies; and 5) provide other useful and pertinent information.

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SECTION

2

Utility Service Area Description

This section provides a brief overview of the City of San Diego's (City) history, geography, demographics, climate, water supply sources, utility systems, and wastewater treatment and water reclamation systems.

Since the 1900s, the City has implemented many major projects and programs to diversify its water supply portfolio and increase its water supply reliability. In 1901, the City purchased its initial water system from the San Diego Water Company and the Southern California Mountain Water Company. Between 1913 and 1943, the City developed eight new reservoirs to capture local runoff from rainfall to meet growing water demands. Before 1944, all the water supply provided by the City was from impounded local runoff from rainfall and some limited groundwater sources. As the City grew, it became clear that new water sources were needed. In 1944, the San Diego County Water Authority (SDCWA) was formed as a countywide wholesale water agency to transport imported water from the Colorado River to the City and other communities in the County. SDCWA joined the Metropolitan Water District of Southern California (Metropolitan) in the same year. As Southern California's regional wholesale water provider, Metropolitan owns and operates the Colorado River Aqueduct (CRA), which was constructed in the 1930s. In 1947, Colorado River water from Metropolitan's CRA was delivered to the City via the SDCWA raw and treated water aqueducts.

As the population and economy of California grew, Metropolitan and 30 other public water agencies signed a contract to develop the State Water Project (SWP). Initiated in the early 1960s, this ambitious civil works project was the largest of its kind in the nation. This massive undertaking involved constructing a series of reservoirs, large conveyance pipelines and canals, and massive pump stations designed to bring water from the Sacramento-San Joaquin Delta (Delta) to the central and southern regions of California. Metropolitan is the largest member of the State Water Contractors and receives approximately 50 percent of water deliveries from the SWP, which is managed by the Department of Water Resources (DWR). In 1978, water from the SWP was delivered to the City, blending with CRA water.

Key Highlights

Demographic and Water Use Trends for the City of San Diego

- The City's water system is one of the most complex in California. It includes nine reservoirs, three water treatment plants, local groundwater, and the future San Diego Pure Water Program, which will provide potable reuse for surface water supply augmentation. The City has already invested in recycled water to offset potable demand and has two water reclamation plants to treat non-potable recycled water.
- The City's water service area population is expected to increase from 1.40 million in 2025 to 1.46 million in 2050, or by 4 percent in the next 25 years. Due to densification, City growth is expected to be in multifamily units with a small decrease in single-family units.

The City provides potable water and recycled water services to approximately 1.4 million people (excluding wholesale customers) residing within the City's water service area which is equivalent to the City's jurisdictional boundary. Wholesale water deliveries are provided to communities both inside and outside of the City's boundary. For this 2025 Urban Water Management Plan (UWMP), the demographics and water use presented are defined as the City water service area (unless otherwise noted).

2.1 GEOGRAPHY

The City is located in the southwest portion of San Diego County and is bound by the Pacific Ocean to the west, the United States (US)-Mexico border to the south, and neighboring cities to the east and north. **Figure 2-1** shows the location of San Diego in California. The City of San Diego is approximately 340 square miles, and San Diego County extends over 4,300 square miles. **Figure 2-2** shows the location of the City within San Diego County.

The topography of the City can be characterized as hilly, with hills separating mesas due to the numerous canyons within and around the City. Elevations range from sea level to 1,600 feet above sea level.

2.2 DEMOGRAPHICS, POPULATION, AND LAND USE

This section summarizes historical, current, and projected population trends in the City. Population projections are essential to the planning process and form the basis for most planning decisions.

San Diego is the second most populous city in California, with a population of approximately 1.4 million. The City is within San Diego County, which has a population of nearly 3.3 million (2023 estimate census.gov).

Projecting future growth is far from an exact science, given the complex set of variables that can affect population growth rates. Typically, projections are developed by taking past patterns and combining them with reasonable assumptions about the future to obtain an estimate of future growth rates. These projections provide the City with insight into the type and quantity of future growth as well as guidance regarding future planning activities; therefore, such planning activities can only be as effective as the ability to anticipate population growth.

Service area population data for the 2025 UWMP is based on the San Diego Association of Governments (SANDAG) Series 15: 2050 Regional Growth Forecast (S15). SANDAG produces economic, demographic, and transportation forecasts through a set of assumptions, data, computations, and model interactions. S15 is the fifteenth published forecast by SANDAG and was accepted by the Board of Directors in April 2024 for distribution and use in planning. The S15 forecast is the foundation of the Sustainable Communities Strategy (SCS) land use pattern and is being incorporated into SANDAG's updated Regional Plan. The starting year (base year) for S15 is 2022 and provides forecasting in five-year increments through the year 2050. SANDAG's forecasts are based on current local planning assumptions and policies, changes to long-term economic trends and demographic patterns, US Census data, and the annual population and housing estimates produced by the California Department of Finance. SANDAG works closely with each jurisdiction, including the City, to incorporate existing and planned land uses, development constraints, zoning, remaining housing capacity, current adopted general and community plans, and guidance on likely development patterns by 2050.

Figure 2-1 City of San Diego Location Within California

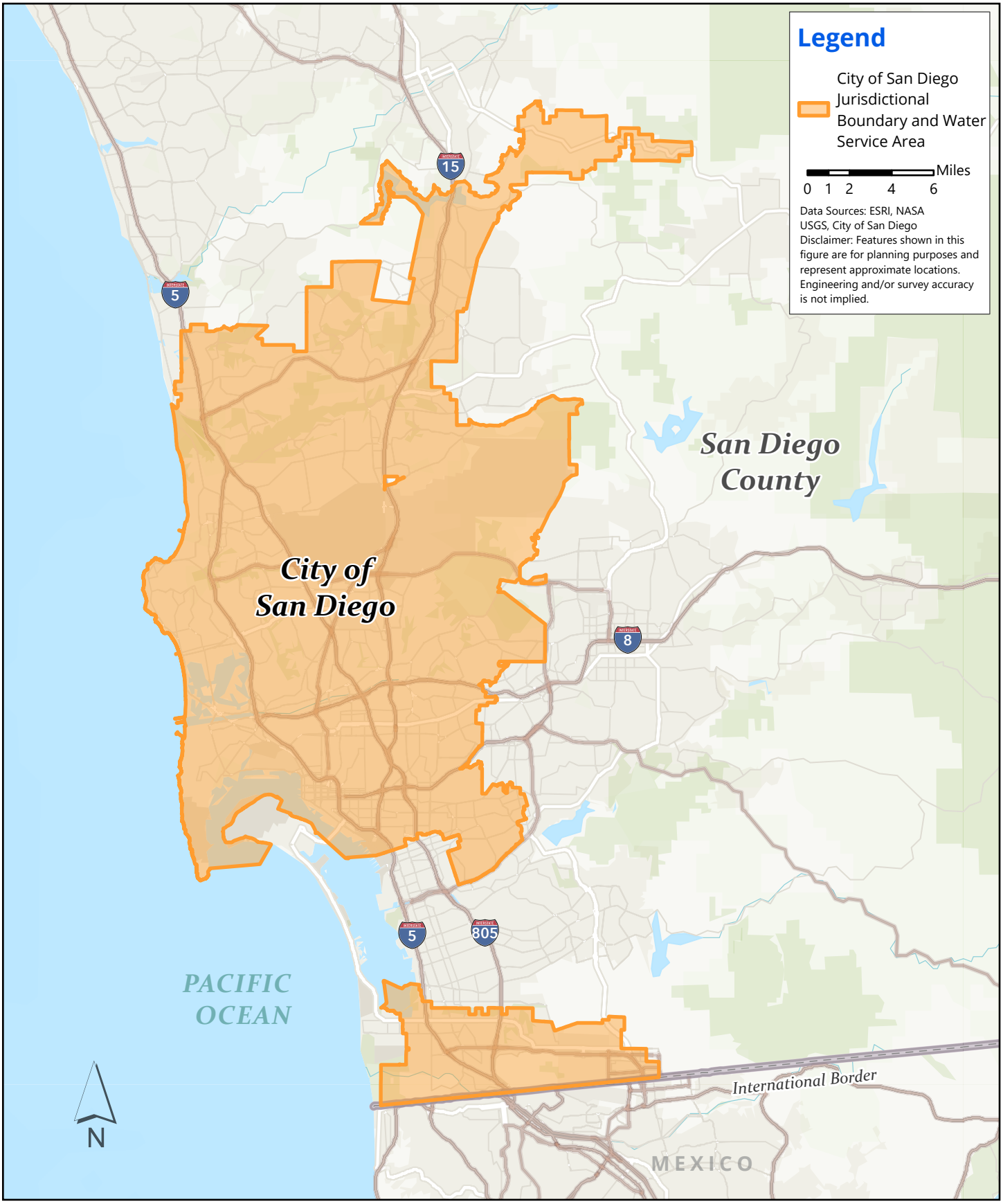


Figure 2-2 City of San Diego Location Within San Diego County

The S15 projections are produced by census tracts and provide estimates for the following residential categories: household population, total population (including group quarters and military), single-family occupied units, multifamily occupied units, and household income. The census tract demographics were spatially overlaid to pressure zones for the City's service area. This determined the percentage of a pressure zone that is located within a given census tract. Water meter locations were spatially joined to the percentage of the tract that is within a pressure zone.

Nearly 1.4 million people reside in the City's water service area. The current and projected population within the City's water service area are presented in **Table 2-1**. The 2020 UWMP forecasted a 2025 population of 1.48 million and a 2045 population of 1.64 million. These differences are mainly due to changes with SANDAG forecasting. Refer to Section 3.0 and the 2025 UWMP Demand Forecast Report **(Appendix F)** for more details.

Table 2-1 City's Water Service Area Population - Current and Projected for Retail and Wholesale

	2025	2030	2035	2040	2045	2050
Total Population	1,399,930	1,418,515	1,424,765	1,440,431	1,462,016	1,456,893

Notes:
Source: SANDAG Series 15.

Analyzing demographic data can yield important information about possible shifts in demand for the City's water service. The City's water service area total population is expected to increase from 1.40 million in 2025 to 1.46 million in 2050. This increase of nearly 57,000 people equates to 4 percent in the next 25 years, or 0.16 percent annually. Total single-family residential (SFR) units are expected to decrease by 2,785 from 2025 to 2050, and total multifamily residential (MFR) units are expected to increase by 70,373 between 2025 to 2050. This trend is also reflected in a decrease in average household size from 2.4 to 2.3 in the same period. This is due to impacts from densification in the region. **Table 2-2** presents a summary of the demographic projections for the City's water service area.

Table 2-2 Demographic Projections for the City of San Diego Water Service Area

Demographic	2025	2030	2035	2040	2045	2050
Household Population(1)	1,330,233	1,348,405	1,354,134	1,369,283	1,391,205	1,385,650
SFR Dwelling Units(2)	234,147	233,676	233,530	233,265	232,833	231,362
MFR Dwelling Units(2)	310,215	324,821	332,955	345,597	365,676	380,588
Total Dwelling Units(2)	544,362	558,497	566,485	578,862	598,509	611,950
Persons Per Household	2.4	2.4	2.4	2.4	2.3	2.3
Employment	1,135,251	1,151,165	1,169,178	1,192,587	1,209,857	1,227,126

Notes:
Source: SANDAG Series 15.
(1) Does not include military population.
(2) Occupied dwellings.

S15 estimates that the region's population will become older and more ethnically diverse over the coming decades. S15 projects that the number of people in the region will eventually decrease, but includes continued growth in the number of jobs in the region. This may be due to individuals working more than one job, and workers from outside the service area commuting into San Diego

for work. Jobs are expected to be in the food services, local government, tourism, accommodations, professional services, healthcare, biotech, and technology sectors.

Blueprint SD is the City's recent General Plan update. The City's existing General Plan was amended in 2024 to align with the City's adopted Climate Action Plan (CAP), the SANDAG Regional Transportation Plan, as well as the new goals, policies, and discussion that support the City's objectives for climate action, fair housing, and equity. The Land Use Element in the General Plan sets forth the City's policies for guiding community development. The largest land use type category is Park, Open Space, and Recreation (29 percent), especially when combined with Water Bodies (3 percent), which also create open space and recreational opportunities, while residential land use type accounts for only 26 percent of the City's service area.

2.3 CLIMATE AND RESILIENCE

The City's service area climate is characterized as a mild year-round Mediterranean climate with cycles of multi-year droughts. Average monthly evapotranspiration (ETo) rates, rainfall, and temperature are summarized in **Table 2-3**. ETo values serve as indicators of how much water is required to maintain healthy agriculture and landscaping.

Figure 2-3 graphically presents the average monthly temperature, rainfall, and ETo for the coastal area of City of San Diego from 1939 to 2024.

Table 2-3 City of San Diego Water Service Area Climate Characteristics

Month	Monthly Average ETo[1] (inches)	Monthly Average Rainfall[1,2] (inches)	Monthly Average Temperature[1,2] (deg F)	
			Minimum	Maximum
January	2.28	1.84	47.89	65.84
February	2.63	1.92	49.24	66.17
March	3.75	1.47	51.53	66.70
April	4.51	0.67	54.26	68.50
May	4.80	0.36	57.61	68.63
June	4.93	0.11	60.51	71.45
July	5.62	0.21	64.15	75.87
August	5.40	0.18	65.48	77.78
September	4.44	0.21	64.23	77.63
October	3.45	0.41	59.16	74.89
November	2.52	0.79	53.04	70.93
December	1.96	1.68	48.60	66.40
Annual	**46 (Total)**	**10 (Total)**	**56 (Average)**	**71 (Average)**

Notes:
deg F - degrees Fahrenheit
(1) Source: California Irrigation Management Information System (CIMIS): Station 184 San Diego II (2002 to 2024).
(2) Source: Western Regional Climate Center (WRCC): Station USW00023188 San Diego International Airport (1939 to 2016).

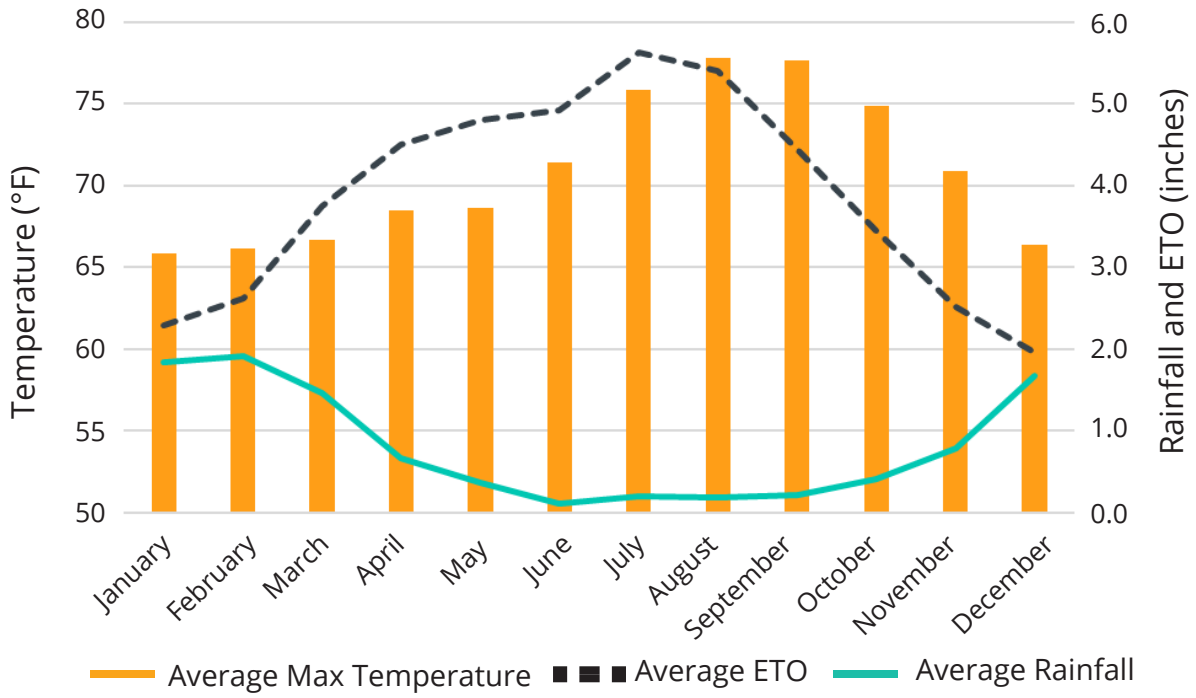


Figure 2-3 Average Climate Characteristics in Coastal Area of San Diego, California (1939-2024)

Climate data is provided by the CIMIS and the WRCC. These two weather databases were used retrieve data at stations 184 San Diego II (CIMIS) and USW00023188 San Diego International Airport (WRCC) representing the City's coastal climate during the years 1939 to 2024.

The average monthly ETo from 2002 to 2024 ranges from 1.96 inches (December) to 5.62 inches (July). Average annual rainfall from 1939 to 2024 is approximately 9.85 inches (value reflects the sum of monthly average rainfall). The rainfall follows a distribution pattern typical of the San Diego region, with the majority occurring during the months of November through March. Monthly precipitation has been as high as 4.85 inches in the past 20 years (Station 184 San Diego II, October 2004). Average maximum monthly temperature ranges from about 65 to 78 deg F while average minimum temperatures range from 48 to 65 deg F. between 1939 to 2024.

It is important to note that the ETo indicates how much supplemental irrigation the area's vegetation (turf, trees, and shrubs) requires; the higher the ETo, the more irrigation water is needed to sustain the vegetation. Due to the City's geography and terrain, precipitation and temperature can vary across the service area. Coastal areas tend to have less precipitation and lower temperatures, while higher inland elevations can receive more than 30 inches of precipitation per year and have higher temperatures. Due to wide variability in temperature and precipitation, the ETo rates also vary drastically within the City's service area, requiring higher irrigation demands inland compared to the coastal areas.

Projected climate change trends for California include increasing temperature and increasing intensity of heavy precipitation events at greater variation in the form of rainfall rather than snow. Water suppliers now assess local climate challenges and plan for vulnerabilities within their systems.

As these risks are identified, methods of adaptation and mitigation can be employed to increase the sustainability of water resources.

2.3.1 CITY OF SAN DIEGO CLIMATE ACTION PLAN

The City's 2022 CAP serves as a high-level planning document with the primary objective of reducing greenhouse gas (GHG) emissions to net-zero by 2035. Target of 100 percent renewable or GHG-free power for all San Diego Community Power (SDCP) customers in the City by 2030, which is estimated to result in a GHG reduction of nearly 690,000 metric tons of carbon dioxide emissions (MT CO_2e). By 2035, the reduction would be over 520,000 MT CO_2e. This aligns with California's legislation, Assembly Bill (AB) 32 (2006) and Senate Bill (SB) 32 (2016), setting a state GHG avoidance goal of returning to 1990 emissions levels by 2020 and reducing this further by 40 percent below 1990 levels by 2030. The City has set forth strategies and implementation steps to achieve this goal, considering the associated challenges and benefits experienced by residents.

Following extensive public engagement, the City defined core benefits to influence the development and implementation of the CAP, including air quality, public health, resilience, jobs, and economy. In 2023, the City released an Implementation Plan to accompany the CAP by organizing structure and processes to achieve the net-zero GHG emissions goal. City staff report to Council members each year to provide updates on progress made toward CAP strategies, measures, and actions.

Strategies are defined with targets, measures, quantified actions, and supporting qualitative actions to avoid or reduce future GHG emissions. The 2022 CAP has categorized the following strategies:

- Decarbonization of the Built Environment: The removal of carbon (primarily natural gas/methane) from existing buildings, new building developments, and City-owned facilities.
- Access to Clean and Renewable Energy: The development of a comprehensive electric mobility strategy to support residents' transition to electric vehicles and transition the City-owned municipal fleet to low or zero-emission vehicles.
- Mobility and Land Use: Changes to the City's approach to land use planning and infrastructure to lessen commute time, create neighborhoods with healthy food access and safe public spaces, increase efficiency of infrastructure delivery, provide space for transit services, and increase pedestrian and cycling infrastructure.
- Circular Economy and Clean Communities: Achieving a zero-waste and circular economy by eliminating all discharges to land, water, or air that can potentially threaten the public and the environment.
- Resilient Infrastructure and Healthy Ecosystems: Natural and built environments that better prepare the City for climate change impacts and minimize the associated adverse effects.
- Emerging Climate Actions: Explore additional opportunities, such as developing partnerships with regional partners, collaborating on research, exploring alternative fuel sources, and developing pilot projects for new techniques and technologies.

Measures are defined as targets with quantifiable actions, policies, and/or programs developed toward the goals of the CAP. A measure is ranked on a scale of 1-3 (1 being lowest, 3 being highest) in terms of feasibility, including:

- Stakeholder acceptability: Acceptance of local residents and businesses
- Technical feasibility: Availability of design implementation and maintenance support
- Ease of implementation: Reliance on county, state, or national support
- Financial viability: Realistic option financially and potential funding
- Mainstreaming potential: Integration with existing City government and planning policy

Additionally, equitable implementation of a measure is ranked on the same 1-3 scale, including community benefits and burdens, community empowerment, and addressing historical disparity.

2.3.2 CLIMATE RESILIENT SD

Considering these climatic conditions and climate change, the City's CAP mitigation and adaptation efforts are reducing GHG emissions and moving the City toward clean technologies, renewable energy, and green jobs. The CAP promotes regulatory mandates and incentives to improve the performance of new and existing buildings, as well as set goals for water use consumption.

Ordinances have been developed for requiring disclosure of a building's energy and water use to homebuyers, installing weather-based sprinkler controls, and prioritizing drought-resistant landscaping. Additionally, the City has introduced *Climate Resilient SD* as part of the CAP's Strategy 5 (Resilient Infrastructure and Healthy Ecosystems) as a stand-alone climate adaptation plan (https://www.sandiego.gov/sites/default/files/2024-08/climate-resilient-sd_3-22-24.pdf) and has recently introduced a climate advisory board. The plan evaluates the City's capacity to respond and recover from climate change-related events. This includes identifying water and wastewater system vulnerabilities, implementing social equity, capitalizing on partner benefits, and overall increasing local climate resilience. The City plans to update the CAP in 2027 to ensure it is on track to achieve GHG reduction goals.

2.4 WATER SUPPLY SOURCES AND UTILITY SYSTEMS

The City's water system is one of the most complex in California. To meet its water demands, the City purchases imported water from the SDCWA, captures local runoff from rainfall in nine reservoirs, and recycles wastewater at the City's two water reclamation plants to offset potable water use. The SDCWA's water supplies include desalinated seawater, water transfers from the Imperial Irrigation District (IID), imported (SWP and CRA) water purchased and delivered through Metropolitan's system to San Diego County, and the City’s Pure Water San Diego Program starting in 2026. In addition, the City has a small supply of local groundwater. These supplies are described in the following sections.

2.4.1 METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA SYSTEM

As Southern California's regional water wholesaler, Metropolitan operates the largest water system in the nation. It imports water from two main supply sources: (1) the CRA, which it owns and

operates, bringing water from the Colorado River into Southern California; and (2) the SWP that it contracts with through DWR to bring water from the Delta, which is formed at the western edge of the Central Valley by the confluence of the Sacramento and San Joaquin rivers. The SWP and CRA are part of an extensive water supply system that includes federal, state, and local water conveyance, as shown on **Figure 2-4**.

Metropolitan was created in 1928, under the authority of the Metropolitan Act (California Statutes 1927, Chapter 429, as reenacted in 1969 as Chapter 209, as amended). Metropolitan's primary purpose is to provide a supplemental supply of wholesale water for domestic and municipal uses to its constituent agencies. The Metropolitan 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. The total service area is home to more than 19 million people, including 3.3 million in San Diego County.

Metropolitan has 26 member agencies, including 14 cities, 11 municipal water districts, and the SDCWA.

Metropolitan's existing water supplies have been historically sufficient to meet demand within its service area during years of normal precipitation. Although Metropolitan plans and manages reserve supply to account for occurrences of drought conditions and regulatory actions, including but not limited to restrictions under the Federal and California Endangered Species Acts, there have been times that Metropolitan has placed limitations on water deliveries 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 Metropolitan's ability to supply its member agencies.

Figure 2-4 Major Water Conveyance Facilities in California

Colorado River Water

The Colorado River is the largest river in the western US; it also flows into Mexico. The Colorado River Basin covers roughly 246,000 square miles, including parts of the seven US "basin states" of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming. The river provides water to approximately 40 million people, irrigates nearly 4 million acres of cropland, and supplies more than 10 billion kilowatt-hours (kWh) of hydropower annually.

Metropolitan obtains its Colorado River allocation via the CRA, which was Metropolitan's original water source after it was established in 1928. Metropolitan owns and operates the CRA, which is 242 miles long, starting at Lake Havasu in western Arizona and terminating at Lake Mathews in Riverside County.

The Colorado River has been in severe drought since the year 2000. This 25-year-long (and ongoing) drought is considered the worst in the American West in more than 1,000 years. Refer to Section 6 for further information on the Colorado River.

State Water Project

The SWP is a water storage and delivery system that provides water to 29 urban and agricultural water suppliers in Northern California, the San Francisco Bay Area, the San Joaquin Valley, the Central Coast, and Southern California. In total, it delivers water to 27 million people, or two-thirds of the population of California, and 750,000 acres of farmland. The SWP is owned by the State of California and operated by the DWR.

As the largest of 29 contractors for water from the SWP, Metropolitan holds a contract for a maximum of 1,911 thousand acre-feet (TAF) per year, or 46 percent of the total SWP Table A allocations for all contractors. The maximum amount of the contract is rarely met because the California DWR determines annual allocations of SWP contract amounts based on hydrologic (snowpack and surface water reservoir storage levels) and regulatory conditions.

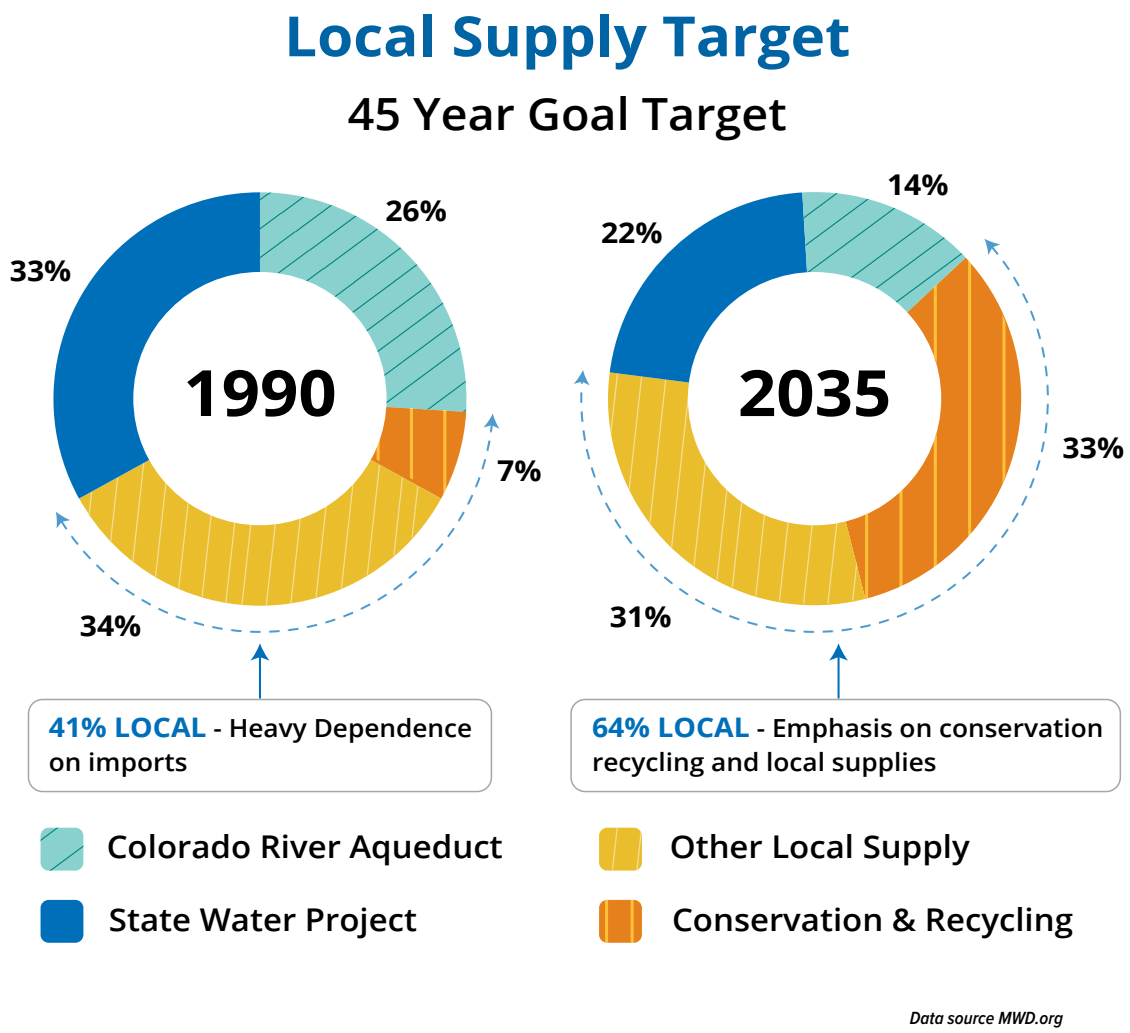
Metropolitan receives water pumped from the Harvey O. Banks Pumping Plant in the southern portion of the Delta via the 444-mile-long California Aqueduct to four delivery points near the northern and eastern boundaries of Metropolitan. Water supply from the SWP has also been significantly reduced because of drought and environmental regulations protecting the Delta. Political and environmental concerns may also limit the imported water supply from Northern California.

The quantity of SWP water available for delivery each year is controlled by hydrology, environmental, regulatory, and operational considerations. For decades, the Delta has experienced water quality and supply reliability challenges and conflicts due to variable hydrology and environmental standards that limit pumping operations.

Metropolitan's key concern is the supply reliability of the SWP. Metropolitan has leveraged its prior investments in conservation, local projects, regional storage, distribution, and treatment infrastructure to improve its water supply. Through these investments, Metropolitan has stored water in wet years when the SWP allocation was higher (2010-2012, 2016-2017, 2019, and 2023) for

use in drought years when the SWP allocation was lower (2008-2009, 2013-2015, and 2020-2022). Metropolitan's ability to manage surplus water during wet years will prove vital for managing supply through future droughts.

Metropolitan has developed water banking programs, agricultural efficiency and land fallowing programs, and water transfers to augment its imported water from the Colorado River and Delta. Additionally, Metropolitan has developed groundwater storage programs with water agencies in its service area. Further, it provides financial incentives for local water agencies in its service area to implement projects for recycled water, groundwater recovery, and seawater desalination. Metropolitan has continued to diversify its water portfolio with local projects and storage for regional reliability, as shown in **Figure 2-5**. This has resulted in a shift in the projected water portfolio.



Source: https://www.mwdh2o.com/.

Figure 2-5 Metropolitan Historical and Projected Water Portfolio

2.4.2 SAN DIEGO COUNTY WATER AUTHORITY SYSTEM

The SDCWA is the countywide water wholesaler delivering water imported from Metropolitan to 3.3 million people in San Diego County. The SDCWA is comprised of 22 retail agencies, including the City. **Figure 2-6** shows a map of the retail agencies' service areas. The members include six cities, five water districts, three irrigation districts, seven municipal water districts, and one federal military base. The member agencies provide water supplies including desalinated seawater, water transfers, local surface water, groundwater, and recycled water to increase reliability and diversify the region's water portfolio beyond imported water from CRA and SWP.

The SDCWA owns and operates five pipelines to deliver imported water. These pipelines are divided into two alignments known as the First and Second Aqueduct:

- First Aqueduct:
  - Pipelines 1 and 2 extend from Metropolitan's CRA near San Jacinto in Riverside County to the San Vicente Reservoir.
- Second Aqueduct:
  - Pipeline 3 extends from the CRA near Hemet in Riverside County to the Lower Otay Reservoir.
  - Pipeline 4 terminates at the Alvarado Water Treatment Plant (WTP) near the Murray Reservoir.
  - Pipeline 5 connects the San Vicente Reservoir to the Second Aqueduct as part of the SDCWA's program for emergency storage.

Figure 2-7 shows the City's water system connections to the SDCWA and the City's reservoir system.

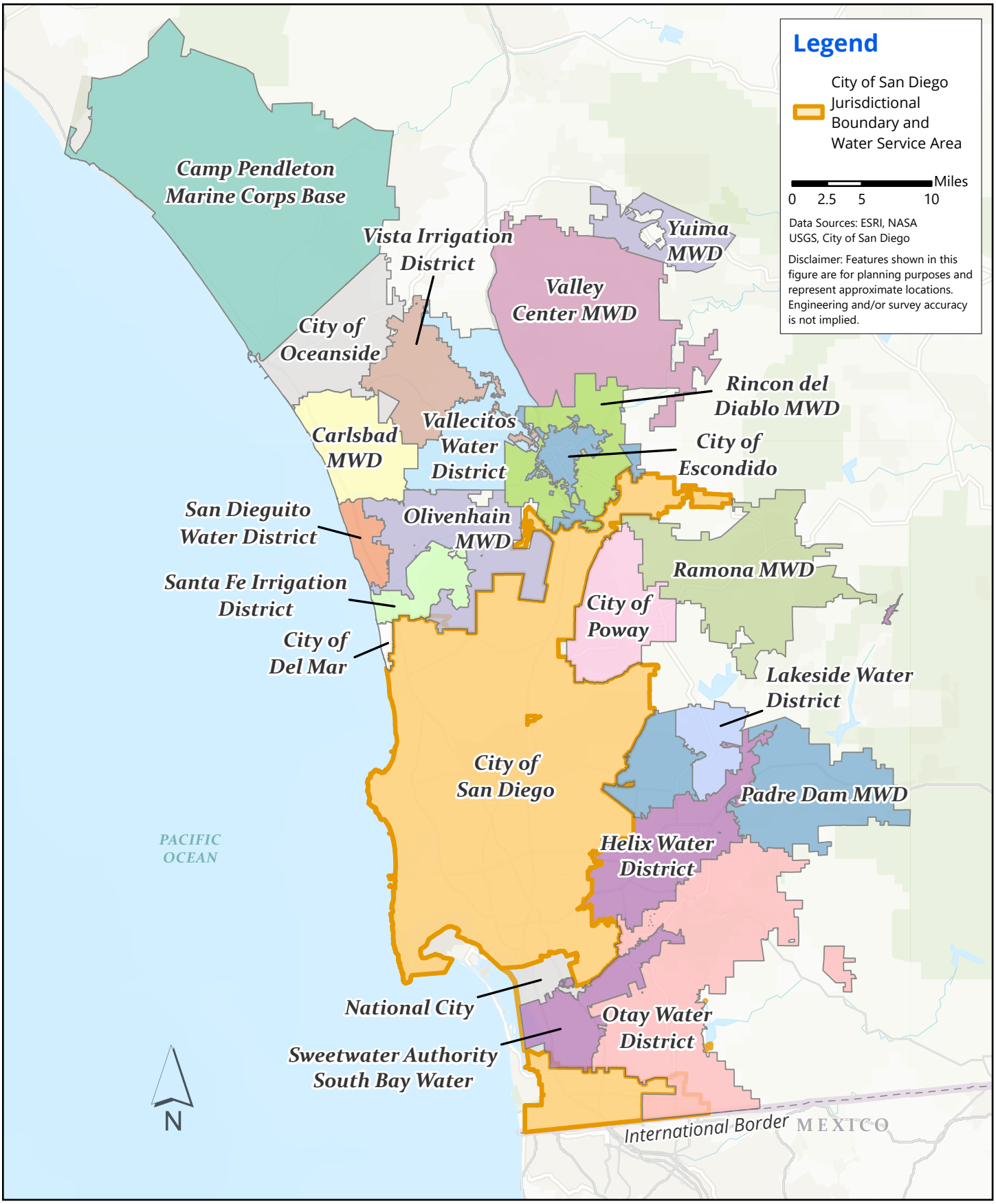


Figure 2-6 SDCWA Retail Member Agencies

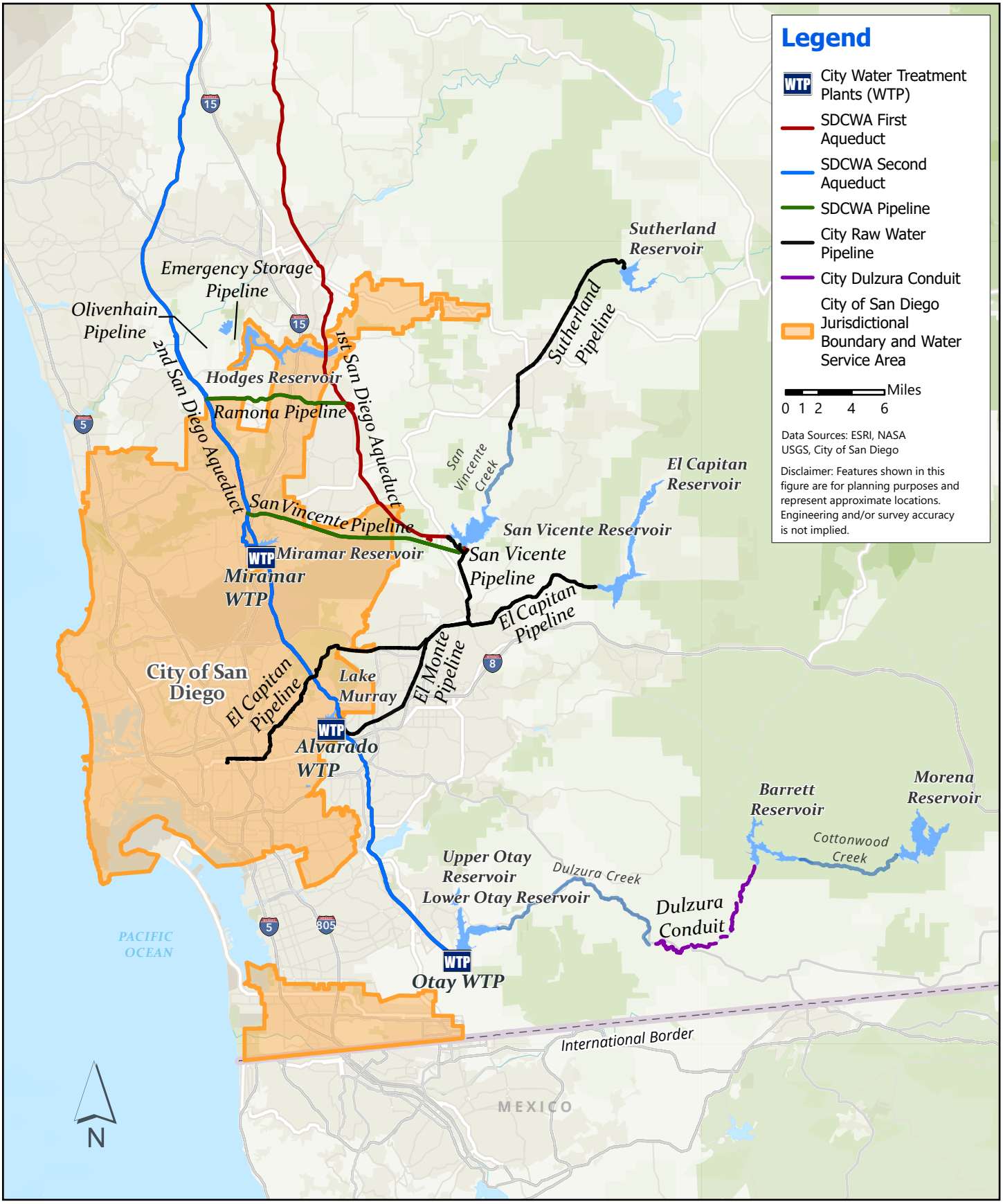


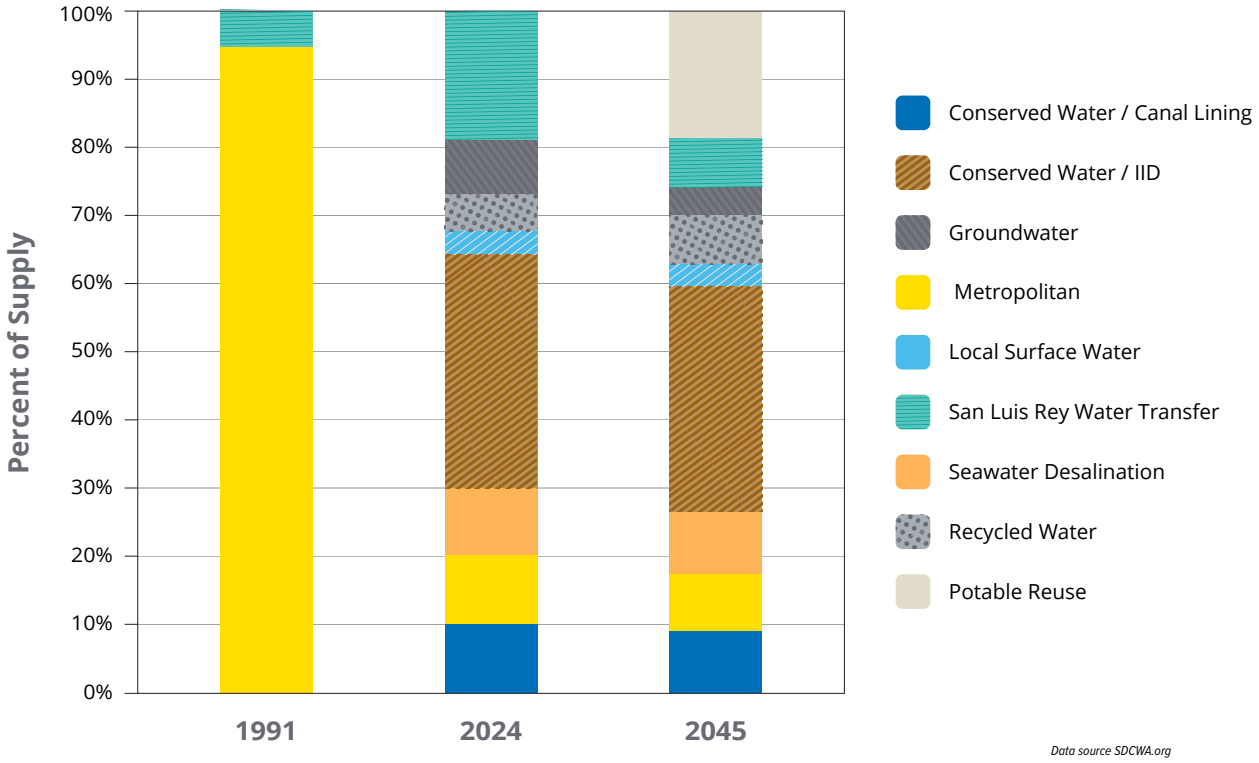
Figure 2-7 City of San Diego Water Supply System

The SDCWA raised the height of the San Vicente Dam by 117 feet, which was the tallest dam raise in the US. Completed in 2016, the project more than doubled the storage capacity of San Vicente Reservoir. SDCWA owns 100,000 acre-feet (AF) of storage in San Vincente Reservoir.

In addition to water purchased from Metropolitan, the SDCWA secured a Quantification Settlement Agreement (QSA) portion of the Colorado River Water supplies, created a 200,000 acre-feet per year (AFY) water transfer program with the IID, conserved water by concrete lining long stretches of the All-American and Coachella canals, and developed a regional desalination facility in Carlsbad.

SDCWA Water Supply Diversification Strategy

Due to uncertainties associated with Metropolitan's two largest supplies (CRA and SWP), the SDCWA has been diversifying its water portfolio through collaboration with its member agencies to develop local supplies such as groundwater, recycled water, and potable reuse. **Figure 2-8** shows the planned water supply diversification strategy of SDCWA and the significant reduction of reliance on water from Metropolitan from the primary source in 1991 to the current and projected supply mix through the year 2045.



Source: https://www.sdcwa.org/your-water/

Figure 2-8 SDCWA Water Supply Source Diversification

SDCWA's projected mix of water resources to meet future demands includes:

- Member agency local water supplies, recycling, potable reuse, groundwater, desalination, and surface water supplies
- Continued regional water use efficiency and conservation
- Transfer agreement with IID
- All-American Canal and Coachella Canal Lining Projects
- Metropolitan Purchase Agreement
- Carlsbad Desalination Plant Water Purchase Agreement with Poseidon Water
- In-Region Carryover and Emergency Storage Program
- Out-of-Region Groundwater Banking Program

2.4.3 CITY'S WATER SUPPLY SYSTEM AND FACILITIES

The City's water supply system is made up of nine reservoirs, three WTPs, and a small supply of local groundwater. To offset potable water demands, the City owns and operates two water reclamation plants (WRPs) and a recycled water distribution system that delivers recycled water for non-potable uses.

In addition, the City is completing Phase 1 of the Pure Water San Diego Program, which is scheduled to start up in late calendar year (CY) 2026. Pure Water San Diego is a phased, multi-year program where Phase 1 is planned to produce 30 million gallons per day (mgd) of potable water. Production is expected to be a staged ramp-up in flow, with 30 mgd produced by late CY 2027. Phase 2 of the Pure Water San Diego Program is still being planned.

The Pure Water San Diego Program will use proven water purification technology to clean recycled water to produce safe, high-quality water for potable reuse. Phase 1 will provide purified water to the Miramar Reservoir. The Program offers a cost-effective investment for San Diego's water needs and will provide a reliable, sustainable water supply.

This program is the City's largest infrastructure project to date and will be the latest addition to the City's water portfolio. **Figure 2-9** shows the significant impact the Pure Water San Diego Program will have on imported water use in the City’s projected water portfolio.

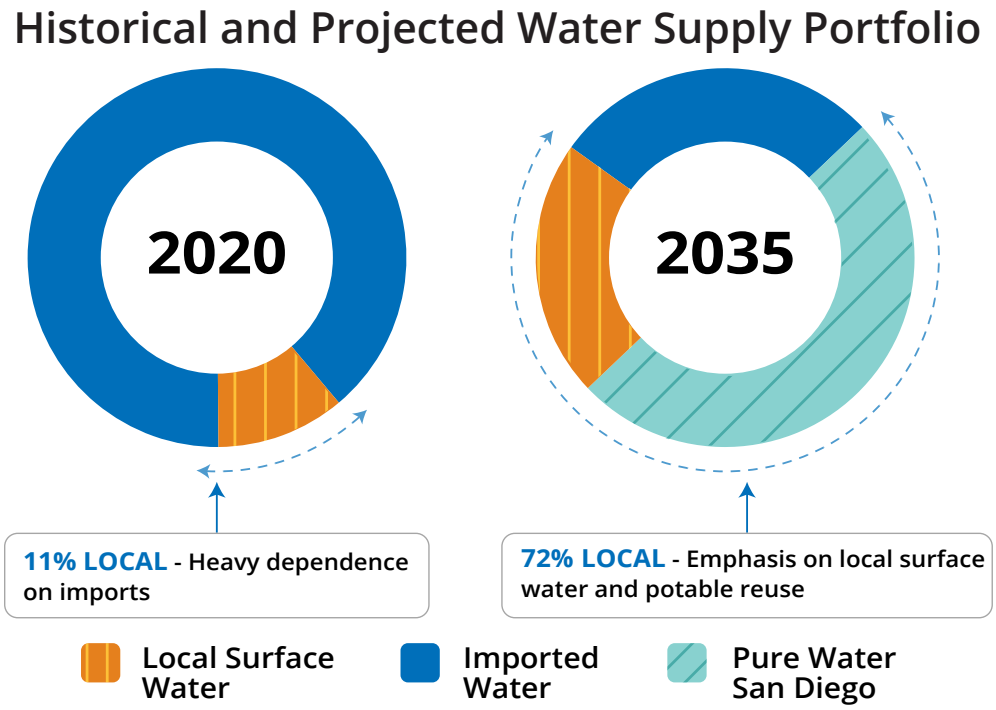


Figure 2-9 City of San Diego Historical and Projected Water Supply Portfolio

Surface Water Reservoirs

Miramar Reservoir

The City operates nine surface water reservoirs: Barrett, El Capitan, Hodges, Lower Otay, Miramar, Morena, Murray, San Vicente, and Sutherland. These reservoirs capture local runoff generated within their respective watersheds, store upstream releases, and, in certain cases, receive imported supplies from SDCWA. Four reservoirs—Lower Otay, Miramar, Murray, and San Vicente—are hydraulically connected to receive imported water deliveries. These same four reservoirs, along with El Capitan, also provide emergency storage capacity within the City's raw water system. The Miramar and Murray reservoirs function as forebays for adjacent WTPs. Beginning in 2026, Miramar Reservoir will additionally receive potable reuse water, supplementing existing sources of local runoff and imported water from SDCWA. Additional information regarding the City's Emergency Storage Policy is provided in Section 4. **Figure 2-7** shows the locations of the reservoirs.

The nine reservoirs currently have a combined capacity of 566,239 AF; however, they have an operational capacity of 444,775 AF. This is due to level restrictions imposed by the State's Division of Safety of Dams (DSOD) on five of the reservoirs, as discussed below. These restrictions have reduced the capacity by approximately 27 percent. **Table 2-4** contains the capacity, restricted capacity,

current storage, and supply sources for the City's reservoirs. DSOD imposed water level restrictions to maintain safety, leading to a loss of storage capacity and prompting plans for replacement with modern, safer structures on five of the City's reservoirs, including El Capitan, Hodges, Morena, Murray, and Barrett. The five dams are currently restricted because of seismic stability issues (El Capitan, Barrett, and Murray), concrete deterioration and a need to mitigate seismic risks (Hodges), and hydraulic and geotechnical reasons (Morena).

Table 2-4 City Reservoirs

Reservoir	Capacity(1) (AF)	Restricted Capacity(1) (AF)	2025 Current Storage(2) (AF)	Supply Sources
Barrett Reservoir	34,806	34,806	27,507	Natural Runoff Upstream Releases
El Capitan Reservoir	112,807	50,732	23,067	Natural Runoff SDCWA's First Aqueduct
Hodges	30,633	5,996	4,824	Natural Runoff
Lower Otay	47,067	47,067	34,352	Natural Runoff Upstream Releases SDCWA's Second Aqueduct
Miramar	6,682	6,682	5,645	SDCWA's Second Aqueduct Pure Water San Diego Program Phase 1 (Future)
Morena	50,694	16,742	11,627	Natural Runoff
Murray	4,684	3,884	3,486	Upstream Releases SDCWA's Second Aqueduct
San Vicente	249,358	249,358	139,892	Natural Runoff Upstream Releases SDCWA's First Aqueduct
Sutherland	29,508	29,508	8,914	Natural Runoff
Total	**566,239**	**444,775**	**259,314**	

Notes:
(1) City of San Diego and California Division of Safety of Dams regulations.
(2) June 24, 2025, San Diego update on reservoirs https://www.sandiego.gov/reservoirs-lakes/about/water-levels.

A brief history of each reservoir is provided below:

- Barrett Reservoir: Created by the City in 1922 with the completion of Barrett Dam. It is approximately 35 miles east of the City at the confluence of the Cottonwood and Pine Valley Creeks. The reservoir operates with a water level restriction (equal to the current capacity of the reservoir) per the California DSOD due to seismic stability issues.

Barrett Reservoir

- El Capitan Reservoir: Created by the City in 1935 as part of the El Capitan Dam. It is approximately 30 miles northeast of the City on the San Diego River. The reservoir operates with a water level restriction per the California DSOD, reducing the potential storage capacity due to seismic stability issues. A seismic stability analysis is being performed to develop long-term improvements (DSOD, 2004).
- Hodges Reservoir: Created in 1918 as part of the Hodges Dam. The reservoir operates with a water level restriction per the DSOD due to concrete deterioration and a need to mitigate seismic risks. DSOD has reduced the reservoir height to limit the storage capacity of Hodges Reservoir to 5,996 AF. The San Dieguito Water District and Santa Fe Irrigation District both have access to water via interconnections under the dam. The City is currently evaluating alternatives for future options with the Hodges Reservoir.
- Lower Otay Reservoir: In 1897, the first Lower Otay Dam was completed by the Southern California Mountain Water Company. The Lower Otay Reservoir was connected to the City of San Diego's water system in 1906 via the Bonita Pipeline. The dam burst in 1916 following heavy rains, and the Otay Valley was flooded. The dam was rebuilt in 1918 and renamed Savage Dam.
- Miramar Reservoir: The dam and reservoir were completed in 1960 as part of the second San Diego Aqueduct project. The reservoir is adjacent to the City's Miramar WTP, which serves the northern part of the City. While the current uses of the Miramar Reservoir will continue, the reservoir will also receive water from the potable reuse Pure Water San Diego Program Phase 1 starting in 2026.
- Morena Reservoir: Construction of Morena Dam began in 1897 on Cottonwood Creek and was completed in 1912. Morena is the highest and most remote of the City's reservoirs. Due to hydraulic reasons, the reservoir operates with a water level restriction per the California DSOD. A condition assessment involving geotechnical investigations is being performed to develop long-term improvement alternatives (DSOD, 2024).
- Murray Reservoir: The reservoir was constructed in 1918. The City took over the operation of the reservoir in 1950 from the Helix Water District and then purchased it in the 1960s. Murray Reservoir is located in the eastern part of the City on the border with the City of La Mesa. The reservoir operates with a water level restriction per the California DSOD due to seismic stability issues. Analyses are planned to determine the long-term improvements necessary to mitigate the seismic stability concerns (DSOD, 2024).

San Vicente Reservoir

- San Vicente Reservoir: The San Vicente Dam, originally constructed in 1943, was raised in 2016 to increase storage capacity for the SDCWA. The additional storage (approximately 100,000 AF) is owned by the SDCWA, while the remaining capacity is still owned by the City. San Vicente is approximately 25 miles northeast of San Diego. It is the largest of the City's reservoirs.
- Sutherland Reservoir: The construction of Sutherland Dam began in 1927 and was completed in 1954. Sutherland Reservoir is located approximately 45 miles northeast of San Diego.

WTPs and Distribution System

The City maintains and operates three WTPs, numerous pump stations, and treated water storage facilities throughout approximately 127 pressure zones to distribute potable water. In 2025, the City had approximately 3,700 miles of water mains with 321,369 service connections

The City's water system is split into three major service areas:

- Miramar: Includes the entire northern area of the City
- Alvarado: Includes the Mission Bay area, Mission Valley area, and the areas extending south to the boundary of National City
- Otay: Serves the southernmost part of the City's service area, adjacent to the US-Mexico border

Table 2-5 describes the date of construction, design capacity, and current capacity of the City's three WTPs.

Table 2-5 City Water Treatment Plants

Plant	Original Construction	Design Capacity	Current Capacity
Alvarado	1951	200 mgd	120 mgd
Miramar	1962	215 mgd	144 mgd
Otay	1914	34.4 mgd	34.4 mgd

Key points about these WTPs are:

- Alvarado: Since it began operation in 1951, Alvarado WTP has provided drinking water to customers primarily in the central section of the City. A multi-phase expansion and upgrade project for the plant was completed in 2011 and included a 1.1-megawatt solar power system. The Alvarado WTP is located adjacent to Murray Reservoir.
- Miramar: Miramar WTP began operation in 1962 and provides drinking water customers primarily in the northern portion of the City. Located in the Scripps Miramar Ranch community, the WTP is adjacent to the Miramar Reservoir. In 2010, the City completed a 14-year multi-phase expansion and upgrade of the plant to ensure future customer demands and more stringent drinking water standards were met. Once the City's potable reuse Pure Water San Diego Program is completed, the purified water from the North City Pure Water Facility (NCPWF) will be transferred via pipeline to Miramar Reservoir, and the water will be treated again at the WTP before distribution.
- Otay: The Otay WTP began operation in 1914 and is located near the Lower Otay Reservoir. The WTP provides drinking water to customers in the southern area of the City.

Alvarado Water Treatment Plant

Otay Water Treatment Plant

Figure 2-10 presents the locations of the three WTPs and service areas. Overlaps of the service areas illustrates the flexibility and reliability in the supply from the three WTPs.

The City 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 California American Water Company (connected to Alvarado and Otay WTPs), Sweetwater Authority (connected to Otay WTP), and the Otay Water District (connected to Otay WTP).

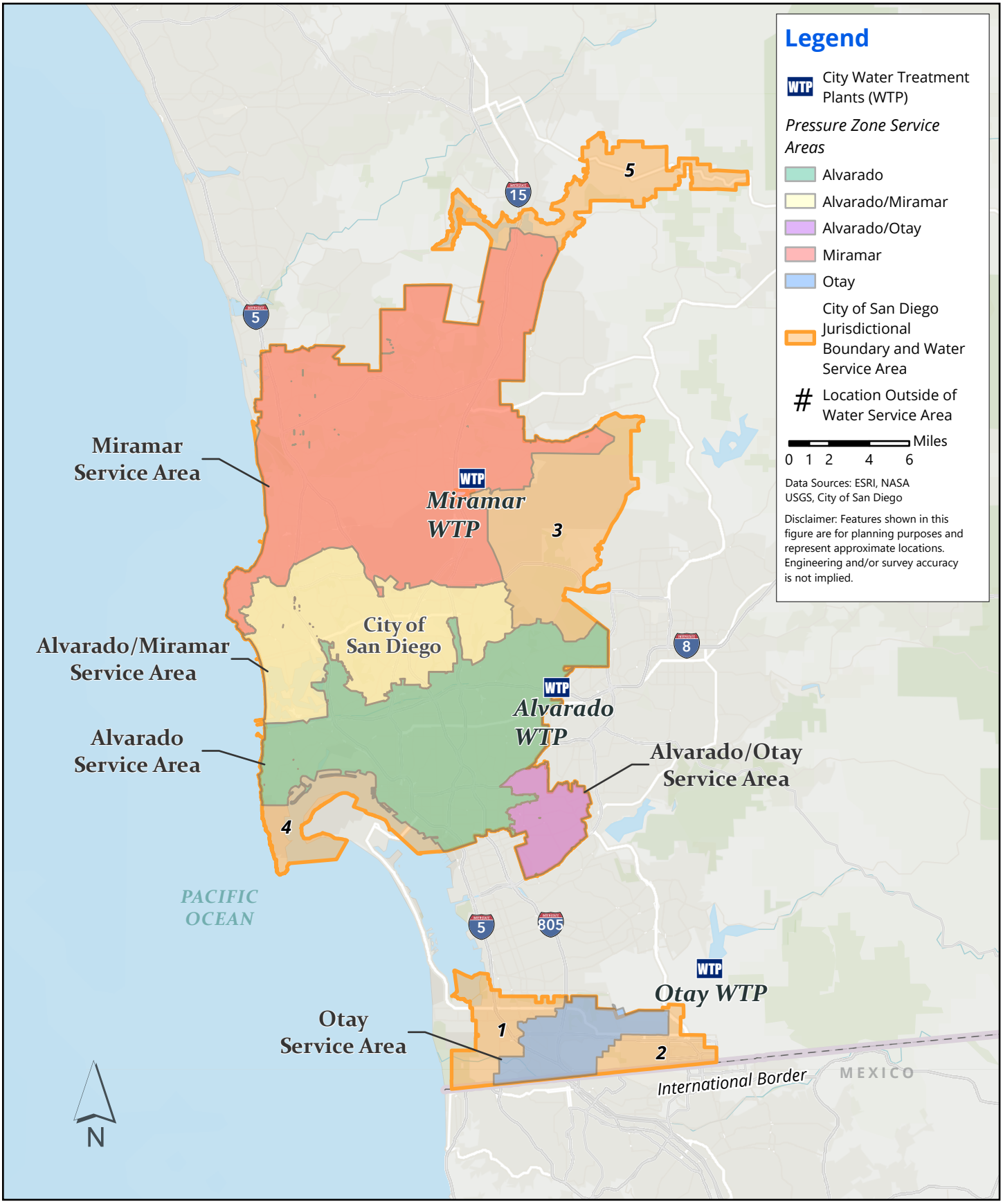


Figure 2-10 City of San Diego Water Service Area and Water Treatment Plants

2.5 WASTEWATER TREATMENT AND WATER RECLAMATION SYSTEM

The City's wastewater system consists of two sub-systems: The Muni system is responsible for collection and conveying wastewater from residences and businesses within the City. The Metro System provides wastewater treatment and disposal services for both the City and 15 additional agencies and districts. The City collects and treats approximately 159 mgd of wastewater that is generated within a 450-square-mile area with a population of over 2.2 million. The Metro Wastewater Joint Powers Authority (Metro JPA) service area is made up of the City's boundaries, as well as the jurisdictions of 15 other cities and districts. The agencies that form the Metro JPA and their roles are shown in **Table 2-6**.

Table 2-6 Metro Wastewater JPA Agencies

Agency	Role
City of San Diego	Collects and treats wastewater, produces, and distributes recycled water
City of Chula Vista	Wastewater generator
City of Coronado	Wastewater generator
City of Del Mar	Wastewater generator
City of El Cajon	Wastewater generator
City of Imperial Beach	Wastewater generator
City of La Mesa	Wastewater generator
Lemon Grove Sanitation District	Wastewater generator
National City	Wastewater generator
Otay Water District	Wastewater generator and wholesale recycled water customer
Padre Dam Municipal Water District	Wastewater generator
City of Poway	Wastewater generator and wholesale recycled water customer
County of San Diego	Wastewater generator
San Diego County Sanitation District	Wastewater generator (representing the Winter Gardens and East Otay Mesa Sewer Maintenance Districts, and the Alpine Lakeside and Spring Valley Sanitation Districts)

The PUD operates three wastewater treatment plants, one biosolids center, seven major pump stations, 74 smaller pump stations, and approximately 3,100 miles of Municipal and Metropolitan sewer pipelines. All of the City's three treatment plants are within City limits: the North City Water Reclamation Plant (NCWRP), South Bay Water Reclamation Plant (SBWRP), and Point Loma Wastewater Treatment Plant (PLWTP). The NCWRP and SBWRP produce disinfected tertiary recycled water as defined by the California Title 22 Standards (Title 22, Division 4, Chapter 3 of the California Code of Regulations).

Total wastewater volume collected from the wastewater service area in 2025 is shown in **Table 2-7**. **Figure 2-11** shows the location of the treatment plants and pump stations in relation to the wastewater service area.

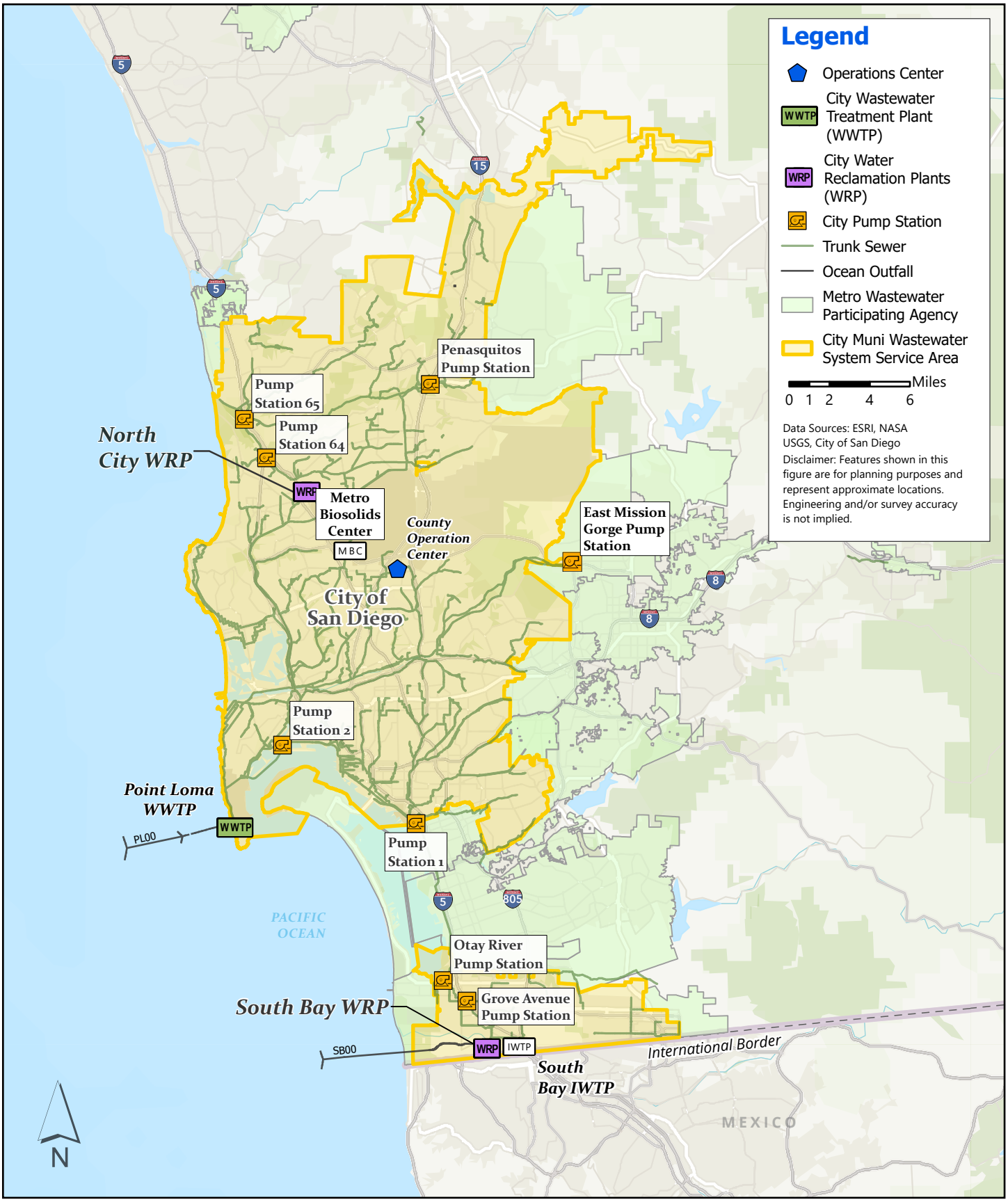


Figure 2.11 - San Diego Wastewater System

Table 2-7 Wastewater Collected in 2025 by Treatment Plant

Treatment Plant	Rated Treatment Capacity (mgd)	Peak Wet Weather Capacity (mgd)	Operator of Treatment Plant	Volume of Wastewater Collected in 2025 (mgd)(1)
PLWTP	240	432	City PUD	139.9
NCWRP	30	N/A	City PUD	13.2
SBWRP	15	N/A	City PUD	5.9
Total				159.0

Notes:
N/A - not applicable
(1) Includes wastewater generated outside the City's Water Service Area.

2.5.1 POINT LOMA WASTEWATER TREATMENT PLANT

The PLWTP opened in 1963 and is located on the bluffs at Point Loma. It has a treatment capacity of 240 mgd and a peak wet weather capacity of 432 mgd. In compliance with federal and state laws, chemically enhanced primary treated water is discharged to the Pacific Ocean via a 4.5-mile outfall. NCWRP and SBWRP alleviate loads on the PLWTP by diverting wastewater flows for recycling and distribution to the North Service Area (NSA) and the South Service Area (SSA), respectively.

Point Loma Wastewater Treatment Plant

2.5.2 NORTH CITY WATER RECLAMATION PLANT

The NCWRP was the first large-scale water reclamation plant in San Diego. It began operation in 1997. The plant 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 NCWRP has a treatment capacity of 30 mgd and distributes recycled water throughout the northern region of San Diego for irrigation and industrial use. The NCWRP also provides recycled water to the City of Poway.

In order to continue providing recycled water to these existing consumers while also producing the recycled water for advanced treatment in the North City Pure Water Facility, the NCWRP is being expanded from 30 mgd to 52 mgd of recycled water. The expansion is scheduled to be complete in 2026 and is occurring at the existing NCWRP site. A site located across the street from the NCWRP is the home of Phase 1 of the Pure Water San Diego Program, as well as the Phase 1 demonstration facility that is used for educational purposes.

2.5.3 NORTH CITY PURE WATER FACILITY

North City Pure Water Facility

Upon completion of Phase 1 of the Pure Water San Diego Program, the new NCPWF will produce up to 30 mgd of advanced treated recycled water on an annual average basis. Phase 2 of the Pure Water San Diego Program is currently being planned.

The NCPWF will use a proven five-step treatment process to further clean 30 mgd of recycled water from NCWRP to produce purified water. A new pump station will convey the purified water to the Miramar Reservoir, where it will be stored before receiving additional treatment at the Miramar WTP. Once treated at the Miramar WTP, the water will be delivered to the City's customers via the existing distribution system network.

2.5.4 SOUTH BAY WATER RECLAMATION PLANT

The SBWRP is in the Tijuana River Valley near the international border. It began operation in 2002. The SBWRP primarily serves the Otay Mesa and San Ysidro communities, as well as the City of Chula Vista and the County's East Otay Mesa community. The SBWRP has a treatment capacity of 15 mgd and provides recycled water and discharges excess treated water to the Pacific Ocean through the South Bay Ocean Outfall on a daily basis[1].

2.5.5 NON-POTABLE RECYCLED WATER DISTRIBUTION FACILITIES

In addition to delivering potable water, the City has a non-potable recycled water program. The City's recycled water system includes the two WRPs, three recycled water storage facilities with over 12 million gallons (MG) of storage capacity, approximately 100 miles of recycled water pipelines, and three recycled water pump stations.

The City's 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 with a dependable, year-round, locally produced, and controlled water resource.

Recycled water that has undergone tertiary treatment is safely used for many non-potable applications, including landscape irrigation, industrial cooling towers, construction purposes, toilet flushing, fountains, and wetlands restoration. Recycled water has been used in the City for almost 20 years. Most of the recycled water is used for irrigation; there is a limited number of industrial connections where the water is used in cooling towers. Recycled water for non-potable uses is delivered to customers in purple pipes that are kept separate from potable water pipes to prevent cross-connections between the two delivery systems.

Disinfected Tertiary Recycled Water, also known as Title 22 Water, as defined by the California Title 22 Standards (Title 22, Division 4, Chapter 3 of the California Code of Regulations), is regulated by the SWRCB's Division of Drinking Water (DDW).

The NCWRP and the SBWRP produce Title 22 Disinfected Tertiary Recycled Water. The City provides recycled water to retail customers and three wholesale customers (City of Poway, Olivenhain Municipal Water District, and Otay Water District). There are currently approximately 785 recycled water customers (FY 2024). **Figure 2-12** presents the City's recycled water delivery system and WRPs.

[1] Includes wastewater generated outside of the City's water service area.

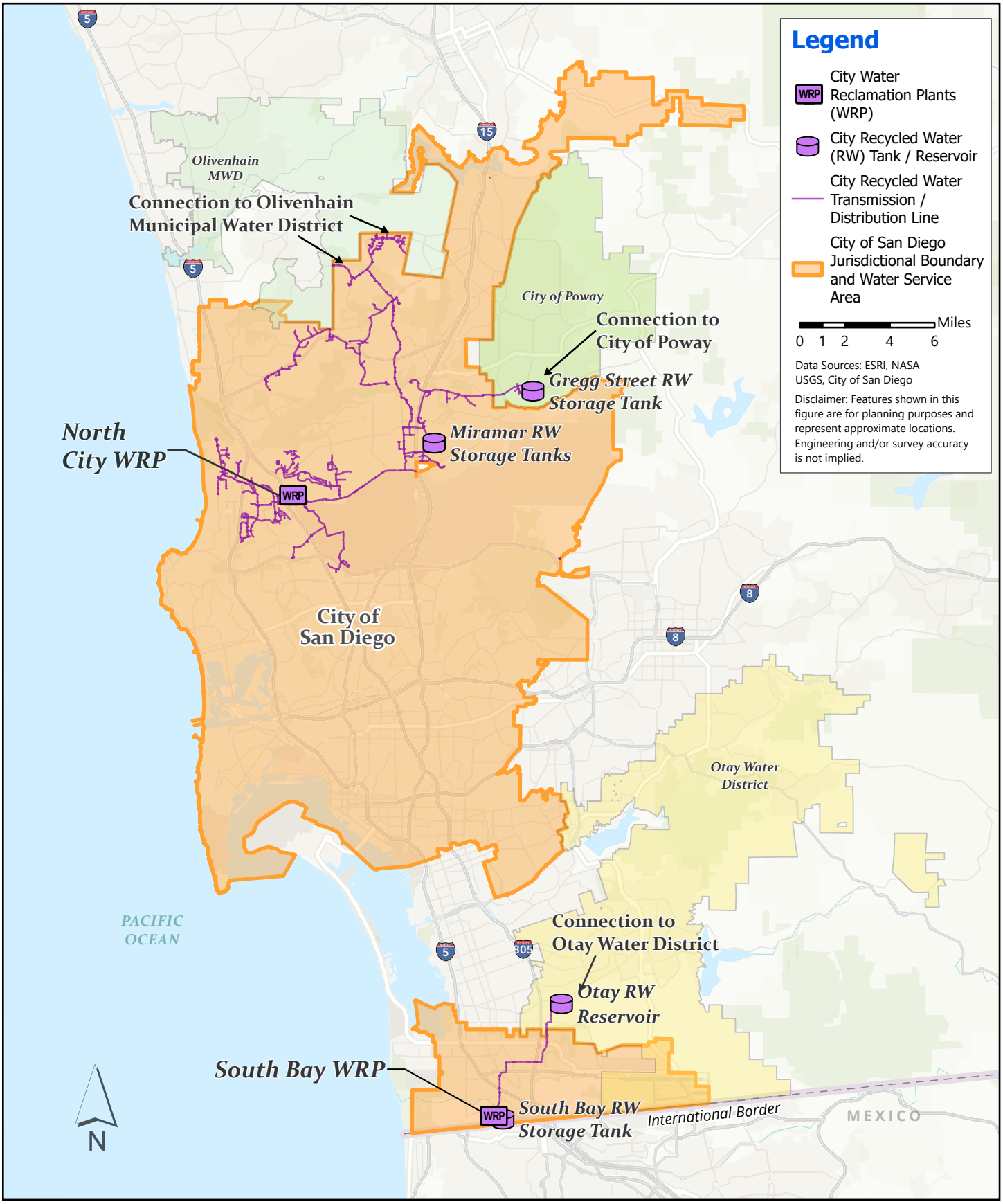


Figure 2-12 City of San Diego Recycled Water System

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SECTION

3

Historical and Projected Water Use

Population growth was once viewed as the most dominant and reliable indicator of future water needs. However, in California, the combined influence of evolving economic conditions, more efficient growth patterns, strong local and state conservation, resilience built during extended droughts, and, most importantly, the lasting adoption of water-saving practices has shifted those trends. Water demand trajectories have been difficult to project. Despite the complexities, the City must prepare for the future and estimate long-range water needs with the best available information possible.

As part of the preparation of this 2025 Urban Water Management Plan (UWMP), a robust forecast model was developed to estimate water demand for the City of San Diego's (City's) service area through 2050 in five-year planning increments, including 2030, 2035, 2040, 2045, and 2050. Estimates of non-revenue water (NRW) and wholesale water demands are then added to the demand forecast to determine the total projected water needs for the City's potable water system. The City also provides recycled water to retail and wholesale customers, which is included in the model.

This section presents historical and projected potable and recycled water needs for the City's water service area, which includes retail water sales to City customers and wholesale water deliveries to other communities located within and outside of the City's jurisdiction. A summary of the key insights and results is provided in this section. The complete 2025 Water Demand Forecast Report is included as **Appendix F**. The Water Demand Forecast Report documents the approach, data, and results for two water demand forecast scenarios generated for the City through 2050. The two scenarios were developed in conjunction with City staff to explore uncertainty in the forecast and to envelop a range of possible futures, based on varying assumptions and possible outcomes. Both scenarios represent plausible future conditions at the City and are founded in the best available data at the time of forecast development.

Key Highlights

Recent and Projected Water Use for the City of San Diego

- Irrigation demands decreased by approximately 30 percent from 2020 to 2025, reflecting the City's conservation efforts, state-driven conservation, and precipitation in the service area.
- Single-family residential water use represents the largest portion of retail demand, about 30 percent in 2025.
- The City's updated water demand forecast incorporates newly released population projections, state-driven conservation savings, and continued densification.
- Over the next 25 years, the City's water demands are anticipated to increase modestly by 2.7 percent to 178,259 AFY.

3.1 HISTORICAL POTABLE WATER USE

The City's potable water production, which includes retail sales, wholesale deliveries, and NRW, between 2000 and 2025 is presented on **Figure 3-1** along with the City's service area population. Over that time, the City's service area population increased from roughly 1.2 to nearly 1.4 million, while water production declined significantly in the same 25-year period. Hence, per capita water use decreased as the City's service area population increased. The decreasing trend in production has been observed since 2007 due to various factors such as housing densification and increased water use efficiency from plumbing codes and landscape ordinances, utility rebates, and water use restrictions from droughts. Since the mid-2010's, production has had year-to-year variations but has generally stabilized.

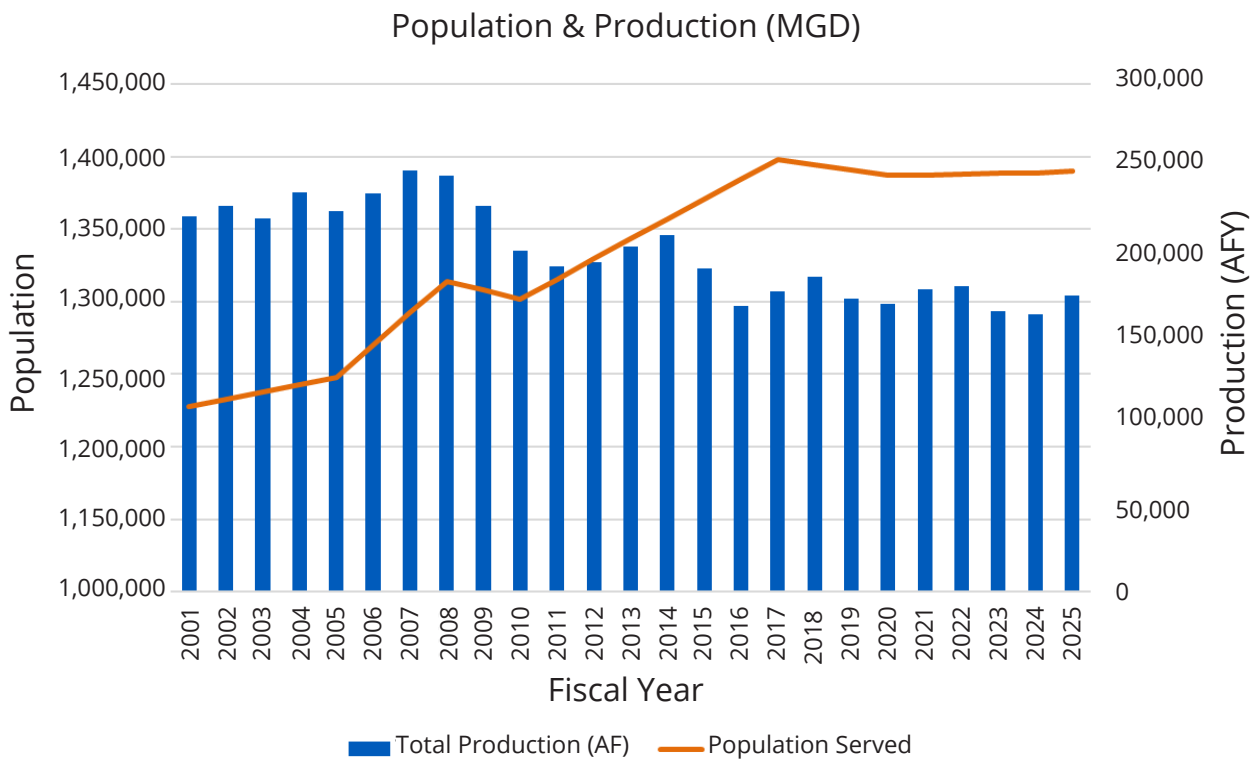

Figure 3-1 Historical Potable Water Production and Population

3.1.1 RETAIL POTABLE WATER USE

The City is a retail water provider to residents living within the City's boundaries, which means that the City operates the necessary infrastructure that delivers water directly to the people in San Diego. All retail potable water usage is fully metered and is categorized into the following categories or sectors: Single-Family Residential (SFR), Multifamily Residential (MFR), Commercial, Industrial, and Institutional (CII), Government, and Irrigation for large landscape areas. It should be noted that irrigation water use from dedicated irrigation meters is included in the sector served, as meters are assigned to sectors based on the premise type of primary establishment where the meter is installed.

Table 3-1 compares the potable water deliveries for the City's retail customers as reported in the 2020 UWMP for fiscal year (FY) 2020 and the current data for FY 2025. Between 2020 and 2025 retail use increased by less than 1.0 percent. **Figure 3-2** presents the City's water use by sector for FY 2025.

Table 3-1 2020 and 2025 Metered Water Deliveries for Retail System

Use Type	2020 Actual Water Deliveries (AF)(1)	2025 Actual Water Deliveries (AF)
Retail		
SFR	54,228	49,804
MFR	35,370	37,863
CII	38,615	47,074
Commercial	-(2)	*28,236*
Industrial	-(2)	*1,697*
Institutional/Governmental	-(2)	*16,814*
Irrigation	17,175	11,657
Non-Revenue Water	17,403	17,675
TOTAL(3)	**162,791**	**164,073**

Notes:
(1) Data from the 2020 UWMP.
(2) 2020 UWMP did not break out water use sectors.
(3) Recycled water use is NOT reported in this table. Refer to Table 3-5.

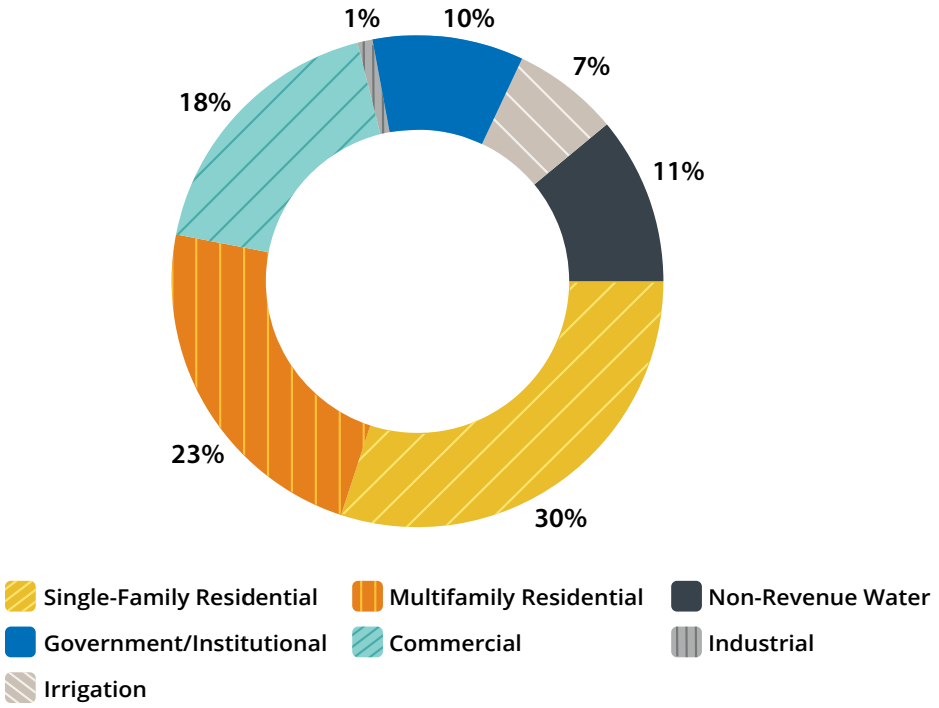

Figure 3-2 City's Water Use by Sector in Fiscal Year 2025

3.1.2 NON-REVENUE WATER

NRW is the difference between the potable water supplied to the system (also known as potable water production), including potable deliveries to wholesale customers, and the potable water sold to retail and wholesale customers. NRW typically includes legitimate uses that are not metered, such as street cleaning, line flushing, fire suppression, and any unaccounted-for water.

Unaccounted water can be attributed to unauthorized consumption, apparent losses (metering inaccuracies, data errors), and real losses (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.

Since the adoption of SB 555 Water Loss Performance Standards in 2015, California urban water suppliers have been required to submit an annual water loss audit to the Department of Water Resources (DWR). The City has continually submitted annual water loss audit reports to DWR since 2013, utilizing the American Water Works Association's (AWWA) Water Audit Software.

Table 3-2 contains the historical and current percent and volume of NRW determined through a comparison of metered production and metered uses. This is different from the NRW reported in the AWWA water audit method that assumes percentages for data handling and meter inaccuracies. Comparison of the metered production and use provides a more accurate accounting of the NRW (**Table 3-2)**. The City's three-year high from 2022 through 2024 of 8.2 percent was used for estimating NRW through 2050.

Table 3-2 Historical and Current NRW Percent of Potable Water Supplied - Retail[(1)]

Fiscal Year	% of Non-Revenue Water	Non-Revenue Water Volume (AF)
2022	8.1	14,625
2023	5.2	8,675
2024	8.2	13,479
2025	10.8	17,675

Notes:
Source: City metering data FY 2022-2025.
(1) NRW volume shown is NOT from the American Water Works Association (AWWA) water audit method it is calculated using metering data.

Water Loss Standard

California's 2028 Water Loss Standard requires that each supplier meet their water loss objective for real and apparent losses starting in 2028. This does not include legitimate NRW (street cleaning, line flushing, and fire suppression). This standard was established by Senate Bill (SB) 606 and Assembly Bill (AB) 1668. Unlike the overall Urban Water Use Objective (UWUO), where suppliers can manage the various components collectively, the water loss objective is a distinct and mandatory target that must be met individually. The UWUO is discussed in Section 5.

By January 1, 2028, the City must reduce the real and apparent water loss to no greater than the water loss standards calculated by the State Water Resources Control Board (SWRCB) for the City. The loss standard represents the water loss per connection in the distribution system per day,

reported as gallons per service connection per day (gpscd). The SWRCB calculated the 2028 real and apparent individual system water loss standards for the City using the SWRCB Water Loss Economic Model (updated April 9, 2024). The Model calculates the water loss standard based on water use, system characteristics, and economic cost data.

Table 3-3 presents the standards and the progress towards the 2028 water loss standard in 2024. As shown in **Table 3-3**, the City's real and apparent water losses in FY 2024 were 53.1 gpscd and 10.1 gpscd, respectively. The apparent losses are below the 2028 water loss standard of 14.4 gpscd. The real losses are above the 2028 water loss standard of 32.3 gpscd.

Table 3-3 City of San Diego Progress Towards 2028 Water Loss Standard

Number of Connections(1)	Real Water Loss			Apparent Water Loss		
	2028 Real Water Loss Standard(1) (gpscd)	Volume of Total Real Loss(2) (AF)	2024 Real Water Loss Per Unit per Day (gpscd)	2028 Apparent Water Loss Standard(1) (gpscd)	Volume of Total Apparent Loss(2) (AF)	2024 Apparent Water Loss Per Unit per Day (gpscd)
372,378	32.3	13,254	53.1	14.4	4,207	10.1

Notes:
(1) Provided by the SWRCB and the DWR.
(2) Real and apparent water loss data from City 2024 AWWA Water Audit.

The City has set up the following procedures to achieve compliance with water loss standards:

1. Prorated billing data to align consumption data with production data will be used in future audits.
2. The City created a water audit handbook to develop standard water auditing procedures.
3. An audit compilation template developed by the City will be used to prepare thorough and consistent audits.
4. Asbestos Cement (AC) and Cast Iron (CI) pipe will be replaced. Repairs made to leaking transmission mains (greater than 16-inch diameter pipelines) that were identified in a condition assessment study.

The City will continue to reduce water losses to maintain compliance. Compliance by January 1, 2028, will be determined by the annual audit submitted for 2027. If the 2027 audit exceeds the standard, the supplier can submit the 2025 and/or 2026 audit to prove compliance. After 2028, each urban retail water supplier's compliance with its real water loss standard shall be assessed in every third year based on an average of the real losses reported in its three most recent annual audits.

3.1.3 WHOLESALE POTABLE WATER USE

The City also has three wholesale water delivery agreements with the following entities:

- California American Water Company (Cal-Am)
- City of Del Mar
- Otay Water District

Table 3-4 contains the historical and current wholesale water deliveries, which ranges from 9,981 AF in FY 2024 to a high of 11,277 AF in FY 2022. It should be noted that the City had an agreement to provide untreated water to the Ramona Municipal Water District. However, this agreement has ended. A brief description of each wholesale potable water delivery is provided below, while wholesale delivery of recycled water is described in Section 3.2.

Table 3-4 Historical and Current Potable Water Sales to Other Agencies - Wholesale Potable Water

Fiscal Year	AF (Metered Delivery does not include NRW)
2022	11,277
2023	10,607
2024	9,981
2025	10,765
Notes: Source: City metering data FY 2022-2025.	

First, the City of San Diego Public Utilities Department (PUD) sells potable water to Cal-Am, which provides water service to the cities of Coronado, National City, 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. Cal-Am also serves a portion of City residents in the South Bay area. Cal-Am is sold City local surface water.

Second, the City of Del Mar purchases both raw untreated and treated water from the City. Per the agreement between the City and the City of Del Mar, the City takes water deliveries, which the City of Del Mar purchases from the San Diego County Water Authority (SDCWA). This raw water is treated at the City's Miramar Water Treatment Plant (WTP) and transported to the City of Del Mar through several interconnections.

Third, the City also has an agreement to sell surplus water to the Otay Water District for emergencies, but this is rarely used.

3.2 HISTORICAL RECYCLED WATER USE

In addition to providing recycled water to its customers, the City also sells recycled water to three wholesale customers, namely:

- City of Poway
- Olivenhain Municipal Water District
- Otay Water District

The historical recycled water use for the City's water service area and wholesale customers from 2022 to 2025 is presented in **Table 3-5**.

Table 3-5 Historical and Current Recycled Water Demand – Retail and Wholesale Customers

Fiscal Year	Recycled Water Demand (AF)
2022	10,309
2023	9,278
2024	7,868
2025	9,272
Notes: Source: City metering data FY 2022-2025.	

Table 3-6 compares the recycled water use for 2025 as projected in the 2020 UWMP with the 2025 actual recycled water use. It should be noted that the use types were not broken out in the 2020 UWMP. The projection for 2025 included all types of use, including wholesale customers.

Table 3-6 2020 UWMP Recycled Water Use Projection Compared to 2025 Actual

Use Type	2020 Projection for 2025 (AF)	FY 2025 Actual Use (AF)
Retail and Wholesale Use	13,773	9,272
Notes: Source: 2020 UWMP projection for 2025 and City metering data FY 2025.		

3.3 PROJECTED POTABLE WATER DEMANDS

The demand forecast model for the 2025 UWMP incorporates unadjusted SANDAG Series 15 (S15) data as the basis for growth, incorporates state-driven conservation savings, and captures densification impacts. A summary of the key takeaways of the 2025 UWMP demand forecast is listed below. For further details, refer to the complete Water Demand Forecast Report included in **Appendix F**.

- The base period of the demand model was selected as an average of FYs 2022, 2023, and 2024. Averaging water use over this time alleviates variations in year-to-year water use. The selection of the most recent period available captures and thereby includes current water conservation levels.
- The demand model was updated with the base period customer metered data and includes potable water demand only. Recycled water demand was incorporated separately.
- SANDAG S15 projections are the latest release and are lower than previous projections. SANDAG Series 13 and 14 projections were used as the basis of growth for the 2015 and 2020 UWMPs, respectively. S15 projections for population are nearly 200,000 fewer people in 2045 compared to Series 14, and projects 120,000 fewer households. Historically, reliance on SANDAG for growth projections resulted in overestimated water demand projections.

- SANDAG S15 projects a slight decline in single-family homes and a modest increase in multifamily homes. This densification is reflected in the demand model and translates to the lower projections in the 2025 UWMP when compared to the 2020 UWMP forecast. The model also reflects declining water use per household due to S15 projections of declining average number of persons per household (ppl/HH) from 2.4 ppl/HH in 2030 to 2.3 ppl/HH in 2050. The S15 Scenario further reflects other densification impacts, such as smaller lot sizes and more multifamily units per newly developed parcel.
- The water demand projections incorporate modest conservation savings on irrigation demands driven by state laws.

The City's retail demand projections are based on the following assumptions for each use type.

- Residential Forecast (SFR and MFR):
  - New Residential Demands: Maintained the econometric functions from the 2020 UWMP to predict new growth for SFR and MFR water use per parcel.
  - Existing Residential Demands: Baseline water use in the SFR and MFR sectors adjusted for reductions in persons per household over the planning horizon.
  - Future Water Demands: New SFR and MFR residential demands are based on assumptions from the 2020 UWMP for parcel attributes (housing type, irrigable lot size, presence of pool, and climate zone), updated socioeconomic variables from the SANDAG S15 growth forecast (income and persons per household), and assume no additional residential water conservation. Also adjusted for reductions in persons per household over the planning horizon.
- Non-Residential Forecast (CII):
  - Growth in employment by pressure zone from the S15 growth forecast was used to establish a timeline for the development of new non-residential parcels over the planning horizon. The approach maintained the non-residential water use factors per parcel from the 2020 UWMP for corresponding land uses.
  - SANDAG Land Use: Development of non-residential parcels based on SANDAG land use geographical information system (GIS) data by parcel, including redevelopment and vacant (infill) development.
  - AB 1572: 10 percent reduction in landscape water use for new and existing non-residential customers from prohibitions on irrigating non-functional turf.
  - Model Water Efficient Landscape Ordinance (MWELO): 10 percent reduction in landscape water use for new non-residential customers from compliance with California's MWELO.
- Irrigation: 10 percent reduction in landscape water use for new and existing non-residential customers from prohibitions on irrigating non-functional turf.
- NRW: Distribution system water loss or NRW was determined using metered data records. The highest water loss (2022 through 2024) of 8.2 percent is used in the Water Demand Forecast for 2030 through 2050.

3.3.1 LOW-INCOME RESIDENTIAL WATER DEMANDS

The UWMP Act requires that the UWMP identify planned low-income housing developments within the agency's service area and develop demand projections for those units. This requirement was first enacted during the 2010 UWMP cycle, as required by SB 1087. Low-income households are defined as households with less than 80 percent of the median household income in San Diego County. The median annual income in the San Diego County area is $72,700; hence, low-income households are households with a total income equal to or less than $58,160 per year.

The City's General Plan's Housing Element is the City's housing plan. The City, along with all California cities and counties, is required to adequately plan to meet the housing needs of everyone in the community and to update its plan every eight years. The foundation for the Housing Element is the Regional Housing Needs Assessment, in which the State estimates each region's housing needs for all income groups for the upcoming eight years. The 2021-2029 Housing Element is the sixth update to the City's General Plan Housing Element and is also referred to as the 6th Cycle Housing Element. The Housing Element contains the City's housing needs targets (108,036 housing units) for the years 2021 through 2029 for the following five income groups.

- Extremely Low Income
- Very Low Income
- Low Income
- Moderate Income
- Above Moderate Income

The demands for all income groups are included in the demand forecast model, which takes into account the demographics of each pressure zone.

3.3.2 WHOLESALE TO OTHER AGENCIES

As described in Section 3.1, the PUD wholesales potable water to Cal-Am, the City of Del Mar, and the Otay Water District. Because water deliveries to Otay occur infrequently and for short periods, they are not included in the projected demands. The City contacted its wholesale water agencies to coordinate on their future water demand projections. The agencies provided preliminary assumptions for their Draft 2025 UWMP forecasts. Since the City's wholesale agencies have service areas that are relatively built out, no significant growth is projected. In general, while wholesale demands have declined slightly over the past years, a conservative approach was taken to assume wholesale demands remain constant through the planning horizon. According to Section 3.1.3, historical wholesale use was estimated from records provided by the City. The average water deliveries to Cal-Am and Del Mar from FY 2022 through FY 2024 were estimated at 10,622 AF.

3.4 PROJECTED RECYCLED WATER DEMANDS

Future recycled water within the City and to wholesale customers is assumed to remain constant as the City shifts its recycled water strategy to development of its potable reuse Pure Water San Diego Program, which is discussed in Section 4. As such, the City is no longer investing in the expansion of its "purple pipe" recycled water system in the Northern Service Area. Refer to Section 4 for further information. The three-year average of deliveries for FY 2022, 2023, and 2024 was selected for future periods (9,152 AF).

3.5 TOTAL WATER DEMAND FORECAST SUMMARY

The City's total water demand forecast includes retail potable water consumption, wholesale water sales, and NRW. These demand categories are summarized in **Table 3-7**.

Table 3-7 Total Uses of Potable Water - Projected

Use Type	Additional Description	Projected Water Use (AF)					
		Level of Treatment	2030	2035	2040	2045	2050
Retail							
Single-Family	Indoor and outdoor uses	Potable	52,153	52,049	51,940	51,725	51,291
Multifamily	Indoor and outdoor uses	Potable	41,132	41,711	42,739	44,445	45,190
Commercial	Indoor and outdoor uses	Potable	28,802	29,048	29,371	29,578	29,739
Industrial	Indoor and outdoor uses	Potable	1,683	1,698	1,718	1,731	1,738
Institutional/Governmental	Indoor and outdoor uses	Potable	16,010	16,019	16,140	16,144	16,181
Irrigation	Landscape irrigation	Potable	8,881	8,881	8,881	8,881	8,881
Distribution System Water Loss	NRW	Potable	14,228	14,294	14,418	14,571	14,617
		TOTAL	**162,888**	**163,700**	**165,207**	**167,074**	**167,637**
Sales to other agencies	Drinking water	Potable	10,622	10,622	10,622	10,622	10,622
		TOTAL	**10,622**	**10,622**	**10,622**	**10,622**	**10,622**
		TOTAL RETAIL AND WHOLESALE	**173,510**	**174,321**	**175,829**	**177,696**	**178,259**

3.6 ESTIMATING FUTURE WATER SAVINGS

The projected potable retail water demands presented in **Table 3-7** include additional (post-2020) water conservation from plumbing codes, landscape ordinances, and utility rebates. See Section 5 for more information on City's conservation programs. **Table 3-8** shows the projections of total water conservation used in forecasting water demands for the City's water service area.

"Passive" savings are water savings from codes, standards, ordinances, or transportation and land use plans. Future water savings are included in the water use projections for non-residential demands. The irrigation use type conservation savings in **Table 3-8** include passive and active water savings for institutional, commercial, government, and industrial irrigation due to the water use reductions from AB 1572 prohibitions on irrigating non-functional turf and from MWELO. Because the City is exceeding its current and future water use objectives for residential uses by a large margin, and because the City is not focusing on indoor residential water conservation as it moves forward with Pure Water San Diego, no additional residential water conservation has been assumed. It should be noted that the historical and projected decline in persons per household from 2.4 to 2.3 between 2025 and 2050 drives the water use down; however, this is not considered conservation. Refer to the Demand Forecast Report (**Appendix F**) for further information on conservation savings included in the demand projections.

Table 3-8 Projected Water Conservation by Sector

Use Type	Projected Water Conservation (AF)(1,2)				
	2030	2035	2040	2045	2050
Single-Family	0	0	0	0	0
Multifamily	0	0	0	0	0
Commercial	129.6	133.7	139.1	142.6	145.3
Industrial	0.6	0.6	0.6	0.6	0.6
Institutional/ Governmental	249.4	249.4	255.0	255.2	257.2
Irrigation	577.0	577.0	577.0	577.0	577.0
TOTAL	**956.5**	**961.1**	**971.7**	**975.3**	**980.1**

Notes:
(1) Passive conservation savings assume CII water use reductions from “Nonfunctional Turf” under AB 1572.
(2) Conservation savings by sector are included in the potable water projected demands.

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SECTION

4 Water Supplies

This section summarizes the City of San Diego's (City's) current, verifiable future, and conceptual future water supplies. These terms are defined and elaborated in Section 4.6. An evaluation of the reliability of these water supplies is presented in Section 6.

The City's current and verifiable future water supplies consist of: (1) water purchased from the San Diego County Water Authority (SDCWA), either directly delivered to one of the City's treatment plants or stored in various reservoirs; (2) local supply including groundwater and captured local runoff from rainfall within the City's nine reservoirs; (3) recycled water for non-potable use; and (4) the Phase 1 Pure Water San Diego Program (potable reuse) which is approved, permitted, and in progress. Each of these supplies are discussed below.

The City has been proactive in operating its two water reclamation plants (WRPs) and developing the Pure Water San Diego Program, which increases the City's local water supply, reduces dependence on imported water, and improves reliability with a drought-proof supply.

Historically, imported water from the SDCWA has been the largest source of the City's water supply. However, as shown in **Figure 4-1**, the City has reduced its reliance on imported water over the years. This trend will continue with the addition of the Phase 1 Pure Water San Diego Program, slated to begin in late Calendar Year (CY) 2026.

Highlights of the City's Water Supplies

- In 2025, the City meet about 28 percent of its supply needs using local water supply from the City-owned reservoirs while the rest was purchased from SDCWA.
- Reliance on imported water will reduce significantly with the implementation of the potable reuse Pure Water San Diego Program that will create a drought proof water supply using advanced water purification technologies to augment local reservoir supply.
- By 2035, the City expects to provide approximately 75 percent of its total supply from local sources, effectively reversing the current reliance on imported water shown earlier.

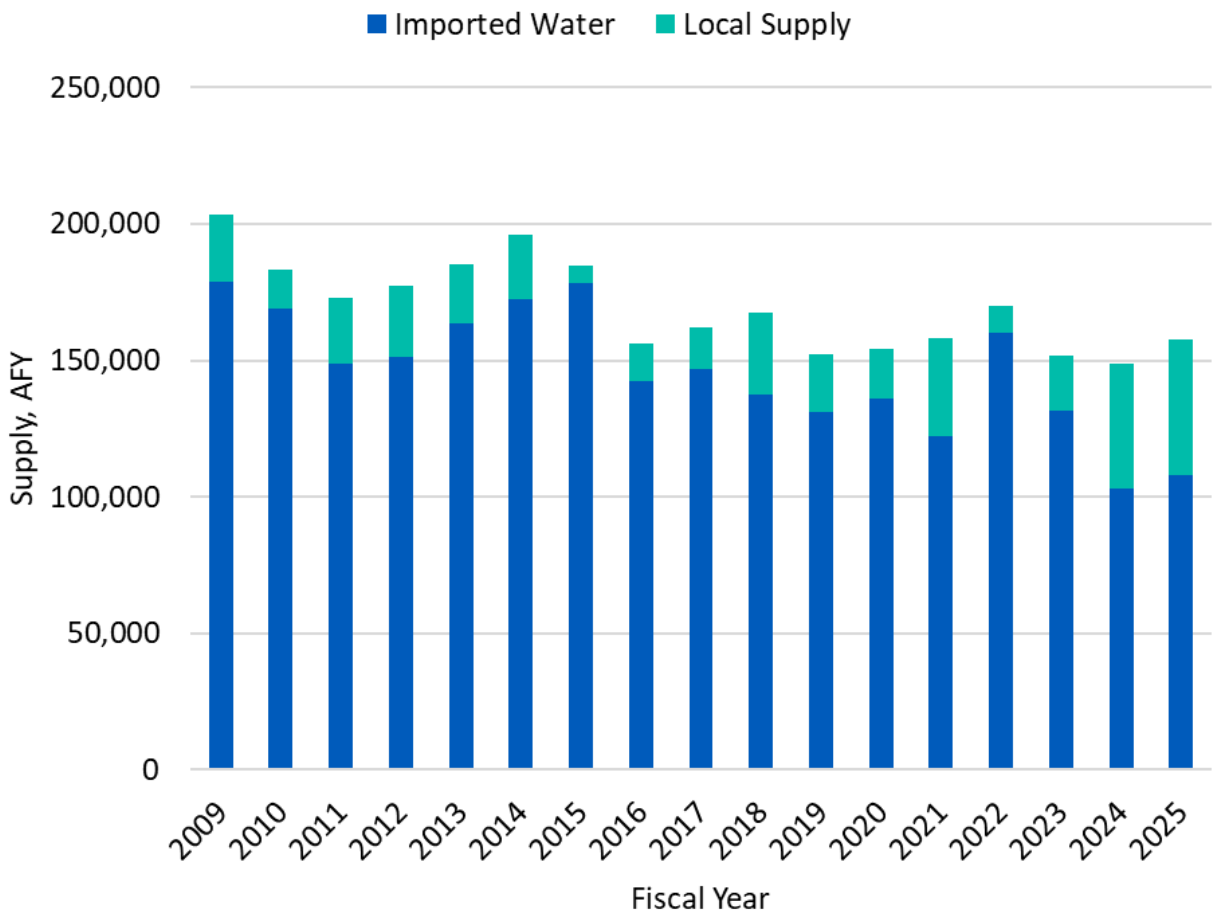


Figure 4-1 Historical Water Supply for the City of San Diego

4.1 CITY LOCAL SURFACE WATER

The City's extensive reservoir system captures and stores runoff from local watersheds and provides the City with a reliable surface water supply. All of the City's nine reservoirs (Barrett, El Capitan, Hodges, Lower Otay, Miramar, Morena, Murray, San Vicente, and Sutherland) provide a local water supply to the City, while two reservoirs (Miramar and Murray) serve as the water treatment plant forebay. Five of the reservoirs offer emergency storage to the City, which include Miramar, Murray, San Vicente, El Capitan, and Lower Otay. Miramar will also be used as storage for purified water from the Phase 1 Pure Water San Diego Program. The combined operational storage capacity of all nine reservoirs, with Division of Safety of Dams (DSOD) restrictions is 444,773 acre-feet (AF), which equates to approximately 2.5 times the City's potable water production of 174,838 AF in 2025.

The runoff from rainfall captured in the reservoirs provides approximately 13 percent of the City's total water supply (based on fiscal year [FY] data from 2009 to 2025). It should be noted that the reservoirs are also used to store imported water and provide recreational, ecosystem, and flood control benefits. Refer to Section 2 for further details on the nine reservoirs.

The historic average reservoir supply from 1948 to 2025 (29,475 AF) was used to estimate the projected supply from the reservoirs over the 2025 Urban Water Management Plan (UWMP)

planning period. In addition to the reservoir supply, the local surface supply includes 400 acre-feet per year (AFY) from the City-Lake Cuyamaca Interagency Agreement.

The Interagency Agreement includes the City, Cuyamaca Mutual Water Company, Cuyamaca Recreation and Park District, and the Helix Water District which owns the lake. It has been assumed that the City will continue to receive 400 AFY through the planning period. **Table 4-1** summarizes the current and projected local surface water supplies.

The use of local water is affected by availability and water resource management policies. The City's policy is to use local surface water first to reduce imported water purchases and costs.

Table 4-1 Current and Projected Local Surface Water Supplies

Water Supply	Current Supply (AF) 2025	Projected Water Supply (AF)				
		2030	2035	2040	2045	2050
Barrett, El Capitan, Hodges, Lower Otay, Morena, San Vicente, Murray, Miramar, and Sutherland Reservoirs	48,795	29,475	29,475	29,475	29,475	29,475
City-Lake Cuyamaca Interagency Agreement	400	400	400	400	400	400
Total Surface Water Supply	**49,195**	**29,875**	**29,875**	**29,875**	**29,875**	**29,875**
Notes: AF – acre feet						

4.1.1 EMERGENCY STORAGE

The City operates emergency and seasonal storage programs in conjunction with approved municipal policy by maintaining an accessible amount of stored water that could increase reliability and provide an uninterrupted supply of water to the City's water treatment plants (WTPs), should there be an interruption to the supply of imported water or another emergency that disrupts the water supply. The management of reservoirs is guided by Council Policy 400-04, which outlines the City's Emergency Water Storage Program. The current policy is under revision. It is anticipated that the revised policy will change to a two-month supply requirement and be based on averaging the highest two-month demands (summer). The two-month requirement will be to maintain 75 percent of the City demands in available storage during that period.

4.2 LOCAL GROUNDWATER BASINS

The City has water rights, jurisdiction, and municipal water supply development interests in four groundwater basins in the San Diego region, which are depicted in **Figure 4-2**. These basins are:

- San Pasqual Valley Groundwater Basin (San Pasqual Valley Basin)
- San Diego River Valley Groundwater Basin (known as the Santee-El Monte Basin)
- Mission Valley Groundwater Basin
- Coastal Plain of San Diego Groundwater Basin (formerly known as the San Diego Formation)

None of the groundwater basins listed above are adjudicated.

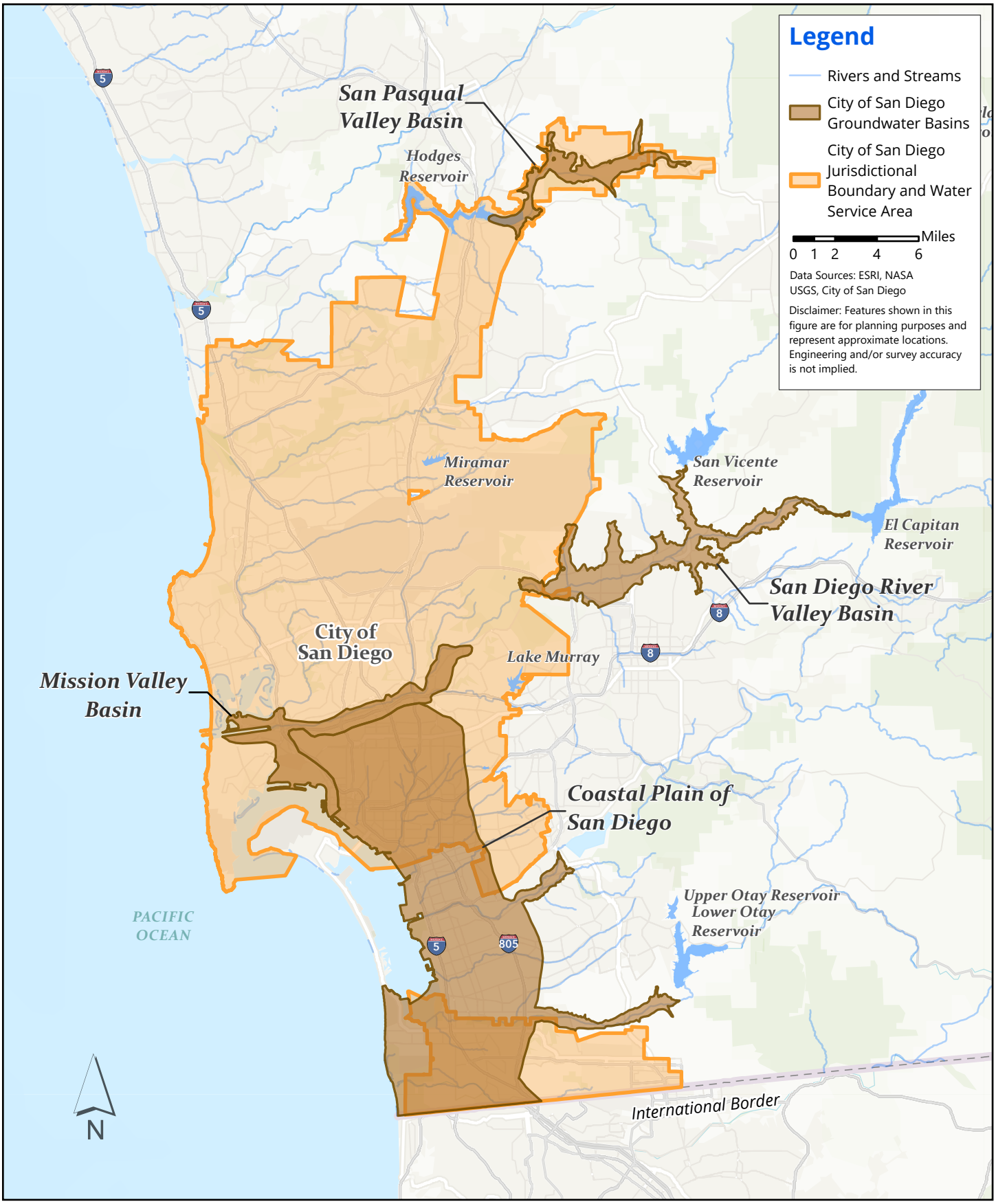


Figure 4-2 City of San Diego Groundwater

4.2.1 SAN PASQUAL VALLEY GROUNDWATER BASIN

The San Pasqual Valley Basin overlays the northern part of the City's service area, approximately 25 miles northeast of downtown San Diego and within the San Pasqual Valley, which is a designated City-owned and managed agricultural preserve. The San Pasqual Valley Basin underlies portions of Cloverdale Canyon, Rockwood Canyon, and Bandy Canyon along Highway 78. The San Pasqual Valley is sparsely populated and includes row crop, orchard, nursery, and dairy operations. Groundwater is used as the primary water supply for irrigation in the valley to produce crops for various agricultural activities. The San Pasqual Valley Basin is an unconfined aquifer identified as Basin No. 9-10 in Department of Water Resources (DWR) Bulletin 118.

In 2016, the City and the County of San Diego formed the San Pasqual Valley Groundwater Sustainability Agency (GSA) to evaluate and protect the San Pasqual Valley Basin. The GSA prepared a Groundwater Sustainability Plan (GSP) for the San Pasqual Valley Basin (Final September 2021). The purpose of the GSP is to ensure groundwater resources are managed to prevent depletion of groundwater, reduction of storage, degradation of water quality, or depletion of surface water. While groundwater use in the San Pasqual Valley Basin is currently sustainable, this GSP includes monitoring requirements, established thresholds, and projects and management actions to ensure sustainable groundwater resource management. The San Pasqual Valley Groundwater Basin GSP states "Historical groundwater pumping in the Basin between 2005 and 2019 was estimated to range from 4,740 to 6,741 AFY. Groundwater levels during this historical period were deemed to be sustainable, and the Basin's sustainable yield is expected to be more than historical groundwater pumping."

The San Pasqual Valley Basin is not connected to the City's potable water supply, and all the groundwater wells are used for local supply to meet the agricultural demands of the farmers living in the San Pasqual Valley. The City currently has no plans to pursue any groundwater from the San Pasqual Valley Basin for contribution to the potable water supply.

4.2.2 SAN DIEGO RIVER VALLEY GROUNDWATER BASIN

The San Diego River Valley Groundwater Basin (San Diego River Basin, also known as the Santee-El Monte Basin) is an unconfined aquifer identified as Basin No. 9-15 in DWR Bulletin 118. Only five percent of the San Diego River Basin is located within the City's municipal boundary, with the remaining ninety-five percent being outside the City's 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.

The San Diego River Basin includes two dams with reservoirs (San Vicente and El Capitan) that are owned and operated by the City. The City installed the San Vicente Production Well in 2004 which has a maximum capacity of 600 gallons per minute (gpm). If pumped continuously, this well could produce almost 1,000 AFY. In March 2010, the City drilled a second production well about a quarter mile downstream of its El Capitan Reservoir. No groundwater production has occurred in the City's only two production wells in the San Diego River Basin since 2020, due to repairs needed at both wells. If the wells were repaired, the groundwater would be sent to the Alvarado WTP for distribution.

4.2.3 MISSION VALLEY GROUNDWATER BASIN

The Mission Valley Groundwater Basin is an unconfined aquifer identified as Basin No. 9-14 in DWR Bulletin 118. The Mission Valley Groundwater Basin is a narrow alluvial aquifer extending east to west along the San Diego River from the bottom of Mission Gorge downstream to the river's tidal estuary beginning approximately at Interstate-5.

The City of San Diego conducted the Mission Valley Groundwater Feasibility Study 2018 to assess the feasibility and costs of a project to develop Mission Valley Groundwater Basin as a sustainable supply source for the City's residents. The study is part of the City's ongoing efforts to enhance water supply reliability and sustainability through local supply development.

4.2.4 COASTAL PLAIN OF SAN DIEGO GROUNDWATER BASIN

The Coastal Plain of the San Diego Groundwater Basin (previously known as the San Diego Formation) is a confined/partially confined aquifer identified as Basin No. 9-33 in DWR Bulletin 118. The Coastal Plain of San Diego Groundwater Basin is located in southern San Diego County. It underlies a portion of the previously identified Otay Valley, Tijuana, and Sweetwater Valley Groundwater Basins. Groundwater in portions of the Coastal Plain of San Diego Groundwater Basin is generally not suitable for potable water production due to high total dissolved solids (TDS), chloride, and sodium content.

4.2.5 HISTORICAL GROUNDWATER BASIN USE

Due to repairs of the City's two production wells (San Vicente and El Capitan) in the San Diego River Valley Groundwater Basin, no groundwater production has occurred since 2020. As the City does not produce potable water from any other groundwater wells, the historical groundwater production has remained zero from 2020 through 2025 as shown in **Table 4-2**.

Table 4-2 Historical Groundwater Supply to the City from 2021 to 2025 in Acre-Feet

Groundwater Well Name and Basin Name	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
San Vicente Production Well, San Diego River Basin	0	0	0	0	0
El Capitan Production Well, San Diego River Basin	0	0	0	0	0
Total Historical Groundwater Use	**0**	**0**	**0**	**0**	**0**

4.2.6 FUTURE GROUNDWATER BASIN USE

Table 4-3 presents the City's projected groundwater supplies available under normal climate conditions. The production from the San Vicente and El Capitan wells is projected to be 50 AFY per well in 2030 and beyond after the wells are rehabilitated. No other wells are planned to be drilled in any of the other groundwater basins described above.

Table 4-3 Projected Groundwater Supply to the City in Acre-Feet

Groundwater Well Name and Basin Name	FY 2030	FY 2035	FY 2040	FY 2045	FY 2050
San Vicente Production Well, San Diego River Basin	50	50	50	50	50
El Capitan Production Well, San Diego River Basin	50	50	50	50	50
Total Groundwater Project Supply	**100**	**100**	**100**	**100**	**100**
Notes: Source: City of San Diego PUD.					

4.3 RECYCLED WATER FOR NON-POTABLE REUSE

This section provides an overview of the existing recycled water system and applications, quantities of wastewater currently being treated to recycled water standards, the existing and projected recycled water use, and use of recycled water for non-potable purposes to offset potable water supply needs.

Recycled water is regulated in California under the Uniform Statewide Recycling Criteria contained in the California Code of Regulations, Title 22, Division 4, Chapter 3. Title 22 establishes approved recycled water uses and the wastewater treatment standards for the recycled water use. Title 22 contains the requirements for disinfected tertiary recycled water. It should be noted that the Pure Water San Diego Program, which is potable reuse, is discussed separately in Section 4.4.

Recycled water is defined in the California Water Code as "water which, as a result of treatment of waste, is suitable for a direct beneficial use or a controlled use that would not otherwise occur and is therefore considered a valuable resource."

4.3.1 RECYCLED WATER COORDINATION

In 1989, the San Diego Municipal Code (Chapter 6, Article 4, Division 8) was amended to require the City to prepare and adopt a Recycled Water Master Plan (RWMP) to define, encourage, and develop the use of recycled water within its boundaries. The latest RWMP Update was completed in 2020. The 2020 RWMP developed a list of capital improvement projects and performed market assessments to evaluate future recycled water options. The assessments included an evaluation of infill demands in the existing service areas, projected new customers and uses, and the addition of new service areas. The City has taken multiple actions in recent years to investigate and expand its use of recycled water. The coordination for recycled water planning involves current and potential recycled water and wholesale customers.

4.3.2 RECYCLED WATER

To offset potable (drinking) water demand, the City delivers Title 22 disinfected tertiary recycled water for non-potable water uses within the City and to wholesale agencies through recycled water agreements.

The City has three separate agreements to sell recycled water to wholesale agencies. The Olivenhain Municipal Water District and the City of Poway are provided with recycled water from the City's North City Water Reclamation Plant (NCWRP), while Otay Water District receives recycled water from the City's South Bay Water Reclamation Plant (SBWRP).

Source wastewater for the City's two water reclamation plants (WRPs) is supplied through the Metro System. **Table 4-4** contains a summary of the volumes and treatment levels at each of the City's wastewater treatment plants in 2025. It is important to note that the NCWRP will provide treated wastewater to the Phase 1 Pure Water San Diego Program starting in late 2026.

Table 4-4 Wastewater Treatment and End Uses in 2025

WWTP	Volume Received AF	Volume Treated(1) AF	Recycled Water Used Within UWMP Service Area		Recycled Water Distributed Outside UWMP Service Area		Wastewater Discharged	
			Treatment Level	Volume AF	Treatment Level	Volume AF	Treatment Level	Volume AF
PLWTP & Ocean Outfall, Place ID 248796	156,696	156,696	-	-	-	-	Advanced Primary	155,251
NCWRP, Place ID 244506	14,821	14,821	Tertiary	6,814	Tertiary	627(2)	Tertiary	5,915
SBWRP, Place ID 257831	6,621	6,621	Tertiary	623	Tertiary	3,156(3)	Secondary Disinfected	2,834
Total	**178,138**	**178,138**	**-**	**7,416**	**-**	**3,772**	**-**	**164,000**

Notes:

(1) The wastewater treated volumes for the North City and South Bay Water Reclamation Plants do not represent any sludge volumes sent to Point Loma Wastewater Treatment Plant; as a result, there is a discrepancy in the volume of treated wastewater and the sum of the volumes of the recycled water and discharged treated wastewater.
(2) Delivery to City of Poway and Olivenhain Municipal Water District.
(3) Delivery to Otay Water District.

4.3.3 RECYCLED WATER DISTRIBUTION SYSTEM

The City's recycled water distribution system consists of two independent recycled water service areas: the Northern Service Area (NSA) and the Southern Service Area (SSA).

The NSA is the City's largest recycled water service area and distribution system, which is served by the NCWRP. The NSA has two wholesale customers: the City of Poway and the Olivenhain Municipal Water District. The primary use of the recycled water in the NSA is irrigation. Other uses include cooling towers, construction, ornamental fountains, and toilet/urinal flushing.

The SSA is served by the SBWRP and delivers recycled water to Caltrans and serves Otay Water District through a wholesale agreement.

Refer to Section 2 for further details on the recycled water system and service areas.

4.3.4 RECYCLED WATER USE

Table 4-5 summarizes the historical annual recycled water use in the NSA and SSA. As shown, the total recycled water use in the past three years has been fairly constant with an average of 8,806 AFY, ranging from 7,868 AF to 9,278 AF.

Table 4-5 Historical Recycled Water Supply to the City and Wholesale Customers from 2023 to 2025

Service Area	Recycled Water Supply City and Wholesale (AF)			
	2022	2023	2024	2025
Northern Service Area	7,391	6,676	5,611	5,493
Southern Service Area	2,918	2,602	2,256	3,779
Total	**10,309**	**9,278**	**7,868**	**9,272**

Figure 4-3 presents the historical and projected recycled water sales from both NCWRP and SBWRP from 2010 to 2050.

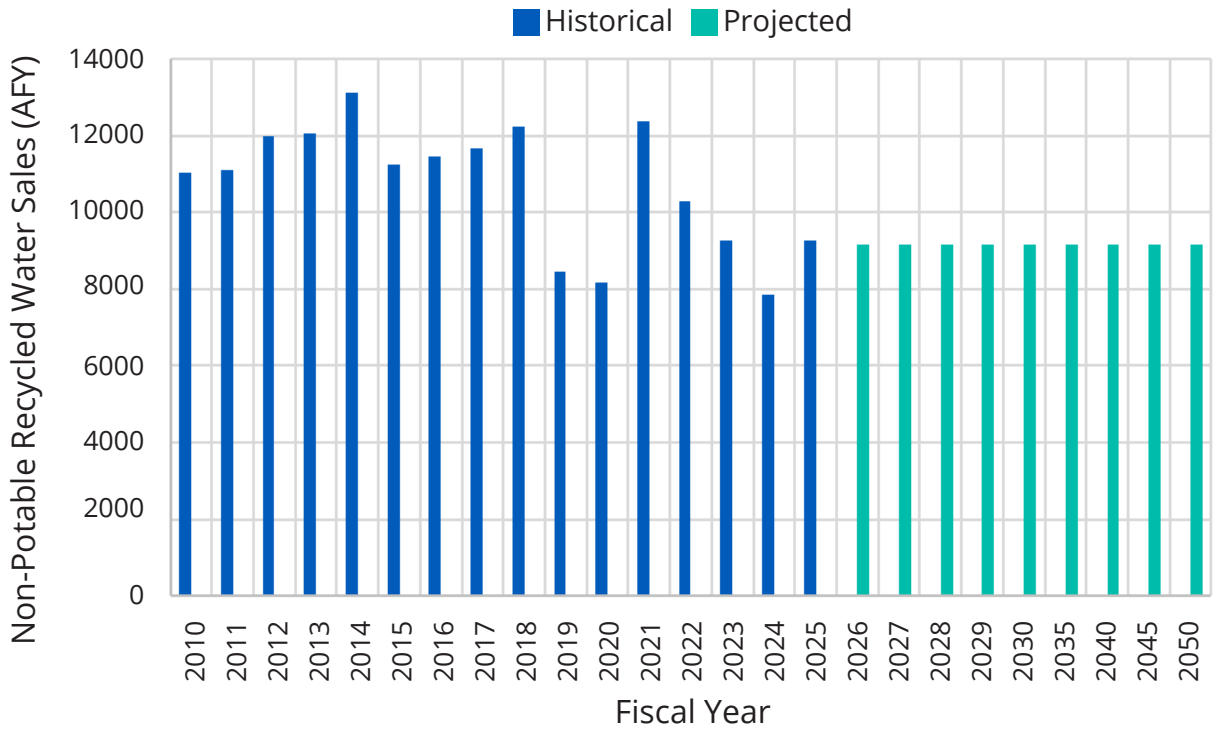


Figure 4-3 Historical and Projected Recycled Water Sales in the City and to Wholesale Customers

For the planning horizon of the 2025 UWMP, the recycled water use by the City and sold to wholesale customers is assumed to remain constant at 9,152 AFY, which is the three-year average of historical recycled water supplied from 2022 through 2024 for City retail and wholesale customers.

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

The Pure Water San Diego Program will divert advanced primary treated water from the PLWTP ocean outfall and recycle a valuable and limited resource, providing a new local source of potable water for the City. The Pure Water San Diego Program was initially designed to reduce flows and loads to the ocean from PLWTP, such that the annual effluent load into the ocean is equal to or less than the loading of PLWTP if the facility provided secondary treatment. It is anticipated that continuation of the Pure Water San Diego Program will be reflected in future permits that will eliminate the need for the City to make over $1.8 billion in upgrades to the PLWTP, which would otherwise be necessary.

Purified water from Pure Water San Diego is generated through the advanced treatment of recycled water to drinking water standards. To avoid a shortage of wastewater flow for Pure Water San Diego Phase 1, the City has already stopped processing new applications for the NSA. There is currently less wastewater being generated within the City than originally forecasted when designing the Pure Water San Diego Program, thanks in part to water conservation. A portion of wastewater flow is allocated to the Pure Water San Diego Program, which will significantly reduce the amount of flow left over for the Recycled Water program in the NSA.

For the SSA, the primary customer for much of the recycled water is the Otay Water District, through a wholesale agreement. A small amount of recycled water is also sold to Caltrans as a retail customer to the City. Due to the lack of available wastewater to be used for recycling and the need for a recycled water distribution system to be constructed, expanding the SSA is limited; therefore, expanding to more customers is unlikely at this point (or in the near future).

The City will reevaluate the Recycled Water Program in the coming years as part of Pure Water San Diego Phase 2.

Table 4-6 presents the current projected recycled water use for retail City customers and wholesale customers.

Table 4-6 Current and Projected Recycled Water Use – Retail and Wholesale Customers Within the Service Area

Water Supply	2025	Projected Water Supply (AF)(1)				
		2030	2035	2040	2045	2050
Recycled Water	9,272	9,152	9,152	9,152	9,152	9,152
Total	**9,272**	**9,152**	**9,152**	**9,152**	**9,152**	**9,152**

Notes:
(1) Includes retail customers within the service area and wholesale customers (Otay Water District, City of Poway, and Olivenhain Municipal Water District).

4.3.5 MAXIMIZING RECYCLED WATER USE

The City's 2020 RWMP identified capital improvement projects, expansions of the service areas, and the Pure Water San Diego Program as projects to increase recycled water use. **Table 4-7** presents the City's planned methods for expanding recycled water use and the associated expected increase in recycled water use. The Pure Water San Diego Program is discussed below.

Table 4-7 Future Recycled Water Use

Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use (AF)
Pure Water Phase 1	Potable Reuse	2030[(1)]	33,600
Pure Water Phase 2	Potable Reuse	2035	59,368
Total			**92,968**

Notes:
(1) Phase 1 is scheduled to come online in late CY 2026. Production is expected to be a staged ramp-up in flow, with 30 mgd (~33,600 AF) produced by late CY 2027.

4.4 POTABLE REUSE

The Pure Water San Diego Program is a two-phase, multi-year program designed to augment the City's reservoirs with up to 83 mgd of purified water through potable reuse. This source of treated, purified water will reduce the purchase of imported water and provide the City with a locally controlled source that is essentially resistant to drought. The Pure Water San Diego Program is the most extensive integrated infrastructure program the City has ever undertaken.

Phase 1 will produce an annual average of 30 mgd (approximately 33,600 AF) of purified water at the new North City Pure Water Facility (NCPWF) that is being constructed across the street from the existing NCWRP. Purified water from the NCPWF will be piped to Miramar Reservoir for potable reuse (reservoir augmentation) as well as used for salinity management of non-potable reuse. The purified water will be treated again at the Miramar WTP before it is delivered to the City's customers via the City's existing potable water distribution system.

North City Pure Water Facility

Infrastructure components associated with the initial 30 mgd Phase 1 of the Pure Water San Diego Program are almost complete, with start-up testing to begin in early. Phase 1 is scheduled to come online in late CY 2026. Production is expected to be a staged ramp-up in flow, with 30 million gallons per day (mgd) produced by late CY 2027.

Phase 2 of the Pure Water San Diego Program is being planned. Currently, there is a small-scale demonstration facility being constructed at PLWTP. Like the demonstration facility for Phase 1, this Phase 2 demonstration facility will provide performance data on the treatment of wastewater from the central portion of the City.

Phase 2 is currently planned to provide up to 53 mgd (approximately 59,368 AF) of purified water by 2035. The Pure Water team is reassessing conditions that have changed since the original Phase 2 plan was conceived during the development of the 2012 Recycled Water Study. Since that time, several important factors have changed to an extent that it merits re-examination of the plan. These factors include water supply and demand, wastewater flows and availability, water supply dam conditions, climate change and sea level rise, regulatory developments, and affordability for customers. https://www.sandiego.gov/sites/default/files/2025-01/pw-art-annual-report-010325-v14.pdf.

No other reuse projects are planned beyond Phase 2 currently. The Pure Water San Diego Program projected supplies are shown in **Table 4-8**.

Table 4-8 Projected Potable Reuse Supplies

Water Supply Source	Additional Detail on Water Supply	Projected Water Supply (AF)				
		2030	2035	2040	2045	2050
Potable Reuse	Pure Water Phase 1	33,600	33,600	33,600	33,600	33,600
Potable Reuse	Pure Water Phase 2	-	59,368	59,368	59,368	59,368
Total		**33,600**	**92,968**	**92,968**	**92,968**	**92,968**

Notes:
Source: City of San Diego PUD.

4.5 SDCWA PURCHASED WATER

This section provides an overview of imported water sources and the current diversification strategies for these imported sources. The City, which has been purchasing imported water from the SDCWA since 1947, determines the imported water supply it needs to purchase from the SDCWA by subtracting its local water supplies from its total water demands. The City's water demand projections, local supplies, and needs for supplemental water are provided to the SDCWA. **Table 4-9** shows the projected calculation for purchased imported water for retail and wholesale customers, respectively. The values presented assume average weather and hydrological conditions through the 2025 UWMP planning period. **Figure 4-4** shows the reduction in SDCWA purchases as the City's local supply sources increase with the Pure Water San Diego Program from 2030 through 2050.

Table 4-9 Projected Imported Water Supplies – Retail and Wholesale

Water Demand/Supply	Projected Water Supply and Demand (AF)				
	2030	2035	2040	2045	2050
City Retail Potable Demands	162,888	163,700	165,207	167,074	167,637
Wholesale Potable Demands	10,622	10,622	10,622	10,622	10,622
Total Demands	**173,510**	**174,322**	**175,829**	**177,696**	**178,259**
City Local Water Supplies(1)	63,575	122,943	122,943	122,943	122,943
Purchased/Imported Water Supply from SDCWA(2)	109,935	51,379	52,886	54,753	55,316
Total Supplies	**173,510**	**174,322**	**175,829**	**177,696**	**178,259**

Notes:
(1) Local water supplies include surface water, groundwater, and potable reuse.
(2) Imported water adjusted to meet forecast demands for retail and wholesale. Only City local supplies are provided to Cal-Am wholesale.

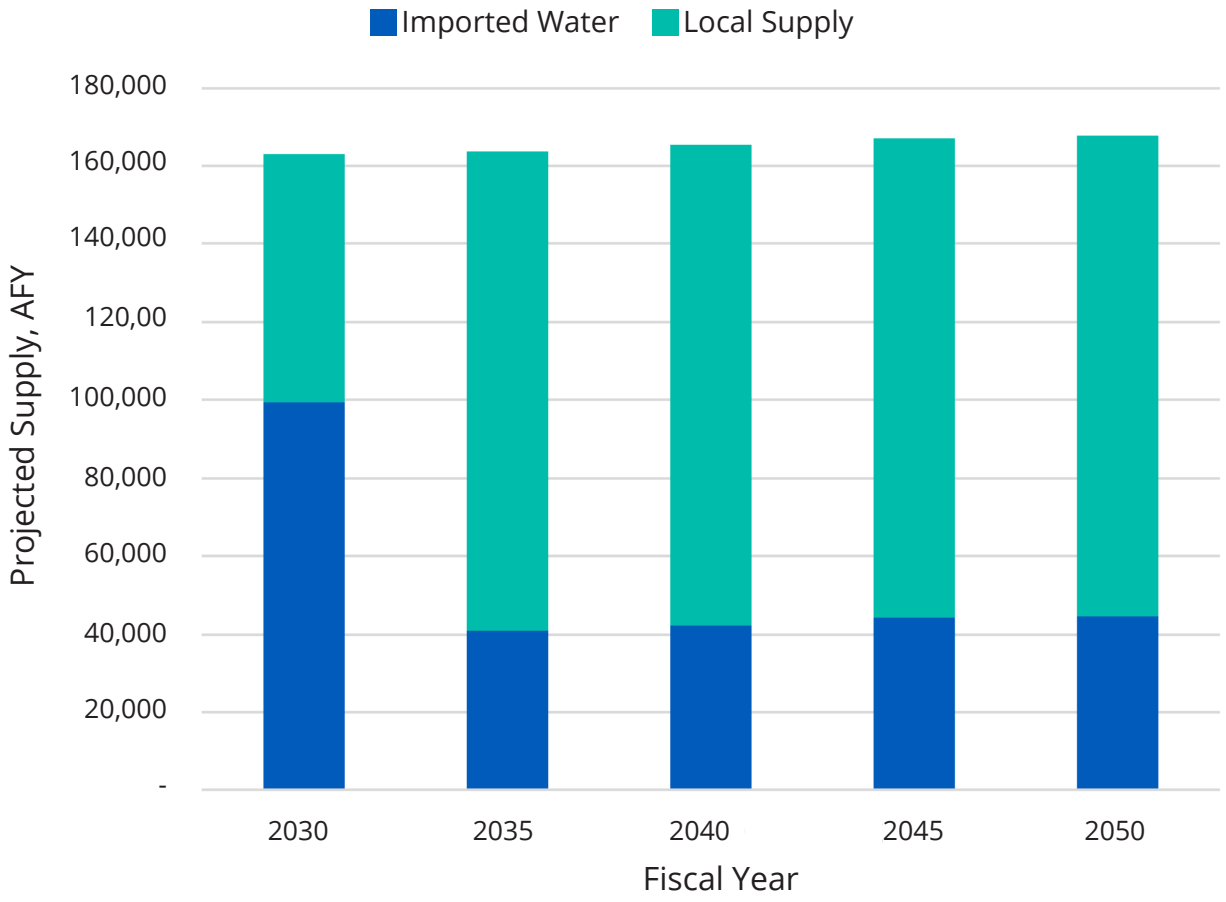


Figure 4-4 Projected Retail Supply Sources 2030-2050[1]

[1] Does not include wholesale supplies.

4.6 FUTURE WATER PROJECTS

The Water Code Section 10631, provides guidance to identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier. The City has defined local supply sources projects for the following three categories as shown in **Figure 4-5** and as follows:

Source: City of San Diego.

Figure 4-5 Local Supply Sources Project Categories

Verifiable Projects

- Have been identified by the Water Authority or member agencies as having achieved a level of certainty in their planning and implementation.
- Have substantial evidence and adequate documentation regarding implementation and supply utilization.
  - Examples: California Environmental Quality Act (CEQA) certification, permits satisfied, or contracts executed.
- Verifiable supplies are included in water supply assessments and verifications prepared by retail water agencies and used by the cities and county in their land use decisions regarding available water supplies for growth under Senate Bill (SB) 221 and SB 610.
- These projects are used in the Water Authority's UWMP reliability assessment.

Additional Planned Projects

- Water Authority or member agencies are actively pursuing and currently funding, but do not rise to the level of verifiable for implementation.
  - Pursuing planning, regulatory compliance, and technical engineering activities.
- Agencies have completed the feasibility phase for these projects and continue to fund advanced planning efforts.
- Additional planned projects are utilized in "Scenario Planning" for the UWMP as potential strategies to manage future supply uncertainty planning scenarios.

Conceptual Projects

- Considered to be in the pre-planning and pre-feasibility analysis phase.
- These projects have not progressed to a point where the project yield can be factored into reliability assessments or uncertainty planning for the UWMP.

As described in Section 4.4, the Pure Water San Diego Program is currently in progress to augment reservoir water supplies with potable reuse water. The Pure Water San Diego Program is considered "verifiable" and is therefore used in projections in this UWMP. Specific water supply projects or programs to increase water supply past the implementation of the Phase 2 Pure Water San Diego Program have not been selected or developed at this time to the "Additional Planned" level. The City may look at optimizing local supplies through infrastructure improvements and operational modifications.

4.7 SUMMARY OF WATER SUPPLIES

The source and volume of water for FY 2025 are presented in **Table 4-10**. A summary of the projected water supply in five-year increments is included in **Table 4-11**. SDCWA water purchases make up the difference between total water demands and local supplies. Due to the City's efforts to expand local sources, the percentage of the City's potable water supply made by local sources will increase from 28 percent in 2025 to 73 percent in 2050. **Figure 4-6** shows the water supply portfolio for 2025 and 2050 illustrating the City's efforts to expand local sources and diversify the portfolio.

Table 4-10 Existing Water Supplies 2025 – Retail and Wholesale

Water Supply	Additional Description	FY 2025	
		Volume (AF)	Water Type
Retail and Wholesale			
Surface water (Not Desalinated)	Raw Water	49,195	Potable
Groundwater (Not Desalinated)	Raw Water	0	Potable
Purchased/Imported Water	From SDCWA	125,644	Potable
Total		**174,839**	
Recycled Water			
Recycled Water Retail and Wholesale		9,272	Non-Potable
Total		**9,272**	Non-Potable

Table 4-11 Projected Water Supplies – Retail and Wholesale

Water Supply	Additional Detail on Water Supply	Projected Water Supply (AF)				
		2030	2035	2040	2045	2050
Retail and Wholesale						
Surface Water[1]	Raw Water	29,875	29,875	29,875	29,875	29,875
Groundwater	Raw Water	100	100	100	100	100
Potable Reuse	Pure Water Phase 1	33,600	33,600	33,600	33,600	33,600
Potable Reuse	Pure Water Phase 2	0	59,368	59,368	59,368	59,368
Purchased/Imported Water[2]	From SDCWA	109,935	51,379	52,886	54,753	55,316
Total		**173,510**	**174,322**	**175,829**	**177,696**	**178,259**
Recycled Water						
Recycled Water Retail and Wholesale		9,152	9,152	9,152	9,152	9,152
Total		**9,152**	**9,152**	**9,152**	**9,152**	**9,152**

Notes:
(1) Barrett, El Capitan, Hodges, Lower Otay, Morena, San Vincente, Murray, Miramar, and Sutherland Reservoirs, and the City-Lake Cuyamaca Interagency Agreement.
(2) Imported water adjusted to meet forecast demands for retail and wholesale. Only City local supplies are provided to Cal-Am wholesale.

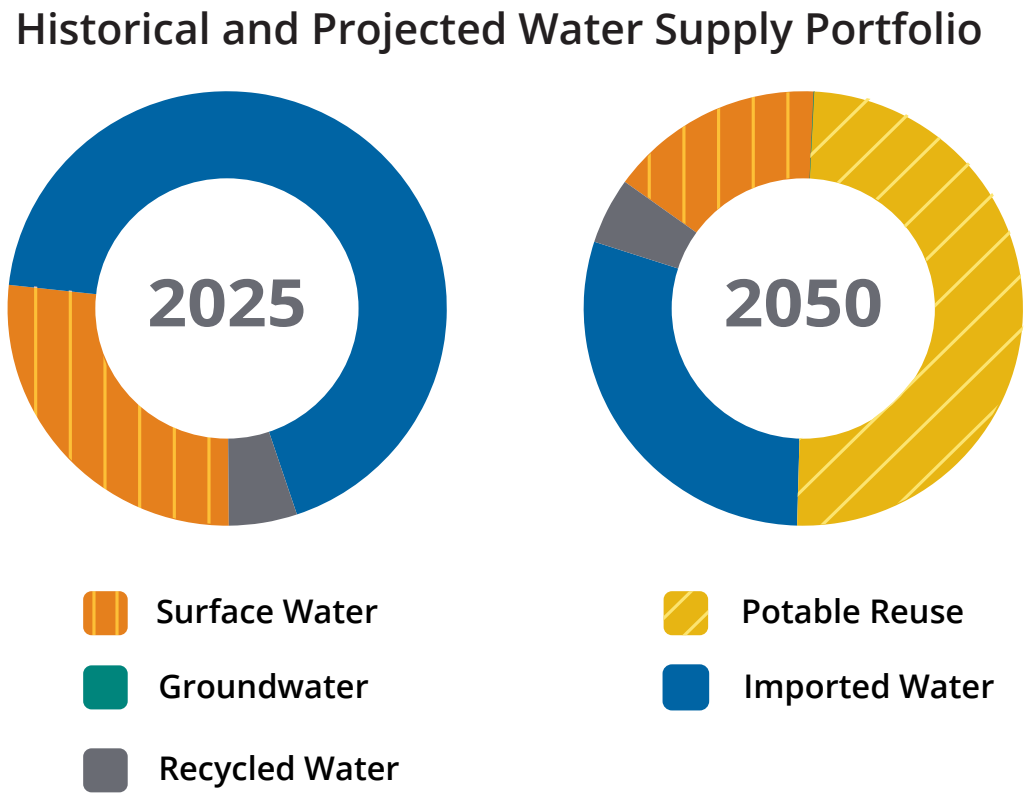


Figure 4-6 Water Supply Portfolio for 2025 and 2050

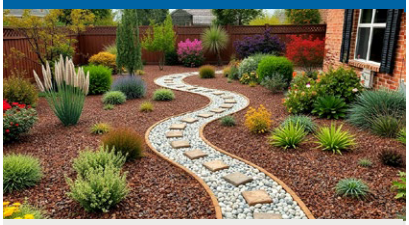
SECTION

5 Demand Management Measures

The California Water Conservation Act of 2009 (SB X7-7) requires water agencies to reduce per capita water use by 20 percent by the year 2020, which is commonly referred to within the water industry as "20x2020". In the 2010 Urban Water Management Plan (UWMP), the City of San Diego (City) developed the per capita water use baseline and future water targets for 2015 and 2020. Water use is typically discussed on a per capita basis and is presented in gallons per capita per day (gpcd).

In 2018, the California State Legislature passed Assembly Bill (AB) 1668 and Senate Bill (SB) 606, directing the State Water Board to adopt efficiency standards and performance measures for commercial, institutional, and industrial (CII) water use. As part of the regulation, urban retail water suppliers—not individual households or businesses—are held to annual urban water use objectives (UWUO). Reporting on UWUO began in 2024.

Highlights of the City's Demand Management Measures



- The City has continued to meet its state-mandated "20x2020" demand reduction target for per capita water use that was set in 2010 and then recalculated in 2015. The City's 2020 water use target was 142 GPCD.
- Due to effective conservation and customer drought responses, the City achieved 112 GPCD in 2025, exceeding the target by 25 percent.
- The City continues to focus on developing long-term water savings through its active conservation and education programs.

5.1 BASELINE DAILY PER CAPITA WATER USE

In the 2010 UWMP, the City was required to develop a baseline for per capita water use. The baseline daily per capita water use in each of the baseline years is calculated by dividing the fiscal year (FY) Gross Water Use by the service area population. "Gross Water Use" is the total volume of water, whether treated or untreated, entering the distribution system of an urban retail water supplier with certain acceptable exclusions.

Following Department of Water Resources (DWR) requirements, the City estimated a 10-year (1996 to 2005) and a five-year (2004 to 2008) baseline per capita water use. The baseline per capita water use estimates in the 2010 UWMP were based on preliminary 2010 Census population data. In the 2015 UWMP, these baseline estimates were recalculated using the formal 2010 Census population data with the DWR Population Tool developed in 2015. In the 2015 UWMP, the adjusted 10-year and five-year baseline per capita water use figures were estimated at 171 gpcd and 163 gpcd, respectively. The baseline daily per capita water use was not updated in the 2020 UWMP nor in this 2025 UWMP per DWR Guidelines. These baselines are used to determine the per capita water use targets.

5.2 PER CAPITA WATER USE TARGETS

SB X7-7 requires urban water suppliers to determine per capita water use targets for comparison against actual per capita water use to demonstrate compliance. In 2005, DWR developed four different technical methods to determine the 2020 per capita water use target:

- Method 1: Estimate per capita water use targets by calculating 80 percent of the urban retail water supplier's baseline, using a 10- to 15-year average.
- Method 2: Determine per capita daily water using a sum of defined performance standards. This method requires the sum of water use in indoor residential and landscaped areas, as well as a 10 percent reduction in CII water use.
- Method 3: Calculate 95 percent of the applicable hydrologic regional target as presented in the DWR Guidebook (DWR, 2009).
- Method 4: Estimate water savings obtained through identified practices and subtract them from the baseline annual daily per capita water use. Agencies that use this method must use the prescribed procedures identified by DWR and utilize the Method 4 Calculator.

The City selected Method 3 in the 2015 UWMP to establish its 2020 per capita water use target. The City is in DWR's South Coast Hydrologic Region Number 4, which has an applicable hydrologic regional target of 149 gpcd. Under Method 3, the 2020 target is 95 percent of 149 gpcd, which is 142 gpcd.

5.3 2020 TARGET COMPLIANCE

Table 5-1 contains a summary of the City's actual per capita water use since 2020 compared to the 2020 water use target. As shown, the City has continued to meet water use target compliance requirements.

Table 5-1 SB X7-7 Water Conservation Act Compliance Summary

Fiscal Year	2020 Target (gpcd)	Actual Use (gpcd)	In Compliance?
2020	142	109	Yes
2021		115	Yes
2022		116	Yes
2023		107	Yes
2024		106	Yes
2025		112	Yes
Notes: Source: City metering and population data.			

Figure 5-1 presents the City's historical annual production, average annual per capita water use, and the 2020 water use target. The impact of the City's conservation programs and the City's residents' participation is clearly shown in the decline in water use over the years (**Figure 5-1**).

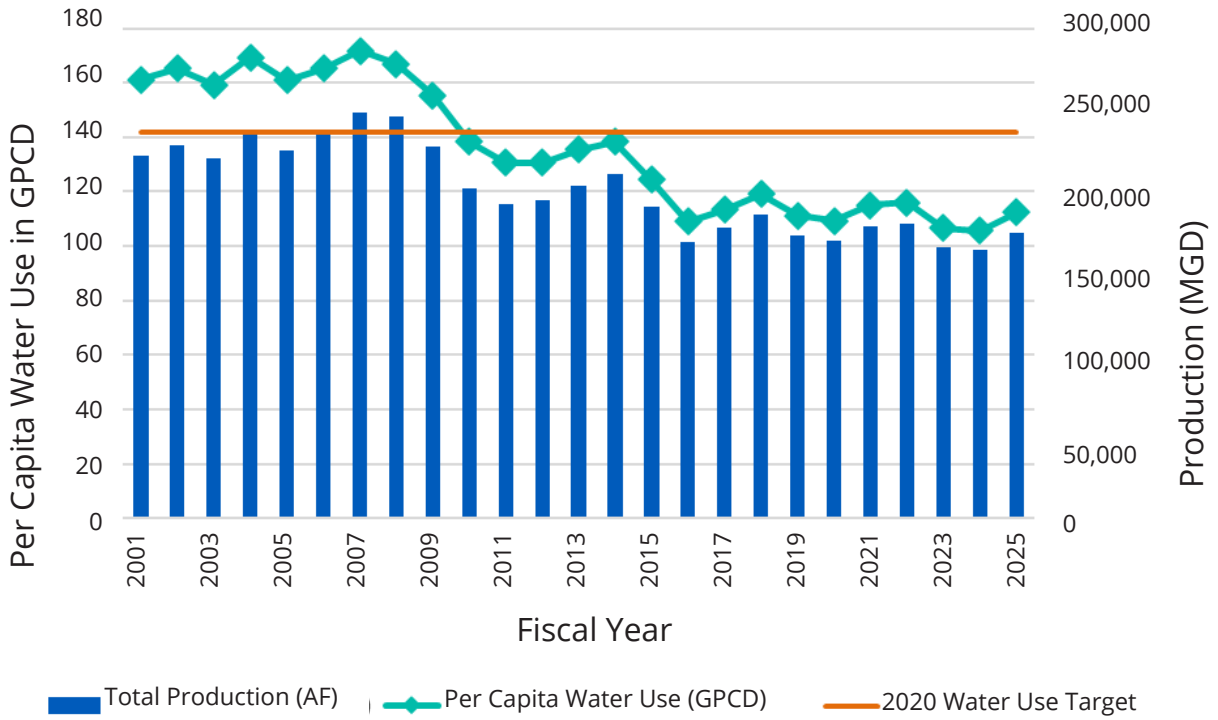


Figure 5-1 Historical Annual Production, Annual Per Capita Water Use, and Per Capita Water Use Targets

5.4 WATER CONSERVATION TARGETS BEYOND 2020

With the passage of AB 1668 and SB 606, the State Water Board adopted efficiency standards and performance measures for CII water use. The regulation (Title 23, section 965 et seq.) gives suppliers significant flexibility to meet objectives in a way that works best for the unique characteristics of the supplier's service area and to implement locally appropriate solutions. To meet annual objectives, suppliers may use a wide variety of tools to encourage customers to use water wisely. Water suppliers are required to calculate an UWUO based on the following components annually:

- Indoor residential water use
- Outdoor residential water use
- Outdoor CII water use
- Water losses
- Adjustments if applicable: variances, temporary provisions, and/or bonus incentive for potable reuse

UWUO reporting started in 2024. Each November, the City will submit a report to DWR on the actual urban water use, CII water use performance measure implementation, and progress towards the UWUO. AB 1668 and SB 606 require compliance with the regulations and meeting the UWUO by 2027. **Table 5-2** contains the City's UWUO FY 2024 report, which shows that the City is already in compliance. The components of the UWUO, and the City's corresponding water use estimate for each component, are briefly described below in Sections 5.4.1 through 5.4.5. The complete City's 2024 UWUO Report is included in **Appendix G**. The FY 2024 UWUO report used the AWWA Water

Audit loss information. In the future, the City will prepare a more accurate water loss estimate for the UWUO reporting using metered data to determine system water loss.

Table 5-2 Urban Water Use Objective Summary FY 2024

Urban Water Use	Water Use (AF)	UWUO (AF)
Total Residential Water Use Indoor + Outdoor	89,783	133,288
Outdoor Irrigation of CII Landscapes Associated with DMMs	17,180	17,180
System Water Loss	13,254	13,254
Water Use Components Sum for Comparison	**120,218**	**163,722**
Compliance	Yes	
Notes: AF - acre-feet; DMMs - demand management measure		

5.4.1 INDOOR RESIDENTIAL WATER USE

The Indoor Residential Standard is the maximum allowed indoor water use measured in gpcd. It is intended to represent efficient use. The standard will decrease over time, as shown in **Table 5-3**. The City's indoor residential water use is estimated to be 45 gpcd. As such, the City is in compliance with the UWUO allowable goal of 47 gpcd through year 2029. It has been assumed that the indoor residential use will remain static over the planning period.

5.4.2 OUTDOOR RESIDENTIAL WATER USE

The outdoor water budget consists of a supplier's residential landscape area, an efficiency standard, and a climate factor reflective of a supplier's unique service area conditions, including a reference evapotranspiration (Eto) and effective precipitation.

Table 5-3 Indoor Residential Standard By Year – Urban Water Use Objectives

Compliance Year	Allowable Indoor Residential Standard (gpcd)
2020-2024	55
2025-2029	47
2030 Onward	42
Notes: gpcd – gallons per capita per day	

5.4.3 OUTDOOR COMMERCIAL, INDUSTRIAL, AND INSTITUTIONAL WATER USE

The CII dedicated irrigation meter (DIM) water budget is like the outdoor residential water use calculation; however, it considers special landscape areas that can include:

- Edible plants
- Recreation
- Recycled water
- Slopes with live vegetation
- Ponds or lakes for sustaining wildlife
- Plant collections, botanical gardens, and arboretums
- Public pools
- Cemeteries (built before 2015)

5.4.4 WATER LOSS

The water loss standard is the maximum allowable "real" water loss measured in gallons per connection per day for each supply system in an urban water supplier's service area. The standards are intended to represent cost-effective real water loss. Real losses can be defined as the volume of annual leakage due to physical water leakage in a supplier's distribution system.

The water loss budget (in gallons) is calculated by multiplying the water loss standard by the number of service connections or miles of distribution system piping over a year.

5.4.5 ADJUSTMENTS

Adjustments can be made to the UWUO if applicable. The adjustments can include variances, temporary provisions, and bonus incentives. A variance or temporary provision must receive prior approval by submitting a request to the State Water Board. Some examples of variances include:

- Significant use of evaporative coolers
- Significant populations of horses and other livestock
- Significant fluctuations in seasonal populations
- Significant landscaped areas irrigated with recycled water having high levels of total dissolved solids
- Significant use of water to supplement ponds and lakes to sustain wildlife
- Significant use of water to irrigate vegetation for fire protection
- Significant use of water for commercial or noncommercial agricultural use

The bonus incentive is for urban water suppliers that deliver water from a source that is augmented by potable reuse water. The bonus incentive serves to increase a supplier's water use objective by a volume equal to the volume of potable reuse delivered to residential water users and to CII irrigation. The bonus incentive cannot exceed:

- 15 percent of the supplier's UWUO for any potable reuse water produced at an existing facility.
- 10 percent of the supplier's UWUO for any potable reuse water produced at a new facility.

Pure Water San Diego will allow the City to claim the bonus incentive in the future, furthering the conservation efforts of the City. The City will be allowed to add 10 percent to the UWUO in the future.

5.4.6 CII PERFORMANCE MEASURES

All urban water suppliers will also be required to meet a list of performance measures designed to result in CII water users using water more efficiently. These performance measures are intended to enable water-usage benchmarking per CII classification category as well as establish best management practices (BMPs) for indoor and outdoor CII water use.

The following CII performance measures are currently being offered by the City:

- Irrigation system inspections, audits, and surveys
- Training and guidance on irrigation scheduling and maintenance
- Programs to remove turf and replace it with climate-ready vegetation

5.5 CITY'S WATER CONSERVATION PROGRAM

In 1985, the San Diego City Council officially established the City's Water Conservation Section to reduce San Diego's dependency on imported water and secure a sustainable water future through conservation. The Water Conservation Section within the City of San Diego Public Utilities Department (PUD) has been the steward of community assistance and education regarding Water Use Efficiency (WUE) programs.

Innovative programs, such as turf replacement, rain harvesting, and residential/commercial surveys, have provided customers with direct participation in water conservation efforts. Financial incentives associated with the innovative programs encourage water-saving practices. In all its conservation programs, the City will avoid placing a disproportionate burden on any customer sector.

The types of water conservation programs currently employed by the City to reduce water supply needs and continue to meet the City's UWUOs are summarized in **Table 5-4**.

Table 5-4 Active Water Conservation Programs

City Water Conservation Programs
Water Waste Prevention Ordinances
Public Education and Outreach
Metering
Volumetric Water Use Pricing
Distribution System Audits, Leak Detection, and Repair
Water Conservation Surveys
Water Conservation Rebates and Incentives

5.5.1 WATER WASTE PREVENTION ORDINANCES

To further water conservation in San Diego, the San Diego Municipal Code (SDMC) has water waste prevention ordinances to mandate year-round permanent water restrictions (SDMC 67.38).

The permanent water waste prohibitions and drought alert restrictions are detailed in the Water Shortage Contingency Plan **(Appendix C**). SDMC 67.38 describes the permanent Water Waste restriction and various levels of drought response requiring progressively increased levels of water use restrictions (**Appendix H**). This ordinance is in place at all times and is not dependent upon a water shortage for implementation. These restrictions are designed to promote water conservation as a permanent way of life in San Diego. Examples include provisions that customers shall not:

- Allow potable water used for irrigation to cause runoff
- Overfill swimming pools
- Wash down sidewalks or driveways without a hose with a shutoff nozzle

5.5.2 PUBLIC EDUCATION AND OUTREACH

Over the years, the City has expanded its successful public outreach and education campaign. As the City emerged from the 2007 to 2009 drought, the Mayor called for an end to mandatory water use

restrictions. With this directive, an adjustment in messaging through the *San Diegans Waste No Water* campaign affirmed: (1) San Diegans were effective in their efforts to reduce water use, and (2) this was a collective effort, recognizing that San Diegans came together to achieve necessary conservation. This shift allowed messaging to focus on long-term behavior changes and the development of a sustained water use ethic to help prolong the savings realized from 2009 to 2011. In 2012, the *San Diegans Waste No Water* campaign was refocused to increase awareness of drought, its severity, and the City's enforcement activities. Its objectives focused on:

- Educating residents about the state-mandated water use restrictions and the enforcement actions of the City
- Repositioning conservation from a penalty to a long-term way of life
- Reinforcing actions citizens could take to minimize drought impacts

Since that time, in alignment with the ongoing S*an Diegans Waste No Water* messages of the City, complementary drought response messages from the San Diego County Water Authority's (SDCWA's) *When In Drought* campaign and the state's *Making Conservation a California Way of Life* have collectively communicated the drought message to San Diegans.

The *San Diegans' Waste No Water* campaign and continued conservation programs have demonstrated the City's sustained leadership and commitment to promoting the use of water in the most efficient ways possible to meet the near-term and long-term water use reduction goals. The community's overall response to the message has been positive.

The following sections address the basic and unique methods the City employs to increase awareness of the drought, water use restrictions, and water conservation.

Basic Public Education and Outreach Methods

The City uses the following outreach methods to educate customers on mandatory water use restrictions and conservation while engaging residents to participate directly in water conservation efforts:

- Bill inserts reminding customers of the mandatory water use restrictions
- Campaign posters and materials at all the City's PUD office counters
- Billboards throughout the City focused on communicating limits on watering days, watering at the right time of day, and fixing leaks
- *Waste No Water* banners at the City's recreation centers
- May "Water Awareness Month" can include classes, events, and activities, such as plant fairs at local nurseries, water conservation story hours at public libraries and bookstores, City-sponsored California Friendly Landscape classes, and exhibits at various street fairs and community events
- Presentations delivered by the City to community, professional, civic, and business groups
- Information booths at many community events, including the Del Mar Fair, San Diego Fall and Spring Home and Garden Shows, December Nights, Earth Fair, numerous street fairs, and several events held at the regional Water Conservation Garden at Cuyamaca College (The Garden)
- Press releases include the campaign slogan and website reference, https://www.sandiego.gov/public-utilities/sustainability/water-conservation

To address droughts over the last two decades, the City mounted an advertising campaign highlighting the mandatory water use restrictions that targeted single-family homeowners, adults over 35 years old, and people with interests in landscaping and home improvement. The City purchased and strategically placed advertising in the following media:

- English-language print ads in The San Diego Union-Tribune and San Diego Magazine, and Spanish-language print ads in El Latino/Enlace and La Prensa
- Internet advertising on City, KFMB, and The San Diego Union-Tribune websites
- Public service announcements on City TV, Cox Media's 16 cable channels, KFMB TV, and local radio stations

Unique Public Education and Outreach Methods

To reach the public, the City pursued a variety of unique advertising strategies with high visibility at key community locations in San Diego. These efforts, which sought to embed the *Waste No Water* ethic in neighborhoods and social networks, helped to develop a social norm that would be continually reinforced. These efforts included the following:

- In partnership with the Metropolitan Transit System, the City wrapped trolleys and buses in water conservation messaging. On trolleys, this advertising ran on all three trolley lines (Orange, Blue, and Green). On buses, routes were chosen for bus wraps to reach all Council districts. Both attracted the attention of daily trolley and bus riders and passersby, including large crowds attending community events, such as Comic-Con, Padres games, and Charger games
- Multiple billboards throughout the City
- Posters strategically placed at entrances to major shopping malls in the City
- Promoting the conservation message through proven community-based social marketing techniques, such as:
  - Social media posts that helped build a community norm via peer-to-peer stories and ads
  - Web videos showing conservation commitments from various local leaders and community groups
  - A smartphone app that communicated key messages and allowed residents to report observed water waste easily. This app, the *Get It Done* app, is discussed in more detail later in this section
- The City worked with local large universities and student sustainability clubs to promote the conservation message
- Grass replacement incentives and residential survey programs to help customers achieve significant water use reductions

Besides educating students through poster and film contests, the City applies additional methods to educate students in San Diego, Coronado, and Imperial Beach. In partnership with the SDCWA, students have access to resources including a DVD titled "Be Water Smart", posters titled "Water Supply" and "Water Cycle", water quality testing kits for high school classroom use, a self-contained mobile lab named "Splashlab" that provides students with a hands-on science experience, and theater programs titled "Waterology" and "H2O, Where Did You Go?".

5.5.3 METERING

All of the City's approximately 370,000 customers are metered and are billed on a monthly basis. Billing for actual water use provides a strong incentive for customers to use less water and equalizes service costs for each customer to their actual use. The City actively implements an Advanced Metering Infrastructure (AMI) Program to improve the accuracy of meters and reduce apparent water losses.

Sub-Metering Ordinance

The City enacted a sub-metering ordinance on June 1, 2010, that requires sub-meters to be installed in every new multi-unit building with at least three units and to install sub-meters whenever an existing multi-unit building with at least three units replaces its entire interior potable water supply piping. Metering each unit separately allows residents to better understand their water use and to be billed on actual consumption instead of a fixed amount or rate based on the unit's square footage. The sub-metering ordinance provides a financial incentive for residents living in multifamily properties to conserve water.

5.5.4 VOLUMETRIC WATER USE PRICING

Water conservation is encouraged through a pricing system that rewards customers who use less water with financial incentives, while high-water users are charged a higher rate. This is typically implemented through a tiered pricing system.

The City's consumption-based tiered pricing system consists of five main categories: (1) single-family residence (SFR) customers, (2) multifamily residence (MFR) customers,
(3) commercial/industrial/outside the City customers, (4) irrigation customers, and (5) temporary construction customers. For each category, a base monthly meter fee plus a fee based on actual water use is billed monthly. The rate structure also includes a pass-through adjustment from the SDCWA that applies to all water users, to pay for increases in the cost of imported water supplies.

5.5.5 DISTRIBUTION SYSTEM REAL LOSS

This program focuses on the water distribution system itself and includes water audits, leak detection, and repair. The first step in a water audit is relatively straightforward, involving a comparison of the amount of water produced with the amount of water delivered to customers. The difference is termed unaccounted-for-water which includes actual losses (leaks) in the distribution system, authorized but unmetered use (e.g., hydrant flushing and firefighting), unauthorized water use, and meter inaccuracies.

The City's ongoing water main replacement program is reducing water loss by replacing leaking pipes and water service connections.

The public participates directly in reducing distribution system losses by submitting reports of leaks and complaints regarding a potential water leak through the *Get It Done* app and the City's website. The City takes swift action to identify and repair the given leak as warranted.

5.5.6 WATER CONSERVATION PROGRAM COORDINATION

The Water Conservation Section within PUD researches, develops, implements, and administers the City's Water Conservation Program. The Section collaborates with regional and state agencies and boards to review upcoming legislation and develop innovative water conservation programs and concepts for customers. The Section also participates in professional organizations, nonprofit groups, and a regional Water Conservation Garden.

The Water Conservation Section has been the primary steward in the City's efforts to comply with water use targets, as well as the mandatory water use reductions enacted in response to the state-mandated conservation efforts. To meet established goals, the following sections detail specifics about the Section's ongoing water conservation offerings and initiatives.

5.5.7 WATER CONSERVATION PROGRAMS

Residential and Multifamily Water Survey Programs

The City's Residential Water Survey Program offers residential customers (SFR and MFR up to 8 units) a water use survey for the inside and outside of their home. Upon request, a water surveyor visits a customer's home and reviews how to read a water meter, checks water pressure, measures the flow of fixtures such as faucets, showers, and toilets, identifies leaks, inspects the water heater, and provides water conservation tips. If the property is landscaped, the surveyor reviews the irrigation system and landscape plant material and recommends ways to reduce water usage and increase efficiency.

Residential Water Survey

Participants may receive free water-saving devices, such as low-flow showerheads, faucet aerators, a five-minute shower timer, a hose end nozzle, or California native plant seeds. Participants will also receive a summary checklist at the completion of the survey. It is estimated that a typical household might reduce water consumption by 40 to 60 gallons per day (gpd) by implementing the water use efficiency suggestions made during the residential survey.

The City's Multifamily Water Survey Program offers MFR properties with more than eight units complimentary training for property owners and on-site maintenance staff to conduct basic water use evaluations. The water surveyor will train the property manager how to read a water meter, measure the flow fixtures such as faucets, showers, and toilets, identify leaks, and inspect the water heater. If the property is landscaped, the surveyor reviews the irrigation system and landscape plant material and recommends ways to reduce water usage and increase water use efficiency. Participants may receive free water-saving devices, such as showerheads and faucet aerators. Participants will also receive a summary report after submitting data on dwelling units.

Commercial Landscape Survey Programs

Outdoor Water Survey

The City's Commercial Landscape Survey Program (CLSP) has proven to be an outstanding water conservation program targeted to commercial properties across San Diego. The CLSP offers qualifying CII properties with less than one acre of landscaped area a complimentary landscape water use survey. The CLSP provides suggestions on ways to increase irrigation system efficiency and recommends conservation methods and technologies. A final report is provided to the customer that includes water budgets (water use targets) for landscaping that can be used as a guide for setting landscape watering times at the property. It is estimated that many of these properties might reduce water consumption by 20 to 40 percent by implementing the water use efficiency suggestions made during the landscape survey. CII customers with more than one acre of landscaped area are eligible to apply for a complimentary large landscape water use survey.

Water Conservation Rebate Programs

The Water Conservation Section is a multi-source funded program. Typical funding sources include California voter-approved propositions, Metropolitan, the SDCWA, and the Transportation and Stormwater Department's Storm Water Pollution Prevention Program. Rebates are available to residential and commercial customers for indoor and outdoor water conservation projects and devices. The goal is to conserve potable water while also reducing pollutant-laden dry weather runoff into sensitive receiving waters.

The rebate program is run in-house by water conservation staff and offers services including on-site consultation to customers, application and rebate processing, and customer support for landscape projects. The program offers customers rebates for rain barrels and cisterns, rain gutters, downspout redirects, and turf replacement.

Descriptions for each rebate type are detailed below, while 2024 participation is summarized in **Table 5-5**. As shown, in the year 2024 alone, the City was involved in nearly 350 water conservation projects.

Table 5-5 2024 Totals for City Conservation Programs

Program	No. of Projects/Customers
Rain Barrels	54
Rain Gutters	17
Residential Survey Indoor	45
Residential Survey Landscape	40
Residential Survey Indoor/Landscape	122
Turf Replacement	68
Total Number of Projects in 2024	**346**

- Rain Barrels and Cisterns: Rain barrels and cisterns (also referred to as rain tanks) are large containers that capture stormwater from the roof that would otherwise be lost as runoff. They are a simple, efficient, low-cost method to reduce the amount of stormwater runoff from properties. Estimates indicate that a quarter-inch of rain falling on an average home yields more than 200 gallons of water. Rebates are available for rain barrels and cisterns at a rate of $1.50 per gallon of storage capacity, with a total not to exceed $800.

Rain Barrel and Gutter

- Rain Gutters: Rain gutters are used on homes to divert rainwater away from properties to protect roofs and foundations from rainwater accumulation. In addition, gutters are necessary for diverting rainwater into a green space, landscape, or rain barrel. The rain gutter rebate amount is $1.25 per linear foot for aluminum (maximum $312.50), $2.00 per linear foot for steel (maximum $500.00), and $0.25 per linear foot for polyvinyl chloride (PVC) (maximum $62.50) up to 250 linear feet per property.
- Downspout Redirects: A downspout is a pipe that carries rainwater from the rain gutter to a storm drain. A downspout redirect conveys the water to a landscaped area, bioswale, or rain barrel rather than entering the storm drain. The downspout redirect rebate amount is $40 per redirected downspout.
- Landscape Transformation Program or Turf Replacement Program: This program incentivizes residential and commercial customers to replace traditional grass lawns and spray sprinklers with water-efficient California Friendly® and native plants and more water-efficient irrigation systems. Lawns are estimated to require 44 gallons of water per square foot per year. There are various funding sources for this rebate, including the City's Transportation and Storm Water Department, Metropolitan, and SDCWA. The turf replacement rebate amount is $3.00 per square foot up to 5,000 square feet for residential customers and $3.00 per square foot up to 50,000 square feet for commercial customers. Additionally, program applicants are eligible to receive $100 per tree, up to a maximum of five trees.

- SoCal Water$mart Rebates: This program is funded by Metropolitan and provides rebates for additional devices such as high-efficiency toilets, high-efficiency washing machines, and water-wise irrigation equipment.
- Free Compost or Mulch from Miramar Greenery: The Miramar Landfill and Greenery offers products, such as mulch, wood chips, and compost. Mulch is a reliable, cost-effective product for water retention, erosion control, and weed suppression. Up to two cubic yards of self-loaded compost or mulch is available for free to San Diego residents with proof of residency. Additional compost, mulch, and wood chips are available for purchase. These products are used in conjunction with the Turf Replacement Program.

Drought Tolerant Landscaping

Water-Wise Business Surveys

Water-Wise Business Surveys are offered free of charge to all CII customers. The on-site survey includes a customized review of indoor water use, identifying areas where water can be used more efficiently, and a cost analysis of the suggested enhancements. Recommendations can help business customers use water more efficiently and save energy.

Get It Done App for iPhone® & Android®

The City's *Get It Done* app is available for download on iPhones and Android operating systems. The app allows users to upload a photo of a problem or concern and link the address using a GPS system. This information is conveyed to the City's Water Conservation staff for investigation and response. The reporting app also offers users access to online information about the City's water use restrictions, available rebate programs, and other resources.

SoCal Water$mart Rebates

SoCal Water$mart is a residential and commercial rebate program, provided by the Metropolitan and its member agencies which include the SDCWA, for various devices such as high-efficiency toilets and clothes washing machines, smart irrigation controllers or weather-based irrigation controllers (WBICs), rotating sprinkler nozzles, air-cooled ice machines, cooling tower conductivity controllers, and waterless urinals. Funds for these rebates are limited, and a limited number of rebates are offered each year. SoCal Water$mart also offers turf replacement rebates of $3-$5 per square foot for the first 5,000 square feet of turf removed and replaced, with potential additional rebates for trees. Many City customers participate in both the SoCal Water$mart rebate and the City's turf replacement rebate program to combine the incentives for their landscape conversion projects to obtain $6-$8 per square foot of turf removed. Customers apply directly to SoCal Water$mart to obtain a rebate.

General Plan Housing Element

The General Plan's Housing Element is the City's housing plan. As required by the State, the City, along with all California cities and counties, evaluates and plans for the housing needs of the community every eight years. The sixth update of the City's General Plan Housing Element includes an eight-year planning period of 2021-2029 and is also referred to as the 6th Cycle Housing Element.

The plan consists of "Objective Q," which supports policies and programs targeting reduced energy and resource consumption in existing homes. Policy HE-Q.2 promotes and incentivizes energy and resource conservation among homeowners, property owners and managers, and renters. This includes the support and implementation of the UWMP and Conservation Program to develop a comprehensive water storage program and promote voluntary water conservation and retrofitting. Objective Q stresses the importance of promoting programs administered by partner organizations, such as public agencies and nonprofit partners.

The City will continue to support and promote programs such as those of Metropolitan and SDCWA. The City's PUD provides ratepayers with rebates for implementing numerous water conservation practices on their properties.

WUE Devices With Property Resale

To further conserve, the City enacted SDMC 147.04 that requires the replacement of non-compliant WUE devices upon resale of a property.

5.6 MONITORING FUTURE WATER CONSERVATION SAVINGS

The City has continued to meet its 2020 target of 142 gpcd. If the City can maintain current water consumption rates, it will maintain conservation goals. To continue to track water conservation savings and comply with water use targets, the City uses tools such as the Alliance for Water Efficiency's water conservation evaluation tool. This tool is used by the City and SDCWA to project water savings by demand management measures. The water conservation tool is a rolling calculation of water conservation data from 1995 to 2025. The tool is designed to calculate the water saving of devices and projects over a specified life span, which is typically 10 years. The tool allows the City to calculate cost savings of billed usage, as well as review historical, present, and future savings.

5.7 WHOLESALE SUPPLIER ASSISTANCE PROGRAMS

The City participates in conservation programs provided by the SDCWA, which consequently includes Metropolitan's regional programs that SDCWA coordinates on behalf of the member agencies.

The City's wholesale customers, the City of Del Mar and Otay Water District, are member agencies of SDCWA and have access to the programs offered by SDCWA.

Cal-Am, also a wholesale customer of the City, provides its customers with incentives and programs to conserve water.

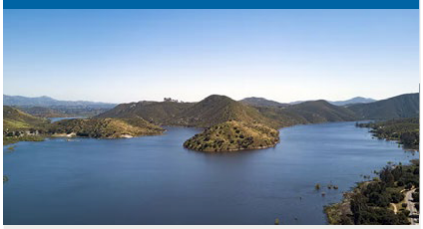
SECTION

6 Water Supply Reliability Assessment

The Urban Water Management Planning Act (Act) requires an agency to prepare a water supply reliability assessment (WSRA) for its future water supply under multiple hydrologic conditions. The hydrologic conditions included in the WSRA are based on historical runoff in the State over the last 30 years or more. **Figure 6-1** presents the California Department of Water Resources (DWR) annual runoff in million acre feet (MAF) for the Sacramento Valley and the San Joaquin Valley from water year 1974 through water year 2024. Water years are used by hydrologists and run from October 1 through September 30 because it is better aligned with the natural water cycle, especially in regions with distinct wet and dry seasons like California. It should also be noted that the hydrology for the entire Sacramento Valley and San Joaquin Valley was used as opposed to Southern California alone because the City of San Diego (City) relies on a combination of local surface water and imported water supplies from Northern California and the Colorado River as described in Section 2.

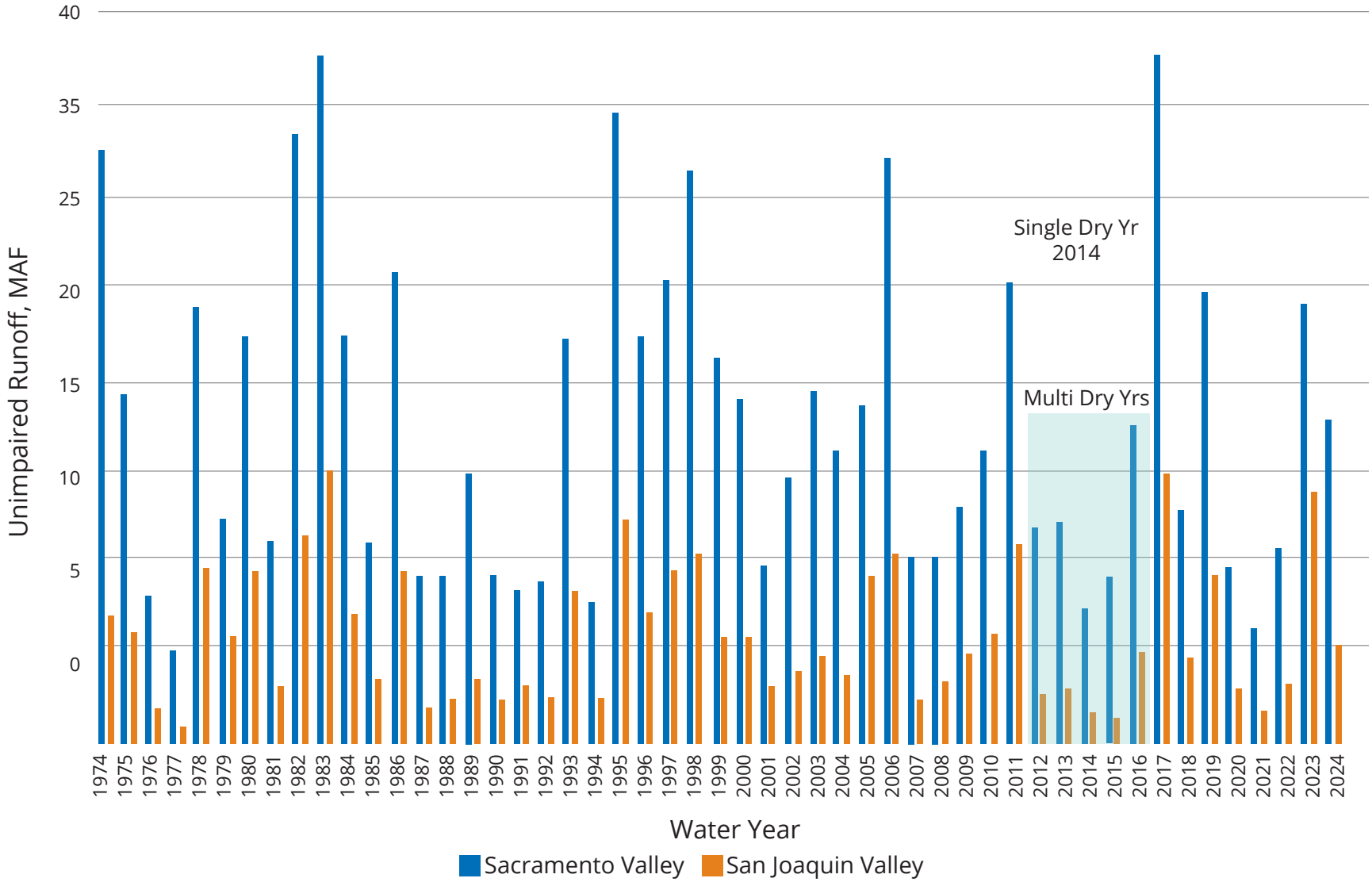
Review of the historical runoff patterns for the Sacramento Valley and the San Joaquin Valley with the State Water Project (SWP) allocation history from 1974 to 2024, and the City's historical local surface water supply confirmed that the water years selected in the 2020 Urban Water Management Plan (UWMP) for the WSRA and the Drought Risk Assessment (DRA) needed to be revised to reflect hydrologic conditions. The hydrologic year types used for the WSRA presented in this section include 1) normal year, 2) single dry year, and 3) multiple dry year conditions, consisting of 5 consecutive dry years. For each of these year types, the hydrologic year, runoff, base years, percentage of the average local surface water supply available, and the demand scaling factors used in the WSRA and DRA are listed in **Table 6-1**. A comparison of the City's historical local and imported supplies to the hydrologic years indicates that the dry water year conditions (low precipitation and low runoff) do not impact the City's local surface water supply usage until the following fiscal year (FY). For example, water year 2014 was the driest water year, but the reduction in local surface water supply occurred in FY 2015. This is why the base year for the supply evaluation is different from the hydrologic year. The determination of the 2025 UWMP year types are detailed below.

Key Highlights



Highlights of the Water Supply Reliability Assessment

- The City has projected the availability of each of its supplies under different hydrologic year types and compared those to projected future water demands.
- The City's investment in a diverse water supply portfolio will result in a total water supply that meets its demands from 2030 to 2050 in all scenarios evaluated.
- Potable reuse, an essentially drought proof supply, will make up half the City's water supply by 2035.
- The WSCP, included as Appendix C, describes how the City will respond to water shortage conditions resulting from a drought, regulatory action, emergency or other event. The WSCP details the actions the City will take to reduce demand over six shortage levels, from a shortage of 10 percent to more than 50 percent.



Source: California Department of Water Resources Sacramento and San Joaquin Valley Unimpaired Runoff by Water Year.

Figure 6-1 Sacramento and San Joaquin Valley Annual Runoff In Water Years 1974-2024

Table 6-1 Supply Reliability Assessment Basis of Water Year

Year Type	Hydrologic Base Water Year(1)	Annual Runoff (MAF)	Base Year for Supply Evaluation(2)	Percent of Average Local Surface Water Supply(3)	Demand Scaling Factor(4)
Normal Year	2010	16.01	2011	100	1.00
Single Dry Year	2014	7.46	2015	26	1.04
Consecutive Dry Years 1st Year	2012	11.84	2013	90	0.96
Consecutive Dry Years 2nd Year	2013	12.19	2014	97	1.01
Consecutive Dry Years 3rd Year	2014	7.46	2015	26	1.04
Consecutive Dry Years 4th Year	2015	9.23	2016	57	0.95
Consecutive Dry Years 5th Year	2016	17.48	2017	64	0.84

Notes:
(1) Hydrologic water year with runoff volume and year type designation that meets the DWR definition of the year types.
(2) The fiscal year in which the local supply was impacted by the hydrologic water year. For example, water year 2014 was the driest hydrologic water year, but the reduction in local surface water supply usage occurred in FY 2015.
(3) Percentage of the local supply for each base year compared to the normal year supply. This is used to project the supply in the reliability assessment.
(4) The ratio of historical demand for each base year to the normal year demand. This is used to project the demand in the reliability assessment.

In each reliability analysis, the percent of average supply in **Table 6-1** is used to scale the projected local surface water supplies, and the demand scaling factor is used to scale the water demands. This represents an increase or decrease in water demands and supply for the hydrologic conditions experienced. For example, water demands tend to be higher in dry and hot years, resulting in a factor greater than 1.0. Likewise, water demands are typically lower in wet and cool years, which yield a factor less than 1.0, whereas average demands have a factor of 1.0. A demand factor of less than 1.0 could also reflect the conservation efforts of the City and residents during multiple dry years.

6.1 NORMAL YEAR WATER DEMAND TO SUPPLY COMPARISON

The "average" or "normal" year represents the average water supply available to the City, which most closely represents median runoff levels and patterns over the previous 30 years or more. The hydrologic water year of 2010 closely represents the median runoff in the 50-year period from 1974 to 2024.

At Lindbergh Field in San Diego, the water year 2010 precipitation was 98 percent of normal precipitation making 2010 the closest water year to normal precipitation between 2000 and 2024, confirming the selection of water year 2010 as the base for normal year.

As mentioned earlier, the normal or average hydrologic year would have a factor of 1.0 applied to the projected water demands; thus, the projected demand totals over the planning period presented in Section 3 remain unchanged for the normal year evaluation due to the factor of 1.0.

The future local surface water supply was estimated based on the historic average supply from the reservoirs. The potable reuse Pure Water San Diego Program Phase 1 and Phase 2 are included in the table. Phase 2 is currently planned to start in 2035. Groundwater storage will vary with rainfall, as that is the primary groundwater recharge mechanism. Because the forecasted groundwater supply is small compared to the available local surface water storage capacity and other supplies, it is assumed to be constant in the reliability analysis. Refer to Section 4 for further information on water supplies. **Table 6-2** presents the comparison of demands and supplies at five-year increments through 2050 for a "Normal" year for retail and wholesale.

The City's wholesale customers have service areas that are relatively built out and no significant growth is expected. While wholesale demands have declined slightly over the past years, a conservative approach was adopted to assume demands remain constant in the future.

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

Demand/Supplies	Demand and Supplies (AF)				
	2030	2035	2040	2045	2050
Retail Water Demand(1)	162,888	163,700	165,207	167,074	167,637
Wholesale Water Demand	10,622	10,622	10,622	10,622	10,622
Total Water Demands	**173,510**	**174,322**	**175,829**	**177,696**	**178,259**
Local Water Supplies					
Local Surface Water(2)	29,875	29,875	29,875	29,875	29,875
Groundwater	100	100	100	100	100
Potable Reuse Pure Water San Diego Phase 1	33,600	33,600	33,600	33,600	33,600
Potable Reuse Pure Water San Diego Phase 2	0	59,368	59,368	59,368	59,368
Subtotal Local Supplies	63,575	122,943	122,943	122,943	122,943
Imported Water SDCWA(3)	109,935	51,379	52,886	54,753	55,316
Total Water Supplies	**173,510**	**174,322**	**175,829**	**177,696**	**178,259**

Notes
(1) Includes retail demand, non-revenue water, and conservation.
(2) Includes City-Lake Cuyamaca Interagency Agreement 400 AFY.
(3) Imported water adjusted to meet forecast demands for retail and wholesale. Only City local supplies are provided to Cal-Am wholesale.

6.2 SINGLE DRY YEAR WATER DEMAND TO SUPPLY COMPARISON

The "single dry" year comparison represents the driest water year resulting in the lowest water supply available to the City and the highest demands. The single dry year comparisons are based on the dry hydrologic year conditions of 2014. As mentioned previously, FY 2015 was used to determine the supply and demand scaling factors for projections. This results in a 26 percent of normal supply and an increased demand factor of 1.04 (or 104 percent) as listed in **Table 6-1**.

A comparison of single dry year water demand and supply at five-year increments through 2050 is provided in **Table 6-3** for retail and wholesale. As shown, the City's demand in single dry years is

projected to be 4 percent higher, which is mostly attributed to an increase in demand for landscape irrigation. Meanwhile, local surface water supply is assumed to be 6,680 acre-feet (AF) compared to 29,875 AF in normal years based on the actual local surface water supply captured and used in 2015 plus 400 acre-feet per year (AFY) from the City-Lake Cuyamaca Interagency Agreement.

Table 6-3 Single Dry Year Demand vs. Supply for the City

Demand/Supplies	Demand and Supplies (AF)				
	2030	2035	2040	2045	2050
Retail Water Demand[1,3]	169,403	170,248	171,815	173,757	174,343
Wholesale Water Demand	11,047	11,047	11,047	11,047	11,047
Total Water Demands	**180,450**	**181,295**	**182,862**	**184,804**	**185,390**
Local Water Supplies					
Local Surface Water[2]	6,680	6,680	6,680	6,680	6,680
Groundwater	100	100	100	100	100
Potable Reuse Pure Water San Diego Phase 1	33,600	33,600	33,600	33,600	33,600
Potable Reuse Pure Water San Diego Phase 2	0	59,368	59,368	59,368	59,368
Subtotal Local Supplies	40,380	99,748	99,748	99,748	99,748
Imported Water SDCWA[4]	140,070	81,547	83,114	85,056	85,642
Total Water Supplies	**180,450**	**181,295**	**182,862**	**184,804**	**185,390**

Notes:
(1) Includes retail demand, non-revenue water, and conservation.
(2) Includes City-Lake Cuyamaca Interagency Agreement 400 AFY.
(3) Single dry year demands are assumed to be 4 percent higher than normal year demands per Table 6-1.
(4) Imported water adjusted to meet forecast demands for retail and wholesale. Only City local supplies are provided to Cal-Am wholesale.

Groundwater supplies are assumed to remain constant for the reason stated in Section 6.1. Future demand in the single dry year is estimated using the scaling factors in **Table 6-1**. Demand reductions due to water shortage stage rationing measures are not included in the single dry-year demand estimates.

As shown in **Table 6-3**, it is projected that in 2050 the City would need to import 85,642 AF from San Diego County Water Authority (SDCWA) in a single dry year, compared to 55,316 AF under normal year conditions (**Table 6-2**). Hence, this is an increase of approximately 54.82 percent.

6.3 MULTIPLE DRY YEAR WATER DEMAND TO SUPPLY COMPARISON

The multiple dry year comparison represents the combination of the lowest water supply available with the highest forecasted demand for five consecutive years. The multiple dry year comparisons are based on the driest five-year hydrological conditions of 2012 through 2016, corresponding to demand scaling factors of 0.96, 1.01, 1.04, 0.95, and 0.84, respectively (**Table 6-1**). Note that year 3 reflects the single dry year conditions above within the driest five consecutive years.

Table 6-4 presents the sequential five-year dry year hydrology comparison of demand and supply at five-year increments through 2050 for retail and wholesale. The City's demand in multiple dry years is projected to be higher at the beginning of the five-year cycle and then reduce as conservation efforts are enforced due to continued drought conditions. As shown, local surface water supplies in this 5-year period range from 23,820 AF in Year 2 to 6,680 AF in Year 3, compared to 29,875 AF in normal years.

Table 6-4 Multiple Dry Year Demand vs. Supply for the City

Demand/Supplies	Demand and Supplies (AF)				
	2030	2035	2040	2045	2050
Dry Year 1					
Retail Water Demand[1,3]	156,372	157,152	158,599	160,391	160,932
Wholesale Water Demand	10,197	10,197	10,197	10,197	10,197
Total Water Demands	**166,569**	**167,349**	**168,796**	**170,588**	**171,129**
Local Water Supplies					
Local Surface Water[2]	22,018	22,018	22,018	22,018	22,018
Groundwater	100	100	100	100	100
Potable Reuse Pure Water San Diego Phase 1	33,600	33,600	33,600	33,600	33,600
Potable Reuse Pure Water San Diego Phase 2	0	59,368	59,368	59,368	59,368
Subtotal Local Supplies	55,718	115,086	115,086	115,086	115,086
Imported Water SDCWA[4]	110,851	52,263	53,710	55,502	56,043
Total Water Supplies	**166,569**	**167,349**	**168,796**	**170,588**	**171,129**
Dry Year 2					
Retail Water Demand[1,3]	164,517	165,337	166,859	168,745	169,314
Wholesale Water Demand	10,728	10,728	10,728	10,728	10,728
Total Water Demands	**175,245**	**176,065**	**177,587**	**179,473**	**180,042**
Local Water Supplies					
Local Surface Water[2]	23,820	23,820	23,820	23,820	23,820
Groundwater	100	100	100	100	100
Potable Reuse Pure Water San Diego Phase 1	33,600	33,600	33,600	33,600	33,600
Potable Reuse Pure Water San Diego Phase 2	0	59,368	59,368	59,368	59,368
Subtotal Local Supplies	57,520	116,888	116,888	116,888	116,888
Imported Water SDCWA[4]	117,725	59,177	60,699	62,585	63,154
Total Water Supplies	**175,245**	**176,065**	**177,587**	**179,473**	**180,042**
Dry Year 3					
Retail Water Demand[1,3]	169,403	170,248	171,815	173,757	174,343
Wholesale Water Demand	11,047	11,047	11,047	11,047	11,047
Total Water Demands	**180,450**	**181,295**	**182,862**	**184,804**	**185,390**
Local Water Supplies					
Local Surface Water[2]	6,680	6,680	6,680	6,680	6,680
Groundwater	100	100	100	100	100
Potable Reuse Pure Water San Diego Phase 1	33,600	33,600	33,600	33,600	33,600
Potable Reuse Pure Water San Diego Phase 2	0	59,368	59,368	59,368	59,368
Subtotal Local Supplies	40,380	99,748	99,748	99,748	99,748
Imported Water SDCWA[4]	140,070	81,547	83,114	85,056	85,642
Total Water Supplies	**180,450**	**181,295**	**182,862**	**184,804**	**185,390**

Table 6-4 Multiple Dry Year Demand vs. Supply for the City *(continued)*

Demand/Supplies	Demand and Supplies (AF)				
	2030	2035	2040	2045	2050
Dry Year 4					
Retail Water Demand[1,3]	154,743	155,515	156,947	158,720	159,255
Wholesale Water Demand	10,091	10,091	10,091	10,091	10,091
Total Water Demands	**164,834**	**165,606**	**167,038**	**168,811**	**169,346**
Local Water Supplies					
Local Surface Water[2]	14,056	14,056	14,056	14,056	14,056
Groundwater	100	100	100	100	100
Potable Reuse Pure Water San Diego Phase 1	33,600	33,600	33,600	33,600	33,600
Potable Reuse Pure Water San Diego Phase 2	0	59,368	59,368	59,368	59,368
Subtotal Local Supplies	47,756	107,124	107,124	107,124	107,124
Imported Water SDCWA[4]	117,078	58,482	59,914	61,687	62,222
Total Water Supplies	**164,834**	**165,606**	**167,038**	**168,811**	**169,346**
Dry Year 5					
Retail Water Demand[1,3]	136,826	137,508	138,774	140,342	140,815
Wholesale Water Demand	8,922	8,922	8,922	8,922	8,922
Total Water Demands	**145,748**	**146,430**	**147,696**	**149,264**	**149,737**
Local Water Supplies					
Local Surface Water[2]	15,789	15,789	15,789	15,789	15,789
Groundwater	100	100	100	100	100
Potable Reuse Pure Water San Diego Phase 1	33,600	33,600	33,600	33,600	33,600
Potable Reuse Pure Water San Diego Phase 2	0	59,368	59,368	59,368	59,368
Subtotal Local Supplies	49,489	108,857	108,857	108,857	108,857
Imported Water SDCWA[4]	96,259	37,573	38,839	40,407	40,880
Total Water Supplies	**145,748**	**146,430**	**147,696**	**149,264**	**149,737**

Notes:
(1) Includes retail demand, non-revenue water, and conservation.
(2) Includes City-Lake Cuyamaca Interagency Agreement 400 AFY.
(3) Multiple dry year demands are adjusted for each consecutive year as listed in Table 6-1.
(4) Imported water adjusted to meet forecast demands for retail and wholesale. Only City local supplies are provided to Cal-Am wholesale.

As shown in **Table 6-4**, it is projected that in a multiple dry year sequence, the City would need to import as much as 85,642 AF from SDCWA (in Year 3) under 2050 demand conditions, compared to 55,316 AF under normal hydrologic conditions under 2050 demand conditions (**Table 6-2**). Hence, this is an increase of approximately 54.82 percent.

6.4 FACTORS AFFECTING SUPPLY RELIABILITY

This section summarizes the factors that can reduce water supply reliability. For the City, these factors vary and are dependent on supply source, hydrologic conditions, climate change, and non-environmental impacts (e.g., regulatory, jurisdictional, and contractual).

For example, regulatory restrictions to protect Northern California fisheries create uncertainties on importing water from the Delta, which impacts the water supply available for export via the SWP. This impacts Metropolitan Water District of Southern California's (Metropolitan's) supply and consequently the SDCWA supplies, which impacts the supply available to the City.

On a regional scale, the 2017 heavy rainfall in Northern California nearly compromised the Oroville Dam, which could have had devastating effects on all the SWP contractors and ultimately impacted the City. On a local scale, heavy rainfall events in the San Diego region can cause landslides and severe erosion that can physically damage infrastructure and the availability of supplies. Moreover, aging infrastructure poses risk of failures of dams or storage reservoirs, treatment facilities, transmission or distribution pipelines, and pump stations.

The City continues to invest in supply diversification (e.g., Pure Water San Diego Program), emergency supply actions, climate change resilience measures, conservation efforts, and water infrastructure rehabilitation to account for these factors that could impact water supply. The following sections present factors by supply source that could impact the City's water supplies. Refer to Section 4 for more details on supply.

6.4.1 IMPORTED SUPPLIES

The United States Bureau of Reclamation (USBR) San Diego Basin Study (USBR, 2021) states that the reliability of imported water deliveries in the San Diego region is uncertain due to recurring droughts in northern California and the Colorado River Basin, regulatory restrictions related to endangered species in the Delta, the potential for catastrophic events, and climate change. The key factors affecting the supply reliability of the Colorado River Aqueduct (CRA) and SWP are summarized below.

Colorado River

Through a combination of historical drought conditions, environmental and ecosystem degradation, and a severe decrease in water quality to downstream users, the USBR has prompted the need for operational changes to preserve Colorado River water supplies.

In April 2019, the lower basin Drought Contingency Plan was finalized, which curtails deliveries to contribute additional water to Lake Mead Storage at specific "trigger" levels (1,045 feet). This reduction in water deliveries to California and other states aims to prevent Colorado River reservoirs from reaching critically low levels.

Since 2020, falling water levels in Lake Mead and Lake Powell have resulted in the USBR implementing Lower Colorado River Basin delivery curtailments to mitigate dangerously low reservoir levels. In 2022, Lake Mead saw its lowest level on record, dropping to approximately 1,041 feet, which is less than 30 percent full. As of 2025, these curtailments and favorable hydrologic conditions have increased reservoir levels from the historic 2022 lows but remain well below the historical average level. In May 2025, Lake Mead's water level was recorded at 1,229 feet, but the USBR expects its elevation to drop to 1,055 feet by the end of 2025, potentially triggering reductions.

Lake Mead

Ongoing declines in Colorado River reservoir storage volumes have highlighted the need for near-term operational changes to protect Colorado River storage volumes.

Several reservoir and water management decisional documents and agreements that govern the operation of the Colorado River facilities and management of the Colorado River are scheduled to expire at the end of 2026. As of now, the "Near Term Operations," which follow the 2023/2024 Environmental Impact Statement by the USBR, define curtailments for CRA users. The USBR is currently preparing alternatives for long-term operations of the Colorado River, (post 2026) considering delivery allocations being dependent on combinations of basin-wide or reservoir specific combined storage volumes. These alternatives are not finalized and are still in discussion with the users and USBR. Reductions in supplies from the Colorado River to California users would ultimately reduce deliveries to Metropolitan and the SDCWA, and therefore the City.

As climate change further stresses the Colorado River and population continues to grow across the West, leaders from the seven Colorado River Basin states are negotiating new post-2026 operating guidelines for the river system to address a drier future. The negotiations will continue for several years until new guidelines are finalized and adopted by the Secretary of the Interior for implementation in 2027.

State Water Project

The SWP has also experienced reductions in allocations due to drought conditions and regulatory restrictions. Furthermore, aging infrastructure and varying climate conditions (e.g., reduced snowpack) have created operational challenges that require ongoing attention.

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.

Aerial view of the Sacramento-San Joaquin River Delta

With the end of the last drought declared by the State in 2019, significant rainfall seasons in 2017, 2020, and 2023 benefited SWP Contractors by increasing allocations from 20 percent in 2015 to 100 percent in 2023. In March 2023, Metropolitan lifted its emergency restrictions mandate on water use for nearly 7 million people in Southern California, including SDCWA and City of San Diego customers. At the time of this UWMP, the 2025 SWP allocation is 50 percent.

Just in the last ten years, the variability of SWP deliveries has experienced high and low extremes.

In 2018, the SWRCB adopted Bay-Delta Plan Amendments establishing updated objectives for management of the San Francisco Bay/Sacramento-San Joaquin Delta. This Amendment focused on identifying flow requirements, habitat restoration, and conservation to improve conditions for wildlife and overall Delta resources management. Since 2022, the Bay-Delta Plan Amendment update has been in development, considering additional tributaries from the southern San Joaquin Valley, therefore requiring a re-evaluation of Delta flow requirements and conservation objectives, which ultimately may impact available supply to the SWP.

The Delta Conveyance Project is a climate adaptation strategy infrastructure improvement project to the SWP to protect against future water supply losses caused by climate change, sea level rise, and earthquakes. The Delta Conveyance Project intends to capture a significant volume of excess flows from the North Delta tributaries and convey water via a single 36-foot diameter tunnel to the headwaters of the SWP. In December 2023, the Final Environmental Impact Report (EIR) was certified, and DWR approved the project. The Delta Conveyance Project has continued to progress through the permitting process, including environmental permitting and water rights evaluations through 2026.

6.4.2 LOCAL WATER SUPPLIES

The City is doing its part to reduce reliance on imported water by implementing additional local water supply projects and continuing to invest in demand management programs. The City's local water sources and the factors that impact the reliability are briefly discussed below. By 2035, the City will provide approximately 70 percent of its total supply from local sources.

Surface Water

Local rainfall is known to change storage and water availability in surface reservoirs. Additionally, the Division of Safety of Dams' regulations limit the ability to maximize the capture of local runoff due to requirements to maintain water levels at certain City of San Diego Public Utilities Department

(PUD) reservoirs related to restrictions on dam operations. As of 2023, five dams have restrictions due to seismic or hydraulic concerns, namely Barret, El Capitan, Hodges, Morena, and Murray.

Groundwater

The City recognizes that groundwater projects in the San Diego region are limited by several factors, including degraded water quality, the lack of storage capacity, and the availability of groundwater recharge. The City is committed to protecting its groundwater resources in all basins.

Potable Reuse

Pure Water San Diego is the City's multi-year potable reuse program that will provide 83 million gallons per day (mgd) of San Diego's water supply locally by the end of 2035. This program will use proven water purification technology to clean recycled water to produce safe, purified water. The purified water will be stored within two of the City's reservoirs and then be treated at the water treatment plant and delivered as potable water. In comparison to projected rising costs of imported water, it offers a cost-effective investment for San Diego's water needs and will provide a reliable and sustainable water supply. Additionally, Pure Water San Diego will reduce the amount of treated wastewater discharged to the ocean by more than 50 percent.

Recycled Water

The City does not plan to expand its existing "purple pipe" recycled water system. To maximize the utilization of the available recycled water, the City will send recycled water to Pure Water San Diego facilities.

6.5 COST OF FUTURE WATER

In addition to reliability concerns, the increased cost of imported water, maintenance, and operations is a continued challenge for the City. Imported water is expensive because of the energy required to transport it from its source and the continual need to maintain and improve infrastructure. During times of drought, the cost of imported water continues to rise, typically at a higher pace than other sources, because drought makes this limited resource even more limited and there's more competition/demand for it.

Metropolitan's most recent approved two-year budget included an 8.5 percent rate increase to its 26 member agencies effective January 1, 2025. The SDCWA Board of Directors recently approved a 14 percent rate increase for wholesale water for its 22 retail member agencies. Of this increase, 11 percent is passed through costs to the SDCWA (e.g., resultant water cost increase from upstream sources). As a result of the SDCWA and Metropolitan rate increase, the City approved adjustments to water and wastewater rates in accordance with the cost of service studies and Proposition 218. On October 28, 2025 a two-year water rate adjustment at the required increases of 14.7 percent and 14.5 percent was approved by City Council.

As of a recent settlement between Metropolitan and the SDCWA, effective January 2026, the SDCWA will pay a fixed price for water from Metropolitan per acre foot, rather than a past Metropolitan-specific rate, escalating annually per specified consumer price index escalator.

The increase in SWP Transportation Charge also impacts Metropolitan's rates. The Transportation Charge is a unit charge applied to each acre-foot of SWP water, and it varies based on the distance from the Sacramento-San Joaquin Delta and the capacity needed to deliver the water. Moreover, the overall transportation charge unit cost per volume increases with a reduction in allocations due to the annual fixed debt service charges each SWP contractor must pay, regardless of deliveries from the SWP. This debt service accounts for the debt obligation associated with bonds used to fund the construction of the SWP infrastructure. These debt obligations are expected to expire in 2035.

The Delta Conveyance Project is expected to be the next major investment in SWP facilities. Like existing SWP infrastructure, the cost of the Delta Conveyance Project is anticipated to be paid through revenue bonds passed through to State Water Contractors and ultimately end users. As the existing State Water Contractor water supply contracts are set to expire between 2035 and 2042, new contract terms between DWR and Table A contractors are anticipated.

6.6 WATER QUALITY

Overall, the City's local source water is generally of good quality, particularly at certain depths within the reservoirs. Water at these specific depths can be used to blend water from different sources, helping to maintain high drinking water standards. However, one of the main water quality challenges facing the City's reservoirs is a process called eutrophication. This occurs when excess nutrients—often from surrounding land runoff or internal recycling during drought years—accumulate in the water. These nutrients can trigger overgrowth of algae and other plant life. When the algae die off, the breakdown process uses up a large amount of oxygen, which can lead to low-oxygen conditions that are harmful to both the environment and water quality.

These low-oxygen areas often develop beneath the thermocline, a natural barrier in reservoirs where warmer surface water sharply transitions to cooler, deeper water. Because of the difference in temperature and density, water above and below this layer doesn't mix easily. While oxygen is more available in the upper layers, the deeper layers can become oxygen-deprived, creating anoxic zones. These oxygen-poor zones can lower pH levels and cause harmful substances like manganese to leach from the reservoir sediments into the water.

To combat these issues, the City has taken proactive steps to improve water quality in its reservoirs:

- At Hodges Reservoir, an oxygenation system was installed at the bottom of the reservoir to reduce algal growth and improve oxygen levels. This project was funded through a grant from the San Diego Integrated Regional Water Management Program and became operational in 2020.
- At El Capitan Reservoir, the City, in partnership with the Helix Water District, upgraded its aeration system in June 2025. This system is designed to prevent anoxic conditions from forming below the thermocline and to reduce the concentration of manganese in the water.

All water is treated at the City's water treatment plants (WTPs), where state-of-the-art treatment processes have been implemented, and all drinking water undergoes extensive monitoring and testing. The City's drinking water at all three WTPs consistently meets all applicable water quality regulations set by the United States Environmental Protection Agency (EPA) and the State Water Resources Control Board (SWRCB) Division of Drinking Water (DDW). The Annual Consumer Confidence Report (CCR) for the City's service area can be found on the City website.

Imported water from Metropolitan and SDCWA can have fairly high amounts of salts and minerals, or total dissolved solids (TDS), typically around 500 milligrams per liter (mg/L). While this higher TDS in imported water is still within safe drinking water standards (less than 1,000 mg/L), it can affect the City's recycled water system and residential appliances/devices (e.g., hot water heaters and faucets). Additionally, some landscaping and crops irrigated with water high in TDS can also be degraded.

6.7 CLIMATE CHANGE

Climate change adds uncertainties to supply planning and future water supply availability, as well as impacts the surrounding environmental, society, and the economy on a whole. The City has recently completed a detailed study evaluating the potential vulnerabilities of existing water facility infrastructure to climate change. Recognizing that existing facilities exhibit vulnerabilities to climate change is the first step to implementing strategies necessary to prepare for potential future impacts.

There is consensus among the climate models that California will continue warming over the next century. For San Diego specifically, the regional climate models evaluated show temperatures are projected to increase for the City; however, the magnitude of increase varies between different projections. Additionally, the City is likely to experience a decrease in the magnitude of annual precipitation for future periods. Given these findings, there is still uncertainty among these predictions, with some models showing the State becoming wetter and others showing the state becoming drier. Regardless of model output, the change in climate patterns with respect to historical trends will require adaptation strategies for the City to implement, deviating from normal facility operations in response to a varying climate in the future.

6.7.1 LOCAL WATER RESOURCES

The City's assessment of the local water supplies with respect to the developed climate vulnerability metrics presented in the 2024 Draft Integrated Master Plan (Final Integrated Master Plan for City by CDM to be complete 2027) assigns vulnerability ratings to City water and wastewater system facilities. Note: Wastewater is included in this assessment due in part to it being the primary influent source for recycled water development. The vulnerability ratings metrics of each climate variable were defined within a five-tier rating system (low, moderate-low, moderate, moderate-high, and high). The eight climate variables included in the vulnerability ratings are listed below:

1. Extreme Heat Days
2. Drought
3. Extreme Precipitation
4. Pluvial Flooding Conditions
5. Floodplain Flooding Condition
6. Coastal Flooding
7. Cliff Retreat
8. Wildfire

As previously mentioned, the climate variables were analyzed for the near- and long-term periods and compared to the historical baseline analysis period. The vulnerability assessment evaluated the

degree to which each of the City's facilities is susceptible to adverse effects of climate change. The following list provides a high-level summary of the most important findings.

- Extreme heat days will increase by over 20 days per year throughout the City and most facilities will experience a greater number of days above 35 degrees Celsius for which operational adjustments may need to be made.
- Greater drought severity and increasing wildfire risk will impact water supply availability, variability, and water quality in most of San Diego's watersheds.
- Wildfire vulnerability is increasing in specific areas: most watersheds, and facilities in Rancho Bernardo, Scripps-Miramar, Rancho Peñasquitos, Tierrasanta, Mission Gorge, College, Encanto, Bonita, and Otay areas.
- Pluvial flooding is the most prevalent vulnerability across PUD facilities and is associated with increased extreme precipitation at facilities (primarily pump stations and storage facilities) with low slopes. All PUD facility types are potentially impacted.
- Flooding vulnerabilities (pluvial, floodplain, and coastal) are greatest for wastewater systems, impacting wastewater treatment plants and around 50 sewer pump stations. Cliff Retreat vulnerability exists and will grow at Point Loma Wastewater Treatment Plant (PLWTP) due to increased flooding of low-lying areas and cliff erosion rise corresponding to 2050 Intermediate condition. Floodplain flooding is the greatest flooding risk for South Bay Water Reclamation Plant. Mitigation sites are also particularly vulnerable to floodplain flooding.
- Pure Water facilities and PUD control buildings do not have coastal or floodplain-related vulnerabilities. However, these facilities do have some vulnerabilities related to wildfire. Pluvial flooding can likely be addressed at a facility level.

The resulting facility vulnerabilities identified from the ratings facilitated the development of adaptation strategies to consider for improving the resilience of water-dependent systems and infrastructure. Identifying and evaluating a range of these strategies across various water resources sectors and climate parameters is critical to navigate potential pathways for current and future adaptation. In summary, based on the findings of the climate vulnerability analysis, the City recommended nine adaptation strategies for consideration across the climate vulnerability metrics.

6.7.2 DEMANDS AND RECYCLED WATER

As the previously mentioned studies indicate, an increase in drought frequency and intensity due to climate change will impact the City, requiring implementation of stronger demand management strategies to combat potential water supply shortages.

Potable water demand management strategies benefit water supply management efforts, but have consequences that impact wastewater treatment and recycled water production facilities. Significant demand management of indoor water use, in addition to managed conservation practice, decreases wastewater flows within urban areas, therefore reducing sanitary sewer flows to regional wastewater treatment plants. This decline of raw wastewater influent to treatment facilities decreases the disposal of treated wastewater, but also reduces the availability and volume of recycled water to be produced, which in turn reduces the cost effectiveness of expensive advanced purification treatment processes and can potentially cause operational challenges.

Additionally, ambitious conservation efforts can possibly make "purple pipe" recycled water system infrastructure no longer cost-effective, potentially creating underutilized or oversized assets for the City.

In addition to its many benefits, indoor water conservation can have the unintended consequence of declining wastewater flows and more concentrated wastewater inflow to treatment facilities, which leads to an increase in biological and solid constituents, therefore requiring more treatment capacity, potentially causing challenges at the wastewater treatment and reclamation plants and/or requiring early expansions.

The City's 2020 Recycled Water Master Plan update indicates that, considering climate change, potential evapotranspiration rates are expected to increase minimally, resulting in a negligible increase in irrigation demand and ultimately not dramatically changing the anticipated demand increase for recycled water.

6.8 DROUGHT RISK ASSESSMENT

This section summarizes the development of a DRA, including a summary of the anticipated City's water demands and supplies over a five-year drought assumed to start in 2026.

6.8.1 WATER SHORTAGE CONDITION LEVELS

The City's Water Shortage Contingency Plan (WSCP), included in **Appendix C**, outlines the process the City will use each year to determine its water supply reliability. The goal of the WSCP is to have a procedure for managing and mitigating shortages, allowing the City to respond in an efficient and timely manner. Coordination with the SDCWA is critical to the City's decisions and responses. The WSCP outlines six standard water supply shortage levels, which are summarized in **Table 6-5**. Reductions in supply are most frequently associated with drought, but could also be the result of flooding, major fire emergencies, earthquakes, regional power outages, water contamination, and any other situation that could impact the water supply.

To determine the appropriate shortage level, the City will annually assess water supply conditions per the procedures outlined in the WSCP Annual Water Supply and Demand Assessment. The City's baseline status is Water Shortage Level 1, which includes permanent, year-round restrictions.

The City determines the total supply available (local supplies and imported supplies) and compares it to the expected demand for the current year and one dry year. If the outcome is a water supply shortage of 18 percent, the City would be in a Drought Watch Condition, or Water Shortage Level 2. Once the condition is set and adopted by City Council, demand reduction measures go into effect with the goal of reducing demand by 18 percent. The City monitors the demands and can implement additional reduction measures or increase the Water Shortage Level if needed to address the shortage. Examples of shortage level triggers that can happen at any time include:

- As determined from City monitoring of demands and current shortage level
- A system malfunction resulting in a shortage
- A City or State declaration due to drought
- A Federal, state, or local disaster declaration that may impact water supplies

- Unplanned water system maintenance
- Catastrophic interruption, including flooding, fire emergencies, earthquakes, regional power outages, and water contamination

Table 6-5 Water Shortage Contingency Plan Water Shortage Levels

Water Shortage Levels	Percent Shortage Range
Level 1 – Expanded Year-Round Permanent Mandatory Water Restrictions	Up to 10%
Level 2 – Drought Watch Condition	Up to 20%
Level 3 – Drought Alert Condition	Up to 30%
Level 4 – Drought Critical Condition	Up to 40%
Level 5 – Drought Crisis Condition	Up to 50%
Level 6 – Drought Emergency Condition	Greater than 50%

A detailed list of shortage response actions is included in the WSCP. The City's shortage response actions include prohibitions on end uses, consumption reduction methods, supply augmentation, and operational change measures. DWR defines prohibitions on end uses as measures to address areas that are the responsibility of users, such as a broken sprinkler or leaking faucet. Consumption reduction methods are actions invoked by a water supplier to reduce consumption, such as expanding public information campaigns and offering water use surveys. Supply augmentation is defined as any action designed to increase the existing supply availability, such as the use of emergency storage or acquiring additional transfer water. Operational changes are defined as actions taken by the City to change the way in which existing supplies are used within its service area.

Although it is difficult to estimate the volume of savings for each action, the City expects to meet required reductions through a combination of response actions in conjunction with outreach and communication efforts to the extent necessary to mitigate any impacts from a water shortage. In 2009, after the City declared a Level 2 shortage, the gallons per capita per day (gpcd) dropped by approximately 12-18 percent for 2010 and 2011. In 2014, after the City declared a Level 2 shortage, the gpcd dropped by approximately 11-27 percent for 2015 and 2016. Each time the City has declared a shortage level, the demand reduction actions and the efforts of the public have reduced consumption.

In addition to drought planning, the WSCP describes how the City is planning for catastrophic events, including a large seismic event on the regional and local scale, that could cause supply shortages and interruptions. Imported water providers Metropolitan and the SDCWA, as well as the City, have developed plans for catastrophic supply interruptions that include a regional power outage, earthquake, or other disaster. The City maintains emergency storage detailed in Section 4, as well as maintains several emergency connections to and from neighboring water agencies, to provide mutual aid during times of catastrophic supply interruptions.

The WSCP will be re-evaluated at least every five years in coordination with the UWMP update or updated more frequently, at the discretion of the City Council, as the efficacy of shortage mitigation strategies is re-evaluated.

6.8.2 DROUGHT RISK ASSESSMENT

Near-term drought reliability of the sources of supply utilized by the City depends on the drought impact and stress on each supply as described in Section 6.5. The assumed drought availability for each of the City's supplies is as follows:

- Surface water: In a prolonged drought, rainfall and runoff into local reservoirs would be reduced, so that supply sourced from local reservoirs would decrease over the course of a five-year drought. The availability of local water is assumed to be equal to the usage of this supply during the historical drought from 2012 to 2017. In addition, the City-Lake Cuyamaca Interagency Agreement is expected to provide 400 AFY.
- Groundwater: The City's groundwater supply makes up a small percentage of its supply portfolio and should not be limited in terms of the City's water rights to groundwater or the sustainability of the aquifer sources. However, the production wells require rehabilitation and, therefore, may not be a reliable source in the near term. It has been assumed that the production wells would be rehabilitated and groundwater would be available in 2030.
- Potable Reuse: The Pure Water San Diego Program Phase 1 purified water will be used to augment the Miramar Reservoir, providing a drought-proof source. This facility will start up in late calendar year 2026 with phased production until full capacity in late CY 2027.
- Purchased/Imported Water: The SDCWA supply to the City is assumed to be reliable and available over the five-year DRA. This is due to SDCWA's in-region carryover and emergency storage program and the out-of-region groundwater banking program.

The water demand and supply summary for the five-year DRA period from 2026 through 2030, is presented in **Table 6-6** for retail and wholesale. The projected retail and wholesale use between 2025 and 2030 was extrapolated using the demand forecast and consecutive dry year demand factors listed in **Table 6-1** to determine the water demands for 2026 to 2030. The DRA shows no anticipated shortages over the five-year drought starting in 2026 based on these assumptions.

Table 6-6 Five-Year Drought Risk Assessment Summary – Retail and Wholesale

DRA Water Demand/Supplies	Demand and Supplies (AF)				
	2026	2027	2028	2029	2030
Retail Water Use(1)	157,221	164,869	170,503	155,004	137,220
Wholesale Water Use	10,197	10,728	11,047	10,091	8,922
Total Water Use (AF)	**167,418**	**175,597**	**181,550**	**165,095**	**146,142**
Surface Water(2)	22,018	23,820	6,680	14,056	15,789
Groundwater	0	0	0	0	100
Pure Water San Diego Phase 1	0	23,800	33,600	33,600	33,600
Pure Water San Diego Phase 2	0	0	0	0	0
Purchased/Imported Water(3)	145,400	127,977	141,270	117,439	96,653
Total Supplies (AF)	**167,418**	**175,597**	**181,550**	**165,095**	**146,142**

Notes:
(1) Includes retail demand, non-revenue water, and conservation.
(2) Barrett, El Capitan, Hodges, Lower Otay, Morena, San Vincente, Murray, Miramar, and Sutherland Reservoirs, and the City-Lake Cuyamaca Interagency Agreement (400 AFY).
(3) Imported water from the SDCWA adjusted to meet forecast demands for retail and wholesale. Only City local supplies are provided to Cal-Am wholesale.

6.9 SEISMIC RISKS

Seismic impacts to the City's water supply are evaluated on a regional scale, as seismic events along the San Andreas and San Jacinto fault systems could limit imported supplies. Additionally, on a local scale, seismic events on the Elsinore, La Nacion, and Rose Canyon faults could damage City infrastructure. Conveyance infrastructure for imported water supply sources spans hundreds of miles through California, increasing the susceptibility to seismic hazards given the physical exposure to geologic hazards outside of the San Diego region.

City actions in response to a seismic event are summarized for areas throughout the City and reflect actions included in Section 5 of the San Diego County 2023 Multi-Jurisdictional Hazard Mitigation Plan (MJHMP), the 2022 San Diego County Operational Area Emergency Operations Plan, the City's 1973 Emergency Water Storage Policy (Council Policy 400-04), and the City's WSCP water shortage levels.

San Diego County's MJHMP identifies risks posed by natural and manmade disasters and ways to minimize damage from those disasters and is included as **Appendix I**. The plan serves many purposes, including enhancing public awareness and understanding, creating a decision tool for management, promoting compliance with state and federal program requirements, enhancing local policies for hazard mitigation capability, and providing interjurisdictional coordination.

The MJHMP includes a risk assessment to determine the potential impacts of hazards on the people, economy, and built and natural environments. The top five hazards to have an impact on the City were identified as follows:

- wildfire/structure fires

- flooding
- droughts
- extreme heat
- earthquakes

The plan sets goals for the City, including reducing the possibility of damage and losses to people, critical facilities/infrastructure, and State-owned facilities due to earthquake and dam failure. Objectives and action items are identified to assist in achieving and implementing each of the hazard mitigation goals.

6.9.1 CITY OF SAN DIEGO SEISMIC RISKS

The City dams have an average age of approximately 92 years, and some have exceeded the dam's useful life. Many of these aging dams have a potentially significant seismic risk from earthquakes, especially those dams located near the active fault lines, which could lead to sudden dam failure and uncontrolled release of water that would cause injury, property damage, loss of lives downstream of the dam, and result in losing the existing water storage. During a seismic event, the dam can overturn and slide at the foundation, and the concrete is overstressed, causing major cracking in the main portion of the dam that can lead to the dam being unstable and may result in structural failure and uncontrolled release of the reservoir. The City has been evaluating ways to develop and implement mitigation efforts for these identified seismic risk dams. A few of these risk mitigation measures are assessing and designing seismic retrofit or improvement projects on existing dams to address dam deficiencies (seismic, flooding/overtopping, internal erosion, drawdown), improving monitoring and inspections, and emergency preparedness, continuing to conduct condition assessment, and lastly, potentially restricting water level to reduce immediate seismic risk.

A seismic review by the City and G&E Engineering Systems, Inc. (Eidinger, 2017) identified local areas prone to ground shaking, liquefaction, fault offset, and landslides for a set of five earthquake scenarios. The assessment estimated the length of pipe in each hazard zone, as well as tanks, pumping plants, outlet towers, water treatment plants, as well as identified the number of pump stations expected to lose power soon after the earthquake. **Table 6-7** presents the estimated time required to restore water service given the City's available work crews and other considerations.

Table 6-7 San Diego Earthquake Scenarios

Scenario Earthquake	Stabilize System (Days)	Restore Backbone Pipes (Days)	Restore Distribution Pipes (Days)	Complete all Pipe Repairs (Days)
Rose Canyon (M 6.5)	1.7	20	3	74
Silver Strand (M 6.5)	1.0	13	20	43
Rose Canyon / Silver Strand (M 7.2)	2.0	24	43	91
La Nacion (M 6.6)	1.4	18	29	62
Notes: Source: J.M. Eidinger *Seismic Assessment of the San Diego Water System.*				

The longest duration water outages were found in the Mission Bay and Point Loma areas, due to liquefaction and fault offset. The Rose Canyon Fault is the biggest potential seismic threat to the City due to its proximity to the large population centers; a magnitude (M) 6.9 seismic event on this fault has a recurrence every 1,000 years. During this event, major supply pipeline ruptures along the Rose Canyon Fault are expected to leave the coastal communities west of the fault and south of La Jolla Shores (La Jolla, Mission Bay, Point Loma, Downtown, and Coronado Island) completely without water for weeks to months. Fault rupture is also expected to sever all three major interceptor pipelines delivering wastewater to the PLWTP.

Geotechnical reports, included as appendices to the Pure Water San Diego North City Project Final Environmental Impact Report, assessed seismic risks and impacts to the Pure Water Phase 1 facilities. Repair durations for conveyance and distribution pipelines after seismic damage will take one week to two to three months to repair.

6.9.2 METROPOLITAN WATER DISTRICT SEISMIC RISKS

Portions of Metropolitan's CRA are located near the San Andreas and San Jacinto faults. Major seismic events on these faults could cut off Colorado River supplies to Metropolitan and the SDCWA for an extended period. Seismic events along the San Andreas or San Jacinto fault zones could also damage SWP California Aqueduct facilities. Because natural features do not behave in predictable patterns, the impacts of this hazard cannot be fully quantified. However, seismic retrofits have been added to mitigate the natural risks posed by these geologic features, and additional monitoring has been implemented to identify susceptible sections of both facilities.

Metropolitan evaluated potential damage to the SWP California Aqueduct and the CRA from a major (M 7.8) seismic event (termed "Shakeout") on the San Andreas Fault. After a large seismic event, Metropolitan may limit supplies to member agencies. Metropolitan resolved to increase its emergency storage objective to 750,000 AF based on the anticipated performance of the following three water system components during the Shakeout scenario:

- California and CRA Outage: The Shakeout produced a 12- to 24-month outage of the East Branch of the California Aqueduct; a 6- to 12-month outage of the West Branch of the California Aqueduct; and a 2- to 6-month outage of the CRA until 80 percent of CRA capacity could be recovered. The CRA crosses the San Andreas in two locations and has parallel pipelines across each section. Bringing the CRA back to full capacity could take three to five years.
- Potential Maximum Reductions in Member Agency Retail Water Demand: Metropolitan estimated that 30 percent of all retail demand is directed toward outdoor uses. Metropolitan concluded that its member agencies would be able to reduce retail demands by 25 to 35 percent following a seismic event. As a customer of the SDCWA, the City should assume that during a Shakeout scenario, it would be required to reduce demand by this percentage through additional conservation actions.
- Reductions to Member Agency Local Supplies: Metropolitan estimated a 6- and 12-month aggregated loss of 10 to 20 percent of local production following a seismic event. This is a contingency to account for local damage and time for repairs.

The Metropolitan evaluation indicates that as an SDCWA member agency, the City should be prepared to reduce its demands by 25 to 35 percent.

6.9.3 SAN DIEGO COUNTY WATER AUTHORITY SEISMIC RISKS

The 2024 SDCWA Master Plan Update summarized the potential degree of damage to its pipelines and the amount of time required to restore services after a natural disaster. The most probable seismic event is defined as the largest event with a 10 percent chance of occurrence over the next 50 years, while the maximum credible seismic event is the largest event judged to be possible given geologic criteria, such as relationships between fault length, fault displacement, and slip rate.

A study done in 2022 called *Pipeline Seismic Vulnerability Assessment and Repair Time Estimates* shows damages from seismic activity of Elsinore (M 7.5), Rose Canyon (M 7.0), and 2,475 return period earthquake including liquefaction. This study with 47 identified locations estimated that repairs would take around 67 days assuming five construction crews per shift.

The 2024 SDCWA Master Plan outlines solutions such as aqueduct isolation facilities, additional pump drive and transformer at San Vicente Pump Station, and rejection tower replacement. Modeling simulations show that the addition of these facilities is projected to reduce repair times from months to days.
Damage from a regional earthquake to the imported supply is mitigated by major investments in emergency storage made by the SDCWA. SDCWA's Carryover and Emergency Storage Program can be used to deliver emergency water supply for approximately six months.

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SECTION

7 Energy Intensity Analysis

The Department of Water Resources (DWR) requires that water suppliers provide information on the energy required to produce and distribute their water supply through an energy analysis. The City of San Diego (City) completed energy analyses for the 2015 and 2020 Urban Water Management Plans (UWMPs).

Due to the necessary, large, energy-intensive equipment that is operated to convey and treat water, wastewater, recycled water, and biosolids to meet required standards, the City of San Diego Public Utilities Department (PUD) energy intake is larger than any other department in the City's municipal operation. PUD directly uses a portion of its onsite renewable energy generation in its treatment plants. PUD is working to make its operational equipment energy efficient at all its facilities. In addition to the self-generated onsite renewable energy used by the City, the energy portfolio the San Diego Community Power (SDCP) provides to the City is 100 percent renewable and carbon-free electricity (Power100 plan). The greenhouse gas (GHG) emissions intensity is effectively zero from the Power100 plan. This energy approach will help the City meet the Climate Action Plan (CAP) goal of 100 percent renewable by 2030.

Energy records are maintained by calendar year. Therefore to align with CAP and energy records the water, wastewater, and recycled water are discussed in calendar year in this section.

Highlights of the Energy Intensity Analysis

Photovoltaic Solar Power Systems

- The City's renewable energy program self-generates renewable energy to operate its large facilities.
- The three WTPs each have on-site photovoltaic systems that provide self-generated renewable energy.
- The City's total energy footprint is about 8 percent, while the remaining 92 percent is related to upstream water delivery, outside the control of the city.
- Estimated water energy use in 2023 was approximately equivalent to 2.2 metric tons of CO2 per million gallons (MG) delivered, which is roughly the same as driving a gasoline car 5,526 miles for each MG delivered. GHG emissions are related to upstream energy use outside the control of the city.
- The energy portfolio San Diego Community Power provides to the city is 100 percent renewable and carbon-free electricity meaning that the GHG emissions are effectively zero.

7.1 RENEWABLE ENERGY

The City's renewable energy program generates renewable energy to operate its large facilities. Some of the facilities produce enough energy to operate the facility and put excess energy on the grid to provide credits on other selected facilities bills. PUD, along with private partners, uses a number of energy sources to generate energy, including digester gas, landfill gas, biomethane, solar, and fuel cells.

7.1.1 METHANE

Methane gas, a by-product of the wastewater treatment process, is collected at the Point Loma Wastewater Treatment Plant (PLWTP) to fuel two continuously running generators that can each produce up to 2,235 kilowatts (kW) of electricity. This provides energy for PLWTP operations as well as putting excess energy on to the electrical grid. Thermal energy produced by the generators is used to heat the plant's digesters.

7.1.2 SOLAR POWER

Photovoltaic (PV) solar power systems that convert sunlight to electricity are connected to several of the PUD facilities, including:

- Alvarado Water Treatment Plant (WTP) – 950 kW privatized system producing 1.45 million kilowatt-hours (kWh) annually.
- Bayview Reservoir and Water Pump Station – has a 160 kW system producing 308,000 kWh annually.
- Otay Water Treatment Plant – has an 800 kW system producing 1.5 million kWh annually.
- Miramar WTP - has 2.25 MW-AC solar system that was completed in two phases, each phase part of another large project. The Phase 1 solar installation 1 MW-AC was part of Miramar WTP Clearwells rebuild project and was commissioned in 2022. The Miramar Lake Raw Water Pump Station upgrade project added an additional 1.2 MW-AC solar system (Phase 2). Both systems are interconnected onto the one WTP main utility service. The system is expected produce 3,500,000 kilowatt-hour annually, which is enough to power about 550 San Diego homes annually. The system is under utility tariff Net Energy Metering Aggregation. This allows the system's generation to be shared with nearby utility account for Miramar Lake Raw Water Pump Station. It is the largest city-owned solar system.

Miramar Solar

7.2 ENERGY INTENSITY

Water energy intensity is the total amount of energy needed to convey and treat water within the City's operational control from the point where the City acquires the water to the point of delivery. Water energy intensity is expressed as energy units per volume of water delivered. In the UWMP it is reported as kWh per acre-foot (kWh/AF).

7.2.1 WATER CONSUMPTION

The water entering the water management process is used to calculate energy intensity in this analysis. For the City, the point of entry into the water management process begins with the conveyance of water from the reservoirs to the WTPs.

The potable water supply sources for the City of San Diego include: 1) imported untreated water from the San Diego County Water Authority (SDCWA); 2) imported treated water from SDCWA; 3) surface water from local reservoirs; and 4) groundwater from the San Diego River Valley Basin. The City did not use groundwater between 2020 to 2025.

The City delivers both potable and recycled water within the City's water service area. In addition, it sells water to the City of Del Mar and the California American Water Company (Cal-Am).

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

Table 7-1 summarizes the total potable water supplied within the City and through wholesale agreements by calendar year.

Table 7-1 Water Supplied and Supply Source (San Diego, Calendar Years 2019-2024)

Calendar Year	Potable Water Supplied (AF)	Recycled Water Supplied (AF)	Total Water Supplied (AF)
2019	152,637	8,454	181,760
2020	159,141	8,163	177,964
2021	157,559	12,384	190,999
2022	155,970	10,309	190,666
2023	151,532	9,278	175,089
2024	163,927	7,868	172,075

Notes:
Source: City of San Diego.

7.2.2 ENERGY USE FOR POTABLE WATER SUPPLY

As stated previously, the needed energy used to produce and distribute potable water varies based on the different source types and their locations. As the water moves through each step of the water use cycle, from raw water supply to conveyance, water treatment, and finally water distribution, the energy use in each of these steps is described below.

Imported Supply and Conveyance

The imported supply and conveyance energy use for SDCWA untreated water consists of the conveyance and pumping from the State Water Project (SWP) and the Colorado River Aqueduct (CRA) through Metropolitan Water District of Southern California (Metropolitan) and SDCWA's service area. Energy use for SDCWA treated water adds on the energy use associated with water treatment and pumping. The City does not have operational control over the imported supply and conveyance.

Table 7-2 presents the imported water intensity for SDCWA member agencies from SDCWA's and Metropolitan's draft 2025 UWMP energy intensity reporting. It should be noted that SDCWA receives a conveyance energy credit from their Rancho Peñasquitos in-line hydroelectricity facility. The Rancho Peñasquitos hydroelectric facility was offline in 2023 and 2024 due to construction upgrades. When in operation, the energy from the in-line hydroelectricity facility is counted as consequential and is included as a negative number that is deducted from the total energy used that can produce a net negative energy intensity.

Table 7-2 Components of Imported Water Energy Intensity for SDCWA Member Agencies Calendar Year 2003[1]

Water System Segment	2023 CY Water Energy Intensity (kWh/AF)	Data Source
Metropolitan Delivered Untreated[2]	2,709.2	Metropolitan Draft UWMP 2025
SDCWA Conveyance[3]	31.8	SDCWA Draft UWMP 2025
SDCWA Untreated Subtotal	**2,741**	
SDCWA Treatment	140.1	SDCWA Draft UWMP 2025
SDCWA Distribution[4]	17.5	SDCWA Draft UWMP 2025
SDCWA Treated Total	**189**	
Total Upstream Water Processes	**2,930**	

Notes:
kWh - kilowatt-hour; AF - acre-feet; CY - calendar year
Source: Metropolitan Draft 2025 UWMP, SDCWA Draft 2025 Appendix I.
(1) "Imported" refers to moving water from the original source to SDCWA's member agency's service area or first connection point.
(2) Includes conveyance from the SWP and CRA water to Metropolitan's distribution system, and distribution from Metropolitan to SDCWA.
(3) Conveyance of raw water supplies to the WTPs or to member agency connections (negative value means hydro-electric generation by SDCWA).
(4) Distribution of treated water from SDCWA's Twin Oaks WTP to SDCWA's member agencies.

Local Raw Water Conveyance

Local supply and conveyance refers to surface and groundwater within the City's water service area supplied to water treatment plants, such as pumping water from local surface water reservoirs to nearby water treatment plants. Due to data availability constraints, the local raw water supply and conveyance energy intensity is combined with the local water treatment energy intensity.

Local Potable Water Treatment

Local potable water treatment refers to the water treated at the City's WTPs. The energy intensity depends on the source water quality, the treatment level, and the capacity and efficiency of the associated WTP. The City owns and operates three WTPs: the Alvarado, Miramar, and Otay, which treat raw water to potable levels. The WTPs treat both imported untreated SDCWA water and local water. All three WTPs have on-site behind-the-meter photovoltaic (PV) systems. The PV systems are connected with the raw water pump stations that pump water to and from the WTPs to the nearby reservoirs.

Table 7-3 presents a summary of the energy intensity analysis for the conveyance and treatment of potable water by calendar year from 2020 through 2024. As shown, the total energy intensity for conveyance and treatment within the City's water system is estimated to range from 72 to 87 kWh/AF. Solar production at the Alvarado, Otay, and Miramar PV systems are included in the energy intensity analysis per DWR Guidelines since the energy is used in the water management process. Solar production is netted out in the GHG emissions analysis.

Table 7-3 Local Raw Water Conveyance and Treatment Energy Intensity Calendar Year 2020 through 2024

Component	CY 2020	CY 2021	CY 2022	CY 2023	CY 2024	Description
Water Volume Treated (AF)	159,141	157,559	155,970	151,532	163,927	Total City water production from all water sources (including sales to other water agencies).
Total Conveyance + Treatment Energy Use (kWh)	11,442,957	12,610,100	13,138,497	12,147,915	14,250,303	Total electricity consumption including treatment plant operation, lake pump stations, and electricity generated at Alvarado and Otay on-site PV systems. Includes City-owned Miramar Solar from August 2021.
Total Conveyance + Treatment Energy Intensity (kWh/AF)	72	80	84	80	87	Total energy intensity (total electricity divided by water treated).
Solar Production (kWh)(1)	2,172,498	2,787,200	3,302,984	1,589,090	2,324,359	Annual electricity generated by Alvarado and Otay on-site PV systems. Includes City-owned Miramar Solar from August 2021.

Notes:
Source: City of San Diego Public Utilities Department.
CY – calendar year
(1) Per DWR Guidelines the solar production is not subtracted from the energy consumed since it is used in the water management process.

Local Potable Water Distribution

Distribution energy use includes energy use for water pump stations and/or pressure reduction stations, water storage tanks, and other means. Local distribution energy intensity depends on the service area's topography and the pump station's energy efficiency. The City's water service area has some areas with a gravity-fed system (no energy needed). However, many areas in the City require pumping due to topography variation to ensure that water is delivered to customers with sufficient system pressure.

Table 7-4 presents a summary of the energy intensity analysis for the delivery of potable water from 2020 through 2024. The citywide water distribution energy intensities do not represent the energy intensity of a specific area or pressure zone within the City. As shown, the energy intensity for local water distribution is estimated to range from 167 to 174 kWh/AF. Solar production by the City-owned Bayview Reservoir and Water Pump Station are included in the energy intensity analysis per DWR Guidelines since the energy is used in the water management process. Solar production is netted out in the GHG emissions analysis.

Table 7-4 Local Potable Water Distribution Energy Intensity Calendar Year 2020 through 2024

Component	CY 2020	CY 2021	CY 2022	CY 2023	CY 2024	Description
Total Volume of Water Delivered (AF)	159,141	157,559	155,970	151,532	163,927	Total City water production from all water sources (including sales to other water agencies).
Distribution Pump Stations Energy Use (kWh)	26,964,419	27,561,831	27,185,399	26,244,004	27,308,462	Electricity use at water pump stations, excluding lake pump station. (Added City-owned Bayview Reservoir & Water Pump Station solar data).
Water Distribution Energy Intensity (kWh/AF)	169	175	174	173	167	Citywide water distribution energy intensity.
Solar Production (kWh)(1)	350,186	288,755	310,765	274,786	278,453	Solar Production at Bayview Reservoir & Water Pump Station.

Notes:
Source: City of San Diego Public Utilities Department.
CY – calendar year
(1) Per DWR Guidelines the solar production is not subtracted from the energy consumed since it is used in the water management process.

Summary of Total Energy Intensity

The City has selected to report on its energy intensity using the water supplier operational control approach that includes the water management processes within the City's control (DWR Option A Table O-1A). As shown in **Tables 7-3** and **7-4**, the City's energy reporting for calendar year 2023 and 2024, excluding the energy intensity from upstream suppliers (Metropolitan and SDCWA) outside of the City's control, is estimated at 253 and 254 kWh/AF, respectively. The combined energy estimate for 2023 with imported water is 3,183 kWh/AF. Hence, the City's contribution to the total energy footprint is about 8 percent, while the remaining 92 percent is related to upstream water delivery, outside the control of the City. The DWR Table O-1A is included in **Appendix J**.

7.2.3 WASTEWATER AND RECYCLED WATER ENERGY INTENSITY

Wastewater generated in the City is conveyed to the City of San Diego's Metro System. Wastewater collected by the Metro System is treated at one of the three treatment plants: PLWTP, NCWRP, and SBWRP. **Table 7-5** presents the results of the energy intensity analysis for wastewater in 2024.

Table 7-5 Energy Intensity for Wastewater Collection, Treatment, and Discharge Calendar Year 2024

	Collection and Conveyance	Treatment	Discharge/ Distribution	Total
Volume of Wastewater Entering Process (AF)	--	--	--	116,703
Wastewater Energy Use (kWh)	53,088,323	20,118,714	--	73,508,501
Wastewater Energy Intensity (kWh/AF)(1)	--	--	--	1,925
Plant Onsite Energy Generation Use (kWh)	--	19,927,479	--	19,927,479

Notes:
Source: City of San Diego Public Utilities Department.
(1) Per DWR Guidelines the on-site production is not netted out from the energy consumed since it is used in the water management process.

Recycled water is reported separately from potable supplies, as it is approved and used only for non-potable uses, such as irrigation and cooling towers. The energy intensity of recycled water operations is the amount of energy required to treat recycled water (tertiary treatment, in addition to primary and secondary treatment) and deliver it to end-use customers. In the City, the recycled water is delivered to customers in purple pipes, separated from the potable water distribution system. **Table 7-6** presents the results of the energy intensity analysis for recycled water in 2024. The wastewater and recycled water energy intensity analysis (DWR Table O-2) is in **Appendix J**.

Table 7-6 Energy Intensity for Recycled Water Supply Calendar Year 2024

	Collection and Conveyance	Treatment	Discharge/ Distribution	Total
Volume of Recycled Water Entering Process (AF)	--	--	--	16,668
Recycled Water Energy Use (kWh) (1)	--	34,579,880	1,293,879	35,873,759
Recycled Water Energy Intensity (kWh/AF)	--	--	--	6,605

Notes:
Source: City of San Diego Public Utilities Department.
(1) Energy use for treatment at NCWRP and SBWRP and distribution energy use from Canyon Side and Meanly Dr. Recycled Water Pump Station.

7.3 GHG EMISSIONS POTABLE WATER AND RECYCLED WATER

To convert the energy intensity of water to GHG emissions per unit of water, an electricity emission factor is used for the conversion. For upstream energy use prior to the City receiving the water, a California-wide average emission factor from the United States Environmental Protection Agency (EPA) eGRID Subregion WECC California CAMX (EPA, 2023) is applied to the 2023 energy consumption values in Table 7-2. The 2023 eGRID emission factor for California is 531.7 pounds of carbon dioxide per megawatt hour (lbs CO_2/MWh).

Local energy use for potable water conveyance and treatment, distribution, and recycled water treatment and distribution the City uses a combination of self-generated renewable energy and power purchased from SDCP. As mentioned previously, the City purchases power from the SDCP Power100 plan which provides 100 percent renewable and carbon-free energy, meaning its specific

emission factor is effectively zero kilograms carbon dioxide emission per kilowatt hour (kg CO_2e/kWh).

Table 7-7 summarizes the 2023 GHG emissions associated with potable water extraction, conveyance, storage, treatment, and distribution, and the recycled water treatment and distribution in metric tons of carbon dioxide equivalent (MT CO_2e). As shown, it is estimated that the 2023 water energy use is approximately 2.2 metric ton of carbon dioxide (CO_2) equivalent per million gallons delivered, which is roughly the same as driving a gasoline car 5,526 miles for each million gallon delivered. It is important to note that the GHG emissions are related to upstream energy use from Metropolitan and SDCWA, which the City does not have operational control over.

Table 7-7 GHG Emissions Calendar Year 2023

Year	Water Management Process	Upstream GHG Emissions (MT CO_2e)	City GHG Emissions (MT CO_2e)	Volume of Water Supplied (AF)	Unit GHG Emission (MT CO_2e/MG)
2023	Potable Water and Recycled Water	92,023	0	151,532	2.2

Notes:
AF – acre feet; MT – metric ton; MG – million gallon; CO_2e – carbon dioxide equivalent
Source: Calculation using EPA eGRID emission factor and data from Metropolitan and SDCWA and the City.

7.4 GHG CITYWIDE REDUCTION GOALS

The City's 2022 CAP establishes a comprehensive strategy for citywide reductions in GHG emissions with the goal of citywide net zero emissions by 2035, committing San Diego to an accelerated trajectory for GHG reductions. The 2022 CAP identified a comprehensive set of strategies, supporting actions and targets to reduce GHG emissions by 2035. These actions include a combination of ordinances, City Council Policy, programs, incentives, outreach and education activities, and operational actions. Key actions identified in the FY 2024 Climate Action Plan Annual Workplan for Public Utilities that will help to reduce GHG emissions include:

- Continued capture of methane gas from wastewater treatment.
  - The City can generate methane rich gas, or biogas, that can be used for on-site energy needs or processed further and used in place of natural gas.
- Develop local water supply and reduce dependence on imported water.
  - Through the development of Pure Water, the City will have a local water supply that won't be susceptible to the effects of severe drought or other natural disasters which could impact the City's water supply in the future. Local water generates less GHG than imported water.
- Support ongoing gallon per capita per day (gpcd) water use targets.
- Implement technologies such as renewable electricity generation, heat pumps, energy storage, and microgrids at City facilities to meet the zero emissions goals for municipal buildings established in the Municipal Energy Strategy & Implementation Plan.
  - The new solar installation at Miramar Water Treatment Plant Clearwell 1 and 2 added 2.25 MW of solar generation.

- The new roof top solar installation at Chollas Building A and B added 212 kW of solar generation.
- The new parking lot solar installation at the Employee Training and Development Center added 190 kW of solar generation.

7.5 FUTURE ENERGY INTENSITY AND GHG TRENDS

Pure Water San Diego will consume a large amount of energy, mainly electricity, and will greatly increase PUD's total energy consumption; however, all the power used will be 100 percent renewable and carbon-free energy supplied from SDCP. The energy will be used to pump wastewater to the water reclamation and purification plants, to pump the produced purified water to City reservoirs for storage, and to power the plants' extensive and state-of-the-art treatment processes. The North City Pure Water Facility (NCPWF) will include a solar installation for onsite renewable power generation, but is also planned to rely on grid power. Thus, PUD's use of energy from the utility is projected to more than double when both phases are complete. Though the new facilities built as part of Pure Water San Diego will be major energy consumers, it is worth noting that the Pure Water Program will indirectly reduce energy consumption at some other locations. Each phase will divert a portion of the current wastewater flow away from PLWTP to be treated at the new facilities instead, and therefore, energy consumption at both PLWTP and some pump stations will decline. More importantly, Pure Water will reduce the City's use of imported water. Imported water is transported through extremely large aqueducts and pump stations. Because the water must travel the long distance from the Colorado River and northern California and must be pumped either over or around mountain ranges, the amount of energy per gallon delivered is very high. While these wholesale suppliers are not part of the City itself, any opportunity to reduce the energy they consume on the City's behalf is beneficial to the City's sustainability and climate action goals.

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SECTION

8 References

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APPENDIX A UWMP Checklist

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Retail (x = required)	Wholesale (x = required)	Order	2025 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	Relevant Submittal Table	2025 UWMP Location
x	x	1	Chapter 1	10615	A plan shall describe and evaluate sources of supply, reasonable and practical efficient uses, reclamation and demand management activities.	Introduction and overview	n/a	Section 1.1
x	x	1	Chapter 1	10630.5	Each plan shall include a simple description of the Supplier's plan including water availability, future requirements, a strategy for meeting needs, and other pertinent information. Additionally, a Supplier may also choose to include a simple description at the beginning of each chapter.	Plan preparation	n/a	Section 1.2
x	x	2.1	Section 2.1	10620(b)	Every person that becomes a Supplier shall adopt UWMP within one year after it has become a Supplier.	Plan preparation	n/a	Section 1.6
x	n/a	2.5	Section 2.5	10644	Supplier shall report the Public Water Systems number, volume of delivered water, and number of connections that are included in this UWMP.	Plan preparation	2-1	Section 1.2 and App B Table 2-1
x	x	2.5	Section 2.5	10644	Supplier shall report if this UWMP is an individual UWMP and whether the Supplier belongs to a regional UWMP or regional alliance.	Plan preparation	2-2	App B Table 2-2
x	x	2.5	Section 2.5	10644	Supplier shall report whether the data is in fiscal or calendar years and the units of measure used for reporting water volumes.	Plan preparation	2-3	Page 1-1 and App B Table 2-3
x	x	2.4	Section 2.4	10642	Provide supporting documentation that the Supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan and contingency plan.	Plan preparation	n/a	Section 1.5 and App D
x	x	2.4	Section 2.4.2	10620(d)(3)	Coordinate the preparation of its plan with other appropriate agencies in the area, including other Suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	Plan preparation	n/a	Section 1.5 and App D
x	n/a	2.4	Section 2.4.1	10631(h)	Retail Suppliers will include documentation that they have provided their Wholesale Supplier(s)—if any—with water use projections from that source.	Plan preparation	2-4 R	Section 1.5 and App B Table 2-4R
n/a	x	2.4	Section 2.4.1	10631(h)	Wholesale Suppliers will provide their Suppliers with identification and quantification of the existing and planned sources of water available from the Wholesale Supplier to the Supplier during various water year types.	Plan preparation	2-4 W	Section 1.5 and App B Table 2-4W
x	x	3	Chapter 3.0	10631(a)	Describe the Supplier service area.	System description	n/a	Section 2
x	x	3.3	Section 3.3	10631(a)	Describe the climate of the Supplier's service area.	System description	n/a	Section 2.3
x	x	3.4	Section 3.4.1	10631(a)	Provide the current and projected service area populations for 2030, 2035, 2040, 2045 and optionally 2050.	System description	3-1	Section 2.2, Table 2-1, and App B Table 3-1
x	x	3.4	Section 3.4.2	10631(a)	Describe other social, economic, and demographic factors affecting the Supplier's water management planning.	System description	n/a	Section 2.2
x	x	3.5	Section 3.5	10631(a)	Describe the land uses within the service area… include the current and projected land uses within the existing or anticipated service area affecting the Supplier's water management planning. Describe the land uses within the service area.	System description and baselines	n/a	Section 2.2
x	Optional	4.2	Sections 4.2.3 and 4.2.4	10631(d)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System water use	4-1 and 4-2	Section 3, Table 3-1 and 3-7, and App B Table 4-1 and 4-2
x	Optional	4.3	Section 4.3.1	10631(d)(3)(A)	Report the distribution system water loss for each of the five years preceding the plan update.	System water use	4-5	Section 3.1.2, Table 3-2, and App B Table 4-5
x	n/a	4.3	Section 4.3.2	10631(d)(3)(C)	Retail Suppliers shall provide data to show the distribution loss standards were met.	System water use	4-6	Section 3.1.2, Table 3-3, and App B Table 4-6
x	n/a	4.2	Section 4.2.5.4	10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the Supplier.	System water use	4-3	Section 3.3.1 and App B Table 4-3

Retail (x = required)	Wholesale (x = required)	Order	2025 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	Relevant Submittal Table	2025 UWMP Location
x	n/a	4.2	Section 4.2.5.3	10631(d)(4)(A)	In projected water use, include estimates of water savings from adopted codes, plans, and other policies or laws.	System water use	4-3	Section 3.3 and App B Table 4-3
x	n/a	4.2	Section 4.2.5.3	10631(d)(4)(B)	Provide citations of codes, standards, ordinances, or plans used to make water use projections.	System water use	4-3	Section 3 and 3.6 and App B Table 4-3
x	n/a	4.2	Section 4.2.5.3	10631(d)(4)(B)(ii)	To the extent that a Supplier reports the information described in subparagraph (A), an urban water Supplier shall… Indicate the extent that the water use projections consider savings from codes, standards, ordinances, or transportation and land use plans. Water use projections that do not account for these water savings shall be noted of that fact.	System water use	4-3	Section 3.6, Table 3-8, and App B Table 4-3
x	x	4.2	Section 4.2.5.6	10635(b)	Demands under climate change considerations must be included as part of the drought risk assessment.	System water use	n/a	Section 3
n/a	x	5.1	Section 5.1	10608.36	Wholesale Suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their Retail Suppliers achieve targeted water use reductions.	Baselines and targets	n/a	Section 5
x	n/a	5.2	Section 5.2	10608.4	Retail Suppliers shall report on their compliance in meeting their water use targets. Reporting requirements will vary depending on whether the Supplier: - Was considered an urban retail water supplier in 2020, - Met its 2020 target in 2020, or - Was part of a merger or consolidation since 2020. Chapter 5 Subsections 5.2.1, 5.2.2, and 5.2.3 address each of these situations.	Baselines and targets	5-1	Section 5, Table 5-1, and App B Table 5-1
x	x	6.1	Section 6.1	10631(b)(2)	When multiple sources of water supply are identified, describe the management of each supply in relationship to other identified supplies.	System supplies	n/a	Section 6
x	x	6.1	Sections 6.1 and 6.2	10631(b)(1)	Provide a discussion of anticipated supply availability under a normal, single dry year, and a drought lasting five years, as well as more frequent and severe periods of drought, including changes in supply due to climate change.	System supplies	n/a	Section 6
x	x	6.2	Section 6.2.2	10631(b)(4)(C)	Indicate whether groundwater is an existing or planned source of water available to the Supplier. If groundwater is identified as an existing or planned source of water… (include) a detailed description and analysis of the location, amount and sufficiency of groundwater pumped by the Supplier for the past five years.	Water supplies and recycled water	6-1	Section 4.2, Table 4-2, and App B Table 6-1
x	x	6.2	Section 6.2.2	10631(b)(4)(A)	Indicate whether a groundwater sustainability plan or groundwater management plan has been adopted by the Supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	System supplies	n/a	Section 4.2
x	x	6.2	Section 6.2.2	10631(b)(4)(B)	Describe the groundwater basin.	System supplies	n/a	Section 4.2
x	x	6.2	Section 6.2.2	10631(b)(4)(B)	Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the Supplier has the legal right to pump.	System supplies	n/a	Section 4.2
x	x	6.2	Section 6.2.2	10631(b)(4)(B)	For unadjudicated basins… (include) information as to whether DWR has identified the basin as a high- or medium-priority basin in the most current official departmental bulletin…	Water supplies and recycled water	n/a	Section 4.2

Retail (x = required)	Wholesale (x = required)	Order	2025 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	Relevant Submittal Table	2025 UWMP Location
x	x	6.2	Section 6.2.2	10631(b)(4)(B)	For unadjudicated basins… describe efforts by the Supplier to coordinate with sustainability or groundwater agencies to achieve sustainable groundwater conditions.	Water supplies and recycled water	n/a	Section 4.2
x	x	6.2	Section 6.2.2.	10631(b)(4)(C)	If groundwater is identified as an existing or planned source of water… (include) a detailed description and analysis of the location, amount and sufficiency of groundwater pumped by the Supplier for the past five years.	System supplies	n/a	Section 4.2
x	x	6.2	Section 6.2.2	10631(b)(4)(D)	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	System supplies	6-9	Section 4.2 and App B Table 6-9
x	x	6.1	Section 6.1	10631(b)	Identify and quantify the existing and planned sources of water available for 2025, 2030, 2035, 2040, 2045 and optionally 2050.	System supplies	6-8 and 6-9	Section 4.7, Tables 4-10 and 4-11, and App B Tables 6-8 and 6-9
x	x	6.2	Section 6.2.7	10631(c)	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	System supplies	n/a	Section 4
x	n/a	6.2	Section 6.2.5	10633(a)	Describe the wastewater collection and treatment systems in the Supplier's service area with quantified amount of collection and treatment and the disposal methods.	System supplies (recycled water)	6-2	Section 2.5, Section 4.3, and App B Table 6-2
x	x	6.2	Section 6.2.5	10633(b)	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	System supplies (recycled water)	6-3	Section 4.3, Table 4-4, and App B Table 6-3
x	x	6.2	Section 6.2.5	10633(c)	Describe the recycled water currently being used in the Supplier's service area.	System supplies (recycled water)	6-4	Section 4.3.4 and App B Table 6-4
x	x	6.2	Section 6.2.5	10633(d)	Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.	System supplies (recycled water)	6-4	Section 4.3.4 and App B Table 6-4
x	x	6.2	Section 6.2.5	10633(e)	Describe the projected use of recycled water within the Supplier's service area at the end of 5, 10, 15, and 20 years, and describe the actual use of recycled water in comparison to uses previously projected.	System supplies (recycled water)	6-4 and 6-5	Section 4.3.4, Table 4-6, and App B Tables 6-4 and 6-5
x	x	6.2	Section 6.2.5	10633(f)	Describe the actions that may be taken to encourage the use of recycled water and the projected results of these actions in terms of acre-feet of recycled water used per year.	System supplies (recycled water)	6-6	Section 4.3.5, Table 4-7, and App B Table 6-6
x	x	6.2	Section 6.2.5	10633(g)	Provide a plan for optimizing the use of recycled water in the Supplier's service area.	System supplies (recycled water)	n/a	Section 4.3.5
x	x	6.2	Section 6.2.6	10631(g)	Describe desalinated water project opportunities for long-term supply.	System supplies	6-7	Not applicable App B Table 6-7
x	x	6.2	Section 6.2.10	10631(f)	Describe the expected future water supply projects and programs that may be undertaken by the water Supplier to address water supply reliability in average, single-dry, and for a period of drought lasting five consecutive water years.	System supplies	6-7	Section 4.6 and App B Table 6-7
x	x	6.3	Section 6.3 and Appendix O	10631.2(a)	The UWMP must include energy information, as stated in the code, that a Supplier can readily obtain.	System suppliers, energy intensity	O-1A, O-1B, O-1C, and O-2	Section 7 and App J Tables O-1A and O-2
x		7.1	Section 7.1	10634	Provide information on the quality of existing sources of water available to the Supplier and the manner in which water quality affects water management strategies and supply reliability.	Water supply reliability assessment	n/a	Sections 6.5, 6.6, 6.7, and 6.8
x	x	7.2	Section 7.2	10635(a)	Service Reliability Assessment: Assess the water supply reliability during normal, dry, and a drought lasting five consecutive water years by comparing the total water supply sources available to the Supplier with the total projected water use over the next 20 years.	Water supply reliability assessment	7-2, 7-3, and 7-4	Section 6 and tables in the section, App B Tables 7-2, 7-3, and 7-4

Retail (x = required)	Wholesale (x = required)	Order	2025 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	Relevant Submittal Table	2025 UWMP Location
x	x	7.2	Section 7.2.3	10620(f)	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	Water supply reliability assessment	n/a	Section 6
x	x	7.3	Section 7.3	10635(b)	Provide a drought risk assessment as part of information considered in developing the demand management measures and water supply projects.	Water supply reliability assessment	n/a	Section 6.9
x	x	7.3	Section 7.3	10635(b)(1)	Include a description of the data, methodology, and basis for one or more supply shortage conditions that are necessary to conduct a drought risk assessment for a drought period that lasts five consecutive years.	Water supply reliability assessment	n/a	Section 6.9.2
x	x	7.3	Section 7.3	10635(b)(2)	Include a determination of the reliability of each source of supply under a variety of water shortage conditions.	Water supply reliability assessment	n/a	Section 6.9.2
x	x	7.3	Section 7.3	10635(b)(3)	Include a comparison of the total water supply sources available to the Supplier with the total projected water use for the drought period.	Water supply reliability assessment	7-5	Section 6.9.2, Table 6-6, and App B Table 7-5R and 7-5W
x	x	7.3	Section 7.3	10635(b)(4)	Include considerations of the historical drought hydrology, plausible changes on projected supplies and demands under climate change conditions, anticipated regulatory changes, and other locally applicable criteria.	Water supply reliability assessment	n/a	Section 6
x	x	8	Chapter 8	10632(a)	Provide a water shortage contingency plan (WSCP) with specified elements below.	Water shortage contingency planning	n/a	App C
x	x	8	Chapter 8	10632(a)(1)	Provide an analysis of water supply reliability (from Guidebook Chapter 7) in the WSCP.	Water shortage contingency planning	n/a	Section 6
x	x	8.2	Section 8.2	10632(a)(2)(A)	Provide the written decision-making process and other methods that the Supplier will use each year to determine its water reliability.	Water shortage contingency planning	n/a	App C
x	x	8.2	Section 8.2	10632(a)(2)(B)	Provide data and methodology to evaluate the Supplier's water reliability for the current year and one dry year pursuant to factors in the code.	Water shortage contingency planning	n/a	App C
x	x	8.3	Section 8.3	10632(a)(3)(A)	Define six standard water shortage levels of 10%, 20%, 30%, 40%, 50% shortage, and greater than 50% shortage. These levels shall be based on supply conditions, including percent reductions in supply, changes in groundwater levels, changes in surface elevation, or other conditions. The shortage levels shall also apply to a catastrophic interruption of supply.	Water shortage contingency planning	n/a	Section 6.9.1 and App C
x	x	8.3	Section 8.3	10632(a)(3)(B)	Suppliers with an existing WSCP that uses different water shortage levels must cross reference their categories with the six standard categories.	Water shortage contingency planning	8-1	Section 6.9.1, App C, and App B Table 8-2.
x	x	8.4	Section 8.4	10632(a)(4)(A)	Suppliers with WSCPs that align with the defined shortage levels must specify locally appropriate supply augmentation actions.	Water shortage contingency planning	8-2	App C and App B Table 8-2
x	x	8.4	Section 8.4	10632(a)(4)(B)	Specify locally appropriate demand reduction actions to adequately respond to shortages.	Water shortage contingency planning	8-3	App C and App B Table 8-3
x	x	8.4	Section 8.4	10632(a)(4)(C)	Specify locally appropriate operational changes.	Water shortage contingency planning	8-2	App C and App B Table 8-2
x	x	8.4	Section 8.4	10632(a)(4)(D)	Specify additional mandatory prohibitions against specific water use practices that are in addition to State-mandated prohibitions are appropriate to local conditions.	Water shortage contingency planning	Table 8-3	App C and App B Table 8-3

Retail (x = required)	Wholesale (x = required)	Order	2025 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	Relevant Submittal Table	2025 UWMP Location
x	x	8.4	Section 8.4	10632(a)(4)(E)	Estimate the extent to which the gap between supplies and demand will be reduced by implementation of the action.	Water shortage contingency planning	8-2 and 8-3	App C and App B Tables 8-2 and 8-3
x	x	8.4	Section 8.4.6	10632.5	The UWMP shall include a seismic risk assessment and mitigation plan.	Water shortage contingency plan	n/a	App C
x	x	8.5	Section 8.5	10632(a)(5)(A)	Suppliers must describe that they will inform customers, the public and others regarding any current or predicted water shortages.	Water shortage contingency planning	n/a	App C
x	x	8.5	Section 8.5	10632(a)(5)(B), 10632(a)(5)(C)	Suppliers must describe that they will inform customers, the public and others regarding any shortage response actions triggered or anticipated to be triggered and other relevant communications.	Water shortage contingency planning	n/a	App C
x	n/a	8.6	Section 8.6	10632(a)(6)	Retail Supplier must describe how it will ensure compliance with and enforce provisions of the WSCP.	Water shortage contingency planning	n/a	App C
x	x	8.7	Section 8.7	10632(a)(7)(A)	Describe the legal authority that empowers the Supplier to enforce shortage response actions.	Water shortage contingency planning	n/a	App C
x	x	8.7	Section 8.7	10632(a)(7)(B)	Provide a statement that the Supplier will declare a water shortage emergency per Water Code Chapter 3. *Water Shortage Emergencies* .	Water shortage contingency planning	n/a	App C
x	x	8.7	Section 8.7	10632(a)(7)(C)	Provide a statement that the Supplier will coordinate with any city or county within which it provides water for the possible proclamation of a local emergency.	Water shortage contingency planning	n/a	App C
x	x	8.8	Section 8.8	10632(a)(8)(A)	Describe the potential revenue reductions and expense increases associated with activated shortage response actions.	Water shortage contingency planning	n/a	App C
x	x	8.8	Section 8.8	10632(a)(8)(B)	Provide a description of mitigation actions needed to address revenue reductions and expense increases associated with activated shortage response actions.	Water shortage contingency planning	n/a	App C
x	n/a	8.8	Section 8.8	10632(a)(8)(C)	Retail Suppliers must describe the cost of compliance with Water Code Chapter 3.3, *Excessive Residential Water Use During Drought* .	Water shortage contingency planning	n/a	App C
x	n/a	8.9	Section 8.9	10632(a)(9)	Retail Suppliers must describe the monitoring and reporting requirements and procedures that ensure appropriate data are collected, tracked, and analyzed for purposes of monitoring customer compliance.	Water shortage contingency planning	n/a	App C
x	x	8.10	Section 8.10	10632(a)(10)	Describe reevaluation and improvement procedures for monitoring and evaluation the WSCP to ensure risk tolerance is adequate and appropriate water shortage mitigation strategies are implemented.	Water shortage contingency planning	n/a	App C
x	n/a	8.11	Section 8.11	10632(b)	Analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas.	Water shortage contingency planning	n/a	App C
x	x	8.12	Section 8.12	10632(c)	Make available the WSCP to customers and any city or county where it provides water within 30 days after adoption of the plan.	Water shortage contingency planning	n/a	Section 1.6

Retail (x = required)	Wholesale (x = required)	Order	2025 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	Relevant Submittal Table	2025 UWMP Location
x	n/a	9.1	Sections 9.1	10631(e)(1)	Retail Suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand management measures	n/a	Section 5
n/a	x	9.2	Sections 9.2	10631(e)(2)	Wholesale Suppliers shall describe specific demand management measures listed in code, their distribution system asset management program, and Supplier assistance program.	Demand management measures	n/a	Section 5
x	n/a	10	Chapter 10	10608.26(a)	Retail Suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets (recommended to discuss compliance).	Plan adoption, submittal, and implementation	n/a	Section 1.6
x	x	10.2	Section 10.2.1	10621(b)	Notify, at least 60 days prior to the public hearing, any city or county within which the Supplier provides water that the Supplier will be reviewing the UWMP and considering amendments or changes to the plan.	Plan adoption, submittal, and implementation	10-1	Section 1.5 and App B Table 10-1
x	x	10.4	Section 10.4	10621(f)	Each urban water Supplier shall update and submit its 2025 plan to DWR by July 1, 2026.	Plan adoption, submittal, and implementation	n/a	Section 1.6
x	x	10.2	Sections 10.2.2, 10.3, and 10.5	10642	Provide supporting documentation that the Supplier made the UWMP and WSCP available for public inspection, published notice of the public hearing, and held a public hearing about the UWMP and WSCP.	Plan adoption, submittal, and implementation	n/a	Section 1.6 and App D
x	x	10.2	Section 10.2.2	10642	The Supplier is to provide the time and place of the hearing to any city or county within which the Supplier provides water.	Plan adoption, submittal, and implementation	10-1	Section 1,5 and App B Table 10-1
x	x	10.3	Section 10.3.2	10642	Provide supporting documentation that the UWMP and WSCP has been adopted as prepared or modified.	Plan adoption, submittal, and implementation	n/a	App D
x	x	10.4	Section 10.4	10644(a)	Provide supporting documentation that the Supplier has submitted their UWMP to the California State Library.	Plan adoption, submittal, and implementation	n/a	App D
x	x	10.4	Section 10.4	10644(a)(1)	Provide supporting documentation that the Supplier has submitted their UWMP to any city or county within which the Supplier provides water no later than 30 days after adoption.	Plan adoption, submittal, and implementation	n/a	App D
x	x	10.4	Sections 10.4.1 and 10.4.2	10644(a)(2)	The UWMP, or amendments to the UWMP, submitted to DWR shall be submitted electronically.	Plan adoption, submittal, and implementation	n/a	Section 1.6
x	x	10.7	Section 10.7.2	10644(b)	If revised, submit a copy of the WSCP to DWR within 30 days of adoption.	Plan adoption, submittal, and implementation	n/a	Section 1.6
x	x	10.5	Section 10.5	10645(a)	Provide supporting documentation that, not later than 30 days after filing a copy of its UWMP with DWR, the Supplier has or will make the plan available for public review during normal business hours.	Plan adoption, submittal, and implementation	n/a	Section 1.6
x	x	10.5	Section 10.5	10645(b)	Provide supporting documentation that, not later than 30 days after filing a copy of its WSCP with DWR, the Supplier has or will make the plan available for public review during normal business hours.	Plan adoption, submittal, and implementation	n/a	Section 1.6
x	x	10.6	Section 10.6	10621(c)	If Supplier is regulated by the Public Utilities Commission, include its plan and contingency plan as part of its general rate case filings.	Plan adoption, submittal, and implementation	n/a	Noted

APPENDIX B

Department of Water Resources Compliance Tables

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Submittal Table 2-1 Retail: Public Water Systems			
Has there been a change in the number of affiliated Public Water Systems since the 2020 UWMP? (OPTIONAL)			No
Public Water System Number	Public Water System Name	Number of Municipal Connections 2025	Volume of Water Supplied 2025 (AF)
Add additional rows as needed			
CA3710020	City of San Diego	321,369	174,838
	Total	321,369	174,838
DWR NOTES: **Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Table 2-3.			
NOTES:			

Submittal Table 2-2: Plan Identification			
Select One or Both	**Type of Plan**		**Name of Regional Alliance or RUWMP** (Drop Down List)
☑	**Individual UWMP**		
	☐	Water Supplier is also a member of a SB X7-7 Regional Alliance	
☐	**Regional Urban Water Management Plan (RUWMP)**		
NOTES:			

Submittal Table 2-3: Supplier Identification	
Type of Supplier (select one or both)	
☑	Supplier is a wholesale supplier
☑	Supplier is a retail supplier
Fiscal or Calendar Year (select one)	
☐	UWMP Tables are in calendar years
☑	UWMP Tables are in fiscal years
If using fiscal years provide month and date that the fiscal year begins (mm/dd)	
7/1	
Units of measure used in UWMP (Select from the drop down list).	
Unit	AF
DWR NOTES: **Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Submittal Table 2-3.	
NOTES:	

Submittal Table 2-4 Retail: Water Supplier Information Exchange Water Code Section 10631(h)
The retail Supplier has informed the following wholesale supplier(s) of projected water use in accordance with Water Code Section 10631 (h).
Wholesale Water Supplier Name
Add additional rows as needed
San Diego County Water Authority
NOTES:

Submittal Table 2-4 Wholesale: Water Supplier Information Exchange Water Code Section 10631(h)	
☐	Supplier has informed more than 10 other water suppliers of water supplies available in accordance with Water Code Section 10631(h). Completion of the table below is optional. If not completed, include a list of the water suppliers that were informed.
	Provide page number for location of the list.
☑	Supplier has informed 10 or fewer other water suppliers of water supplies available in accordance with Water Code Section 10631(h). **Complete the table below.**
Water Supplier Name	
Add additional rows as needed	
California American Water Company	
City of Del Mar	
NOTES:	

Submittal Table 3-1 Retail: Population - Current and Projected Water Code Section 10631(a)						
Population Served	2025	2030	2035	2040	2045	2050(opt)
	1,399,930	1,418,515	1,424,765	1,440,431	1,462,016	1,456,893
NOTES: Source: SANDAG Series 15.						

Submittal Table 3-1 Wholesale: Population - Current and Projected Water Code Section 10631(a)						
Population Served	2025	2030	2035	2040	2045	2050(opt)
	98,838	96,263	95,870	94,541	93,503	92,465
NOTES: Source: SANDAG Series 15.						

Submittal Table 4-1 Retail: 2025 Actual Total Uses for Potable and Non-Potable Water Water Code Section 10631(d)(1)			
Use Type	Additional Description (as needed)	2025 Actual Water Use	
Drop down list May select each use multiple times These are the only use types that will be recognized by the WUEdata online submittal tool		Level of Treatment When Delivered (OPTIONAL) Drop down list	Volume (AF)
Add additional rows as needed			
Single Family	Indoor and outdoor uses	Potable	49,804
Multi-Family	Indoor and outdoor uses	Potable	37,863
Commercial	Indoor and outdoor uses	Potable	28,236
Industrial	Indoor and outdoor uses	Potable	1,697
Institutional/Governmental	Indoor and outdoor uses	Potable	17,141
Landscape	Dedicated Irrigation Meters	Potable	11,657
Sales/Transfers/Exchanges to other	Sales to Cal Am and Del Mar	Potable	10,765
Distribution System Water Loss	Non-revenue water	Potable	17,675
		Subtotal Potable	174838
		Subtotal Non-Potable	0
		Total	174,838
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3.			
NOTES:			

OPTIONAL Submittal Table 4-1 Wholesale: 2025 Actual Total Uses for Potable and Non-Potable Water Water Code Section 10631(d)(1)			
Use Type	Additional Description (as needed)	2025 Actual Water Use	
Drop down list May select each use multiple times These are the only use types that will be recognized by the WUEdata online submittal tool		Level of Treatment When Delivered (OPTIONAL) Drop down list	Volume (AF)
Add additional rows as needed			
Sales to other agencies	Cal Am and City of Del Mar	Potable	10,765
		Subtotal Potable	10,765
		Subtotal Non-Potable	0
		Total	10,765
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3.			
NOTES:			

Submittal Table 4-2 Retail: Total Uses of Potable, and Non-Potable Water - Projected
Water Code Section 10631(d)(1)

Use Type	Additional Description (as needed)	Projected Water Use (Report To the Extent that Records are Available)					
Drop down list May select each use multiple times These are the only Use Types that will be recognized by the WUEdata online submittal tool		Level of Treatment When Delivered (OPTIONAL) Drop down list	**2030** (AF)	**2035** (AF)	**2040** (AF)	**2045** (AF)	**2050** (opt) (AF)
Add additional rows as needed.							
Single Family	Indoor and outdoor uses	Potable	52,153	52,049	51,940	51,725	51,291
Multi-Family	Indoor and outdoor uses	Potable	41,132	41,711	42,739	44,445	45,190
Commercial	Indoor and outdoor uses	Potable	28,802	29,048	29,371	29,578	29,739
Industrial	Indoor and outdoor uses	Potable	1,683	1,698	1,718	1,731	1,738
Institutional/Governmental	Indoor and outdoor uses	Potable	16,010	16,019	16,140	16,144	16,181
Landscape	Dedicated Irrigation Meters	Potable	8,881	8,881	8,881	8,881	8,881
Distribution System Water Loss	Non-revenue water	Potable	14,228	14,294	14,418	14,571	14,617
		Subtotal Potable	162,888	163,700	165,207	167,074	167,637
		Subtotal Non-Potable	0	0	0	0	0
		Total	162,888	163,700	165,207	167,074	167,637

DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3.

NOTES: Non-potable recycled water demands are NOT reported in this table. Recycled water demands are reported in Table 6-4. Refer to Section 6.5 for additional

OPTIONAL Submittal Table 4-2 Wholesale: Uses for Potable and Non-Potable Water - Projected
Water Code Section 10631(d)(1)

Use Type	Additional Description (as needed)	**Projected Water Use** (Report To the Extent that Records are Available)					
Drop down list May select each use multiple times These are the only Use Types that will be recognized by the WUEdata online submittal tool.		Level of Treatment When Delivered (OPTIONAL) Drop down list	**2030** (AF)	**2035** (AF)	**2040** (AF)	**2045** (AF)	**2050** (opt) (AF)
Add additional rows as needed							
Sales to other agencies	Cal Am and City of Del Mar	Potable	10,622	10,622	10,622	10,622	10,622
		Subtotal Potable	10,622	10,622	10,622	10,622	10,622
		Subtotal Non-Potable	0	0	0	0	0
		Total	10,622	10,622	10,622	10,622	10,622

DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3.

NOTES: Non-potable recycled water demands are NOT reported in this table. Recycled water demands are reported in Table 6-4. Refer to Section 6.5 for ac

Submittal Table 4-3 Retail: Inclusion in Water Use Projections Water Code Section 10631 (a), 10631 (d)(4)(A), and 10631 (d)(4)(B)	
Are Future Water Savings Included in Projections? (Refer to Appendix K of UWMP Guidebook) **Drop down list (y/n)**	Yes
If "Yes" to above: State the section or page number, in the cell to the right, where citations of the codes, ordinances, or otherwise are utilized in demand projections are found. **OPTIONAL** Suppliers may complete Optional Submittal Table 4-4 R to quantify the expected savings.	Passive savings in DWR Table 4-4. UWMP Section 3.6 and Table 3-8 show all future water savings.
Are Lower Income Residential Demands Included In Projections? (Refer to Appendix K of UWMP Guidebook) **Drop down list (y/n)**	Yes
OPTIONAL If the method for accounting Lower Income Residential Demands has been included, provide page number where this accounting can be found. (An example is included in Appendix K.)	UWMP Section 3.3.1
NOTES:	

OPTIONAL Submittal Table 4-4 Retail: Passive Water Savings Projections Water Code Section 10631(d)(4)(A)					
Description (Codes, Standards, Ordinances, or Plans)	Passive savings				
	2030	2035	2040	2045	2050 (opt)
	(AF)	(AF)	(AF)	(AF)	(AF)
Add additional rows as needed					
AB 1572	162	166	176	179	182
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3.					
NOTES: Passive conservation savings assume CII and irrigation water use reductions from non-func					

Submittal Table 4-5 Retail: Water Loss Audit Reporting Water Code Section 10631(d)(3)(A)		
Public Water System ID # Reported in Table 2-1 R	Reporting Period	Submitted to DWR Water Loss Audit Program (yes/no)
Report submittal status for all five years for each Public Water System as available. **Add rows as needed**		
	2020	Yes
	2021	Yes
	2022	Yes
	2023	Yes
	2024	Yes
DWR NOTES: Suppliers will provide a link to the WUEdata submittals of their Water Loss Audit Reports.		
NOTES:		

Submittal Table 4-6 Retail: Progress Towards 2028 Water Loss Standard | Water Code Section 10631(d)(3)(C)

Public Water System ID # Reported in Submittal Table 2-1 R	Did the Water Board Calculate a Water Loss Standard for this Public Water System? (y/n) If no, Supplier will not complete this row.	Real Water Loss					Apparent Water Loss				
		2028 Real Water Loss Standard per Unit per day (as calculated by the Water Board)	Units for Real Water Loss (as used by the Water Board) Drop down list	Number of Units (Connections or Miles corresponding with units selected.)	Volume of Total Real Loss (from AWWA Water Loss Audit)	2025 or Most Recent Year Real Water Loss Per Unit per Day	2028 Apparent Water Loss Standard per Unit per Day (as calculated by the Water Board	Units for Apparent Water Loss	Number of Connections	Volume of Total Apparent Loss (from AWWA Water Loss Audit)	2025 or Most Recent Year Apparent Water Loss Per Unit per Day
Add additional rows as needed.											
CA3710020	Yes	32.3	Gallons per Service Connection per Day (GPSCD)	372378	22151.764	53.1	14.4	Gallons per Service Connection per Day (GPSCD)	372378	4207.983	10.1
Water Board's Calculated Water Loss Standards											
DWR NOTES: Units of measure (AF, CCF, MG) for Water Loss **MUST** remain consistent with units reported in Submittal Table 2-3. The units reported in Submittal Table 2-3 are used in this table's calculations.											
NOTES: Units of measure in this UWMP are acre-feet (AF). Data from the City's 2024 AWWA Water Audit.											

Submittal Table 5-1 Retail: SB X7-7 2020 Target Progress | Water Code Section 10608.40						
☐	**Not an Urban Water Supplier in 2020. Supplier will not complete this table.**					
Regional Alliance Target or Individual Target? Drop down list	2020 Target	Actual 2020 GPCD	Did Supplier Achieve Targeted Reduction for 2020?	**Only for suppliers that did not meet the Target in 2020**		
				Was Supplier part of a merger or consolidation since 2020?	Actual 2025 GPCD (From SB X7-7 Compliance Form)	Did Supplier meet the 2020 Target in 2025?
Individual Target	142	109	Yes			
DWR NOTES: Suppliers calculating a 2025 GPCD will need to complete and submit SB X 7-7 Compliance Tables to verify the use of SB X7-7 Methodologies. Suppliers that were part of a merger or consolidation since 2020 and did not meet their target in 2020 must re-calculate baselines and targets to include the new area. See Appendix P. This recalculation is for the new area only and cannot be part of a regional alliance.						
NOTES: Reported in Gallons per Capita per Day (GPCD).						

Submittal Table 6-1 Retail: Groundwater Volume Pumped Water Code Section 10631(4) and 10631(4)(c)							
☐	Check the box if the Supplier does not pump groundwater. Proceed to the next table.						
☐	Check the box if all or part of the groundwater described below is desalinated. (OPTIONAL)						
Groundwater Type **Drop Down List** May use each category multiple times	Water Type (OPTIONAL) **Drop down list**	Location or Basin Name	2021 (AF)	2022 (AF)	2023 (AF)	2024 (AF)	2025 (AF)
Add additional rows as needed							
Alluvial Basin	Potable	San Diego River Valley Basin	0	0	0	0	0
		Total	0	0	0	0	0

DWR NOTES:
Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3.

NOTES: San Vincente and El Capitan Production Wells

Submittal Table 6-2 Retail: Wastewater Collected Within Service Area in 2025 Water Code Section 10633(a)				
☐	Check the box if there is no wastewater collection system. Proceed to the next table.			
	Percentage of 2025 service area served by wastewater collection system (OPTIONAL)			
	Percentage of 2025 service area population served by wastewater collection system (OPTIONAL)			
Wastewater Collection			**Recipient of Collected Wastewater**	
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated? OPTIONAL **Drop Down List**	Volume of Wastewater Collected from UWMP Service Area 2025 (AF)	Name of Wastewater Treatment Plant (WWTP) and Place ID Number **Drop down list**	Is WWTP Located Within UWMP Area? **Drop Down List**
Add additional rows as needed				
San Diego Public Utilities Department	Metered	156,676	Point Loma WWTP & Ocean Outfall, Place ID 248796	Yes
San Diego Public Utilities Department	Metered	14,817	North City WRP, Place ID 244506	Yes
San Diego Public Utilities Department	Metered	6,620	South Bay WRP, Place ID 257831	Yes
Total Wastewater Received from UWMP Service Area in 2025:		178,113		

DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3.
Additional Guidance. See Appendix M, Section M.21 for detailed guidance on this table.

NOTES:

Submittal Table 6-3 Retail: Wastewater Treatment and Outcomes Within UWMP Service Area in 2025 Water Code Section 10633(a)														
☐	**Check the box if no wastewater is treated or disposed of within the UWMP service area.** Proceed to the next table.													
				2025 Outcomes of Treated Wastewater										
Wastewater Treatment Plant Name and Place ID Number **Drop down list**	Does This Plant Treat Wastewater Generated Outside the UWMP Service Area? (OPTIONAL) **Drop down list**	2025 Volume of Wastewater Received from UWMP Service Area (As Reported in Submittal Table 6-2 R) (AF)	Total 2025 Volume of Water Treated (AF)	**Water Recycled Within UWMP Service Area** (enter data as applicable)		**Water Recycled Outside of UWMP Service Area** (enter data as applicable)		**Effluent Discharge that is not a Permitted Recycled Water Use** (enter data as applicable)		**Required Discharge for Instream Flow** (enter data as applicable)		**Delivered to Another Entity for Additional Treatment** (enter data as applicable)		
				Treatment Level **Drop down list**	Volume (AF)	Treatment Level **Drop down list**	Volume (AF)	Treatment Level **Drop down list**	Volume (AF)	Treatment Level **Drop down list**	Volume (AF)	Treatment Level **Drop down list**	Volume (AF)	Name of other entity
Add additional rows as needed														
Point Loma WWTP & Ocean Outfall, Place	Yes	156696	156,696					Secondary, Undisinfected	155251					
North City WRP, Place ID 244506	Yes	14821	14,821	Tertiary	6,814	Tertiary	627	Tertiary	5915					
South Bay WRP, Place ID 257831	Yes	6621	6,621	Tertiary	623	Tertiary	3,156	Secondary, Disinfected -	2834					
	Total	178,138	178,138		7,437		3,783		164,000		0		0	

DWR NOTES:
Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3.
IPR: Indirect Potable Reuse would have the treatment level of its end use requrement in the Level of Treatment drop-down.
Additional Guidance. See Appendix M, Section M.21 for detailed guidance on this table.

NOTES: PLWTP treatment level is advanced primary. The wastewater treated volumes for the North City and South Bay Water Reclamation Plants do not represent any sludge volumes sent to PLWTP; as a result there is a discrepancy in the volume of treated wastewater and the sum of the volumes of the recycled water and discharged treated wastewater. SBWRP is disinfected secondary to meet fecal coliform and enterococci permit limits for ocean discharge. NCWRP discharges to the sewer.

Submittal Table 6-4 Retail: Recycled Water Direct Beneficial Uses Within Service Area | Water Code Section 10633 (c)(d)	
☐	Recycled water is not used and is not planned for use within the service area of the supplier. The supplier will only complete the column on "Potential Recycled Water Use" and submit an accompanying narrative on the feasibility of that potential recycled water use.
Name(s) of Facility/ies Producing (Treating) the Recycled Water (OPTIONAL) :	North City WRP and South Bay WRP
Name of Supplier Operating the Recycled Water Distribution System (OPTIONAL) :	City of San Diego
Supplemental Water Added in 2025 (volume) Include units (OPTIONAL) :	0
Source of 2025 Supplemental Water (OPTIONAL) :	N/A

Use Type Drop down list	Water Type (after treatment if treated) (OPTIONAL) Drop down list	Additional Information (as needed)	2025	2030	2035	2040	2045	2050 (opt)	Potential Recycled Water Use	
									Volume	Narrative page number
Other (Description Required)	Non-Potable	Landscape irrigation and industrial reuse combined	9272	9152	9152	9152	9152	9152		
Reservoir water augmentation (IPR)	Potable	Pure Water San Diego Phase 1	0	33600	33600	33600	33600	33600		
Reservoir water augmentation (IPR)	Potable	Pure Water San Diego Phase 2	0	0	59368	59368	59368	59368		
		Total	9272	42752	102120	102120	102120	102120	0	

DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.
Potential recycled water use - a description of the feasibility of these uses must be included in the narrative.

NOTES: Units of measure in this UWMP are acre-feet (AF).

Submittal Table 6-5 Retail: 2020 UWMP Recycled Water Use Projection Compared to 2025 Actual Water Code Section 10633 (e)

☐	Check the box if recycled water was not used in 2025 nor previously projected for use in 2020. Proceed to the next table.

Use Type Drop Down list	2020 Projection for 2025	2025 Actual Use
	(AF)	(AF)
Add additional rows as needed		
Other (Description Required)	13,773	9,272
Total	13,773	9,272

DWR NOTES:
Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure reported in Submittal Table 2-3
Additional Guidance. See Appendix M, Section M.21 for detailed guidance on this table.

NOTES: Other includes all uses and wholesale

Submittal Table 6-6 Retail: Methods to Encourage Future Recycled Water Use Water Code Section 10633 (f)			
☐	Check the box if the Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.		
	Provide page location of narrative in the UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use (AF)
Add additional rows as needed			
Pure Water San Diego Phase 1	Potable reuse	2028	33,600
Pure Water San Diego Phase 2	Potable reuse	2035	59,368
		Total (AF)	92,968
		Unit Conversion to AF	92,968

DWR NOTES:
Units of measure (AF, CCF, MG) MUST remain consistent with units reported in Submittal Table 2-3. The units reported in Submittal Table 2-3 are used in this table's calculations.
The unit conversion to Acre Feet addresses the Water Code's requirement that this value be provided in acre-feet.

NOTES: Phase 1 will startup in calendar year 2026 with ramped up production to 33,600 by 2028.

Submittal Table 6-7 Retail: Expected Future Water Supply Projects or Programs Water Code Section 10631 (f)							
☑	Check the box if there are no expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Procees to the next table.						
☐	Check the box if some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in a narrative format.						
	Provide page location of narrative in the UWMP						
Name of Future Projects or Programs	Joint Project with other suppliers?		Additional Description (as needed)	Water Type (after treatment if treated) (OPTIONAL) **Drop Down list**	Planned Implementation Year	Planned for Use in Year Type **Drop Down List**	Expected Increase in Water Supply to Supplier (This may be a range) (AF)
	Drop Down List (yes/no)	If Yes, Supplier Name					
Add additional rows as needed							

DWR NOTES:
Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure reported in Submittal Table 2-3.

NOTES:

Submittal Table 6-8 Retail: Water Supplies — 2025 Actual Water Code Section 10631 (b)				
Water Supply		**2025**		
Drop down list May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool	Additional Description (as needed)	**Water Type** (after treatment if treated) (OPTIONAL) **Drop Down list**	**Actual Volume**	**Total Entitlement** (OPTIONAL) See "DWR Notes" below
			(AF)	(AF)
Add additional rules as needed				
Surface water (not desalinated)	Reservoirs	Potable	49,195	
Groundwater (not desalinated)	Raw water and drinking water	Potable	0	
Purchased or Imported Water	SDCWA raw and drinking water	Potable	125,643	
		Subtotal Potable	174,838	0
		Subtotal Non-Potable	0	0
		Total	174,838	0

DWR NOTES:
Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3.
Total Entitlement: e.g. Water Right, Groundwater Allocation, Contracted Amount.

NOTES:

Submittal Table 6-9 Retail: Water Supplies — Projected Water Code Section 10631 (b)												
Water Supply			**Projected Water Supply (Report to the Extent Practicable)**									
			2030		**2035**		**2040**		**2045**		**2050 (opt)**	
Drop down list May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool	Additional Detail on Water Supply	**Water Type** (after treatment if treated) (OPTIONAL) **Drop Down list**	Reasonably Available Volume	Total Entitlement (OPTIONAL) See "DWR Notes" below	Reasonably Available Volume	Total Entitlement (OPTIONAL) See "DWR Notes" below	Reasonably Available Volume	Total Entitlement (OPTIONAL) See "DWR Notes" below	Reasonably Available Volume	Total Entitlement (OPTIONAL) See "DWR Notes" below	Reasonably Available Volume	Total Entitlement (OPTIONAL) See "DWR Notes" below
			(AF)	(AF)	(AF)	(AF)	(AF)	(AF)	(AF)	(AF)	(AF)	(AF)
Add additional rows as needed												
Surface water (not desalinated)	Reservoirs	Potable	29,875		29,875		29,875		29,875		29,875	
Groundwater (not desalinated)	Ground water	Potable	100		100		100		100		100	
Other (optional)	Potable Reuse Pure Water San Diego Phase 1	Potable	33,600		33,600		33,600		33,600		33,600	
Other (optional)	Potable Reuse Pure Water San Diego Phase 2	Potable	0		59,368		59,368		59,368		59,368	
Purchased or Imported Water	SDCWA raw and drinking water	Potable	99,313		40,757		42,264		44,131		44,694	
		Subtotal Potable	162,888	0	163,700	0	165,207	0	167,074	0	167,637	0
		Subtotal Non-Potable	0	0	0	0	0	0	0	0	0	0
		Total	162,888	0	163,700	0	165,207	0	167,074	0	167,637	0

DWR NOTES:
Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.
Total Entitlement: e.g. Water Right, Groundwater Allocation, Contracted Amount.

NOTES:

Submittal Table 6-9 Wholesale: Water Supplies — Projected
Water Code Section 10631 (b)

Water Supply			Projected Water Supply (Report to the Extent Practicable)									
			2030		2035		2040		2045		2050 (opt)	
Drop down list May use each category multiple times.These are the only water supply categories that will be recognized by the WUEdata online submittal tool	Additional Detail on Water Supply	**Water Type** (after treatment if treated) (OPTIONAL) **Drop Down list**	Reasonably Available Volume	Total Entitlement (OPTIONAL) See "DWR Notes" below	Reasonably Available Volume	Total Entitlement (OPTIONAL) See "DWR Notes" below	Reasonably Available Volume	Total Entitlement (OPTIONAL) See "DWR Notes" below	Reasonably Available Volume	Total Entitlement (OPTIONAL) See "DWR Notes" below	Reasonably Available Volume	Total Entitlement (OPTIONAL) See "DWR Notes" below
			(AF)	(AF)	(AF)	(AF)	(AF)	(AF)	(AF)	(AF)	(AF)	(AF)
Add additional rows as needed												
Purchased or Imported		Potable	10,622		10,622		10,622		10,622		10,622	
Subtotal Potable			10,622	0	10,622	0	10,622	0	10,622	0	10,622	0
Subtotal Non-Potable			0	0	0	0	0	0	0	0	0	0
Total			10,622	0	10,622	0	10,622	0	10,622	0	10,622	0

DWR NOTES:
Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in a Submittal Table 2-3.
Total Entitlement: e.g. Water Right, Groundwater Allocation, Contracted Amount.

NOTES:

OPTIONAL Submittal Table 7-1 Retail: Basis of Water Year Data (Reliability Assessment)

Year Type	Base Year If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 2024-2025, use 2025	Available Supplies if Year Type Repeats	
		☐ Check the box if quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. **Location:** [insert location from UWMP]	
		Quantification of available supplies is provided in this table as either volume only, percent only, or both.	
		Volume Available	**% of Average Supply**
Average Year	2010		100%
Single-Dry Year	2014		26%
Consecutive Dry Years 1st Year	2012		91%
Consecutive Dry Years 2nd Year	2013		97%
Consecutive Dry Years 3rd Year	2014		26%
Consecutive Dry Years 4th Year	2015		57%
Consecutive Dry Years 5th Year	2016		64%

DWR NOTES: Supplier may use multiple versions of Submittal Table 7-1 R if different water sources have different base years and the supplier chooses to report the base years for each water source separately. If a Supplier uses multiple versions of Submittal Table 7-1 R, in the "Note" section of each submittal table, state that multiple versions of Submittal Table 7-1 R are being used and identify the particular water source that is being reported in each submittal table.
Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table reports the units of measure reported in Submittal Table 2-3.

NOTES:

Submittal Table 7-2 Retail: Normal Year Supply and Use Comparison Water Code Section 10635 (a)					
	2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (Opt) (AF)
Supply totals (autofill from Submittal Table 6-9 R)	162,888	163,700	165,207	167,074	167,637
Use totals (autofill from Submittal Table 4-2 R)	162,888	163,700	165,207	167,074	167,637
Surplus/(shortfall)	0	0	0	0	(0)
OPTIONAL Planned WSCP Actions					
WSCP - supply augmentation benefit					
WSCP - use reduction savings benefit					
Revised Surplus/(shortfall)					
DWR NOTES : Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.					
NOTES:					

Submittal Table 7-2 Wholesale: Normal Year Supply and Use Comparison Water Code Section 10635 (a)					
	2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (Opt) (AF)
Supply totals (autofill from Submittal Table 6-9 W)	10,622	10,622	10,622	10,622	10,622
Use totals (see OPTIONAL Submittal Table 4-2 W)	10,622	10,622	10,622	10,622	10,622
Surplus/(shortfall)	0	0	0	0	0
OPTIONAL Planned WSCP Actions					
WSCP - supply augmentation benefit					
WSCP - use reduction savings benefit					
Revised Surplus/(shortfall)					
DWR NOTES : Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.					
NOTES:					

Submittal Table 7-3 Retail: Single Dry Year Supply and Use Comparison Water Code Section 10635(a)					
	2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (Opt) (AF)
Supply totals	169,403	170,248	171,815	173,757	174,343
Use totals	169,403	170,248	171,815	173,757	174,343
Surplus/(shortfall)	0	0	0	0	0
OPTIONAL Planned WSCP Actions					
WSCP - supply augmentation benefit					
WSCP - use reduction savings benefit					
Revised Surplus/(shortfall)					
DWR NOTES : Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.					
NOTES					

OPTIONAL Submittal Table 7-3 Wholesale: Single Dry Year Supply and Use Comparison - POTABLE					
	2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (Opt) (AF)
Supply totals	11,047	11,047	11,047	11,047	11,047
Use totals	11,047	11,047	11,047	11,047	11,047
Surplus/(shortfall)	0	0	0	0	0
OPTIONAL Planned WSCP Actions					
WSCP - supply augmentation benefit					
WSCP - use reduction savings benefit					
Revised Surplus/(shortfall)					
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.					
NOTES:					

Submittal Table 7-4 Retail: Multiple Dry Years Supply and Use Comparison Water Code Section 10635(a)						
		2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (Opt) (AF)
First year	Supply totals	156,372	157,152	158,599	160,391	160,932
	Use totals	156,372	157,152	158,599	160,391	160,932
	Surplus/(shortfall)	0	0	0	0	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Second year	Supply totals	164,517	165,337	166,859	168,745	169,314
	Use totals	164,517	165,337	166,859	168,745	169,314
	Surplus/(shortfall)	0	0	0	0	0
	OPTIONAL WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Third year	Supply totals	169,403	170,248	171,815	173,757	174,343
	Use totals	169,403	170,248	171,815	173,757	174,343
	Surplus/(shortfall)	0	0	0	0	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Fourth year	Supply totals	154,744	155,515	156,947	158,720	159,256
	Use totals	154,744	155,515	156,947	158,720	159,256
	Surplus/(shortfall)	0	0	0	0	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Fifth year	Supply totals	136,826	137,508	138,774	140,342	140,815
	Use totals	136,826	137,508	138,774	140,342	140,815
	Surplus/(shortfall)	0	0	0	0	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					

DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.

NOTES:

OPTIONAL Submittal Table 7-4 Wholesale: Multiple Dry Years Supply and Use Comparison - POTABLE						
		2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (Opt) (AF)
First year	Supply totals	10,197	10,197	10,197	10,197	10,197
	Use totals	10,197	10,197	10,197	10,197	10,197
	Surplus/(shortfall)	0	0	0	0	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Second year	Supply totals	10,728	10,728	10,728	10,728	10,728
	Use totals	10,728	10,728	10,728	10,728	10,728
	Surplus/(shortfall)	0	0	0	0	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Third year	Supply totals	11,047	11,047	11,047	11,047	11,047
	Use totals	11,047	11,047	11,047	11,047	11,047
	Surplus/(shortfall)	0	0	0	0	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Fourth year	Supply totals	10,091	10,091	10,091	10,091	10,091
	Use totals	10,091	10,091	10,091	10,091	10,091
	Surplus/(shortfall)	0	0	0	0	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Fifth year	Supply totals	8,922	8,922	8,922	8,922	8,922
	Use totals	8,922	8,922	8,922	8,922	8,922
	Surplus/(shortfall)	0	0	0	0	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					

DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3

NOTES:

Submittal Table 7-5 Retail: Five-Year Drought Risk Assessment Water Code Section 10635(b)(3)		
2026		**Total**
Total Water Use	(AF)	157,221
Total Supplies	(AF)	157,221
Surplus/Shortfall w/o WSCP Action		0
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)		
WSCP - supply augmentation benefit	(AF)	
WSCP - use reduction savings benefit	(AF)	
Revised Surplus/(shortfall)		
2027		**Total**
Total Water Use	(AF)	164,869
Total Supplies	(AF)	164,869
Surplus/Shortfall w/o WSCP Action		0
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)		
WSCP - supply augmentation benefit	(AF)	
WSCP - use reduction savings benefit	(AF)	
Revised Surplus/(shortfall)		
2028		**Total**
Total Water Use	(AF)	170,503
Total Supplies	(AF)	170,503
Surplus/Shortfall w/o WSCP Action		0
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)		
WSCP - supply augmentation benefit	(AF)	
WSCP - use reduction savings benefit	(AF)	
Revised Surplus/(shortfall)		
2029		**Total**
Total Water Use	(AF)	155,004
Total Supplies	(AF)	155,004
Surplus/Shortfall w/o WSCP Action		0
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)		
WSCP - supply augmentation benefit	(AF)	
WSCP - use reduction savings benefit	(AF)	
Revised Surplus/(shortfall)		
2030		**Total**
Total Water Use	(AF)	137,220
Total Supplies	(AF)	137,220
Surplus/Shortfall w/o WSCP Action		0
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)		
WSCP - supply augmentation benefit	(AF)	
WSCP - use reduction savings benefit	(AF)	
Revised Surplus/(shortfall)		
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.		
NOTES:		

Submittal Table 7-5 Wholesale: Five-Year Drought Risk Assessment Water Code Section 10635(b)(3)		
2026		**Total**
Total Water Use	(AF)	10,197
Total Supplies	(AF)	10,197
Surplus/Shortfall w/o WSCP Action		0
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)		
WSCP - supply augmentation benefit	(AF)	
WSCP - use reduction savings benefit	(AF)	
Revised Surplus/(shortfall)		
2027		**Total**
Total Water Use	(AF)	10,728
Total Supplies	(AF)	10,728
Surplus/Shortfall w/o WSCP Action		0
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)		
WSCP - supply augmentation benefit	(AF)	
WSCP - use reduction savings benefit	(AF)	
Revised Surplus/(shortfall)		
2028		**Total**
Total Water Use	(AF)	11,047
Total Supplies	(AF)	11,047
Surplus/Shortfall w/o WSCP Action		0
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)		
WSCP - supply augmentation benefit	(AF)	
WSCP - use reduction savings benefit	(AF)	
Revised Surplus/(shortfall)		
2029		**Total**
Total Water Use	(AF)	10,091
Total Supplies	(AF)	10,091
Surplus/Shortfall w/o WSCP Action		0
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)		
WSCP - supply augmentation benefit	(AF)	
WSCP - use reduction savings benefit	(AF)	
Revised Surplus/(shortfall)		
2030		**Total**
Total Water Use	(AF)	8,922
Total Supplies	(AF)	8,922
Surplus/Shortfall w/o WSCP Action		0
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)		
WSCP - supply augmentation benefit	(AF)	
WSCP - use reduction savings benefit	(AF)	
Revised Surplus/(shortfall)		
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.		
NOTES:		

Submittal Table 8-1: Cross-reference for Standard vs Supplier Shortage Levels Water Code Section 10632(a)(3)(B)			
☑	Check the box if the Supplier uses the Standard six levels of water shortage. Proceed to the next table.		
Standard Shortage Levels	**Percent Shortage Range**	**Suppliers Shortage Levels**	**Percent Shortage Range**
1	Up to 10%		
2	Up to 20%		
3	Up to 30%		
4	Up to 40%		
5	Up to 50%		
6	>50%		
NOTES:			

Submittal Table 8-2 Retail: Supply Augmentation and Other Actions Water Code Section 10632(a)(4)(A),(C) and (E)				
	Is the Supplier completing this table using the standard six levels? (yes/no)			
Shortage Level	Supply Augmentation Methods and Other Actions by Water Supplier **Drop down list** These are the only categories that will be accepted by the WUEdata online submittal tool	How much is this going to reduce the shortage gap?		Additional Explanation or Reference (OPTIONAL)
		Volume or Percentage Drop down	Shortage Gap Reduction Value (May be a range) (AF)	
Add additional rows as needed				
ALL	Expand Public Information Campaign	Percentage	2	Continued public information campaign through all stages.
5	Stored Emergency Supply	Percentage	15	
5	Other Actions (describe)	Percentage	10	Locally appropriate supply augmentation as per SDCWA WSCP.
6	Stored Emergency Supply	Percentage	15	
6	Other Actions (describe)	Percentage	10	Locally appropriate supply augmentation as per SDCWA WSCP.
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.				
NOTES:				

Submittal Table 8-3 Retail: Demand Reduction Actions Water Code Section 10632(a)(4)(B) and (E)					
	Is the Supplier completing this table using the standard six levels? (yes/no)				
Shortage Level	Demand Reduction Actions **Drop down list** These are the only categories that will be accepted by the WUEdata online submittal tool. Select those that apply.	How much is this going to reduce the shortage gap?		Additional Explanation or Reference (OPTIONAL)	Penalty, Charge, or Other Enforcement? **For Retail Suppliers Only** Drop Down List
		Volume or Percentage Drop down	Shortage Gap Reduction Value (May be a range) (AF)		
Add additional rows as needed					
1	Other	Percentage	2	Increase outreach efforts for high-volume customers and expand the leak alert program.	No
1	Other	Percentage	2	Increase voluntary conservation.	No
1	Other	Percentage	7	Expanded enforcement of Permanent Water Waste Prohibitions.	No
2	Other - Require automatic shut of hoses	Percentage	2	Areas with no irrigation system must use a hand-held hose with a shutoff nozzle, a hand-held container, or a garden hose sprinkler system on a timer.	Yes
2	Other	Percentage	1	Washing of automobiles, vehicles, airplanes, and other mobile equipment is permitted only before 10:00 a.m. or after 6:00 p.m. with a hand-held container or a hand-held hose with a shutoff nozzle. Washing is permitted at any time at commercial car washes. Car washes that do not use partially recirculated water will be subject to volume limits designated by a resolution of the City Council. Boats and boat engines are permitted to be washed down after use during the designated time. Mobile equipment washings are exempt from these regulations where the health, safety, and welfare of the public are contingent upon frequent vehicle washings.	Yes
2	Landscape - Limit landscape irrigation to specific days	Percentage	4	Landscape irrigation is limited to no more than three assigned days per week on a schedule posted by the Mayor. This does not apply to commercial growers or nurseries, nor to the irrigation of golf course greens and trees.	Yes
2	Other	Percentage	1	Use of recycled or non-potable water, when available, is required for construction purposes.	Yes
2	Other	Percentage	1	Construction operations receiving water from a fire hydrant meter or water truck will not use water beyond that required for normal construction activities. Construction projects requiring water for new landscaping materials shall adhere to the designated irrigation hours of before 10:00 a.m. and after 6:00 p.m.	Yes
2	Other	Percentage	1	Water from fire hydrants is limited to firefighting	Yes

3	Landscape - Limit landscape irrigation to specific days	Percentage	6	Landscaped irrigation of areas not covered by sprinklers is limited to two assigned days per week using a hand-held container, a hand-held hose with a shutoff nozzle, or low-volume non-spray irrigation, such as a soaker hose.	Yes
3	Water Features - Restrict water use for decorative water features, such as fountains	Percentage	1	Operation of ornamental fountains is prohibited, except when needed for maintenance.	Yes
3	Landscape - Limit landscape irrigation to specific times	Percentage	3	Landscape irrigation using sprinklers is limited to no more than five minutes per watering station during two assigned days per week, on a schedule established by the Mayor. The five-minute limit per watering station does not apply to landscape irrigation systems using water efficient devices, including drip/micro-irrigation systems and stream rotor sprinklers.	Yes
3	Other	Percentage	1	Commercial car washes must reuse/recirculate water.	Yes
3	Other - Prohibit use of potable water for washing hard surfaces	Percentage	1	Prohibition on street cleaning.	Yes
4	Other water feature or swimming pool restriction	Percentage	8	Operation of cascading and recreational fountains is prohibited, except to the extent needed for maintenance.	Yes
4	Landscape - Limit landscape irrigation to specific times	Percentage	1	Landscape irrigation is limited to two assigned days per week and to no more than five minutes per watering station, or no more than 18 minutes per day with impact rotors, rotating nozzles, or micro spray heads. This condition does not apply to commercial growers or nurseries, or to the irrigation of golf course greens.	Yes
4	Other water feature or swimming pool restriction	Percentage	1	Refilling ornamental lakes or ponds is prohibited, except to the extent necessary to sustain plants or animals that were present in the water feature before a water shortage level was declared.	Yes
4	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	Percentage	2	Washing vehicles is prohibited, except at commercial car washes that recirculate water, or by using high-pressure/low-volume wash systems.	Yes
4	Other	Percentage	2	Suspension of specific municipal uses such as hydrant flushing, street cleaning, and water-based recreation.	Yes
4	Other	Percentage	2	Increase initiative to install pressure regulators in all homes and businesses that do not currently have one and require a downward adjustment to 60 pounds per square inch (psi).	No

5	Landscape - Prohibit certain types of landscape irrigation	Percentage	12	Prohibit certain types of landscape irrigation. Stop all landscape irrigation, except for crops and landscape products of commercial growers and nurseries. This does not apply to: Maintenance of trees and shrubs watered no more than two assigned days per week and by using a hand-held container, a hand-held hose with an automatic shutoff nozzle, or low-volume non-spray irrigation. Maintenance of existing landscaping for fire protection. Maintenance of plant materials identified to be rare or protected by City Council policy, or essential for the well-being of rare animals. Maintenance of landscaping within active parks and playing fields, daycare centers, school grounds, cemeteries, and golf course greens, with maximum irrigation of two days per week.	Yes
5	Other water feature or swimming pool restriction	Percentage	1	Prohibit filling or refilling residential pools and spas.	Yes
5	Landscape - Prohibit all landscape irrigation	Percentage	15	Suspension of potable water use for irrigation (100 percent reduction).	Yes
5	Other	Percentage	2	Increase initiative to install pressure regulators in all homes and businesses that do not currently have one and require a downward adjustment of all pressure regulators from 60 psi to 50 psi.	No
6	Other	Percentage	2	Use of flow restrictors on accounts that are non-responsive to outreach, and other mandatory restrictions and enforcement, as necessary.	Yes
6	Landscape - Prohibit all landscape irrigation	Percentage	20	Prohibit all landscape irrigation. This does not apply to: Maintenance of trees and shrubs watered no more than two assigned days per week and by using a hand-held container, a hand-held hose with an automatic shutoff nozzle, or low-volume non-spray irrigation. Maintenance of existing landscaping for fire protection. Maintenance of plant materials identified to be rare or protected by City Council policy, or essential for the well-being of rare animals.	Yes
6	Other	Percentage	3	Increase initiative to install pressure regulators in all homes and businesses that do not currently have one and require downward adjustment of all pressure regulators from 50 psi to 40 psi.	No
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.					
NOTES: Refer to WSCP for more information.					

Submittal Table 10-1 Retail: Notification to Cities and Counties Water Code Section 10621(b) and 10642		
City Name	60 Day Notice Drop Down (yes/no)	Notice of Public Hearing Drop Down (yes/no)
Add additional rows as needed		
City of San Diego	No	Yes
County Name Drop Down List	60 Day Notice Drop Down (yes/no)	Notice of Public Hearing Drop Down (yes/no)
Add additional rows as needed		
San Diego County	Yes	Yes
NOTES: City of San Diego public notificed of public review period and hearing.		

Submittal Table 10-1 Wholesale: Notification to Cities and Counties Water Code Section 10621(b) and 10642		
☐	Check the box if the Supplier has notified more than 10 cities or counties in accordance with Water Code Sections 10621 (b) and 10642. **Completion of the table below is not required. Provide a separate list of the cities and counties that were notified.**	
	Provide the page or location of this list in the UWMP.	
☑	Check the box if the Supplier has notified 10 or fewer cities or counties. **Complete the table below.**	
City Name	60 Day Notice Drop Down (yes/no)	Notice of Public Hearing Drop Down (yes/no)
Add additional rows as needed		
Del Mar		
County Name Drop Down List	60 Day Notice Drop Down (yes/no)	Notice of Public Hearing Drop Down (yes/no)
Add additional rows as needed		
NOTES: Notices also sent to Cal Am.		

APPENDIX C Water Shortage Contingency Plan

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City of San Diego

Water Shortage Contingency Plan

City of San Diego
Public Utilities Department

Public Review Draft / February 2026

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List of Abbreviations and Acronyms

AB	Assembly Bill
AF	acre-feet
AFY	acre-feet per year
AMI	Advanced Metering Infrastructure
AWWA	American Water Works Association
Board	SDCWA's Board of Directors
City	City of San Diego
CII	commercial, institutional, and industrial
CWC	California Water Code
DWR	Department of Water Resources
EOC	Emergency Operations Center
ESP	Emergency Storage Project
EWDP	Emergency Water Delivery Plan
Fund	Water Enterprise Fund
GIS	geographical information system
ICP	Integrated Contingency Plan
JPIC	Joint Public Information Council
M&I	municipal and industrial
psi	pounds per square inch
PUD	Public Utilities Department
SB	Senate Bill
SDCWA	San Diego County Water Authority
SWRCB	State Water Resources Control Board
TSAWR	Transitional Special Agricultural Water Rate
UWMP	Urban Water Management Plan
WSAP	Water Supply Allocation Plan
WSCP	Water Shortage Contingency Plan
WTP	water treatment plant

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Introduction

Due to increasing strain caused by more frequent and extreme droughts, the City of San Diego (City) must be prepared for potential constraints on its local and imported water supply. This Water Shortage Contingency Plan (WSCP) provides the plan in the event of a declared water emergency or enactment of more stringent restrictions on water use.

In response to the severe drought of 2012-2016, two long-term conservation bills, Senate Bill (SB) 606 and Assembly Bill (AB) 1668, were signed into law in 2018 by Governor Jerry Brown. The two bills amend portions of the California Water Code (CWC), including §10632, which is related to water shortage contingency planning. This WSCP discusses the City's compliance with these regulations, as outlined in §10632 (a)(2) and §10632.1 of the CWC, and steps taken by the City's regional supply wholesaler, the San Diego County Water Authority (SDCWA), to address an extended drought and water emergency.

The goal of the WSCP is to have a procedure for managing and mitigating shortages, allowing the City to respond in an efficient and timely manner. Coordination with the SDCWA is critical to the City's decisions and responses. The WSCP outlines the process the City will use each year to determine its water supply reliability. The WSCP also details six standard water supply shortage levels and the specific actions the City would take to reduce water use and augment supply to address the water shortage. Reductions in supply are most frequently associated with drought, but could also be the result of flooding, major fire emergencies, earthquakes, regional power outages, water contamination, and any other situation that could impact the water supply. Water shortage response actions include prohibitions on end uses, consumption reduction methods, supply augmentation, and operational change measures to address shortage levels. In addition to drought planning, the WSCP describes how the City is planning for catastrophic events that could cause supply shortages and interruptions. A plan for communicating water use mandates to the public is also presented.

The City encourages its residents to always use water wisely, and the City of San Diego Municipal Code formalizes the WSCP in Chapter 6, Article 7, Division 38. These Emergency Water Regulations specify water use restrictions that are always in effect (Water Waste Prohibitions under §67.3803) and authorize the City to determine and declare water shortages and water shortage emergencies in its service area.

The WSCP will be re-evaluated at least every five years in coordination with the Urban Water Management Plan (UWMP) update or updated more frequently, at the discretion of the Public Utilities Department (PUD) as approved by the City Council, as the efficacy of shortage mitigation strategies is re-evaluated. Additional conservation requirements imposed by the California State Water Resources Control Board (SWRCB) will be available on the City's Mandatory Water Use Restrictions webpage at: Link to Water Use Restrictions webpage.

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SECTION

1

Annual Water Supply and Demand Assessment

The CWC §10632(a)(2) requires that urban water suppliers conduct an annual water supply and demand assessment (Annual Assessment). This section describes the procedures used to 1) conduct the Annual Assessment, and 2) prepare and submit an Annual Assessment Report to the state. In addition, this section outlines key inputs to conduct the Annual Assessment, the decision-making process for determining water supply reliability, and the ability/flexibility for the City to use shortage response actions not included in the WSCP, as applicable.

The City Council, in accordance with the provisions of the CWC, will determine if a supply shortage exists and declare any foreseen water shortage level based on the results of the Annual Assessment, which will then be included in the Annual Assessment Report submitted to the state. The evaluation is conducted by the City PUD to determine if a shortage declaration is needed, and at what level. The Annual Assessment Report will document any anticipated shortage, any triggered shortage response actions, associated compliance and enforcement actions, and communication actions. More information on shortage response actions is included in *Section 4 – Shortage Response Actions*. Reasonable alternative actions can be used to address identified water shortages, provided that descriptions of alternative actions are submitted with the Annual Assessment Report.

1.1 KEY INPUT: PROJECTED WATER SUPPLY

This WSCP identifies key inputs and methodology needed to evaluate available water supply. Under normal (non-shortage) conditions, the City can purchase as much water from the SDCWA as necessary to meet demand. When imported supply is under shortage conditions, the amount of shortage (allocation of shortage) specific to the City is determined in a process led by SDCWA. Evaluation of City supply begins with SDCWA's own supply evaluation, as the City receives most of its water supply from the SDCWA regional supply system. SDCWA uses the availability of the City's local supplies to determine the City's imported water allocation. As such, the City's imported water supply, in years in which imported supply is short, is dependent on availability of local supplies. To inform SDCWA's allocation process, the City must describe and quantify each source of City-owned water supply. The City's local water supply portfolio consists of the following sources:

- Local surface water
- Groundwater
- Non-potable (recycled) water
- Potable reuse (Pure Water anticipated to start up in calendar year 2026)
- City emergency storage (which includes some of the local surface water stored in City reservoirs)

After evaluating the availability of local supply, SDCWA applies formulas to determine the City's allocation of imported supply during shortage years.

1.1.1 EVALUATING AVAILABLE WATER SUPPLY

The City will evaluate the current year available supply and one dry year available supply in the Annual Assessment. The available water supply evaluation will consider hydrological and regulatory conditions. The methodology for determining the available supply from each water source is as follows:

Local Sources:

- **Local surface water**: On April 1, determine 1) storage in each reservoir and 2) storage above the emergency storage pool in each reservoir.
- **Groundwater**: Determine last year's production and potential production constraints.
- **Non-potable (recycled) water**: Determine recent production and supply.
- **Potable reuse (Pure Water)**: Not currently applicable. Pure Water Phase 1 is anticipated to start up in calendar year 2026.
- **City emergency storage:** Not applicable for non-emergency conditions.

Imported Sources:

- **Imported water**: Allocation determined by SDCWA. See *Section 1.1.2 – SDCWA Drought Contingency Strategy (Imported Water).*
- **SDCWA carryover**: Determine based on SDCWA WSCP and the most recent information. See *Section 1.1.3 – SDCWA Carryover Storage*.
- **SDCWA emergency storage**: Not applicable for non-emergency conditions. See *Section 7.2 - SDCWA Emergency Storage Project*.

1.1.2 SDCWA DROUGHT CONTINGENCY STRATEGY (IMPORTED WATER)

Coordination with SDCWA is crucial to accurately quantify the City's available drought contingency water supply. As the City's direct wholesale water supplier responsible for imported water as well as regional wholesale supply and emergency storage management, SDCWA coordinates all imported supply on behalf of its member agencies. SDCWA also determines the regional water shortage allocation when shortages exist.

SDCWA's WSCP is consistent with the state's long-term framework contained in the April 2017 Final Report, *Making Water Conservation a California Way of Life, Implementing Executive Order B-37-16* which provides recommendations on the implementation of long-term improvements to water supply management to support water conservation. SDCWA's Annual Assessment will ensure that SDCWA's Board of Directors (Board), member agencies, the public, and state and local agencies are informed about the region's water supply conditions and the likelihood of water shortages.

SDCWA has six regional water shortage levels, which are consistent with the six levels identified in the states' long-term framework document. SDCWA identifies five potential shortage response

actions which could be implemented as appropriate for the specific drought condition. The five shortage response actions are:

- Implement the communication plan
- Initiate storage withdrawals
- Initiate spot transfers and other actions
- Call for extraordinary demand reduction measures
- Implement member agency municipal and industrial (M&I) supply allocations

SDCWA acknowledges that member agencies, including the City, will independently adopt retail-level actions to manage potential water supply shortages. However, the City's WSCP uses the SDCWA's WSCP as a key input with added detail for City-owned supplies and facilities. The City's WSCP does not include a reassessment of regional emergency supply, but it does assess the resulting shortage to the City, specifically, from a declared regional shortage by SDCWA.

1.1.3 SDCWA CARRYOVER STORAGE

To more effectively manage supplies and increase reliability during shortage periods, SDCWA invested in carryover storage to store water in years when supplies are available and utilize those supplies during times of shortage. SDCWA carryover storage includes surface water storage in the San Vicente Reservoir and out-of-region groundwater agreements. Per SDCWA's 2020 WSCP and 2025 proposed policy guidelines, the San Vicente Reservoir target carryover storage is 40,000 acre-feet (AF), although storage levels may vary throughout the year due to operational needs, with a maximum volume of 100,000 AF during normal (non-shortage) periods. The out-of-region groundwater storage in California's Central Valley provides 70,000 AF of storage capacity, with more than 9,000 acre-feet per year (AFY) of capacity that can be recharged into the groundwater basin and more than 14,000 AFY of groundwater that can be withdrawn for use.

If the SDCWA Board elects to utilize carryover storage, a separate allocation for this supply is performed.

1.2 KEY INPUT: EXISTING INFRASTRUCTURE

The City is required to describe the methodology for identifying existing water supply infrastructure capabilities and potential constraints. The City's existing water supply infrastructure is well-documented in the City's geographical information system (GIS) where it can be assessed by Water System Operations staff. Existing water supply infrastructure includes City-owned infrastructure and imported water infrastructure. City-owned infrastructure includes surface water reservoirs, water treatment plants (WTPs), pipelines, pump stations, and groundwater wells. Imported water infrastructure includes a seawater desalination plant and SDCWA's aqueducts and regional pipelines. The City will evaluate existing water supply and capacities, and any constraints for the current year and for one dry year. City-owned infrastructure constraints may consider service area-level supply capabilities in the current year, such as shutdowns due to maintenance, construction impacts, and water quality impacts. The City will determine whether the total quantified water supply (as determined in *Section 1.1 – Key Input: Projected Water Supply*) should be adjusted to

account for identified infrastructure constraints. The City will coordinate with SDCWA to evaluate regional infrastructure constraints and impacts to available City water supplies.

1.3 KEY INPUT: PROJECTED WATER DEMAND

This WSCP identifies key inputs and methodology needed to evaluate the City's projected water demand. Unless otherwise specified, the Annual Assessment will use the City's latest demand forecast (adjusted by the previous year's active consumption), which considers unconstrained demand, weather, population growth, and other influencing factors for the current year and following years. The demand forecast includes adjustment factors for dry-year demand.

1.4 KEY INPUT: EVALUATION CRITERIA

The City relies primarily on SDCWA to evaluate regional supply and demand and to evaluate water shortage levels. The City's supply and demand evaluation criterion are applied as minor adjustments to account for the latest information on City-owned supplies or unpredicted changes in City demand. As such, the City will evaluate City-owned supply storage levels, changes in recycled water availability, changes in groundwater availability, and recent water demand trends to determine any deviations from the SDCWA Annual Assessment. The criterion will be calculated using the key data inputs of the Annual Assessment, including:

- Overall storage
- Storage above emergency pools
- Imported water allocation
- Drought pool allocation
- Emergency allocation
- City emergency storage
- Effectiveness of active conservation
- SDCWA Carryover Storage
- Demand
- Infrastructure constraints

1.5 DECISION-MAKING PROCESS

This section describes the decision-making process that the City will use each year to determine, and subsequently report to the state, its water supply reliability. Steps in the decision-making process are listed below.

1. SDCWA announces member agency allocation determination for the current year.
2. SDCWA determines carryover (and emergency storage apportionments if under emergency).
3. City determines City supply available (per *Section 1.1 – Key Input: Projected Water Supply*) – exclusive of imported water supply.
4. City determines total supply available – inclusive of imported water supply.

5. City determines infrastructure constraints (including water quality conditions limiting local sources).
6. City determines expected demand.
7. City compares supply and demand and decides of the water supply reliability for the current year and one dry year (see *Section 1.4 – Key Input: Evaluation Criteria*).
8. City prepares and submits an Annual Assessment Report to the state. The City will coordinate with SDCWA on submittal of the report. Submittal options are as follows: 1) within 14 days of receiving final allocations from SDCWA or 2) by July 1.

1.6 REASONABLE ALTERNATIVE ACTIONS

As stated in the regulations, an urban water supplier shall follow, where feasible and appropriate, the prescribed procedures and implement determined shortage response actions in this WSCP, as identified in the CWC subdivision (a) of §10632, or reasonable alternative actions, provided that descriptions of the alternative actions are submitted with the Annual Assessment Report pursuant to CWC §10632.1. Should the City like to include reasonable alternative actions, the Annual Assessment Report will describe identified reasonable alternative actions (shortage response actions in addition to those identified in *Section 4 – Shortage Response Actions*) to reduce the gap between water supply and demand.

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SECTION

2 Water Shortage Levels

Per regulations stipulated in SB 606, this WSCP defines a total of six water shortage levels. These graduated water shortage levels specify water shortage response actions that the City can implement in response to shortages in water supply, as expressed by percentages. Shortage response actions associated with each of these levels are discussed in *Section 4 – Shortage Response Actions*.

2.1 WATER SHORTAGE LEVELS

The City has six standard water shortage levels as provided in **Table 2-1** below. To determine the appropriate level, the City will assess water supply conditions per the procedures outlined in *Section 1 – Annual Water Supply and Demand Assessment*. For example, if the Annual Assessment determines a shortage of 18 percent, the City would be in a Drought Watch Condition, or Water Shortage Level 2. Water shortage levels also apply to catastrophic interruption of water supplies, including but not limited to a regional power outage, an earthquake, and other potential emergency events. See *Section 7 – Catastrophic Supply Interruption Planning* for an expanded discussion of catastrophic supply interruptions.

The Mayor[1] can, when necessary, recommend one of six shortage response levels to the City Council, which has the authority to declare the appropriate conservation level necessary to ensure sufficient supplies will be available to meet anticipated demand. The City Council can also terminate a shortage response level, based on the Mayor's recommendation. *Section 9 – Communication Protocol* provides the process for notifying and declaring water shortage levels. As outlined in *Section 1 – Annual Water Supply and Demand Assessment*, the City's PUD will monitor the projected supply and demand during the water shortage and recommend to the Mayor the extent of conservation required.

Table 2-1 Water Shortage Levels

Water Shortage Level	Percent Shortage Range
Level 1: Expanded Year-Round Permanent Mandatory Water Restrictions	Up to 10%
Level 2: Drought Watch Condition	Up to 20%
Level 3: Drought Alert Condition	Up to 30%
Level 4: Drought Critical Condition	Up to 40%
Level 5: Drought Crisis Condition	Up to 50%
Level 6: Drought Emergency Condition	Greater than 50%

[1] While the drought response is often conducted by a City Manager, the City changed from a City Manager form of government to strong Mayor form of government in 2006. While the policy language uses "City Manager", this document will refer to the Mayor.

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SECTION 3

Penalties, Charges, and Other Enforcement of Prohibitions

Wasting water is always illegal, even when no drought response levels are in effect, and the Emergency Water Regulations prohibit all water waste. The regulations define violations of both the permanent water conservation measures and mandatory conservation measures for Water Shortage Levels 2 through 6. Violations are subject to criminal, civil, and administrative penalties and remedies, which are defined in Chapter 1 of the San Diego Municipal Code. Under a Water Shortage Level 1: Expanded Year-Round Permanent Mandatory Water Restrictions, conservation measures are voluntary, so there are no penalties for non-compliance.

The City may penalize those who continue to willfully waste water by using an escalating series of remedies, up to discontinuing water service or installing flow-restricting devices. Remedies in order of issuance are:

- Warning letter
- Notice of Violation
- Administrative Citations with penalties of $100, $250, $500, and up to $1,000
- Referral to the City Attorney for civil or criminal prosecution
- Water service restricted or shut off

Water waste violators will receive a Notice of Violation if a water waste complaint is confirmed. A Notice of Violation does not carry a monetary penalty. If a water waste complaint is not confirmed by City staff, a warning letter is issued instead. Warnings are followed by a site visit from a City code enforcement officer to verify if the issue has been resolved. If the problem has not been corrected, the code enforcement officer can issue an Administrative Citation. Each violation is treated on a per-property basis, and not a per-incident basis. For example, if a property owner has received a Notice of Violation for a broken sprinkler head, the next observed violation on the property can result in an Administrative Citation, even if it is for a different fixture. If the problem persists, the case may be referred to the City Attorney and the offender's water service may be restricted or shut off.

Terminating a customer's water service is not taken lightly and would occur only when other enforcement measures have not been effective. The City will consider the following factors as part of a decision regarding appropriate remedies:

- Water shortage level in effect
- Prior enforcement remedies applied
- Public health and safety
- Amount of water being used in violation
- Impact of the violation

3.1 APPEALS AND EXEMPTION PROCEDURES

If, due to unique circumstances, a specific requirement of this WSCP would result in undue hardship to a customer using City of San Diego water or to property upon which City of San Diego water is used, that is disproportionate to the impacts to City of San Diego water users generally or to similar property or classes of water uses, then the customer may apply for a variance. The following items are required to apply for a variance:

- Application for a variance will be in written form prescribed by the Mayor and will be accompanied by a non-refundable processing fee in an amount set by resolution of the City Council.
- The written application will be accompanied by a written statement of the applicant and include other supporting documentation such as photographs, maps, drawings, or other pertinent information as applicable.

The variance may be granted or conditionally granted only upon a written finding of the existence of facts demonstrating an undue hardship. The Mayor will exercise approval authority and act upon any completed application after submittal and may approve, conditionally approve, or deny the variance. The applicant requesting the variance will be promptly notified in writing of any action taken. The decision of the Mayor is final. Unless specified otherwise at the time a variance is approved, the variance applies to the subject property during the term of the mandatory drought response.

There are two instances in which an application for variance will be approved.

1. An application for variance will be approved if all the following occur:
    a. The variance does not constitute a grant of special privilege inconsistent with the limitations upon other City of San Diego customers; and
    b. because of special circumstances applicable to the property or its use, the strict application of this WSCP would have a disproportionate impact on the property or use that exceeds the impacts to customers generally; and
    c. the authorizing of such variance will not be of substantial detriment to adjacent properties, and will not materially affect the ability of the City of San Diego to effectuate the purpose of this WSCP and will not be detrimental to the public interest; and
    d. the condition or situation of the subject property or the intended use of the property for which the variance is sought is not common, recurrent or general in nature.

2. An application for variance will be approved if either of the following occur:
    a. The property has been adversely impacted by a disaster; or
    b. proposed alternative water use restrictions for the property would result in greater water savings than the existing water use restrictions.

No relief will be granted to any customer for any reason in the absence of a showing by the customer that the customer has achieved the maximum practical reduction in the customer's residential, commercial, institutional, and industrial (CII), agricultural, or governmental water consumption.

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SECTION

4 Shortage Response Actions

Per CWC §10632 (a)(4), the City has expanded its list of possible supply shortage mitigation tools. The four types of locally appropriate "shortage response actions" as defined by regulations are:

- Supply augmentation
- Demand reduction actions
- Operational changes
- Mandatory water use prohibitions (in addition to state-mandated prohibitions)

Shortage response actions included in this WSCP are a mix of prohibitions on end uses, consumption reduction methods, supply augmentation, and operational change measures. The California Department of Water Resources (DWR) defines prohibitions on end uses as measures to address areas that are the responsibility of end users, such as a broken sprinkler or leaking faucet. Consumption reduction methods are actions invoked by a water agency to reduce consumption, such as expanding public information campaigns and offering water use surveys. Supply augmentation is defined as any action designed to increase the existing supply availability, such as the use of emergency storage or acquiring additional transfer water. Operational changes are defined as actions taken by the City to change the way in which existing supplies are used within its service area. Examples of operational change include eliminating hydrant flushing and street cleaning. The applicability of the Emergency Water Regulations is described in §67.3804 of the San Diego Municipal Code. In general, the Emergency Water Regulations do not apply to special supply programs, such as the SDCWA Permanent Special Agricultural Water Rate Program. The regulations also do not apply, in general, to water drawn from private wells, reclaimed water, water from graywater systems, and areas serviced by the Parks and Recreation Department. Additionally, industrial manufacturing, processing, and CII research and development are exempt, under certain conditions, from the Drought Watch and Drought Alert conditions.

4.1 PERMANENT WATER WASTE PROHIBITIONS

Permanent Water Waste prohibitions are always in effect in the City's water service area. These prohibited uses, enforceable through §67.3803 of the City's Emergency Water Regulations, are intended to promote water conservation as a permanent way of life in San Diego, even during years of normal or above-normal precipitation. All permanent water waste prohibitions target end uses and are included as shortage response actions under Water Shortage Levels 1 through 6. The following is an abbreviated list of restrictions; the entire list of restrictions is provided in the Emergency Water Regulations and the City's Water Conservation webpage:

- No water may leave a customer's property by drainage due to excessive irrigation and/or uncorrected leaks.

- Users must repair or stop all water leaks upon discovery, or within 72 hours of notification by the City.
- No washing down of sidewalks, driveways, parking areas, tennis courts, or other paved areas without using a power washer or a hose with a shutoff nozzle.
- No overfilling of swimming pools and spas.
- No use of non-recirculating ornamental fountains or cascading fountains.
- Vehicles may be washed only in a commercial car wash or using a hose with an automatic shutoff nozzle or a hand-held container.
- No single pass-through cooling systems and no non-recirculating systems are allowed in all conveyor car wash and commercial laundry systems.
- Restaurants and other food establishments shall only serve and refill water upon request.
- Guests in hotels and motels shall be provided the option of not laundering towels and linens daily.
- Irrigation of potted plants, non-commercial vegetable gardens and fruit trees, residential and commercial landscapes (including golf courses, parks, school grounds, and recreation fields) is limited to the hours before 10:00 a.m. and after 6:00 p.m.
- Irrigation is prohibited during and within 48 hours of a rain event.
- Irrigation may occur at any time as required by a landscape permit for erosion control; the establishment, repair, or renovation of public use fields for schools and parks; landscape establishment following a disaster; the renovation or repair of an irrigation system with an operator present; or for nursery and commercial growers using a hand-held hose equipped with a positive shutoff device, a hand-held container, or drip or micro-irrigation distribution systems. Irrigation of nursery propagation beds is permitted at any time.

Table 4-1 below summarizes additional on-going consumption reduction methods implemented by the City which are not included in the Emergency Water Regulations.

Table 4-1 Additional On-Going Consumption Reduction Methods

Consumption Reduction Method	Description
Increase Customer Water Use Transparency	City single-family residential water bill provides data showing usage for the current billing period as compared to last year for each billing period and it also shows average single-family residential use in the area. For non-single-family residential bills, the usage during the current billing period is shown in gallons per day and in hundred cubic feet, and shows usage compared to last year's use and the percentage change.
Enhanced Metering Data	The City currently has 24,000 Advanced Metering Infrastructure (AMI) meters deployed across its service area. AMI meters use radio-based technology to read meters, eliminating the need to manually read them and providing real-time data to customers and better tools to conserve water. The Department will continue to implement this technology City-wide and monitor and repair any non-responding meters as needed. A submetering ordinance requires submeters to be installed in every new multi-unit building with at least three units. This will allow tenants to be billed on their water use, thereby providing a financial incentive to conserve water.
Offer Water Use Surveys	Water use surveys are offered for residential customers inside and outside their home, and for commercial landscapes. Water-wise business surveys are offered for CII users. See Section 5 of the City's 2025 UWMP for additional details.
Provide Water Conservation Rebates	Through Metropolitan Water District of Southern California and other funding sources, the City offers rebates on various water conserving devices. See Section 5 of the City's 2025 UWMP for additional details.
Provide Rebates for Landscape Irrigation Efficiency and Water Wise Landscape Incentives	Rebates for landscape irrigation efficiency devices and grass replacement are offered on an ongoing basis. See Section 5 of the City's 2025 UWMP for additional details.
Decrease Line Flushing	The City actively seeks to minimize the amount of water used for line flushing and has evaluated options to reuse and/or decrease the amount of water required for flushing. However, currently there is no cost-effective alternative to flushing. PUD works closely with the Engineering and Capital Projects Department to track, reduce, and limit the amount of water necessary to meet water quality requirements in new lines. Engineering and Capital Projects has implemented a tracking form used by contractors to meter flushing. This information is being gathered to accurately determine if appropriate or excessive water is being used for flushing. The information may ultimately be used to revise contract documents and specifications related to flushing, to reduce waste.
Reduce System Water Loss	The City is conducting water system audits on a yearly basis using the American Water Works Association's (AWWA) Water Audit Software, as discussed in Section 3.1.2 of the City's 2025 UWMP.

4.2 SHORTAGE RESPONSE ACTIONS

The shortage response actions presented in this WSCP were developed to delay any reductions to ratepayers' quality of life and standard of living and mitigate water shortages during drought conditions or catastrophic events. The following subsections list the shortage response actions associated with each of the six water shortage levels. These shortage response actions are also presented in table format in Attachment A. As specific drought response levels are implemented, the

City will closely monitor projected available supply and demand per the Annual Assessment. Depending on these projections, the shortage response actions would either be implemented or expanded to appropriately respond to shortages.

Shortage response actions from previous levels are assumed to remain in effect as the water shortage level increases. The combination of shortage response actions associated with each water shortage level is designed to produce an additional 10 percent of demand reductions above the previous level's reduction. As an example, Water Shortage Level 3 shortage response actions in conjunction with those implemented in Water Shortage Levels 1 and 2 are anticipated to provide a combined demand reduction total of up to 30 percent. Attachment A quantifies the estimated extent to which supply gaps are reduced for each shortage response action.

4.2.1 WATER SHORTAGE LEVEL 1: EXPANDED YEAR-ROUND PERMANENT MANDATORY WATER RESTRICTIONS

Water Shortage Level 1: Expanded Year-Round Permanent Mandatory Water Restrictions constitutes a consumer demand reduction of up to 10 percent. During Water Shortage Level 1, a new set of water conservation practices takes effect, in addition to all Permanent Water Waste Prohibitions. The shortage response actions under Water Shortage Level 1 appears below:

- Increase outreach efforts for high-volume customers and expand the leak alert program.
- Increase voluntary conservation.
- Expanded enforcement of Permanent Water Waste Prohibitions.

The communication plan (see *Section 9 – Communication Protocol*) will be in place prior to a water supply shortage and will be initiated in Water Shortage Level 1. Activation of the communication protocol will continue through all subsequent water shortage levels.

4.2.2 WATER SHORTAGE LEVEL 2: DROUGHT WATCH CONDITION

Water Shortage Level 2: Drought Watch Condition is implemented when demand must be reduced up to 20 percent to ensure sufficient supplies. During a Drought Watch Condition, a new set of mandatory water conservation practices takes effect, in addition to all Permanent Water Waste Prohibitions. Conservation practices imposed under Water Shortage Level 1 remain in effect. Industrial manufacturing, processing, and CII research and development are exempt, under certain conditions, from the Drought Watch conditions. The shortage response actions under Water Shortage Level 2 appears below:

- Areas with no irrigation system must use a hand-held hose with a shutoff nozzle, a hand-held container, or a garden hose sprinkler system on a timer.
- Washing of automobiles, vehicles, airplanes, and other mobile equipment is permitted only before 10:00 a.m. or after 6:00 p.m. with a hand-held container or a hand-held hose with a shutoff nozzle. Washing is permitted at any time at commercial car washes. Boats and boat engines are permitted to be washed down after use during the designated time. Mobile equipment washings are exempt from these regulations where the health, safety, and welfare of the public are contingent upon frequent vehicle washings.

- Landscape irrigation is limited to no more than three assigned days per week on a schedule posted by the Mayor. This does not apply to commercial growers or nurseries, nor to the irrigation of golf course greens and trees.
- Use of recycled or non-potable water, when available, is required for construction purposes.
- Construction operations receiving water from a fire hydrant, meter, or water truck will not use water beyond that required for normal construction activities. Construction projects requiring water for new landscaping materials shall adhere to the designated irrigation hours of before 10:00 a.m. and after 6:00 p.m.
- Water from fire hydrants is limited to firefighting.

4.2.3 WATER SHORTAGE LEVEL 3: DROUGHT ALERT CONDITION

Water Shortage Level 3: Drought Alert Condition is implemented when demand must be reduced up to 30 percent to ensure sufficient supplies. During a Drought Alert Condition, a new set of mandatory water conservation practices takes effect, in addition to all Permanent Water Waste Prohibitions. Mandatory conservation practices imposed under Water Shortage Level 1 and Level 2 remain in effect. Industrial manufacturing, processing, and CII research and development are exempt, under certain conditions, from the Drought Alert conditions. The shortage response actions under Water Shortage Level 3 appears below:

- Landscaped irrigation of areas not covered by sprinklers is limited to two assigned days per week using a hand-held container, a hand-held hose with a shutoff nozzle, or low-volume non-spray irrigation, such as a soaker hose.
- Operation of ornamental fountains is prohibited, except when needed for maintenance.
- Landscape irrigation using sprinklers is limited to no more than five minutes per watering station during two assigned days per week, on a schedule established by the Mayor. The five-minute limit per watering station does not apply to landscape irrigation systems using water efficient devices, including drip/micro-irrigation systems and stream rotor sprinklers.
- Prohibition on street cleaning.

During a Drought Alert Condition, the Mayor may recommend and implement a water allocation per account as an additional tool to reduce consumption and establish a schedule of surcharges or penalties for exceeding the water allocation. These actions are subject to the passage of a resolution by the City Council. Water conservation measures required under the Drought Watch and Alert conditions could be suspended by resolution of the City Council, if a water allocation is in effect.

4.2.4 WATER SHORTAGE LEVEL 4: DROUGHT CRITICAL CONDITION

Water Shortage Level 4: Drought Critical Condition is implemented when demand must be reduced up to 40 percent to ensure sufficient supplies. During a Drought Critical Condition, a new set of mandatory water conservation practices takes effect, in addition to all Permanent Water Waste Prohibitions. Mandatory conservation practices imposed under Water Shortage Levels 1 through 3 remain in effect. The Drought Critical Condition's mandatory conservation practices apply to industrial manufacturing, processing, and CII research and development, which are exempt, under

certain conditions, from the Drought Watch and Drought Alert conditions. The shortage response actions under Water Shortage Level 4 appears below:

- Operation of cascading and recreational fountains is prohibited, except to the extent needed for maintenance.
- Landscape irrigation is limited to two assigned days per week and to no more than five minutes per watering station, or no more than 18 minutes per day with impact rotors, rotating nozzles, or micro-spray heads. This condition does not apply to commercial growers or nurseries, or to the irrigation of golf course greens.
- Refilling ornamental lakes or ponds is prohibited, except to the extent necessary to sustain plants or animals that were present in the water feature before a water shortage level was declared.
- Washing vehicles is prohibited, except at commercial car washes that recirculate water, or by using high-pressure/low-volume wash systems.
- Suspension of specific municipal uses such as hydrant flushing, street cleaning, and water-based recreation.
- Increase initiative to install pressure regulators in all homes and businesses that do not currently have one and require a downward adjustment to 60 pounds per square inch (psi).

During a Drought Critical Condition, the Mayor may recommend and implement a water allocation per account as an additional tool to reduce consumption and establish a schedule of surcharges or penalties for exceeding the water allocation. These actions are subject to the passage of a resolution by the City Council. Water conservation measures required under the Drought Watch, Alert, and Critical conditions could be suspended by resolution of the City Council, if a water allocation is in effect.

4.2.5 WATER SHORTAGE LEVEL 5: DROUGHT CRISIS CONDITION

Water Shortage Level 5: Drought Crisis Condition is implemented when a water shortage emergency requires that demand be reduced up to 50 percent to ensure sufficient supplies. During a Drought Crisis a new set of mandatory conservation measures takes effect, in addition to all Permanent Water Waste Prohibitions. Mandatory conservation practices imposed under Water Shortage Levels 1 through 4 remain in effect. The shortage response actions under Water Shortage Level 5 appears below:

- Prohibit certain types of landscape irrigation. Stop all landscape irrigation, except for crops and landscape products of commercial growers and nurseries. This does not apply to:
  - Maintenance of trees and shrubs watered no more than two assigned days per week and by using a hand-held container, a hand-held hose with an automatic shutoff nozzle, or low-volume non-spray irrigation.
  - Maintenance of existing landscaping for fire protection.
  - Maintenance of plant materials identified to be rare or protected by City Council policy, or essential for the well-being of rare animals.
  - Maintenance of landscaping within active parks and playing fields, daycare centers, school grounds, cemeteries, and golf course greens, with maximum irrigation of two days per week.
- Prohibit filling or refilling residential pools and spas.

- Suspension of potable water use for irrigation (100 percent reduction).
- City emergency storage withdrawals.
- Locally appropriate supply augmentation as per SDCWA WSCP.
- Increase initiative to install pressure regulators in all homes and businesses that do not currently have one and require a downward adjustment of all pressure regulators from 60 psi to 50 psi.

4.2.6 WATER SHORTAGE LEVEL 6: DROUGHT EMERGENCY CONDITION

Water Shortage Level 6: Drought Emergency Condition is implemented when a water shortage emergency requires that demand be reduced greater than 50 percent to ensure sufficient supplies. During a Drought Emergency a new set of mandatory conservation measures takes effect, in addition to all Permanent Water Waste Prohibitions. Mandatory conservation practices imposed under Water Shortage Levels 1 through 5 remain in effect. The City may establish mandatory water use budgets if needed. The shortage response actions under Water Shortage Level 6 appears below:

- Use of flow restrictors on accounts that are non-responsive to outreach, and other mandatory restrictions and enforcement, as necessary.
- Prohibit all landscape irrigation. This does not apply to:
  - Maintenance of trees and shrubs watered no more than two assigned days per week and by using a hand-held container, a hand-held hose with an automatic shutoff nozzle, or low-volume non-spray irrigation.
  - Maintenance of existing landscaping for fire protection.
  - Maintenance of plant materials identified to be rare or protected by City Council policy, or essential for the well-being of rare animals.
- City emergency storage withdrawals.
- Locally appropriate supply augmentation as per SDCWA WSCP.
- Increase initiative to install pressure regulators in all homes and businesses that do not currently have one and require downward adjustment of all pressure regulators from 50 psi to 40 psi.

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SECTION 5

Determining Water Shortage Reductions

5.1 MONITORING AND REPORTING

The City monitors how effective the shortage response actions in each water shortage level is with meters. The City meters both the water supplies entering the distribution system and the water consumed by individual customers. The City can compare this meter data with water use in prior months and during non-drought years to determine if it is achieving specific percentage goals for water consumption associated with the drought response levels. If the goals are not being met, the City can implement additional shortage response actions.

The City is also required to report total monthly production to the SWRCB in compliance with the California Code of Regulations, Title 23, Division 3, Chapter 3.5.

5.2 REEVALUATION AND IMPROVEMENT PROCEDURES

Reevaluation and improvement procedures are used to ensure shortage risk tolerance is adequate and appropriate water shortage mitigation strategies are implemented as needed. The WSCP will be re-evaluated at least every five years in coordination with the UWMP update or at the discretion of the PUD as approved by the City Council. An evaluation of the effectiveness of the water shortage response actions will be conducted, by comparing the expected percent demand reduction against actual reductions, and shortage response actions will be revised appropriately. The City will also assess the effectiveness of the communication plan (see *Section 9 – Communication Protocol*) and modify it as appropriate.

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SECTION 6

Revenue and Expenditure Impacts

When customers reduce their water consumption in response to prolonged water shortages or emergency situations, revenues for the City's Water Enterprise Fund (Fund) decline as a result. However, a portion of the Fund's expenditures is fixed regardless of how much water customers use. To remedy this imbalance of revenues versus expenditures, the City may have to increase rates and/or reduce or defer capital improvements. This is necessary to meet contractual requirements of bondholders related to outstanding debt, as the City must maintain a minimum debt service coverage ratio. Maintaining targeted debt service ratios is critical to obtaining future funding for capital projects needed to improve water system reliability and mitigate against future droughts and emergencies. In 2025, the City completed a Cost-of-Service Update for the Fund to determine necessary rate changes.

6.1 WATER RATE STRUCTURE

The City's rates as of January 1, 2026 utilize a tiered structure for single family residential based on level of usage, with all other customer classes having their own per unit rate. The rate structure will assist the City in generating sufficient revenues to operate, manage, and maintain its facilities and services. Any future rate increases would have to be approved by the City Council via the Proposition 218 noticing and Public Hearing process.

The City's rate structure for single-family residential customers is based on level of usage, with all other customer classes having their own per unit rate. Assets like storage facilities, treatment plants, pump stations, and pipelines must be built to not only handle average daily demand, but to handle peak hour demand plus fire suppression flow. The single-family residential class typically exhibits the highest peaking factor among the user classes. The structure uses three consumption-based tiers for single-family residential customers with progressively higher commodity charges at each tier to pay for the increased costs related to peak demand.

The rate structure also includes a pass-through adjustment that applies to all water users. As discussed in the UWMP, the City purchases most of its water from the SDCWA. In turn, SDCWA purchases a large portion of its supplies from Metropolitan Water District of Southern California. Scarcities in statewide and regional water supplies have raised the cost of imported water while reducing availability. The rate increases from SDCWA and Metropolitan Water District of Southern California are used to calculate the overall dollar impact on the City based on assumed purchases for the current fiscal year. The pass-through percentage increase to the City's customers is calculated as the impact amount as a percentage of total assumed sales, so that the City only collects the impact amount. As an example, if SDCWA imposes a 2 percent increase resulting in a $5 million impact to the City for water purchases; and the City expects to sell $500 million worth of

water that year; it would raise rates by 1 percent to City customers (1 percent of $500 million is $5 million).

6.2 USE OF FINANCIAL RESERVES

The City does not anticipate tapping any reserves to maintain operations during a drought or emergency but does have those resources available if needed. However, if revenue shortfalls were to occur, the City could consider the options of deferring operation and maintenance and capital program projects, using emergency storage water, or drawing from one or more of the available reserve funds. Any reallocation of capital project funding to meet short-term emergency needs would be restricted by bond covenants that require bond proceeds to be used exclusively for capital projects.

There are four applicable reserve funds that could serve in the event of a revenue loss resulting from reduced water demand:

- **Secondary Purchase Reserve:** Intended to be equal to 6 percent of the annual water purchase budget, this fund is earmarked as an emergency reserve for the purchase of water in the event of drought or other emergency that suddenly disrupts the normal supply. City Council action is required to appropriate this reserve.
- **Emergency Operating Reserve:** Intended to be used in the event of a catastrophe that prevents the utility from operating in its normal course of business, with a target level equivalent to 70 days of operation. Any request to utilize the Emergency Operating Reserve must include a plan and timeline for replenishment, which may be in conjunction with the City Council authorization of a future Cost of Service study and rate adjustment. City Council approval is required to appropriate this reserve.
- **Rate Stabilization Reserve:** Intended to be equal to 5 percent of the prior year operating revenue. Transfers in and out of this fund serve as a revolving mechanism to mitigate potential fluctuations in the rates for the Water System operations and maintain stable debt service coverage ratios for the Outstanding Obligations. Use of the Rate Stabilization Reserve is based upon the recommendation of the PUD and approved by the City's Chief Financial Officer.
- **Emergency Capital:** Intended to be equal to $5 million, this fund is earmarked as an emergency reserve to fund unforeseen emergency conditions resulting in the need to immediately repair or replace existing assets. City Council action is required to appropriate this reserve.

Without the use of these reserves or emergency storage water, it could be necessary to increase rates if deliveries reduce significantly. The use of reserves would ultimately require rate increases because the reserves would need to be replenished, but the increases could be spread over multiple years. The timing and the amount of the reserves used would be evaluated based on the significance of the rate increases, the ability to reduce variable operation and maintenance costs and defer capital projects, the availability of emergency storage water, the timing of additional debt issuances, and the possibility of a downgrade in the debt rating.

6.3 POTENTIAL REVENUE REDUCTIONS & EXPENSES ASSOCIATED WITH ACTIVATED SHORTAGE RESPONSE ACTIONS

Potential revenue reductions and expenses associated with activated shortage response actions are varied depending on the shortage response action. As mentioned above, customer reductions in water use will result in declining revenues during a shortage. Increased enforcement and auditing of existing water waste prohibitions could increase operational expenditures. In addition, increased outreach efforts may require more staff time and resources.

6.4 MEASURES TO MITIGATE REVENUE AND EXPENDITURE IMPACTS DURING SHORTAGES

The City has many ways to mitigate the effects of prolonged water shortages or emergencies on revenues and expenditures. **Table 6-1** summarizes the measures discussed in this section.

Table 6-1 Summary of Measures to Mitigate Revenue and Expenditure Impacts

Name of Measure	Summary of Effects
Use of emergency water storage and other local water resources during times of shortage	Makes water available to avoid revenue losses resulting from decreased sales, and expenditure increases caused by purchasing imported water. Protects against potential higher cost or surcharges on imported water during shortages.
Use of Secondary Purchase Reserve	Allows the purchase of water during a sudden disruption of supply during drought or another emergency.
Use of Emergency Operating Reserve	Provides for unanticipated needs when normal water supply is disrupted by a catastrophic event.
Use of Rate Stabilization Reserve	Provides a source of funds to mitigate future rate increases by maintaining legal covenanted rates.
Use of Emergency Capital	Provides a source of funds to repair or replace existing assets due to unforeseen emergency conditions.
Reductions in expenditures through possible deferrals	Reduces current operational expenditures to compensate for reduction in water sales revenue. Delays operations & maintenance and capital improvements.
Council approved rate increase	Provides additional revenues when water sales decline or expenditures increase. Replenishes reserve funds used to offset effects of shortages.

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SECTION 7

Catastrophic Supply Interruption Planning

A catastrophic supply interruption occurs when a disaster suddenly disrupts all or a large portion of the water available to meet the region's needs. The UWMP Act requires agencies to identify actions they will take if there is a catastrophic supply interruption, specifically including interruptions from a power outage, earthquake, or other non-drought-related emergency. Metropolitan Water District of Southern California, SDCWA, and the City have developed plans for catastrophic supply interruptions that include a regional power outage, earthquake, or other disaster. The City additionally maintains several emergency connections to and from neighboring water agencies, to provide mutual aid during times of catastrophic supply interruptions. These agencies include the Santa Fe Irrigation District, City of Poway, Otay Water District, California American Water Company, and the Sweetwater Authority. Catastrophic supply interruption events are considered when determining the City's overall water supply shortage as defined by the water shortage levels in *Section 2 – Water Shortage Levels*. The City does not designate a specific catastrophic supply interruption water shortage level with its own shortage response actions. Rather, the resulting shortage of a catastrophic supply interruption would contribute to the City's total projected shortage in any given year. Shortage response actions associated with the determined water shortage level will help guide the City's response to catastrophic supply interruptions.

7.1 METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA CATASTROPHIC SUPPLY INTERRUPTION PLANNING

Metropolitan Water District of Southern California has developed emergency storage requirements and plans based on a 100 percent reduction in imported supplies from all aqueducts serving its service area, for a period of six months. Metropolitan Water District of Southern California has made significant investments in emergency storage to provide water to its member agencies during emergencies. If a catastrophe were to occur, non-firm (non-contractual) service deliveries would be suspended and firm (contractual) supplies to member agencies would be cut back by 25 percent from normal-year demand. Water would be drawn from a combination of Metropolitan Water District of Southern California's surface reservoirs and groundwater basins, as well as its emergency water storage and other available storage projects. Emergency supplies are designed to be delivered via gravity, except in limited circumstances. Metropolitan Water District of Southern California's WTPs have backup generators to continue treating water in the event of a power outage. Metropolitan Water District of Southern California also can deploy mobile generators to key locations, as needed.

Metropolitan Water District of Southern California's Water Surplus and Drought Management (WSDM) Plan and Water Supply Allocation Plan (WSAP) will guide the allocation of supplies and resources during a catastrophic supply interruption. Metropolitan Water District of Southern California and its member agencies worked together to develop the WSDM Plan. The WSDM Plan establishes broad water resource management strategies to ensure Metropolitan Water District of Southern California's ability to meet full service demand always. It also contains principles for supply allocation if the need should ever arise. The WSDM Plan splits Metropolitan Water District of Southern California's resource actions into two major categories: Surplus Actions and Shortage Actions. The Shortage Actions are split into three subcategories: Shortage, Severe Shortage, and Extreme Shortage.

A catastrophic supply interruption would fall under an Extreme Shortage. Under an Extreme Shortage, Metropolitan Water District of Southern California would allocate supplies to its member agencies in accordance with the WSAP. If shortage allocations are required, Metropolitan Water District of Southern California will rely on the calculations established in the WSAP. The plan allocates shortages equitably among its member agencies based on need, with adjustments for growth, local investments, changes in supply conditions, demand hardening (increasing water use efficiency such that additional conservation is more difficult to obtain), and water conservation plans.

7.2 SDCWA CATASTROPHIC SUPPLY INTERRUPTION PLANNING

SDCWA's catastrophic supply interruption planning consists of an Integrated Contingency Plan (ICP) and an Emergency Storage Project (ESP).

7.2.1 SDCWA INTEGRATED CONTINGENCY PLAN

The SDCWA's ICP outlines how staff would respond to an emergency that causes severe damage to SDCWA's water distribution system or hinders SDCWA's ability to provide reliable water service to its member agencies, including the City. In addition to providing direction and strategies for responding to a crisis, it also outlines the situations and incidents that would activate the ICP and the Emergency Operations Center (EOC). SDCWA's ICP includes the following:

- Authorities, policies, and procedures associated with emergency response activities.
- EOC activities, including EOC activation and deactivation guidelines.
- Multiagency and multi-jurisdictional coordination, particularly between SDCWA, its member agencies, and Metropolitan Water District of Southern California, in accordance with Standardized Emergency Management System and National Incident Management System guidelines.
- Incident Command System management and organization and emergency staffing required to assist in mitigating any significant emergency or disaster.
- Mutual Aid Agreements and covenants that outline terms and conditions under which mutual aid assistance will be provided.
- Hazard specific action plans and Incident Command System position checklists.

The SDCWA's ICP provides a step-by-step approach with procedural tools such as resource and information lists, personnel rosters, listings of established policies and procedures, and reference materials. SDCWA provides input to the Unified San Diego County Emergency Services Organization's "Operational Area Emergency Plan", which serves to supports SDCWA's ICP.

7.2.2 SDCWA EMERGENCY STORAGE PROJECT

The SDCWA's ESP is a system of reservoirs, pipelines, pump stations, and other conveyance facilities that are designed to provide water to the region during a prolonged regional supply interruption. The ESP facilities can be used to help deliver emergency water supply to member agencies during two- and six-month emergency events in which the region is either completely unable or partially able to receive imported water deliveries due to a disaster that renders their transmission system inoperable.

The ESP was designed to create a regional storage capacity of 90,100 AF of water to meet emergency needs. Recent trends in regional water demand indicate that this volume of emergency storage will serve the region beyond 2045. The regional emergency water supply reservoirs are Olivenhain, Hodges, and San Vicente. The actual amount of ESP water to be delivered to a particular member agency during an emergency event will depend on many factors, including member agency demand, local supplies, parts of the ESP infrastructure and other Water Authority infrastructure in place, availability of supplies from MWD, and the actual duration of the emergency.

SDCWA sized the ESP based on the authority's assumption of providing a 75 percent service level to all member agencies during an outage, while fully implementing best management practices for water conservation. SDCWA's Board of Directors can authorize use of ESP supplies in an emergency or prolonged drought situation when imported water and local supplies would not meet 75 percent of the member agencies' municipal and industrial demand.

Emergency Water Delivery Plans (EWDPs) provide forecasts of SDCWA emergency water supply deliveries to its member agencies during two- and six-month emergency events. The following general procedure from EWDPs show the methodology for calculating the allocation of ESP supplies to member agencies in a prolonged drought or outage situation without imported supplies:

- Define water storage and conveyance facility infrastructure that would be in place at the time of the emergency event to estimate the duration of the emergency (i.e., time needed to repair damaged pipelines and/or infrastructure).
- Determine the total demand of each member agency during the emergency, considering both municipal and industrial water demands and agricultural water demand.
- Determine the net demand of each member agency, considering the availability of recycled water supplies.
- Determine the local supplies available to each member agency, including potable reuse, groundwater, surface water storage, and seawater desalination.
- Determine the amount of local supply that could be transferred within the City's service areas.
- Determine the potential transfers between member agencies based on existing agreements.

- Determine the amount of Lewis Carlsbad Desalination Plant supplies that could be delivered to member agencies.
- Determine the amount of imported water supplies available for delivery to member agencies.
- Allocate ESP supplies in Olivenhain, Hodges, and San Vicente Reservoirs to member agencies to achieve an initial level of service of 75 percent, considering other available supplies described above and considering limitations of delivery facilities.
- Determine reductions in deliveries to member agencies participating in SDCWA's Transitional Special Agricultural Water Rate (TSAWR) program. The reduction rate for TSAWR customers is twice the rate imposed on SDCWA municipal and industrial customers, up to a 90 percent reduction. Reductions in deliveries that arise from such cutbacks would be reallocated to commercial and industrial customers.
- Determine increases in member agency deliveries due to redistribution of emergency water not delivered to member agencies because of TSAWR program.
- Determine net SDCWA deliveries to member agencies from all water sources available to SDCWA, consisting of Lewis Carlsbad Desalination Plant supplies, imported water supplies, and ESP reservoir supplies.

7.3 CITY OF SAN DIEGO EMERGENCY STORAGE OF WATER POLICY

The City operates emergency and seasonal storage programs in conjunction with approved municipal policy by maintaining an accessible amount of stored water that could increase reliability and provide an uninterrupted supply of water to the City's WTPs, should there be an interruption to the supply of imported water or another emergency that disrupts the water supply. The management of reservoirs is guided by Council Policy 400-04, which outlines the City's Emergency Water Storage Program.

SECTION

8 Legal Authorities

Under California law, including CWC Chapters 3.3 and 3.5 of Division 1, Parts 2.55 and 2.6 of Division 6, Division 13, and Article X, Section 2 of the California Constitution, the City Council is authorized to implement the water shortage actions outlined in this WSCP. In all water shortage cases, shortage response actions to be implemented will be at the discretion of the City Council and will be based on an assessment of the supply shortage, customer response, and need for demand reductions.

It is noted that upon proclamation by the Governor of a state of emergency under the California Emergency Services Act (Chapter 7 [commencing with Section 8550] of Division 1 of Title 2 of the Government Code) based on drought conditions, the state will defer to implementation of locally adopted water shortage contingency plans to the extent practicable. The City will coordinate with regional and local water suppliers for which it provides water supply services for possible proclamation of a local emergency as necessary.

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SECTION

9 Communication Protocol

The City's communication protocol includes the various channels the City will utilize to convey critical messages regarding water shortage allocations and voluntary and mandatory actions. Public outreach programs can help increase awareness of water shortages, while customer services and workshops can encourage ratepayers to actively participate in demand-reducing strategies. A strong communication plan will educate City ratepayers, including local leaders and the business community, on the water supply situation; what actions are proposed; what the intended achievements are; and how these actions are to be implemented. While specific types of messaging are deployed at various shortage response levels, how these messages are conveyed to the public is described per this communication protocol. The communication protocol will be in place prior to a water supply shortage and will be initiated in Water Shortage Level 1 (Expanded Year-Round Permanent Mandatory Water Restrictions). Activation of the communication protocol will continue through all subsequent water shortage levels. At times, specific communities may require specialized outreach.

9.1 COORDINATION

To communicate effectively, avoid confusion, and maintain credibility, the City will work in close coordination with SDCWA at various levels of management. These levels include the Joint Public Information Council (JPIC)/Conservation Coordinators (staff level), the Member Agency Managers group (management level), and SDCWA Board's Legislation and Public Outreach Committee (Board level). During droughts or other times of limited supply, the frequency and extent of coordination will increase to ensure outreach tactics are consistent with the changing needs of the City and its ratepayers. The City will seek opportunities to leverage external resources to complement its own outreach.

9.2 COMMUNICATION OBJECTIVES

Communication objectives during the various water shortage levels of the WSCP include the following:

- Motivate water users to quickly increase conservation in ways that are consistent with any voluntary or mandatory actions called for at the current level of the WSCP.
- Raise awareness and understanding of the drought, regulatory, or other conditions affecting water supplies and the need for increased conservation.
- Minimize confusion and maintain credibility of water agencies and conservation messages with an appropriate tone that avoids a "false alarm" perception and non-compliance backlash.
- Make water users feel appreciated for existing accomplishments in improving their water-use efficiency and for supporting regional and local investments in water supply reliability.

- Educate regional civic and business leaders, elected officials, and the public that the City has greatly improved its water supply reliability.
- Prepare the City for any potential escalation (or de-escalation) of the WSCP based on trending supply conditions.
- Ensure all stakeholders believe they are being treated fairly in relationship to other stakeholders.
- Maintain communication effectiveness by soliciting or monitoring feedback from member agencies, key stakeholders, and the public to update or adapt messages or communication tools.
- Exit WSCP implementation having demonstrated the effectiveness and value of conservation actions and water supply reliability investments in minimizing impacts to the City's economy and quality of life.

9.3 COMMUNICATION PROTOCOL FOR CURRENT OR PREDICTED SHORTAGE

A current or predicted shortage, as determined by the Annual Assessment, will be communicated to the public upon submittal of the Annual Assessment Report. For a Water Shortage Level 1 or 2, the Mayor may publish a notice of determination of the existence of a shortage condition in the City's official newspaper. The City of San Diego may also post notice of the condition on its website. A Water Shortage Level 3 or 4 condition may be declared upon recommendation by the Mayor and resolution of the City Council. The declaration of a Water Shortage Level 5 or 6 may be issued upon recommendation by the Mayor and resolution of the City Council and in accordance with the procedures specified in CWC §351 and §352.

9.4 COMMUNICATION PROTOCOL FOR TRIGGERED OR ANTICIPATED TO BE TRIGGERED SHORTAGE RESPONSE ACTION

The public will be notified about triggered or anticipated to be triggered shortage response actions. The implementation of shortage response actions associated with any water shortage level will take effect on the tenth day after the date the shortage response action is declared. Within five days following the declaration of the shortage response action, the Mayor will publish a notice giving the extent, terms, and conditions around the use and consumption of water for three consecutive days in the City's official newspaper.

9.5 PROTOCOL AND STRATEGIES FOR RELEVANT COMMUNICATIONS

To reduce water use during any water shortage level, the City will increase its public education and outreach efforts to build awareness of needed actions from the public. In addition, the City's outreach campaign will be regularly revised to reflect current conditions. Key communication strategies and associated water shortage level implementation are listed below. Communication strategies build upon from previous levels as the water shortage level increases.

- Announce status change to key stakeholders and the public (all water shortage levels).
- Provide regular updates to stakeholders and the media on conditions (all water shortage levels).

- Increase agency coordination via monthly JPIC meetings (Water Shortage Levels 1 and 2).
- Conduct issue briefings with elected officials and other key civic and business leaders (Water Shortage Level 2).
- Promote available water assistance resources for vulnerable populations; specialized outreach for impact industries (Water Shortage Levels 3 and 4).
- Conduct specialized outreach to reduce discretionary outdoor use while minimizing landscape damage (Water Shortage Levels 3 and 4).
- Suspend promotion of long-term water use efficiency programs/tools to focus on imminent needs (Water Shortages Levels 5 and 6).

The City has various means of implementing its communication strategies. The City may update its website, newsletters, and social media platforms to reflect conditions and convey key messaging. The City may also hold news conferences or other events to announce or explain changes in conditions. Finally, the City may modify school assembly program content to include key conservation messages.

9.5.1 CATASTROPHIC COMMUNICATIONS

In the event of a catastrophic supply interruption that requires water use to be quickly prioritized for or limited to essential public health and safety needs, the City will immediately deploy appropriate strategies from Water Shortage Levels 1 through 6. In addition, outreach messaging will reflect emergency conditions and the need to focus on health and public safety. The City may also consider potential joint news release/new events with public health officials or incident commanders to announce conditions and explain needed action. Finally, the City will ensure ongoing coordination with emergency response services with daily advisories or alerts as needed.

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ATTACHMENT A Shortage Response Actions Table

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Types of response actions:

- Locally appropriate supply augmentation actions
- Locally appropriate demand reduction actions to adequately respond to shortages
- Locally appropriate operational changes
- Additional, mandatory prohibitions against specific water use practices (in addition to state-mandated prohibitions)

Note: Shortage response actions from previous drought response levels will remain in effect at later levels.

Water Shortage Level	Shortage Response Actions	Estimate Of Extent To Which Supply Gap Reduced	Response Action Type
Water Shortage Level 1: Expanded Year-Round Permanent Mandatory Water Restrictions (consumer demand reduction of up to 10% is required)	Increase outreach efforts for high-volume customers and expand the leak alert program.	1-2%	Demand Reduction
	Increase voluntary conservation.	1-2%	Demand Reduction
	Expanded enforcement of Permanent Water Waste Prohibitions.	3-7%	Demand Reduction

Water Shortage Level	Shortage Response Actions	Estimate Of Extent To Which Supply Gap Reduced	Response Action Type
Water Shortage Level 2: Drought Watch Condition (consumer demand reduction of up to 20% is required)	Areas with no irrigation system must use a hand-held hose with a shutoff nozzle, a hand-held container, or a garden hose sprinkler system on a timer.	2%	Demand Reduction
	Washing of automobiles, vehicles, airplanes, and other mobile equipment is permitted only before 10:00 a.m. or after 6:00 p.m. with a hand-held container or a hand-held hose with a shutoff nozzle. Washing is permitted at any time at commercial car washes. Car washes that do not use partially recirculated water will be subject to volume limits designated by a resolution of the City Council. Boats and boat engines are permitted to be washed down after use during the designated time. Mobile equipment washings are exempt from these regulations where the health, safety, and welfare of the public are contingent upon frequent vehicle washings.	1%	Mandatory Prohibition
	Landscape irrigation is limited to no more than three assigned days per week on a schedule posted by the Mayor. This does not apply to commercial growers or nurseries, nor to the irrigation of golf course greens and trees.	4%	Mandatory Prohibition
	Use of recycled or non-potable water, when available, is required for construction purposes.	1%	Operational Change
	Construction operations receiving water from a fire hydrant meter or water truck will not use water beyond that required for normal construction activities. Construction projects requiring water for new landscaping materials shall adhere to the designated irrigation hours of before 10:00 a.m. and after 6:00 p.m.	1%	Mandatory Prohibition
	Water from fire hydrants is limited to firefighting.	1%	Operational Change

Water Shortage Level	Shortage Response Actions	Estimate Of Extent To Which Supply Gap Reduced	Response Action Type
Water Shortage Level 3: Drought Alert Condition (consumer demand reduction of up to 30% is required)	Landscaped irrigation of areas not covered by sprinklers is limited to two assigned days per week using a hand-held container, a hand-held hose with a shutoff nozzle, or low-volume non-spray irrigation, such as a soaker hose.	6%	Mandatory Prohibition
	Operation of ornamental fountains is prohibited, except when needed for maintenance.	1%	Mandatory Prohibition
	Landscape irrigation using sprinklers is limited to no more than five minutes per watering station during two assigned days per week, on a schedule established by the Mayor. The five-minute limit per watering station does not apply to landscape irrigation systems using water efficient devices, including drip/micro-irrigation systems and stream rotor sprinklers.	3%	Mandatory Prohibition
	Commercial car washes must reuse/recirculate water.	1%	Demand Reduction
	Prohibition on street cleaning.	1%	Mandatory Prohibition

Water Shortage Level	Shortage Response Actions	Estimate Of Extent To Which Supply Gap Reduced	Response Action Type
Water Shortage Level 4: Drought Critical Condition (consumer demand reduction of up to 40% is required)	Operation of cascading and recreational fountains is prohibited, except to the extent needed for maintenance.	8%	Mandatory Prohibition
	Landscape irrigation is limited to two assigned days per week and to no more than five minutes per watering station, or no more than 18 minutes per day with impact rotors, rotating nozzles, or micro-spray heads. This condition does not apply to commercial growers or nurseries, or to the irrigation of golf course greens.	1%	Mandatory Prohibition
	Refilling ornamental lakes or ponds is prohibited, except to the extent necessary to sustain plants or animals that were present in the water feature before a water shortage level was declared.	1%	Mandatory Prohibition
	Washing vehicles is prohibited, except at commercial car washes that recirculate water, or by using high-pressure/low-volume wash systems.	2%	Mandatory Prohibition
	Suspension of specific municipal uses such as hydrant flushing, street cleaning, and water-based recreation.	2%	Operational Change
	Increase initiative to install pressure regulators in all homes and businesses that do not currently have one and require a downward adjustment to 60 pounds per square inch (psi).	2%	Operational Change

Water Shortage Level	Shortage Response Actions	Estimate Of Extent To Which Supply Gap Reduced	Response Action Type
Water Shortage Level 5: Drought Crisis Condition (consumer demand reduction of up to 50% is required)	Prohibit certain types of landscape irrigation. Stop all landscape irrigation, except for crops and landscape products of commercial growers and nurseries. This does not apply to: ▪ Maintenance of trees and shrubs watered no more than two assigned days per week and by using a hand-held container, a hand-held hose with an automatic shutoff nozzle, or low-volume non-spray irrigation. ▪ Maintenance of existing landscaping for fire protection. ▪ Maintenance of plant materials identified to be rare or protected by City Council policy, or essential for the well-being of rare animals. ▪ Maintenance of landscaping within active parks and playing fields, daycare centers, school grounds, cemeteries, and golf course greens, with maximum irrigation of two days per week.	12%	Mandatory Prohibition
	Prohibit filling or refilling residential pools and spas.	1%	Demand Reduction
	Suspension of potable water use for irrigation (100 percent reduction).	15%	Mandatory Prohibition
	City emergency storage withdrawals.	15%	Supply Augmentation
	Locally appropriate supply augmentation as per SDCWA WSCP.	10%	Supply Augmentation
	Increase initiative to install pressure regulators in all homes and businesses that do not currently have one and require a downward adjustment of all pressure regulators from 60 psi to 50 psi.	2%	Operational Change

Water Shortage Level	Shortage Response Actions	Estimate Of Extent To Which Supply Gap Reduced	Response Action Type
Water Shortage Level 6: Drought Emergency Condition (consumer demand reduction greater than 50% is required)	Use of flow restrictors on accounts that are non-responsive to outreach, and other mandatory restrictions and enforcement, as necessary.	2%	Mandatory Prohibition
	Prohibit all landscape irrigation. This does not apply to: ▪ Maintenance of trees and shrubs watered no more than two assigned days per week and by using a hand-held container, a hand-held hose with an automatic shutoff nozzle, or low-volume non-spray irrigation. ▪ Maintenance of existing landscaping for fire protection. ▪ Maintenance of plant materials identified to be rare or protected by City Council policy, or essential for the well-being of rare animals.	20%	Mandatory Prohibition
	City emergency storage withdrawals.	15%	Supply Augmentation
	Locally appropriate supply augmentation as per SDCWA WSCP.	10%	Supply Augmentation
	Increase initiative to install pressure regulators in all homes and businesses that do not currently have one and require downward adjustment of all pressure regulators from 50 psi to 40 psi.	3%	Operational Change

APPENDIX D Outreach Documents

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The City *of*
SAN DIEGO

January 1, 2026

Donya Dezfooli
(Donya.Dezfooli@amwater.com)
California American Water
1025 Palm Avenue
Imperial Beach, CA 91932

Subject: **Notice of Preparation of the 2025 City of San Diego Urban Water Management Plan**

Pursuant to the requirements of the California Water Code, Division 6, Part 2.6 Urban Water Management Planning, Section 10621 (b), every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days prior to the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.

This letter is intended to notify your agency that the City of San Diego (City) is in process of preparing the 2025 Urban Water Management Plan (UWMP). Based on the City's current schedule, we anticipate that a draft of the 2025 UWMP will be available for public review in February 2026 prior to adoption in spring 2026.

The City is encouraging participation from agencies and other interested parties in the UWMP. The City would like to extend to your agency an opportunity to meet with us to go over the various elements of the UWMP, including assumptions about future population, future water demand, future water supplies, and upcoming water conservation programs.

If your agency would like to learn more about the 2025 UWMP, submit questions or comments, or provide input to the City, please contact me in the Public Utilities Department via email at CarlsonS@sandiego.gov.

Sincerely,

Sandra Carlson, P.E.
Associate Civil Engineer
City of San Diego Public Utilities Department

The City *of*
SAN DIEGO

January 1, 2026

Polly Robertson
(probertson@delmar.ca.us)
City of Del Mar
1050 Camino Del Mar
Del Mar, CA 92014

Subject: **Notice of Preparation of the 2025 City of San Diego Urban Water Management Plan**

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Sincerely,

Sandra Carlson, P.E.
Associate Civil Engineer
City of San Diego Public Utilities Department

The City *of*
SAN DIEGO

January 1, 2026

Jeremy Crutchfield
San Diego County Water Authority
4677 Overland Avenue
San Diego, CA 92123

Subject: **Notice of Preparation of the 2025 City of San Diego Urban Water Management Plan**

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Sincerely,

Sandra Carlson, P.E.
Associate Civil Engineer
City of San Diego Public Utilities Department

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Commitment to Distribute the 2025 Urban Water Management Plan (UWMP)

The documentation currently included in these appendices satisfies California Water Code (CWC) parts 10621(b) and 10642.

Two other sections of the CWC specify UWMP documentation that must take place after the submission of the supplier's UWMP to the California Department of Water Resources (DWR). These parts are as follows:

- Part 10644(a), requiring documentation that within 30 days of submitting the UWMP to DWR, the adopted UWMP has been or will be submitted to the California State Library and any city or county to which the supplier provides water.
- Part 10645, requiring documentation that the supplier will make the UWMP available for public review no later than 30 days after submission to DWR.

In order to satisfy these requirements, the City will perform the following actions:

- The City will submit its 2025 UWMP to DWR.
- The City will send a printed or electronic copy of its 2025 UWMP to the California State Library and to the cities and counties within which it provides water. The City will do this within 30 days from filing with DWR.
- The City will make their 2025 UWMP available for public review within 30 days from filing with DWR.

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APPENDIX E City Adoption Resolution

To be included in a future submittal.

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APPENDIX F Demand Forecast Report

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City of San Diego

2025 Water Demand Forecast Report

City of San Diego
Public Utilities Department

Public Review Draft / February 2026

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ATTACHMENT C S15 SCENARIO WATER DEMAND FORECAST BY PRESSURE ZONE

ATTACHMENT D S15 SCENARIO PRESSURE ZONE REPORT

ATTACHMENT E ON TREND SCENARIO WATER DEMAND FORECAST BY PRESSURE ZONE

ATTACHMENT F WSPP DEMAND FORECAST

List of Abbreviations and Acronyms

AB	Assembly Bill
AF	acre-feet
AFY	acre-feet per year
AWWA	American Water Works Association
Cal-Am	California American Water Company
Carollo	Carollo Engineers
CII	commercial, institutional, and industrial
CIMIS	California Irrigation Management Information System
City	City of San Diego
CMIP5	Coupled Model Intercomparison Project, Phase 5
CY	calendar year
deg F	degrees Fahrenheit
DWR	Department of Water Resources
EO	Executive Order
FY	fiscal year
gal/sq ft/day	gallons per square foot per day
GCM	general circulation model
GIS	geographical information system
gpcd	gallons per capita per day
gpd	gallons per day
ID	identification
MFR	multifamily residential
mgd	million gallons per day
MWELO	Model Water Efficient Landscape Ordinance
N/A	not applicable
NRW	non-revenue water
RCP	representative concentration pathway
S15	Series 15
SANDAG	San Diego Association of Governments
SCS	Sustainable Communities Strategy
SDCWA	San Diego County Water Authority
SFR	single-family residential
SGMA	Sustainable Groundwater Management Act
So San Diego Resv	South San Diego Reservoir
r-gpcd	residential gallons per capita per day
US	United States
UWMP	Urban Water Management Plan
WRCC	Western Regional Climate Center
WTP	water treatment plant
WUE	water use efficiency

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SECTION

1 Introduction

1.1 PURPOSE AND OVERVIEW

The City of San Diego (City) provides potable water and recycled water services directly across the City and provides wholesale water to other cities and utilities. The City's water demand peaked in fiscal year (FY) 2007 at 222 million gallons per day (mgd). Since that peak, demand has slowly declined and hit a low of 147 mgd in FY 2024. This 34 percent decline in demand over the past two decades occurred despite the population growing from 1.29 million in 2007 to the current peak customer base of nearly 1.4 million residents. Whereas population growth was once considered the most dominant and reliable indicator of future water needs, those times have passed. Across California, water demand trajectories have been highly uncertain, difficult to project, and often overestimated. Changing economic conditions, growth density, local and state conservation initiatives and regulations, prolonged periods of severe drought, and, importantly, permanent conservation adoption have compounded to dampen demands.

Despite the complexities and uncertainties, the City must prepare for future estimated long-range water needs. The City has retained Carollo Engineers (Carollo) to prepare a *2025 Water Demand Forecast Report* (Demand Forecast) to aid the City with internal planning as well as the preparation of the *2025 Urban Water Management Plan* (UWMP). The main purpose of the 2025 UWMP is to ensure that urban water suppliers prudently assess and plan for long-term water supply reliability. More specifically, UWMPs are intended to:

- Demonstrate how a supplier will provide reliable water service under normal, single-dry, and multiple-dry year conditions over a 20-year planning horizon (2030 through 2050).
- Match projected water demands with available water supplies, considering population growth, land use, and conservation.
- Prepare suppliers and their communities for droughts, climate change impacts, and supply uncertainties.
- Provide a foundation for water shortage contingency planning, which is critical for drought response.

Sound demand projections, therefore, serve as a foundational element of the UWMP. This Demand Forecast documents the approach, data, and results for two water demand forecast scenarios generated for the City through 2050 using fiscal years. Two scenarios were developed in conjunction with City staff to explore uncertainty in the forecast and to envelop a range of possible futures, based on varying assumptions and possible outcomes. Both scenarios represent plausible future conditions at the City and are founded on the best available data at the time of forecast development.

Accurate growth projections are a critical input in demand forecasting as population and land use changes directly drive future water needs. Understanding where and how an area will grow (or

remain if already built out) allows a water supplier to plan infrastructure, secure supplies, and ensure long-term reliability without over-or under-investing in resources. The San Diego Association of Governments (SANDAG) is the agency responsible for developing regional growth forecasts that cover the City and County of San Diego. SANDAG recently released the Series 15 (S15) Regional Growth Forecast, the fifteenth forecast, which includes demographic forecasts. The first water demand forecast scenario incorporates the S15 forecast for the City, plus state-driven conservation savings and densification impacts and is referred to as the "S15 Scenario".

SANDAG projections have historically overestimated growth (as discussed in detail in Section 2). Although the current S15 forecast is more realistically aligned with observed trends when compared to historical releases, alternative growth patterns were explored in the second water demand scenario evaluated in this Demand Forecast. Referred to as the "On Trend Scenario", this forecast was developed using a similar framework to the S15 Scenario and captures densification impacts, but with S15 forecasted growth adjusted to reflect recent trends in the City water account growth and inclusion of additional potential conservation reductions.

Both the S15 and the On-Trend Scenarios evaluated use forecast models that rely on empirical water use data by sector at the pressure zone level as the starting point of the forecast. As discussed in detail in Section 2.3, models were calibrated to a recent three-year average water use (FY 2022, 2023, and 2024). Econometric demand functions are used to project water use for new residential developments and incorporate projected changes in demographics, socioeconomics, and land use. The demand functions, developed through multiple linear regression techniques, assume that water use is a function of several explanatory factors determined through the regression, such as weather, income, housing characteristics, and other demographics. This approach approximates the mathematical relationship between the explanatory factors (e.g., weather, income, etc.) and the water use factor (i.e., gallons per single-family home per day). These models are often referred to as *econometric* when the structure of the model primarily addresses economic variables, including household income. For the nonresidential sectors, water demand from new growth is projected using land-use water-use factors paired with developable parcel projections and zoning.

The resulting scenarios demonstrate a relatively tight range of future demands, with the upper bound reflecting modest growth (S15 Scenario) and the lower bound a slight decline (On Trend Scenario). The upper bound S15 scenario is a more conservative approach with respect to long-term water supply planning and is the demand forecast adopted by the City for the 2025 UWMP in accordance with the regulatory planning goals defined in the Department of Water Resources (DWR) Guidelines and the California Water Code. This helps to ensure the City has adequate supplies under potential future conditions and reduces the risk of being unprepared to supply development and growth, including any unanticipated growth, within the next 25 years. The On-Trend scenario is likely more reflective of actual customer demand that is influenced by increased costs as well as lower irrigation sector use due to additional conservation. It provides a useful alternative data set that the City can utilize to ensure strategic capital investments in the City’s water system.

1.2 STUDY AREA

The City is in Southern California on the Pacific Coast, adjacent to the Mexico-United States (US) border, as shown in **Figure 1-1**. It is within the County of San Diego and extends over 340 square miles. The City is bound by the Pacific Ocean to the west, the Mexico-US border to the south, and neighboring cities to the east, including Lemon Grove, El Cajon, and Poway, and to the north, including Del Mar, Solana Beach, and Escondido. The topography of the City can be characterized as hilly, with hills separating mesas due to the numerous canyons within and around the City. Elevations range from sea level to 1,600 feet above sea level. The City's climate is characterized by warm summers and mild winters, consistent with Southern California's "Mediterranean" climate.

The City provides potable water and recycled water services to approximately 1.4 million people (excluding wholesale customers and areas serviced by another water district) residing within the City's current retail water service area, which is equivalent to the City's jurisdictional boundary. Wholesale water deliveries are provided to communities both inside and outside of the City boundary. To meet the water needs of the customers, local runoff from rainfall is captured in the City's reservoirs, imported water is purchased from the San Diego County Water Authority (SDCWA), and wastewater is recycled at the City's two water reclamation plants for non-potable use.

There are three major service areas across the City's water system, including Miramar, Alvarado, and Otay, all of which have a water treatment plant (WTP), as shown in **Figure 1-2.** The service areas include two blended zones, which can be supplied with water from more than one WTP. The City's water service area includes portions within the City's jurisdictional boundary that are not covered in a pressure zone by the City's wholesale or retail water system, shown in the orange shaded areas in **Figure 1-2**. An overview of these areas is provided below with the number corresponding to the location in **Figure 1-2**:

1. California-American Water (Cal-Am) serves the area directly west of the Otay Service Area boundary with potable water, most of which is purchased from the City. These demands are captured through the Wholesale water use sector in the City's water demand forecast.
2. Otay Water District serves the area directly east of the Otay Service Area boundary with potable water. The Otay area has the potential for future growth, but most of that growth is in the Eastern portion which will be supplied by Otay Water District. These current and future potable demands are not a part of the City's water demand forecast. The City does provide wholesale recycled water to Otay Water District.
3. In the eastern portion of the Miramar Service Area, which is primarily sparsely developed military lands, the City has a metered retail connection with the military base. The military base distributes the supply to its needed locations within the orange shaded area. These demands are captured through the Government water use sector of the City's demand forecast.
4. The Point Loma area is served via a military metered connection located near the southwestern corner of the Alvarado Service Area. These demands in the orange shaded area are captured through the Government water use sector of the City's water demand forecast.
5. At the northwest corner of the Miramar Service Area is the San Pasqual Valley Groundwater Basin, which is not connected to the City's potable water system. Located approximately 25 miles northeast of downtown San Diego within the San Pasqual Valley, approximately 90 percent of the San Pasqual Valley Groundwater Basin is City-owned and is designated and managed as an agricultural preserve,

as documented in City Council Policy 600-45. The San Pasqual Valley Groundwater Sustainability Agency, which comprises the City and the County of San Diego, developed and adopted a *Groundwater Sustainability Plan* to comply with California's Sustainable Groundwater Management Act (SGMA) in 2021 and was approved by the Department of Water Resources in 2023. The San Pasqual Valley Groundwater Basin is mostly agriculture water users with some rural domestic use. Users in the basin rely upon local supplies to meet their needs. Water availability and sustainability are the subject of the Groundwater Sustainability Plan. Thus, water demand in the San Pasqual Valley Groundwater Basin is not considered in the City's demand forecast.

In addition, the City owns and operates nine reservoirs, three WTPs, and two water reclamation plants. In 2025, the City had 3,700 miles of water mains with 321,369 service connections. The nine reservoirs capture local runoff from rainfall within the surrounding watersheds, store upstream releases, and hold water received from SDCWA. Some of the nine reservoirs will receive indirect potable reuse water in the future, in addition to capturing local runoff and receiving water from SDCWA. The nine reservoirs provide a total water storage capacity of 566,236 acre-feet (AF) and an operational capacity of 444,773 AF.

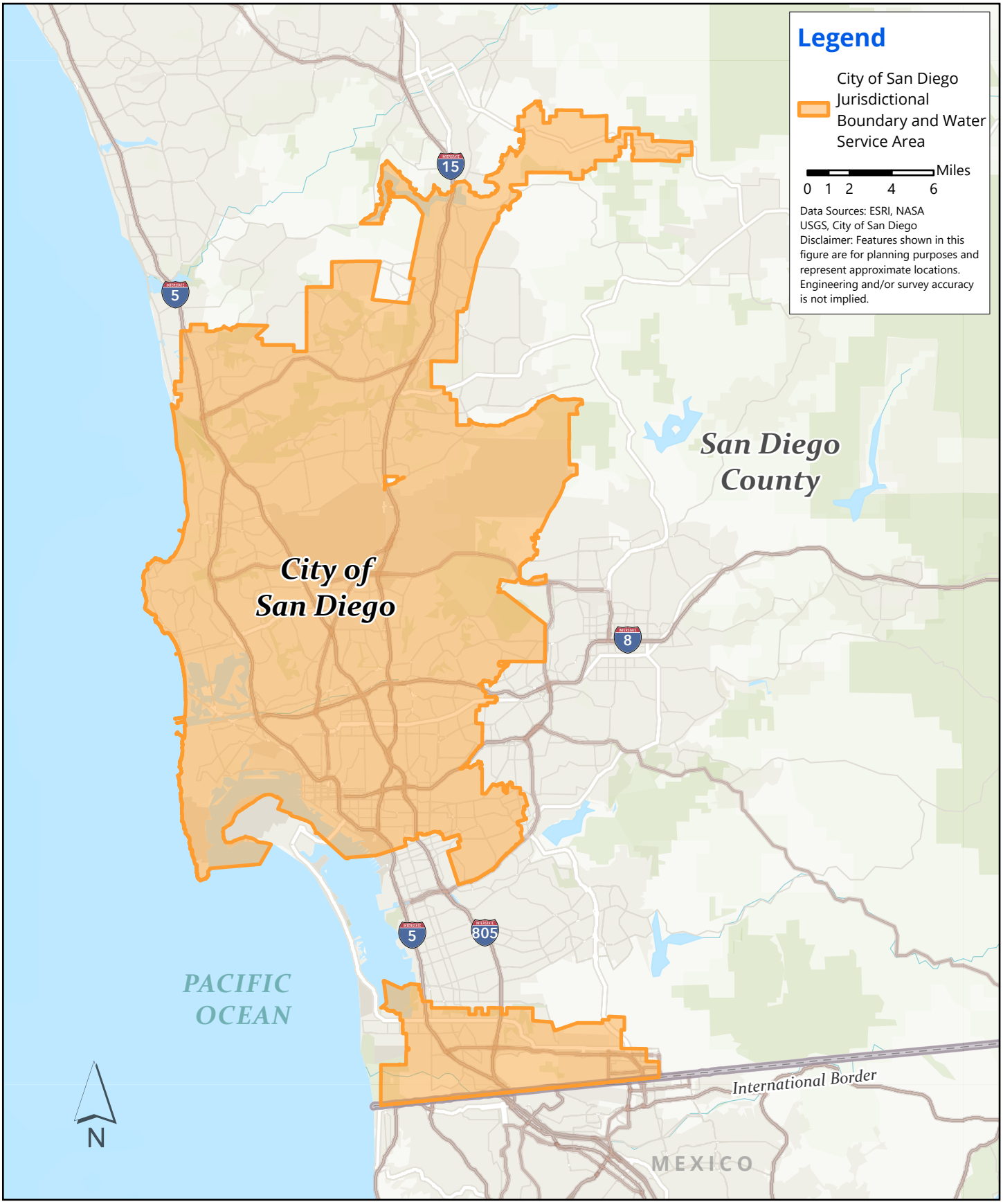


Figure 1-1 City of San Diego Location Within San Diego County

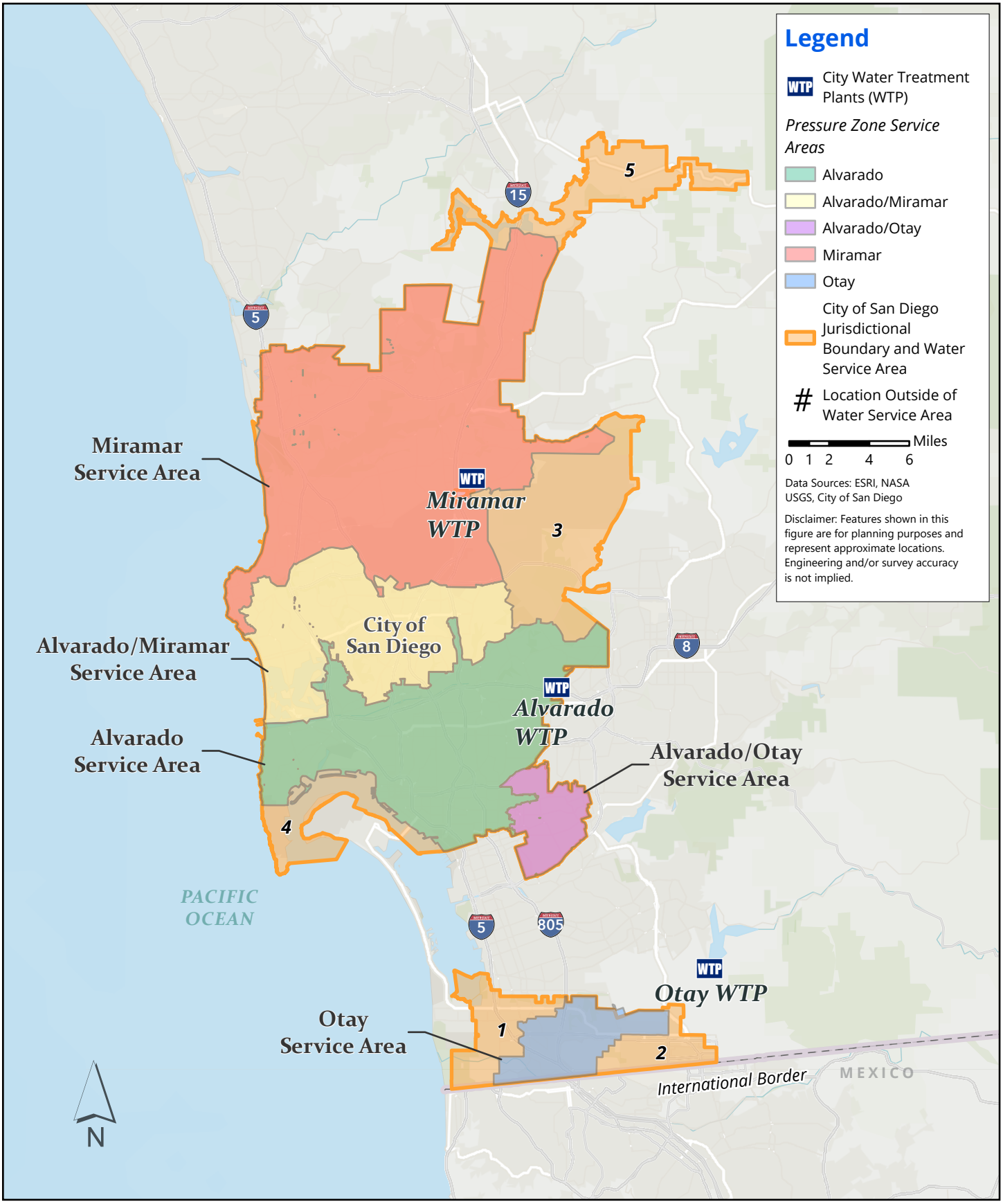


Figure 1-2 City of San Diego Water Service Area and Water Treatment Plants

1.3 PLANNING HORIZON

The planning horizon of the water demand forecast is 20 years, extending the demand projections to 2050. The planning years are broken down at five-year increments: 2030, 2035, 2040, 2045, and 2050.

1.4 REPORT ORGANIZATION

This report contains a total of seven sections covering the background, development, and resulting demand forecast scenarios. The sections are briefly summarized below:

SECTION 1

Introduction:

- This section presents the purpose and objectives of the 2025 Water Demand Forecast, a description of the service area and potable water facilities, and the planning horizon of this report.

SECTION 2

Water Demand Forecast Methodology:

- This section describes the adaptation of the 2020 UWMP demand model and provides a general overview of the demand forecasting methodology and approach.

SECTION 3

Current Water Demand Analysis:

- This section discusses the current potable and recycled water use by billing sector within the service area. Non-revenue water and overall water production are also discussed.

SECTION 4

UWMP Water Demand Forecast Scenario (S15):

- This section provides the results of the water demand projections by billing sector, forecasted City-wide conservation savings and water production, and demand statistics for the forecast scenario adopted for the 2025 UWMP.

SECTION 5

Alternative Water Demand Forecast Scenario:

- This section provides the results of the water demand and production projections developed for an alternative demand scenario as well as demand statistics and City-wide conservation savings.

SECTION 6

Water Demand Forecast Scenario Summary:

- The water demand projections for the adopted and alternative forecast scenarios are summarized in this section by billing sector and service area. The range of results between the two scenarios is also discussed in this section.

SECTION 7

Water Demand Forecast Uncertainty:

- The uncertainties associated with water demand forecasting such as varying demographics, climate, and economic factors as well as statistical model errors are discussed this section.

SECTION 8

References:

- This section provides the references used in the creation of this report.

1.5 DATA SOURCES

Several data sources were compiled to generate the water demand forecast scenarios, as described below and referenced throughout the report.

- Customer metered water use data and wholesale usage records were provided by the City.
- WTP production data were provided by the City.
- American Water Works Association (AWWA) Water Audits were provided by the City.
- Water Use Efficiency (WUE) reports were provided by the City.
- Climate and weather data were retrieved through the Western Regional Climate Center (WRCC) and California Irrigation Management Information System (CIMIS).
- Geospatial data were provided by the City, including parcels, adequate building sites, water meters, and pressure zones.
- Geospatial data were retrieved through SANDAG, including census tracts, building outlines, developable sites, re-developable/infill sites, and current and planned land use.
- Downscaled climate data were obtained from a public data portal maintained by a consortium of California state agencies and academic institutions (https://cal-adapt.org/data/download/).

SECTION 2

Water Demand Forecast Methodology

The City's water demand forecast is prepared for primary sectors by pressure zone and then rolled up into various useful summaries. Metered data serve as the foundation of sector assignments and current water use estimates, as well as additional data on wholesale water deliveries. For each meter within an account, sectors were defined per the premise code identified in the metered data and via the lookup provided in **Attachment A**. Recycled water meters and use were identified using the billing rate code "WTR_RECL." The primary sectors for the demand forecast include:

- Single-family residential (SFR)
- Multifamily residential (MFR)
- Commercial
- Institutional
- Government
- Irrigation
- Industrial
- Wholesale
- Recycled

This section describes the overall approach, assumptions, data sources, and processing of the water demand forecast model inputs. The forecast approach is referred to as *driver times unit use factor*. Within that structure, *driver units* are the primary variables that most strongly influence long-term water use, such as growth in housing and development of new non-residential parcels. The *unit use factors* define how much water, on average, each driving unit uses, typically expressed in gallons per day (gpd) (i.e., gallons per dwelling unit per day).

2.1 MODEL OVERVIEW

The water demand forecast model prepared by CDM Smith for the City's *2020 UWMP* (referred to as the 2020 demand model) was adapted as the base model for the demand forecasting scenarios presented in this report (see CDM Smith 2021 and CDM Smith 2021b). The updated 2025 demand model utilizes a hybrid approach, combining empirical water use data from the City's metered water use files, which is summarized at the pressure zone and sector level, combined with econometric functions and land use statistics, which were developed from the City's metered data at the parcel level for forecasting new demands. Current (existing) demands are separated from new growth in the model. New growth is estimated using the residential econometric functions, non-residential land use water factors, and growth projections for housing units and non-residential parcels. Demand reductions from potential WUE and conservation measures are incorporated accordingly for new growth and existing demand by sector and pressure zone. The following sections describe the major model components and processing steps involved in preparing the 2025 demand forecast.

2.1.1 HYBRID EMPIRICAL APPROACH

There are several methodologies and techniques used to forecast long-term water demand. Generally, methods can be characterized as trend extrapolation, adjusted unit use, disaggregated use, demand functions, land use approaches, or end-use accounting models. In practice, these methods are given different names and fall along a spectrum rather than a single approach. Forecasts are typically a hybrid approach that includes aspects of multiple methods within a single water demand model. The City's demand forecast method is an example of a hybrid, customized model that is disaggregated by both sector (i.e., types of water users with similar water use characteristics) and geographic units (i.e., pressure zones). The City's model uses tailored approaches for each sector as well as existing demands versus projected new demands.

For decades, the City utilized econometric demand functions as a means of developing water demand forecasts for all sectors. However, this method did not meet the spatial component of the forecast with accuracy. The City has since migrated to a hybrid method that incorporates empirical (or observed) water use derived from the City's metered data, summarized by pressure zone. The observed, current water use is the basis of the forecast. This critical step improves model accuracy and ensures that the starting point of the forecast, referred to as the model base period, is rooted in actual, up-to-date patterns and use levels. New growth is estimated separately within the model structure. The residential sectors employ an econometric method for projecting new growth (described in Section 2.1.2), while the non-residential sectors employ land use water factors for projecting new growth (described in Section 2.1.3). This hybrid, empirical method offers improved short-term accuracy for water use projections, pinpoints new growth demands, and has the mathematical foundation to estimate the water use changes from socioeconomic and climate variable shifts that impact all demands (whether existing or new). All equations are executed at the pressure zone level across the service area and rely on land use projection data built up from the parcel level as the basis of the forecast growth.

2.1.2 RESIDENTIAL DEMAND FUNCTIONS

The SFR and MFR sector models use econometric demand functions as the foundation to forecast changes in water use over time driven by demographic growth and socioeconomic shifts. Econometric demand functions, developed through regression techniques, mathematically identify and define the relationship between water use variables for socioeconomic and climate variables. The coefficients from the regression output can be interpreted as an *elasticity*, which is a statistical rate of change that describes how changes in the variable drive changes in water use. Positive elasticities have a positive effect on water use, meaning that an increase in the parameter value is associated with an increase in water use, while negative elasticities have an inverse effect on water use. For example, income elasticity of +0.20 means that a 10 percent increase in real income will result in a 2 percent increase in water demand.

The City's residential econometric demand functions were developed by first spatially joining water meter data to parcels. Parcels were assigned to either the SFR or MFR sector per the premise code from the billing data. Other characteristics were joined from the parcel layer, including parcel size, number of housing units (applicable to MFR only), irrigable area of the parcel, and presence of a

pool. Using census block data, characteristics such as median household income and average number of persons per household were joined to the parcel records. Multiple years of observed historical annual water use were generated for each parcel and included water use for all rate types, including irrigation. Thus, any metered use with a premise code matching the residential sector was included in the water use for that parcel, regardless of rate type.

Historical weather observations from the weather station nearest to the parcel were incorporated to match the historical water use. These data were compiled into a *cross-sectional time series database*. The data are *cross-sectional* due to being observed per parcel, with weather and water use varying over the *time series*. The data were transformed into natural log, and regression modeling was conducted, including the testing of multiple variables for statistical significance in predicting the dependent variable. Only those variables found to be statistically significant were included in the final model.

While the residential econometric demand functions were developed in 2020, the structure of the model and relationships between the variables and water use (i.e., the coefficients or responses) have not likely changed. For this reason, they are still considered valid for the City's 2025 demand forecast. Over the past five years, SFR water use has fluctuated in response to weather, and a slight decline in the number of active accounts has been observed. MFR demand has been slightly increasing, alongside growth in active accounts. The relative stability in recent trends highlights the appropriateness of maintaining the residential demand functions. For this reason, they are still considered valid for the City's 2025 demand forecast. Historical water use trends by sector are further discussed in Section 3.

Residential water demand from new growth is estimated using the econometric demand functions, paired with projections of growth by pressure zone and across the entire service area. Growth projections are the basis for determining when new residential parcels will be developed over time.

The variables included in each residential econometric demand function are summarized in **Table 2-1**. The SFR function estimates household water use in gpd as a function of persons per household, temperature, income, irrigable parcel area, and presence of a pool. Note that an SFR account usually aligns with one single-family parcel and one single-family dwelling unit.

Similarly, the MFR function estimates water use per multifamily parcel as a function of persons per household, temperature, the number of dwelling units constructed on the parcel, parcel area, and presence of a pool. From the predicted water use per parcel, the unit use is estimated as water use per multifamily dwelling unit. These extra calculations are needed because of how multifamily parcels and metered data are structured.

Of note, both residential models indicated that temperature is the predominant climatic variable driving water use patterns. Outdoor use, which drives seasonal variability in residential consumption, is primarily governed by evapotranspiration and plant water requirements, both of which increase with higher temperatures. As a result, temperature provides a consistent and continuous signal that aligns closely with observed changes in water use. Precipitation in Southern California is infrequent, highly seasonal, and unevenly distributed. Rainfall often occurs during cooler months when irrigation demand is already low, and individual storm events may generate runoff rather than contributing meaningfully to soil moisture. When temperature and precipitation

are both included in regression analysis, temperature frequently captures most of the seasonal variation in demand, rendering precipitation statistically insignificant. This outcome reflects both the strong correlation between temperature and precipitation and the nonlinear influence of rainfall on water use.

Table 2-1 Residential Econometric Function Variables

Single-Family Model		Multifamily Model	
Estimated Unit Use Factor		**Estimated Unit Use Factor**	
Gallons per SFR Dwelling Unit Per Day		Gallons per Developed Parcel, Converted to Gallons per MFR Dwelling Unit Per Day	
Explanatory Variable	**Variable Coefficient (also Elasticity)**	**Explanatory Variable**	**Variable Coefficient (also Elasticity)**
Temperature: Avg and Max	+1.29 and +0.22	Temperature: Max	+1.68
Persons per Household	+0.17	Persons per Household(1)	+0.90
Household Income(1)	+0.30	Number of Units per Parcel(1)	+0.78
Irrigable Parcel Area(1)	+0.19	Total Parcel Area	+0.22
Presence of a Pool(1)	+0.23	Presence of a Pool	+0.09
Model Constant	-6.18	Model Constant	-4.88

Notes:
Source: CDM Smith 2021.
All variables have a P-value of >0.001, indicating the relationships are statistically significant.
(1) Denotes a variable with a strong t-statistic (in absolute values), indicating the variable has a strong relationship with water use.

Further, the residential econometric demand function variable coefficients are used as the mathematical foundation to estimate changes in the existing water use from socioeconomic and climate changes. Specifically, the *adjusted unit use with elasticities* method is applied to estimate changes from persons per household, price increases, and climate change. This mathematical approach is a derivative of the demand function, with an adjustment factor calculated by dividing the future estimated value of a variable by the base period value of the variable, and then raising the quotient by the variable coefficient. The adjustment factor is multiplied by the projected unit use factor. As an illustrative example, to estimate the change in water use on a per household basis from changes in persons per household, the following steps are taken, given the assumptions:

- Assume persons per household is projected to decline from 2.6 to 2.3 by 2040, and the demand function coefficient (or elasticity) for persons per household is+ 0.17.
- If the unadjusted projected unit use factor is 215 gallons per household per day in 2040, then the equation is: (2.3/2.6)^0.17 * 215.
- The adjusted projected unit use factor would be 211 gallons per household per day in 2040.

2.1.3 NON-RESIDENTIAL WATER USE FACTORS

Water demand from new growth for non-residential sectors, including commercial, institutional, government, irrigation, and industrial, is estimated by multiplying the parcel development area, expressed in square feet, by water use factors for the corresponding land uses. The non-residential

water use factors were developed by spatially mapping meter data to parcels. Water use was included for all meters within the parcel, regardless of rate type. Thus, any metered use with a non-residential premise code was incorporated in the water use for that parcel, including irrigation or commercial. This aligns with how the base period water use is calculated. Land use zoning was overlaid to determine the type of business activity occurring at the parcel. The land use zoning types are more specific than the meter premise codes, which allows for more granular secondary categories of non-residential water uses to be estimated. Parcel characteristics such as square footage and secondary categories, alongside historical water use, were added to a cross-sectional time series database. Statistics were generated for each secondary category, expressed as gallons per parcel square footage per day.

These non-residential land use factors indicate how much water a particular non-residential parcel will use on average, normalized to the area of the parcel. These metrics provide a standardized, data-driven basis for forecasting water needs across diverse land uses. Due to non-residential water use being highly variable depending on the type and scale of land use, applying specific normalized factors at the parcel level that are specific to land use inherently captures the unique characteristics and scale-dependent nature of these establishments. For example, land use types such as restaurants, schools, offices, hotels, or warehouses have distinct operational characteristics, occupancy patterns, and water demands. Even within a single category, the relationship between parcel size, or business scale, and water use is typically proportional. Thus, larger facilities will have higher total water use while maintaining a comparable intensity metric (e.g., larger parcels result in larger buildings with greater capacities). This built-in flexibility allows the land use factors to represent variety across establishments and scalability within each land use type, making it a robust and adaptable forecasting tool.

While the non-residential land use factors were developed in 2020, the relationship between parcel development and water use (i.e., the coefficients) has not changed since that time and is still valid for the City's 2025 demand forecasts. Non-residential sectors that are primarily associated with irrigation have fluctuated over the past five years. Other non-residential sectors have also fluctuated; however, this is in response to economic conditions, such as the COVID-19 pandemic, that are not associated with the development and scope of water use factors. Beyond these stable trends, building characteristics have not seen a noticeable change over a short period of time. Historical water use trends by sector are further discussed in detail in Section 3.

Water demand from new growth is estimated by multiplying projections of newly developed parcels by land use type by the land use water factors, all matched by secondary category. Employment growth projections are the basis for determining when new parcels will be developed over time. This projected new water demand is added to the existing water use from the model base period for these sectors. All equations are executed at the pressure zone level.

The applied water use factors are summarized in **Table 2-2**. Section 2.2.3 provides projections of parcel growth. Hotels, nursing homes, and hospitals are among the highest water use per square foot of the parcel.

Table 2-2 Non-Residential Water Use Factors

Primary Sector	Secondary Sector	Applied Water Use Factor (gal/sq ft/day)
Institutional	Primary Schools	0.011
	Junior Colleges	0.037
	Universities	0.055
	Nursing Homes	0.109
Government	City and Offices	0.029
	Parks and Recreation	0.020
	Military	0.014
Commercial	Hotels	0.225
	Hospitals	0.092
	Offices	0.035
	Mixed Use(1)	0.053
	Retail Stores	0.060
	Medical Offices	0.039
	Airport	0.020
	Transportation	0.013
Industrial	Light	0.015
	Regular	0.017
	Warehousing	0.013

Notes:
gal/sq ft/day – gallon per square feet per day
Source: CDM Smith 2021.
(1) Corrected from the CDM Smith 2021.

2.2 SANDAG SERIES 15

SANDAG produces economic, demographic, and transportation forecasts through a set of assumptions, data, computations, and model interactions. SANDAG's forecasting is based on U.S. Census Data, annual population and housing estimates developed by the California Department of Finance, and local input of the region's 18 incorporated and unincorporated areas. The S15 Regional Growth Forecast is the fifteenth published forecast by SANDAG and was accepted by the Board of Directors in April 2024 for distribution and use in planning. The S15 forecast is the foundation of the Sustainable Communities Strategy (SCS) land use pattern and is being incorporated into SANDAG's updated Regional Plan. The base year for S15 is 2022 and provides forecasted demographic conditions through the year 2050.

2.2.1 CENSUS TRACTS AND DATA PROCESSING

Census tracts are statistical subdivisions of a county, delineated by a local committee of data users. On average, census tracts contain about 4,000 inhabitants and are relatively homogeneous in terms of population, economics, and living conditions. The S15 projections are developed using census tracts and provide estimates for the following residential categories: household population, total population (including group quarters and military population), single-family occupied units,

multifamily occupied units, and household income. Employment for all categories is also included and summarized.

For development of the 2025 Demand Forecast inputs for demographics, Carollo used a spatially detailed technique to allocate census tract demographics to pressure zones. Water meter locations were spatially joined to the census tract, and the percentage of the tract that is within a pressure zone was calculated from the meter count. Areas outside of the pressure zones but served directly with potable water by the City (such as the Point Loma area) were reviewed for growth trends. It was determined that no growth was projected in these areas; thus, the pressure zone extent was suitable for identifying growth. It should be noted that this spatially joining technique differs from the method employed to develop previous iterations of the City's demand forecast, which applied the percentage of a pressure zone within a given census tract to estimate the pressure zone demographics.

Further, a calibration process was applied to align the SANDAG projections of single-family and multifamily dwelling units with the City's definition of a single-family and multifamily meter. Specifically, the SANDAG projections of single-family dwelling units were calibrated to the count of single-family meters in 2022 by pressure zone. To re-estimate multifamily dwelling units, the calibrated count of single-family dwelling units is subtracted from the total occupied dwelling units.

2.2.2 POPULATION AND HOUSING

The resulting population and housing unit projections for the City's water service area from SANDAG S15 are provided in **Table 2-3**. The City's service area is expected to grow from its current population served of 1.38 million to 1.46 million by 2050. Nearly all of this growth is projected to be in multifamily housing units, implying a densification of housing, which is captured in the demand model. Inherent to the SANDAG assumptions, a decline in persons per household over the next 25 years is also captured in the demand model.

Table 2-3 SANDAG City Water Service Area Population and Housing Unit Projections

Component	2022	2030	2035	2040	2045	2050
Total Population	1,380,210	1,418,515	1,424,765	1,440,431	1,462,016	1,456,893
Household Population	1,309,005	1,348,405	1,354,134	1,369,283	1,391,205	1,385,650
SFR Dwelling Units(1)	230,391	233,676	233,530	233,265	232,833	231,362
MFR Dwelling Units(1)	288,004	324,821	332,955	345,597	365,676	380,588
Total Dwelling Units	518,395	558,497	566,485	578,862	598,509	611,950
Persons Per Household	**2.5**	**2.4**	**2.4**	**2.4**	**2.3**	**2.3**

Notes:
(1) Calibrated to reflect the City's definition of a single-family and multifamily metered property.

SANDAG demographic projections have been the basis for the City's UWMP forecasts for many years. Most recently, the Series 13 and 14 projections were used as the basis of growth for the City's 2015 and 2020 UWMPs, respectively. Notably, the S15 projections are significantly lower than the other previously published data. As shown in **Figure 2-1**, the S15 projections for population are nearly 200,000 fewer people in 2045 compared to Series 14. As shown in **Figure 2-2**, S15 projects

significantly less growth in housing units, with 120,000 fewer households projected by 2045 compared to Series 14.

Historically, reliance on SANDAG Series 13 and 14 for growth projections resulted in overestimated water demand projections. S15 projections will result in much lower growth in water demand. Other factors impact the differences in the projections used in the water demand models. Namely, Carollo used a more detailed method for estimating pressure zone demographics from the census tract data provided by SANDAG (described in Section 2.2.1). While the changes from SANDAG are the primary reason behind the lower growth, the processing assumptions also contribute to the lower estimate of the City's population and households served.

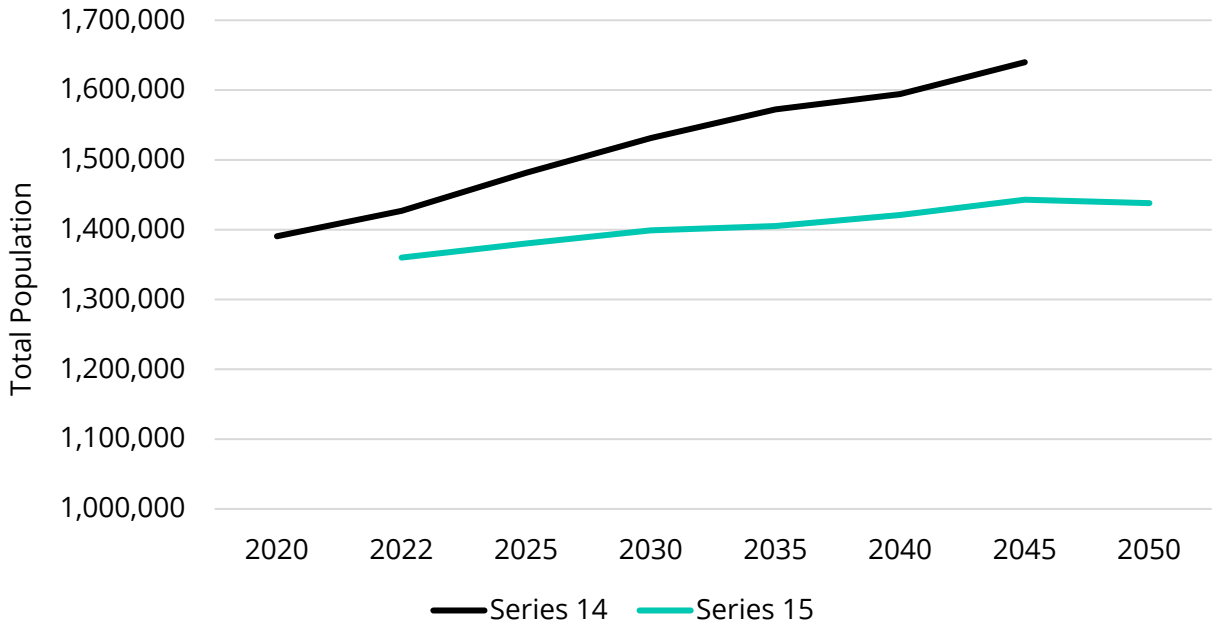


Figure 2-1 Comparison of SANDAG Series Projections of Total Population for the City's Water Service Area

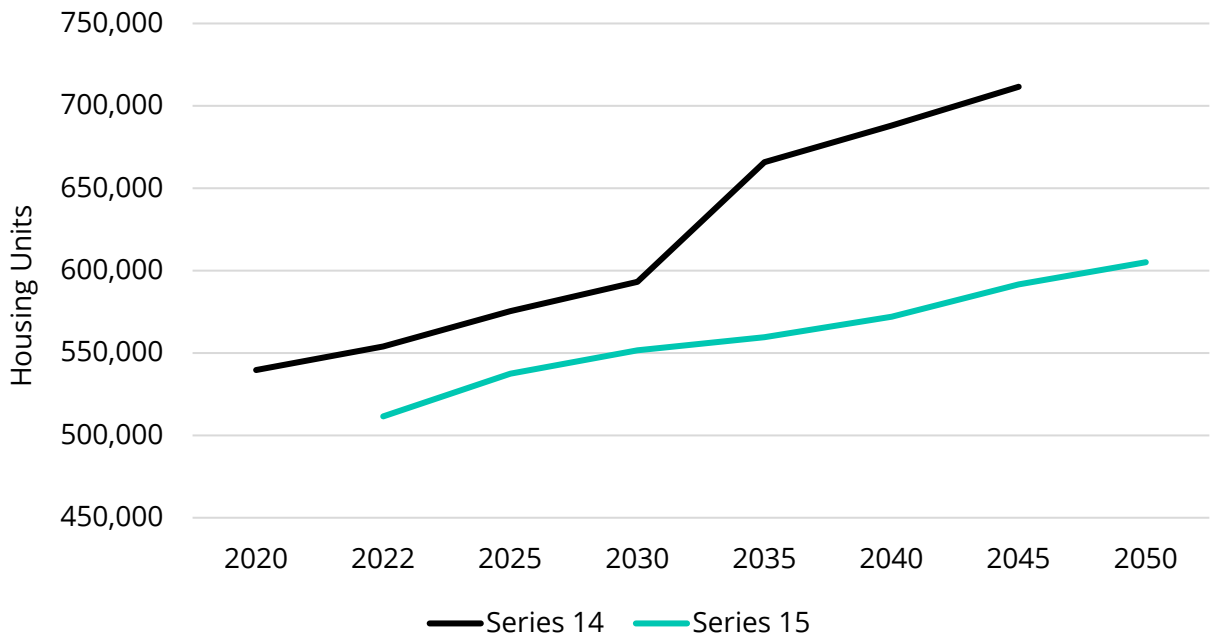


Figure 2-2 Comparison of SANDAG Series Projections of Dwelling Units for the City's Water Service Area

2.2.3 EMPLOYMENT AND NON-RESIDENTIAL PARCEL PROJECTIONS

For non-residential, the SANDAG S15 includes identification of parcels across the City by land use type, broken into definitions for vacant, developable (i.e., infill parcels), and redevelopable. Parcels within the City that are vacant and suitable for development are defined as "Adequate Sites" by SANDAG. These data were obtained in spatial format and processed using a geographical information system (GIS) to identify which pressure zone the parcels fall within, and maintain the important attribute data. Further, parcels slated for redevelopment or infill are identified by SANDAG.

Growth in total employment by pressure zone from the SANDAG S15 growth forecast was used to establish a timeline for the development of new non-residential parcels over the planning horizon (employees per parcel). Total employment is inclusive of both wage/salaried and non-wage/non-salaried. This approach maintained the non-residential water use factors per parcel from the 2020 demand model (discussed in Section 2.1.3). The 2020 demand model processed non-residential parcels based on projected population and assumed non-residential buildout in 2050. **Table 2-4** shows the employment projections developed by SANDAG for S15.

Table 2-4 SANDAG City Employment and Non-Residential Parcel Development Projections

Component	2022	2025	2030	2035	2040	2045	2050
Total Employment (thousands)(1)	1,160	1,170	1,186	1,204	1,227	1,244	1,262
Count of Newly Developed Parcels by Secondary Sector							
Primary Schools	0	3	6	12	13	14	0
Junior Colleges	0	0	0	0	0	0	0
Universities	0	2	2	5	5	6	0
Nursing Homes	0	0	0	0	0	0	0
City and Offices	0	2	4	7	8	10	0
Parks and Recreation	2	8	11	27	32	38	2
Military	1	3	5	7	9	11	1
Hotels	2	2	5	7	8	10	2
Hospitals	0	0	0	1	1	1	0
Offices	3	9	17	28	34	39	3
Restaurants	0	0	0	0	0	0	0
Mixed Use	41	119	221	380	503	622	41
Retail Stores	1	4	11	22	26	29	1
Medical Offices	0	0	1	3	3	6	0
Airport	0	0	0	0	1	1	0
Transportation	1	2	4	6	8	9	1
Light	2	7	13	31	34	39	2
Regular	1	3	8	13	17	21	1
Warehousing	0	1	1	1	2	2	0
Total Parcels	**54**	**165**	**309**	**550**	**704**	**858**	**54**

Notes:
(1) Represents all jobs, including non-wage/non-salaried.

2.3 FORECAST BASE PERIOD

The base period of a demand model serves as the starting point for forecasting under existing demand conditions and was defined as the average of FYs 2022, 2023, and 2024. Averaging water use over this period smooths out variations in year-to-year variability. The selection of the most recent period available captures and thereby includes current water conservation levels.

Of note, the demand forecast was developed prior to the availability of FY 2025 data. While sector-level FY 2025 data were subsequently processed and presented in the UWMP in accordance with requirements, FY 2025 data were not incorporated into the base period of the demand model. During FY 2025, a substantial number of customer meters were replaced, which would have required extensive re-geoprocessing and re-association of meter-level data into the model pressure zone framework. Review of FY 2025 sector-level data indicated values within the range of recent

historical use patterns, and no material changes in water use were identified that would warrant the effort to re-geoprocess the meter data.

2.4 CUSTOMER METERED DATA

The City meters all water customer accounts and provided Carollo with historical meter data records for calendar year (CY) 2018 through CY 2024, translating to FY 2019 through FY 2024. This metered data serves as the empirical basis for historical and current water consumption by primary and secondary sectors and corresponding pressure zone demand for each FY. This section describes the processing steps, while Section 3 presents results of the historical water use analysis resulting from the metered data.

2.4.1 METER DATA PROCESSING

For each CY, four file types were provided by the City: (1) metered data billed during odd months; (2) metered data billed during even months; (3) metered data for monthly billed; and (4) fire, construction, and wholesale (these are mostly sewer-billed records and construction metered). Carollo processed the metered data using an R-script programming language; a copy of this script is included as **Attachment B**. Ultimately, this script resulted in meter data summaries for FY by pressure zone, rate code, and secondary sector, which serves as the foundation of the model. A high-level summary of the metered data processing steps and assumptions is as follows:

- All file types were combined into a single database with the indication of the source file and how often the meter is read (monthly, odd, even).
- Next, the meter read date was assessed to determine the consumption month.
  - For monthly meter read dates, the month of the meter read date was assumed to be the consumption month (i.e., if it was read on November 22, 2023, the consumption was assumed for November 2023). This approach was deemed an appropriate approximation for processing into annual summaries.
  - For the odd and even meter read dates, half of the consumption was assumed in the meter read month, and the other half in the month before the meter read month.
- Columns were created to identify the consumption month and year.
- The premise codes provided in **Attachment A** were used to look up water use primary and secondary sectors.
- Meters were geospatially located within pressure zones using GIS, then joined using the R-script.
  - Some accounts did not have representation within the GIS data. For these meters, the pressure zone was identified using an address match function.
- Summaries of the meter-to-pressure zone join process were generated and exported to Excel. There are summaries by pressure zone, rate type (used to identify recycled water users), and secondary sector.

2.5 HISTORICAL WEATHER

There are seven weather stations within or in proximity to the City's jurisdictional boundary, as shown in **Figure 2-3**. Historical weather data were retrieved from the CIMIS and WRCC databases for the years 2004 through 2024 at all stations, as summarized in **Table 2-5**. The 20-year average annual precipitation across the stations is 9.1 inches. Temperatures range from an average minimum of 54.2 degrees Fahrenheit (deg F) to an average maximum of 72.1 deg F. As shown in **Figure 2-4**, looking historically at the San Diego II station, temperature was reasonably close to average the past six years (FY 2019 to FY 2024). Hotter years included FY 2015 and FY 2026. Rainfall has varied over the past two decades, with periods of rainfall under 5 inches (well below average), and periods of rainfall exceeding 13 inches (way above average).

Table 2-5 20-Year Average Weather Summary

Station Name	Station ID	Annual Minimum Temperature (deg F)	Annual Maximum Temperature (deg F)	Total Annual Precipitation (inches)
Chula Vista(1)	USC00041758	55.8	71.6	8.3
Escondido San Pasqual Valley(2)	153	48.5	78.7	8.9
Miramar(2)	150	52.9	72.6	10.2
Otay Lake(2)	147	53.2	73.9	8.1
San Diego Airport(1)	USW00023188	58.5	71.0	9.4
San Diego II(2)	184	54.9	71.1	8.7
Torrey Pines(2)	173	55.7	66.1	10.1
Average of All Stations	**N/A**	**54.2**	**72.1**	**9.1**

Notes:
ID - identification; N/A - not applicable
(1) Data Source: WRCC.
(2) Data Source: CIMIS.

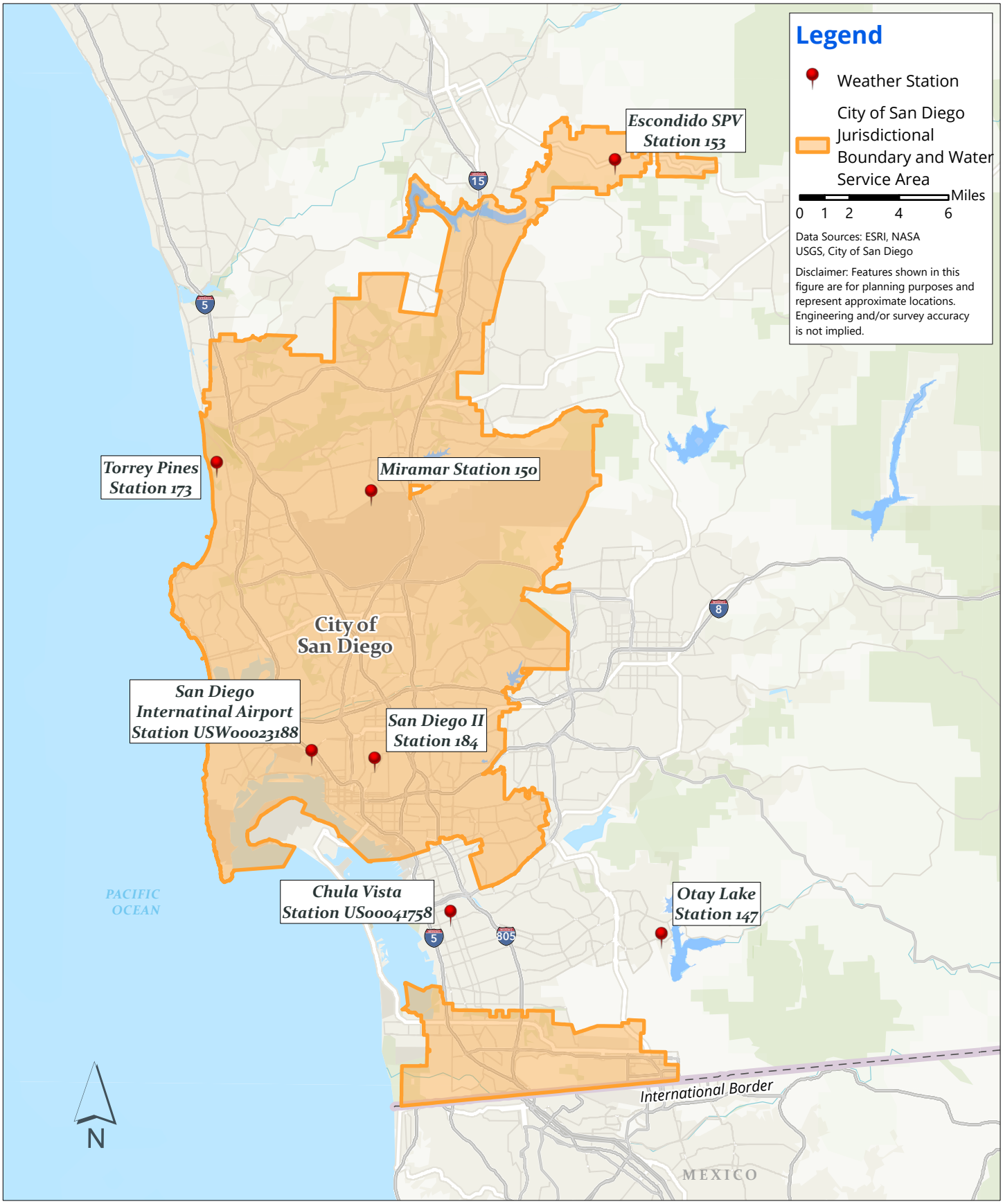
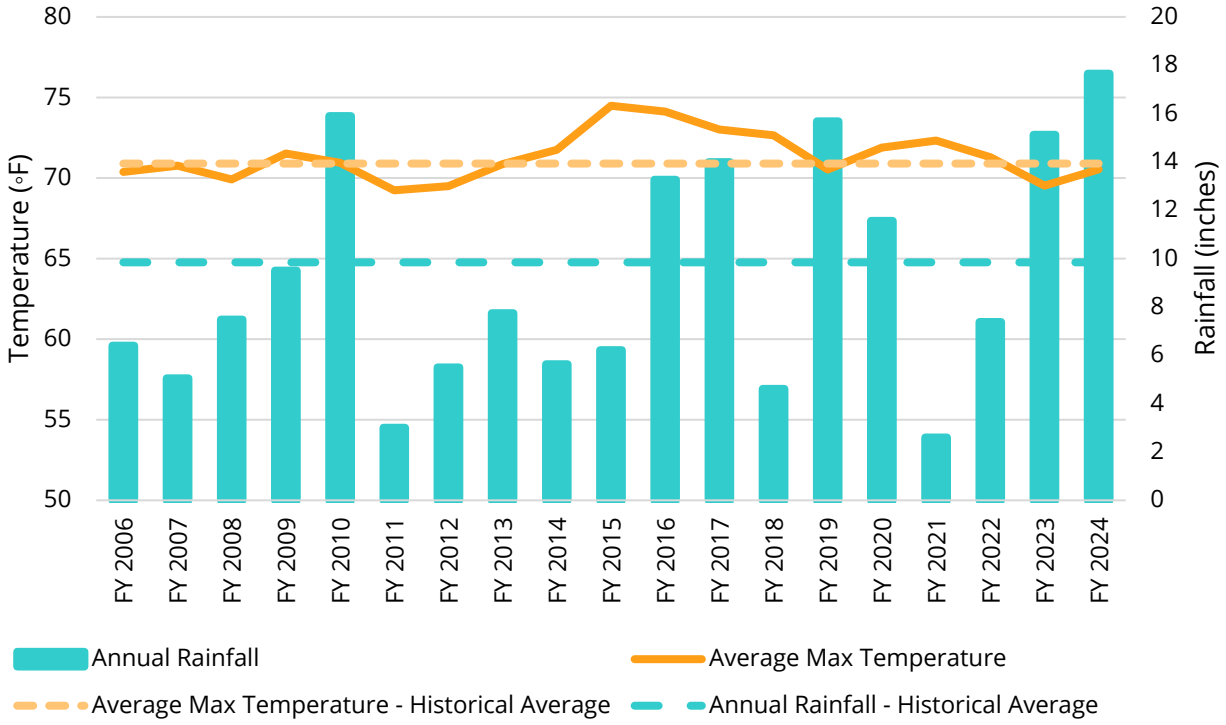


Figure 2-3 Weather Stations Near the City



Source: CIMIS: Station 184 San Diego II. Data gaps filled with data from Station 188 San Diego International Airport.

Figure 2-4 Average Maximum Daily Temperature and Rainfall for the San Diego II Station

2.6 WATER CONSERVATION

The state of California's conservation requirements are included in the demand forecast scenarios. However, the two demand scenarios assume variations in the impact of water conservation over the next 25 years. Impacts from three factors were identified as potential drivers of water conservation with savings incorporated: (1) Assembly Bill (AB) 1572, (2) California's Model Water Efficient Landscape Ordinance (MWELO), and (3) impacts from projected rate increases. Each of the three components is described as follows.

It is worth noting that no impacts were assumed from Water Code 10609.4, which states that,

> *Until January 1, 2025, the standard for indoor residential water use shall be 55 gallons per capita daily. Beginning January 1, 2025, and until January 1, 2030, the standard for indoor residential water use shall be 47 gallons per capita daily. Beginning January 1, 2030, the standard for indoor residential water use shall be 42 gallons per capita daily.*

Through the review of the WUE reports, the City is achieving the State's water use objective, including the 47 gallons per capita per day (gpcd) standard and the 42 gpcd change. For that reason, the forecast does not assume further residential indoor water reductions. This assumption aligns with the City's planning and considers the past indoor water conservation achievements of the City.

Further, additional indoor water conservation is not the City's primary objective during the rainy months in San Diego, as a large portion of indoor water use is returned to the City through wastewater collection and becomes the source of supply for the City's Pure Water San Diego program.

2.6.1 KEY INITIATIVES AND IMPACTS FROM WATER CONSERVATION

AB 1572 was approved by Governor Newsom on October 13, 2023, amending existing Water Code Sections 10540, 10608.12, and 10608.22, and adding Water Code Section 110. The bill prohibits commercial, institutional, and industrial (CII), as well as homeowners' associations, common interest developments, and community service organizations or similar entities' properties, from watering non-functional turf with potable water in a phased approach from January 1, 2027, to January 1, 2031. Under AB 1572, the State Water Resources Control Board has authority for compliance certification and can require property owners to certify their compliance. Additionally, public utilities are authorized to revise local regulations and enforce compliance. The City is still determining the impacts of AB 1572, but compliance will reduce the amount of water currently used for irrigation in the CII sector.

MWELO was adopted in 1993 from the 1990 Water Conservation and Landscaping Act as a California state regulation to aid in the prevention of water waste on irrigated landscapes. The regulation was recently updated in 2015 under Executive Order (EO) B-29-15 by DWR to restrict the amount of lawn allowed on a premise. Land Use Authorities (i.e., cities and counties) are enforcing MWELO compliance with new residential, commercial, industrial, and institutional development projects. Local MWELO requires a dedicated landscape meter and lawn area of less than 10 percent for all new development with a landscape area greater than or equal to 1,000 square feet, excluding single-family dwelling unit developments.

The City recently proposed a planned rate increase from 2025 to 2029 of 14.5 percent annually, as documented in the City's draft *Water Financial Plan, Cost of Service, and Rate Study*. In October 2025, the San Diego City Council approved the first two years of the proposed rate hikes (14.7 percent in 2026 and 14.5 percent in 2027). These rate increases plus the proposed additional increases past 2027, if approved, could result in action by the City's residents to reduce water use. Typically, the single-family sector is most sensitive to rate impacts, as they directly see the bill (compared to residents living in multifamily complexes that might not). Furthermore, CII establishments are less price-responsive as the amount of water used can be a function of business activities.

2.6.2 WATER CONSERVATION ASSUMPTIONS BY SCENARIO

Given the three identified primary drivers of conservation, varying assumptions were made for the two demand scenarios on the impact. **Table 2-6** documents assumptions on water conservation for each demand forecast scenario. For estimating savings for AB 1572 and MWELO, irrigation water use for the primary sectors by pressure zone was calculated by summing metered water use for rate type "WTR_IRR", which is a dedicated irrigation meter within the City. Savings were applied to the resulting irrigation water use only.

Table 2-6 Water Conservation Assumptions Summary

Component	Demand Scenario Assumptions	
	S15 Scenario[1]	On Trend Scenario[2]
AB 1572	10% reduction in irrigation water use for these non-residential sectors: Institutional, Government, Commercial, Industrial, and Irrigation.	10% reduction in irrigation water use for these non-residential sectors: Institutional, Government, Commercial, Industrial. 20% reduction in irrigation water use for the Irrigation sector.
MWELO	Additional 10% reduction in irrigation water use for new development only in the non-residential sectors.	Additional 10% reduction in irrigation water use for new development only in the non-residential sectors.
Planned Rate Increase	None.	Decrease in SFR water use per planned rate increases.

Notes:
(1) See Section 4.5 for details and a summary of assumed savings.
(2) See Section 5.5 for details and a summary of assumed savings.

SECTION

3 Current Water Demand Analysis

3.1 WATER PRODUCTION AND POPULATION

From FY 2001 to FY 2025, the City's population served increased by 13.2 percent from 1.23 million to 1.39 million, but has remained relatively flat over the past decade. The total water production, which includes non-revenue water (NRW) and wholesale deliveries during this time, is summarized in **Figure 3-1** along with the City's population served. A decreasing trend in production has been observed since FY 2007 due to several factors, including weather changes, housing densification, increased water use efficiency from plumbing codes and landscape ordinances, utility rebates, and water use restrictions from droughts. Peak production occurred in FY 2007 at just under 250,000 AF. A significant drop occurred from FY 2009 and lasted through FY 2011. Production peaked again in FY 2014 but declined in FY 2016. The trend has somewhat stabilized over the past decade. In FY 2022, the total production was approximately 180,350 AF. An all-time low occurred in FY 2024 at 164,000 AF.

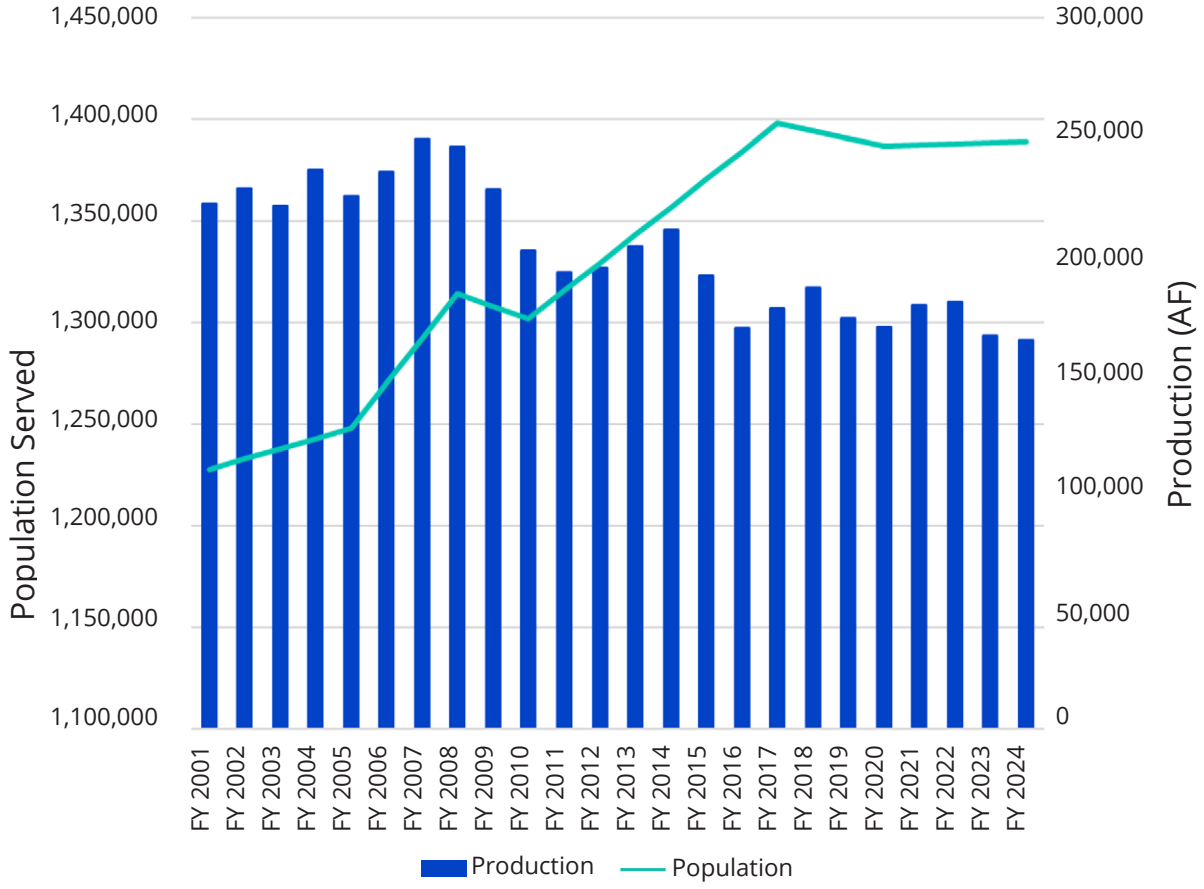


Figure 3-1 Historical Water Production and Population

3.2 NON-REVENUE WATER

According to the AWWA Manual *M36 Water Audits and Loss Control Programs*, NRW is the difference between the volume of water a utility supplies into its distribution system and the volume that is billed to customers (AWWA 2020). It represents water that is produced but does not generate revenue, either because it is lost before reaching customers or used in ways that are not billed. NRW includes three main components:

- Real losses—such as leaks or breaks in pipes.
- Apparent losses—such as meter inaccuracies or data handling errors.
- Authorized unbilled consumption—such as water used for firefighting or system flushing.

A standard method for calculating NRW is by comparing metered consumption to WTP production and calculating the difference in terms of volume and percentage. The metered consumption and production, as well as NRW calculations, are provided in **Table 3-1**. Since FY 2019, NRW has ranged from a low of 5.2 percent to a high of 8.2 percent. The maximum NRW was in FY 2024 at 8.2 percent.

Table 3-1 NRW Loss Calculation

FY	Water Production (AFY)	Metered Consumption (AFY)	NRW (AFY)	NRW (%)
2019	173,306	160,534(1)	12,772	7.4%
2020	169,801	156,835(1)	12,966	7.6%
2021	178,615	166,418(1)	12,197	6.8%
2022	180,357	165,733	14,624	8.1%
2023	165,811	157,136	8,675	5.2%
2024	164,207	150,728	13,479	8.2%
Maximum(2)				**8.2%**

Notes:
Equation: NRW % = [(Water Production – Metered Consumption)/Water Production]*100
(1) The City of Del Mar's (Del Mar) wholesale water use was added to metered consumption to derive total metered consumption. Data were available for FY 2022 through FY 2024 and were estimated for other years.
(2) Maximum of FY 2019 through FY 2024.

NRW can fluctuate over the years as some periods may experience larger pipe breaks. To be conservative, the maximum of the recent FYs was selected as a future estimate of NRW in the model base period and the water demand forecast years. As NRW assumptions in the forecast directly relate to supply planning, assuming a recent high NRW percentage provides a conservative estimate of total production requirements. Because supply systems must produce enough water to meet both billed (customer) demand and system losses, using a higher NRW value ensures that source capacity, treatment, and conveyance infrastructure are sized to meet realistic operational conditions. This approach helps avoid underestimating the total water that needs to be diverted, treated, or stored to maintain reliable service.

3.3 POTABLE WHOLESALE

The City has an agreement with Cal-Am to sell treated water that is distributed to Cal-Am customers within the cities of Coronado, National City, Imperial Beach, and the Naval Air Station North Island. The City also has an agreement with Del Mar that allows the City to purchase raw water from SDCWA at the Second Aqueduct Connection at Miramar WTP. This raw water is treated at the Miramar WTP and provided to Del Mar through interconnections. The City has an emergency-only agreement with Otay Water District, but has not provided any supply in recent years. Lastly, the City has an untreated exchange agreement with Ramona Municipal Water District that is expiring in 2025.

For potable water, only Cal-Am wholesale deliveries are included in the City's metered data. Del Mar deliveries are not metered directly because the City first purchases raw water from SDCWA and treats it at the Miramar WTP. This treated water is then delivered through multiple interconnections to Del Mar. For simplicity, the final treated water sent to Del Mar was provided by the City and added separately. Deliveries to Cal-Am and Del Mar are provided in **Table 3-2** and have ranged from 9,981 to 11,464 AFY over the past six years. While there has been fluctuation, there is no strong trend in wholesale deliveries over this six-year period. The City's average wholesale deliveries from FY 2022 through FY 2024 is estimated at 10,622 AFY.

Table 3-2 Historical Potable Wholesale Water Deliveries (AFY)

Customer	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	3-Year Average(1)
Cal-Am	9,816	9,489	10,404	10,270	9,651	9,078	9,666
Del Mar	1,165(2)	1,112(2)	1,060(2)	1,008	957	903	956
Total	**10,981**	**10,601**	**11,464**	**11,278**	**10,608**	**9,981**	**10,622**

Notes:
(1) Average deliveries from FY 2022 through FY 2024.
(2) Estimated by trending FY 2022 through FY 2024 metered data for Del Mar.

3.4 RECYCLED WATER

Recycled water demands were identified through the metered data by isolating the billing rate classification "WTR_RECL". This includes recycled water that is delivered to dedicated recycled water customers, plus the City's wholesale customers of Otay Water District, the Olivenhain Municipal Water District, and the City of Poway. The total recycled water between FY 2019 to FY 2024 is provided in **Table 3-3**. Over the past six years, recycled water demand has ranged from just under 8,000 AF to just under 12,000 AF. The number of active accounts was around 770, but grew to 811 in FY 2024. The average recycled water demand in the past three years was 9,152 AFY.

Table 3-3 Historical Recycled Water Demand and Accounts

Sector	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	3-Year Average(1)
Recycled Water Use in AFY	8,864	8,359	11,889	10,309	9,278	7,868	9,152
Recycled Water Accounts	757	794	775	773	785	785	N/A

Notes:
(1) Average water use from FY 2022 through FY 2024.

3.5 BASE PERIOD POTABLE WATER DEMAND SUMMARY

Historical metered potable water use by primary sector for the past six years is provided in **Table 3-4**. Metered potable use ranged from just under 150,000 AFY up to 167,000 AFY. Sector water use varies over time, with unique trends in response to weather, socioeconomic, and other key driving conditions, including the pandemic period, which spanned across FYs. Specifically, the second half of FY 2019 was when the pandemic started. Many residents shifted to work-from-home arrangements, and generally, children were home rather than in school. These shifts in where people were located during the day, and thus using water, are reflected in the sector data. It is also possible that residents left the City during periods of shutdowns, as reflected in the low retail water use in FY 2020. In FY 2021, residential water use peaked, likely due to the return of residents, but with work-from-home arrangements still in place. The non-residential sectors showed the greatest decline in FY 2020, with the Commercial sector continuing to decline in FY 2021. Overall, all sectors have remained steady or declined during the post-pandemic years.

Table 3-4 Historical Metered Water Demand by Primary Sector (AFY)

Primary Sector	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	3-Year Average(1)
SFR	53,092	53,873	58,804	55,508	51,089	48,784	51,794
MFR	36,418	36,433	38,894	38,849	38,459	38,005	38,437
Institutional	3,766	3,090	3,111	3,176	3,436	3,258	3,290
Government	13,699	12,927	14,012	14,491	12,946	11,992	13,143
Commercial	30,773	28,002	26,296	29,149	29,393	28,048	28,863
Industrial	1,590	1,775	1,730	1,680	1,639	1,706	1,675
Irrigation	10,424	10,289	12,210	11,595	9,561	8,947	10,034
Total Metered Retail	**149,762**	**146,389**	**155,057**	**154,448**	**146,523**	**140,740**	**147,236**
Wholesale	10,980	10,601	11,463	11,278	10,608	9,981	10,622
Total Metered Potable	**160,743**	**156,990**	**166,520**	**165,726**	**157,131**	**150,721**	**157,858**

Notes:
(1) Average water use from FY 2022 through FY 2024.
(2) FY 2025 data were reviewed by sector to confirm no major shifts in water use occurred since development of the demand forecast presented herein.

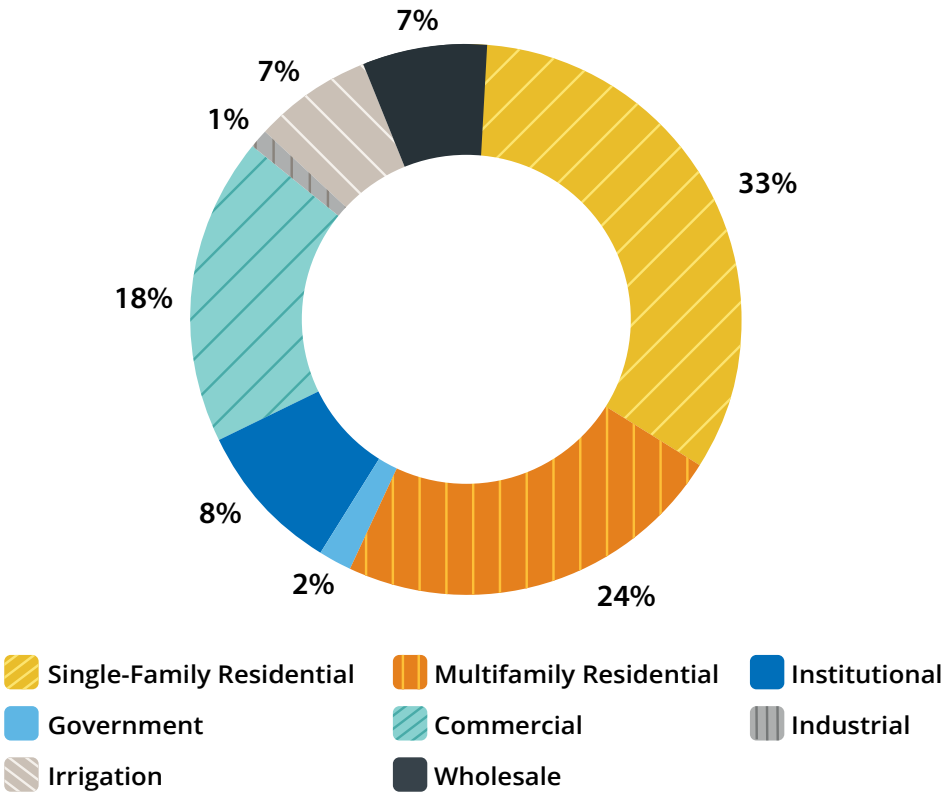
For the water demand model, the average of FY 2022 through FY 2024 was selected as the base period. This represents a post-pandemic average with recent patterns and conditions. As noted in Section 2.3, FY 2025 data by sector was reviewed to assure no major shifts have occurred in water use since the development of this Demand Forecast. **Table 3-5** and **Figure 3-2** provide a summary of average water use by primary sector. SFR is the largest water use sector, accounting for 33 percent of total use. MFR comprises an additional 23 percent of use, while Commercial comprises 18 percent.

Additional details on the residential and non-residential sector water use are provided in Section 3.5.1 and Section 3.5.2, respectively.

Table 3-5 Base Period Water Demand by Primary Billing Sector

Primary Sector	Number of Accounts(1)	Water Demand (AFY)(2)	Percent of Total
SFR	232,472	51,794	33%
MFR	33,741	38,437	24%
Institutional	781	3,290	2%
Government	2,467	13,143	8%
Commercial	17,140	28,863	18%
Industrial	170	1,675	1%
Irrigation	4,477	10,034	7%
Wholesale	2	10,622	7%
Total	**291,250**	**157,858**	**100%**

Notes:
(1) Number as of FY 2024.
(2) Average water use from FY 2022 through FY 2024.



Notes: Average water use from FY 2022 through 2024.

Figure 3-2 Base Period Water Demand by Primary Sector

3.5.1 RESIDENTIAL DEMAND

Based on SANDAG S15 processing (described in Section 2.2), the total City-wide household population in 2022 was 1,309,005, with a total of 518,395 occupied residential dwelling units, resulting in an estimated 2.5 persons per household. Including military and group quarters populations, the City's service area encompasses an estimated 1,380,210 total population.

Most of the City's water is used in the residential sectors. Current use for the SFR and MFR sectors combined accounted for 90,231 AFY, as presented in **Table 3-6**. Dedicated irrigation meters associated with premise codes for residential properties (which can be identified by rate type) are included within the respective sector water use totals. When combined, residential use is approximately 57 percent of the City's average potable demand. Given the household population and combined residential use, residential water use is estimated at 62 gpcd. This metric is sometimes referred to as residential gpcd or "r-gpcd".

The SFR sector has historically been the City's largest water use sector. Nearly all SFR accounts, including "Single-Family Dwelling" and "Outside City" premise codes, have an individual meter associated with a parcel (excluding irrigation rate type meters). There were 232,472 SFR accounts in FY 2024. The average water demand from FY 2022 through FY 2024 was approximately 51,794 AFY, or 33 percent of the City's use.

The MFR sector encompasses the water used in housing structures designed to accommodate multiple dwelling units and accounted for approximately 24 percent of the overall water demand from FY 2022 to FY 2024, as presented in **Table 3-6**. MFR accounts can be associated with one or multiple dwelling units. Using the method described in Section 2.2.1, MFR dwelling units are estimated at 288,004 in 2022. With 33,741 MFR accounts, there are approximately 8.5 dwelling units per MFR account. On average, MFR water demand was 38,437 AFY over the past three years.

Table 3-6 Base Period Water Demand for Residential Sectors

Residential Sector	Number of Accounts(1)	Number of Dwelling Units(2)	Water Demand (AFY) (3)
SFR	232,472	230,391	51,794
MFR	33,741	288,004	38,437
Total	**266,213**	**518,395**	**90,231**

Notes:
(1) Number as of FY 2024.
(2) Total dwelling units estimated from SANDAG S15 base period, which provides the count as of FY 2022. The split between SFR and MFR was estimated by assuming each SFR account equals a SFR dwelling unit. The difference between total dwelling units and SFR dwelling units is assumed to be MFR dwelling units.
(3) Average water use from FY 2022 through FY 2024.

3.5.2 NON-RESIDENTIAL WATER DEMAND

There are five primary sectors for non-residential customers: Institutional, Government, Commercial, Industrial, and Irrigation. The premise code to sector mapping can be found in **Attachment A**. Dedicated irrigation meters associated with premise codes for non-residential properties (which can be identified by rate type) are included within the respective sector water use

totals. In FY 2024, there were 25,035 meters classified as non-residential. The combined average water demand for non-residential customers from FY 2022 to FY 2024 was 50,004 AFY, which is approximately 36 percent of the City's total water demand during these years.

Institutional

The Institutional sector includes the following secondary sectors: Primary Schools, Junior Colleges, and Universities. From FY 2022 through FY 2024, the Institutional sector made up approximately 2 percent of the City's total water demand at 3,290 AFY. The highest category within the Institutional sector is Universities. A summary of the average demand for each secondary category from FY 2022 through FY 2024 is presented in **Table 3-7.**

Table 3-7 Base Period Water Demand for the Institutional Sector

Secondary Sector	Number of Accounts(1)	Water Demand (AFY)(2)
Junior Colleges	73	145
Primary Schools	590	1,116
Universities	118	2,029
Total	**781**	**3,290**

Notes:
(1) Count as of FY 2024.
(2) Average water use from FY 2022 through FY 2024.

Government

The Government sector includes the following secondary sectors: City and Offices, Parks and Recreation, and Military. These sectors accounted for 8 percent of the City's total average water demand, or 13,143 AF, from FY 2022 through FY 2024. As shown in **Table 3-8**, the highest metered use within the Government sector is Parks and Recreation with an average demand of 5,269 AFY.

Table 3-8 Base Period Water Demand for the Government Sector

Secondary Sector	Number of Accounts(1)	Water Demand (AFY) (2)
City and Offices	889	3,744
Parks and Recreation	1,502	5,269
Military	76	4,130
Total	**2,467**	**13,143**

Notes:
(1) Count as of FY 2024.
(2) Average water use from FY 2022 through FY 2024.

Commercial

The Commercial sector includes the following secondary sectors: Commercial General, Transportation, and Hotels. With an average of 28,863 AFY in metered usage from FY 2022 to FY 2024, the Commercial sector is the highest non-residential sector and accounts for approximately 18 percent of the City's demand. **Table 3-9** summarizes the Commercial sector's water demand. Most of the sector use is categorized as Commercial General.

Table 3-9 Base Period Water Demand for the Commercial Sector

Secondary Sector	Number of Accounts(1)	Water Demand (AFY)(2)
Commercial General	16,366	24,004
Transportation	115	348
Hotels	659	4,511
Total	**17,140**	**28,863**

Notes:
(1) Number as of FY 2024.
(2) Average water use from FY 2022 through FY 2024.

Industrial

The Industrial sector does not have any secondary sectors. Historically, the Industrial sector has been the lowest metered water user when compared to City-wide water usage. From FY 2022 to FY 2024, the Industrial sector accounted for approximately 1 percent of the City's total average water demand at 1,675 AFY and had 170 meters in FY 2024.

Irrigation

The Irrigation sector does not have any secondary sectors and includes only those premises identified by the City as "irrigation only." Dedicated irrigation meters associated with residential or non-residential properties (identified by rate type) are included within their respective sectors rather than in the Irrigation sector. In total, the Irrigation sector includes 4,447 meters in FY 2024 with an average potable water demand of 10,034 AFY over the past three years, representing about 7 percent of the City's total water demand.

SECTION

4 UWMP Water Demand Forecast Scenario (Series 15)

The City selected the S15 Scenario to be used for the 2025 UWMP water demand projections. This forecast represents modest growth projections, per the SANDAG S15 release, alongside conservative estimates of conservation adoption, NRW, and wholesale water deliveries. As the UWMP is primarily geared towards planning for long-term water supply reliability, conservative estimates are desired to provide a margin of safety and additional buffer should growth trends accelerate and plans for reliability even under a worst-case scenario.

This section presents the water demand forecast projections for the S15 Scenario for residential, non-residential, recycled water, wholesale, NRW, and production. Assumptions are made for the City-wide conservation measures, and conservation savings are presented along with the S15 population and housing statistics.

4.1 RESIDENTIAL FORECAST

As previously discussed in Section 2.1.2, econometric demand functions were used to predict new growth in SFR and MFR water use per parcel. This includes assumptions for parcel attributes (i.e., housing type, irrigable lot size, presence of pool, and temperature) and socioeconomic variables from the SANDAG S15 growth forecast (i.e., income and persons per household). The water use in the SFR and MFR sectors were adjusted to capture reductions in persons per household over the planning horizon. The S15 Scenario assumes that residential water conservation will not be a significant driver over the planning horizon, as discussed in detail in Section 2.6. The basis for this assumption is that the City is achieving the current and future state-issued water use objective. This assumption aligns with the City's planning and considers the past indoor water conservation achievements at the City.

Table 4-1 presents the water demand forecast for residential sectors through 2050. As shown, this forecast represents a continuation of stabilized SFR water use and growing MFR water use. These projections align with the recent patterns observed in the residential sector, described in Section 3.5.1. The SFR is projected to remain relatively flat while MFR increases by 18 percent by 2050. Overall, the residential sectors are forecasted to increase modestly by approximately 6,250 AF over the next 25 years.

Table 4-1 S15 Scenario Residential Water Demand Forecast (AFY)[1]

Sector	Base Period[2]	FY 2030	FY 2035	FY 2040	FY 2045	FY 2050
SFR	51,794	52,153	52,049	51,940	51,725	51,291
MFR	38,437	41,132	41,711	42,739	44,445	45,190
Total Residential	**90,231**	**93,285**	**93,760**	**94,679**	**96,170**	**96,481**

Notes:
(1) The forecast includes potable water demand only.
(2) Average water use from FY 2022 through FY 2024.

Water demand forecast statistics related to the residential sectors for the S15 Scenario are provided in **Table 4-2**. The residential gpcd is derived from the combined projected SFR and MFR water demand, divided by the total household population. The SFR projections demonstrate a slight decline in gallons per housing unit per day as a result of slight densification (new housing units on smaller lots) and lower persons per household. The MFR projections show a more prominent reduction in gallons per housing unit per day, which is a result of densification (more units per parcel) as well as fewer people per household. Overall, the residential gpcd is stable over the forecast period. This stabilization is expected with the forecast assumptions of modest growth, no significant residential conservation, and only changes in persons per household. Reductions in persons per household do reduce the amount of water used indoors, but also allocate the same amount of water used outdoors on the parcel to fewer people, so it can have a neutralizing effect on gpcd.

Table 4-2 S15 Scenario City-Wide Water Demand Statistics for Residential Sectors

Component	Base Period[1]	FY 2030	FY 2035	FY 2040	FY 2045	FY 2050
Household Population	1,309,005	1,348,405	1,354,134	1,369,283	1,391,205	1,385,650
SFR Dwelling Units[2]	230,391	233,676	233,530	233,265	232,833	231,362
MFR Dwelling Units[2]	288,004	324,821	332,955	345,597	365,676	380,588
Total Dwelling Units[2]	518,395	558,497	566,485	578,862	598,509	611,950
SFR Water Demand[3] (gpd)	46,238,425	46,559,265	46,466,728	46,369,190	46,177,236	45,789,627
MFR Water Demand[3] (gpd)	34,314,813	36,720,467	37,236,765	38,154,777	39,678,075	40,343,248
Total Residential Water Demand[3] (gpd)	80,553,238	83,279,732	83,703,493	84,523,967	85,855,311	86,132,875
SFR Gallons per Housing Unit per Day	201	199	199	199	198	198
MFR Gallons per Housing Unit per Day	119	113	112	110	109	106
Resulting Residential gpcd	62	62	62	62	62	62
Persons Per Household	2.5	2.4	2.4	2.4	2.3	2.3

Notes:
(1) Water use is the average from FY 2022 through FY 2024. Demographics units are as of 2022.
(2) Total dwelling units estimated from SANDAG S15 base period, which provides the count as of FY 2022. The split between SFR and MFR was estimated by assuming each SFR account equals a SFR dwelling unit. The difference between total dwelling units and SFR dwelling units is assumed to be MFR dwelling units.
(3) The forecast includes potable water demand only.

4.2 NON-RESIDENTIAL FORECAST

Growth in employment by pressure zone from the SANDAG S15 growth forecast was used to establish a timeline for the development of new non-residential parcels over the planning horizon. The development of non-residential parcels was based on SANDAG land use GIS data, including redevelopment and vacant (infill) development. The non-residential land use water factors provide estimates for future water demand, as discussed in Section 2.1.3. For water conservation, a 10 percent reduction in irrigation water use for new and existing non-residential customers was assumed for AB 1572, which issued prohibitions on irrigating non-functional turf. Similarly, an additional 10 percent reduction was assumed in irrigation water use for new non-residential customers from compliance with MWELO. Conservation assumptions are discussed in detail in Section 2.6.

The non-residential water demand forecast through the planning horizon is provided in **Table 4-3**. With the combined assumptions, water use for all non-residential sectors is projected to remain constant. This is in response to new state-driven initiatives to reduce the irrigation of non-functional turf at CII establishments, combined with the relatively modest growth projected in employment and land use parcel development.

Table 4-3 S15 Scenario Non-residential Water Demand Forecast (AFY)(1)

Sector	Base Period(2)	FY 2030	FY 2035	FY 2040	FY 2045	FY 2050
Institutional	3,290	3,249	3,254	3,355	3,357	3,364
Government	13,143	12,761	12,765	12,785	12,787	12,817
Commercial	28,863	28,802	29,048	29,371	29,578	29,739
Industrial	1,675	1,683	1,698	1,718	1,731	1,738
Irrigation	10,034	8,881	8,881	8,881	8,881	8,881
Total Non-Residential	**57,004**	**55,376**	**55,646**	**56,110**	**56,334**	**56,539**

Notes:
(1) The forecast includes potable water demand only.
(2) Average water use from FY 2022 through FY 2024.

4.3 POTABLE WHOLESALE FORECAST

The City contacted its potable wholesale water agencies, CAL-AM and the City of Del Mar, to coordinate on future water demands projections. The agencies provided preliminary assumptions for their draft 2025 UWMP forecasts. The City's wholesale potable customers have service areas that are relatively built out, and no significant growth is projected. While wholesale demands have declined slightly over the past years, a conservative approach was taken by the City to assume wholesale demands remain constant through the planning horizon. According to Section 3.3, historical wholesale use was estimated from records provided by the City. The average water deliveries to Cal-Am and Del Mar from FY 2022 through FY 2024 were estimated at 10,622 AF. These demands are held constant in the forecast to 2050, as shown in **Table 4-4**.

Table 4-4 S15 Scenario Wholesale Forecast (AFY)

Sector	Base Period(1)	FY 2030(2)	FY 2035(2)	FY 2040(2)	FY 2045(2)	FY 2050(2)
Wholesale(1)	10,622	10,622	10,622	10,622	10,622	10,622

Notes:
(1) Average water use from FY 2022 through FY 2024.
(2) Projections assume the average water use from FY 2022 through FY 2024 remains constant to 2050.
(3) Includes Cal-Am and the City of Del Mar.

4.4 RECYCLED WATER FORECAST

The City provides recycled water to about 811 active accounts. Recycled water use varies from year to year in response to economic and climatic conditions. On average, recycled water usage was 9,152 AF between FY 2022 through FY 2024. This includes all retail connections, as well as the wholesale customers of Otay Water District, the Olivenhain Municipal Water District, and the City of Poway. Beginning on December 31, 2023, the City is no longer accepting new applications in the northern area for recycled water service to meet the flow requirements of the Pure Water San Diego Program. Additionally, recycled water usage may decrease in response to proposed rate changes. Since the response from recycled water customers is unknown at this time, recycled water demands are assumed to remain constant at the previous three-year average, as shown in **Table 4-5**.

Table 4-5 S15 Scenario Recycled Water Demand Forecast (AFY)

Sector	Base Period(1)	FY 2030(2)	FY 2035(2)	FY 2040(2)	FY 2045(2)	FY 2050(2)
Recycled Water	9,152	9,152	9,152	9,152	9,152	9,152

Notes:
(1) Average water use from FY 2022 through FY 2024.
(2) Projections assume the average recycled water use from FY 2022 through FY 2024.

4.5 WATER CONSERVATION SAVINGS

The assumptions for water conservation savings for the S15 Scenario are described in Section 2.6 and summarized in **Table 2-6**. The resulting water savings by sector are provided in **Table 4-6**. The 10 percent reduction in CII irrigation water use from the City's compliance with AB 1572, along with MEWLO reductions, results in approximately 980 AF of savings by 2050. Savings are projected for the following sectors: Institutional, Government, Commercial, Industrial, and Irrigation. The Irrigation sector makes nearly 60 percent of the total projected savings. The S15 Scenario assumes that residential water conservation will not be a significant driver over the planning horizon.

Table 4-6 S15 Scenario City-Wide Water Conservation Savings from Base Period by Primary Sector (AFY)

Sector	FY 2030	FY 2035	FY 2040	FY 2045	FY 2050
SFR(1)	0.0	0.0	0.0	0.0	0.0
MFR(1)	0.0	0.0	0.0	0.0	0.0
Institutional(2)	31.8	32.0	35.9	36.0	36.3
Government	217.6	217.9	219.0	219.2	221.0
Commercial(2)	129.6	133.7	139.1	142.6	145.3
Industrial(2)	0.6	0.6	0.6	0.6	0.6
Irrigation	577.0	577.0	577.0	577.0	577.0
Total	**956.6**	**961.2**	**971.6**	**975.4**	**980.2**

Notes:
(1) Note that a decline in persons per household drives the water use down, which is not accounted for as conservation. The residential sectors are not projected to have significant water conservation savings over the planning horizon, as described in Section 2.6.
(2) Conservation savings assume CII water use reductions on irrigation use from "Non-functional Turf" under AB 1572.

4.6 FORECAST SUMMARY

As shown in **Table 4-7** and **Figure 4-1**, the S15 forecast represents a City population that reaches 1.46 million by 2050. With the water demand assumptions and growth projections, total production is forecasted to reach approximately 178,300 AF by 2050, an increase of 3.7 percent. The City's potable gpcd (which excludes wholesale) is projected to decrease slightly in response to conservation, but overall would remain constant under the modeled assumptions. This reflects relatively low growth and stabilized base water use.

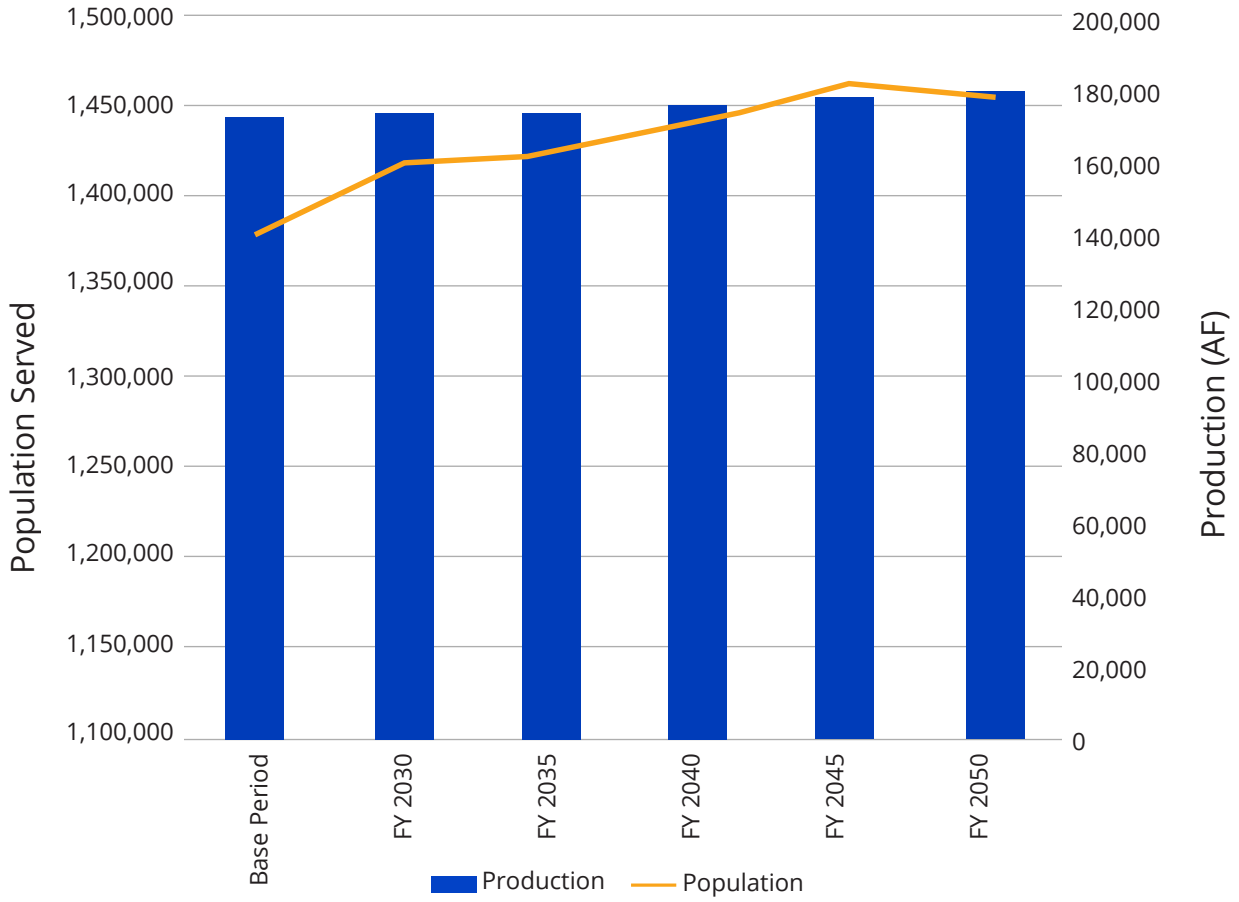
Section 5 presents an alternative forecast prepared to bracket future demands and explore forecast uncertainty. Section 6 compares and summarizes the two forecast scenarios. Section 7 provides a discussion of forecast uncertainty and projections under climate change.

Attachment C includes a summary table with the S15 pressure zone forecast. A detailed report for each pressure zone is provided in **Attachment D**.

Table 4-7 S15 Scenario City-Wide Water Demand Summary

Component	Base Period[1]	FY 2030	FY 2035	FY 2040	FY 2045	FY 2050
Demographic Projections						
Total Population	1,380,210	1,418,515	1,424,765	1,440,431	1,462,016	1,456,893
Household Population	1,309,005	1,348,405	1,354,134	1,369,283	1,391,205	1,385,650
Total Dwelling Units[2]	518,395	558,497	566,485	578,862	598,509	611,950
Potable Demand Projections (AFY)						
SFR	51,794	52,153	52,049	51,940	51,725	51,291
MFR	38,437	41,132	41,711	42,739	44,445	45,190
Institutional	3,290	3,249	3,254	3,355	3,357	3,364
Government	13,143	12,761	12,765	12,785	12,787	12,817
Commercial	28,863	28,802	29,048	29,371	29,578	29,739
Industrial	1,675	1,683	1,698	1,718	1,731	1,738
Irrigation	10,034	8,881	8,881	8,881	8,881	8,881
Total Retail	**147,236**	**148,661**	**149,406**	**150,789**	**152,503**	**153,020**
Wholesale	10,622	10,622	10,622	10,622	10,622	10,622
Total Metered Consumption	157,858	159,283	160,028	161,411	163,126	163,642
NRW[3]	14,101	14,228	14,294	14,418	14,571	14,617
Total Production	**171,959**	**173,511**	**174,322**	**175,829**	**177,697**	**178,259**
Recycled Water (AFY)						
Recycled Water	9,152	9,152	9,152	9,152	9,152	9,152
Statistics						
Residential gpcd[4]	62	62	62	62	62	62
City Potable gpcd[5]	104	103	103	102	102	103

Notes:
(1) Average water use from FY 2022 through FY 2024. Demographics units are as of 2022.
(2) Total dwelling units estimated from SANDAG S15 base period, which provides the count as of FY 2022.
(3) Assumed a constant 8.2 percent for forecast years. See Section 3.2 for more information.
(4) Excludes wholesale and recycled water use: [(SFR + MFR) / Household Population].
(5) Excludes wholesale and recycled water use: [(Total Production – Wholesale) / Total Population].



Notes: Base period is the average water use from FY 2022 through FY 2024.

Figure 4-1 S15 Scenario Production and Population Forecast

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SECTION 5

Alternative Water Demand Forecast Scenario

The On Trend Scenario was developed as an alternative demand forecast for the 2025 UWMP to bracket future demands and explore uncertainty in the forecast. The S15 Scenario model was used as a starting point for the On Trend Scenario analysis, with inherent growth assumptions from S15 adjusted to reflect recent trends within the City. These trends were analyzed based on the growth or decline in accounts or units by primary sector from FY 2018 to FY 2024 metered data. An average growth rate was developed for each primary sector, as shown in **Table 5-1**. These growth rates were used to calibrate S15 demographic growth projections by pressure zone to the overall City-wide growth trends. The individual trends in pressure zones from the S15 projections were maintained, but all growth was adjusted so that the growth in each primary sector matched the trend.

Based on the adjustment factors and recent trends in meters, the SFR sector is projected to decline by 0.54 percent annually. The MFR sector, however, is projected to grow at 1.6 percent annually, which is higher than the MFR sector growth in the S15 projections. The Government sector has the next highest growth rate, at 0.52 percent annually. The Institutional and Commercial sectors are projected to grow modestly at 0.2 and 0.12 percent, respectively.

Table 5-1 On Trend Scenario Growth Rate Adjustments by Primary Sector

Primary Sector	Average Annual Growth Rate (Percent)(1)
SFR	-0.54
MFR(2)	1.60
Institutional	0.20
Government	0.52
Commercial	0.12
Industrial	0.00

Notes:
(1) Calculated based on average annual growth in accounts from FY 2018 through FY 2024.
(2) Growth in the number of multifamily dwelling units associated with the MFR accounts.

This section presents the results of the On Trend Scenario for residential, non-residential, recycled water, wholesale, NRW, and potable production. Assumptions made for the City-wide conservation measures and savings are presented, along with the On Trend population and housing statistics.

5.1 RESIDENTIAL FORECAST

The residential water demand forecast for the On Trend Scenario was developed with the same approach as the S15 Scenario and utilizes econometric demand functions to predict new growth for SFR and MFR water use per developed parcel. Baseline and future water use in the SFR and MFR sectors were similarly adjusted for reductions in persons per household over the planning horizon.

Different from the S15 Scenario, the On Trend Scenario assumes a reduction in SFR demand to reflect potential consumer responses to proposed water rate increases, which is further discussed in Sections 2.6 and 5.5. The results of the residential water demand forecast are shown in **Table 5-2**. Under these assumptions, the SFR forecast is projected to decrease significantly to 2050, dropping to 40,012 AFY. The MFR sector, however, is projected to increase to 50,293 AFY, reflecting recent growth trends.

Table 5-2 On Trend Scenario Residential Water Demand Forecast (AFY)(1)

Sector	Base Period(2)	FY 2030	FY 2035	FY 2040	FY 2045	FY 2050
SFR	51,794	47,896	44,978	43,520	41,849	40,012
MFR	38,437	43,125	46,295	47,656	49,281	50,293
Total Residential	**90,231**	**91,021**	**91,273**	**91,176**	**91,130**	**90,305**

Notes:
(1) The forecast includes potable water demand only.
(2) Average water use from FY 2022 through FY 2024.

Water demand forecast statistics related to the residential sectors for the On Trend Scenario are provided in **Table 5-3**. The residential gpcd is derived from the combined projected SFR and MFR water demand per person in the household population. Persons per household is defined as the proportion of the household population to total dwelling units. The SFR sector has a significant decline in gallons per housing unit per day because of the assumed price response and lower persons per household. Although less prominent, the MFR sector is projected to have a reduction in gallons per housing unit per day as a result of densification (more units per parcel), as well as fewer people residing in each household. Overall, the residential gpcd declines slightly over the forecast period in response to the conservation savings.

Table 5-3 On Trend Scenario City-Wide Water Demand Statistics

Component	Base Period(1)	FY 2030	FY 2035	FY 2040	FY 2045	FY 2050
Household Population	1,309,005	1,306,398	1,327,659	1,339,772	1,346,178	1,335,886
SFR Dwelling Units(2)	230,391	227,977	221,974	221,708	221,273	219,801
MFR Dwelling Units(2)	288,004	336,052	363,143	376,135	393,912	408,624
Total Dwelling Units(2)	518,395	564,029	585,117	597,843	615,186	628,425
SFR Water Demand(3) (gpd)	46,238,425	42,758,347	40,153,667	38,852,363	37,360,542	35,720,143
MFR Water Demand(3) (gpd)	34,314,813	38,499,339	41,329,348	42,544,192	43,995,168	44,898,937
Total Residential Water Demand(3) (gpd)	80,553,238	81,257,686	81,483,015	81,396,555	81,355,710	80,619,080
Single-family Gallons per Housing Unit per Day	201	188	181	175	169	163
Multifamily Gallons per Housing Unit per Day	119	115	114	113	112	110
Resulting Residential gpcd	62	62	61	61	60	60
Persons Per Household	2.5	2.3	2.3	2.2	2.2	2.1

Notes:
(1) Water use is the average from FY 2022 through FY 2024. Demographics units are as of 2022.
(2) Total dwelling units estimated from SANDAG S15 base period, which provides the count as of FY 2022. The split between SFR and MFR was estimated by assuming each SFR account equals a SFR dwelling unit. The difference between total dwelling units and SFR dwelling units is assumed to be MFR dwelling units.
(3) The forecast includes potable water demand only.

5.2 NON-RESIDENTIAL FORECAST

Similar to the S15 Scenario, for the On Trend Scenario forecast, the non-residential land use water factors serve as the unit use factors. The On Trend Scenario used the same approach as S15 for analyzing future land use by identifying the development of non-residential parcels based on the SANDAG land use GIS. Instead of employment projections, the On Trend Scenario assumed growth in the number of customer accounts by sector from FY 2018 to FY 2024 to establish a timeline for the development of new non-residential parcels over the planning horizon.

For water conservation, a 10 percent reduction in irrigation water use for new and existing non-residential customers was assumed for the impacts of AB 1572 for the Institutional, Government, and Commercial sectors. For the Irrigation sector, a 20 percent reduction was assumed. Similarly, an additional 10 percent reduction was assumed in irrigation water use for new non-residential customers from compliance with MWELO. Conservation assumptions are discussed in detail in Section 2.6.

Table 5-4 summarizes the water demand forecast for non-residential parcels developed across the planning horizon in the On Trend Scenario. While most sectors are projected to remain relatively stable, the Irrigation sector is projected to decline by approximately 23 percent.

Table 5-4 On Trend Scenario Non-Residential Water Demand Forecast (AFY)[1]

Sector	Base Period[2]	FY 2030	FY 2035	FY 2040	FY 2045	FY 2050
Institutional	3,290	3,371	3,374	3,401	3,405	3,412
Government	13,143	12,898	12,942	12,991	13,023	13,068
Commercial	28,863	28,890	29,023	29,144	29,283	29,427
Industrial	1,675	1,674	1,674	1,674	1,674	1,674
Irrigation	10,034	7,727	7,727	7,727	7,727	7,727
Total Non-Residential	**57,005**	**54,560**	**54,740**	**54,937**	**55,112**	**55,308**

Notes:
(1) The forecast includes potable water demand only.
(2) Average water use from FY 2022 through FY 2024.

5.3 POTABLE WHOLESALE FORECAST

The potable wholesale demand forecast for the On Trend Scenario is the same as the S15 Scenario, where it is assumed to be held at a constant value based on the FY 2022 through FY 2024 average metered data. **Table 5-5** presents the wholesale forecast throughout the planning horizon.

Table 5-5 On Trend Scenario Wholesale Forecast (AFY)

Sector	Base Period[1]	FY 2030[2]	FY 2035[2]	FY 2040[2]	FY 2045[2]	FY 2050[2]
Wholesale[3]	10,622	10,622	10,622	10,622	10,622	10,622

Notes:
(1) Average water use from FY 2022 through FY 2024.
(2) Projections assume the average water use from FY 2022 through FY 2024 remains constant to 2050.
(3) Includes Cal-Am and Del Mar.

5.4 RECYCLED FORECAST

As shown in **Table 5-6**, the recycled water demand forecast in the On Trend Scenario remains constant throughout the planning horizon, consistent with the S15 Scenario.

Table 5-6 On Trend Scenario Recycled Water Demand Forecast

Sector	Base Period[1]	FY 2030[2]	FY 2035[2]	FY 2040[2]	FY 2045[2]	FY 2050[2]
Recycled Water	9,152	9,152	9,152	9,152	9,152	9,152

Notes:
(1) Average water use from FY 2022 through FY 2024.
(2) Projections assume the average recycled water use from FY 2022 through FY 2024.

5.5 WATER CONSERVATION SAVINGS

Similar to the S15 Scenario, reductions in irrigation water use were assumed in the On Trend Scenario for non-residential sectors in response to state-driven requirements from AB 1572 and MWELO. These reductions were estimated by isolating water use from dedicated irrigation meters beginning in the year 2030 and were evaluated for the following sectors: Institutional, Government, Commercial, Industrial, and Irrigation. Assumptions for CII irrigation conservation include:

- A 10 percent reduction in irrigation water use for new non-residential customers in response to MWELO.
- For the Institutional, Government, and Commercial sectors, a 10 percent reduction in irrigation water use for new and existing uses in response to AB 1572 prohibitions on irrigating non-functional turf.
- For the Irrigation sector, a 20 percent reduction in irrigation water use for new and existing uses in response to AB 1572 prohibitions on irrigating non-functional turf.

The On Trend Scenario assumes additional reductions in the SFR sector due to proposed and partially approved water rate increases. The City's draft *Water Financial Plan, Cost of Service, and Rate Study* proposed an annual rate increase each year from 2025 to 2029 of 14.5 percent (Raftelis 2021). As of October 2025, the San Diego City Council has approved rate increased for 2026 and 2027 of 14.7 percent and 14.5 percent, respectively. The scenario assumes the 2028 and 2029 rate increases are approved, plus an additional rate increase was assumed at 7.2 percent after 2029. Through the entire planning horizon, the annual average rate increase is 8.4 percent before inflation and 4.5 percent after inflation. Future inflation was estimated at 3.7 percent based on the 2015 to 2024 Consumer Price Index for the San Diego-Carlsbad Statistical Area.

To estimate reductions in water use from the price increase, the *adjusted unit use with elasticities* method was applied, as detailed in Section 2.1.2. An *elasticity* is a mathematical factor that describes the relationship between two variables. Water rate variables have a negative elasticity, which means that as the water rate goes up, water use goes down. To obtain an elasticity for use in this forecast, the *SDCWA Water Demand Model Update* reported an elasticity value of -0.23 for SFR, which was assumed in the model (Hazen and Sawyer 2021). In communication with SDCWA during the preparation of this report, it was confirmed that there have only been minor changes to the elasticity since the *SDCWA Water Demand Model Update* written in 2021.

The forecasted water savings by primary sector for the On Trend Scenario are provided in **Table 5-7**. With the rate response modeled, the SFR sector is projected to reduce by more than 10,800 AF by 2050 from its current average use. The Irrigation sector has the second-highest projected savings at 1,154 AF starting in 2030, primarily attributed to the City's compliance with the non-functional turf ban.

Table 5-7 On Trend Scenario City-Wide Water Conservation Savings from Base Period by Primary Sector (AFY)

Sector	FY 2030	FY 2035	FY 2040	FY 2045	FY 2050
SFR(1)	4,104	5,598	7,046	10,638	9,821
MFR(1)	0	0	0	0	0
Institutional(2)	37	37	38	38	38
Government	226	228	231	233	236
Commercial(2)	131	133	135	138	140
Industrial(2)	1	1	1	1	1
Irrigation	1,154	1,154	1,154	1,154	1,154
Total	**5,653**	**7,151**	**8,605**	**12,202**	**11,390**

Notes:
(1) Note that a decline in persons per household drives the water use down, which is not accounted for as conservation. Savings for the SFR reflect the potential reduction from proposed rate increases.
(2) Conservation savings assume CII water use reductions from "Non-functional Turf" under AB 1572.

5.6 FORECAST SUMMARY

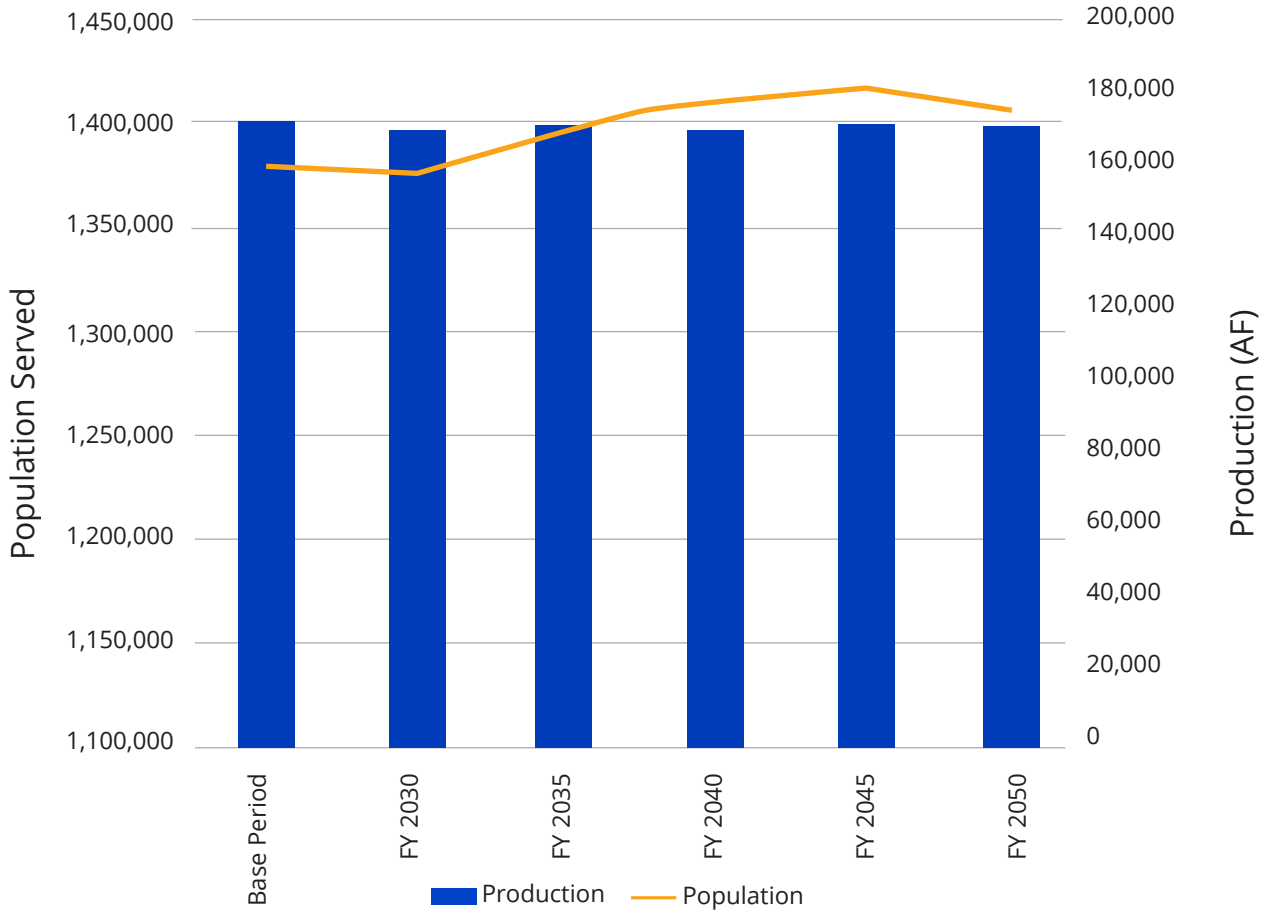
As shown in **Table 5-8** and **Figure 5-1**, the On Trend Scenario forecast represents a City population that reaches 1.41 million and water production at approximately 170,200 AFY by the year 2050. With the growth projections, densification impacts, and higher potential conservation adoptions, the On Trend forecast projects a 1 percent decrease in water demands, primarily driven by the SFR response to proposed price of water increases and lower Irrigation sector use.

Attachment D includes a summary table with the On Trend Scenario pressure zone forecast. Section 6 provides a comparison of the S15 and On Trend Scenarios. Section 7 explores forecast uncertainty and presents demands under climate change.

Table 5-8 On Trend Scenario City-Wide Water Demand Statistics

Component	Base Period[1]	FY 2030	FY 2035	FY 2040	FY 2045	FY 2050
Demographic Projections						
Total Population	1,380,210	1,418,515	1,424,765	1,440,431	1,462,016	1,456,893
Household Population	1,309,005	1,348,405	1,354,134	1,369,283	1,391,205	1,385,650
Total Dwelling Units[2]	518,395	558,497	566,485	578,862	598,509	611,950
Potable Demand Projections (AFY)						
SFR	51,794	47,896	44,978	43,520	41,849	40,012
MFR	38,437	43,125	46,295	47,656	49,281	50,293
Institutional	3,290	3,371	3,374	3,401	3,405	3,412
Government	13,143	12,898	12,942	12,991	13,023	13,068
Commercial	28,863	28,890	29,023	29,144	29,283	29,427
Industrial	1,675	1,674	1,674	1,674	1,674	1,674
Irrigation	10,034	7,727	7,727	7,727	7,727	7,727
Total Retail	**147,236**	**145,581**	**146,013**	**146,113**	**146,242**	**145,613**
Wholesale	10,622	10,622	10,622	10,622	10,622	10,622
Total Metered Consumption	157,858	156,203	156,635	156,735	156,864	156,235
NRW[3]	14,101	13,953	13,991	14,000	14,012	13,956
Total Potable Production	**171,959**	**170,156**	**170,626**	**170,735**	**170,876**	**170,191**
Recycled Water (AFY)						
Recycled Water	9,152	9,152	9,152	9,152	9,152	9,152
Statistics						
Residential gpcd[4]	62	63	62	61	61	60
City Potable gpcd[5]	104	103	102	101	101	101

Notes:
(1) Average water use from FY 2022 through FY 2024. Demographics units are as of 2022.
(2) Total dwelling units estimated from SANDAG S15 base period, which provides the count as of FY 2022.
(3) Assumed a constant 8.2 percent for forecast years. See Section 3.2 for more information.
(4) Excludes wholesale and recycled water use: [(SFR + MFR) / Household Population].
(5) Excludes wholesale and recycled water use: [(Total Production – Wholesale) / Total Population].



Notes: Base period is the average water use from FY 2022 through FY 2024.

Figure 5-1 On Trend Scenario Production and Population Forecast

SECTION

6 Water Demand Forecast Scenario Summary

This section summarizes and compares the water demand forecast projections for the S15 and On Trend Scenarios by primary sector and service area, as described in detail in Sections 4 and 5, respectively. A range of water demand forecasts are compared for residential and non-residential sectors, City-wide conservation savings, and population and housing statistics between the two scenarios. The demand forecast projections for recycled water and wholesale water are assumed to be the same for each scenario and, therefore, are not discussed in this section.

6.1 SERIES 15 WATER DEMAND FORECAST SUMMARY

Figure 6.1 presents the spatial change in water demand across the City's service area between the base period to 2050 for the S15 Scenario. The majority of the pressure zones, 61 of 127, fall into the range of either no change or a minor decrease of up to 5 percent. A total of 25 pressure zones are expected to increase by up to 5 percent, while 20 pressure zones are projected to decrease by up to 10 percent.

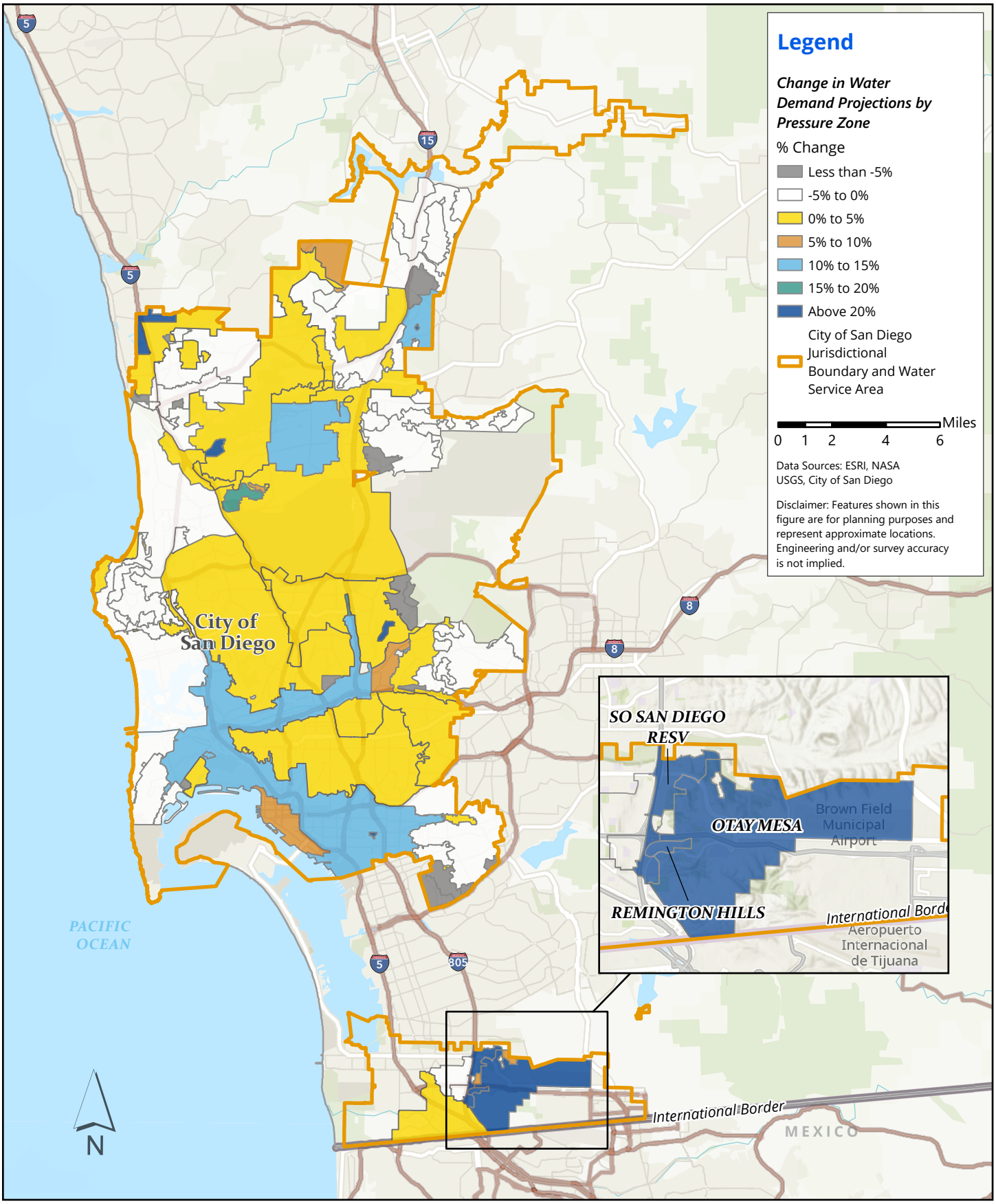
Table 6-1 provides a summary of the top five pressure zones with the greatest projected growth in water demand throughout the planning horizon. The Remington Hills pressure zone is primarily residential with a small amount of irrigation water use. This pressure zone is expected to have the greatest increase in water use, with additional SFR and MFR units through 2050 driving the increase. The Otay Mesa pressure zone has a mixture of water use types; however, it is primarily residential. Both residential and non-residential developments are projected to occur in this pressure zone by 2040. The Imperial pressure zone is 100 percent commercial water use, with new non-residential developments projected to be developed around 2040. The Golf Course 2 pressure zone is primarily SFR with about 20 percent irrigation usage. SFR demand is anticipated to approximately double beginning in the year 2030, resulting in a demand increase of 44 percent. The South San Diego Reservoir (So San Diego Resv) pressure zone has a mixture of SFR, MFR, and commercial water use, equally divided around 30 percent of the total water use, with irrigation accounting for the remaining. SFR and MFR units are expected to increase steadily through 2050 while irrigation and commercial remain steady.

See **Attachments C** and **E** for summaries by pressure zone for both the S15 and On Trend Scenarios, respectively, and **Attachment D** for a report of individual pressure zones for the S15 Scenario.

Table 6-1 Top Five Demand Growth by Pressure Zone for the S15 Scenario (gpd)[1]

Pressure Zone	Base Period Demand[2]	2050 Demand	Percent Change
Remington Hills	97,138	569,563	486
Otay Mesa	899,582	1,612,511	79
Imperial	16,400	25,310	54
Golf Course 2	10,746	15,430	44
So San Diego Resv	305,918	408,895	34

Notes:
(1) The forecast includes potable water demand only.
(2) Average water use from FY 2022 through FY 2024.



Notes: Includes potable demand only.

Figure 6-1 Change in Water Demand Forecast by Pressure Zone from Base Period to 2050 for the S15 Scenario

6.1.1 WATER DEMAND FORECAST SUMMARY BY PRIMARY SECTOR

A summary of the S15 Scenario water demand forecast is provided by primary billing sector in AFY in **Table 6-2** and in mgd in **Table 6-3**. Based on forecast assumptions, the MFR sector has the most growth, while other sectors are relatively stable or declining.

Table 6-2 S15 Scenario Water Demand Forecast by Primary Sector (AFY)[1]

Sector	Base Period[2]	FY 2030	FY 2035	FY 2040	FY 2045	FY 2050
SFR	51,794	52,153	52,049	51,940	51,725	51,291
MFR	38,437	41,132	41,711	42,739	44,445	45,190
Institutional	3,290	3,249	3,254	3,355	3,357	3,364
Government	13,143	12,761	12,765	12,785	12,787	12,817
Commercial	28,863	28,802	29,048	29,371	29,578	29,739
Industrial	1,675	1,683	1,698	1,718	1,731	1,738
Irrigation	10,034	8,881	8,881	8,881	8,881	8,881
Wholesale	10,622	10,622	10,622	10,622	10,622	10,622
Total Metered Consumption	**157,858**	**159,283**	**160,028**	**161,411**	**163,126**	**163,642**
NRW[3]	14,101	14,228	14,294	14,418	14,571	14,617
Total Potable Production	**171,959**	**173,511**	**174,322**	**175,829**	**177,697**	**178,259**

Notes:
(1) The forecast includes potable water demand only.
(2) Average water use from FY 2022 through FY 2024.
(3) Assumed a constant 8.2 percent for forecast years. See Section 3.2 for more information.

Table 6-3 S15 Scenario Water Demand Forecast by Primary Sector (mgd)[1]

Sector	Base Period[2]	FY 2030	FY 2035	FY 2040	FY 2045	FY 2050
SFR	46.2	46.6	46.5	46.4	46.2	45.8
MFR	34.3	36.7	37.2	38.2	39.7	40.3
Institutional	2.9	2.9	2.9	3.0	3.0	3.0
Government	11.7	11.4	11.4	11.4	11.4	11.4
Commercial	25.8	25.7	25.9	26.2	26.4	26.5
Industrial	1.5	1.5	1.5	1.5	1.5	1.6
Irrigation	9.0	7.9	7.9	7.9	7.9	7.9
Wholesale	9.5	9.5	9.5	9.5	9.5	9.5
Total Metered Consumption	**141**	**142**	**143**	**144**	**146**	**146**
NRW[3]	12.6	12.7	12.8	12.9	13.0	13.0
Total Potable Production	**154**	**155**	**156**	**157**	**159**	**159**

Notes:
(1) The forecast includes potable water demand only.
(2) Average water use from FY 2022 through FY 2024.
(3) Assumed a constant 8.2 percent for forecast years. See Section 3.2 for more information.

6.1.2 WATER DEMAND FORECAST SUMMARY BY SERVICE AREA

The S15 Scenario water demand forecast by service area is presented in AFY in **Table 6-4** and in mgd in **Table 6-5**, while graphically depicted in **Figure 6-2**. The forecast by pressure zone is mapped to these service areas. The forecast includes all retail sectors, wholesale deliveries, and NRW (assumed consistent across service areas). Under the model assumptions, the Alvardo and Otay Service Areas are projected to grow slightly over the planning horizon. The Miramar, Alvarado/Miramar, and Alvarado/Otay Service Areas are projected to remain relatively stable.

Table 6-4 S15 Scenario Water Demand Forecast by Service Area (AFY)[1]

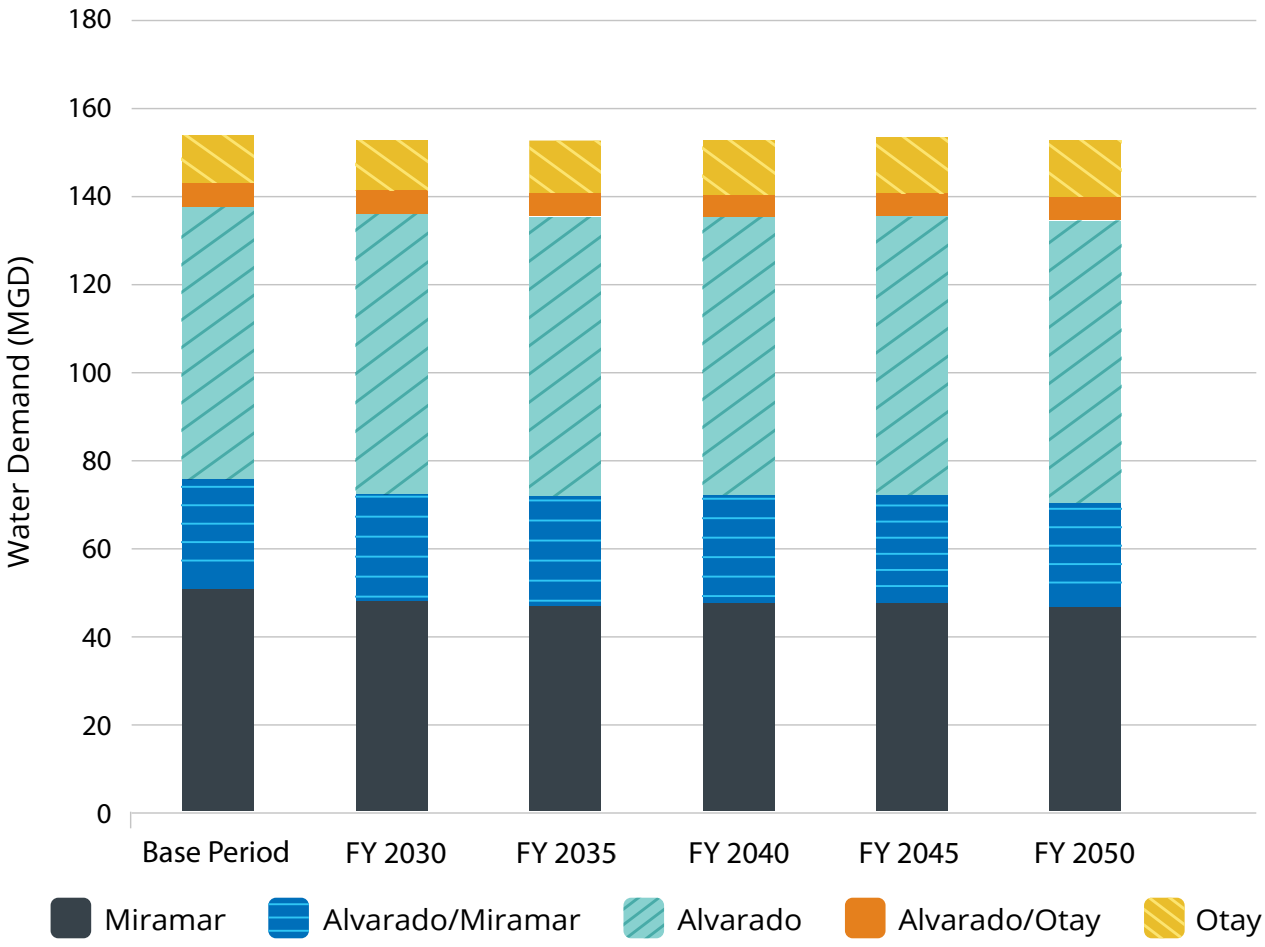
Service Area	Base Period[2]	FY 2030	FY 2035	FY 2040	FY 2045	FY 2050
Miramar	56,939	56,483	56,686	56,993	57,574	57,461
Alvarado/Miramar	28,432	28,352	28,433	28,569	28,650	28,630
Alvarado	69,118	70,737	71,075	71,927	72,615	73,218
Alvarado/Otay	5,869	5,725	5,726	5,762	5,769	5,761
Otay	11,601	12,214	12,402	12,578	13,089	13,189
Total	**171,959**	**173,511**	**174,322**	**175,829**	**177,697**	**178,259**

Notes:
(1) The forecast includes potable water demand only. Components include retail, wholesale, and NRW.
(2) Average water use from FY 2022 through FY 2024.

Table 6-5 S15 Scenario Water Demand Forecast by Service Area (mgd)[1]

Service Area	Base Period[2]	FY 2030	FY 2035	FY 2040	FY 2045	FY 2050
Miramar	50.8	50.4	50.6	50.9	51.4	51.3
Alvarado/Miramar	25.4	25.3	25.4	25.5	25.6	25.6
Alvarado	61.7	63.2	63.5	64.2	64.8	65.4
Alvarado/Otay	5.2	5.1	5.1	5.1	5.2	5.1
Otay	10.4	10.9	11.1	11.2	11.7	11.8
Total	**154**	**155**	**156**	**157**	**159**	**159**

Notes:
(1) The forecast includes potable water demand only. Components include retail, wholesale, and NRW.
(2) Average water use from FY 2022 through FY 2024.



Notes: Base period is the average water use from FY 2022 through FY 2024.

Figure 6-2 S15 Water Demand Forecast by Service Area

6.2 ON TREND WATER DEMAND FORECAST SUMMARY

6.2.1 WATER DEMAND FORECAST SUMMARY BY PRIMARY BILLING SECTOR

Tables 6-6 and **6-7** provide a summary of the On Trend Scenario water demand forecast by primary billing sector in AFY and mgd, respectively. Compared to the S15 Scenario, the MFR sector is projected to have significantly more growth, approximately 31 percent from the base period. The Irrigation and SFR sectors are projected to decrease by approximately 23 percent, primarily driven by the SFR response to proposed price increases for water and lower Irrigation sector use from impacts of the non-functional turf ban and MWELO, and the assumed savings.

Table 6-6 On Trend Scenario Demand Forecast by Primary Sector in (AFY)(1)

Sector	Base Period(2)	FY 2030	FY 2035	FY 2040	FY 2045	FY 2050
SFR	51,794	47,896	44,978	43,520	41,849	40,012
MFR	38,437	43,125	46,295	47,656	49,281	50,293
Institutional	3,290	3,371	3,374	3,401	3,405	3,412
Government	13,143	12,898	12,942	12,991	13,023	13,068
Commercial	28,863	28,890	29,023	29,144	29,283	29,427
Industrial	1,675	1,674	1,674	1,674	1,674	1,674
Irrigation	10,034	7,727	7,727	7,727	7,727	7,727
Wholesale	10,622	10,622	10,622	10,622	10,622	10,622
Total Metered Consumption	**157,858**	**156,203**	**156,635**	**156,735**	**156,864**	**156,235**
NRW(3)	14,101	13,953	13,991	14,000	14,012	13,956
Total Potable Production	**171,959**	**170,156**	**170,626**	**170,735**	**170,876**	**170,191**

Notes:
(1) The forecast includes potable water demand only.
(2) Average water use from FY 2022 through FY 2024.
(3) Assumed a constant 8.2 percent for forecast years. See Section 3.2 for more information.

Table 6-7 On Trend Scenario Demand Forecast by Primary Sector in (mgd)[1]

Sector	Base Period[2]	FY 2030	FY 2035	FY 2040	FY 2045	FY 2050
SFR	46.2	42.8	40.2	38.9	37.4	35.7
MFR	34.3	38.5	41.3	42.5	44.0	44.9
Institutional	2.9	3.0	3.0	3.0	3.0	3.0
Government	11.7	11.5	11.6	11.6	11.6	11.7
Commercial	25.8	25.8	25.9	26.0	26.1	26.3
Industrial	1.5	1.5	1.5	1.5	1.5	1.5
Irrigation	9.0	6.9	6.9	6.9	6.9	6.9
Wholesale	9.5	9.5	9.5	9.5	9.5	9.5
Total Metered Consumption	**141**	**139**	**140**	**140**	**140**	**140**
NRW[3]	12.6	12.5	12.5	12.5	12.5	12.4
Total Potable Production	**154**	**152**	**153**	**153**	**153**	**152**

Notes:
(1) The forecast includes potable water demand only.
(2) Average water use from FY 2022 through FY 2024.
(3) Assumed a constant 8.2 percent for forecast years. See Section 3.2 for more information.

6.2.2 WATER DEMAND FORECAST SUMMARY BY SERVICE AREA

The On Trend Scenario is summarized by service area in **Tables 6-8** and **6.9,** as well as **Figure 6-3**. The Otay Service Area is projected to experience the most growth in water demand in the On Trend Scenario, followed by the Alvarado Service Area. The Miramar, Alvarado/Miramar, and Alvarado/Otay Service Areas are projected to steadily decline throughout the planning horizon.

Table 6-8 On Trend Scenario Demand Forecast by Service Area (AFY)[1]

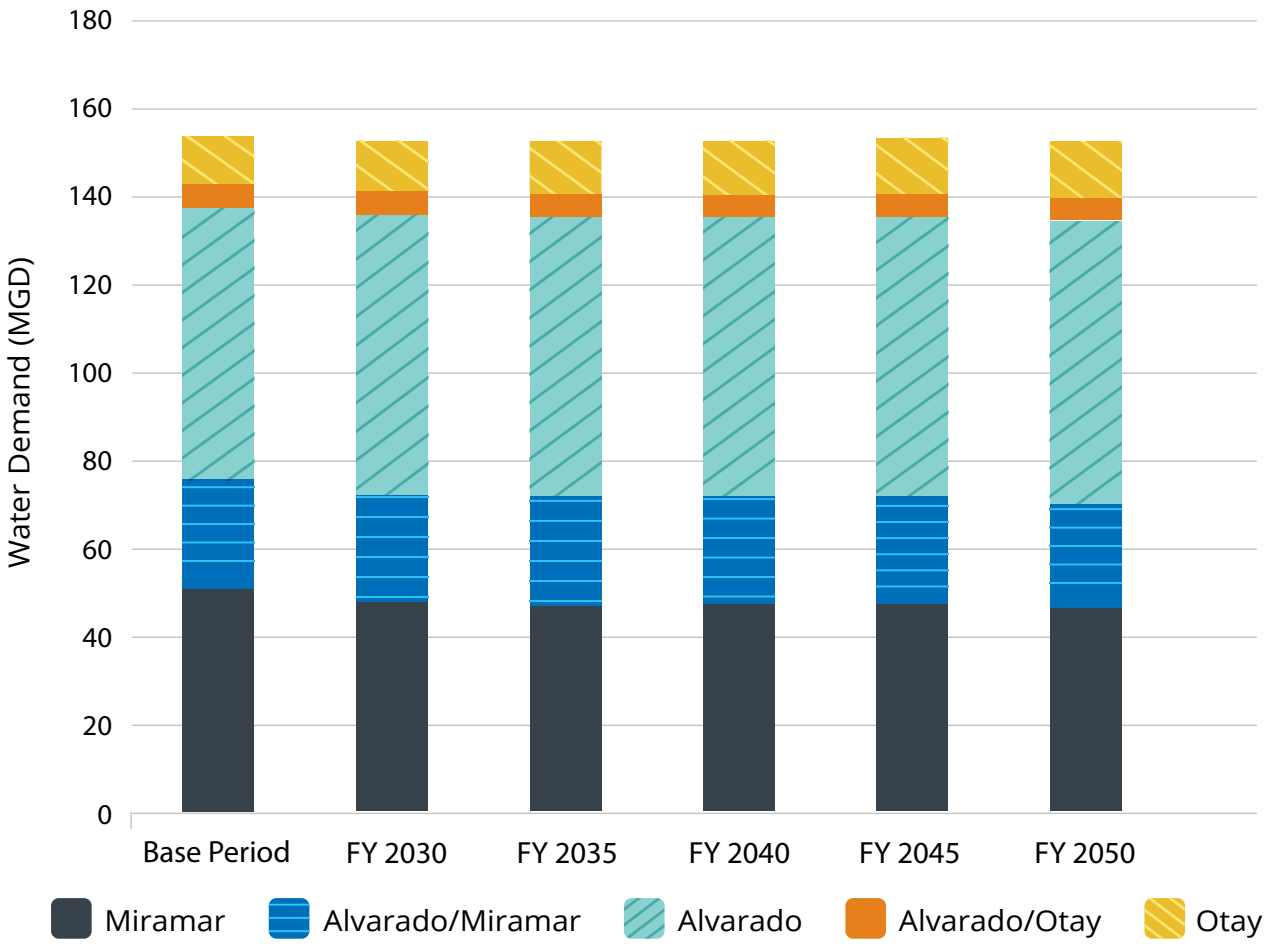
Service Area	Base Period[2]	FY 2030	FY 2035	FY 2040	FY 2045	FY 2050
Miramar	56,939	54,143	53,598	53,197	52,930	52,373
Alvarado/Miramar	28,432	27,189	26,964	26,744	26,555	26,207
Alvarado	69,118	69,991	71,007	71,308	71,669	71,709
Alvarado/Otay	5,869	5,884	5,656	5,697	5,665	5,589
Otay	11,601	12,949	13,401	13,789	14,057	14,313
Total	**171,959**	**170,156**	**170,626**	**170,735**	**170,876**	**170,191**

Notes:
(1) The forecast includes potable water demand only. Components include retail, wholesale, and NRW.
(2) Average water use from FY 2022 through FY 2024.

Table 6-9 On Trend Scenario Demand Forecast by Service Area (mgd)[1]

Service Area	Base Period[2]	FY 2030	FY 2035	FY 2040	FY 2045	FY 2050
Miramar	50.8	48.3	47.8	47.5	47.3	46.8
Alvarado/Miramar	25.4	24.3	24.1	23.9	23.7	23.4
Alvarado	61.7	62.5	63.4	63.7	64.0	64.0
Alvarado/Otay	5.2	5.3	5.0	5.1	5.1	5.0
Otay	10.4	11.6	12.0	12.3	12.5	12.8
Total	**154**	**152**	**153**	**153**	**153**	**152**

Notes:
(1) The forecast includes potable water demand only. Components include retail, wholesale, and NRW.
(2) Average water use from FY 2022 through FY 2024.



Notes: Base period is the average water use from FY 2022 through FY 2024.

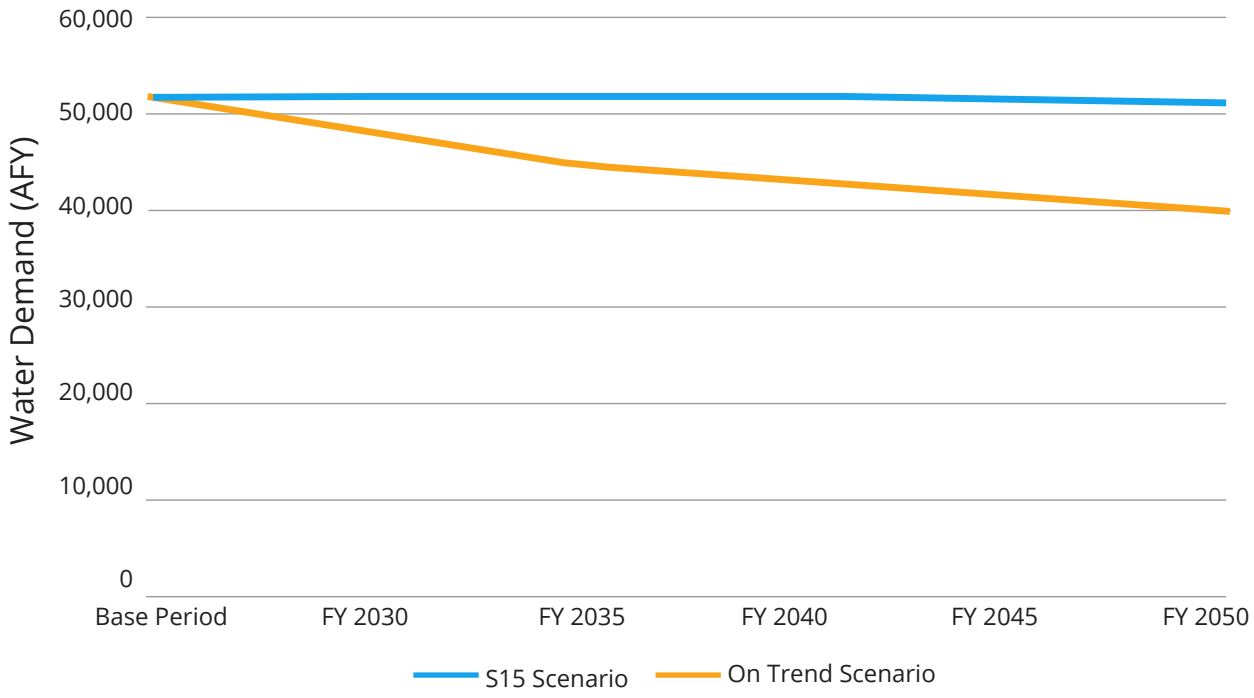
Figure 6-3 On Trend Water Demand Forecast by Service Area

6.3 WATER DEMAND FORECAST RANGE

The S15 and On Trend Scenario results were compared to identify variations in growth and projections. The range of these results is summarized and graphically presented in the following sections. Section 7 further presents a discussion of forecast uncertainty, including potential impacts from climate change on both scenarios.

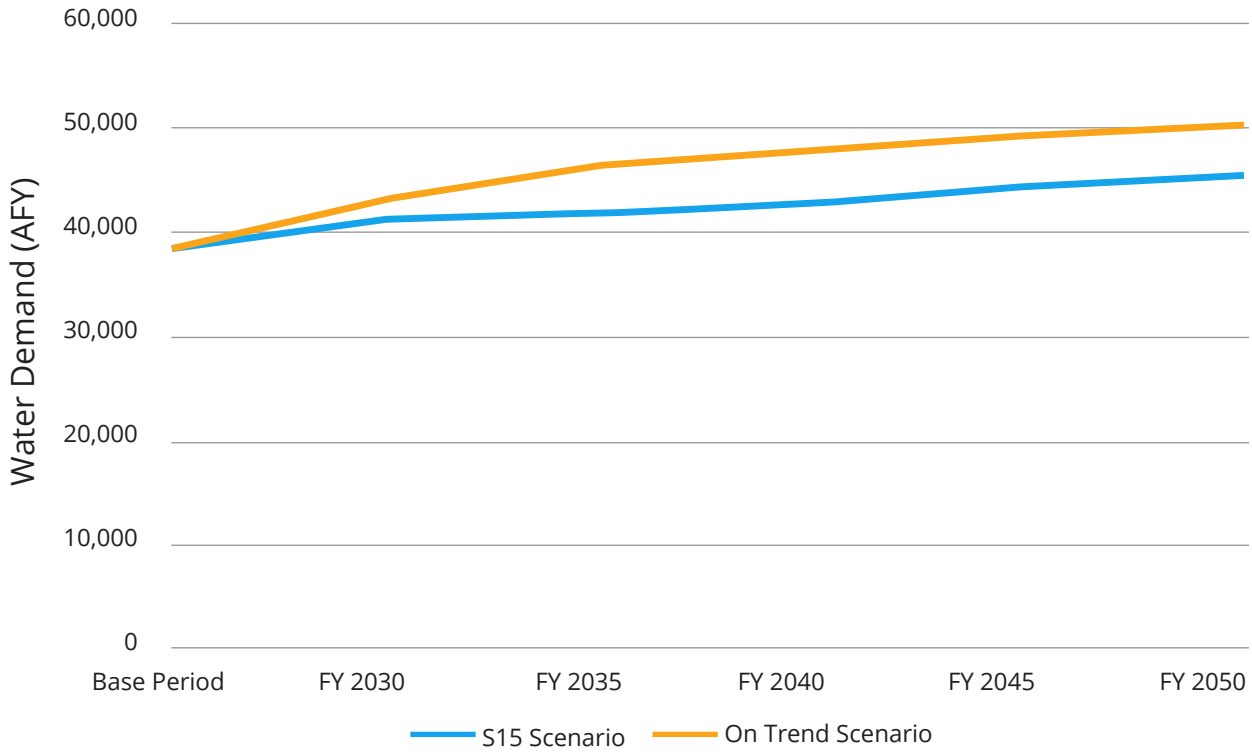
6.3.1 RESIDENTIAL WATER DEMAND FORECAST RANGE

Figures 6-4 and **6-5** show the comparison of SFR and MFR water demand forecasts between the S15 and On Trend Scenarios. Due to the assumed reduction in SFR use resulting from price increase and consumer responses, the On Trend Scenario produces a steady decrease in SFR demand through 2050, then reaches an approximate 11,300 AFY difference from the S15 Scenario in 2050. The On Trend Scenario is approximately 5,100 AFY more than the S15 Scenario for MFR demand between the years 2035 and 2050.



Notes: Base period is the average water use from FY 2022 through FY 2024.

Figure 6-4 SFR Water Demand Forecast Comparison

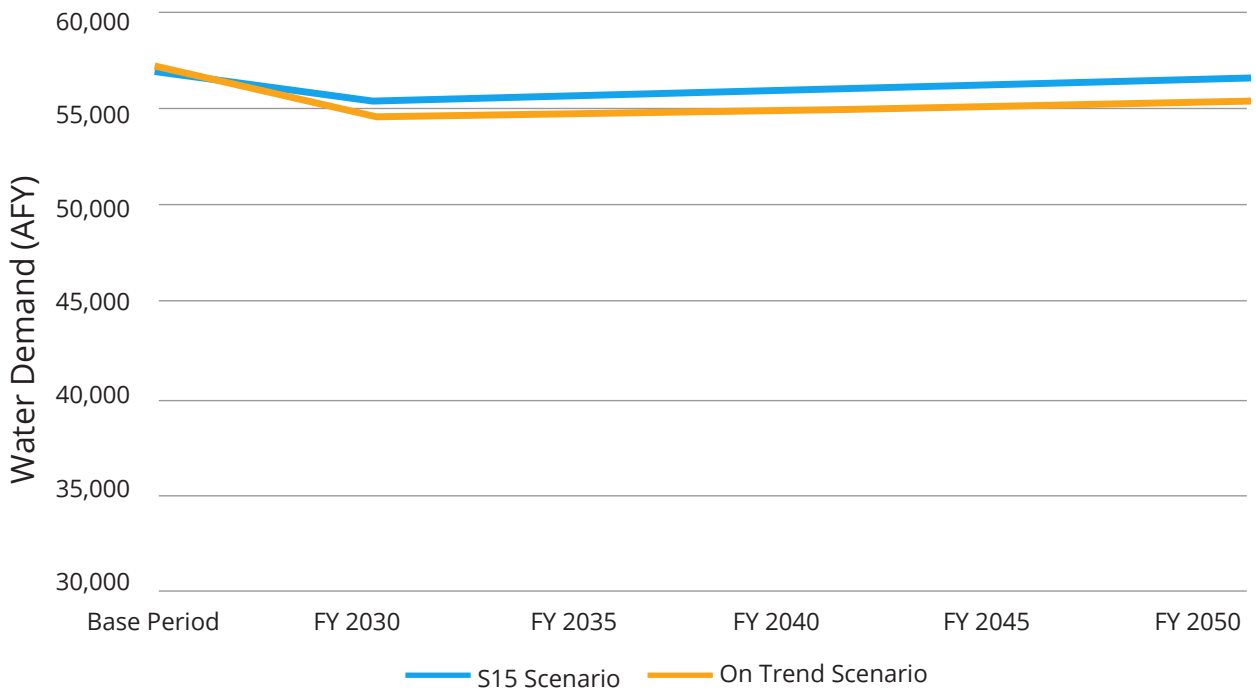


Notes: Base period is the average water use from FY 2022 through FY 2024.

Figure 6-5 MFR Water Demand Forecast Comparison

6.3.2 NON-RESIDENTIAL WATER DEMAND FORECAST RANGE

A comparison of the S15 and On Trend Scenarios total non-residential water demand projection is provided in **Figure 6-6** and includes water use for the Institutional, Government, Commercial, Industrial, and Irrigation sectors. As shown in the figure, the non-residential demand forecasts are similar in pattern and within 2 percent of each other across the planning horizon.



Notes: Base period is the average water use from FY 2022 through FY 2024.

Figure 6-6 Non-Residential Water Demand Forecast Comparison

6.3.3 WATER CONSERVATION SAVINGS RANGE

As observed in **Figure 6-7**, the City-wide water conservation savings in the On Trend Scenario is significantly greater when compared to the S15 Scenario, reaching approximately 11,400 AF in total by year 2050. This is primarily due to the assumed SFR water use reductions in response to rate increases incorporated into the On Trend Scenario, discussed in Section 5.5. The non-residential water conservation due to state-driven requirements is approximately 980 AF for the S15 Scenario and 1,570 AF for the On Trend Scenario, reflecting the increased assumptions in the On Trend Scenario for the Irrigation sector reductions in response to the non-functional turf ban. These results demonstrate the potential range of savings that is possible across the City and the planning horizon.

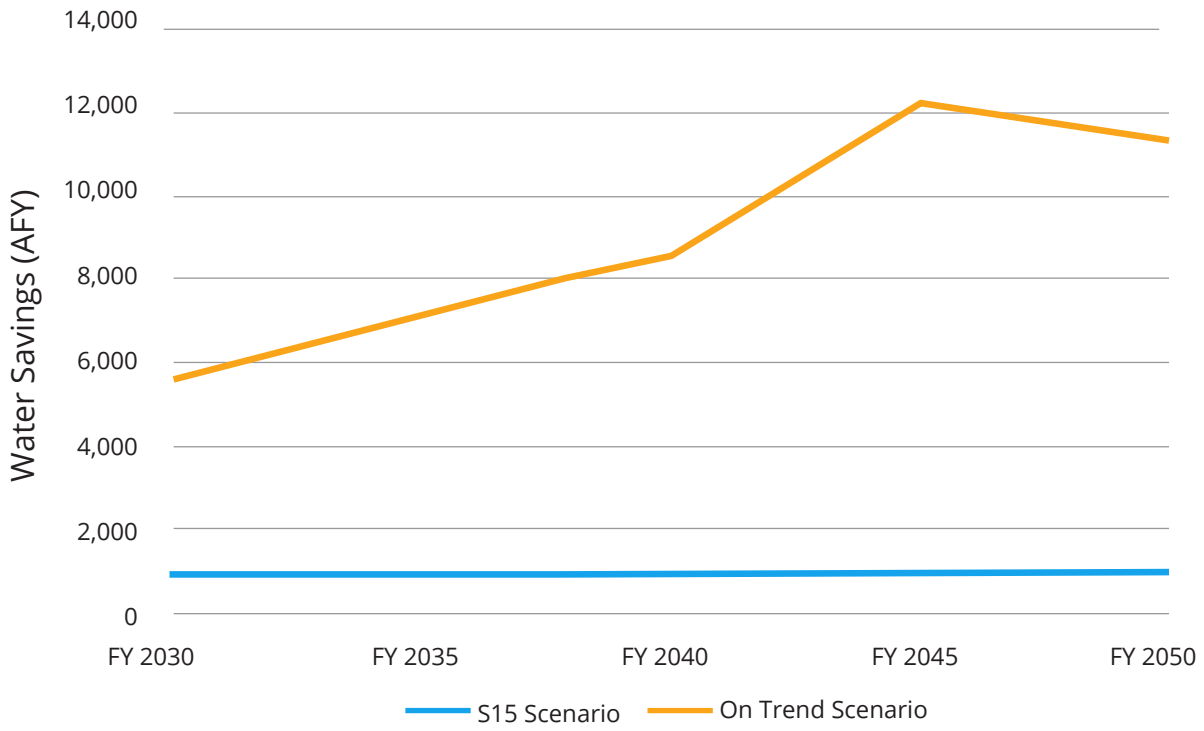
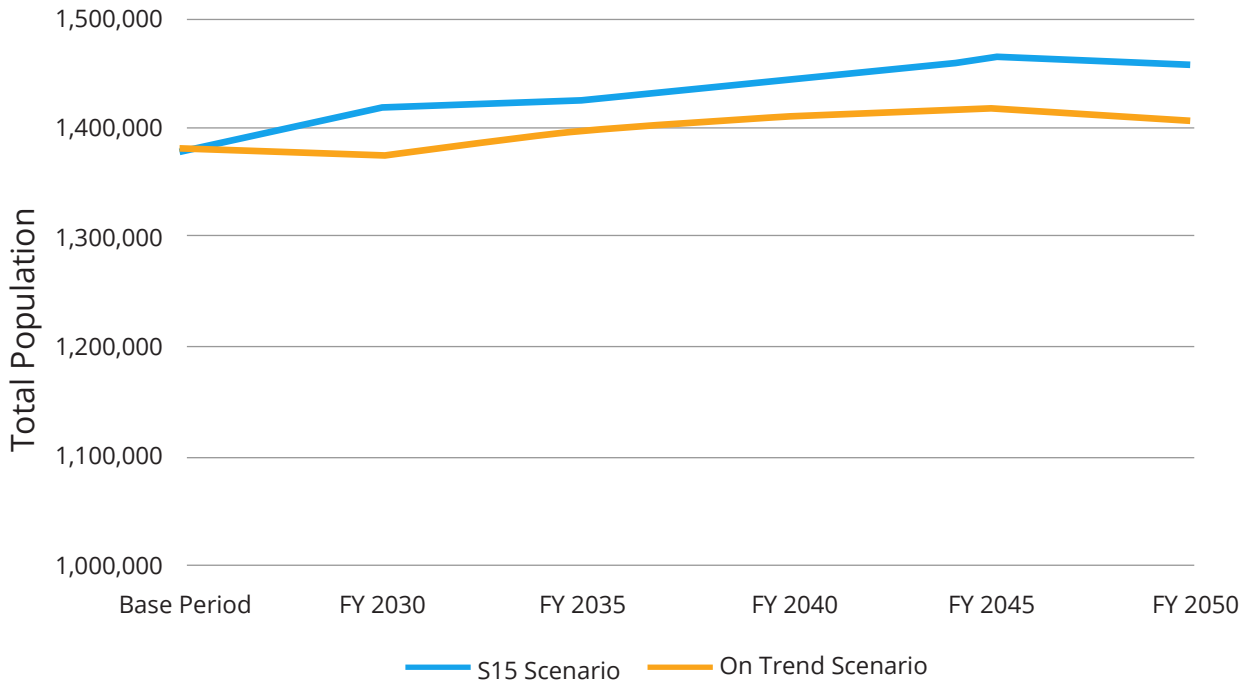


Figure 6-7 City-Wide Water Conservation Savings Comparison

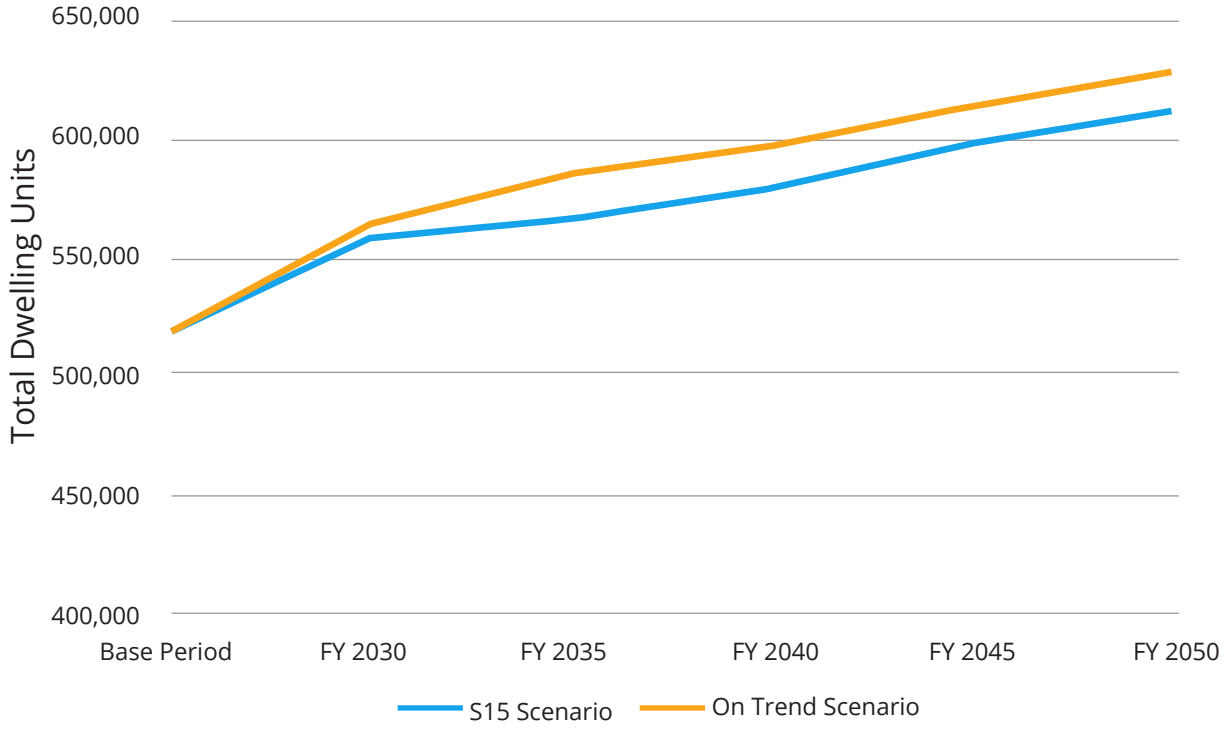
6.3.4 WATER DEMAND FORECAST STATISTICS RANGE

When comparing the S15 and On Trend Scenario statistics, the difference between the total population and household population is within 3 and 4 percent, respectively. The On Trend Scenario has a slight decline in total population in 2030, but remains consistent with the S15 growth pattern during the other planning years. Both scenarios project slight declines in total population between 2045 to 2050 as a result of declines in persons per household. Similarly, the growth pattern for total dwelling units between the two scenarios is consistent and within 3 percent. The comparison of total population and total dwelling units for the scenarios is presented in **Figures 6-8** and **6-9**, respectively.



Notes: Base period is the average water use from FY 2022 through FY 2024.

Figure 6-8 Total Population Forecast Comparison



Notes: Base period is the average water use from FY 2022 through FY 2024.

Figure 6-9 Total Dwelling Unit Forecast Comparison

SECTION 7

Water Demand Forecast Uncertainty

7.1 UNCERTAINTY OVERVIEW

Any forecast carries a degree of uncertainty and numerous variables that drive future conditions—such as population growth, economic shifts, technological innovation, climate patterns, regulatory frameworks, and social values—are subject to change in unpredictable ways. Compounding this are unknown future shocks, such as geopolitical events, economic recessions, or other disruptions, that could fundamentally alter trends or render previous assumptions obsolete. While scenario planning can help explore a range of plausible futures, no single projection can account for all the complex and interacting forces that shape the long-term future. As a result, long-range forecasts should be interpreted as strategic tools to guide thinking and prepare for uncertainty, rather than as precise predictions.

The following provides a bulleted list of the key identified uncertainties related to the City's forecast:

- Demographic growth:
  - **Population growth rates:** Changes in birth rates, death rates, and migration patterns can alter the trajectory of the population projections developed by SANDAG.
  - **Urbanization patterns:** Changes in policy could further shift demographic trends towards even more dense multi-family housing or redevelopment.
  - **Household size and composition:** The SANDAG projections assume a decline in persons per household. Economic or social conditions could reverse this trend, resulting in more persons per household. For example, economic strains could result in multi-generational living and, therefore, an increase in population residing in San Diego.
- Economics and technology:
  - **Economic growth:** Fluctuations in economic development can influence industrial and commercial water use.
  - **Industrial activity changes:** The emergence or decline of water-intensive industries.
  - **Technological changes in industries:** Adoption of water-saving technologies or processes at industrial or commercial establishments.
  - **Cost of water:** Increases in the cost of water could drive use down to essential needs only.

- Climate change:
  - **Extreme events:** Potential increase in floods, heatwaves, or long-term droughts affecting supply and demand, as well as population migration. Fires could impact areas of the City.
  - **Changes to patterns**: Shifts in temperature and rainfall could impact irrigation water demand. Other end uses could be impacted, such as water used in cooling towers or evaporation at pools, spas, and decorative fountains.
- Model uncertainty:
  - **Uncaptured driver**: There could be future disruptions or drivers that impact water demand that is not accounted for within the modeling structure.
- Model error:
  - The statistical land use factors for the non-residential model have inherent uncertainty and a range of statistical error.
  - The demand functions for the residential sectors likewise have statistical error.

7.2 DEMOGRAPHIC AND ECONOMIC CONDITIONS UNCERTAINTY

The uncertainty in demographic growth is captured in this report based on the two distinct demand scenarios developed. The greatest difference was determined to be in the MFR sector, which shows a potential increase of 5,100 AFY in the On Trend Scenario over the S15 Scenario, given more growth in that sector, plus net decreases in SFR housing units through redevelopment.

Uncertainty related to water conservation was explored through variations in the irrigation water use assumptions. The largest difference was determined to be related to the reductions from the non-functional turf ban on the Irrigation sector. The impact, overall and compounded with slight differences in growth assumptions, was only a 2 percent change by 2050.

The cost of water and its impact on water demands was found to have a considerable impact. Reductions within the SFR sector were estimated at 9,800 AFY by 2050 for the On Trend Scenario in response to proposed rate increases. When compounded with recent trends in SFR declines in meters, the overall net reduction reaches 11,300 AFY by 2050 compared to the S15 Scenario forecast.

Other economic uncertainties, such as increases or decreases in industrial activity, recessions, or technological changes that greatly impact water use, are possible but difficult to quantify.

7.3 STATISTICAL UNCERTAINTY

The statistical response from changes in the key variables that impact water use for the residential sectors can be estimated from the econometric functions used as the foundation of the new growth projections. **Tables 7-1** and **7-2** present the statistical variable responses for the SFR and MFR sectors, respectively. Small changes in these variables at the individual parcel level can impact water use at the micro scale. Larger cultural shifts would impact system-wide demand. However, offsets in the future could mitigate impacts. For example, impacts from increases in household income or temperature could be mitigated by targeted conservation programs that reduce irrigable area.

Table 7-1 SFR Variables Statistical Impact

Change in Explanatory Variable	Percent Change in Household Water Use
10% Increase in Average Annual Temperature	+13.0%
10% Decrease in Irrigable Area	-2.0%
10% Increase in Median Household Income	+2.9%
10% Decrease in Persons Per Household	-1.8%
Presence of Swimming Pool	+26.0%
Notes: (1) Source: CDM Smith 2021, Table 19.	

Table 7-2 MFR Variables Statistical Impact

Change in Explanatory Variable	Percent Change in Household Water Use
10% Increase in Maximum Annual Temperature	+17.4%
10% Decrease in Total Parcel Area	-2.3%
10% Increase in Number of Dwelling Units per Parcel	+7.7%
10% Decrease in Persons Per Household	-9.0%
Presence of Swimming Pool	+9.2%
Notes: (1) Source: CDM Smith 2021, Table 20.	

7.4 FUTURE RANGE WITH CLIMATE CHANGE

Using the scenario planning framework, variability in future climate change conditions under climate change scenarios was also analyzed. Downscaled climate impacts for temperature were obtained and incorporated into the demand models using the temperature elasticities from the residential econometric demand functions and the *adjusted unit use with elasticities method,* detailed in Section 2.1.1. Climate change potential impacts are explored for both the S15 and On Trend Scenarios.

7.4.1 DOWNSCALE CLIMATE PROJECTIONS

Downscaled climate data were obtained from a public data portal maintained by a consortium of California state agencies and academic institutions (https://cal-adapt.org/data/download/). A single grid cell, located at the approximate centroid of the combination of three City service areas, was selected for the analysis, generally at the San Diego Airport.

A suite of 20 general circulation model (GCM) outputs was collected that correspond to 10 general climate models applied for two different greenhouse gas emission pathways. This set of projections has been used widely for California-specific studies and is recommended by DWR. All projections were developed as part of the World Climate Research Programme Coupled Model Intercomparison Project, Phase 5 (CMIP5). The CMIP5 data set includes a range of GCMs developed at top research institutions worldwide and applied across varying model input assumptions. Two sets of

representative concentration pathways (RCP) are included in this data set, representing a mitigated (reduced) greenhouse gas emissions pathway (RCP4.5) and a generally unmitigated pathway with high associated emissions (RCP8.5).

Two ensembles of projections were defined to characterize climate change in 2050. Ensembling is a common technique used to identify clusters of trends amongst GCM outputs. A "*hot/dry*" ensemble was developed to represent worst-case conditions for greenhouse gas emissions and local response. A second ensemble representing "*central tendency*" conditions was developed using the ten central projections for projected changes in climate.

A planning horizon representing mid-century conditions centered on 2050 was defined. The ensembled outputs were averaged for plus and minus 10 years around 2050 to capture the "natural" year-to-year variability in the climate data, while still being representative of relevant climate trend projections. In other words, the resulting 2050 temperature changes represent an “on average” temperature change. Year-to-year variations would be expected.

The historical and projected ensemble mean annual values for daily maximum and daily mean temperatures for the San Diego Airport weather station are presented in **Table 7-3**. The difference between historical and future 2050 maximum daily temperature for the central tendency ensemble is 2.2 degrees (3.1 percent increase), while the hot/dry ensemble is predicted to have a 2.4 degree increase (3.4 percent).

Table 7-3 Climate Change Data Input for San Diego Airport Weather Station(1,2)

Time Period	Start Year	End Year	Maximum Daily Temp (deg F)		Average Daily Temp (deg F)	
			Central	Hot/Dry	Central	Hot/Dry
Historical	2004	2024	71.7	71.6	64.7	64.6
Base Year(3)	2022	2022	72.4	71.9	65.2	64.7
Future 2050	2040	2060	73.9	74.0	66.9	67.0

Notes:
(1) From CalAdapt, two ensembles were created based on clustering of data. The grid cell containing the San Diego Airport weather station was selected.
(2) Climate inputs averaged over two decades to approximate average future warming conditions.
(3) CY 2022 selected as closest to the water demand model average conditions. This year was relatively close to the historical average weather in San Diego.

7.4.2 ESTIMATING THE DEMAND RESPONSE

The two climate projection temperature changes were input into the demand model to estimate changes in demand from climate change. As discussed in detail Section 2.1.2, the residential demand functions showed that temperature is the predominant climatic variable driving water use patterns. The statistical models also reflect both the strong correlation between temperature and precipitation and the nonlinear influence of rainfall on water use. Specifically, included in the SFR and MFR econometric models are elasticities for air temperature metrics:

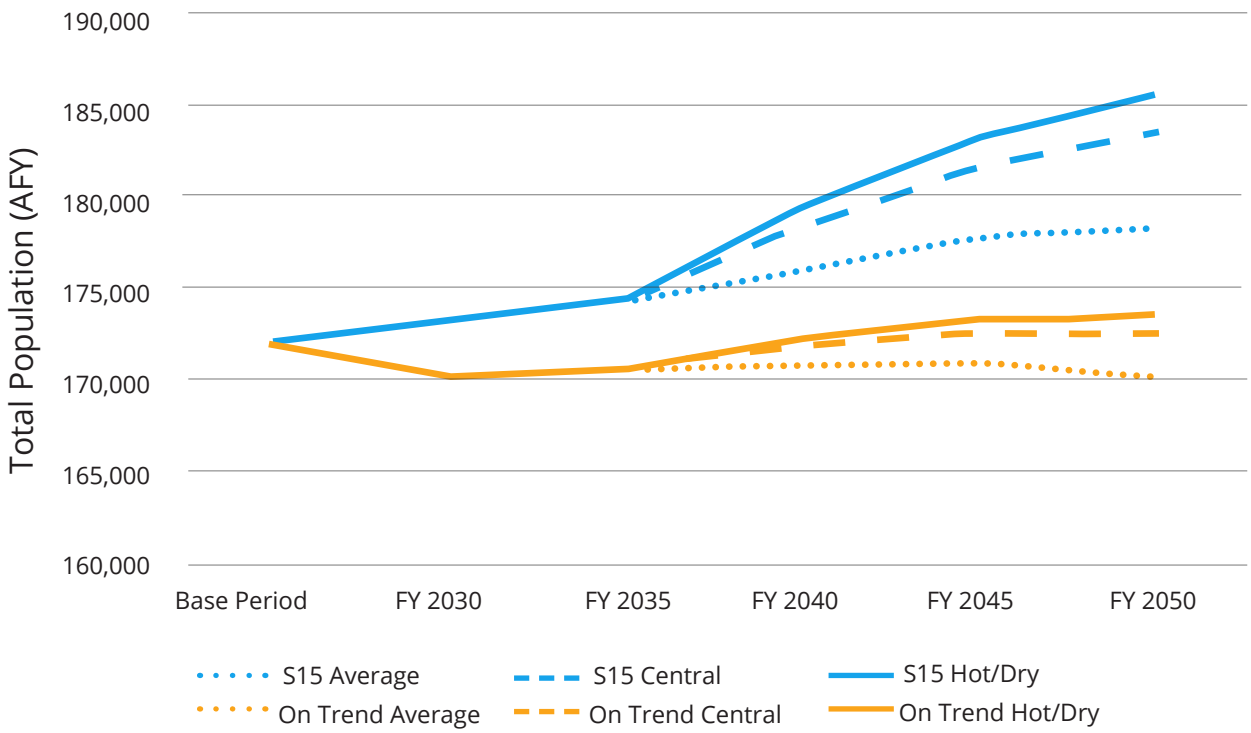
- SFR:
  - Annual average daily temperature | elasticity = 1.285.
  - Annual average maximum daily temperature | elasticity = 0.218.
- MFR:
  - Annual average maximum daily temperature | elasticity = 1.684.

Using the *adjusted unit use with elasticities method* (see Carollo Engineers 2025), elasticities from the residential models, and the inputs on temperature increases from climate change, the SFR and MFR responses were estimated. This process was straightforward for the S15 Scenario for the residential sectors. However, additional assumptions were necessary to estimate responses for the non-residential sectors and to estimate for the On Trend Scenario. These adjustments were needed because the On Trend Scenario includes a greater amount of irrigation conservation (i.e., reduction), so the response would logically be reduced. The following documents the assumptions made to assess the City's climate change-adjusted water demands:

- Climate change response for SFR and MFR sectors within the City's service area was estimated using the climate elasticities from the regression models (or demand functions).
- To determine the approximate response for the non-residential sectors:
  - The irrigation portion of use for the non-residential sectors was assessed by calculating the conservation-adjusted irrigation water demand from the demand model. The percentage of the sector irrigation use to total sector use was then calculated. These primary sectors were determined to have significant irrigation water use: Government = 30 percent, Institutional = 20 percent, and Irrigation = 100 percent.
  - This was compared to the estimated irrigation portion of water use in the residential sectors. Assuming that residential indoor water use is approximately 45 r-i-gpcd, and given the calculated total residential water use of approximately 65 r-gpcd, outdoor residential water use is estimated at 30 percent of the total use.
  - The SFR and MFR weather responses were averaged, and a scaled percentage was applied to the three primary sectors (Government, Institutional, and Irrigation). The Irrigation primary sector was capped at twice the response.
- An additional adjustment was made to the SFR sector for estimating the impact from the On Trend Scenario. This was done to account for the additional SFR conservation incorporated via the price response. The reductions from SFR customers are likely to be on outdoor water use; therefore, a SFR climate response was assumed at 50 percent of the elasticity response.

7.4.3 DEMAND FORECAST WITH CLIMATE CHANGE

The City's forecasted total production under the unadjusted (average), central tendency, and hot/dry ensembles for S15 and On Trend Scenarios are shown in **Figure 7-1**. There is a difference of 7,300 AF between the S15 hot/dry and average scenarios in 2050, approximately 4.1 percent. The On Trend Scenario is expected to have a 2 percent difference (3,300 AF) between the hot/dry and average scenarios in the year 2050.



Notes: Base year is average of FY 2022 through FY 2024.

Figure 7-1 Total Production Range Based on Future Climate Conditions

SECTION

8 References

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ATTACHMENT A Premise Code to Sector Mapping

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Premise Code to Sector Mapping

Premise Code	Description	Demand Forecast - Primary Sector	Demand Forecast - Secondary Category
1	Single-Family Dwelling	SFR	SFR
2	Other Domestic (XXX=Number of Units)	MFR	MFR
3	Commercial	Commercial	Commercial General
4	Industrial	Industrial	Industrial
5	Outside City	SFR	SFR
6	California–American Water Company	Wholesale	Wholesale
7	Motels/Hotels (XXX=Number of Units)	Commercial	Hotels
8	Trailer Park (XXX=Number of Units)	MFR	MFR
9	Combined Business and Domestic (XXX=Units)	Commercial	Commercial General
10	US Naval Station	Government	Military
11	Naval Air Station – North Island	Government	Military
12	Naval Air Station – Miramar	Government	Military
13	Naval Supply Center	Government	Military
14	Naval Training Center	Government	Military
15	Naval Electronics Laboratory	Government	Military
16	Naval Hospital	Government	Military
17	Naval Housing (XXX=Number of Units)	Government	Military
18	Navy – Fort Rosecrans	Government	Military
19	Other Naval Facilities	Government	Military
20	US Marine Corps	Government	Military
21	US Coast Guard	Government	Military
22	US Post Office	Government	City and Offices
23	Other Federal Agencies	Government	City and Offices
30	California Department of Transportation	Government	City and Offices
31	San Diego State University	Institutional	Universities
32	University of California at San Diego	Institutional	Universities
33	Other State of California Agencies	Government	City and Offices
40	Park & Recreation – (For Future Use)	Government	Parks & Recreation

Premise Code to Sector Mapping *(continued)*

Premise Code	Description	Demand Forecast - Primary Sector	Demand Forecast - Secondary Category
41	Park & Recreation – Golf Courses	Government	Parks & Recreation
42	Park & Recreation – Coastal Division	Government	Parks & Recreation
43	Park & Recreation– Central Division	Government	Parks & Recreation
44	Park & Recreation– Community Division	Government	Parks & Recreation
45	Park & Recreation – Open Space/Street Medians	Government	Parks & Recreation
46	Park & Recreation – Open Space	Government	Parks & Recreation
47	Park & Recreation – Open Space/Landscape Main	Government	Parks & Recreation
48	Park & Recreation – Environmental Growth – Coastal	Government	Parks & Recreation
49	Park & Recreation – Environmental Growth – Central	Government	Parks & Recreation
50	Park & Recreation – Environmental Growth – Northern	Government	Parks & Recreation
51	City of San Diego – Waste Management Department	Government	City and Offices
52	City of San Diego – Cemeteries	Government	City and Offices
53	City of San Diego – Water Utilities Department	Government	City and Offices
54	City of San Diego – General Services Department	Government	City and Offices
55	City of San Diego – Fire Department	Government	City and Offices
56	City of San Diego – Police Department	Government	City and Offices
57	City of San Diego – Library Department	Government	City and Offices
58	Other City of San Diego Departments	Government	City and Offices
59	City of San Diego – MWWD Department	Government	City and Offices
60	Elementary Schools	Institutional	Primary Schools

Premise Code to Sector Mapping *(continued)*

Premise Code	Description	Demand Forecast - Primary Sector	Demand Forecast - Secondary Category
61	Junior High Schools	Institutional	Primary Schools
62	Senior High Schools	Institutional	Primary Schools
63	Other San Diego Unified School District	Institutional	Primary Schools
70	County of San Diego	Government	City and Offices
71	San Diego Zoo	Government	Parks & Recreation
72	San Diego Unified Port District	Commercial	Transportation
73	San Diego Transit Corporation	Commercial	Transportation
74	San Diego Community Colleges	Institutional	Junior Colleges
80	Irrigation Only	Irrigation	Irrigation
81	RECY	Recycled	Recycled
Notes: MFR - multifamily residential; SFR – single-family residential; US - United States			

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ATTACHMENT B R-Script for Meter Data Processing

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```
## ------------------------------------------------------------------------

setwd("C:/Users/knocera/OneDrive - Carollo Engineers/Documents/Carollo/Clients/CA/SanDiego/R")

getwd()



## ------------------------------------------------------------------------

library(plyr)
library(dplyr)
library(tidyverse)


library(readxl)
library(purrr)


library(lubridate)
library(zoo)
library(data.table)
library(openxlsx)

library(scales)


view_comma <- function(df) {
  df %>%
    mutate(across(where(is.numeric), scales::comma)) %>%
    View()
}



## ------------------------------------------------------------------------

BilledData = list.files(path = "./Data/Original/", pattern="*.xlsx", full.names=TRUE)



## ------------------------------------------------------------------------

# Get unique sets of column names
unique_cols <- unique(map(BilledData, ~ colnames(read_xlsx(.x, n_max = 1))))

# Print unique column structures
unique_cols



## ------------------------------------------------------------------------

# Get column names from each file
column_lists <- map(BilledData, ~ colnames(read_xlsx(.x, n_max = 1)))

# Get all unique column names across files
all_columns <- unique(unlist(column_lists))

# Check which columns are missing per file
column_diffs <- map(column_lists, ~ setdiff(all_columns, .x))

# Show files with missing columns
column_diffs



## ------------------------------------------------------------------------

Data_original <-
  ldply(BilledData, function(file) read_xlsx(file) %>% mutate(filename = file))

# reads BilledData and adds a column called filename



## ------------------------------------------------------------------------
Data_original <- read.csv("./OriginalData.csv", check.names = FALSE)

Data <- Data_original
```

```
## ------------------------------------------------------------------------

Pressure_orig <- read.xlsx("./ccs_cy2023_customers_export_UpdatedPzone_20250310.xlsx", check.names = FALSE)

subsectors <- read.xlsx("./subsector.xlsx")

wholesale_nullreplace <- read.xlsx("./NullAddressGeocode_SpatialJoin_Export.xlsx")


HCFtoGal <- 748.1
GaltoAF <- 325099


## ------------------------------------------------------------------------

## if you don't do check.names then you have to remove the period
colnames(Data) <- gsub("\\.", " ", colnames(Data))

fix_names <- c("Bill Date (Posting Date)" = "BillDate",
               "Meter Read Date" = "MeterDate",
               "Number of Units (persons)" = "Units",
               "Location (In/Out of City)" = "City_InOut")

# Rename columns in Data_original only if they match the incorrect ones
colnames(Data) <- ifelse(colnames(Data) %in% names(fix_names),
                                 fix_names[colnames(Data)],
                                 colnames(Data))

# Print updated column names (for verification)
print(colnames(Data))


## ------------------------------------------------------------------------

Pressure <-
  Pressure_orig %>%
  mutate(BUSINESS_PARTNER_NO = sub("\\..*$", "", BUSINESS_PARTNER_NO),
         ADDRESS_ORIG = sub("^ ", "", ADDRESS_ORIG))



## ------------------------------------------------------------------------

#check column data types
str(Data)
str(Pressure)



## ------------------------------------------------------------------------

Data <-
  Data %>%
    mutate(
      `Meter Serial Number` = as.numeric(`Meter Serial Number`),
      `Service Address` = gsub("  +", " ", `Service Address`),
      #`Number of Units (persons)` = as.numeric(`Number of Units (persons)`),
      `Premise Type` = as.numeric(`Premise Type`),
      `Contract Account Number` = as.character(`Contract Account Number`),
      `Business Partner Number` = as.character(`Business Partner Number`),
      #`Meter Read Date` = as.Date(`Meter Read Date`),
      MeterDate = as.Date(MeterDate),
      BillDate = as.Date(BillDate),
      Year = format(MeterDate, "%Y")
    )

# Data <-
#   Data %>%
#   mutate(Year = format(BillDate, "%Y"))


## ------------------------------------------------------------------------


Pressure <-
  Pressure %>%
  full_join(
    wholesale_nullreplace %>%
      select(USER_Service_Address, NAME_UNIQU_1) %>%
      distinct(USER_Service_Address, .keep_all = TRUE),
```

```
    by = c("ADDRESS_ORIG" = "USER_Service_Address")
  ) %>%
  mutate(UNIQU.NAME = coalesce(UNIQU.NAME, NAME_UNIQU_1)) %>%
  select(-NAME_UNIQU_1)


# premise code 6 erroneously as GATEWAY (blank NAME)
Pressure <-
  Pressure %>%
  mutate(UNIQU.NAME = case_when(
    TARGET_FID == 25733 ~ "OTAY REGULATED",
    TARGET_FID == 214949 ~ "PRINCESS DEL SOL",
    TARGET_FID == 220104 ~ "OTAY REGULATED",
    TARGET_FID == 268150 ~ "OTAY REGULATED",
    TRUE ~ UNIQU.NAME  # keep existing value if no match
  )) %>%
   select(BUSINESS_PARTNER_NO,
         STREET_NUM,
         STREET_NAME,
         ZIP,
         ADDRESS_ORIG,
         CUSTOMER_BUSINESS_NAME,
         UNIQU.NAME,
         PREMISE_TYPE,
         TARGET_FID,
         OBJECTID,
         everything())


## ------------------------------------------------------------------------

Data <- left_join(
  x = Data,
  y = subsectors,
  by = c("Premise Type" = "Premise"))



## ------------------------------------------------------------------------

keep <- c("filename"
          ,"Business Partner Number"
          ,"Meter Serial Number"
          ,"Customer Business Name"
          ,"Service Address"
          ,"PressureZone"
          ,"Premise Type"
          ,"Primary"
          ,"Secondary"
          ,"MeterDate"
          ,"Water Consumption"
          ,"City_InOut"
          )



## ------------------------------------------------------------------------

setdiff(keep, names(Data))



## ------------------------------------------------------------------------

Data_clean <- Data # reset created PRE Pressure Join, confirmed totals etc.



## ------------------------------------------------------------------------

Data <- Data_clean



## ------------------------------------------------------------------------

# has different street and business number // has different business number
Pressure %>%
  filter(!is.na(METER_SER_NUM)) %>%
  group_by(METER_SER_NUM) %>%
  summarize(n = n_distinct(UNIQU.NAME)) %>%
```

```
  filter(n > 1)


# same as one of the meter above -- different business number

Pressure %>%
  filter(!is.na(ADDRESS_ORIG)) %>%
  group_by(ADDRESS_ORIG) %>%
  summarize(n = n_distinct(UNIQU.NAME)) %>%
  filter(n > 1)


# MANY examples, use as last resort

Pressure %>%
  filter(!is.na(BUSINESS_PARTNER_NO)) %>%
  group_by(BUSINESS_PARTNER_NO) %>%
  summarize(n = n_distinct(UNIQU.NAME)) %>%
  filter(n > 1)


# See why they're different, fix after joins

test <-
  Pressure %>%
  filter(METER_SER_NUM == "20121136") %>%
  select(METER_SER_NUM, UNIQU.NAME, ADDRESS_ORIG, BUSINESS_PARTNER_NO)




## ---------------------------------------------------------------------------


Pressure_msn <- Pressure %>%
  filter(!is.na(METER_SER_NUM)) %>%
  distinct(METER_SER_NUM, .keep_all = TRUE)


Pressure_addr <- Pressure %>%
  filter(!is.na(ADDRESS_ORIG)) %>%
  distinct(ADDRESS_ORIG, .keep_all = TRUE)


Pressure_bp <- Pressure %>%
  filter(!is.na(BUSINESS_PARTNER_NO)) %>%
  distinct(BUSINESS_PARTNER_NO, .keep_all = TRUE)


Data <-
  Data %>%
  left_join(Pressure_msn %>% select(METER_SER_NUM, UNIQU.NAME),
            by = c("Meter Serial Number" = "METER_SER_NUM")) %>%
  rename(PressureZone_msn = UNIQU.NAME) %>%
  left_join(Pressure_addr %>% select(ADDRESS_ORIG, UNIQU.NAME),
            by = c("Service Address" = "ADDRESS_ORIG")) %>%
  rename(PressureZone_addr = UNIQU.NAME) %>%
  left_join(Pressure_bp %>% select(BUSINESS_PARTNER_NO, UNIQU.NAME),
            by = c("Business Partner Number" = "BUSINESS_PARTNER_NO")) %>%
  rename(PressureZone_bp = UNIQU.NAME) %>%
  mutate(PressureZone = coalesce(PressureZone_msn, PressureZone_addr, PressureZone_bp)) %>%
  select(all_of(keep),
         -PressureZone_msn, -PressureZone_addr, -PressureZone_bp,
          everything())


rm(Pressure_msn)
rm(Pressure_addr)
rm(Pressure_bp)

# manually reassign the duplicate METER_SER_NUM above

Data <-
  Data %>%
  mutate(PressureZone = case_when(
    `Meter Serial Number` == "17068559" & `Service Address` == "1702 OLAMAR WAY" ~ "HILLSBOROUGH",
    `Meter Serial Number` == "20121136" & `Business Partner Number` == "5201251015" ~ "UNIVERSITY HEIGHTS_1",
    TRUE ~ PressureZone
  ))
```

```
## ---------------------------------------------------------------------------

Data_Prorated <-
  Data %>%
  mutate(
    MonthYr1 = as.yearmon(MeterDate, "%y-%b"),
    MonthYr2_date = case_when(
      grepl("Even|Odd", filename) ~ as.Date(MeterDate) %m-% months(1),
      TRUE ~ NA_Date_),
    MonthYr2 = as.yearmon(MonthYr2_date, "%y-%b"),
    ProratedUse =
      ifelse(grepl("Even|Odd", filename), `Water Consumption` / 2,
             `Water Consumption`)) %>%
  select(-MonthYr2_date) %>%
  arrange(`Meter Serial Number`, MeterDate)



## ---------------------------------------------------------------------------
# Step 1: Separate the data into monthly and bimonthly

monthly_data <-
  Data_Prorated %>%
  filter(is.na(MonthYr2)) %>%
  mutate(MonthYr = as.yearmon(MeterDate, "%y-%b"))

bimonthly_data <-
  Data_Prorated %>%
  filter(!is.na(MonthYr2)) %>%
  pivot_longer(cols = c(MonthYr1, MonthYr2),
               names_to = "Month_1or2",
               values_to = "MonthYr")

# Step 2: Bind the data back together
Data_Prorated <- bind_rows(monthly_data, bimonthly_data)


# Step 3: Identify fiscal year
Data_Prorated <-
  Data_Prorated %>%
  mutate(ProratedUse = ifelse(is.na(ProratedUse), `Water Consumption`, ProratedUse),
         FY = ifelse(lubridate::month(MonthYr) %in% 1:6,
                     lubridate::year(MonthYr),
                     lubridate::year(MonthYr) + 1))



## ---------------------------------------------------------------------------


Data_original %>% summarize(orig_total = sum(`Water Consumption`, na.rm = TRUE))
Data %>% summarize(wrangle_total = sum(`Water Consumption`, na.rm = TRUE))
Data_Prorated %>% summarize(prorated_total = sum(ProratedUse, na.rm = TRUE))

tibble(
  orig_total = sum(Data_original$`Water Consumption`, na.rm = TRUE),
  wrangle_total = sum(Data$`Water Consumption`, na.rm = TRUE),
  prorated_total = sum(Data_Prorated$ProratedUse, na.rm = TRUE)
)



## ---------------------------------------------------------------------------
sum(Usage_CY[, 2:8], na.rm = TRUE)
sum(Usage_FY[, 2:9], na.rm = TRUE)

sum(UsageSecondary_CY[, 2:8], na.rm = TRUE)

sum(Usage_CY_Pressure_Rate[, 4:10], na.rm = TRUE)
sum(Usage_FY_Pressure_Rate[, 4:11], na.rm = TRUE)



Usage_CY <-
  Data %>%
  group_by(Year, `Premise Type`) %>%
  summarize(TotalUsage = sum(`Water Consumption`, na.rm = TRUE)) %>%
  arrange(Year) %>%
  pivot_wider(
    names_from = Year,
    values_from = TotalUsage) %>%
```

```
  arrange(`Premise Type`)


Usage_FY <-
  Data_Prorated %>%
  group_by(FY, `Premise Type`) %>%
  summarize(TotalUsage = sum(ProratedUse, na.rm = TRUE)) %>%
  arrange(FY) %>%
  pivot_wider(
    names_from = FY,
    values_from = TotalUsage) %>%
  arrange(`Premise Type`)




Usage_CY_Pressure_Rate <-
  Data %>%
  group_by(Year, PressureZone, `Water Rate Category`, `Premise Type`) %>%
  summarize(TotalUsage = sum(`Water Consumption`, na.rm = TRUE)) %>%
  arrange(Year) %>%
  pivot_wider(
    names_from = Year,
    values_from = TotalUsage) %>%
  arrange(PressureZone, `Water Rate Category`, `Premise Type`)


Usage_FY_Pressure_Rate <-
  Data_Prorated %>%
  group_by(FY, PressureZone, `Water Rate Category`, `Premise Type`) %>%
  summarize(TotalUsage = sum(ProratedUse, na.rm = TRUE)) %>%
  arrange(FY) %>%
  pivot_wider(
    names_from = FY,
    values_from = TotalUsage) %>%
  arrange(PressureZone, `Water Rate Category`, `Premise Type`)



UsageSecondary_CY <-
  Data %>%
  group_by(Year, Secondary) %>%
  summarize(TotalUsage = sum(`Water Consumption`, na.rm = TRUE)) %>%
  arrange(Year) %>%
  pivot_wider(
    names_from = Year,
    values_from = TotalUsage) %>%
  arrange(Secondary)

UsageSecondary_CY_GPD <-
  Data %>%
  group_by(Year, Secondary) %>%
  summarize(TotalUsage = (sum(`Water Consumption`, na.rm = TRUE)*HCFtoGal)/365) %>%
  arrange(Year) %>%
  pivot_wider(
    names_from = Year,
    values_from = TotalUsage) %>%
  arrange(Secondary) # %>%
  select(-`2018`)

UsageSecondary_FY <-
  Data_Prorated %>%
  group_by(FY, Secondary) %>%
  summarize(TotalUsage = sum(ProratedUse, na.rm = TRUE)) %>%
  arrange(FY) %>%
  pivot_wider(
    names_from = FY,
    values_from = TotalUsage) %>%
  arrange(Secondary)

UsageSecondary_FY_GPD <-
  Data_Prorated %>%
  group_by(FY, Secondary) %>%
  summarize(TotalUsage = (sum(ProratedUse, na.rm = TRUE)*HCFtoGal)/365) %>%
  arrange(FY) %>%
  pivot_wider(
    names_from = FY,
    values_from = TotalUsage) %>%
  arrange(Secondary) %>%
  select(-`2018`, -`2025`)
```

```
## ------------------------------------------------------------------------

sheets <- list("Usage FY by Premise" = Usage_FY
               ,"Usage CY by Premise" = Usage_CY
               ,"Usage FY by Secondary" = UsageSecondary_FY
               ,"Usage CY by Secondary" = UsageSecondary_CY
               ,"Usage FY by Pressure Rate Code" = Usage_FY_Pressure_Rate
               ,"Usage CY by Pressure Rate Code" = Usage_CY_Pressure_Rate
               )

openxlsx::write.xlsx(sheets,
           file = "./Usage_Updated_0527.xlsx")




## ------------------------------------------------------------------------


wholesale <- "CA-Ol-Ot-FH"



WholesaleUsage <-
  Data %>%
  filter(grepl(wholesale, filename)) %>%
  mutate(Year = format(BillDate, "%Y")) %>%
  group_by(Year, Primary) %>%
  summarize(TotalUsage = sum(`Water Consumption`, na.rm = TRUE)) %>%
  arrange(Year)



WholesaleUsage_CY <-
  Data %>%
  filter(grepl(wholesale, filename)) %>%
  mutate(Year = format(BillDate, "%Y")) %>%
  group_by(Year, Primary, PressureZone) %>%
  summarize(TotalUsage = sum(`Water Consumption`, na.rm = TRUE)) %>%
  arrange(Year) %>%
  pivot_wider(
    names_from = Year,
    values_from = TotalUsage)



WholesaleUsage_FY <-
  Data_Prorated %>%
  filter(grepl(wholesale, filename)) %>%
  group_by(FY, Primary, PressureZone) %>%
  summarize(TotalUsage = sum(ProratedUse, na.rm = TRUE)) %>%
  arrange(FY) %>%
  pivot_wider(
    names_from = FY,
    values_from = TotalUsage)



CalAm_Accounts <-
  Data %>%
  filter(`Water Rate Category` == "WTR_CALAM") %>%
  select(`Customer Business Name`
         , `Water Rate Category`
         ,`Business Partner Number`
         , `Service Address`
         , PressureZone
         , `Premise Type`
  ) %>%
  distinct()

wholsale_Accounts <-
  Data %>%
  filter(`Premise Type` == 6) %>%
  select(`Customer Business Name`
         , `Water Rate Category`
         ,`Business Partner Number`
         , `Service Address`
         , PressureZone
```

```
        , `Premise Type`
  ) %>%
  distinct()



wholesale_CalAm_CY <-
  Data %>%
  filter(`Premise Type` == 6)


wholesale_CalAm_CY <-
  Data %>%
  filter(`Premise Type` == 6) %>%
  mutate(Year = format(BillDate, "%Y")) %>%
  group_by(Year, `Water Rate Category`, `Customer Business Name`, PressureZone) %>%
  summarize(TotalUsage = sum(`Water Consumption`, na.rm = TRUE)) %>%
  arrange(Year) %>%
  pivot_wider(
    names_from = Year,
    values_from = TotalUsage) %>%
  mutate(Total = sum(`2018`, `2019`, `2020`, `2021`, `2022`, `2023`, `2024`)) %>%
  filter(Total != 0 & !is.na(Total)) %>%
  select(-Total) %>%
  arrange(PressureZone, `Water Rate Category`)


wholesale_CalAm_FY <-
  Data_Prorated %>%
  filter(`Premise Type` == 6) %>%
  group_by(FY, `Water Rate Category`, `Customer Business Name`, PressureZone) %>%
  summarize(TotalUsage = sum(ProratedUse, na.rm = TRUE)) %>%
  arrange(FY) %>%
  pivot_wider(
    names_from = FY,
    values_from = TotalUsage) %>%
  mutate(Total = sum(`2018`, `2019`, `2020`, `2021`, `2022`, `2023`, `2024`)) %>%
  filter(Total != 0 & !is.na(Total)) %>%
  select(-Total) %>%
  arrange(PressureZone, `Water Rate Category`)




Wholesale_accounts <-
  Data %>%
  filter(grepl(wholesale, filename),
         is.na(PressureZone)) %>%
  select(`Service Address`,
         `Service Zip Code`
         ) %>%
  distinct()

wholesale_accounts_list <-
  unique(Wholesale_accounts$`Service Address`)

write.csv(Wholesale_accounts, "./null_wholesale_address.csv", row.names = FALSE)



WholesaleZones <-
  test %>%
  filter(grepl(wholesale, filename),
         is.na(PressureZone)) # %>%
  mutate(Year = format(BillDate, "%Y")) %>%
  group_by(Year, Primary, PressureZone) %>%
  summarize(TotalUsage = sum(`Water Consumption`, na.rm = TRUE)) %>%
  arrange(Year) %>%
  pivot_wider(
    names_from = Year,
    values_from = TotalUsage) %>%
  mutate(Total = rowSums(across(`2019`:`2024`), na.rm = TRUE)) %>%
  filter(Total != 0 & !is.na(Total)) %>%
  select(-Total)


Data_RecycledWholesale <-
  Data %>%
  filter(grepl(wholesale, filename),
         `Water Rate Category` == "WTR_RECL")
```

```
RecycleWholesaleUsage_CY <-
  Data %>%
  filter(grepl(wholesale, filename),
         `Water Rate Category` == "WTR_RECL") %>%
  mutate(Year = format(BillDate, "%Y")) %>%
  group_by(Year, Primary) %>%
  summarize(TotalUsage = sum(`Water Consumption`, na.rm = TRUE)) %>%
  arrange(Year) %>%
  pivot_wider(
    names_from = Year,
    values_from = TotalUsage)



RecycleWholesaleUsage_FY <-
  Data_Prorated %>%
  filter(grepl(wholesale, filename),
         `Water Rate Category` == "WTR_RECL") %>%
  group_by(FY, Primary) %>%
  summarize(TotalUsage = sum(ProratedUse, na.rm = TRUE)) %>%
  arrange(FY) %>%
  pivot_wider(
    names_from = FY,
    values_from = TotalUsage)



RecycleUsage_CY <-
  Data %>%
  filter(`Water Rate Category` == "WTR_RECL") %>%
  mutate(Year = format(BillDate, "%Y")) %>%
  group_by(Year) %>%
  summarize(TotalUsage = sum(ProratedUse, na.rm = TRUE)) %>%
  arrange(Year) %>%
  pivot_wider(
    names_from = Year,
    values_from = TotalUsage)


RecycleUsage_FY <-
  Data_Prorated %>%
  filter(`Water Rate Category` == "WTR_RECL") %>%
  group_by(FY) %>%
  summarize(TotalUsage = sum(ProratedUse, na.rm = TRUE)) %>%
  arrange(FY) %>%
  pivot_wider(
    names_from = FY,
    values_from = TotalUsage)









Accounts_RECL_In_FY <-
  Data_Prorated %>%
  filter(`Water Rate Category` == "WTR_RECL") %>%
  group_by(FY, City_InOut) %>%
  summarize(TotalAccounts = n_distinct(`Meter Serial Number`), .groups = "drop") %>%
  arrange(FY) %>%
  pivot_wider(
    names_from = FY,
    values_from = TotalAccounts)

Accounts_RECL_In_CY <-
  Data %>%
  filter(`Water Rate Category` == "WTR_RECL") %>%
  mutate(Year = format(BillDate, "%Y")) %>%
  group_by(Year, City_InOut) %>%
  summarize(TotalAccounts = n_distinct(`Meter Serial Number`), .groups = "drop") %>%
  arrange(Year) %>%
  pivot_wider(
    names_from = Year,
    values_from = TotalAccounts)
```

```
## there are no Primary Wholesale in WTR_RECL




construction <-
  Data %>%
  filter(!grepl(wholesale, filename),
         `Water Rate Category` == "WTR_CONST")



sheets <- list("Wholesale Usage FY" = WholesaleUsage_FY,
               "Wholesale Usage CY" = WholesaleUsage_CY,
               "Wholesale Accounts FY" = Accounts_wholesale_FY,
               "Wholesale Accounts CY" = Accounts_wholesale_CY,
               "Recycle Usage FY" = RecycleUsage_FY,
               "Recycle Usage CY" = RecycleUsage_CY,
               "Recycle Accounts FY" = Accounts_RECL_In_FY,
               "Recycle Accounts CY" = Accounts_RECL_In_CY
)

openxlsx::write.xlsx(sheets,
                     file = "./UsageAccounts_RECL_Wholesale.xlsx")







## ---------------------------------------------------------------------------

PressureNULLUsage_CY <-
  Data %>%
  filter(is.na(PressureZone)) %>%
  mutate(Year = format(BillDate, "%Y")) %>%
  group_by(Year, Primary) %>%
  summarize(TotalUsage = sum(`Water Consumption`, na.rm = TRUE)) %>%
  arrange(Year) %>%
  pivot_wider(
    names_from = Year,
    values_from = TotalUsage)



## ---------------------------------------------------------------------------

Usage_FY <-
  Data_Prorated %>%
  group_by(FY, PressureZone, `Water Rate Category`, Primary, Secondary) %>%
  summarize(TotalUsage = sum(ProratedUse, na.rm = TRUE)) %>%
  arrange(FY) %>%
  pivot_wider(
    names_from = FY,
    values_from = TotalUsage) %>%
  mutate(Total = sum(`2018`, `2019`, `2020`, `2021`, `2022`, `2023`, `2024`)) %>%
  filter(Total != 0 & !is.na(Total)) %>%
  select(-Total) %>%
  arrange(PressureZone, `Water Rate Category`, Primary, Secondary)



## ---------------------------------------------------------------------------

customers <- c("CITY OF POWAY",
               "OLIVENHAIN MUNICIPAL WATER DISTRICT",
               "OTAY WATER DISTRICT")

specificcustomers_FY <-
  Data_Prorated %>%
  filter(`Customer Business Name` %in% customers) %>%
  group_by(FY, `Customer Business Name`, PressureZone) %>%
  summarize(TotalUsage = sum(ProratedUse, na.rm = TRUE)) %>%
  arrange(FY) %>%
  pivot_wider(
    names_from = FY,
    values_from = TotalUsage)


specificcustomers_CY <-
  Data %>%
```

```
  filter(`Customer Business Name` %in% customers) %>%
  mutate(Year = year(BillDate)) %>%
  group_by(Year, `Customer Business Name`, PressureZone) %>%
  summarize(TotalUsage = sum(ProratedUse, na.rm = TRUE)) %>%
  arrange(Year) %>%
  pivot_wider(
    names_from = Year,
    values_from = TotalUsage)


write.csv(specificcustomers_FY, "./specificcustomers_FY.csv", row.names = FALSE)



## ------------------------------------------------------------------------

no_pzone <-
  Data_Prorated %>%
  filter(is.na(PressureZone),
         ProratedUse > 0) %>%
  arrange(desc(ProratedUse)) %>%
  select(MeterDate, FY, `Meter Serial Number`, `Premise Type`, Primary, Secondary, `Water Consumption`,
everything())




## ------------------------------------------------------------------------

Accounts_SFR <-
  Data %>%
  filter(Primary == "SFR",
         !(`Water Rate Category` %in% c("WTR_IRR", "WTR_RECL"))) %>%
  mutate(Year = year(MeterDate)) %>%
  group_by(Year, PressureZone) %>%
  summarize(TotalAccounts = n_distinct(`Meter Serial Number`)) %>%
  arrange(Year) %>%
  pivot_wider(
    names_from = Year,
    values_from = TotalAccounts) %>%
  arrange(PressureZone)


Accounts_MFR <-
  Data %>%
  filter(Primary == "MFR",
         !(`Water Rate Category` %in% c("WTR_IRR", "WTR_RECL"))) %>%
  mutate(Year = year(MeterDate)) %>%
  group_by(Year, PressureZone) %>%
  summarize(TotalAccounts = n_distinct(`Meter Serial Number`)) %>%
  arrange(Year) %>%
  pivot_wider(
    names_from = Year,
    values_from = TotalAccounts) %>%
  arrange(PressureZone)

# by secondary
Accounts_NonRes <-
  Data %>%
  filter(!(Primary %in% c("MFR", "SFR"))) %>%
  mutate(Year = year(MeterDate)) %>%
  group_by(Year, PressureZone, `Water Rate Category`, Primary, Secondary) %>%
  summarize(TotalAccounts = n_distinct(`Meter Serial Number`), .groups = "drop") %>%
  arrange(Year) %>%
  pivot_wider(
    names_from = Year,
    values_from = TotalAccounts) %>%
  arrange(PressureZone, `Water Rate Category`, Primary, Secondary)




Accounts_RECL_Inside <-
  Data %>%
  filter(`Water Rate Category` == "WTR_RECL") %>%
  mutate(Year = year(MeterDate)) %>%
  group_by(Year, City_InOut) %>%
  summarize(TotalAccounts = n_distinct(`Meter Serial Number`), .groups = "drop") %>%
  arrange(Year) %>%
  pivot_wider(
    names_from = Year,
```

```
    values_from = TotalAccounts)


Accounts_RECL_In_FY <-
  Data_Prorated %>%
  filter(`Water Rate Category` == "WTR_RECL") %>%
  group_by(FY, City_InOut) %>%
  summarize(TotalAccounts = n_distinct(`Meter Serial Number`), .groups = "drop") %>%
  arrange(FY) %>%
  pivot_wider(
    names_from = FY,
    values_from = TotalAccounts)




Accounts_wholesale_CY <-
  Data %>%
  filter(grepl(wholesale, filename)) %>%
  mutate(Year = year(BillDate)) %>%
  group_by(Year, PressureZone) %>%
  summarize(TotalAccounts = n_distinct(`Meter Serial Number`), .groups = "drop") %>%
  arrange(Year) %>%
  pivot_wider(
    names_from = Year,
    values_from = TotalAccounts)


Accounts_wholesale_FY <-
  Data_Prorated %>%
  filter(grepl(wholesale, filename)) %>%
  group_by(FY, PressureZone) %>%
  summarize(TotalAccounts = n_distinct(`Meter Serial Number`), .groups = "drop") %>%
  arrange(FY) %>%
  pivot_wider(
    names_from = FY,
    values_from = TotalAccounts)




Accounts_PressureNULL <-
  Data %>%
  filter(is.na(PressureZone)) %>%
  mutate(Year = year(MeterDate)) %>%
  group_by(Year, Primary) %>%
  summarize(TotalAccounts = n_distinct(`Meter Serial Number`), .groups = "drop") %>%
  arrange(Year) %>%
  pivot_wider(
    names_from = Year,
    values_from = TotalAccounts)


Accounts_premise <-
  Data %>%
  mutate(Year = year(MeterDate)) %>%
  group_by(Year, `Premise Type`) %>%
  summarize(TotalAccounts = n_distinct(`Meter Serial Number`), .groups = "drop") %>%
  arrange(Year) %>%
  pivot_wider(
    names_from = Year,
    values_from = TotalAccounts)




## ---------------------------------------------------------------------------

MFRunits <-
  Data %>%
  mutate(Year = format(MeterDate, "%Y")) %>%
  filter(Primary == "MFR",
         `Water Rate Category` != "WTR_RECL") %>%
  group_by(Year, `Meter Serial Number`) %>%
  summarize(UnitCounts = max(Units) , .groups = "drop") %>%
  group_by(Year) %>%
  summarize(TotalUnits = sum(UnitCounts))

MFRUse <-
  Data %>%
  mutate(Year = format(MeterDate, "%Y")) %>%
```

```
  filter(Primary == "MFR",
         `Water Rate Category` != "WTR_RECL") %>%
  group_by(Year) %>%
  summarize(TotalUsage = sum(`Water Consumption`), .groups = "drop")


MFR_PerUnit <-
  MFRunits %>%
  left_join(MFRUse, by = "Year") %>%
  mutate(PerUnitDemand = TotalUsage / TotalUnits)



## ------------------------------------------------------------------------

sheets <- list("Usage CY" = Usage_CY,
               "SFR Accounts" = Accounts_SFR,
               "MFR Accounts" = Accounts_MFR,
               "NonRes Accounts" = Accounts_NonRes)

openxlsx::write.xlsx(sheets,
           file = "./UsageAccounts_export.xlsx")



## ------------------------------------------------------------------------

sheets <- list("Accounts NULL Zone" = Accounts_PressureNULL
               ,"Accounts Recycle" = Accounts_RECL_Inside
               ,"Usage NULL Zone" = PressureNULLUsage_CY
               ,"Usage Recycle Wholesale" = RecycleWholesaleUsage_CY
               ,"Usage Wholesale File" = WholesaleUsage_CY
               ,"Usage Wholesale Primary" = WholesaleUsagePrimary_CY
               )

openxlsx::write.xlsx(sheets,
           file = "./UsageAccounts_RecycleWholesale.xlsx")



## ------------------------------------------------------------------------

write.csv(Data_original, "./OriginalData.csv", row.names = FALSE)



## ------------------------------------------------------------------------

write.csv(Usage_FY, "./UsageProrated.csv", row.names = FALSE)
```

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ATTACHMENT C S15 Scenario Water Demand Forecast by Pressure Zone

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S15 Scenario Water Demand Forecast by Pressure Zone (mgd)[1]

Pressure Zone Name	Service Area	Base Period[2]	2030	2035	2040	2045	2050
ALLIED GARDENS	Alvarado	1.1	1.1	1.1	1.1	1.1	1.2
ALVARADO_1	Alvarado	13.6	13.6	13.6	13.7	13.9	14.1
ALVARADO_2	Alvarado/Otay	0.3	0.3	0.3	0.3	0.3	0.3
ALVARADO_3	Alvarado/Otay	0.1	0.1	0.1	0.1	0.1	0.1
ALVARADO_4	Alvarado	1.8	1.8	1.8	1.8	1.9	1.9
ARCHER	Alvarado/Miramar	0.01	0.01	0.01	0.01	0.01	0.01
ARNOLD HILLS	Alvarado	0.01	0.01	0.01	0.01	0.01	0.01
ARROYO SORRENTO	Miramar	0.8	0.8	0.8	0.8	0.8	0.7
BAY TERRACE	Alvarado/Otay	0.2	0.2	0.2	0.2	0.2	0.2
BAYVIEW	Alvarado/Miramar	0.3	0.3	0.3	0.3	0.3	0.3
BERNARDO HEIGHTS	Miramar	0.8	0.7	0.7	0.7	0.7	0.7
BERNARDO OAKS_1	Miramar	0.7	0.7	0.7	0.7	0.7	0.7
BERNARDO OAKS_2	Miramar	0.9	0.8	0.8	0.8	0.8	0.8
BERNARDO TRAILS	Miramar	0.4	0.4	0.4	0.4	0.4	0.4
BLACK MTN RANCH	Miramar	0.2	0.2	0.2	0.2	0.2	0.2
CARMEL COUNTRY	Miramar	0.5	0.5	0.5	0.5	0.5	0.5
CARMEL MALL	Miramar	1.3	1.4	1.4	1.4	1.4	1.4
CARMEL VALLEY	Miramar	0.9	0.9	0.9	0.9	0.9	0.9
CARMEL VIEW	Otay	0.2	0.2	0.2	0.2	0.2	0.2
CARROLL RIDGE	Miramar	0.1	0.1	0.1	0.1	0.1	0.1
CATALINA	Alvarado	1.8	1.8	1.8	1.8	1.8	1.8
COLLEGE CANYON	Alvarado	0.2	0.2	0.2	0.1	0.1	0.1
CORNISH HILL	Alvarado	0.01	0.01	0.01	0.01	0.01	0.01
COUNTRY CASUAL	Alvarado	0.5	0.5	0.5	0.5	0.5	0.5
DEL CERRO	Alvarado	0.4	0.4	0.4	0.4	0.4	0.4
DEL MAR HILLS	Miramar	0.1	0.1	0.1	0.1	0.1	0.1
DEL MAR TERRACE	Miramar	0.1	0.1	0.1	0.1	0.1	0.1
DENNERY RD	Otay	0.1	0.1	0.1	0.1	0.1	0.1
EAGLE RIDGE	Alvarado	0.02	0.02	0.02	0.02	0.02	0.02
EL CAMINO	Miramar	0.01	0.01	0.01	0.01	0.01	0.01
GATEWAY	Alvarado	0.1	0.1	0.1	0.1	0.1	0.1
GLIDDEN	Alvarado/Miramar	0.01	0.01	0.01	0.01	0.01	0.01
GOLF COURSE_1	Miramar	0.04	0.04	0.04	0.04	0.04	0.04
GOLF COURSE_2	Miramar	0.01	0.02	0.02	0.02	0.02	0.02
HIDDEN TRAILS	Otay	0.1	0.1	0.1	0.1	0.1	0.1

S15 Scenario Water Demand Forecast by Pressure Zone (mgd)[1] *(continued)*

Pressure Zone Name	Service Area	Based Period[2]	2030	2035	2040	2045	2050
HILLSBOROUGH	Alvarado/Otay	0.1	0.1	0.1	0.1	0.1	0.1
IMPERIAL	Alvarado	0.02	0.02	0.02	0.03	0.03	0.03
KEARNY MESA	Alvarado/Miramar	5.6	5.6	5.7	5.7	5.7	5.7
LA JOLLA GARDENS	Miramar	0.4	0.4	0.4	0.4	0.4	0.4
LA JOLLA HERMOSA	Miramar	1.4	1.4	1.4	1.4	1.4	1.4
LA JOLLA MESA VISTA	Alvarado/Miramar	0.1	0.1	0.1	0.1	0.1	0.1
LA JOLLA PACIFICA	Alvarado/Miramar	0.2	0.2	0.2	0.2	0.2	0.2
LA JOLLA SHORES	Miramar	0.3	0.3	0.3	0.3	0.3	0.3
LA JOLLA SOLEDAD W	Alvarado/Miramar	0.3	0.3	0.3	0.3	0.3	0.3
LA JOLLA TOWNE	Miramar	0.7	0.7	0.7	0.7	0.7	0.7
LA MIRAGE	Alvarado	0.2	0.2	0.2	0.2	0.2	0.2
LIBERTY STATION	Alvarado	0.1	0.1	0.1	0.1	0.1	0.1
LOWER DEL MAR TERR	Miramar	0.1	0.1	0.1	0.1	0.1	0.1
LUSK PARK_1	Miramar	0.03	0.03	0.03	0.03	0.03	0.04
LUSK PARK_2	Miramar	0.2	0.2	0.2	0.2	0.2	0.2
LUSK PARK_3	Miramar	3.6	3.6	3.6	3.6	3.6	3.6
MAR VILLA	Miramar	0.02	0.02	0.02	0.02	0.02	0.02
MERCY HIGH	Miramar	0.01	0.01	0.01	0.01	0.01	0.01
MIRA MESA	Miramar	4.0	4.0	4.1	4.1	4.5	4.6
MIRAMAR	Miramar	5.2	5.1	5.1	5.1	5.2	5.2
MIRAMAR BOOSTED	Miramar	0.3	0.3	0.3	0.3	0.3	0.3
MISSION CITY	Alvarado	0.2	0.2	0.2	0.2	0.2	0.2
MONTE VERDE	Alvarado	0.1	0.1	0.1	0.1	0.1	0.1
MURPHY CANYON	Alvarado/Miramar	0.03	0.03	0.03	0.04	0.04	0.04
NORMAL HEIGHTS	Alvarado	1.6	1.6	1.6	1.6	1.6	1.7
NORTH CITY_1	Miramar	6.4	6.3	6.4	6.4	6.5	6.5
NORTH CITY_2	Miramar	7.8	7.7	7.8	7.9	7.8	7.8
NORTH CITY_3	Miramar	0.1	0.1	0.1	0.1	0.1	0.1
NORTH CITY_4	Miramar	0.1	0.1	0.1	0.1	0.1	0.1
NORTH VILLAGE	Miramar	0.8	0.7	0.7	0.8	0.8	0.8
NORTHWEST MESA	Alvarado/Miramar	11.4	11.4	11.4	11.4	11.5	11.6
OAKS NORTH	Miramar	0.01	0.01	0.01	0.01	0.01	0.01
OLD CLIFFS	Alvarado	0.03	0.03	0.03	0.03	0.03	0.03
OTAY MESA	Otay	0.9	1.1	1.1	1.2	1.6	1.6

S15 Scenario Water Demand Forecast by Pressure Zone (mgd)[1] *(continued)*

Pressure Zone Name	Service Area	Base Period[2]	2030	2035	2040	2045	2050
OTAY REGULATED	Otay	3.6	3.7	3.8	3.8	3.8	3.8
PACIFIC BEACH	Alvarado/Miramar	5.4	5.3	5.3	5.3	5.3	5.2
PACIFICA	Alvarado/Miramar	0.005	0.005	0.005	0.005	0.005	0.005
PARADISE HILLS #1	Alvarado/Otay	0.6	0.6	0.5	0.5	0.5	0.5
PARADISE HILLS #2	Alvarado/Otay	0.02	0.02	0.02	0.02	0.02	0.02
PARADISE MESA	Alvarado/Otay	3.5	3.4	3.4	3.5	3.5	3.5
PARKVIEW	Alvarado/Miramar	0.2	0.2	0.2	0.2	0.2	0.2
PENASQUITOS	Miramar	1.4	1.5	1.5	1.5	1.5	1.5
PENASQUITOS PARK VW	Miramar	0.2	0.2	0.2	0.2	0.2	0.2
PINNACLE	Miramar	0.1	0.05	0.05	0.05	0.05	0.05
POINT LOMA_1	Alvarado	1.5	1.5	1.5	1.5	1.5	1.5
POINT LOMA_2	Alvarado	0.7	0.7	0.7	0.7	0.7	0.7
POMERADO PARK	Miramar	1.3	1.3	1.3	1.3	1.3	1.3
PRESTWICK ESTATES	Miramar	0.02	0.02	0.02	0.02	0.02	0.02
PRINCESS DEL SOL	Otay	4.9	4.9	4.9	4.9	4.9	4.9
PRINCESS GARDENS	Alvarado	0.01	0.01	0.01	0.01	0.01	0.01
PRINCIPAL DOWNTOWN	Alvarado	11.0	11.6	11.6	11.8	11.9	12.0
RANCHO BERNARDO_1	Miramar	2.0	2.0	2.0	2.0	2.0	2.0
RANCHO BERNARDO_2	Miramar	1.8	1.7	1.7	1.7	1.7	1.7
RANCHO SANTA FE	Miramar	0.2	0.2	0.2	0.2	0.2	0.2
RANCHO VALLEY	Miramar	0.1	0.1	0.1	0.1	0.1	0.1
REDWOOD VILLAGE	Alvarado	3.9	3.9	3.9	3.9	4.0	4.0
REMINGTON HILLS	Otay	0.1	0.4	0.4	0.5	0.5	0.6
RIDGEGATE LA JOLLA	Alvarado/Miramar	0.02	0.02	0.02	0.02	0.02	0.02
RIDGEGATE REDUCED	Alvarado/Miramar	0.01	0.01	0.01	0.01	0.01	0.01
RIVIERA DEL SOL	Otay	0.03	0.03	0.03	0.04	0.04	0.04
RIVIERA SHORES	Otay	0.05	0.05	0.05	0.05	0.04	0.04
ROBINHOOD RIDGE	Otay	0.1	0.1	0.1	0.1	0.1	0.1
RODEFER	Alvarado	0.02	0.02	0.02	0.02	0.02	0.02
ROSECRANS	Alvarado	0.5	0.5	0.5	0.5	0.5	0.6
SAN ANDRES	Miramar	0.1	0.1	0.1	0.1	0.1	0.1

S15 Scenario Water Demand Forecast by Pressure Zone (mgd)[1] *(continued)*

Pressure Zone Name	Service Area	Base Period[2]	2030	2035	2040	2045	2050
SAN CARLOS	Alvarado	2.1	2.1	2.0	2.0	2.0	2.0
SAN CARLOS ESTATES	Alvarado	0.2	0.2	0.2	0.2	0.2	0.2
SAN CARLOS REDUCED	Alvarado	0.1	0.1	0.1	0.1	0.1	0.1
SANTA LUZ	Miramar	0.1	0.1	0.1	0.1	0.1	0.1
SCRIPPS EASTVIEW	Miramar	0.1	0.1	0.1	0.1	0.1	0.1
SCRIPPS HILLS	Miramar	0.1	0.1	0.1	0.1	0.1	0.1
SCRIPPS MESA VISTA	Miramar	0.1	0.1	0.1	0.1	0.1	0.1
SCRIPPS RANCH BSTD	Miramar	0.2	0.2	0.2	0.2	0.2	0.2
SCRIPPS RANCH NORTH	Miramar	0.7	0.7	0.7	0.7	0.7	0.7
SCRIPPS RANCH_1	Miramar	0.03	0.03	0.03	0.03	0.03	0.03
SCRIPPS RANCH_2	Miramar	2.7	2.7	2.7	2.7	2.7	2.7
SCRIPPS VALLEY	Miramar	0.5	0.5	0.5	0.5	0.5	0.5
SO LA JOLLA CLIFFS	Miramar	0.03	0.03	0.03	0.03	0.03	0.03
SO SAN DIEGO RESV	Otay	0.3	0.4	0.4	0.4	0.4	0.4
SOLEDAD MUIRLANDS	Alvarado/Miramar	1.2	1.2	1.2	1.2	1.2	1.2
SOUTH CREEK	Miramar	0.2	0.2	0.2	0.2	0.2	0.2
STALLIONS CROSSING	Miramar	0.02	0.02	0.02	0.02	0.02	0.02
STOCKWOOD	Miramar	0.02	0.02	0.02	0.02	0.02	0.02
STONEBRIDGE	Miramar	0.3	0.2	0.2	0.2	0.2	0.2
SYCAMORE ESTATES	Miramar	0.1	0.1	0.1	0.1	0.1	0.1
TIERRASANTA	Alvarado/Miramar	0.5	0.5	0.5	0.5	0.5	0.5
TIERRASANTA NORTE	Alvarado/Miramar	0.1	0.1	0.1	0.1	0.1	0.1
TIERRASANTA SUR	Alvarado/Miramar	0.1	0.1	0.1	0.1	0.1	0.1
TORREY PINES	Miramar	0.4	0.4	0.4	0.4	0.4	0.4
UNIVERSITY HEIGHTS_1	Alvarado	19.8	20.8	21.0	21.4	21.7	21.9
UNIVERSITY HEIGHTS_2	Alvarado/Otay	0.4	0.4	0.4	0.4	0.4	0.4
WABASH MESA	Alvarado	0.02	0.03	0.03	0.03	0.03	0.03

Notes:
(1) The forecast includes potable water demand only. NRW is included and assumed constant across zones.
(2) Average water use from FY 2022 through FY 2024.

S15 Scenario Water Demand Forecast by Pressure Zone (AFY)[1]

Pressure Zone Name	Service Area	Base Period[2]	2030	2035	2040	2045	2050
ALLIED GARDENS	Alvarado	1,192	1,203	1,208	1,226	1,258	1,289
ALVARADO_1	Alvarado	15,264	15,193	15,236	15,384	15,592	15,794
ALVARADO_2	Alvarado/Otay	326	317	317	318	317	322
ALVARADO_3	Alvarado/Otay	157	157	163	163	164	163
ALVARADO_4	Alvarado	2,038	2,023	2,032	2,056	2,090	2,102
ARCHER	Alvarado/Miramar	7	7	7	7	7	7
ARNOLD HILLS	Alvarado	8	9	9	9	9	9
ARROYO SORRENTO	Miramar	881	850	852	850	845	839
BAY TERRACE	Alvarado/Otay	182	179	177	176	174	171
BAYVIEW	Alvarado/Miramar	306	307	306	306	305	304
BERNARDO HEIGHTS	Miramar	849	800	804	803	801	801
BERNARDO OAKS_1	Miramar	827	816	814	813	810	807
BERNARDO OAKS_2	Miramar	966	943	941	938	933	925
BERNARDO TRAILS	Miramar	415	397	397	396	396	394
BLACK MTN RANCH	Miramar	221	221	221	220	220	219
CARMEL COUNTRY	Miramar	523	508	507	507	513	512
CARMEL MALL	Miramar	1,412	1,607	1,611	1,608	1,606	1,598
CARMEL VALLEY	Miramar	1,039	1,022	1,021	1,019	1,027	1,022
CARMEL VIEW	Otay	176	176	175	177	176	174
CARROLL RIDGE	Miramar	66	68	68	68	72	72
CATALINA	Alvarado	2,001	2,010	2,008	2,007	2,003	1,998
COLLEGE CANYON	Alvarado	176	170	169	168	166	164
CORNISH HILL	Alvarado	7	7	7	7	7	7
COUNTRY CASUAL	Alvarado	595	580	579	577	574	569
DEL CERRO	Alvarado	436	427	426	426	424	422
DEL MAR HILLS	Miramar	115	114	114	114	114	113
DEL MAR TERRACE	Miramar	115	110	109	109	109	108
DENNERY RD	Otay	168	163	164	164	162	160
EAGLE RIDGE	Alvarado	24	24	23	23	23	23
EL CAMINO	Miramar	12	12	12	12	13	13
GATEWAY	Alvarado	119	134	134	133	133	131
GLIDDEN	Alvarado/Miramar	6	6	6	6	6	6
GOLF COURSE_1	Miramar	47	45	45	45	45	45
GOLF COURSE_2	Miramar	12	17	17	17	17	17
HIDDEN TRAILS	Otay	59	57	59	59	58	58

S15 Scenario Water Demand Forecast by Pressure Zone (AFY)[1] *(continued)*

Pressure Zone Name	Service Area	Based Period[2]	2030	2035	2040	2045	2050
HILLSBOROUGH	Alvarado/Otay	153	146	146	146	145	144
IMPERIAL	Alvarado	18	18	18	28	28	28
KEARNY MESA	Alvarado/Miramar	6,263	6,300	6,342	6,431	6,439	6,422
LA JOLLA GARDENS	Miramar	489	481	476	475	471	466
LA JOLLA HERMOSA	Miramar	1,575	1,543	1,542	1,540	1,538	1,536
LA JOLLA MESA VISTA	Alvarado/Miramar	114	115	115	115	115	114
LA JOLLA PACIFICA	Alvarado/Miramar	204	199	199	199	198	197
LA JOLLA SHORES	Miramar	301	305	304	304	303	301
LA JOLLA SOLEDAD W	Alvarado/Miramar	359	350	350	350	349	348
LA JOLLA TOWNE	Miramar	789	779	780	788	794	800
LA MIRAGE	Alvarado	249	237	235	234	232	228
LIBERTY STATION	Alvarado	129	123	122	122	121	120
LOWER DEL MAR TERR	Miramar	66	64	64	64	64	64
LUSK PARK_1	Miramar	30	31	32	37	38	40
LUSK PARK_2	Miramar	204	197	198	200	208	209
LUSK PARK_3	Miramar	4,052	4,008	4,000	4,011	4,024	4,007
MAR VILLA	Miramar	21	19	19	19	19	19
MERCY HIGH	Miramar	13	13	13	13	13	13
MIRA MESA	Miramar	4,464	4,524	4,564	4,625	5,076	5,124
MIRAMAR	Miramar	5,830	5,744	5,746	5,752	5,852	5,835
MIRAMAR BOOSTED	Miramar	374	361	361	361	360	359
MISSION CITY	Alvarado	232	219	219	218	216	213
MONTE VERDE	Alvarado	155	156	155	155	155	154
MURPHY CANYON	Alvarado/Miramar	34	36	37	39	40	40
NORMAL HEIGHTS	Alvarado	1,773	1,799	1,803	1,828	1,837	1,851
NORTH CITY_1	Miramar	7,146	7,072	7,114	7,178	7,236	7,255
NORTH CITY_2	Miramar	8,770	8,658	8,787	8,814	8,788	8,753
NORTH CITY_3	Miramar	131	135	139	140	151	156
NORTH CITY_4	Miramar	116	114	114	114	114	113
NORTH VILLAGE	Miramar	867	829	836	924	920	913
NORTHWEST MESA	Alvarado/Miramar	12,719	12,760	12,812	12,826	12,918	12,958
OAKS NORTH	Miramar	16	15	14	14	14	14
OLD CLIFFS	Alvarado	35	35	35	35	32	32
OTAY MESA	Otay	1,008	1,181	1,242	1,313	1,769	1,806
OTAY REGULATED	Otay	4,077	4,186	4,223	4,255	4,266	4,280

S15 Scenario Water Demand Forecast by Pressure Zone (AFY)[1] *(continued)*

Pressure Zone Name	Service Area	Base Period[2]	2030	2035	2040	2045	2050
PACIFIC BEACH	Alvarado/Miramar	6,028	5,897	5,888	5,916	5,905	5,876
PACIFICA	Alvarado/Miramar	5	5	5	5	5	5
PARADISE HILLS #1	Alvarado/Otay	640	619	616	614	609	602
PARADISE HILLS #2	Alvarado/Otay	18	18	18	18	18	18
PARADISE MESA	Alvarado/Otay	3,930	3,849	3,850	3,889	3,904	3,907
PARKVIEW	Alvarado/Miramar	190	190	190	190	189	189
PENASQUITOS	Miramar	1,608	1,716	1,710	1,707	1,697	1,682
PENASQUITOS PARK VW	Miramar	251	253	254	253	253	253
PINNACLE	Miramar	57	54	54	54	54	53
POINT LOMA_1	Alvarado	1,724	1,685	1,680	1,679	1,675	1,674
POINT LOMA_2	Alvarado	786	779	778	780	777	774
POMERADO PARK	Miramar	1,473	1,422	1,420	1,420	1,415	1,408
PRESTWICK ESTATES	Miramar	24	24	24	24	24	24
PRINCESS DEL SOL	Otay	5,507	5,484	5,481	5,478	5,471	5,461
PRINCESS GARDENS	Alvarado	9	9	9	11	10	10
PRINCIPAL DOWNTOWN	Alvarado	12,307	12,971	13,020	13,198	13,293	13,397
RANCHO BERNARDO_1	Miramar	2,274	2,221	2,215	2,214	2,205	2,190
RANCHO BERNARDO_2	Miramar	1,971	1,919	1,932	1,944	1,954	1,944
RANCHO SANTA FE	Miramar	187	232	232	232	232	232
RANCHO VALLEY	Miramar	70	68	68	68	68	68
REDWOOD VILLAGE	Alvarado	4,365	4,356	4,358	4,399	4,436	4,468
REMINGTON HILLS	Otay	109	411	480	539	585	638
RIDGEGATE LA JOLLA	Alvarado/Miramar	26	26	26	26	26	26
RIDGEGATE REDUCED	Alvarado/Miramar	15	15	15	15	15	15
RIVIERA DEL SOL	Otay	39	38	39	40	41	42
RIVIERA SHORES	Otay	56	53	53	53	50	50
ROBINHOOD RIDGE	Otay	59	61	62	62	63	63
RODEFER	Alvarado	22	22	22	22	22	22
ROSECRANS	Alvarado	603	574	575	590	592	627
SAN ANDRES	Miramar	64	61	61	61	61	61
SAN CARLOS	Alvarado	2,355	2,301	2,296	2,291	2,282	2,267
SAN CARLOS ESTATES	Alvarado	252	250	250	249	249	248
SAN CARLOS REDUCED	Alvarado	70	69	69	69	69	68

S15 Scenario Water Demand Forecast by Pressure Zone (AFY)[1] *(continued)*

Pressure Zone Name	Service Area	Base Period[2]	2030	2035	2040	2045	2050
SANTA LUZ	Miramar	94	92	92	92	92	92
SCRIPPS EASTVIEW	Miramar	103	100	100	100	99	99
SCRIPPS HILLS	Miramar	113	112	112	112	112	111
SCRIPPS MESA VISTA	Miramar	123	117	116	116	114	113
SCRIPPS RANCH BSTD	Miramar	243	236	236	236	235	234
SCRIPPS RANCH NORTH	Miramar	797	781	779	778	775	771
SCRIPPS RANCH_1	Miramar	37	36	36	36	36	36
SCRIPPS RANCH_2	Miramar	3,056	3,002	2,999	3,045	3,039	3,031
SCRIPPS VALLEY	Miramar	547	525	524	522	519	516
SO LA JOLLA CLIFFS	Miramar	28	28	28	28	28	28
SO SAN DIEGO RESV	Otay	343	402	425	439	447	458
SOLEDAD MUIRLANDS	Alvarado/Miramar	1,306	1,315	1,313	1,312	1,308	1,301
SOUTH CREEK	Miramar	207	205	204	204	203	203
STALLIONS CROSSING	Miramar	19	18	18	18	18	18
STOCKWOOD	Miramar	18	18	18	18	18	18
STONEBRIDGE	Miramar	281	274	273	273	272	270
SYCAMORE ESTATES	Miramar	149	148	148	148	147	147
TIERRASANTA	Alvarado/Miramar	606	571	570	577	575	573
TIERRASANTA NORTE	Alvarado/Miramar	157	147	146	146	146	145
TIERRASANTA SUR	Alvarado/Miramar	84	103	103	103	102	102
TORREY PINES	Miramar	396	395	395	396	400	400
UNIVERSITY HEIGHTS_1	Alvarado	22,144	23,327	23,569	23,975	24,280	24,497
UNIVERSITY HEIGHTS_2	Alvarado/Otay	464	440	439	439	437	434
WABASH MESA	Alvarado	28	29	29	29	28	29

Notes:
(1) The forecast includes potable water demand only. NRW is included and assumed constant across zones.
(2) Average water use from FY 2022 through FY 2024.

ATTACHMENT D S15 SCENARIO PRESSURE ZONE REPORT

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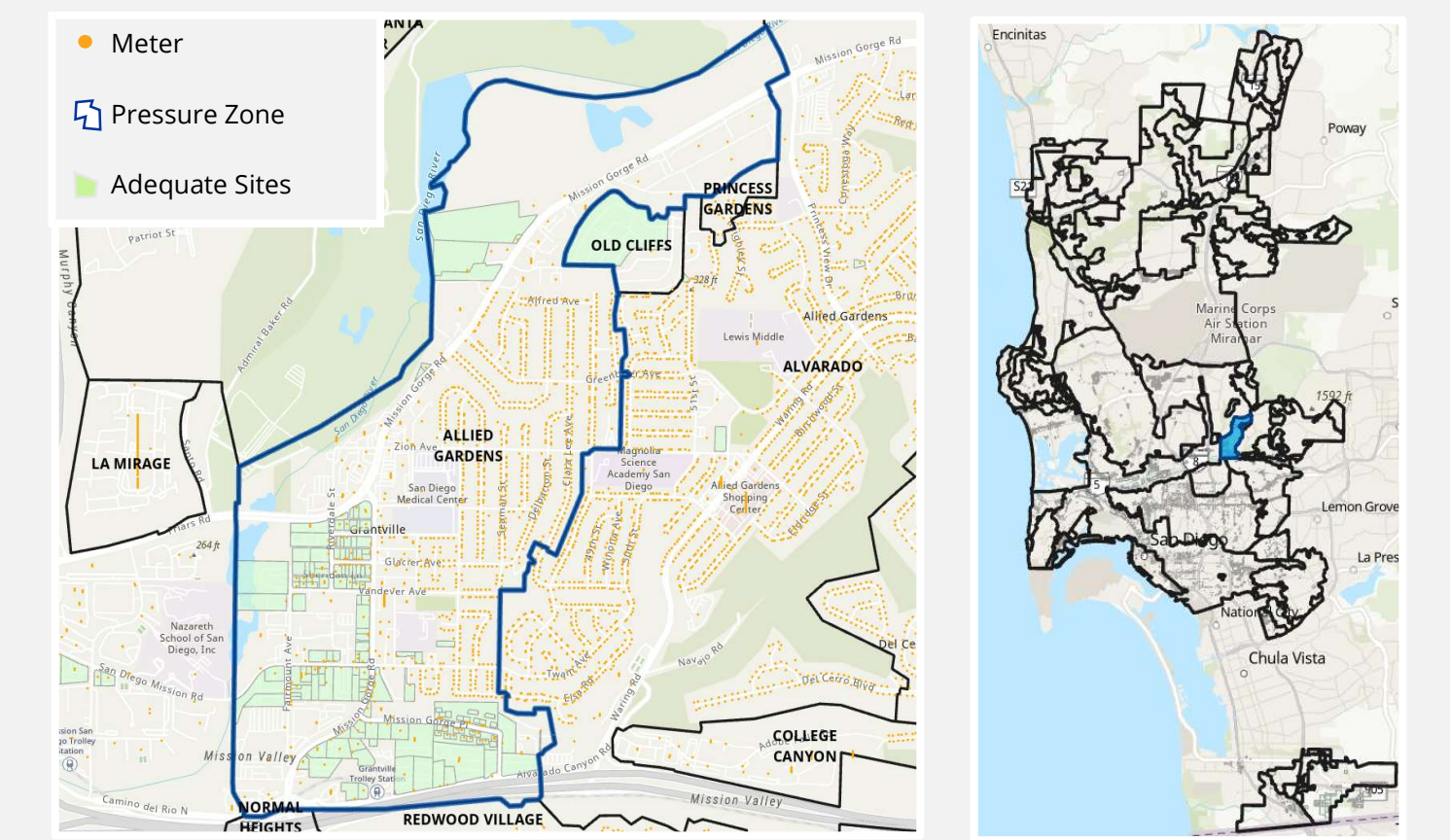
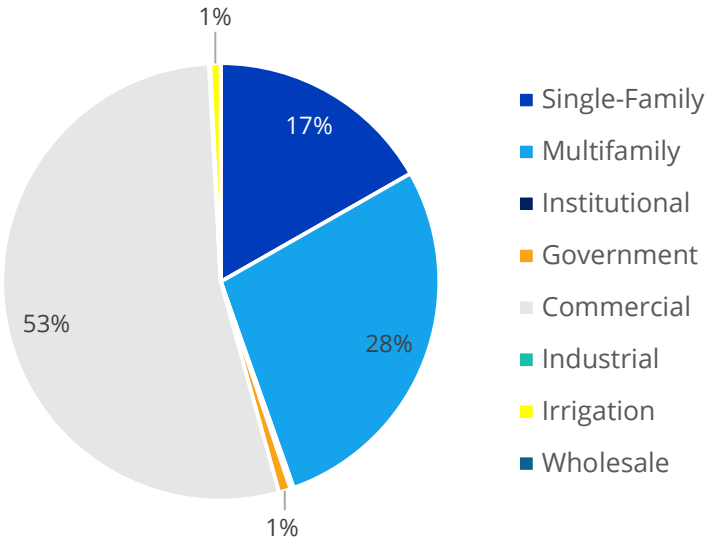
ALLIED GARDENS | Alvarado | HGL 355



The Allied Gardens pressure zone falls within the Alvarado service area and is roughly bordered by the San Diego River to the west, roughly Clara Lee Avenue and Halifax Street to the east, I-8 to the south, and Friars Road to the north. Twain Avenue and Zion Avenue run east/west through the zone and Friars Road and Mission Gorge Road run north/south. More than 50% of the water use is commercial, with another 26% multifamily. On average in FY22-24, water use totaled 0.94 mgd and is projected to reach 1.03 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	8,735	8,882	9,034	9,088	9,388	9,950	10,471
Household Population	8,617	8,767	8,917	8,970	9,268	9,832	10,359
Single-Family Households	889	882	880	880	880	880	879
Multifamily Households	3,162	3,321	3,418	3,458	3,620	3,932	4,259
Total Households	4,051	4,203	4,298	4,338	4,500	4,812	5,138
Employees	8,906	8,926	8,952	8,990	9,160	9,434	9,708
Additional Nonresidential Parcels (count)	n/a	0	0	1	2	4	6
Additional Nonresidential Parcels (square feet)	n/a	0	0	32,290	64,580	129,159	189,645

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	163,732	161,999	161,529	161,435	161,323	161,098	160,589
Multifamily	271,983	280,656	287,494	290,037	302,458	325,994	349,098
Institutional	2,262	2,262	2,262	2,262	2,262	2,262	2,262
Government	8,529	8,081	7,634	7,634	7,634	7,634	7,634
Commercial	522,395	521,119	519,844	521,527	523,210	526,576	529,226
Industrial	776	776	776	776	776	776	776
Irrigation	7,561	7,122	6,683	6,683	6,683	6,683	6,683
Wholesale	0	0	0	0	0	0	0
Potable Total	**977,239**	**982,017**	**986,222**	**990,354**	**1,004,345**	**1,031,023**	**1,056,268**
Recycled	0	0	0	0	0	0	0

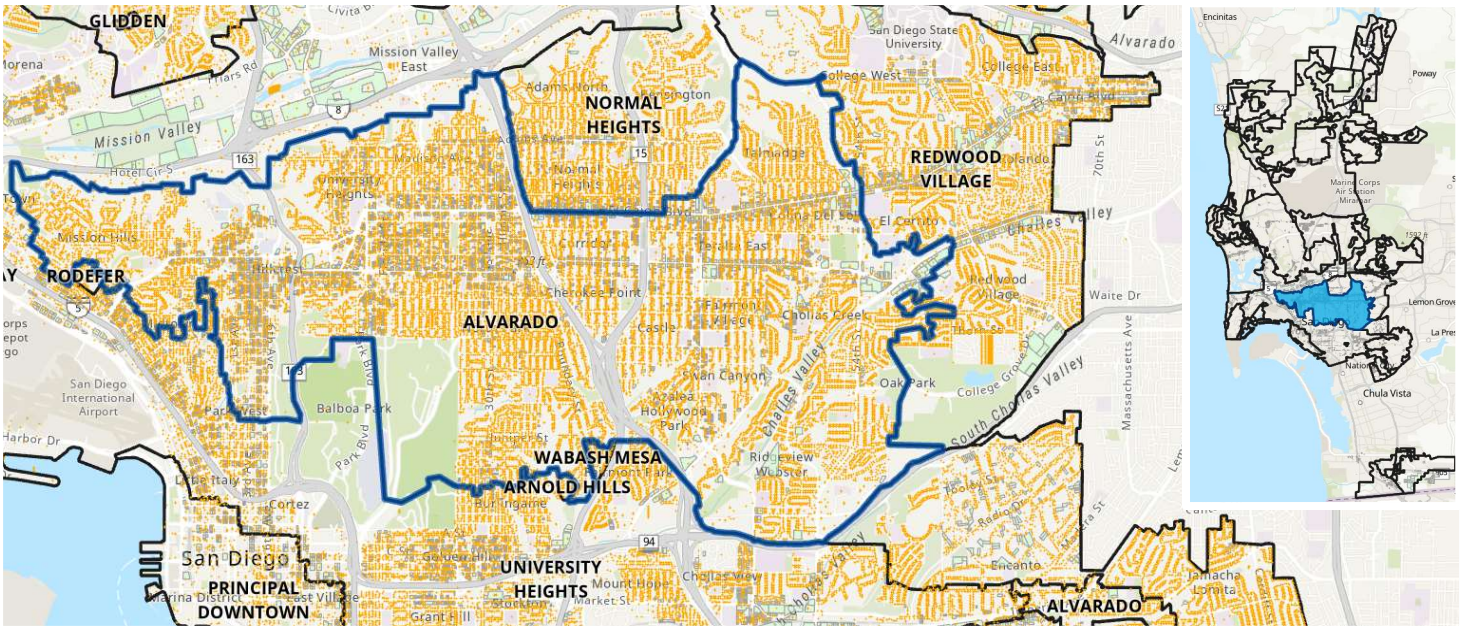
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	183	181	181	181	181	180	180
Multifamily	305	314	322	325	339	365	391
Institutional	3	3	3	3	3	3	3
Government	10	9	9	9	9	9	9
Commercial	585	584	582	584	586	590	593
Industrial	1	1	1	1	1	1	1
Irrigation	8	8	7	7	7	7	7
Wholesale	0	0	0	0	0	0	0
Potable Total	1,095	1,100	1,105	1,109	1,125	1,155	1,183
Recycled	0	0	0	0	0	0	0

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

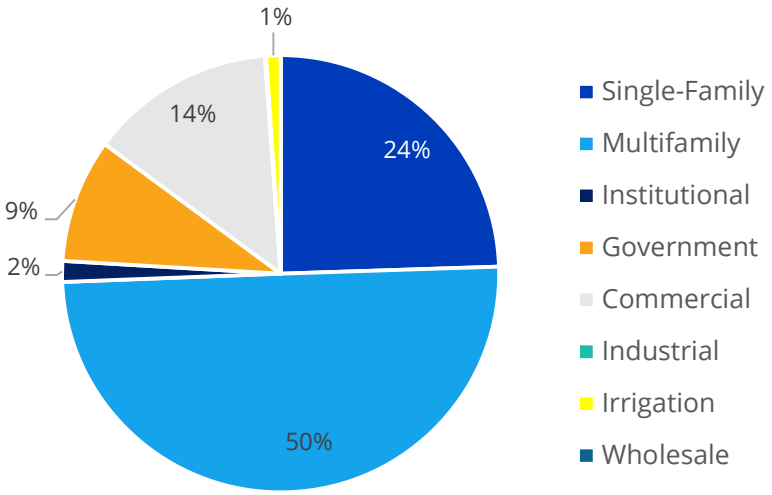
ALVARADO_1 | Alvarado | HGL 536



- Meter
- Pressure Zone
- Adequate Sites

The Alvarado 1 pressure zone falls within the Alvarado service area and is roughly bordered by I-5 to the west, Collwood Boulevard and Chollas Fill Road to the east, Martin Luther King Jr. Freeway, Florida Drive, and Laurel Street to the south, and I-8 and El Cajon Road to the north. Nearly 50% of the water use is multifamily, with another 25% single-family. On average in FY22-24, water use totaled 12.82 mgd and is projected to reach 13.26 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	164,624	165,953	166,347	167,298	170,271	174,049	177,400
Household Population	162,967	164,441	164,789	165,725	168,628	172,441	176,006
Single-Family Households	18,569	17,710	17,237	16,940	16,452	16,060	15,500
Multifamily Households	53,425	56,929	58,274	59,640	62,082	65,643	69,860
Total Households	71,994	74,639	75,511	76,580	78,534	81,703	85,360
Employees	76,117	76,597	77,132	78,569	83,151	87,089	91,027
Additional Nonresidential Parcels (count)	n/a	4	8	20	58	90	124
Additional Nonresidential Parcels (square feet)	n/a	35,874	71,748	179,370	516,264	803,256	1,113,002

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	3,062,730	2,910,114	2,833,294	2,786,397	2,716,817	2,656,518	2,572,985
Multifamily	6,245,745	6,414,803	6,484,394	6,560,919	6,734,132	6,950,467	7,184,206
Institutional	192,365	190,299	188,232	188,232	188,232	188,232	188,395
Government	1,144,913	1,121,604	1,098,294	1,098,294	1,098,294	1,098,294	1,098,294
Commercial	1,717,859	1,717,434	1,717,010	1,722,620	1,740,377	1,755,337	1,770,544
Industrial	11,290	11,290	11,290	11,290	11,290	11,290	11,290
Irrigation	134,601	126,496	118,391	118,391	118,391	118,391	118,391
Wholesale	0	0	0	0	0	0	0
Potable Total	**12,509,503**	**12,492,039**	**12,450,905**	**12,486,143**	**12,607,532**	**12,778,529**	**12,944,105**
Recycled	278,150	246,074	246,074	246,074	246,074	246,074	246,074

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	3,431	3,260	3,174	3,121	3,043	2,976	2,882
Multifamily	6,996	7,186	7,263	7,349	7,543	7,786	8,047
Institutional	215	213	211	211	211	211	211
Government	1,282	1,256	1,230	1,230	1,230	1,230	1,230
Commercial	1,924	1,924	1,923	1,930	1,949	1,966	1,983
Industrial	13	13	13	13	13	13	13
Irrigation	151	142	133	133	133	133	133
Wholesale	0	0	0	0	0	0	0
Potable Total	14,012	13,993	13,947	13,986	14,122	14,314	14,499
Recycled	312	276	276	276	276	276	276

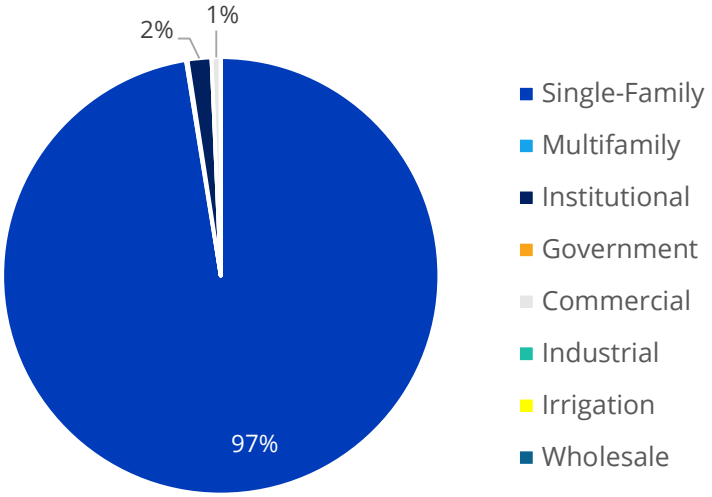
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

ALVARADO_2 | Alvarado/Otay | HGL 536

- Meter
- Pressure Zone
- Adequate Sites

The Alvarado 2 pressure zone falls within the Alvarado/Otay service area and is roughly bordered by Paradise Road and Ebb Street to the west, Gilmartin Drive and S Woodman Street to the east, Paradise Valley Road and Inyo Lane to the south, and Pittsburgh Avenue to the north. This is a small residential zone with Plaza Boulevard and Division Street being two of the main roadways that run throughout. 97% of the water use is single-family. On average in FY22-24, water use totaled 0.27 mgd and is projected to remain around 0.27 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	6,020	5,736	5,646	5,592	5,563	5,462	5,402
Household Population	5,977	5,700	5,606	5,551	5,521	5,420	5,373
Single-Family Households	1,506	1,483	1,473	1,471	1,464	1,455	1,481
Multifamily Households	59	62	65	70	87	102	116
Total Households	1,565	1,545	1,538	1,541	1,551	1,557	1,597
Employees	617	617	618	620	642	649	656
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	261,511	255,815	253,582	252,733	251,151	248,841	251,011
Multifamily	331	765	1,198	1,913	4,305	6,365	8,220
Institutional	4,737	4,563	4,390	4,390	4,390	4,390	4,390
Government	0	0	0	0	0	0	0
Commercial	1,783	1,783	1,783	1,783	1,783	1,783	1,783
Industrial	0	0	0	0	0	0	0
Irrigation	0	0	0	0	0	0	0
Wholesale	0	0	0	0	0	0	0
Potable Total	**268,362**	**262,926**	**260,953**	**260,819**	**261,630**	**261,378**	**265,403**
Recycled	0	0	0	0	0	0	0

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	293	287	284	283	281	279	281
Multifamily	0	1	1	2	5	7	9
Institutional	5	5	5	5	5	5	5
Government	0	0	0	0	0	0	0
Commercial	2	2	2	2	2	2	2
Industrial	0	0	0	0	0	0	0
Irrigation	0	0	0	0	0	0	0
Wholesale	0	0	0	0	0	0	0
Potable Total	301	295	292	292	293	293	297
Recycled	0	0	0	0	0	0	0

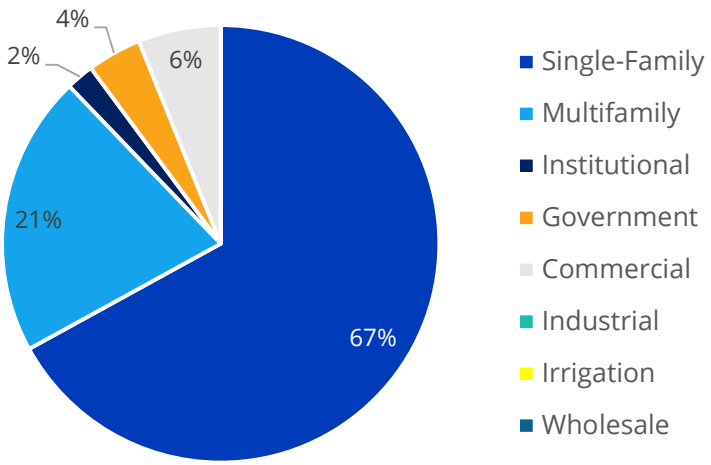
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

ALVARADO_3 | Alvarado/Otay | HGL 536

- Meter
- Pressure Zone
- Adequate Sites

The Alvardo 3 pressure zone falls within the Alvarado/Otay service area and is roughly bordered by 65th Street to the west, Meadowbrook Drive to the east, mostly undeveloped land south of Jamacha Road to the south, and land just north of Brooklyn Street and Lisbon Street to the north. This is a small residential zone with Imperial Avenue, Jamacha Road, and Lisbon Street as the main roadways that run throughout the zone. Nearly 70% of the water use is single-family, with another 21% multifamily. On average in FY22-24, water use totaled 0.13 mgd and is projected to reach 0.14 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	2,133	2,108	2,079	2,055	2,040	2,035	1,970
Household Population	2,113	2,091	2,061	2,037	2,022	2,017	1,955
Single-Family Households	469	482	481	481	484	496	498
Multifamily Households	133	135	135	135	135	136	136
Total Households	602	617	616	616	619	632	634
Employees	279	281	289	307	311	314	317
Additional Nonresidential Parcels (count)	n/a	0	0	2	3	3	3
Additional Nonresidential Parcels (square feet)	n/a	0	0	86,271	94,866	94,866	94,866

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	88,005	89,733	89,375	89,198	89,450	90,801	90,562
Multifamily	27,326	26,753	26,450	26,176	25,893	25,492	24,730
Institutional	2,683	2,604	2,525	2,525	2,525	2,525	2,525
Government	5,276	5,013	4,750	4,750	4,750	4,750	4,750
Commercial	8,020	8,020	8,020	13,033	13,481	13,481	13,481
Industrial	0	0	0	0	0	0	0
Irrigation	0	0	0	0	0	0	0
Wholesale	0	0	0	0	0	0	0
Potable Total	**131,310**	**132,123**	**131,120**	**135,681**	**136,098**	**137,048**	**136,047**
Recycled	0	0	0	0	0	0	0

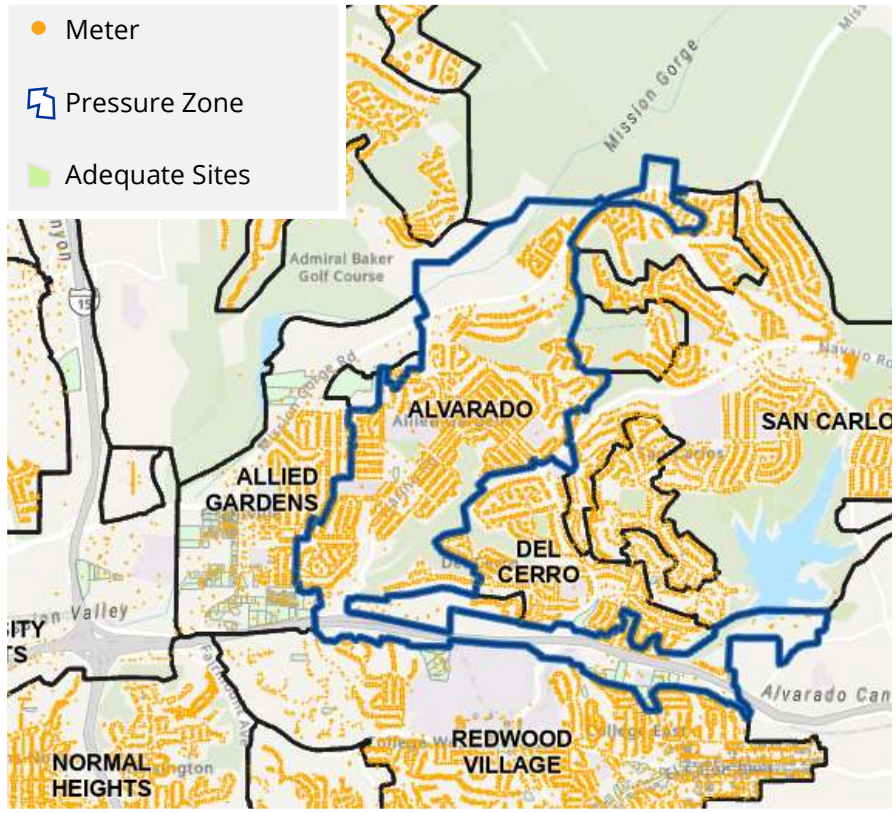
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	99	101	100	100	100	102	101
Multifamily	31	30	30	29	29	29	28
Institutional	3	3	3	3	3	3	3
Government	6	6	5	5	5	5	5
Commercial	9	9	9	15	15	15	15
Industrial	0	0	0	0	0	0	0
Irrigation	0	0	0	0	0	0	0
Wholesale	0	0	0	0	0	0	0
Potable Total	147	148	147	152	152	154	152
Recycled	0	0	0	0	0	0	0

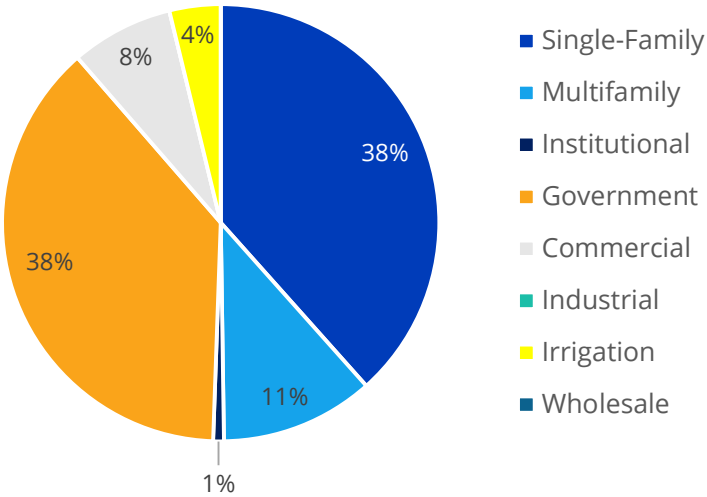
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

ALVARADO_4 | Alvarado | HGL 536



The Alvarado 4 pressure zone falls within the Alvarado service area and is roughly bordered by Estrella Avenue and Winona Avenue to the west, the San Carlos 849 zone to the east, Kumeyaay Highway to the south, and Mission Gorge Road to the north. Waring Road, Fontaine Street, 50th Street, Mission Gorge Road, and a section of I-8 all run through this zone. Nearly 40% of the water use is single-family, with another 38% government. On average in FY22-24, water use totaled 1.74 mgd and is projected to reach 1.79 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	12,436	12,081	12,162	12,298	12,602	13,149	13,088
Household Population	12,388	12,034	12,114	12,250	12,552	13,100	13,045
Single-Family Households	3,910	3,905	3,900	3,899	3,898	3,896	3,891
Multifamily Households	1,295	1,246	1,322	1,423	1,594	1,926	2,041
Total Households	5,205	5,151	5,222	5,322	5,492	5,822	5,932
Employees	5,840	5,857	5,885	5,921	6,007	6,106	6,205
Additional Nonresidential Parcels (count)	n/a	0	0	0	2	3	5
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	114,436	167,852	282,288

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	666,319	663,331	661,719	660,671	659,715	657,649	654,357
Multifamily	197,327	200,191	200,150	208,408	223,268	251,221	257,781
Institutional	13,749	13,749	13,749	13,749	19,794	19,794	25,839
Government	661,083	659,344	657,605	657,605	657,605	657,605	657,605
Commercial	131,423	131,177	130,930	130,930	130,930	132,762	132,762
Industrial	0	0	0	0	0	0	0
Irrigation	65,834	62,542	59,250	59,250	59,250	59,250	59,250
Wholesale	0	0	0	0	0	0	0
Potable Total	**1,735,734**	**1,730,334**	**1,723,403**	**1,730,614**	**1,750,563**	**1,778,281**	**1,787,595**
Recycled	0	0	0	0	0	0	0

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

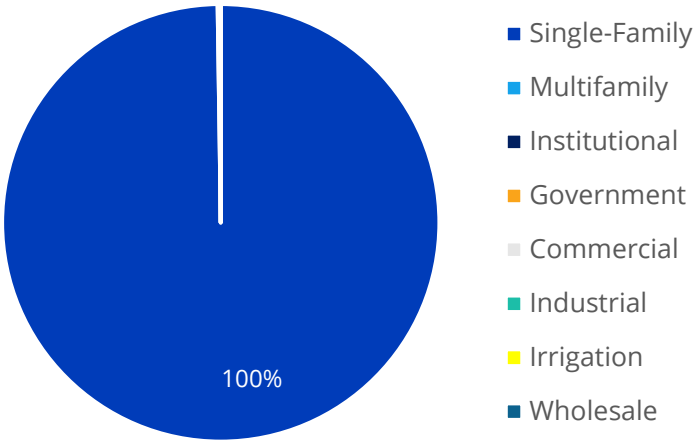
Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	746	743	741	740	739	737	733
Multifamily	221	224	224	233	250	281	289
Institutional	15	15	15	15	22	22	29
Government	741	739	737	737	737	737	737
Commercial	147	147	147	147	147	149	149
Industrial	0	0	0	0	0	0	0
Irrigation	74	70	66	66	66	66	66
Wholesale	0	0	0	0	0	0	0
Potable Total	1,944	1,938	1,930	1,939	1,961	1,992	2,002
Recycled	0	0	0	0	0	0	0

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

ARCHER | Alvarado/Miramar | HGL 330

The Archer pressure zone falls within the Alvarado/Miramar service area and is roughly bordered by Van Nuys Street to the north, Agate Street to the south, Cass Street to the west, and Everts Street to the east. 100% of the water use is single-family. On average in FY22-24, water use totaled 0.0058 mgd and is projected to reach 0.0059 mgd in 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	121	121	119	118	118	116	113
Household Population	119	120	118	117	116	114	112
Single-Family Households	35	36	36	36	36	35	35
Multifamily Households	22	22	21	21	21	22	22
Total Households	57	58	57	57	57	57	57
Employees	64	65	65	66	67	69	70
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	5,797	5,962	5,963	5,954	5,946	5,787	5,770
Multifamily	13	13	138	13	13	112	112
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	0	0	0	0	0	0	0
Wholesale	0	0	0	0	0	0	0
Potable Total	**5,811**	**5,975**	**6,101**	**5,967**	**5,959**	**5,900**	**5,882**
Recycled	0	0	0	0	0	0	0

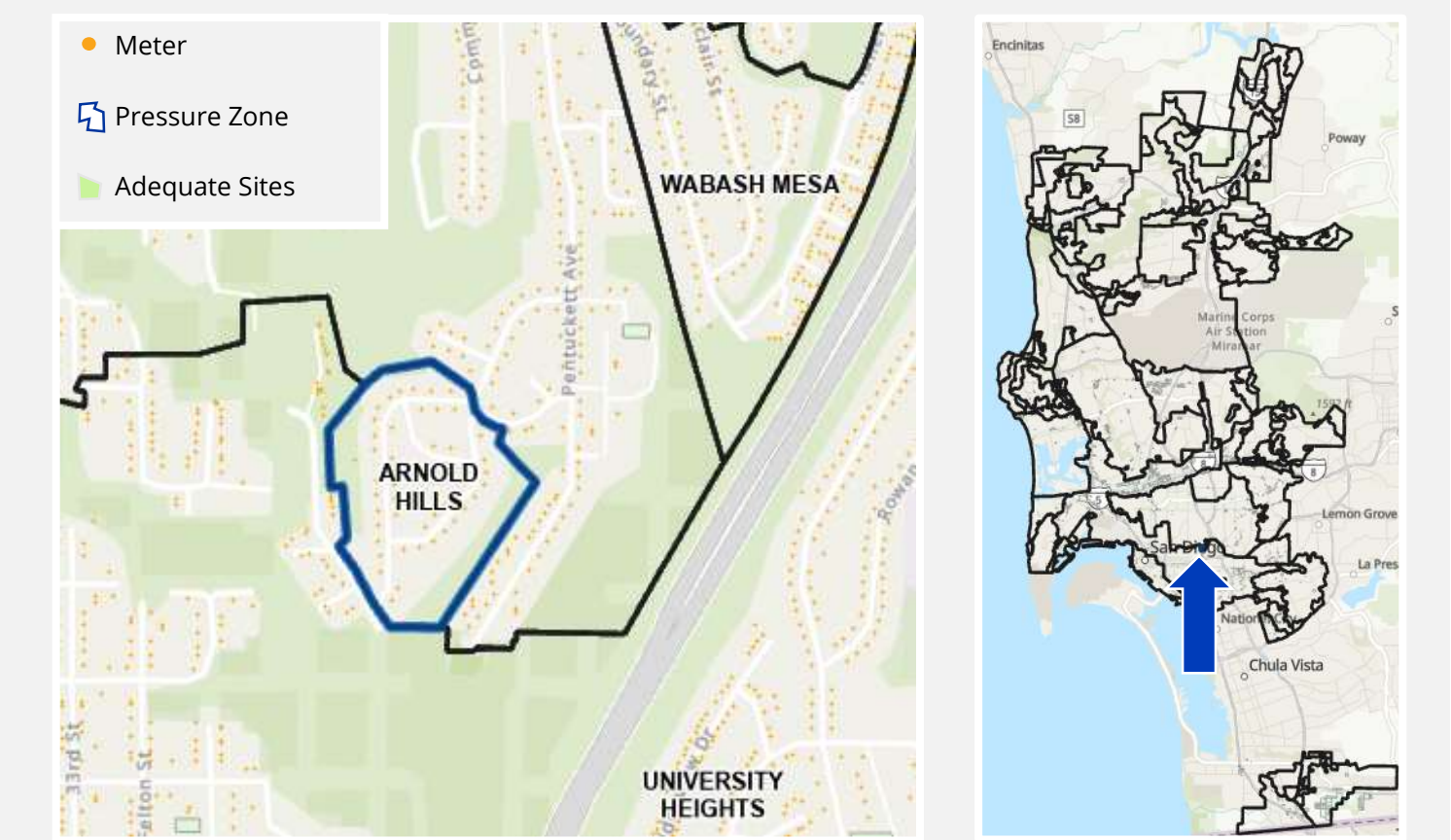
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	6	7	7	7	7	6	6
Multifamily	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	0	0	0	0	0	0	0
Wholesale	0	0	0	0	0	0	0
Potable Total	7	7	7	7	7	7	7
Recycled	0	0	0	0	0	0	0

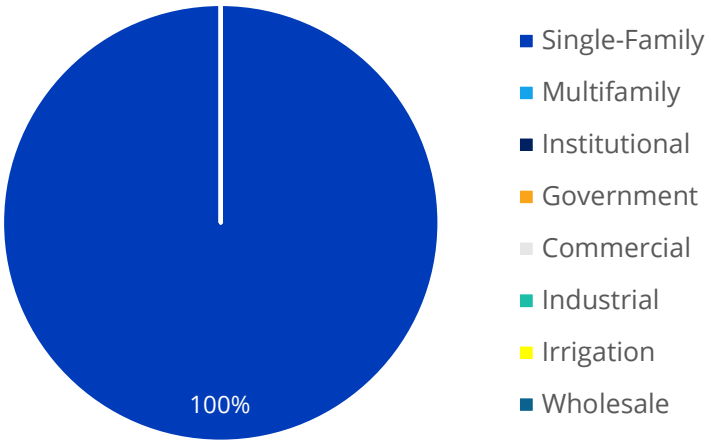
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

ARNOLD HILLS | Alvarado | HGL 358



The Arnold Hills pressure zone falls within the Alvarado service area and is roughly bordered by Whaley Avenue to the west, Pentuckett Avenue to the east, Petra Place to the north, and unoccupied land to the west of the Escondido Freeway to the south. Being that it's a very small residential zone, there are no major roadways that traverse throughout, but it is located close to the Escondido Freeway and Martin Luther King Jr. Freeway. 100% of the water use is single-family. On average in FY22-24, water use totaled 0.0073 mgd and is projected to reach 0.0075 mgd.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	126	129	127	127	130	130	128
Household Population	123	127	125	125	127	128	125
Single-Family Households	47	49	49	49	49	49	49
Multifamily Households	1	1	1	2	4	5	5
Total Households	48	50	50	51	53	54	54
Employees	33	33	33	33	35	35	35
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	7,266	7,643	7,623	7,598	7,570	7,557	7,527
Multifamily	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	0	0	0	0	0	0	0
Wholesale	0	0	0	0	0	0	0
Potable Total	**7,266**	**7,643**	**7,623**	**7,598**	**7,570**	**7,557**	**7,527**
Recycled	0	0	0	0	0	0	0

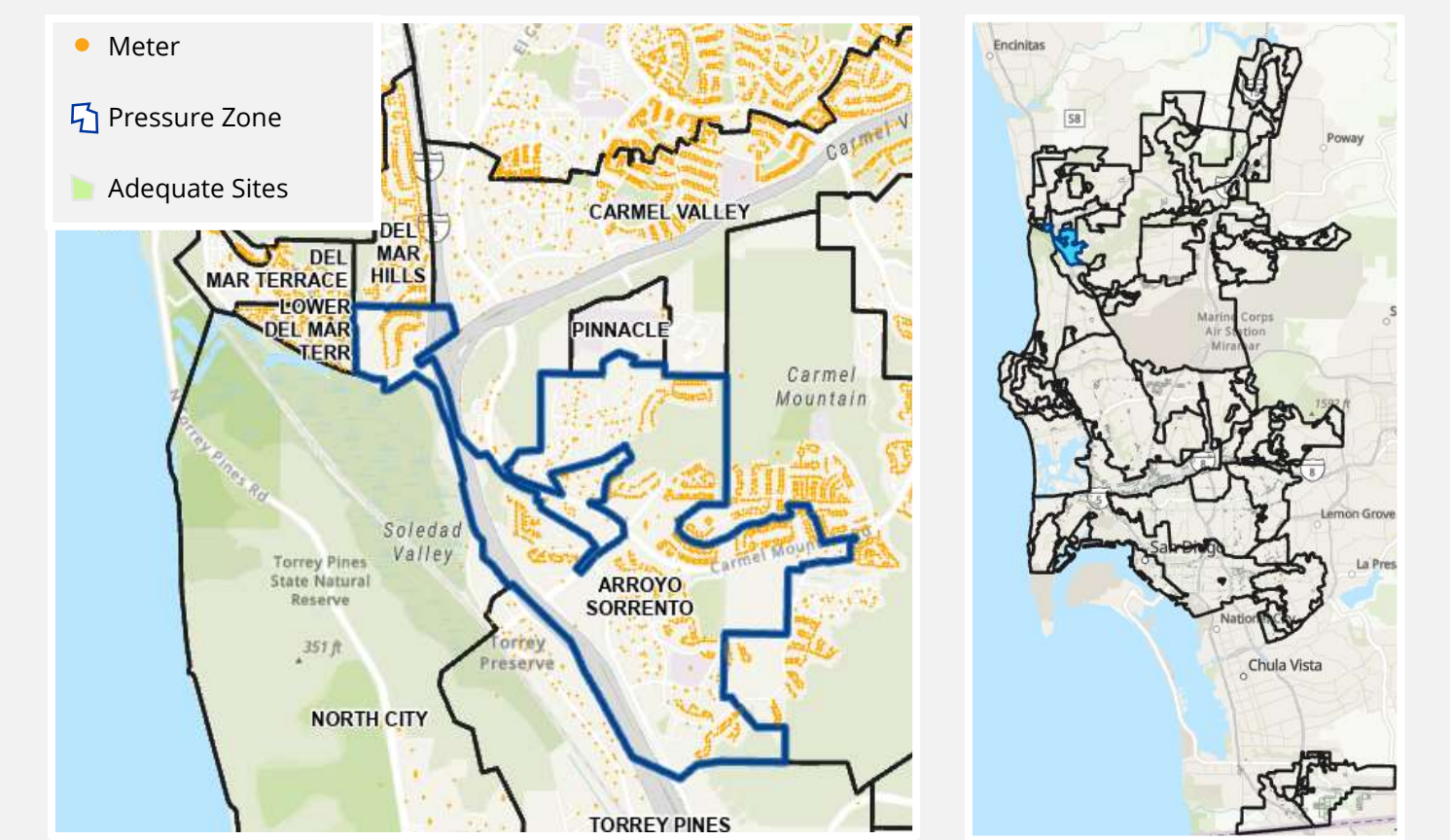
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	8	9	9	9	8	8	8
Multifamily	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	0	0	0	0	0	0	0
Wholesale	0	0	0	0	0	0	0
Potable Total	8	9	9	9	8	8	8
Recycled	0	0	0	0	0	0	0

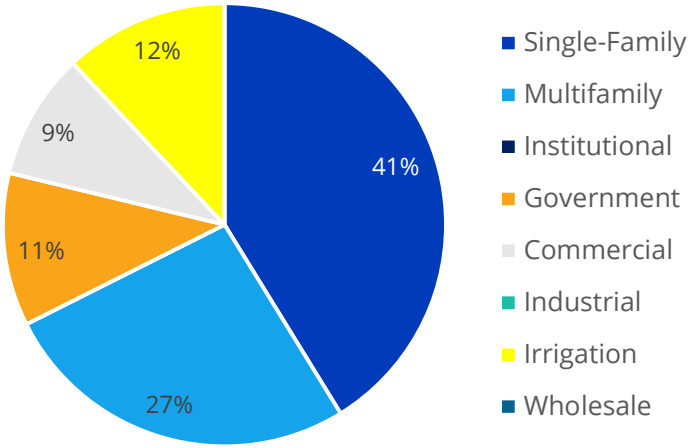
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

ARROYO SORRENTO | Miramar | HGL 470



The Arroyo Sorrento pressure zone falls within the Miramar service area and is bordered by I-5 to the west, The North City 610 zone to the east, Torrey Pines 330 to the south, and Pinnacle 470 to the north. This is a medium sized zone close to I-5. El Camino Real, Vista Sorrento Parkway, and Carmel Mountain Roadway are all main roadways through this zone. More than 40% of the water use is single-family, with another 27% multifamily. On average in FY22-24, water use totaled 0.76 mgd and is projected to slightly decline to 0.73 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	6,231	6,119	6,033	5,985	5,943	5,844	5,694
Household Population	6,231	6,119	6,033	5,985	5,943	5,844	5,694
Single-Family Households	1,056	1,067	1,065	1,065	1,065	1,064	1,062
Multifamily Households	1,410	1,406	1,394	1,397	1,399	1,401	1,399
Total Households	2,466	2,473	2,459	2,462	2,464	2,465	2,461
Employees	5,098	5,121	5,168	5,226	5,297	5,345	5,393
Additional Nonresidential Parcels (count)	n/a	0	0	1	1	1	1
Additional Nonresidential Parcels (square feet)	n/a	0	0	270,909	270,909	270,909	270,909

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	313,499	314,331	313,535	313,038	312,614	311,543	309,952
Multifamily	200,741	197,497	197,003	194,209	193,055	190,309	186,455
Institutional	0	0	0	0	0	0	0
Government	85,128	80,885	76,643	76,643	76,643	76,643	76,643
Commercial	70,333	69,310	68,287	68,287	68,287	68,287	68,287
Industrial	0	0	0	4,602	4,602	4,602	4,602
Irrigation	91,123	86,567	82,010	82,010	82,010	82,010	82,010
Wholesale	0	0	0	0	0	0	0
Potable Total	**760,823**	**748,590**	**737,479**	**738,790**	**737,212**	**733,394**	**727,950**
Recycled	0	0	0	0	0	0	0

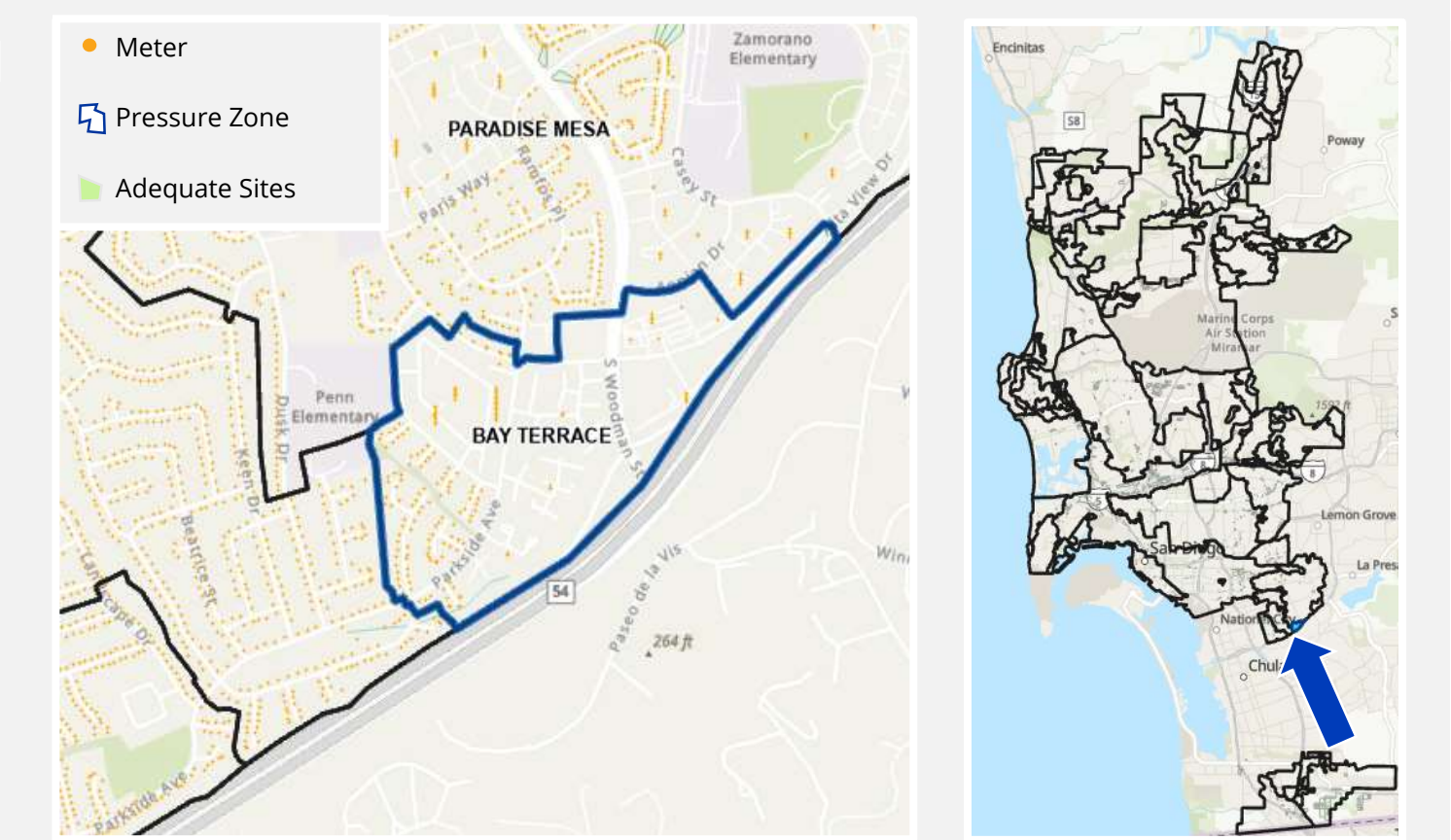
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	351	352	351	351	350	349	347
Multifamily	225	221	221	218	216	213	209
Institutional	0	0	0	0	0	0	0
Government	95	91	86	86	86	86	86
Commercial	79	78	76	76	76	76	76
Industrial	0	0	0	5	5	5	5
Irrigation	102	97	92	92	92	92	92
Wholesale	0	0	0	0	0	0	0
Potable Total	852	839	826	828	826	822	815
Recycled	0	0	0	0	0	0	0

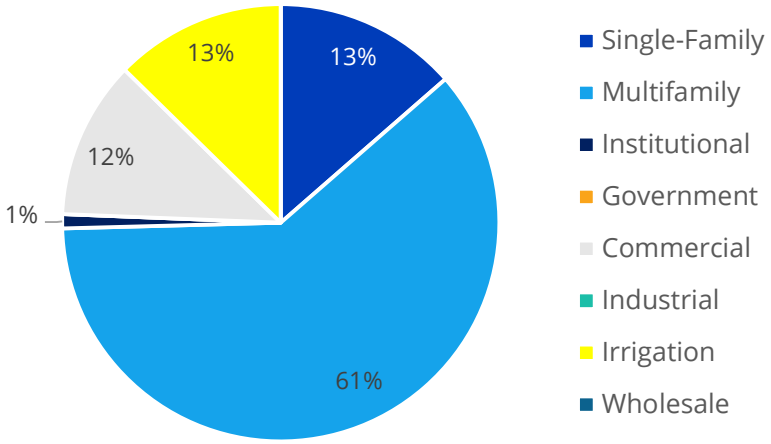
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

BAY TERRACE | Alvarado/Otay | HGL 490



The Bay Terrace pressure zone falls within the Alvarado/Otay service area and is bordered by the Paradise Hills 472 zone to the west, S Bay Freeway to the south and east, and approximately Alta View Drive and Appian Drive to the north. S Woodman Street and Parkside Avenue are main roadways through this zone. More than 70% of the water use is multifamily, with another 10% irrigation. On average in FY22-24, water use totaled 0.22 mgd and is projected to slightly decline to 0.21 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	1,687	1,703	1,679	1,662	1,645	1,609	1,558
Household Population	1,687	1,703	1,679	1,662	1,645	1,609	1,558
Single-Family Households	125	142	142	142	142	142	142
Multifamily Households	390	394	393	394	394	394	394
Total Households	515	536	535	536	536	536	536
Employees	194	195	196	197	199	201	202
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	20,251	22,846	22,803	22,761	22,725	22,648	22,537
Multifamily	90,946	89,050	88,201	87,272	86,477	84,790	82,393
Institutional	1,566	1,454	1,342	1,342	1,342	1,342	1,342
Government	0	0	0	0	0	0	0
Commercial	17,464	17,464	17,464	17,464	17,464	17,464	17,464
Industrial	0	0	0	0	0	0	0
Irrigation	18,854	17,732	16,610	16,610	16,610	16,610	16,610
Wholesale	0	0	0	0	0	0	0
Potable Total	**149,081**	**148,546**	**146,420**	**145,449**	**144,618**	**142,855**	**140,347**
Recycled	0	0	0	0	0	0	0

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

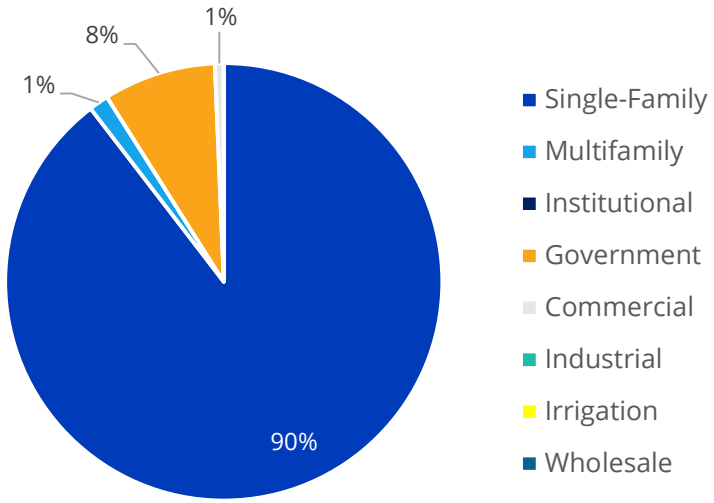
Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	23	26	26	25	25	25	25
Multifamily	102	100	99	98	97	95	92
Institutional	2	2	2	2	2	2	2
Government	0	0	0	0	0	0	0
Commercial	20	20	20	20	20	20	20
Industrial	0	0	0	0	0	0	0
Irrigation	21	20	19	19	19	19	19
Wholesale	0	0	0	0	0	0	0
Potable Total	167	166	164	163	162	160	157
Recycled	0	0	0	0	0	0	0

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

BAYVIEW | Alvarado/Miramar | HGL 463

The Bayview pressure zone falls within the Alvarado/Miramar service area and is bordered by La Jolla Mesa Drive to the west, Kate Sessions Park to the east, Calle Altura to the north, and Beryl Street to the south. Cardeno Drive and Lamont Street are a few of the main roadways that traverse this zone. More than 90% of the water use is single-family, with another 6% government. On average in FY22-24, water use totaled 0.26 mgd and is projected to remain around 0.26 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	2,132	2,106	2,079	2,063	2,048	2,019	1,985
Household Population	2,122	2,097	2,069	2,053	2,038	2,009	1,977
Single-Family Households	813	831	827	827	827	825	818
Multifamily Households	76	65	64	63	62	64	75
Total Households	889	896	891	890	889	889	893
Employees	851	856	866	880	899	918	936
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	224,855	227,869	226,778	226,521	226,280	225,390	223,454
Multifamily	3,678	4,989	3,713	3,692	3,672	3,723	4,841
Institutional	0	0	0	0	0	0	0
Government	20,865	20,091	19,317	19,317	19,317	19,317	19,317
Commercial	1,617	1,617	1,617	1,617	1,617	1,617	1,617
Industrial	0	0	0	0	0	0	0
Irrigation	0	0	0	0	0	0	0
Wholesale	0	0	0	0	0	0	0
Potable Total	**251,016**	**254,566**	**251,426**	**251,147**	**250,887**	**250,047**	**249,231**
Recycled	0	0	0	0	0	0	0

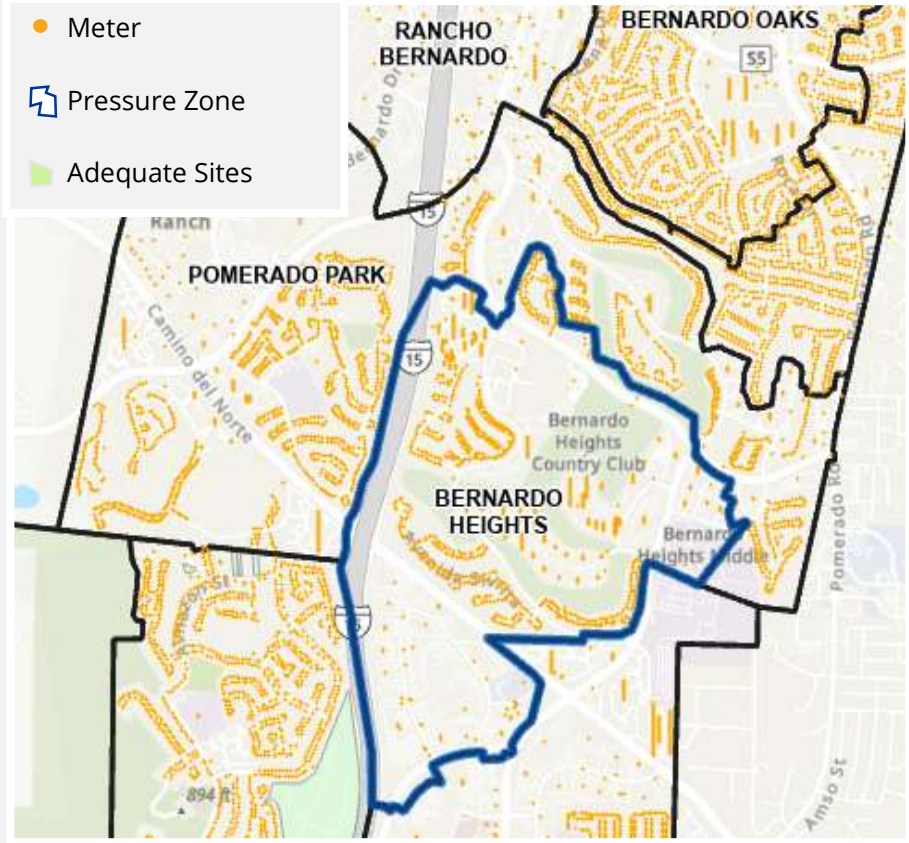
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	252	255	254	254	253	252	250
Multifamily	4	6	4	4	4	4	5
Institutional	0	0	0	0	0	0	0
Government	23	23	22	22	22	22	22
Commercial	2	2	2	2	2	2	2
Industrial	0	0	0	0	0	0	0
Irrigation	0	0	0	0	0	0	0
Wholesale	0	0	0	0	0	0	0
Potable Total	281	285	282	281	281	280	279
Recycled	0	0	0	0	0	0	0

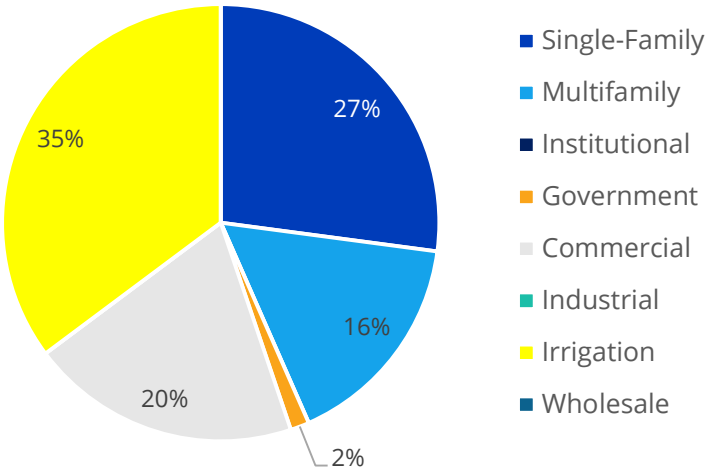
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

BERNARDO HEIGHTS | Miramar | HGL 1020



The Bernardo Heights pressure zone falls within the Miramar service area and is bordered by I-15 to the west, the Pomerado Park 920 zone to the east and north, and Rancho Carmel Drive to the south. I-15, Paseo Lucido, Bernardo Heights Parkway, and Avenida Venusto are main roadways running through or surrounding this zone. Nearly 40% of the water use is irrigation, with another 27% single-family. Commercial water use totals 17% and multifamily water use totals 16%. On average in FY22-24, water use totaled 0.76 mgd and is projected to slightly decline to 0.72 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	5,273	5,171	5,130	5,089	5,054	4,980	4,871
Household Population	5,264	5,162	5,121	5,080	5,045	4,972	4,863
Single-Family Households	991	977	975	975	974	974	973
Multifamily Households	1,251	1,253	1,253	1,253	1,254	1,254	1,253
Total Households	2,242	2,230	2,228	2,228	2,228	2,228	2,226
Employees	1,642	1,659	1,672	1,687	1,703	1,713	1,723
Additional Nonresidential Parcels (count)	n/a	0	0	1	1	1	2
Additional Nonresidential Parcels (square feet)	n/a	0	0	136,570	136,570	136,570	203,982

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	188,465	185,508	184,942	184,681	184,308	183,836	183,008
Multifamily	113,525	112,297	111,587	110,786	110,204	108,776	106,849
Institutional	0	0	0	0	0	0	0
Government	9,650	9,214	8,777	8,777	8,777	8,777	8,777
Commercial	139,189	137,161	135,133	139,814	139,814	139,814	142,379
Industrial	0	0	0	0	0	0	0
Irrigation	244,920	230,000	215,079	215,079	215,079	215,079	215,079
Wholesale	0	0	0	0	0	0	0
Potable Total	**695,750**	**674,179**	**655,519**	**659,138**	**658,183**	**656,282**	**656,092**
Recycled	58,885	46,536	46,536	46,536	46,536	46,536	46,536

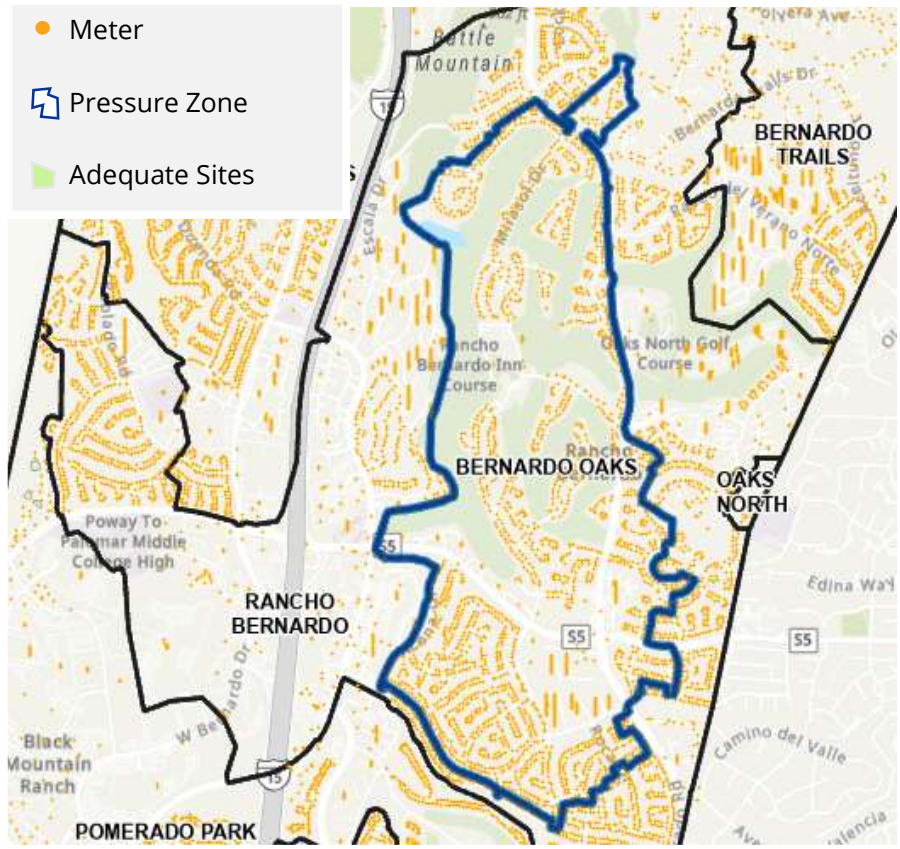
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	211	208	207	207	206	206	205
Multifamily	127	126	125	124	123	122	120
Institutional	0	0	0	0	0	0	0
Government	11	10	10	10	10	10	10
Commercial	156	154	151	157	157	157	159
Industrial	0	0	0	0	0	0	0
Irrigation	274	258	241	241	241	241	241
Wholesale	0	0	0	0	0	0	0
Potable Total	779	755	734	738	737	735	735
Recycled	66	52	52	52	52	52	52

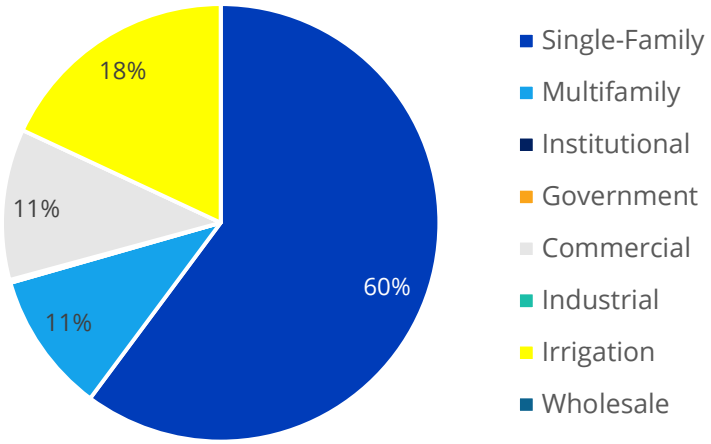
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

BERNARDO OAKS_1 | Miramar | HGL 680



The Bernardo Oaks 1 pressure zone falls within the Miramar service area and is bordered inclusively by the Rancho Bernardo Golf Course to the west, Pomerado Road to the east, the Rancho Bernardo 2 zone to the north, and Lomica Drive to the south. Rancho Bernardo Road and Pomerado Road are main roadways running this zone; it is also in close proximity to I-15. Nearly 60% of the water use is single-family, with another 20% irrigation and 12% commercial. On average in FY22-24, water use totaled 0.76 mgd and is projected to slightly decline to 0.74 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	6,129	6,114	6,060	6,010	5,975	5,878	5,735
Household Population	6,088	6,077	6,021	5,970	5,932	5,836	5,706
Single-Family Households	1,969	2,014	2,009	2,008	2,009	2,007	2,005
Multifamily Households	931	946	946	946	946	946	946
Total Households	2,900	2,960	2,955	2,954	2,955	2,953	2,951
Employees	4,094	4,145	4,213	4,237	4,267	4,287	4,307
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	407,816	414,833	413,403	412,661	412,347	410,944	409,119
Multifamily	70,471	70,478	70,011	69,509	69,100	68,156	66,859
Institutional	0	0	0	0	0	0	0
Government	1,576	1,488	1,400	1,400	1,400	1,400	1,400
Commercial	75,635	75,535	75,434	75,434	75,434	75,434	75,434
Industrial	0	0	0	0	0	0	0
Irrigation	122,311	115,255	108,199	108,199	108,199	108,199	108,199
Wholesale	0	0	0	0	0	0	0
Potable Total	**677,809**	**677,589**	**668,447**	**667,203**	**666,480**	**664,132**	**661,011**
Recycled	0	0	0	0	0	0	0

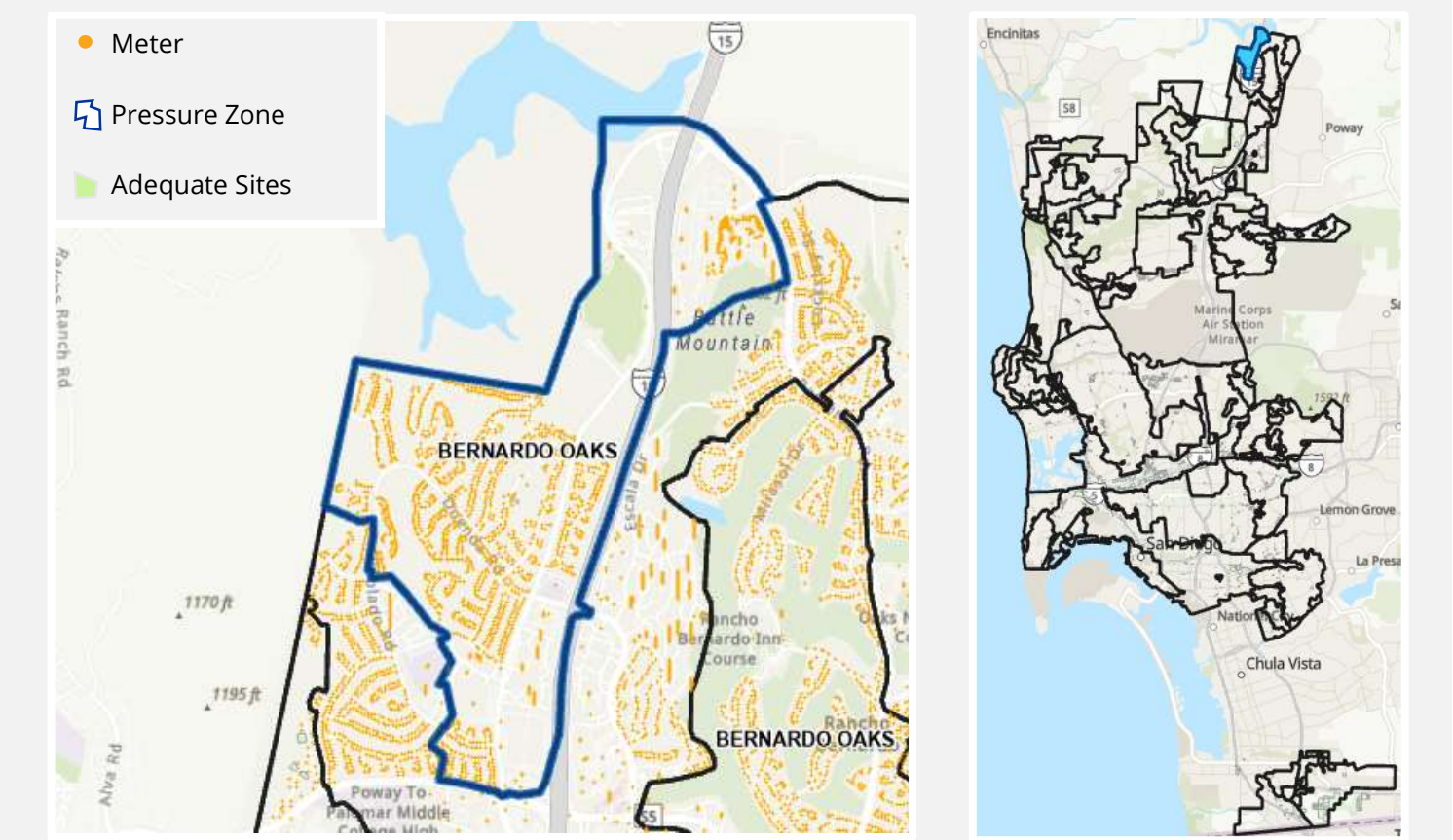
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	457	465	463	462	462	460	458
Multifamily	79	79	78	78	77	76	75
Institutional	0	0	0	0	0	0	0
Government	2	2	2	2	2	2	2
Commercial	85	85	84	84	84	84	84
Industrial	0	0	0	0	0	0	0
Irrigation	137	129	121	121	121	121	121
Wholesale	0	0	0	0	0	0	0
Potable Total	759	759	749	747	747	744	740
Recycled	0	0	0	0	0	0	0

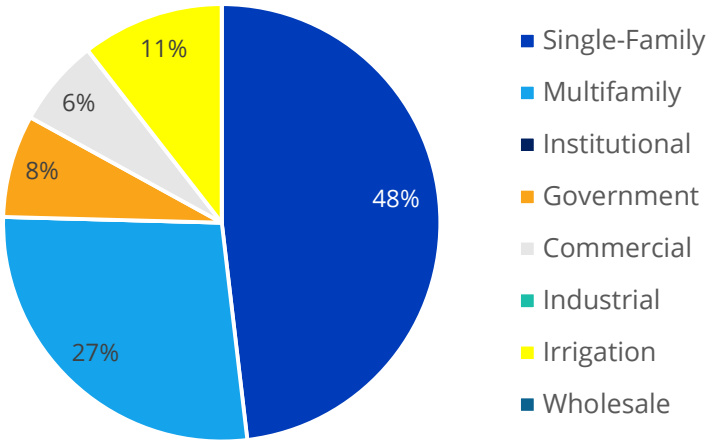
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

BERNARDO OAKS_2 | Miramar | HGL 680



The Bernardo Oaks 2 pressure zone falls within the Miramar service area and is bordered by hills and rough terrain to the west, I-15 to the east, West Bernardo Drive to the north, and Rancho Bernardo Road to the south. West Bernardo Drive and Duenda Road are main roadways through the zone. It is also bordered by major roadways I-15 and Rancho Bernardo Road to the south and east. Nearly 50% of the water use is single-family, with another 25% multifamily and 12% irrigation. On average in FY22-24, water use totaled 0.84 mgd and is projected to slightly decline to about 0.80 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	8,322	8,155	8,074	7,999	7,930	7,791	7,593
Household Population	8,322	8,155	8,074	7,999	7,930	7,791	7,593
Single-Family Households	1,763	1,760	1,755	1,754	1,754	1,753	1,752
Multifamily Households	1,577	1,583	1,583	1,583	1,583	1,583	1,583
Total Households	3,340	3,343	3,338	3,337	3,337	3,336	3,335
Employees	2,015	2,035	2,054	2,073	2,094	2,111	2,128
Additional Nonresidential Parcels (count)	n/a	0	0	1	1	1	1
Additional Nonresidential Parcels (square feet)	n/a	0	0	61,092	61,092	61,092	61,092

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	380,886	378,886	377,380	376,609	376,042	374,743	372,928
Multifamily	216,204	212,792	211,182	209,482	207,864	204,655	200,049
Institutional	0	0	0	0	0	0	0
Government	60,120	59,837	59,554	59,554	59,554	59,554	59,554
Commercial	51,273	51,273	51,273	52,034	52,034	52,034	52,034
Industrial	0	0	0	0	0	0	0
Irrigation	83,109	78,234	73,360	73,360	73,360	73,360	73,360
Wholesale	0	0	0	0	0	0	0
Potable Total	**791,593**	**781,022**	**772,749**	**771,039**	**768,853**	**764,346**	**757,924**
Recycled	0	0	0	0	0	0	0

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

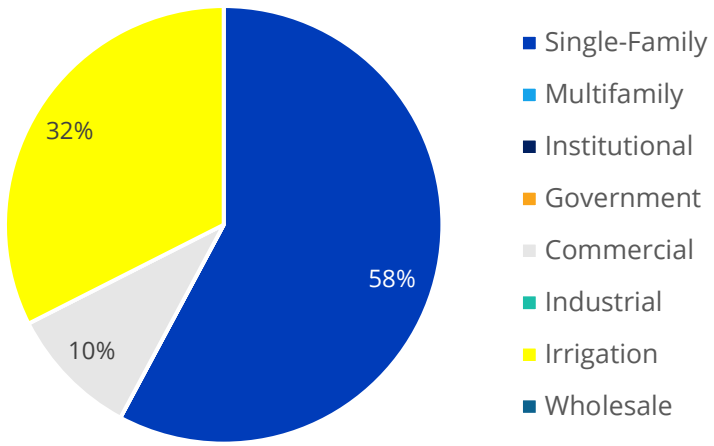
Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	427	424	423	422	421	420	418
Multifamily	242	238	237	235	233	229	224
Institutional	0	0	0	0	0	0	0
Government	67	67	67	67	67	67	67
Commercial	57	57	57	58	58	58	58
Industrial	0	0	0	0	0	0	0
Irrigation	93	88	82	82	82	82	82
Wholesale	0	0	0	0	0	0	0
Potable Total	887	875	866	864	861	856	849
Recycled	0	0	0	0	0	0	0

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

BERNARDO TRAILS | Miramar | HGL 800

The Bernardo Trails pressure zone falls within the Miramar service area and is roughly bordered by the Rancho Bernardo 2 zone to the west and south, Sycamore Creek Road and Highlands Ranch Road to the east, and Highland Valley Road to the north. Paseo Del Verano Norte, Aceituno Street, and Bernardo Trails Drive are main roadways through the zone. More than 50% of the water use is single-family, with another 35% irrigation. Commercial accounts for 11% of the water use. On average in FY22-24, water use totaled 0.39 mgd and is projected to slightly decline to about 0.38 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	2,615	2,577	2,551	2,531	2,513	2,475	2,420
Household Population	2,615	2,577	2,551	2,531	2,513	2,475	2,420
Single-Family Households	1,054	1,058	1,055	1,055	1,055	1,054	1,053
Multifamily Households	120	121	121	121	121	121	121
Total Households	1,174	1,179	1,176	1,176	1,176	1,175	1,174
Employees	367	369	370	373	377	380	382
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	196,650	197,025	196,048	195,781	195,539	194,846	193,917
Multifamily	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	33,031	33,031	33,031	33,031	33,031	33,031	33,031
Industrial	0	0	0	0	0	0	0
Irrigation	110,389	103,336	96,283	96,283	96,283	96,283	96,283
Wholesale	0	0	0	0	0	0	0
Potable Total	**340,071**	**333,392**	**325,362**	**325,095**	**324,854**	**324,161**	**323,231**
Recycled	0	0	0	0	0	0	0

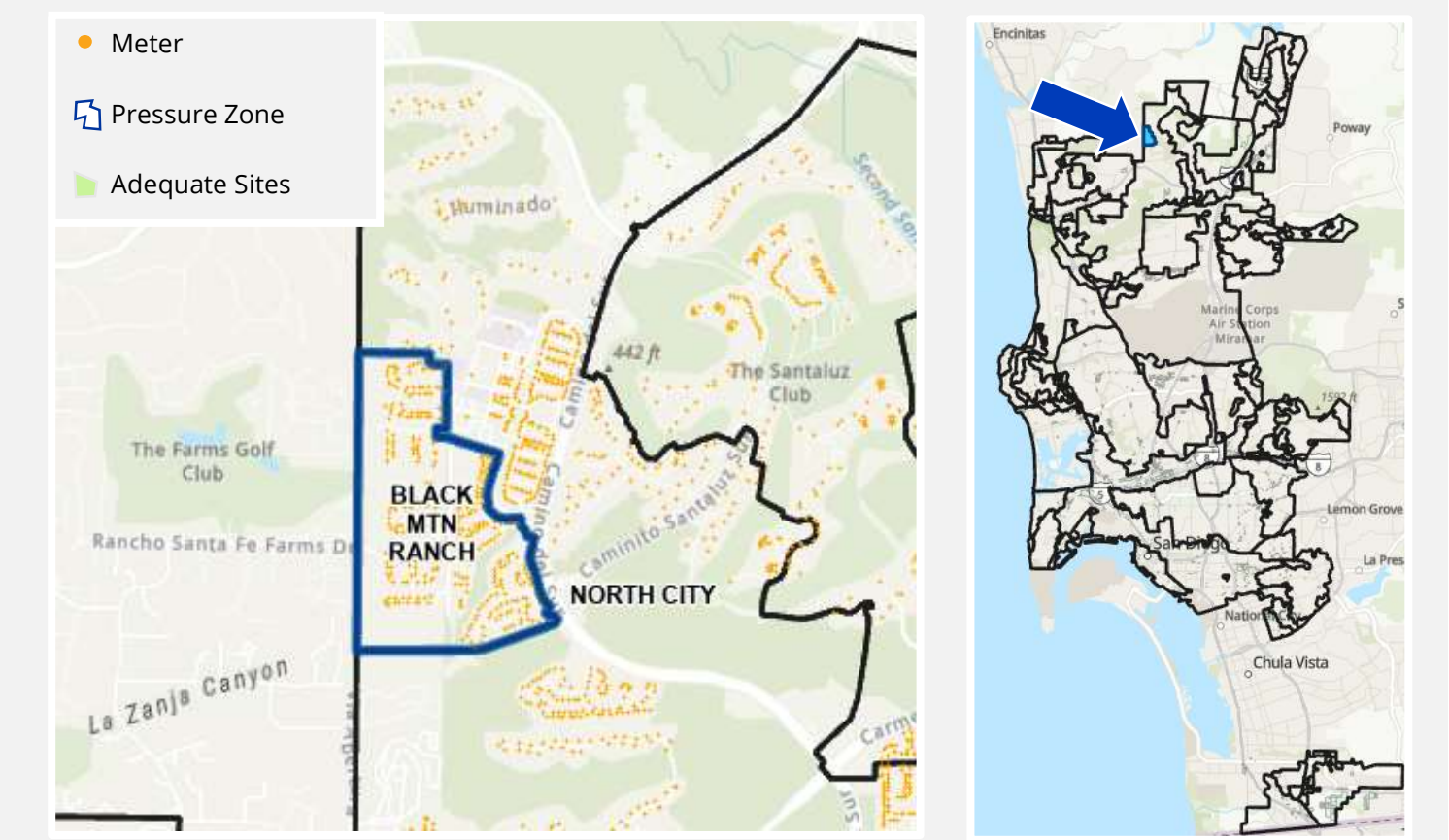
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	220	221	220	219	219	218	217
Multifamily	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	37	37	37	37	37	37	37
Industrial	0	0	0	0	0	0	0
Irrigation	124	116	108	108	108	108	108
Wholesale	0	0	0	0	0	0	0
Potable Total	381	373	364	364	364	363	362
Recycled	0	0	0	0	0	0	0

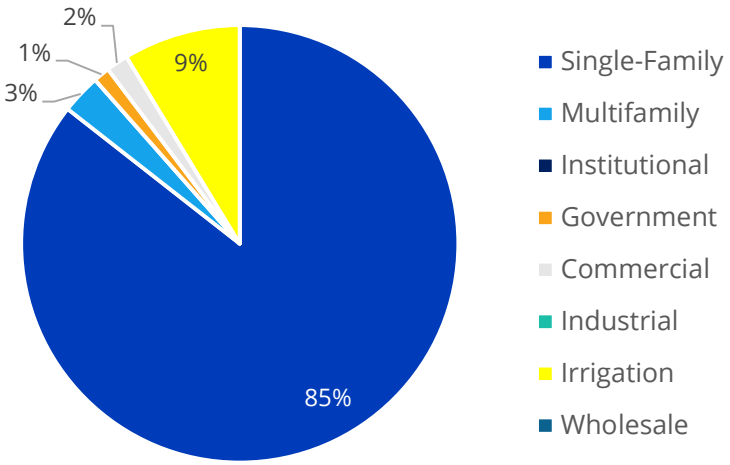
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

BLACK MTN RANCH | Miramar | HGL 520



The Black Mountain Ranch pressure zone falls within the Miramar service area and is roughly bordered by the North City 1 610 zone to the north, east, and south, and trials north of Via Abertura to the west. There are mainly just residential streets traversing this zone with Camino De La Luna running north/south through most of the zone. Camino Del Sur is a major roadway that borders the zone to the east. Nearly 90% of the water use is single-family, with another 9% irrigation. On average in FY22-24, water use totaled 0.20 mgd and is projected to remain around 0.20 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	833	878	856	847	840	826	800
Household Population	816	862	840	831	823	809	784
Single-Family Households	359	380	377	376	376	376	376
Multifamily Households	0	0	0	0	0	0	0
Total Households	359	380	377	376	376	376	376
Employees	356	360	364	366	371	375	378
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	154,803	158,831	157,792	157,404	157,147	156,692	155,863
Multifamily	5,286	5,155	5,086	5,054	5,010	4,934	4,797
Institutional	0	0	0	0	0	0	0
Government	2,179	2,169	2,158	2,158	2,158	2,158	2,158
Commercial	2,931	2,789	2,647	2,647	2,647	2,647	2,647
Industrial	0	0	0	0	0	0	0
Irrigation	15,688	14,705	13,722	13,722	13,722	13,722	13,722
Wholesale	0	0	0	0	0	0	0
Potable Total	**180,887**	**183,649**	**181,406**	**180,985**	**180,684**	**180,153**	**179,187**
Recycled	0	0	0	0	0	0	0

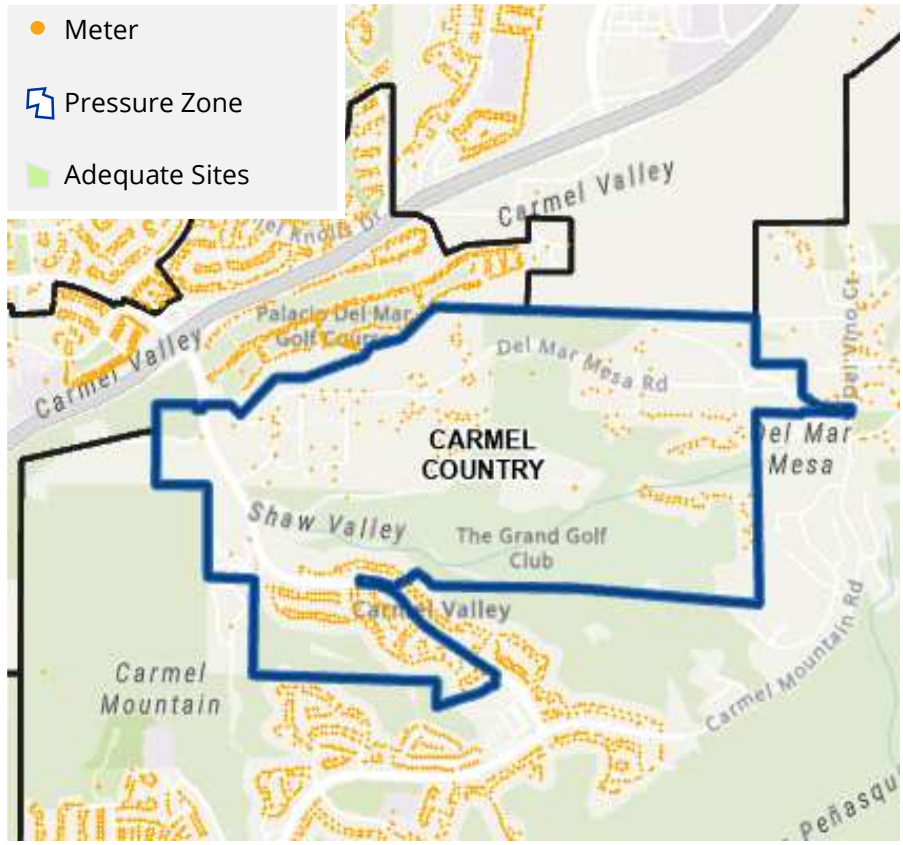
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	173	178	177	176	176	176	175
Multifamily	6	6	6	6	6	6	5
Institutional	0	0	0	0	0	0	0
Government	2	2	2	2	2	2	2
Commercial	3	3	3	3	3	3	3
Industrial	0	0	0	0	0	0	0
Irrigation	18	16	15	15	15	15	15
Wholesale	0	0	0	0	0	0	0
Potable Total	203	206	203	203	202	202	201
Recycled	0	0	0	0	0	0	0

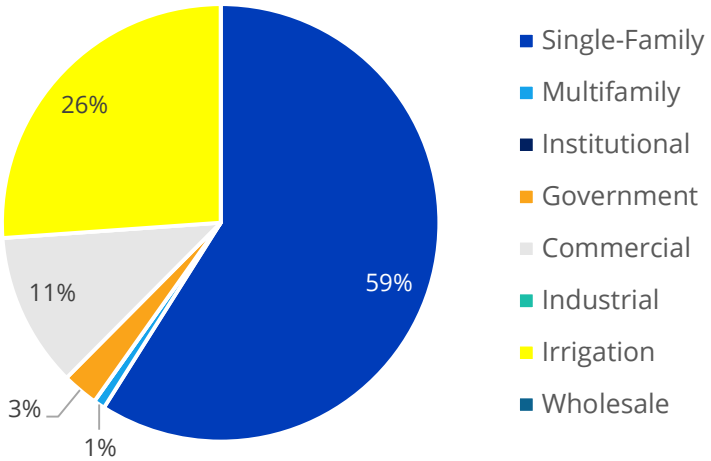
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

CARMEL COUNTRY | Miramar | HGL 495



The Carmel Country pressure zone falls within the Miramar service area and is roughly bordered by Carmel Country Road to the west, Carmel Mountain Road to the east, undeveloped hilly terrain on either side of the builds on Carmel Country Road to the south, and undeveloped hilly terrain south of the Caminito Exquisito to the north. Grand Del Mar Way, Del Mar Mesa Road, and Carmel Country Road are main roadways that traverse this zone. Nearly 60% of the water use is single-family, with another 28% irrigation and 10% commercial. On average in FY22-24, water use totaled 0.46 mgd and is projected to remain around 0.46 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	2,028	2,099	2,073	2,054	2,038	2,084	2,032
Household Population	2,028	2,099	2,073	2,054	2,038	2,084	2,032
Single-Family Households	439	439	437	437	437	468	467
Multifamily Households	208	253	252	253	253	255	255
Total Households	647	692	689	690	690	723	722
Employees	421	446	463	488	540	563	586
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	252,728	251,294	250,481	250,017	249,678	254,778	253,555
Multifamily	3,620	9,503	9,603	9,576	9,552	9,730	9,659
Institutional	0	0	0	0	0	0	0
Government	11,320	10,632	9,944	9,944	9,944	9,944	9,944
Commercial	49,051	49,051	49,051	49,051	49,051	49,051	49,051
Industrial	0	0	0	0	0	0	0
Irrigation	111,839	104,542	97,246	97,246	97,246	97,246	97,246
Wholesale	0	0	0	0	0	0	0
Potable Total	**428,557**	**425,022**	**416,324**	**415,834**	**415,471**	**420,749**	**419,455**
Recycled	200,224	161,137	161,137	161,137	161,137	161,137	161,137

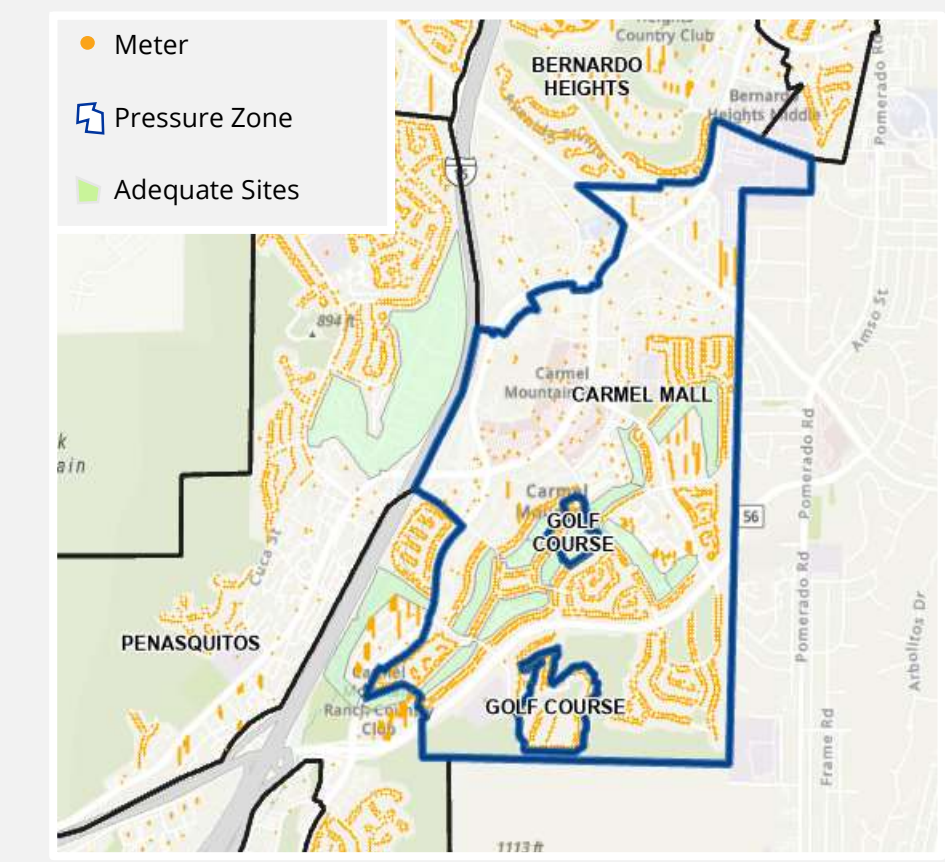
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

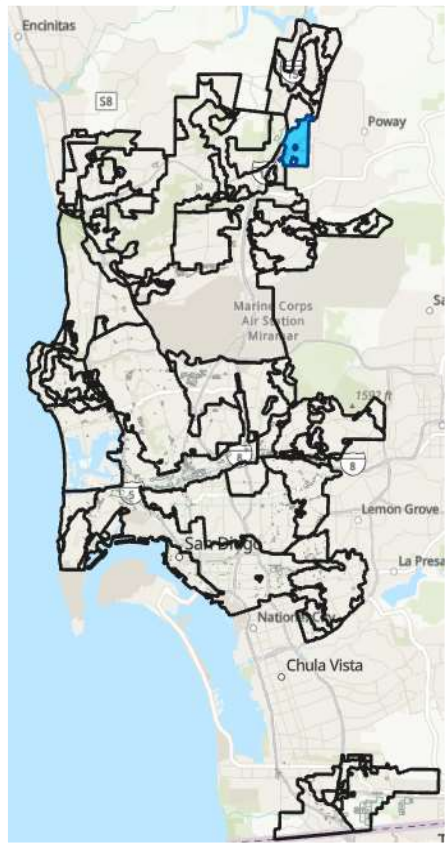
Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	283	281	281	280	280	285	284
Multifamily	4	11	11	11	11	11	11
Institutional	0	0	0	0	0	0	0
Government	13	12	11	11	11	11	11
Commercial	55	55	55	55	55	55	55
Industrial	0	0	0	0	0	0	0
Irrigation	125	117	109	109	109	109	109
Wholesale	0	0	0	0	0	0	0
Potable Total	480	476	466	466	465	471	470
Recycled	224	180	180	180	180	180	180

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

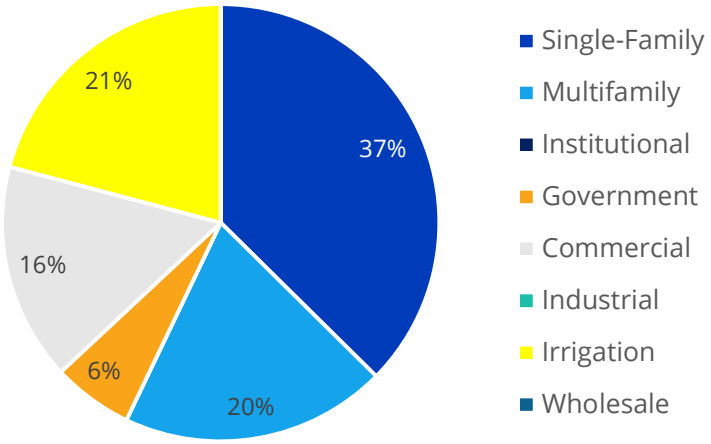
CARMEL MALL | Miramar | HGL 920





The Carmel Mall pressure zone falls within the Miramar service area and is roughly bordered by Rancho Carmel Drive to the west, open space parallel to Essence Road, Esprit Avenue, and Via Corsini to the east, Van Dam Peak to the south, and Rancho Bernardo High School to the north. Nearly 40% of the water use is single-family, with another 22% irrigation and 19% multifamily. On average in FY22-24, water use totaled 1.25 mgd and is projected to reach 1.40 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	9,218	11,742	11,655	11,554	11,470	11,283	11,009
Household Population	9,090	11,616	11,528	11,428	11,341	11,155	10,889
Single-Family Households	2,286	3,419	3,422	3,421	3,420	3,418	3,416
Multifamily Households	1,313	1,308	1,309	1,309	1,310	1,310	1,310
Total Households	3,599	4,727	4,731	4,730	4,730	4,728	4,726
Employees	10,021	10,063	10,113	10,167	10,238	10,293	10,347
Additional Nonresidential Parcels (count)	n/a	0	0	2	2	3	3
Additional Nonresidential Parcels (square feet)	n/a	0	0	148,092	148,092	331,979	331,979

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	432,633	636,682	636,560	635,769	635,053	633,574	631,547
Multifamily	228,027	223,106	220,910	219,231	217,840	214,715	210,197
Institutional	0	0	0	0	0	0	0
Government	68,988	67,269	65,550	65,550	65,550	65,550	65,550
Commercial	186,155	184,172	182,189	187,327	187,327	187,327	187,327
Industrial	0	0	0	0	0	3,124	3,124
Irrigation	241,453	226,804	212,155	212,155	212,155	212,155	212,155
Wholesale	0	0	0	0	0	0	0
Potable Total	**1,157,256**	**1,338,033**	**1,317,363**	**1,320,031**	**1,317,925**	**1,316,445**	**1,309,900**
Recycled	0	0	0	0	0	0	0

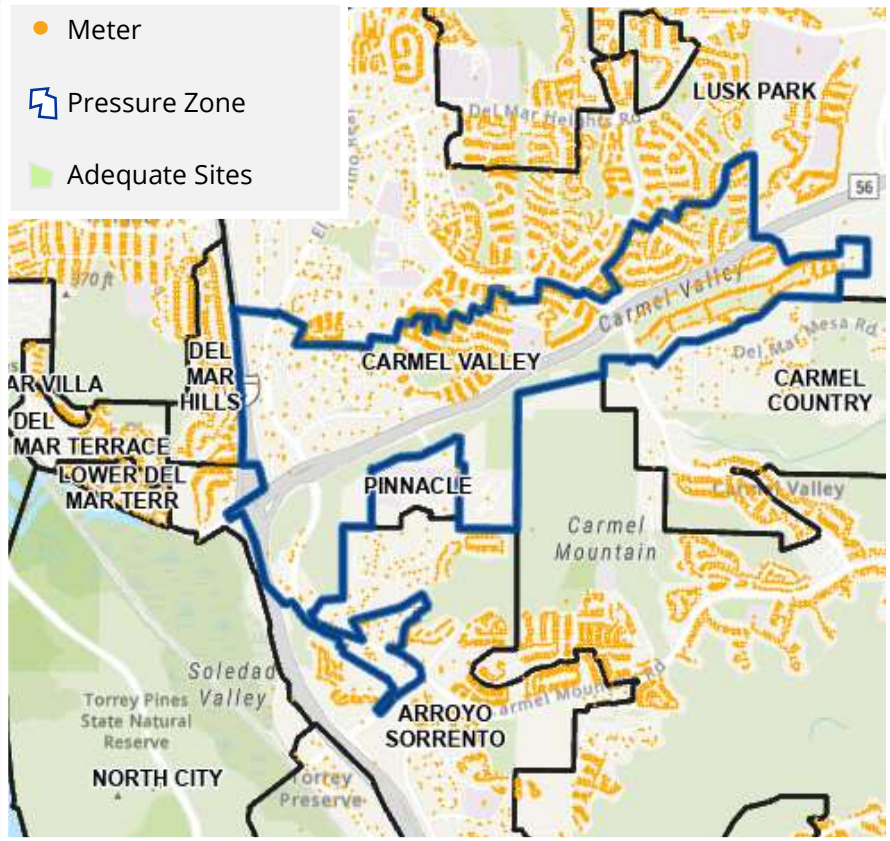
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	485	713	713	712	711	710	707
Multifamily	255	250	247	246	244	241	235
Institutional	0	0	0	0	0	0	0
Government	77	75	73	73	73	73	73
Commercial	209	206	204	210	210	210	210
Industrial	0	0	0	0	0	3	3
Irrigation	270	254	238	238	238	238	238
Wholesale	0	0	0	0	0	0	0
Potable Total	1,296	1,499	1,476	1,479	1,476	1,475	1,467
Recycled	0	0	0	0	0	0	0

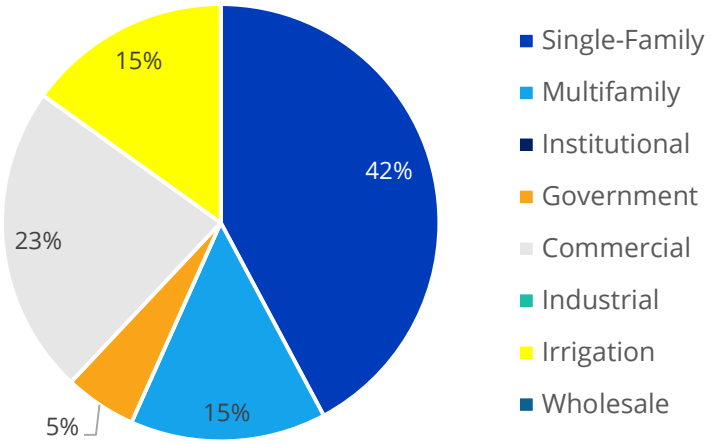
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

CARMEL VALLEY | Miramar | HGL 330



The Carmel Valley pressure zone falls within the Miramar service area and is roughly bordered by 1-5 to the west, undeveloped hilly terrain near Carmel Knolls Drive to the east, undeveloped hilly terrain just south of Ted Williams Freeway to the south, and roughly a line parallel to Carmel Canyon Road through Verona to the north. More than 40% of the water use is single-family, with another 21% commercial and 16% irrigation. On average in FY22-24, water use totaled 0.89 mgd and is projected to slightly decline to 0.87 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	6,980	7,222	7,136	7,074	7,017	7,073	6,897
Household Population	6,980	7,222	7,136	7,074	7,017	7,073	6,897
Single-Family Households	1,586	1,578	1,569	1,569	1,568	1,636	1,634
Multifamily Households	1,036	1,188	1,188	1,190	1,191	1,194	1,195
Total Households	2,622	2,766	2,757	2,759	2,759	2,830	2,829
Employees	4,868	4,937	4,997	5,070	5,170	5,232	5,294
Additional Nonresidential Parcels (count)	n/a	2	2	4	4	4	4
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	359,174	356,619	354,648	354,063	353,422	361,679	359,886
Multifamily	123,496	138,407	137,461	136,665	135,912	134,391	131,922
Institutional	0	0	0	0	0	0	0
Government	45,256	42,891	40,526	40,526	40,526	40,526	40,526
Commercial	195,025	193,775	192,525	192,525	192,525	192,525	192,525
Industrial	0	0	0	0	0	0	0
Irrigation	128,469	120,535	112,602	112,602	112,602	112,602	112,602
Wholesale	0	0	0	0	0	0	0
Potable Total	**851,421**	**852,228**	**837,762**	**836,381**	**834,986**	**841,723**	**837,460**
Recycled	53,572	59,241	59,241	59,241	59,241	59,241	59,241

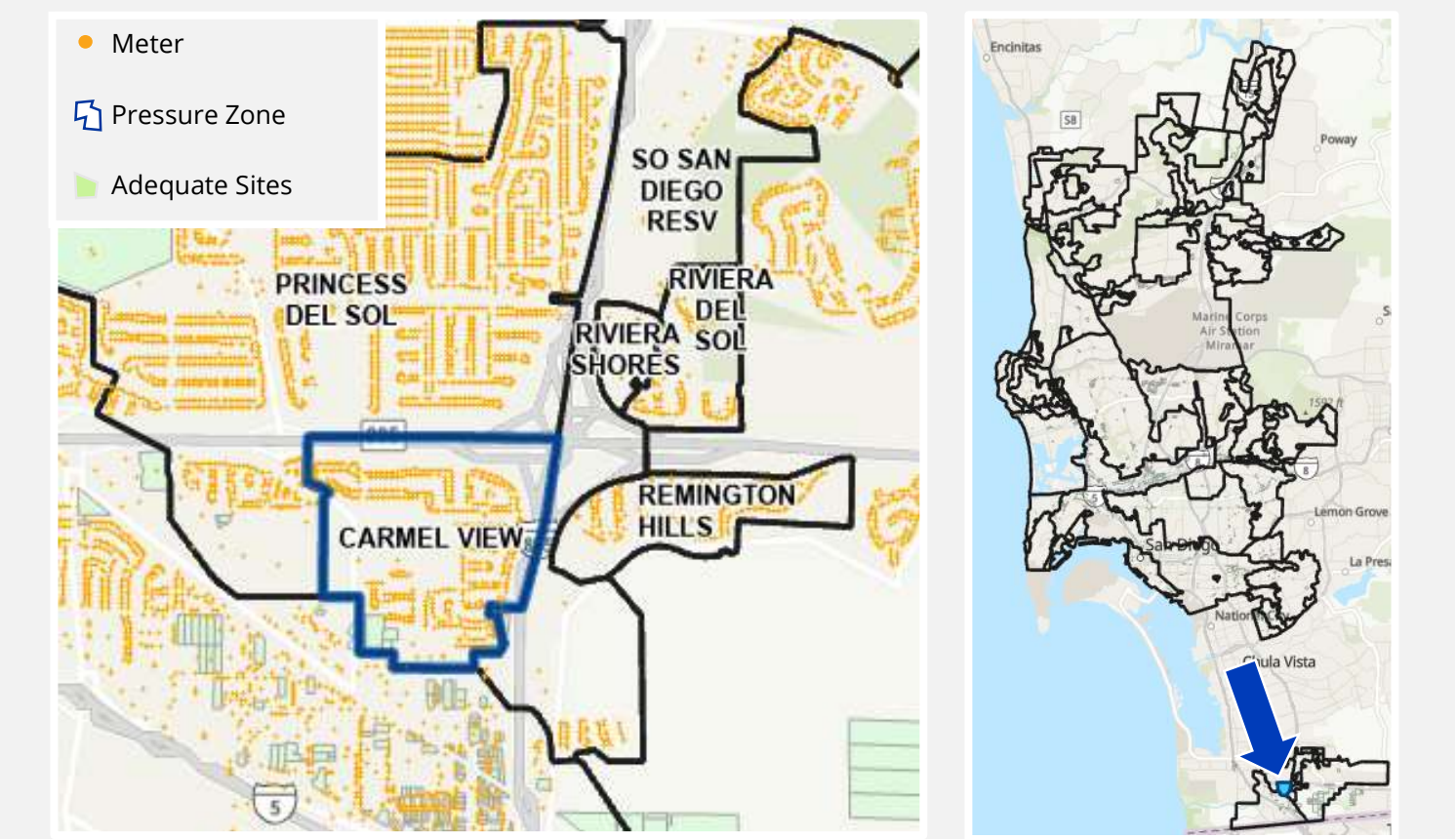
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	402	399	397	397	396	405	403
Multifamily	138	155	154	153	152	151	148
Institutional	0	0	0	0	0	0	0
Government	51	48	45	45	45	45	45
Commercial	218	217	216	216	216	216	216
Industrial	0	0	0	0	0	0	0
Irrigation	144	135	126	126	126	126	126
Wholesale	0	0	0	0	0	0	0
Potable Total	954	955	938	937	935	943	938
Recycled	60	66	66	66	66	66	66

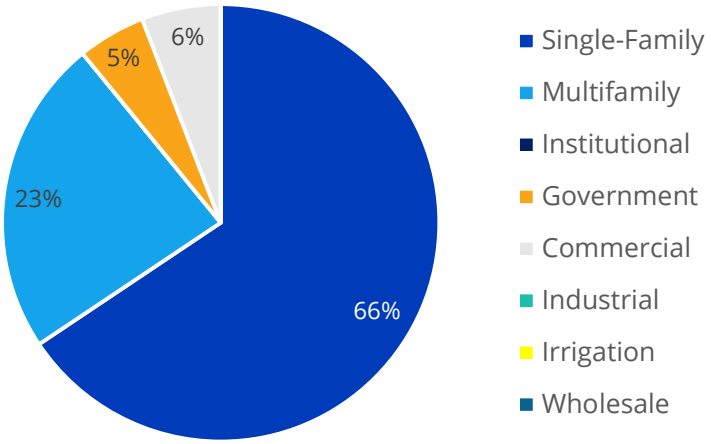
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

CARMEL VIEW | Otay | HGL 346



The Carmel View pressure zone falls within the Otay service area and is roughly bordered by Picador Boulevard to the west, I-805 to the east, area just north of Beyer Boulevard to the south, and US 905 to the north. Avenida De La Madrid, Smythe Avenue, Via Del Bardo, and Alaquinas Drive are main roadways that traverse this zone. More than 70% of the water use is single-family, with another 16% multifamily. On average in FY22-24, water use totaled 0.14 mgd and is projected to remain around 0.14 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	4,195	4,019	4,068	4,033	4,024	3,937	3,809
Household Population	4,182	4,009	4,058	4,023	4,013	3,926	3,802
Single-Family Households	548	540	538	532	532	532	531
Multifamily Households	810	808	843	852	865	867	870
Total Households	1,358	1,348	1,381	1,384	1,397	1,399	1,401
Employees	1,181	1,184	1,191	1,225	1,235	1,244	1,252
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	1
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	94,486	92,584	92,076	91,024	90,832	90,455	89,787
Multifamily	33,812	33,021	36,920	37,754	39,046	38,634	38,068
Institutional	0	0	0	0	0	0	0
Government	7,275	6,869	6,463	6,463	6,463	6,463	6,463
Commercial	8,416	8,416	8,416	8,416	8,416	8,416	8,416
Industrial	0	0	0	0	0	0	0
Irrigation	0	0	0	0	0	0	0
Wholesale	0	0	0	0	0	0	0
Potable Total	**143,990**	**140,889**	**143,875**	**143,656**	**144,757**	**143,968**	**142,735**
Recycled	0	0	0	0	0	0	0

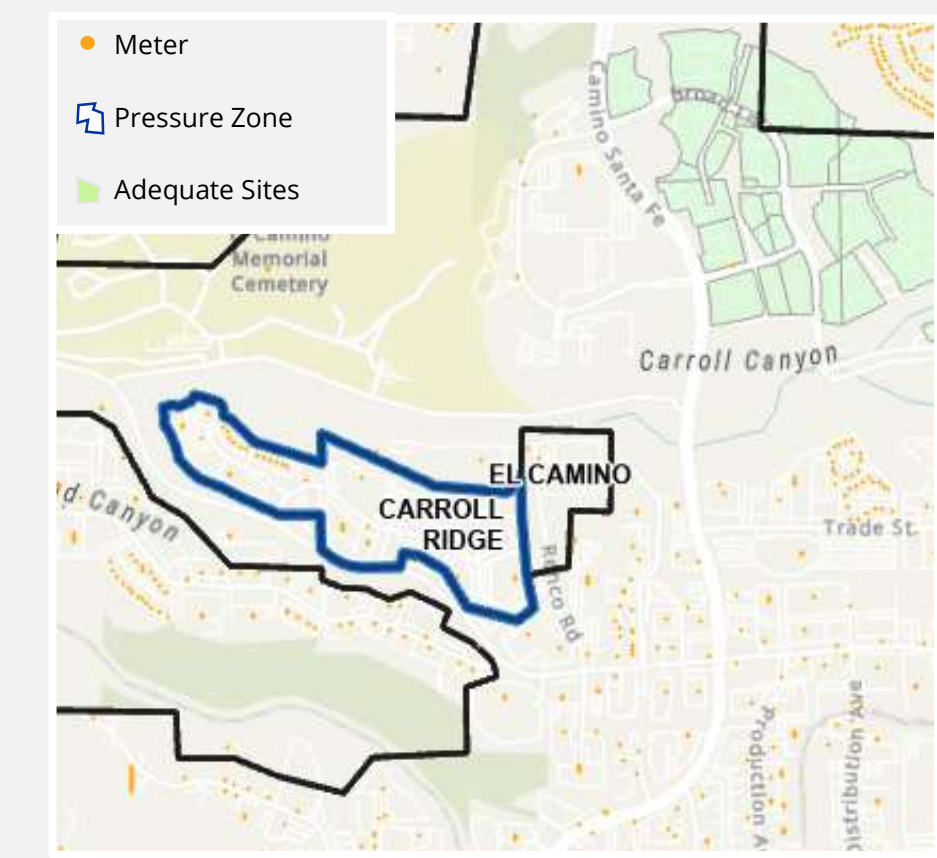
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	106	104	103	102	102	101	101
Multifamily	38	37	41	42	44	43	43
Institutional	0	0	0	0	0	0	0
Government	8	8	7	7	7	7	7
Commercial	9	9	9	9	9	9	9
Industrial	0	0	0	0	0	0	0
Irrigation	0	0	0	0	0	0	0
Wholesale	0	0	0	0	0	0	0
Potable Total	161	158	161	161	162	161	160
Recycled	0	0	0	0	0	0	0

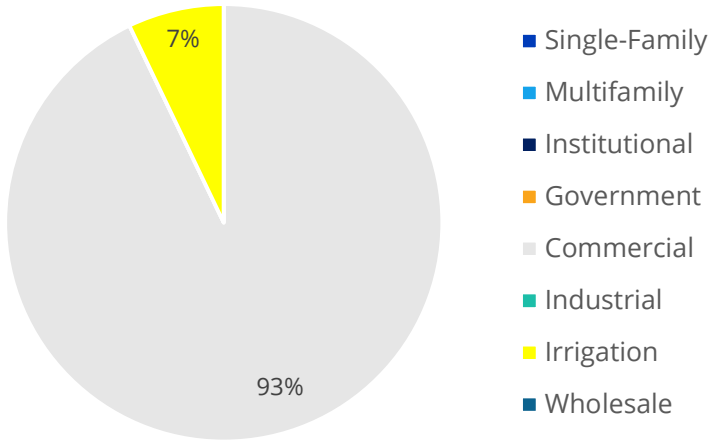
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

CARROLL RIDGE | Miramar | HGL 610



The Carrol Ridge pressure zone falls within the Miramar service area and is roughly bordered by Carroll Canyon to the north, Rehco Road to the east, and Soledad Canyon to the west and south. Being that it's a very small residential zone, there are no major roadways that traverse throughout, but it is located close to I-805. More than 90% of the water use is commercial, with another 7% irrigation. On average in FY22-24, water use totaled 0.064 mgd and is projected to reach 0.068 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	58	57	95	97	101	164	166
Household Population	58	57	95	97	101	164	166
Single-Family Households	0	0	0	0	0	1	1
Multifamily Households	20	20	35	37	38	62	64
Total Households	20	20	35	37	38	63	65
Employees	507	508	509	511	514	515	516
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	0	0	0	0	0	144	144
Multifamily	0	0	1,655	1,870	1,978	4,499	4,706
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	50,622	50,607	50,592	50,592	50,592	50,592	50,592
Industrial	0	0	0	0	0	0	0
Irrigation	3,869	3,637	3,404	3,404	3,404	3,404	3,404
Wholesale	0	0	0	0	0	0	0
Potable Total	**54,491**	**54,244**	**55,652**	**55,866**	**55,975**	**58,639**	**58,847**
Recycled	3,185	2,649	2,649	2,649	2,649	2,649	2,649

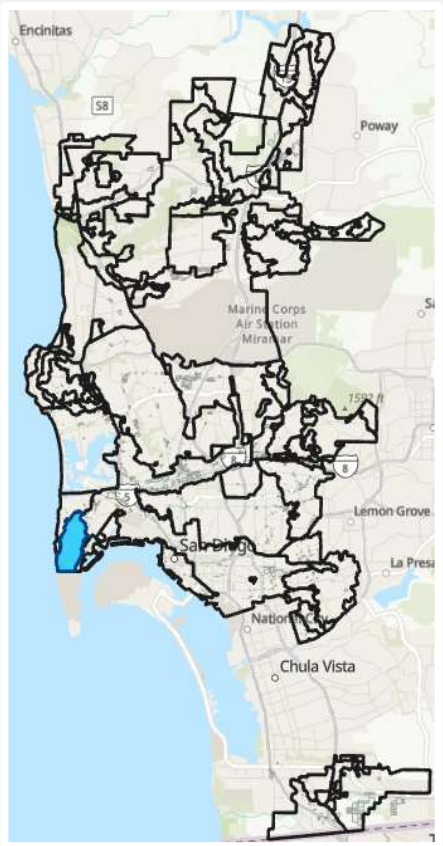
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	0	0	0	0	0	0	0
Multifamily	0	0	2	2	2	5	5
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	57	57	57	57	57	57	57
Industrial	0	0	0	0	0	0	0
Irrigation	4	4	4	4	4	4	4
Wholesale	0	0	0	0	0	0	0
Potable Total	61	61	62	63	63	66	66
Recycled	4	3	3	3	3	3	3

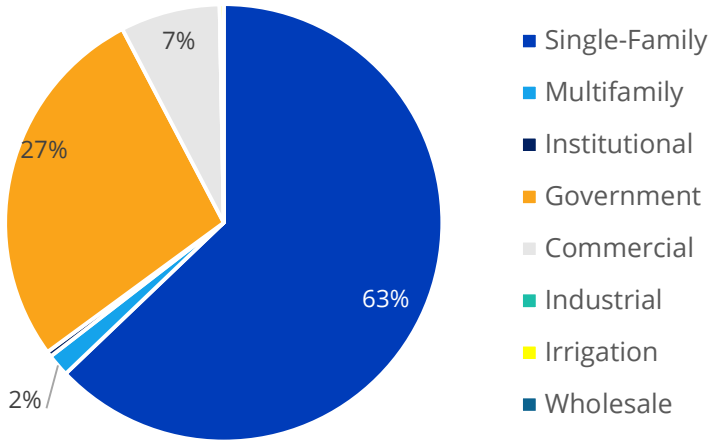
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

CATALINA | Alvarado | HGL 462



The Catalina pressure zone falls within the Alvarado service area and is roughly bordered by the Point Loma 1 260 zone to the north and west, Point Loma 2 260 to the east, and the change from Catalina Boulevard to Cabrillo Memorial Drive to the south. Catalina Boulevard is the main roadway running north/south through the entire zone. More than 50% of the water use is single-family, with another 38% government. On average in FY22-24, water use totaled 2.17 mgd and is projected to slightly decrease to 2.16 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	10,747	10,608	10,553	10,499	10,452	10,308	10,118
Household Population	9,558	9,433	9,375	9,318	9,265	9,125	8,944
Single-Family Households	4,260	4,261	4,243	4,241	4,238	4,235	4,231
Multifamily Households	35	36	57	60	66	73	85
Total Households	4,295	4,297	4,300	4,301	4,304	4,308	4,316
Employees	6,963	6,991	7,743	7,816	7,930	8,029	8,127
Additional Nonresidential Parcels (count)	n/a	0	3	3	3	3	3
Additional Nonresidential Parcels (square feet)	n/a	0	266,901	266,901	266,901	266,901	266,901

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	1,030,836	1,028,585	1,024,227	1,022,778	1,021,185	1,017,875	1,013,428
Multifamily	27,539	27,302	29,146	29,279	29,691	29,954	30,526
Institutional	6,502	6,466	20,507	20,507	20,507	20,507	20,507
Government	449,072	448,595	448,119	448,119	448,119	448,119	448,119
Commercial	120,875	120,824	120,772	120,772	120,772	120,772	120,772
Industrial	0	0	0	0	0	0	0
Irrigation	5,055	4,759	4,462	4,462	4,462	4,462	4,462
Wholesale	0	0	0	0	0	0	0
Potable Total	**1,639,880**	**1,636,531**	**1,647,233**	**1,645,918**	**1,644,736**	**1,641,690**	**1,637,815**
Recycled	0	0	0	0	0	0	0

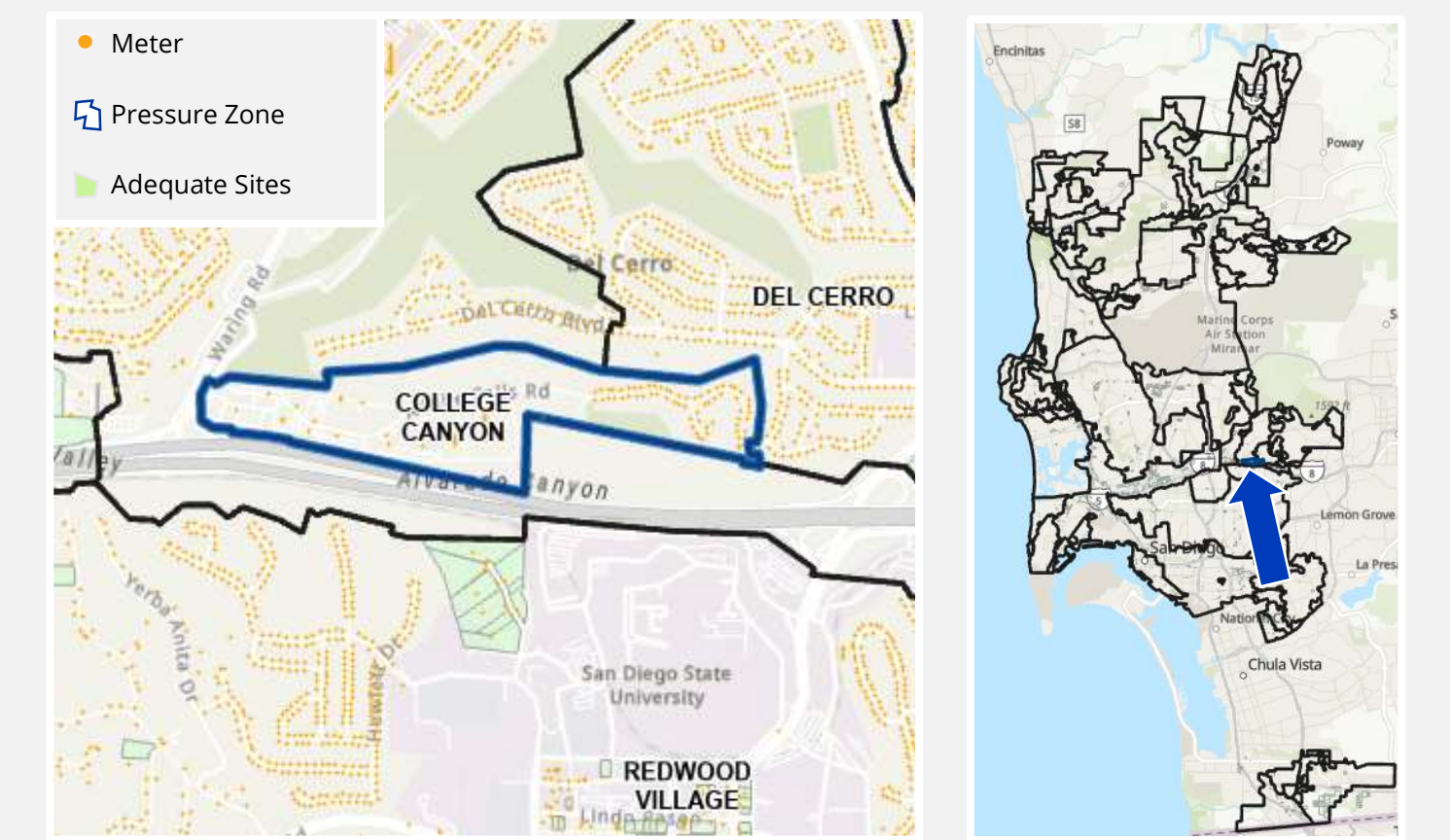
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	1,155	1,152	1,147	1,146	1,144	1,140	1,135
Multifamily	31	31	33	33	33	34	34
Institutional	7	7	23	23	23	23	23
Government	503	502	502	502	502	502	502
Commercial	135	135	135	135	135	135	135
Industrial	0	0	0	0	0	0	0
Irrigation	6	5	5	5	5	5	5
Wholesale	0	0	0	0	0	0	0
Potable Total	1,837	1,833	1,845	1,844	1,842	1,839	1,835
Recycled	0	0	0	0	0	0	0

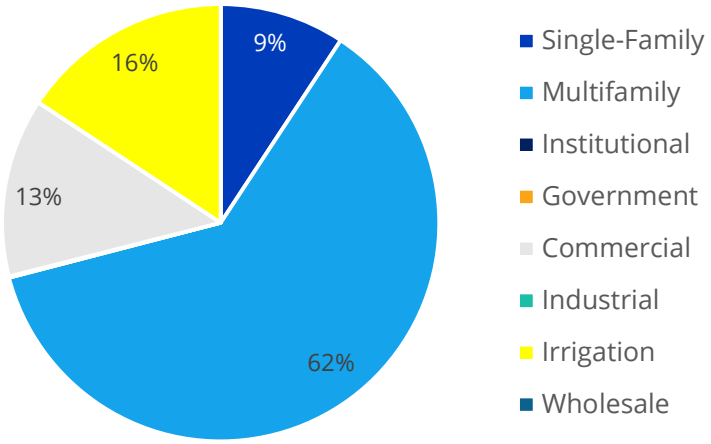
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

COLLEGE CANYON | Alvarado | HGL 468



The College Canyon pressure zone falls within the Alvarado service area and is bordered by Waring Road to the west, Mill Peak Road to the east, hilly terrain behind Adobe Falls Road to the north, and I-8 to the south. As this is a very small residential zone, there are no major roadways that run through it. Almost 60% of the water use is multifamily, with another 20% irrigation and 15% commercial. On average in FY22-24, water use totaled 0.13 mgd and is projected to remain around 0.13 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	327	315	311	309	306	300	293
Household Population	327	315	311	309	306	300	293
Single-Family Households	65	64	63	63	63	63	63
Multifamily Households	61	60	60	60	60	60	60
Total Households	126	124	123	123	123	123	123
Employees	57	57	57	58	59	61	62
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	13,356	13,094	12,883	12,868	12,846	12,800	12,746
Multifamily	88,976	87,409	86,918	86,416	85,662	84,153	82,388
Institutional	0	0	0	0	0	0	0
Government	121	113	104	104	104	104	104
Commercial	19,080	19,080	19,080	19,080	19,080	19,080	19,080
Industrial	0	0	0	0	0	0	0
Irrigation	22,655	21,299	19,943	19,943	19,943	19,943	19,943
Wholesale	0	0	0	0	0	0	0
Potable Total	**144,188**	**140,995**	**138,929**	**138,412**	**137,636**	**136,081**	**134,262**
Recycled	0	0	0	0	0	0	0

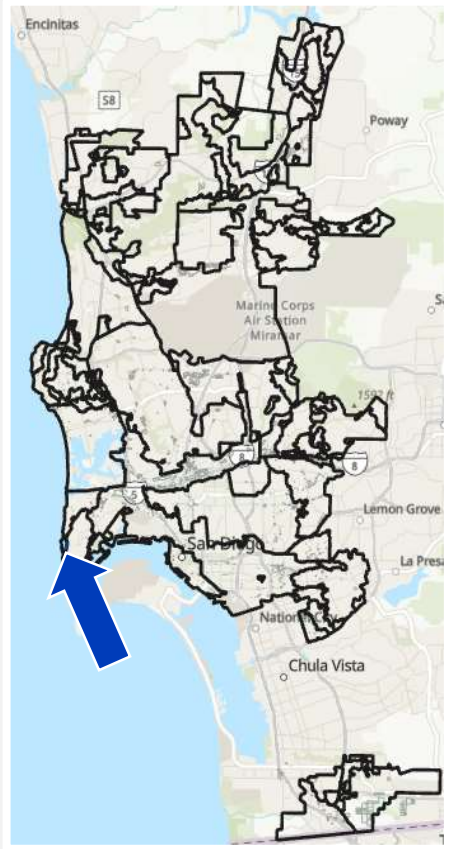
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	15	15	14	14	14	14	14
Multifamily	100	98	97	97	96	94	92
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	21	21	21	21	21	21	21
Industrial	0	0	0	0	0	0	0
Irrigation	25	24	22	22	22	22	22
Wholesale	0	0	0	0	0	0	0
Potable Total	162	158	156	155	154	152	150
Recycled	0	0	0	0	0	0	0

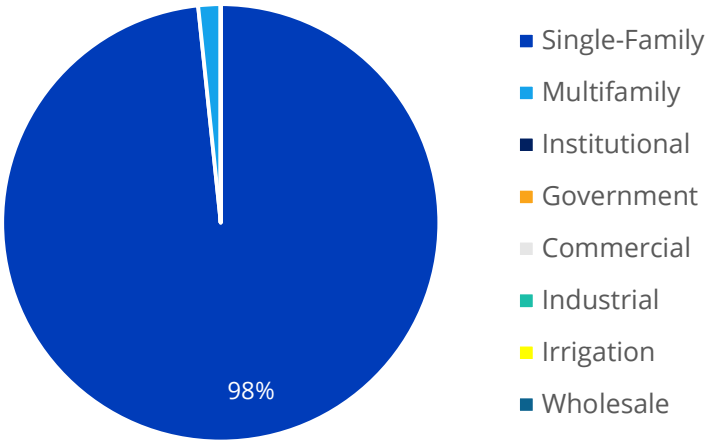
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

CORNISH HILL | Alvarado | HGL 360



The Cornish Hill pressure zone falls within the Alvarado service area and is roughly bordered by Cornish Drive to the west, the homes on the west side of Amiford Drive to the east, Hill Street to the north, and Ladera Street to the south. 100% of the water use is single-family. On average in FY22-24, water use totaled 0.006 mgd and is projected to remain around 0.006 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	110	106	105	104	104	103	101
Household Population	78	73	72	72	71	70	69
Single-Family Households	31	31	31	31	31	31	31
Multifamily Households	1	1	1	1	1	1	1
Total Households	32	32	32	32	32	32	32
Employees	60	60	60	60	61	61	61
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	5,848	5,781	5,767	5,767	5,753	5,739	5,725
Multifamily	99	93	92	92	91	90	88
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	0	0	0	0	0	0	0
Wholesale	0	0	0	0	0	0	0
Potable Total	**5,947**	**5,874**	**5,859**	**5,859**	**5,844**	**5,829**	**5,813**
Recycled	0	0	0	0	0	0	0

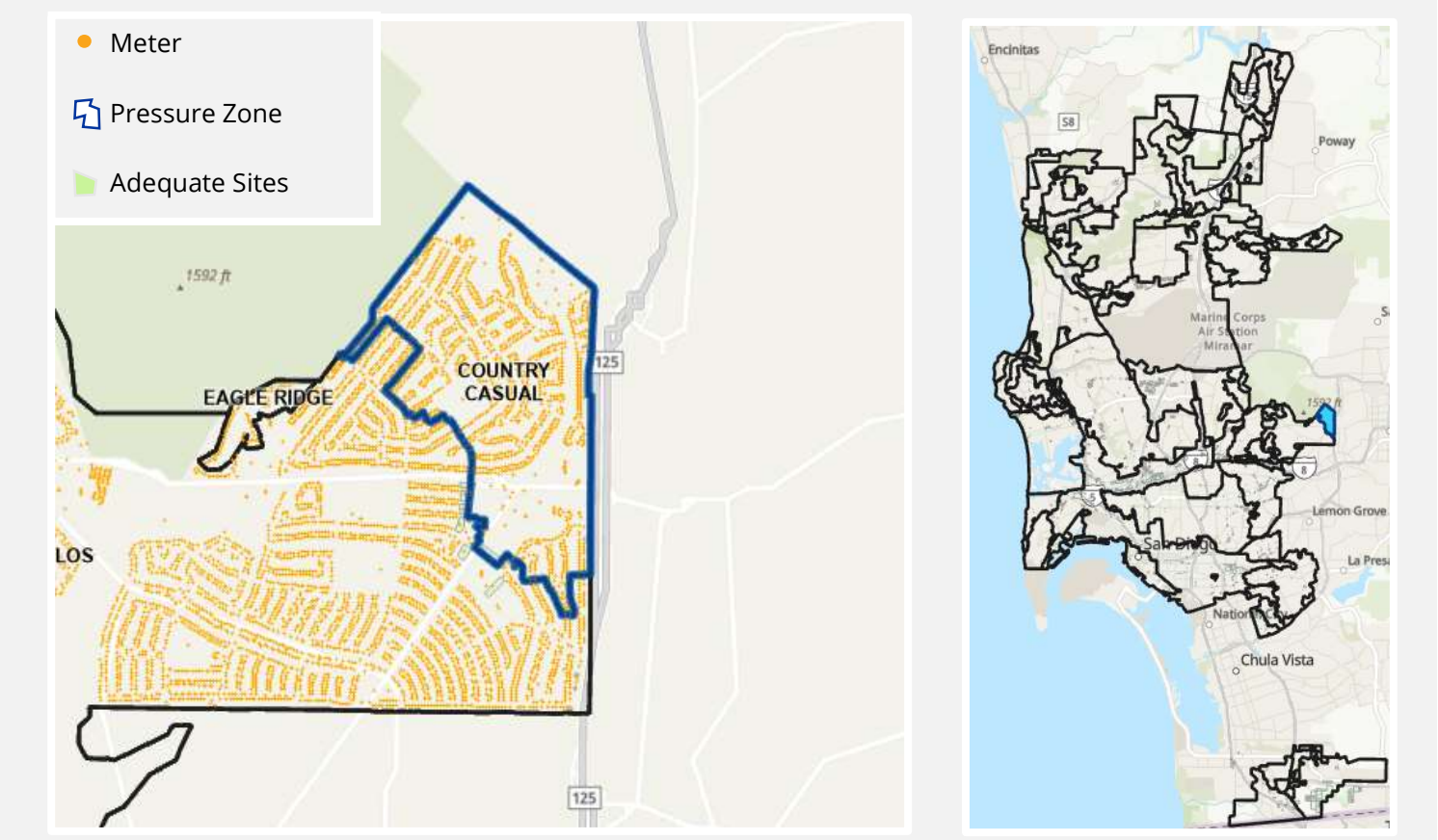
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	7	6	6	6	6	6	6
Multifamily	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	0	0	0	0	0	0	0
Wholesale	0	0	0	0	0	0	0
Potable Total	7	7	7	7	7	7	7
Recycled	0	0	0	0	0	0	0

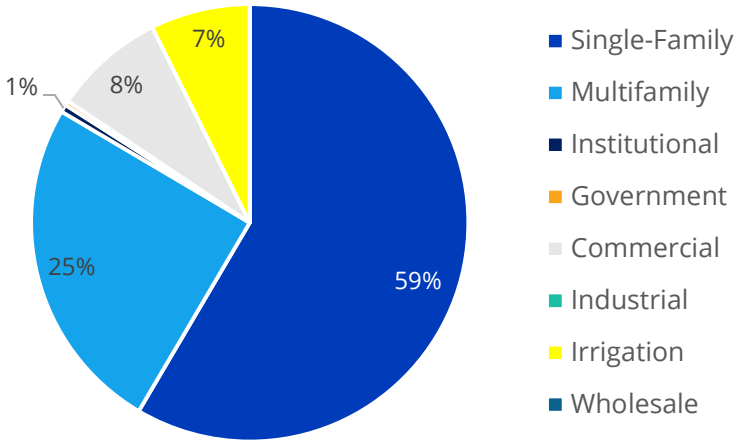
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

COUNTRY CASUAL | Alvarado | HGL 925



The Country Casual pressure zone falls within the Alvarado service area and is roughly bordered by Mission Trails Regional Park and the City of El Cajon to the north, San Carlos pressure zone to the west and south, and CA-125 highway to the east. More than 50% of the water use is single-family, with another 27% multifamily and 10% irrigation. On average in FY22-24, water use totaled 0.55 mgd and is projected to slightly decline to 0.53 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	4,662	4,526	4,477	4,439	4,404	4,329	4,223
Household Population	4,660	4,525	4,476	4,438	4,403	4,328	4,223
Single-Family Households	1,370	1,359	1,356	1,356	1,356	1,356	1,355
Multifamily Households	270	270	270	270	270	270	270
Total Households	1,640	1,629	1,626	1,626	1,626	1,626	1,625
Employees	805	809	818	851	858	865	871
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	285,370	282,317	281,375	280,956	280,567	279,725	278,418
Multifamily	122,140	119,680	118,712	117,807	116,973	115,183	112,733
Institutional	2,717	2,717	2,717	2,717	2,717	2,717	2,717
Government	1,638	1,524	1,411	1,411	1,411	1,411	1,411
Commercial	40,283	39,980	39,676	39,676	39,676	39,676	39,676
Industrial	0	0	0	0	0	0	0
Irrigation	35,859	33,803	31,747	31,747	31,747	31,747	31,747
Wholesale	0	0	0	0	0	0	0
Potable Total	**488,007**	**480,021**	**475,639**	**474,314**	**473,091**	**470,460**	**466,703**
Recycled	0	0	0	0	0	0	0

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

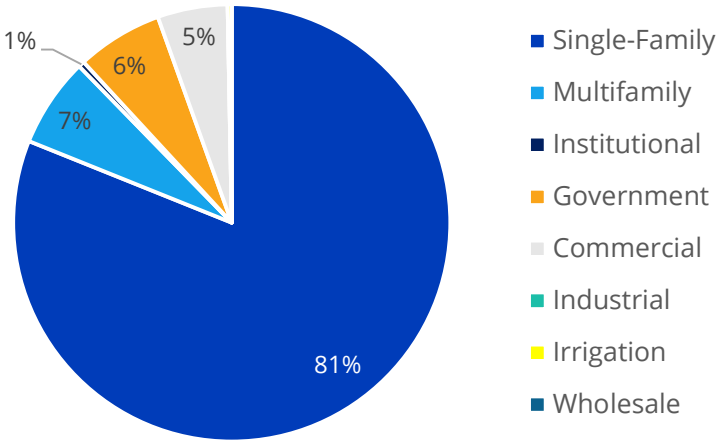
Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	320	316	315	315	314	313	312
Multifamily	137	134	133	132	131	129	126
Institutional	3	3	3	3	3	3	3
Government	2	2	2	2	2	2	2
Commercial	45	45	44	44	44	44	44
Industrial	0	0	0	0	0	0	0
Irrigation	40	38	36	36	36	36	36
Wholesale	0	0	0	0	0	0	0
Potable Total	547	538	533	531	530	527	523
Recycled	0	0	0	0	0	0	0

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

DEL CERRO | Alvarado | HGL 656

The Del Cerro pressure zone falls within the Alvarado service area and is roughly bordered by undeveloped valley-like terrain to the west and north, parts of College Avenue to the east, and I-8 to the south. College Avenue and Del Cerro Boulevard are the two main roadways through this zone, with I-8 sitting just south. More than 80% of the water use is single-family, with another 7% government. On average in FY22-24, water use totaled 0.37 mgd and is projected to slightly decline to 0.36 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	4,496	4,361	4,316	4,278	4,242	4,169	4,065
Household Population	4,495	4,360	4,315	4,277	4,241	4,168	4,065
Single-Family Households	1,229	1,216	1,213	1,213	1,213	1,212	1,211
Multifamily Households	484	478	478	478	476	474	472
Total Households	1,713	1,694	1,691	1,691	1,689	1,686	1,683
Employees	883	888	895	907	923	938	953
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	290,021	286,572	285,603	285,160	284,798	283,865	282,559
Multifamily	23,685	24,027	23,098	22,916	23,017	22,700	22,237
Institutional	1,501	1,501	1,501	1,501	1,501	1,501	1,501
Government	22,819	21,473	20,127	20,127	20,127	20,127	20,127
Commercial	18,538	18,538	18,538	18,538	18,538	18,538	18,538
Industrial	0	0	0	0	0	0	0
Irrigation	1,056	994	931	931	931	931	931
Wholesale	0	0	0	0	0	0	0
Potable Total	**357,620**	**353,105**	**349,798**	**349,173**	**348,911**	**347,663**	**345,893**
Recycled	0	0	0	0	0	0	0

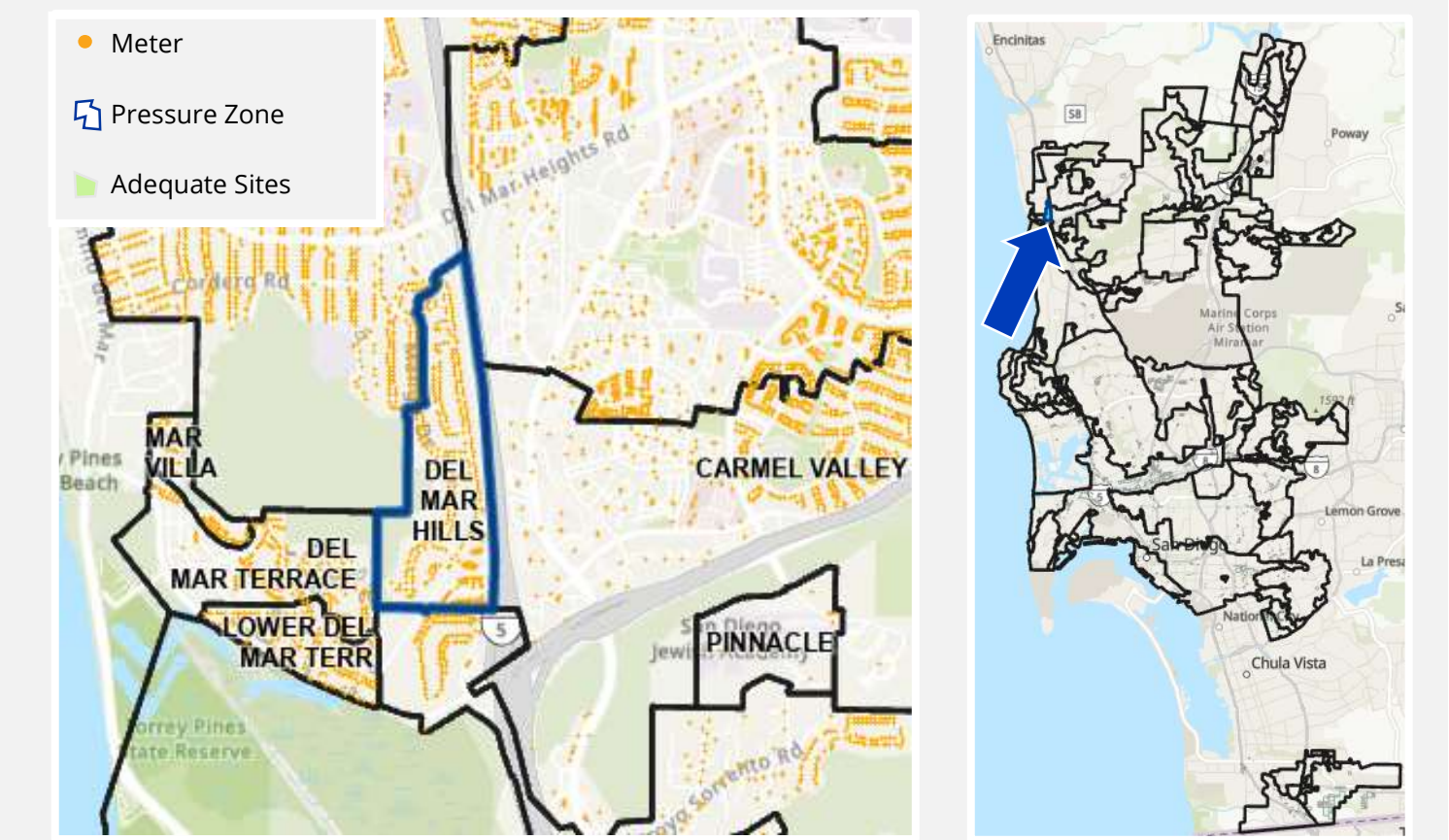
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	325	321	320	319	319	318	317
Multifamily	27	27	26	26	26	25	25
Institutional	2	2	2	2	2	2	2
Government	26	24	23	23	23	23	23
Commercial	21	21	21	21	21	21	21
Industrial	0	0	0	0	0	0	0
Irrigation	1	1	1	1	1	1	1
Wholesale	0	0	0	0	0	0	0
Potable Total	401	396	392	391	391	389	387
Recycled	0	0	0	0	0	0	0

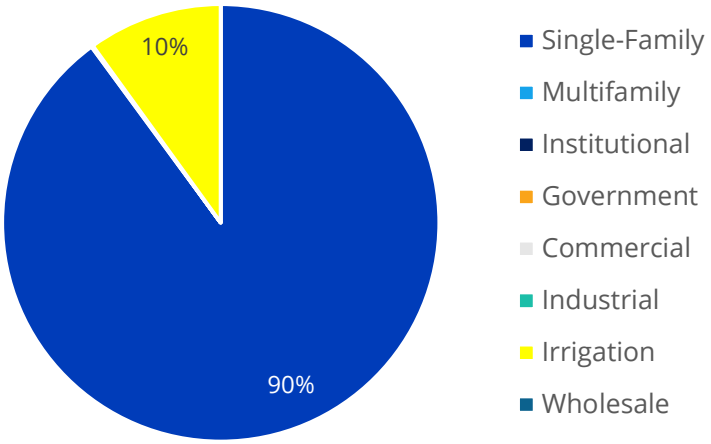
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

DEL MAR HILLS | Miramar | HGL 435



The Del Mar Hills pressure zone falls within the Miramar service area and is roughly bordered by the I-5 to the east, Torrey Pines State Reserve Extension Area to the west, Portofino Circle to the south, and Calais Drive to the north. More than 90% of the water use is single-family, with another 9% irrigation. On average in FY22-24, water use totaled 0.099 mgd and is projected to slightly decline to 0.098 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	1,103	1,094	1,084	1,074	1,066	1,050	1,026
Household Population	1,103	1,094	1,084	1,074	1,066	1,050	1,026
Single-Family Households	382	387	386	386	386	385	385
Multifamily Households	89	89	89	89	89	89	89
Total Households	471	476	475	475	475	474	474
Employees	447	449	457	468	481	491	501
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	84,776	85,501	85,210	85,074	84,965	84,615	84,279
Multifamily	102	101	100	99	99	97	95
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	9,392	8,933	8,475	8,475	8,475	8,475	8,475
Wholesale	0	0	0	0	0	0	0
Potable Total	**94,270**	**94,535**	**93,785**	**93,648**	**93,538**	**93,187**	**92,849**
Recycled	0	0	0	0	0	0	0

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

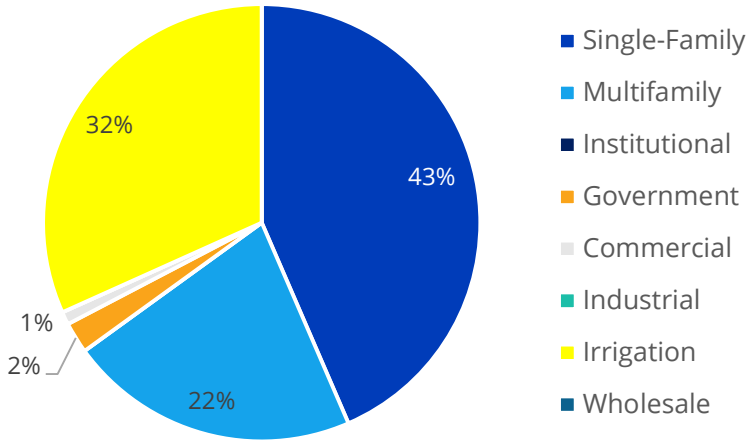
Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	95	96	95	95	95	95	94
Multifamily	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	11	10	9	9	9	9	9
Wholesale	0	0	0	0	0	0	0
Potable Total	106	106	105	105	105	104	104
Recycled	0	0	0	0	0	0	0

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

DEL MAR TERRACE | Miramar | HGL 328

The Lower Del Mar Terrace pressure zone falls within the Miramar service area and is roughly bordered by Los Penasquitos Waterfoul Reserve to the south, Portofino Drive to the east, Via Aprilia and Via Latina to the north, and the intersection of Via Aprilia and Carmel Valley Road to the west. Twain Avenue and Zion. Nearly 40% of of the water use is single-family, with another near 40% irrigation. Almost 20% of water use is multifamily. On average in FY22-24, water use totaled 0.10 mgd and is projected to slightly decline to 0.099 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	694	688	682	676	671	661	646
Household Population	694	688	682	676	671	661	646
Single-Family Households	216	219	219	219	218	218	218
Multifamily Households	80	80	80	80	80	80	80
Total Households	296	299	299	299	298	298	298
Employees	416	418	422	431	440	447	453
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	40,863	41,289	41,227	41,165	40,982	40,876	40,716
Multifamily	20,234	19,896	19,740	19,584	19,513	19,252	18,859
Institutional	0	0	0	0	0	0	0
Government	2,159	2,159	2,159	2,159	2,159	2,159	2,159
Commercial	890	890	890	890	890	890	890
Industrial	0	0	0	0	0	0	0
Irrigation	29,798	27,868	25,938	25,938	25,938	25,938	25,938
Wholesale	0	0	0	0	0	0	0
Potable Total	**93,944**	**92,102**	**89,954**	**89,736**	**89,481**	**89,114**	**88,561**
Recycled	0	0	0	0	0	0	0

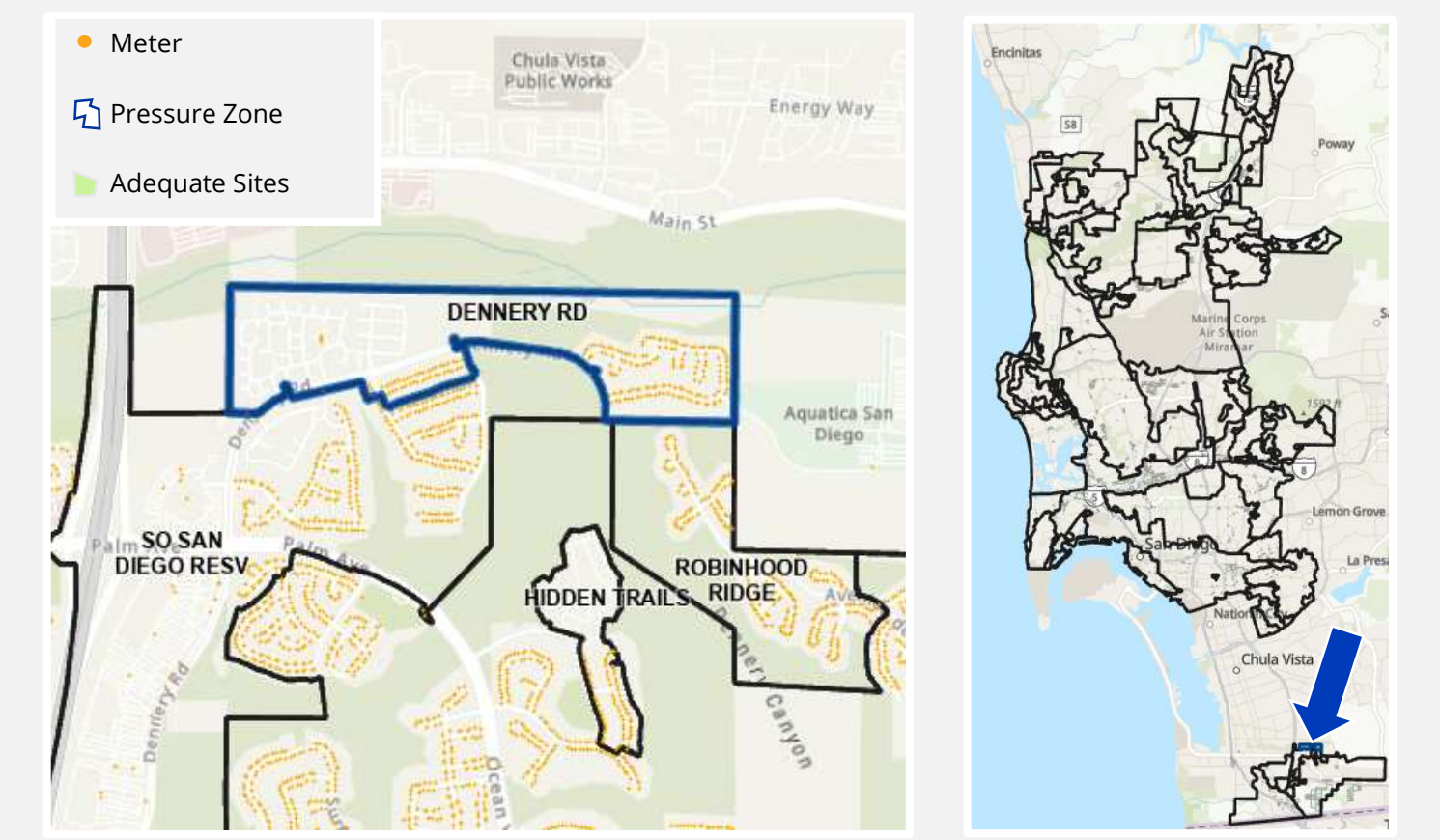
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	46	46	46	46	46	46	46
Multifamily	23	22	22	22	22	22	21
Institutional	0	0	0	0	0	0	0
Government	2	2	2	2	2	2	2
Commercial	1	1	1	1	1	1	1
Industrial	0	0	0	0	0	0	0
Irrigation	33	31	29	29	29	29	29
Wholesale	0	0	0	0	0	0	0
Potable Total	105	103	101	101	100	100	99
Recycled	0	0	0	0	0	0	0

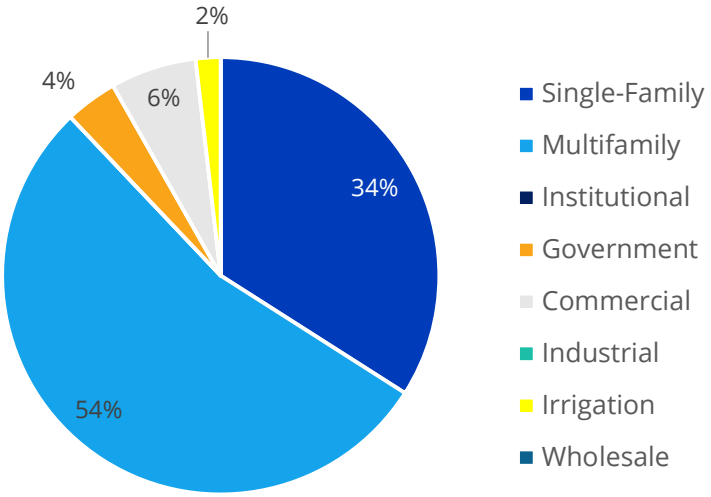
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

DENNERY RD | Otay | HGL 365



The Dennery Road pressure zone falls within the Otay service area and is bordered by an undeveloped valley to the west, undeveloped land separating the neighborhood from Aquatica San Diego SeaWorld Water Park to the east, Otay River to the north, and Royal Island Way to the south; there are no major roadways that run through it. 50% of the water use is multifamily, with another 35% single-family. On average in FY22-24, water use totaled 0.14 mgd and is projected to remain around 0.14 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	1,085	1,046	1,084	1,102	1,103	1,090	1,063
Household Population	1,083	1,044	1,082	1,100	1,101	1,088	1,062
Single-Family Households	194	192	191	190	189	188	187
Multifamily Households	162	161	179	189	194	200	204
Total Households	356	353	370	379	383	388	391
Employees	322	324	325	330	332	334	336
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	46,736	45,898	45,519	45,187	44,854	44,406	43,909
Multifamily	74,041	72,314	73,868	74,711	74,759	73,973	72,527
Institutional	0	0	0	0	0	0	0
Government	5,293	4,892	4,491	4,491	4,491	4,491	4,491
Commercial	8,752	8,290	7,828	7,828	7,828	7,828	7,828
Industrial	0	0	0	0	0	0	0
Irrigation	2,525	2,356	2,187	2,187	2,187	2,187	2,187
Wholesale	0	0	0	0	0	0	0
Potable Total	**137,347**	**133,751**	**133,894**	**134,405**	**134,119**	**132,886**	**130,943**
Recycled	0	0	0	0	0	0	0

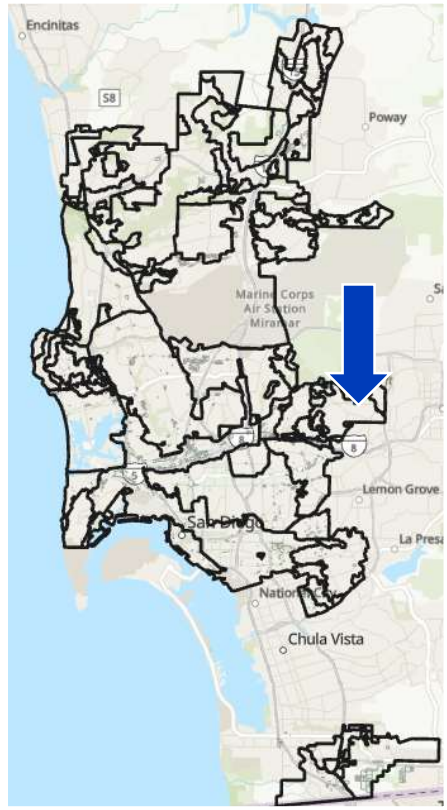
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	52	51	51	51	50	50	49
Multifamily	83	81	83	84	84	83	81
Institutional	0	0	0	0	0	0	0
Government	6	5	5	5	5	5	5
Commercial	10	9	9	9	9	9	9
Industrial	0	0	0	0	0	0	0
Irrigation	3	3	2	2	2	2	2
Wholesale	0	0	0	0	0	0	0
Potable Total	154	150	150	151	150	149	147
Recycled	0	0	0	0	0	0	0

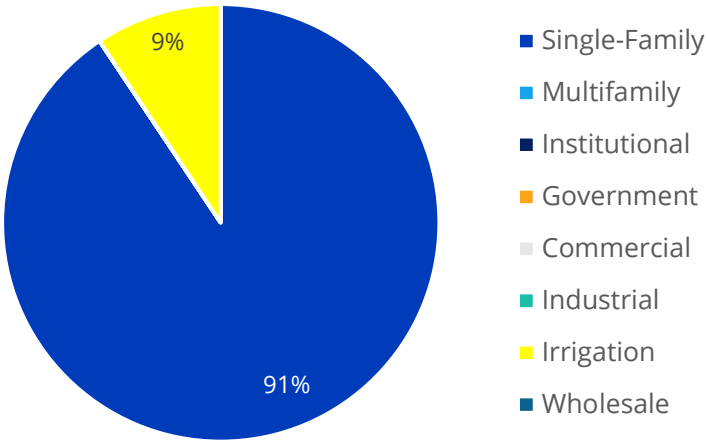
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

EAGLE RIDGE | Alvarado | HGL 940



The Eagle Ridge pressure zone falls within the Alvarado service area and is roughly bordered by Mission Trails Regional Park to the north and west and the San Carlos pressure zone to the south and east. More than 90% of the water use is single-family, with another 9% irrigation. On average in FY22-24, water use totaled 0.021 mgd and is projected to remain around 0.021 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	209	207	205	203	202	198	193
Household Population	208	206	205	203	201	198	193
Single-Family Households	75	76	76	76	76	76	76
Multifamily Households	14	13	13	13	13	13	13
Total Households	89	89	89	89	89	89	89
Employees	23	23	24	24	25	25	25
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	19,059	19,238	19,222	19,190	19,157	19,108	19,024
Multifamily	0	125	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	1,970	1,871	1,773	1,773	1,773	1,773	1,773
Wholesale	0	0	0	0	0	0	0
Potable Total	**21,029**	**21,234**	**20,995**	**20,962**	**20,930**	**20,881**	**20,797**
Recycled	0	0	0	0	0	0	0

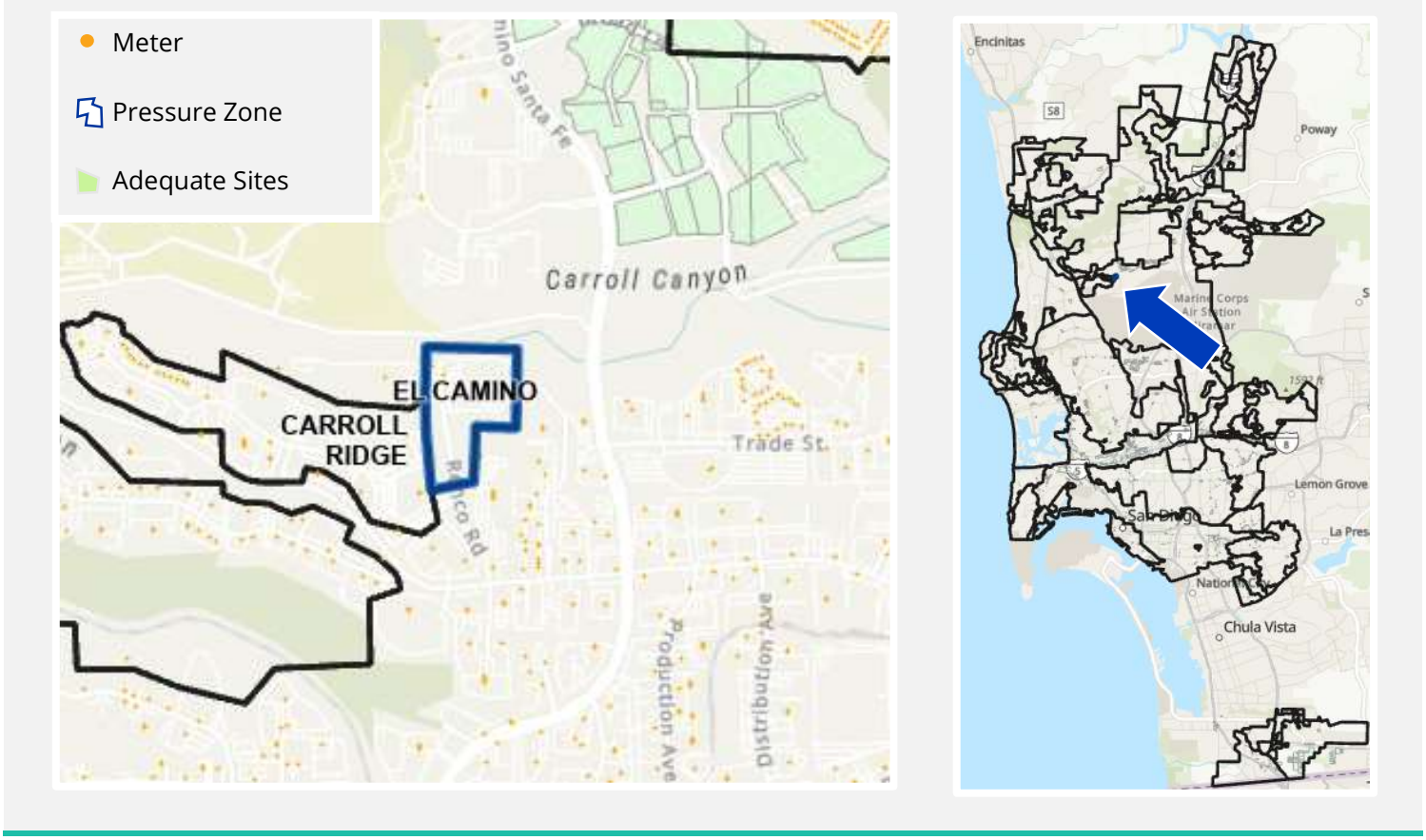
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	21	22	22	21	21	21	21
Multifamily	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	2	2	2	2	2	2	2
Wholesale	0	0	0	0	0	0	0
Potable Total	24	24	24	23	23	23	23
Recycled	0	0	0	0	0	0	0

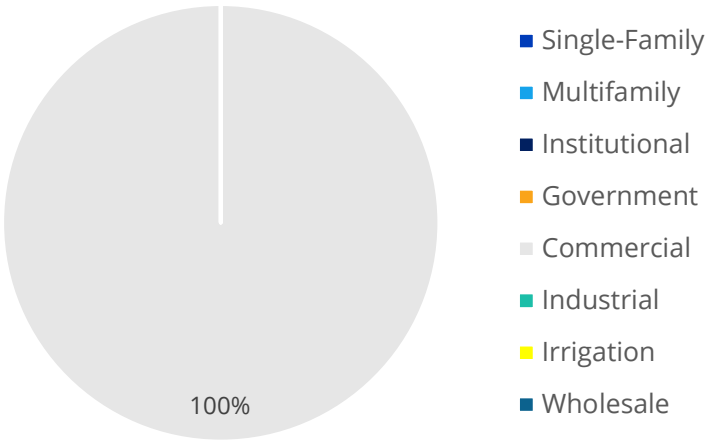
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

EL CAMINO | Miramar | HGL 470



The El Camino pressure zone falls within the Miramar service area and is roughly bordered by Carroll Canyon to the north, Crestmar Point to the east, [something about south], and Rehco Road to the west, which also roughly shares a border with Carroll Ridge pressure zone. Being that it's a very small residential zone, there are no major roadways that traverse throughout. 100% of the water use is commercial. On average in FY22-24, water use totaled 0.0082 mgd and is projected to reach 0.0087 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	8	8	13	13	14	22	23
Household Population	8	8	13	13	14	22	23
Single-Family Households	0	0	0	0	0	0	0
Multifamily Households	4	4	6	6	6	9	9
Total Households	4	4	6	6	6	9	9
Employees	68	68	68	69	69	69	69
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	0	0	0	0	0	0	0
Multifamily	0	0	181	181	181	481	481
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	8,241	8,241	8,241	8,241	8,241	8,241	8,241
Industrial	0	0	0	0	0	0	0
Irrigation	0	0	0	0	0	0	0
Wholesale	0	0	0	0	0	0	0
Potable Total	**8,241**	**8,241**	**8,423**	**8,423**	**8,423**	**8,723**	**8,723**
Recycled	0	0	0	0	0	0	0

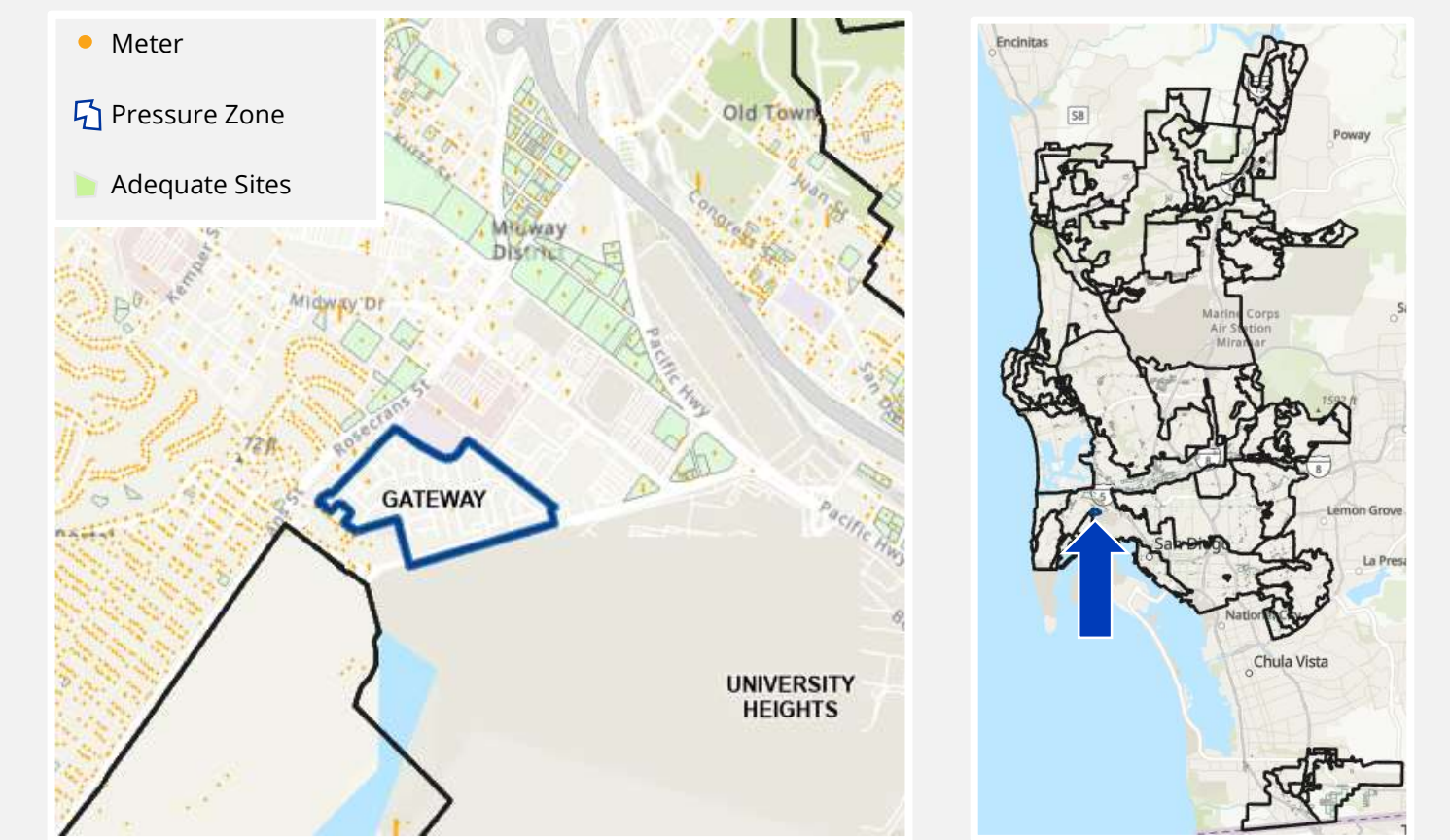
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	0	0	0	0	0	0	0
Multifamily	0	0	0	0	0	1	1
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	9	9	9	9	9	9	9
Industrial	0	0	0	0	0	0	0
Irrigation	0	0	0	0	0	0	0
Wholesale	0	0	0	0	0	0	0
Potable Total	9	9	9	9	9	10	10
Recycled	0	0	0	0	0	0	0

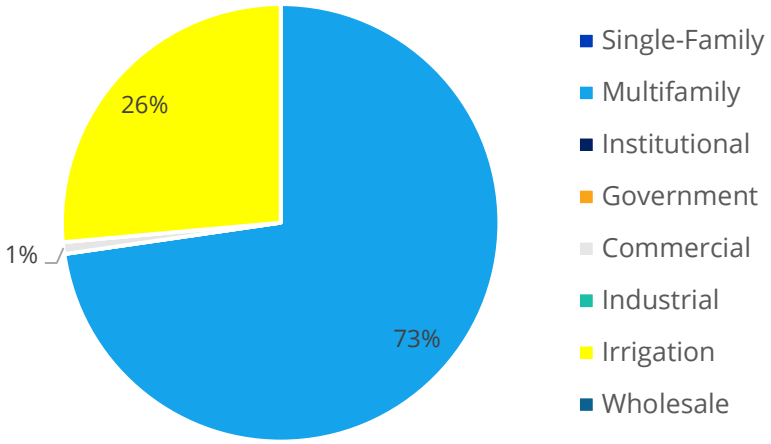
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

GATEWAY | Alvarado | HGL 260



The Gateway pressure zone falls within the Alvarado service area and is roughly bordered by Rosecrans Place and Shoup Drive to the north, Tuscaloosa Street to the east, Barnett Ave to the south, and Durham Ridge Place and Cadiz Street to the west. Being that it's a very small residential zone, there are no major roadways that traverse throughout, but it is located close to I-5. 70% of the water use is multifamily, with another 29% irrigation. On average in FY22-24, water use totaled 0.10 mgd and is projected to reach 0.11 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	1,053	1,463	1,460	1,448	1,439	1,414	1,382
Household Population	1,053	1,463	1,460	1,448	1,439	1,414	1,382
Single-Family Households	44	76	75	75	75	75	74
Multifamily Households	215	354	359	359	359	358	358
Total Households	259	430	434	434	434	433	432
Employees	691	693	697	702	709	714	718
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	0	5,522	5,358	5,358	5,358	5,358	5,219
Multifamily	70,882	81,016	81,145	80,703	80,372	79,696	78,505
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	836	836	836	836	836	836	836
Industrial	0	0	0	0	0	0	0
Irrigation	25,741	24,259	22,777	22,777	22,777	22,777	22,777
Wholesale	0	0	0	0	0	0	0
Potable Total	**97,459**	**111,633**	**110,116**	**109,674**	**109,343**	**108,667**	**107,337**
Recycled	0	0	0	0	0	0	0

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

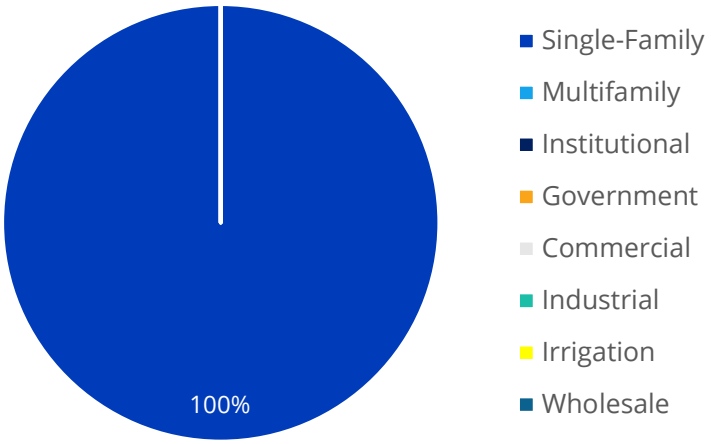
Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	0	6	6	6	6	6	6
Multifamily	79	91	91	90	90	89	88
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	1	1	1	1	1	1	1
Industrial	0	0	0	0	0	0	0
Irrigation	29	27	26	26	26	26	26
Wholesale	0	0	0	0	0	0	0
Potable Total	109	125	123	123	122	122	120
Recycled	0	0	0	0	0	0	0

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

GLIDDEN | Alvarado/Miramar | HGL 320

The Glidden pressure zone falls within the Alvarado/Miramar service area and is roughly bordered by Via Las Cumbres to the west, Corsica Street to the east, Corsica Way to the south, and Goodwin Street and Caminito Listo to the north. 100% of the water use is single-family. On average in FY22-24, water use totaled 0.0054 mgd and is projected to slightly decline to 0.0053 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	141	140	144	145	144	141	138
Household Population	130	129	133	134	133	131	128
Single-Family Households	28	26	25	25	24	24	24
Multifamily Households	20	22	26	26	26	26	26
Total Households	48	48	51	51	50	50	50
Employees	19	19	19	20	21	22	22
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	5,076	4,672	4,459	4,466	4,312	4,299	4,279
Multifamily	0	241	708	708	708	708	708
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	0	0	0	0	0	0	0
Wholesale	0	0	0	0	0	0	0
Potable Total	**5,076**	**4,913**	**5,167**	**5,174**	**5,020**	**5,007**	**4,987**
Recycled	0	0	0	0	0	0	0

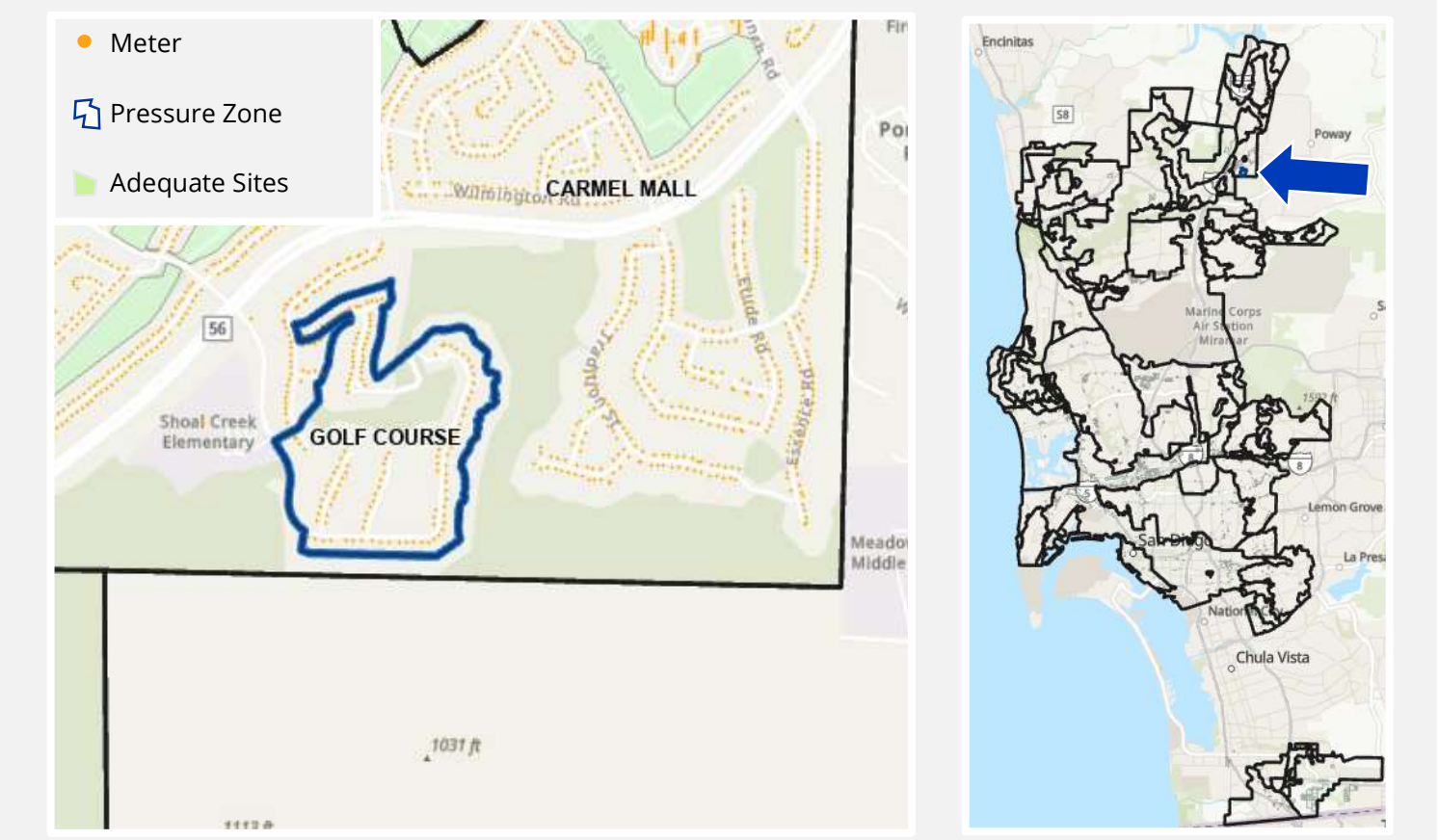
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	6	5	5	5	5	5	5
Multifamily	0	0	1	1	1	1	1
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	0	0	0	0	0	0	0
Wholesale	0	0	0	0	0	0	0
Potable Total	6	6	6	6	6	6	6
Recycled	0	0	0	0	0	0	0

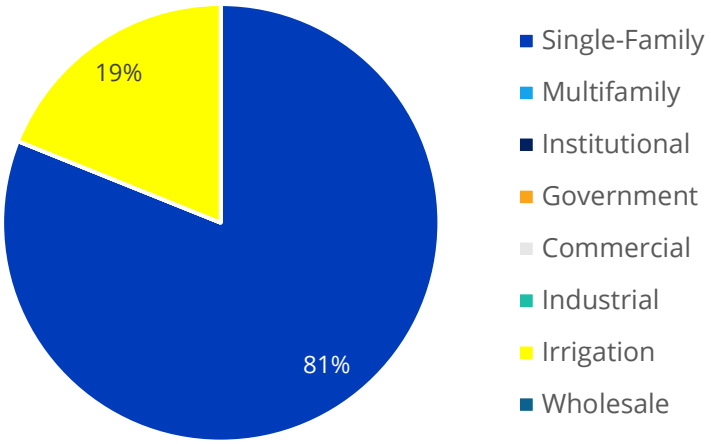
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

GOLF COURSE_1 | Miramar | HGL 1130



The Golf Course 1 pressure zone falls within the Miramar service area and is roughly bordered by Carmel Mountain Ranch Openspace Park to the south, north, and east and Fontanelle Place to the west. More than 80% of the water use is single-family, with another 19% irrigation. On average in FY22-24, water use totaled 0.043 mgd and is projected to slightly decline to 0.042 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	596	580	573	568	564	554	540
Household Population	581	565	558	553	549	539	526
Single-Family Households	131	130	129	129	129	129	129
Multifamily Households	98	98	98	98	98	98	98
Total Households	229	228	227	227	227	227	227
Employees	504	506	507	509	512	515	517
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	31,135	30,837	30,633	30,585	30,546	30,447	30,317
Multifamily	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	7,251	6,851	6,450	6,450	6,450	6,450	6,450
Wholesale	0	0	0	0	0	0	0
Potable Total	**38,386**	**37,688**	**37,083**	**37,035**	**36,996**	**36,898**	**36,768**
Recycled	0	0	0	0	0	0	0

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

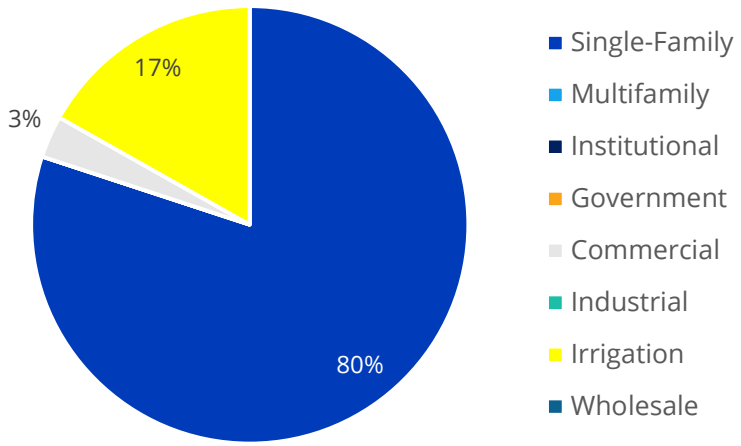
Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	35	35	34	34	34	34	34
Multifamily	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	8	8	7	7	7	7	7
Wholesale	0	0	0	0	0	0	0
Potable Total	43	42	42	41	41	41	41
Recycled	0	0	0	0	0	0	0

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

GOLF COURSE_2 | Miramar | HGL 1130

The Golf Course 2 pressure zone falls within the Miramar service area and is roughly bordered by Carmel Ridge Road to the south, Cedarhurst Lane to the north, and Momfort Court to the west. Almost 70% of the water use is single-family, with another 28% irrigation. On average in FY22-24, water use totaled 0.014 mgd and is projected to reach 0.018 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	115	177	176	175	173	171	167
Household Population	115	177	176	175	173	171	167
Single-Family Households	35	62	62	62	62	62	62
Multifamily Households	9	9	9	9	9	9	9
Total Households	44	71	71	71	71	71	71
Employees	79	80	80	80	81	82	82
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	7,898	12,655	12,648	12,640	12,624	12,609	12,577
Multifamily	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	307	307	307	307	307	307	307
Industrial	0	0	0	0	0	0	0
Irrigation	1,659	1,470	1,281	1,281	1,281	1,281	1,281
Wholesale	0	0	0	0	0	0	0
Potable Total	**9,865**	**14,433**	**14,236**	**14,228**	**14,213**	**14,197**	**14,165**
Recycled	0	0	0	0	0	0	0

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

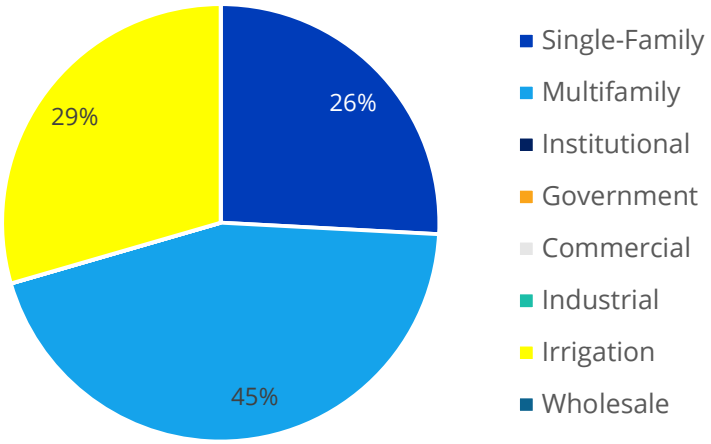
Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	9	14	14	14	14	14	14
Multifamily	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	2	2	1	1	1	1	1
Wholesale	0	0	0	0	0	0	0
Potable Total	11	16	16	16	16	16	16
Recycled	0	0	0	0	0	0	0

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

HIDDEN TRAILS | Otay | HGL 560

The Hidden Trails pressure zone falls within the Otay service area and is roughly bordered by Anchor Cove to the north, Castaway Cove and Sunset Crossing Point to the east, Westport View Drive to the south, and Parsons Landing to the west. Being that it's a very small residential zone, there are no major roadways that traverse throughout, but it is located close to I-805 and US 905. More than 40% of the water use is multifamily, with another 29% single-family and 27% irrigation. On average in FY22-24, water use totaled 0.047 mgd and is projected to slightly decline to 0.046 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	464	463	458	484	481	470	454
Household Population	464	463	458	484	481	470	454
Single-Family Households	64	66	66	66	66	66	66
Multifamily Households	77	80	80	89	90	90	89
Total Households	141	146	146	155	156	156	155
Employees	115	116	118	123	124	125	126
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	12,564	12,843	12,819	12,809	12,782	12,732	12,672
Multifamily	21,740	21,453	21,249	22,404	22,306	21,885	21,508
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	14,344	13,651	12,958	12,958	12,958	12,958	12,958
Wholesale	0	0	0	0	0	0	0
Potable Total	**48,649**	**47,948**	**47,027**	**48,172**	**48,047**	**47,576**	**47,138**
Recycled	0	0	0	0	0	0	0

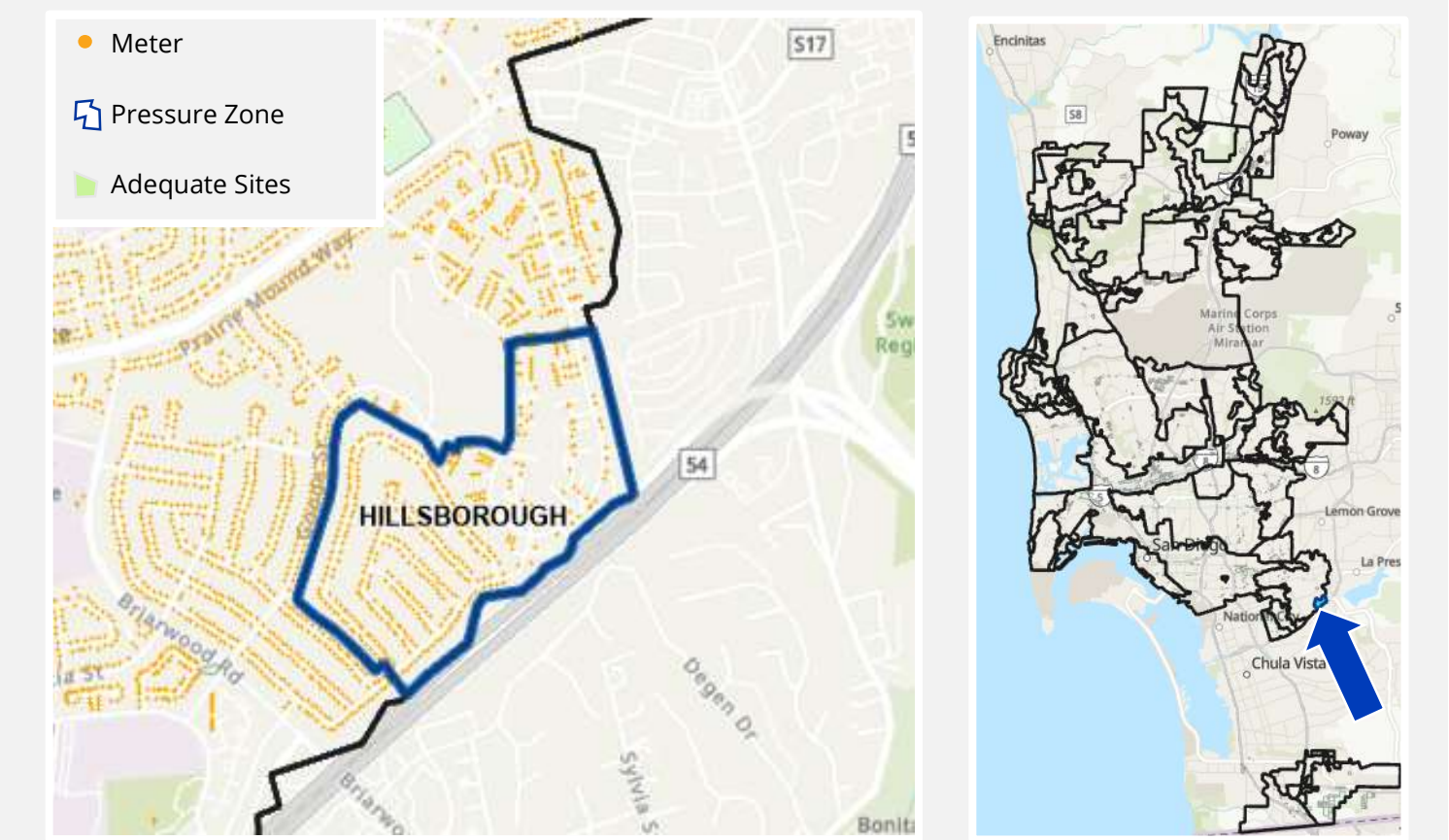
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	14	14	14	14	14	14	14
Multifamily	24	24	24	25	25	25	24
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	16	15	15	15	15	15	15
Wholesale	0	0	0	0	0	0	0
Potable Total	54	54	53	54	54	53	53
Recycled	0	0	0	0	0	0	0

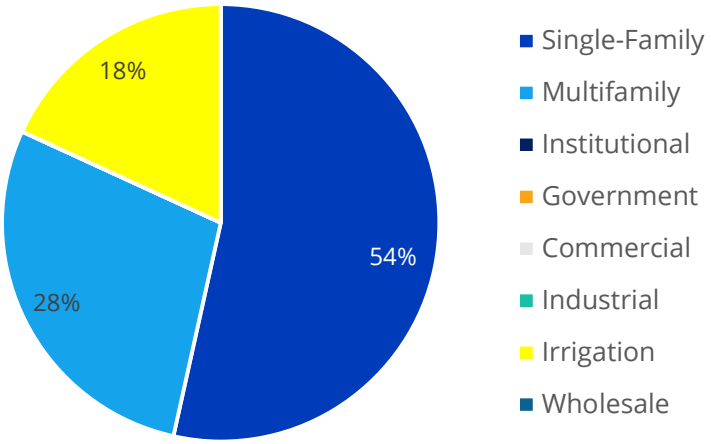
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

HILLSBOROUGH | Alvarado/Otay | HGL 550



The Hillsborough pressure zone falls within the Alvarado/Otay service area and is bordered by the Filipino American Highway to the south/east and Goode Street to the north/west. valley-like terrain to the west and north, parts of College Avenue to the east, and I-8 to the south. There are no major roadways through this zone as it consists of small residential side streets. More than 50% of the water use is single-family, with another 30% multifamily, and 17% irrigation. On average in FY22-24, water use totaled 0.13 mgd and is projected to slightly decline to 0.12 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	1,781	1,697	1,678	1,665	1,659	1,629	1,579
Household Population	1,780	1,697	1,677	1,665	1,659	1,628	1,579
Single-Family Households	412	405	407	409	413	415	415
Multifamily Households	85	85	85	85	85	85	85
Total Households	497	490	492	494	498	500	500
Employees	137	137	138	163	165	167	168
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	66,979	65,292	65,454	65,648	66,120	66,152	65,804
Multifamily	35,569	34,513	34,023	33,682	33,330	32,653	31,769
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	22,703	21,393	20,082	20,082	20,082	20,082	20,082
Wholesale	0	0	0	0	0	0	0
Potable Total	**125,250**	**121,197**	**119,559**	**119,412**	**119,533**	**118,887**	**117,655**
Recycled	0	0	0	0	0	0	0

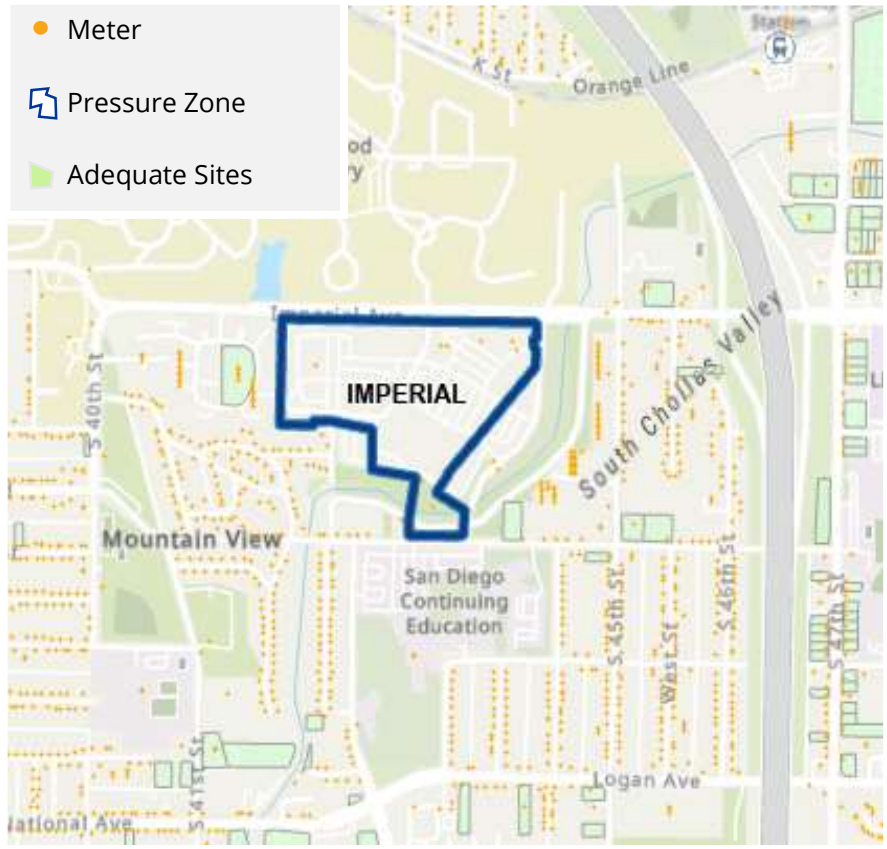
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

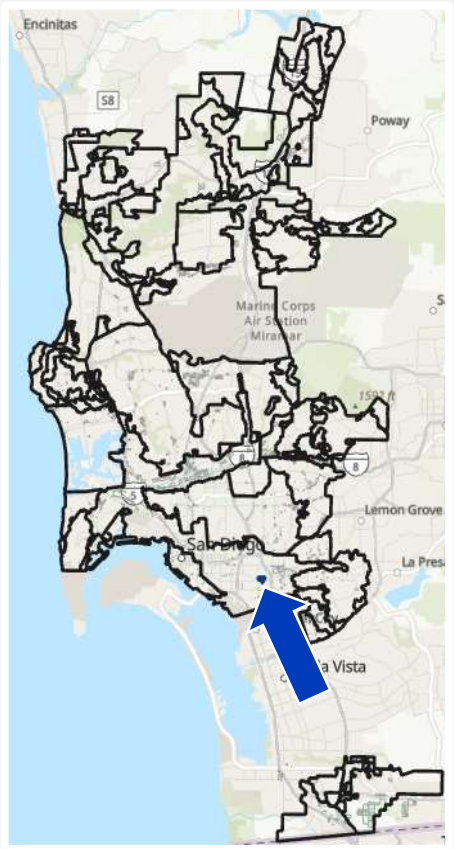
Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	75	73	73	74	74	74	74
Multifamily	40	39	38	38	37	37	36
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	25	24	22	22	22	22	22
Wholesale	0	0	0	0	0	0	0
Potable Total	140	136	134	134	134	133	132
Recycled	0	0	0	0	0	0	0

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

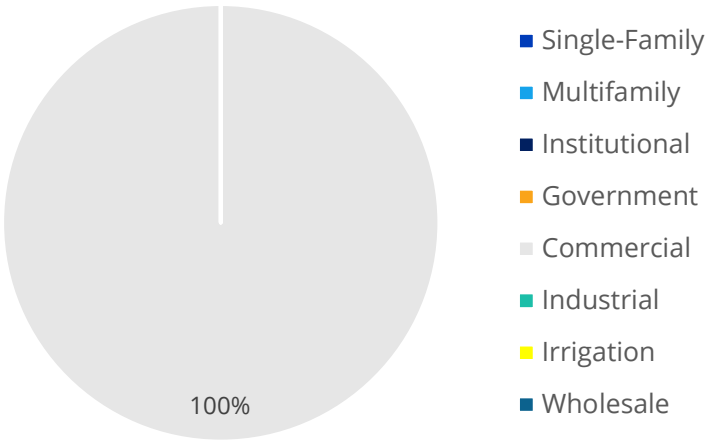
IMPERIAL | Alvarado | HGL 240





The Imperial pressure zone falls within the Alvarado service area and is roughly bordered by Imperial Avenue to the north, Ocean View Avenue to the south, Market Creek Canyon to the east, and University Heights 1 pressure zone to the west. This pressure zone is surrounded by University Heights 1 pressure zone. 100% of the water use is commercial. On average in FY22-24, water use totaled 0.012 mgd and is projected to reach 0.020 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	38	38	38	38	37	36	35
Household Population	38	38	38	37	37	36	35
Single-Family Households	0	0	0	0	0	0	0
Multifamily Households	10	10	10	10	10	10	10
Total Households	10	10	10	10	10	10	10
Employees	18	18	18	18	20	21	22
Additional Nonresidential Parcels (count)	n/a	0	0	0	1	1	1
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	156,911	156,911	156,911

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	0	0	0	0	0	0	0
Multifamily	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	15,056	15,056	15,056	15,056	23,235	23,235	23,235
Industrial	0	0	0	0	0	0	0
Irrigation	0	0	0	0	0	0	0
Wholesale	0	0	0	0	0	0	0
Potable Total	**15,056**	**15,056**	**15,056**	**15,056**	**23,235**	**23,235**	**23,235**
Recycled	0	0	0	0	0	0	0

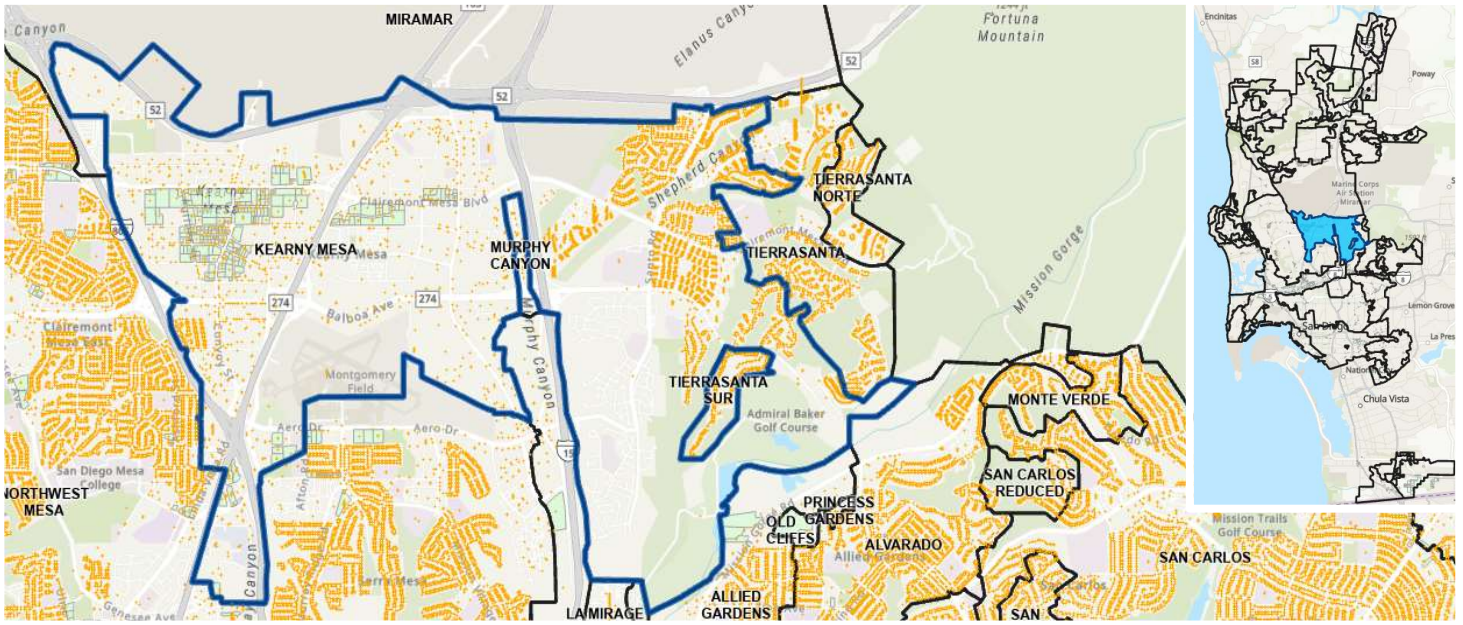
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	0	0	0	0	0	0	0
Multifamily	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	17	17	17	17	26	26	26
Industrial	0	0	0	0	0	0	0
Irrigation	0	0	0	0	0	0	0
Wholesale	0	0	0	0	0	0	0
Potable Total	17	17	17	17	26	26	26
Recycled	0	0	0	0	0	0	0

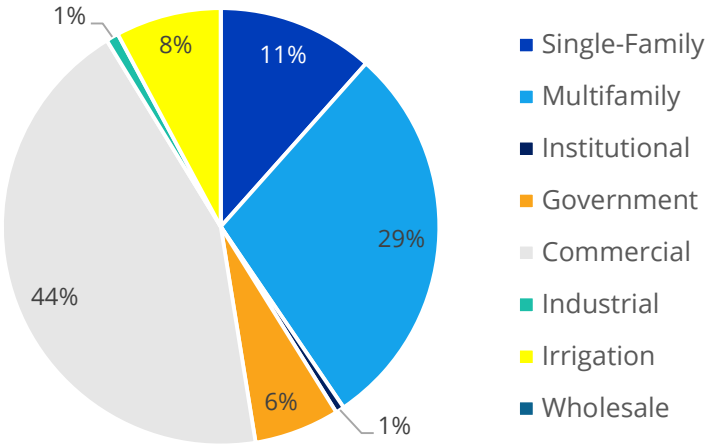
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

KEARNY MESA | Alvarado/Miramar | HGL 600



The Kearny Mesa pressure zone falls within the Alvarado/Miramar service area and is bordered by the Filipino American Highway to the south/east and Goode Street to the north/west. valley-like terrain to the west and north, parts of College Avenue to the east, and I-8 to the south. More than 40% of the water use is commercial, with another 27% multifamily, and 12% single-family. On average in FY22-24, water use totaled 5.27 mgd and is projected to reach 5.41 mgd by 2050

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	27,414	30,331	30,221	30,895	32,377	32,404	31,919
Household Population	27,043	29,967	29,856	30,528	32,008	32,036	31,558
Single-Family Households	3,456	3,551	3,541	3,540	3,538	3,536	3,530
Multifamily Households	6,559	7,985	8,073	8,498	9,287	9,563	9,700
Total Households	10,015	11,536	11,614	12,038	12,825	13,099	13,230
Employees	112,794	113,100	113,519	114,005	114,661	114,992	115,323
Additional Nonresidential Parcels (count)	n/a	2	4	7	12	14	16
Additional Nonresidential Parcels (square feet)	n/a	134,633	269,265	471,214	813,942	948,574	1,083,207

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	593,954	606,348	603,654	602,115	600,200	597,864	594,519
Multifamily	1,483,884	1,579,739	1,575,364	1,600,743	1,658,303	1,660,009	1,642,807
Institutional	33,022	32,235	31,449	31,449	31,449	31,449	31,449
Government	324,913	318,423	311,932	311,932	311,932	311,932	311,932
Commercial	2,249,079	2,244,444	2,239,808	2,250,335	2,266,570	2,273,588	2,280,606
Industrial	47,757	47,757	47,757	47,757	48,498	48,498	48,498
Irrigation	400,452	376,873	353,294	353,294	353,294	353,294	353,294
Wholesale	0	0	0	0	0	0	0
Potable Total	**5,133,061**	**5,205,819**	**5,163,260**	**5,197,626**	**5,270,247**	**5,276,636**	**5,263,107**
Recycled	116,154	104,931	104,931	104,931	104,931	104,931	104,931

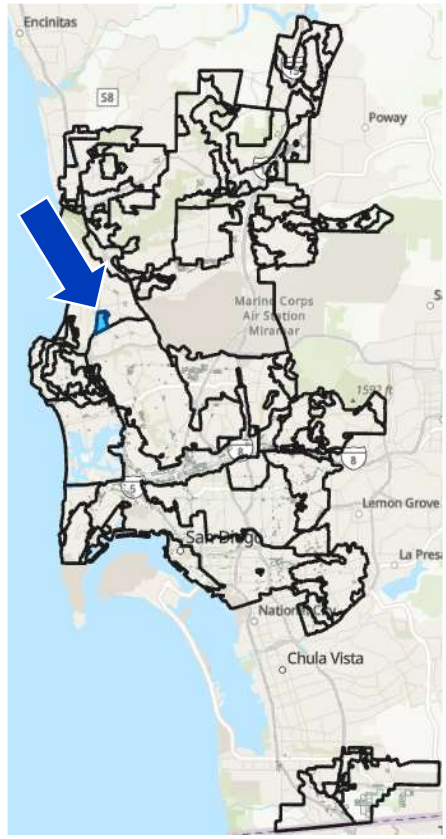
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	665	679	676	674	672	670	666
Multifamily	1,662	1,770	1,765	1,793	1,858	1,859	1,840
Institutional	37	36	35	35	35	35	35
Government	364	357	349	349	349	349	349
Commercial	2,519	2,514	2,509	2,521	2,539	2,547	2,555
Industrial	53	53	53	53	54	54	54
Irrigation	449	422	396	396	396	396	396
Wholesale	0	0	0	0	0	0	0
Potable Total	5,750	5,831	5,784	5,822	5,903	5,911	5,895
Recycled	130	118	118	118	118	118	118

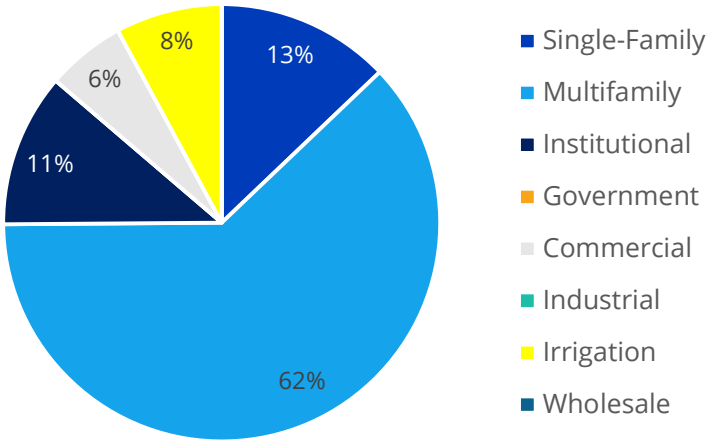
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

LA JOLLA GARDENS | Miramar | HGL 500



The La Jolla Gardens pressure zone falls within the Miramar service area and is bordered by I-5 to the west, Regents Road to the east, North City 610 to the north, and railway south of Caminito Cassis to the south. As this is a very small residential zone, there are no major roadways that run through it, but it is in very close proximation to I-5, Noble Drive, and Regents Road. More than 60% of the water use is multifamily, with another 12% single-family, and 10% institutional. On average in FY22-24, water use totaled 0.43 mgd and is projected to slightly decline to 0.41 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	8,625	8,307	8,211	8,148	8,107	7,989	7,808
Household Population	8,625	8,307	8,211	8,148	8,107	7,989	7,808
Single-Family Households	316	316	316	316	316	316	316
Multifamily Households	3,668	3,583	3,566	3,567	3,574	3,574	3,566
Total Households	3,984	3,899	3,882	3,883	3,890	3,890	3,882
Employees	1,243	1,251	1,274	1,317	1,344	1,362	1,380
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	51,588	51,445	51,380	51,309	51,249	51,119	50,934
Multifamily	248,642	255,721	245,630	241,867	241,048	237,906	234,507
Institutional	45,658	45,560	45,462	45,462	45,462	45,462	45,462
Government	0	0	0	0	0	0	0
Commercial	23,361	23,361	23,361	23,361	23,361	23,361	23,361
Industrial	0	0	0	0	0	0	0
Irrigation	31,596	29,777	27,958	27,958	27,958	27,958	27,958
Wholesale	0	0	0	0	0	0	0
Potable Total	**400,845**	**405,864**	**393,791**	**389,957**	**389,077**	**385,805**	**382,221**
Recycled	167,113	147,616	147,616	147,616	147,616	147,616	147,616

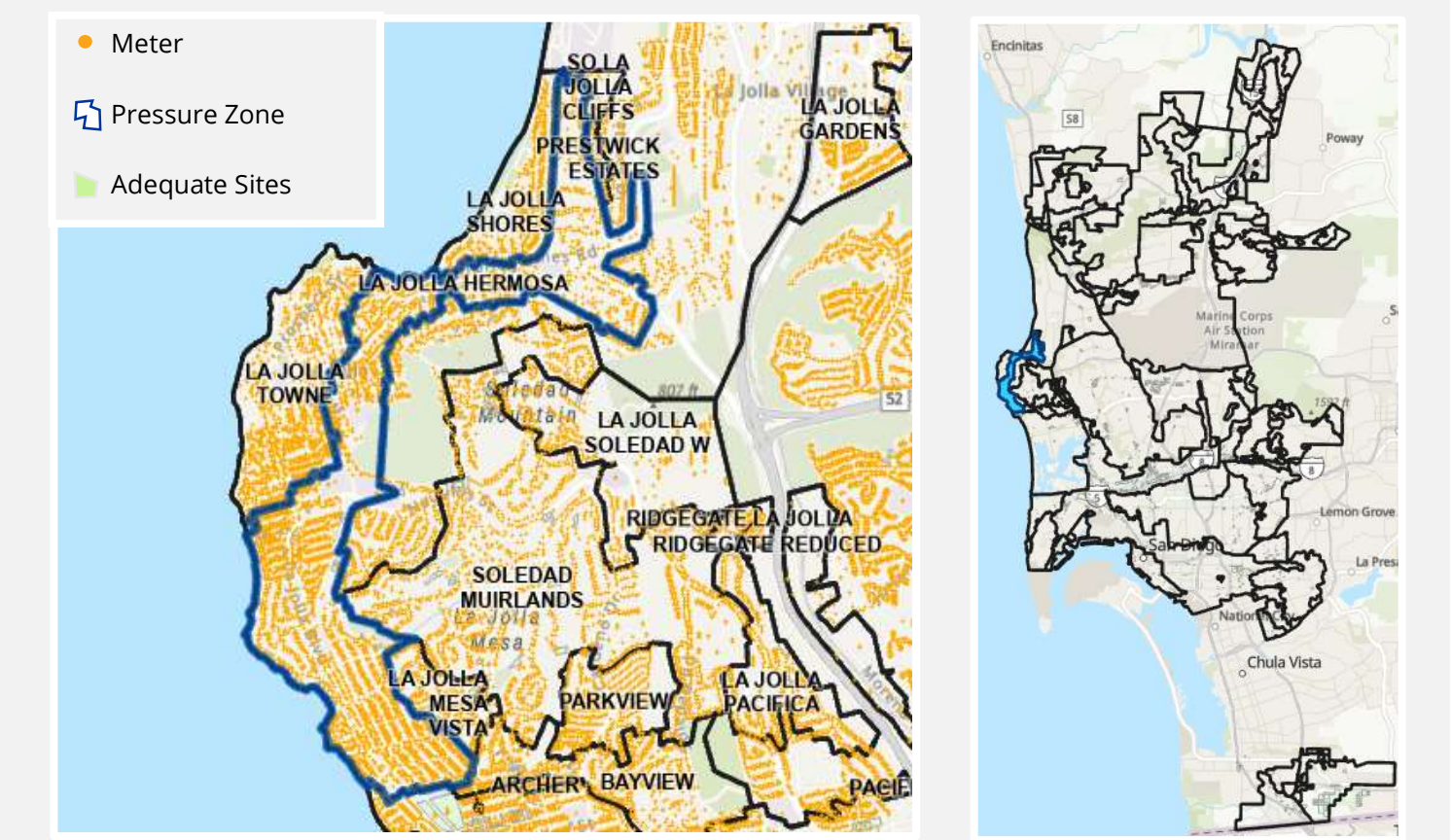
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	58	58	58	57	57	57	57
Multifamily	279	286	275	271	270	266	263
Institutional	51	51	51	51	51	51	51
Government	0	0	0	0	0	0	0
Commercial	26	26	26	26	26	26	26
Industrial	0	0	0	0	0	0	0
Irrigation	35	33	31	31	31	31	31
Wholesale	0	0	0	0	0	0	0
Potable Total	449	455	441	437	436	432	428
Recycled	187	165	165	165	165	165	165

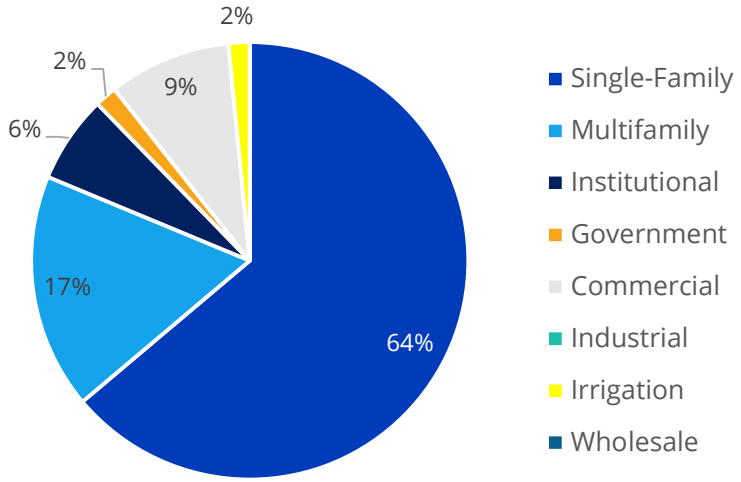
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

LA JOLLA HERMOSA | Miramar | HGL 370



The La Jolla Hermosa pressure zone falls within the Miramar and Alvarado service area and is bordered by La Jolla Towne 270 and the Pacific Ocean to west, North City 2 610 to the east, La Jolla Shores 241 and North City 1 610 to the north, and just south of Colima Street to the south. La Jolla Boulevard is a major roadway running north/south through the entire zone. Nearly 70% of the water use is single-family, with another 18% multifamily. On average in FY22-24, water use totaled 1.30 mgd and is projected to slightly decline to 1.27 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	8,716	8,253	8,086	8,076	8,057	8,004	7,970
Household Population	8,541	8,085	7,915	7,904	7,882	7,831	7,815
Single-Family Households	2,654	2,627	2,590	2,589	2,585	2,580	2,566
Multifamily Households	1,241	1,125	1,116	1,142	1,162	1,197	1,285
Total Households	3,895	3,752	3,706	3,731	3,747	3,777	3,851
Employees	9,641	9,685	9,740	9,798	9,881	9,961	10,040
Additional Nonresidential Parcels (count)	n/a	0	0	1	1	2	2
Additional Nonresidential Parcels (square feet)	n/a	0	0	6,408	6,408	12,815	12,815

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	824,140	816,746	809,169	807,856	806,252	803,472	798,457
Multifamily	224,995	235,995	220,855	220,548	221,008	221,371	225,036
Institutional	83,218	82,985	82,753	82,753	82,753	82,753	82,753
Government	21,200	19,460	17,721	17,721	17,721	17,721	17,721
Commercial	117,006	116,664	116,323	116,657	116,657	116,991	116,991
Industrial	0	0	0	0	0	0	0
Irrigation	20,118	19,099	18,080	18,080	18,080	18,080	18,080
Wholesale	0	0	0	0	0	0	0
Potable Total	**1,290,677**	**1,290,951**	**1,264,901**	**1,263,614**	**1,262,470**	**1,260,388**	**1,259,037**
Recycled	0	0	0	0	0	0	0

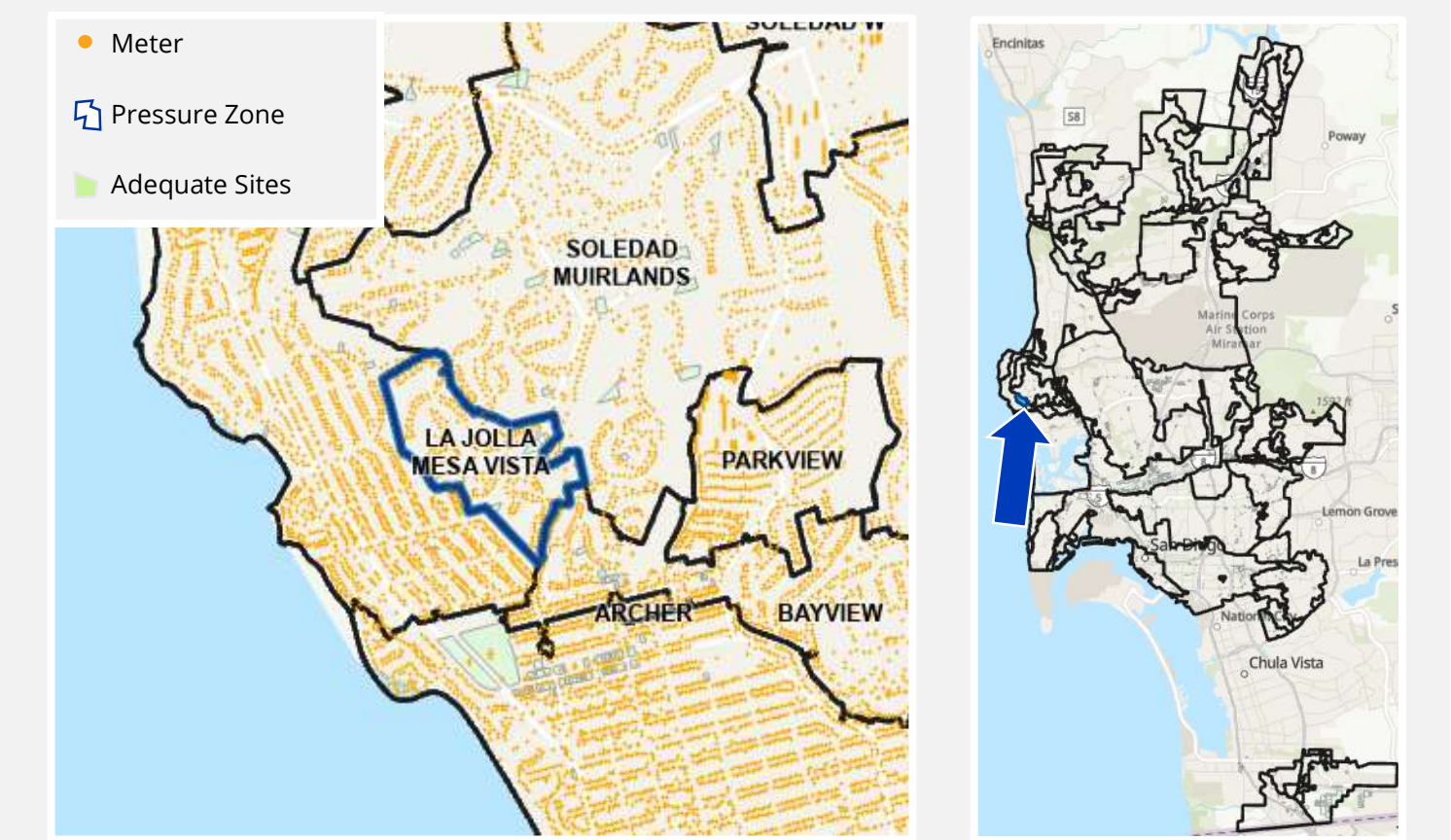
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	923	915	906	905	903	900	894
Multifamily	252	264	247	247	248	248	252
Institutional	93	93	93	93	93	93	93
Government	24	22	20	20	20	20	20
Commercial	131	131	130	131	131	131	131
Industrial	0	0	0	0	0	0	0
Irrigation	23	21	20	20	20	20	20
Wholesale	0	0	0	0	0	0	0
Potable Total	1,446	1,446	1,417	1,415	1,414	1,412	1,410
Recycled	0	0	0	0	0	0	0

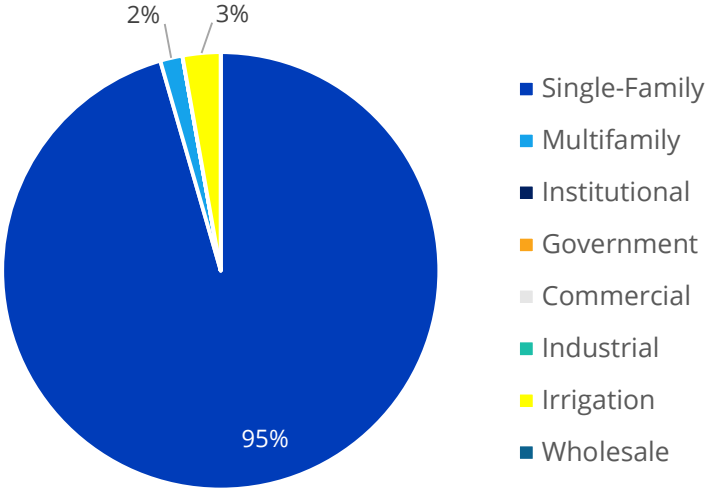
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

LA JOLLA MESA VISTA | Alvarado/Miramar | HGL 495



The La Jolla Mesa Vista pressure zone falls within the Alvarado/Miramar service area and is roughly bordered by Linda Rosa Avenue and La Jolla Mesa Drive to the south, La Canada and La Jolla Corona Drive to the north, and Folsom Drive and Bellevue Drive to the west. Nearly 95% of the water use is single-family, with another 3% multifamily, and another 3% irrigation. On average in FY22-24, water use totaled 0.099 mgd and is projected to remain around 0.099 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	600	607	601	597	593	584	570
Household Population	600	607	601	597	593	584	570
Single-Family Households	263	272	271	271	271	271	270
Multifamily Households	0	0	0	0	0	0	0
Total Households	263	272	271	271	271	271	270
Employees	135	135	136	136	138	140	142
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	89,532	91,058	90,773	90,670	90,566	90,331	89,859
Multifamily	1,549	1,522	1,514	1,505	1,496	1,475	1,449
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	2,629	2,492	2,355	2,355	2,355	2,355	2,355
Wholesale	0	0	0	0	0	0	0
Potable Total	**93,710**	**95,072**	**94,642**	**94,530**	**94,418**	**94,162**	**93,663**
Recycled	0	0	0	0	0	0	0

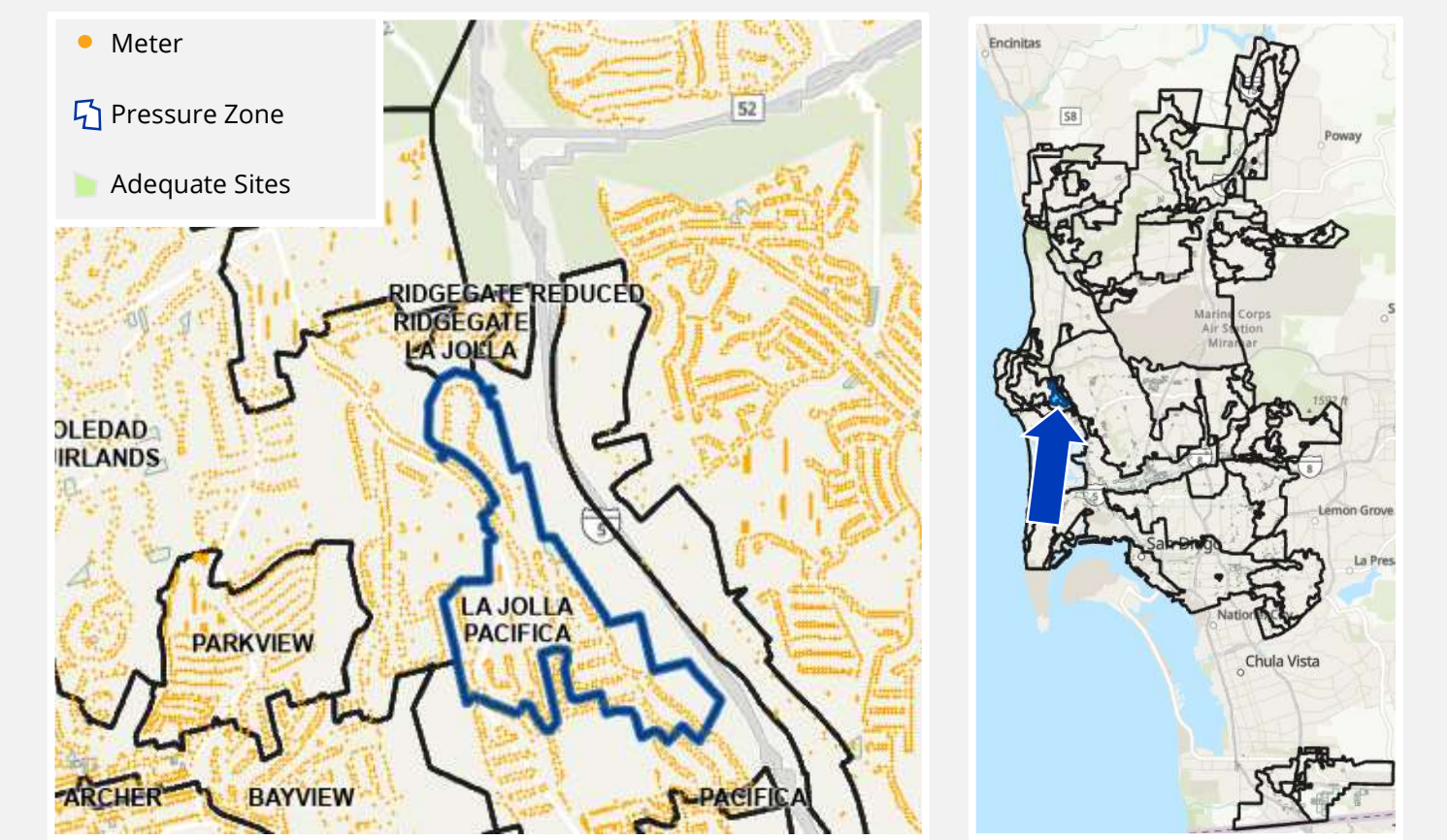
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	100	102	102	102	101	101	101
Multifamily	2	2	2	2	2	2	2
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	3	3	3	3	3	3	3
Wholesale	0	0	0	0	0	0	0
Potable Total	105	106	106	106	106	105	105
Recycled	0	0	0	0	0	0	0

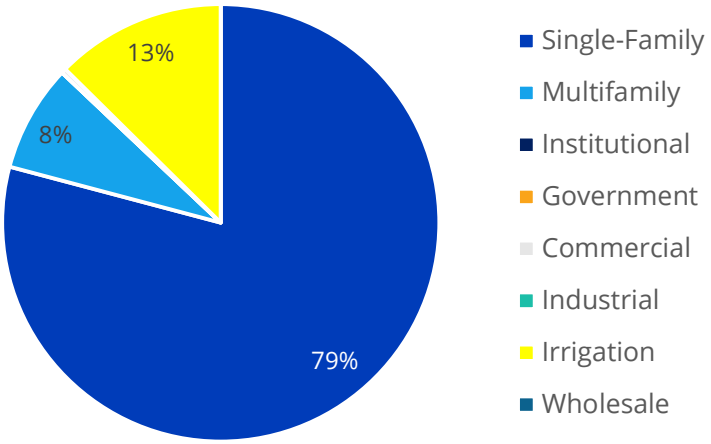
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

LA JOLLA PACIFICA | Alvarado/Miramar | HGL 594



The La Jolla Pacifica pressure zone falls within the Alvarado/Miramar service area and is bordered by Soledad Mountain Road to the west, I-5 to the east, undeveloped land surrounding Palomino Circle to the north, and Northwest Mesa 559 to the south. Soledad Mountain Road is the only main roadway through the zone as the rest are mainly residential streets. Nearly 80% of the water use is single-family, with another 15% irrigation and 8% multifamily. On average in FY22-24, water use totaled 0.19 mgd and is projected to slightly decline to 0.18 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	1,520	1,494	1,475	1,466	1,460	1,442	1,414
Household Population	1,312	1,286	1,268	1,259	1,252	1,234	1,207
Single-Family Households	428	429	426	425	426	425	424
Multifamily Households	118	117	117	117	117	117	117
Total Households	546	546	543	542	543	542	541
Employees	411	413	416	420	428	442	455
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	132,613	132,377	131,556	131,240	131,253	130,788	130,156
Multifamily	13,275	13,163	12,938	12,877	12,792	12,647	12,419
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	586	586	586	586	586	586	586
Industrial	0	0	0	0	0	0	0
Irrigation	21,096	19,693	18,290	18,290	18,290	18,290	18,290
Wholesale	0	0	0	0	0	0	0
Potable Total	**167,570**	**165,820**	**163,370**	**162,993**	**162,921**	**162,312**	**161,451**
Recycled	0	0	0	0	0	0	0

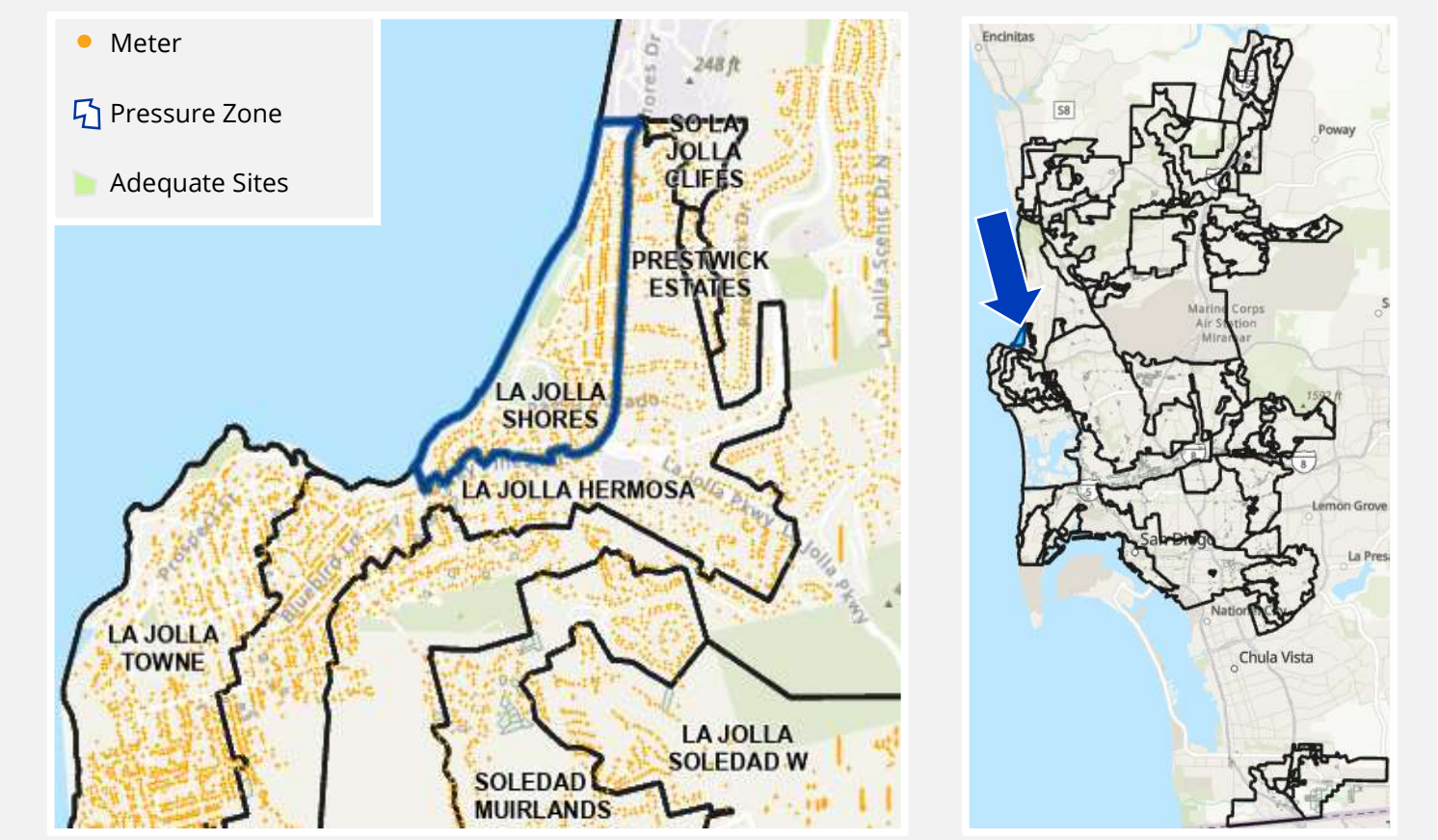
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	149	148	147	147	147	147	146
Multifamily	15	15	14	14	14	14	14
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	1	1	1	1	1	1	1
Industrial	0	0	0	0	0	0	0
Irrigation	24	22	20	20	20	20	20
Wholesale	0	0	0	0	0	0	0
Potable Total	188	186	183	183	182	182	181
Recycled	0	0	0	0	0	0	0

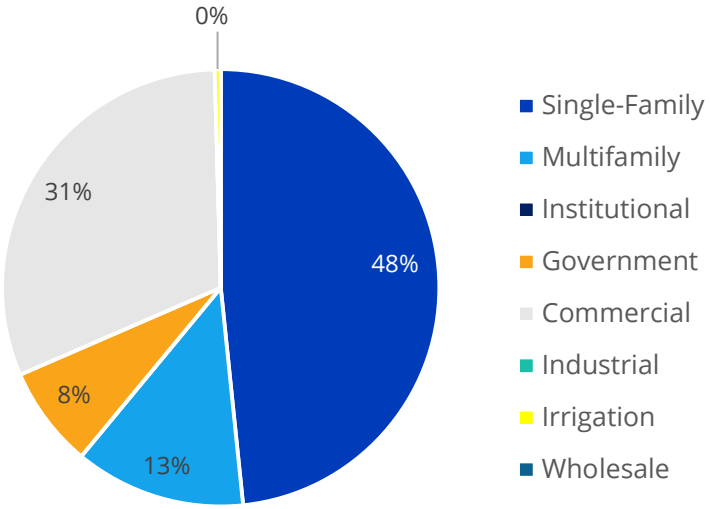
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

LA JOLLA SHORES | Miramar | HGL 241



The La Jolla Shores pressure zone falls within the Miramar and Alvarado service area and is bordered by the Pacific Coast to the west, La Jolla Shores Drive to the east, Scripps Institution of Oceanography to the north, and Torrey Pines Road to the south. Nearly 50% of the water use is single-family, with another 31% commercial and 12% multifamily. On average in FY22-24, water use totaled 0.26 mgd and is projected to remain around 0.26 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	1,424	1,470	1,452	1,442	1,435	1,416	1,384
Household Population	1,373	1,421	1,403	1,393	1,386	1,366	1,335
Single-Family Households	429	458	458	458	458	458	457
Multifamily Households	227	229	226	226	227	228	228
Total Households	656	687	684	684	685	686	685
Employees	3,107	3,110	3,116	3,126	3,136	3,143	3,149
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	119,296	123,924	123,751	123,604	123,470	123,142	122,570
Multifamily	31,200	31,054	31,198	30,627	30,539	30,195	29,625
Institutional	0	0	0	0	0	0	0
Government	18,514	18,486	18,457	18,457	18,457	18,457	18,457
Commercial	76,620	76,059	75,499	75,499	75,499	75,499	75,499
Industrial	0	0	0	0	0	0	0
Irrigation	1,076	1,006	936	936	936	936	936
Wholesale	0	0	0	0	0	0	0
Potable Total	**246,705**	**250,528**	**249,841**	**249,122**	**248,901**	**248,229**	**247,087**
Recycled	0	0	0	0	0	0	0

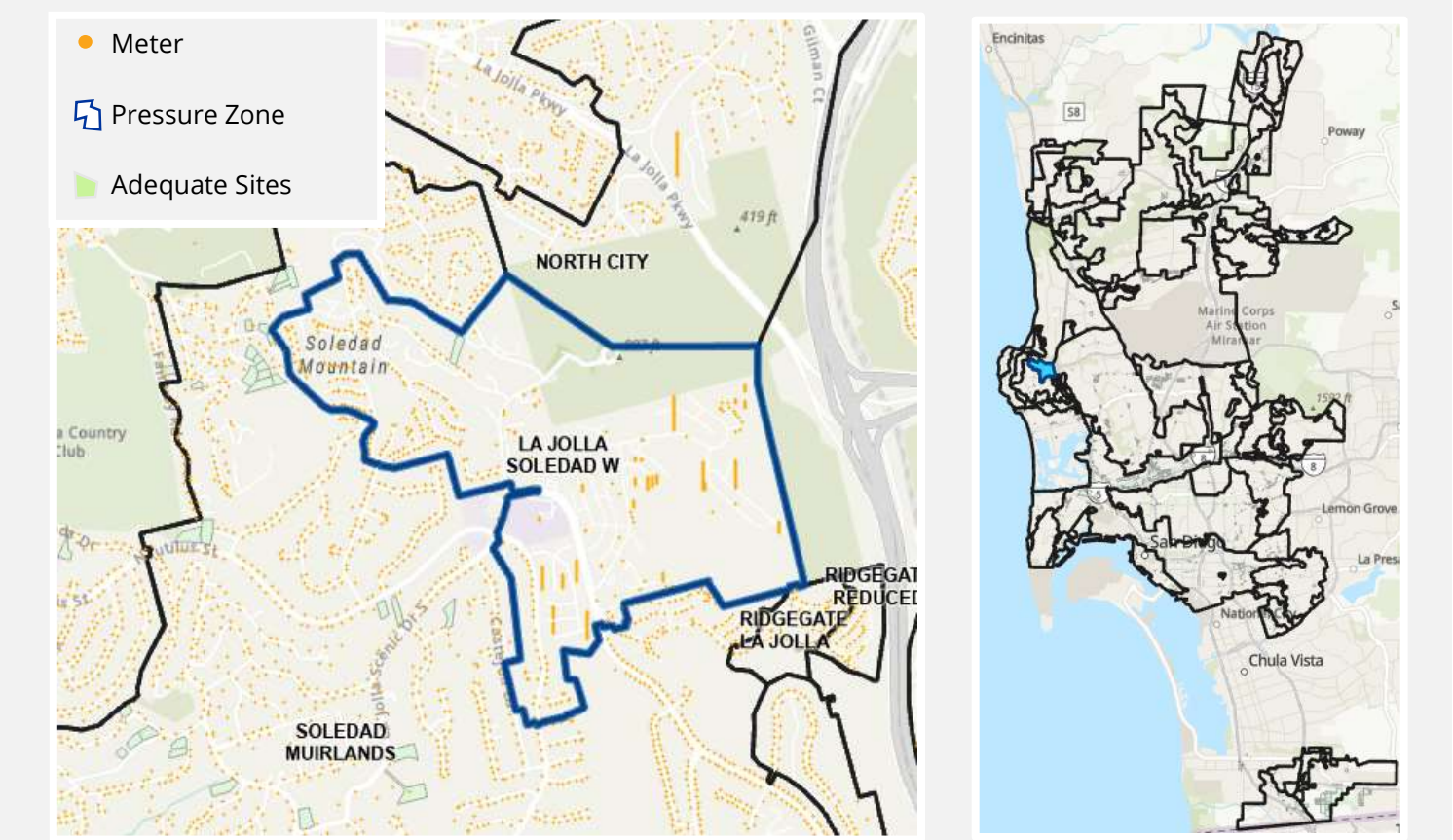
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	134	139	139	138	138	138	137
Multifamily	35	35	35	34	34	34	33
Institutional	0	0	0	0	0	0	0
Government	21	21	21	21	21	21	21
Commercial	86	85	85	85	85	85	85
Industrial	0	0	0	0	0	0	0
Irrigation	1	1	1	1	1	1	1
Wholesale	0	0	0	0	0	0	0
Potable Total	276	281	280	279	279	278	277
Recycled	0	0	0	0	0	0	0

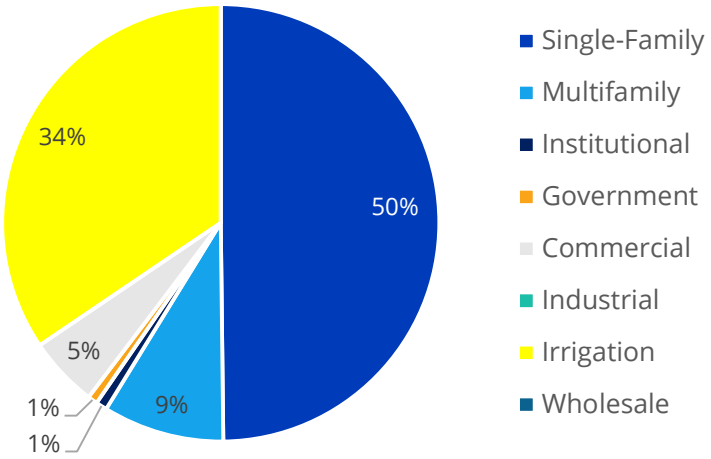
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

LA JOLLA SOLEDAD W | Alvarado/Miramar | HGL 925



The La Jolla Soledad West pressure zone falls within the Alvarado service area and is bordered by North City 610 to the west, San Diego Freeway to the east, Soledad Muirlands 725 to the north, and Via Media to the south. Nearly 50% of the water use is single-family, with another 36% irrigation. On average in FY22-24, water use totaled 0.31 mgd and is projected to slightly decline to 0.30 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	1,187	1,240	1,228	1,218	1,209	1,191	1,163
Household Population	1,186	1,239	1,227	1,217	1,208	1,190	1,162
Single-Family Households	448	481	480	480	480	480	477
Multifamily Households	49	49	49	49	48	48	49
Total Households	497	530	529	529	528	528	526
Employees	611	615	621	629	642	654	665
Additional Nonresidential Parcels (count)	n/a	0	0	0	1	1	1
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	10,606	10,606	10,606

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	146,404	153,325	152,917	152,711	152,571	152,193	151,182
Multifamily	26,332	25,850	25,669	25,481	25,480	25,015	24,670
Institutional	2,476	2,293	2,110	2,110	2,110	2,110	2,110
Government	2,089	1,986	1,884	1,884	1,884	1,884	1,884
Commercial	15,318	15,161	15,003	15,003	15,556	15,556	15,556
Industrial	0	0	0	0	0	0	0
Irrigation	101,254	95,416	89,577	89,577	89,577	89,577	89,577
Wholesale	0	0	0	0	0	0	0
Potable Total	**293,873**	**294,030**	**287,160**	**286,766**	**287,178**	**286,336**	**284,979**
Recycled	0	0	0	0	0	0	0

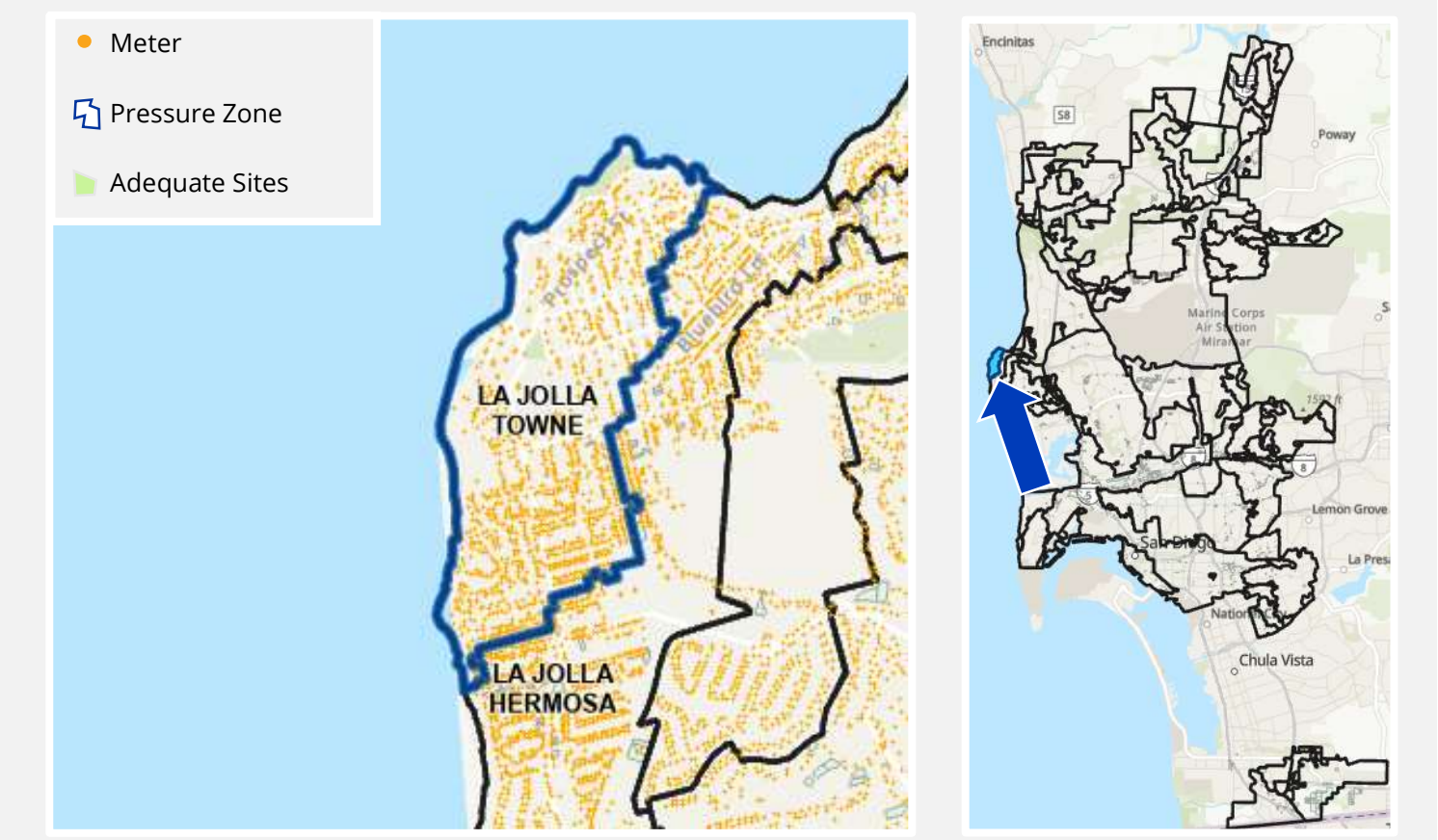
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	164	172	171	171	171	170	169
Multifamily	29	29	29	29	29	28	28
Institutional	3	3	2	2	2	2	2
Government	2	2	2	2	2	2	2
Commercial	17	17	17	17	17	17	17
Industrial	0	0	0	0	0	0	0
Irrigation	113	107	100	100	100	100	100
Wholesale	0	0	0	0	0	0	0
Potable Total	329	329	322	321	322	321	319
Recycled	0	0	0	0	0	0	0

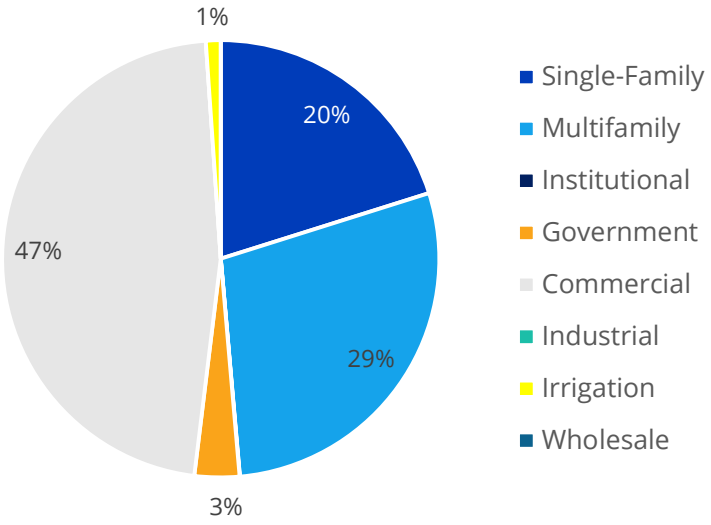
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

LA JOLLA TOWNE | Miramar | HGL 270



The La Jolla Towne pressure zone falls within the Miramar and Alvarado service area and is bordered by the Pacific Coast to the west and north, Torrey Pines Road and Bishop Lane to the east, and North Lane and Westbourne Street to the south. La Jolla Boulevard, Pearl Street, and Prospect Street are main roadways traversing the zone. 45% of the water use is commercial with another 30% multifamily and 21% single-family. On average in FY22-24, water use totaled 0.65 mgd and is projected to reach 0.66 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	4,156	4,139	4,086	4,118	4,268	4,376	4,462
Household Population	3,558	3,556	3,499	3,530	3,675	3,785	3,896
Single-Family Households	658	628	607	607	606	606	601
Multifamily Households	1,279	1,346	1,340	1,368	1,449	1,526	1,622
Total Households	1,937	1,974	1,947	1,975	2,055	2,132	2,223
Employees	8,320	8,361	8,412	8,464	8,536	8,603	8,670
Additional Nonresidential Parcels (count)	n/a	0	1	1	2	2	3
Additional Nonresidential Parcels (square feet)	n/a	0	8,754	8,754	17,508	17,508	26,262

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	130,154	125,324	122,354	122,232	122,121	121,957	121,084
Multifamily	183,967	186,174	186,537	187,135	193,634	198,496	203,847
Institutional	224	224	224	224	224	224	224
Government	21,425	20,497	19,569	19,569	19,569	19,569	19,569
Commercial	303,744	303,456	303,624	303,624	304,081	304,081	304,537
Industrial	0	0	0	0	0	0	0
Irrigation	6,983	6,671	6,359	6,359	6,359	6,359	6,359
Wholesale	0	0	0	0	0	0	0
Potable Total	**646,497**	**642,346**	**638,668**	**639,144**	**645,987**	**650,686**	**655,621**
Recycled	0	0	0	0	0	0	0

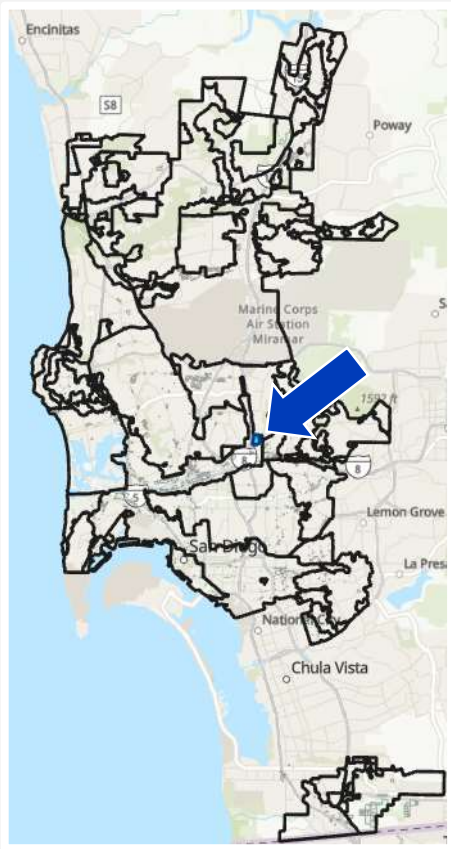
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	146	140	137	137	137	137	136
Multifamily	206	209	209	210	217	222	228
Institutional	0	0	0	0	0	0	0
Government	24	23	22	22	22	22	22
Commercial	340	340	340	340	341	341	341
Industrial	0	0	0	0	0	0	0
Irrigation	8	7	7	7	7	7	7
Wholesale	0	0	0	0	0	0	0
Potable Total	724	720	715	716	724	729	734
Recycled	0	0	0	0	0	0	0

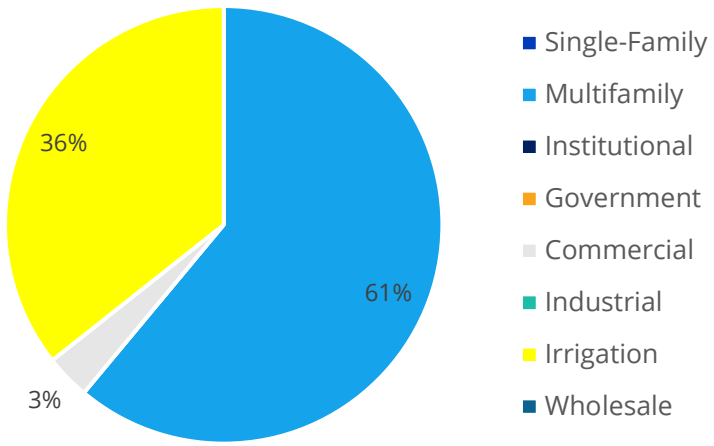
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

LA MIRAGE | Alvarado | HGL 500



The La Mirage pressure zone falls within the Alvarado service area and is roughly bordered by I-15 to the west, Santo Road to the east, undeveloped hilly terrain east of I-15 to the north, and Friars Road to the south. Almost 60% of the water use is multifamiliy, with another 40% irrigation. On average in FY22-24, water use totaled 0.22 mgd and is projected to slightly decline to 0.20 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	397	432	428	424	421	413	402
Household Population	397	432	428	424	421	413	402
Single-Family Households	0	7	7	7	7	7	7
Multifamily Households	190	205	205	205	205	205	205
Total Households	190	212	212	212	212	212	212
Employees	184	185	187	193	205	208	210
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	0	1,205	1,205	1,205	1,205	1,205	1,205
Multifamily	124,803	123,427	122,412	121,396	120,634	118,598	115,792
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	6,764	6,725	6,687	6,687	6,687	6,687	6,687
Industrial	0	0	0	0	0	0	0
Irrigation	72,851	68,208	63,566	63,566	63,566	63,566	63,566
Wholesale	0	0	0	0	0	0	0
Potable Total	**204,418**	**199,566**	**193,870**	**192,855**	**192,092**	**190,056**	**187,250**
Recycled	0	0	0	0	0	0	0

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

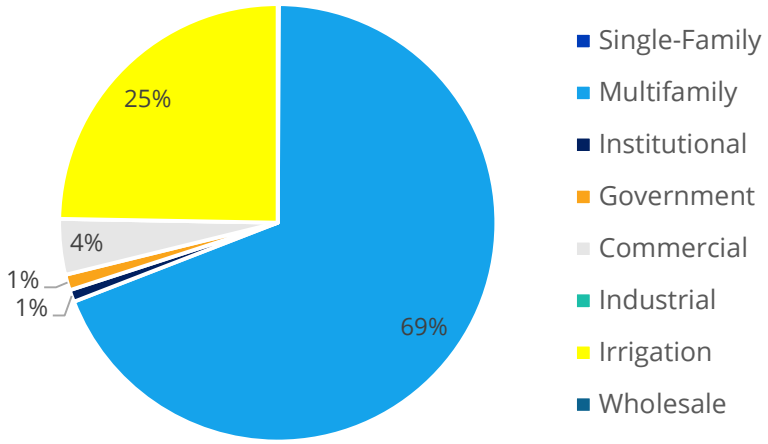
Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	0	1	1	1	1	1	1
Multifamily	140	138	137	136	135	133	130
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	8	8	7	7	7	7	7
Industrial	0	0	0	0	0	0	0
Irrigation	82	76	71	71	71	71	71
Wholesale	0	0	0	0	0	0	0
Potable Total	229	224	217	216	215	213	210
Recycled	0	0	0	0	0	0	0

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

LIBERTY STATION | Alvarado | HGL 175

The Liberty Station pressure zone falls within the Alvarado service area and is roughly bordered by US 209 to the west, Laning Road and N Harbor Drive to the east, Laning Road to the north, and Nimitz Boulevard to the south. Nearly 70% of the water use is multifamily, with another 25% irrigation. On average in FY22-24, water use totaled 0.11 mgd and is projected to slightly decline to 0.10 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	718	706	705	711	708	715	707
Household Population	638	631	628	632	627	634	628
Single-Family Households	1	3	2	1	1	0	0
Multifamily Households	234	237	239	245	245	252	256
Total Households	235	240	241	246	246	252	256
Employees	1,109	1,111	1,114	1,122	1,127	1,155	1,183
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	96	492	305	129	129	-32	-32
Multifamily	72,972	71,284	70,972	70,829	70,336	70,384	69,330
Institutional	936	882	828	828	828	828	828
Government	1,235	1,083	931	931	931	931	931
Commercial	4,347	4,149	3,952	3,952	3,952	3,952	3,952
Industrial	0	0	0	0	0	0	0
Irrigation	26,114	24,783	23,451	23,451	23,451	23,451	23,451
Wholesale	0	0	0	0	0	0	0
Potable Total	**105,700**	**102,673**	**100,439**	**100,120**	**99,627**	**99,514**	**98,459**
Recycled	0	0	0	0	0	0	0

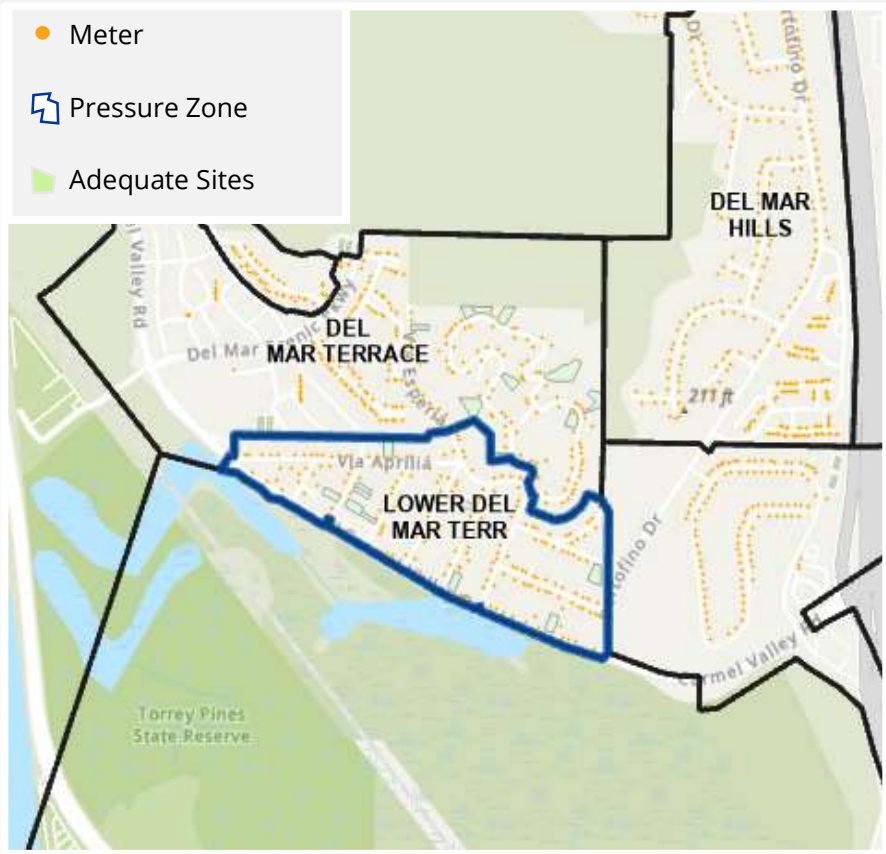
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	0	1	0	0	0	0	0
Multifamily	82	80	79	79	79	79	78
Institutional	1	1	1	1	1	1	1
Government	1	1	1	1	1	1	1
Commercial	5	5	4	4	4	4	4
Industrial	0	0	0	0	0	0	0
Irrigation	29	28	26	26	26	26	26
Wholesale	0	0	0	0	0	0	0
Potable Total	118	115	113	112	112	111	110
Recycled	0	0	0	0	0	0	0

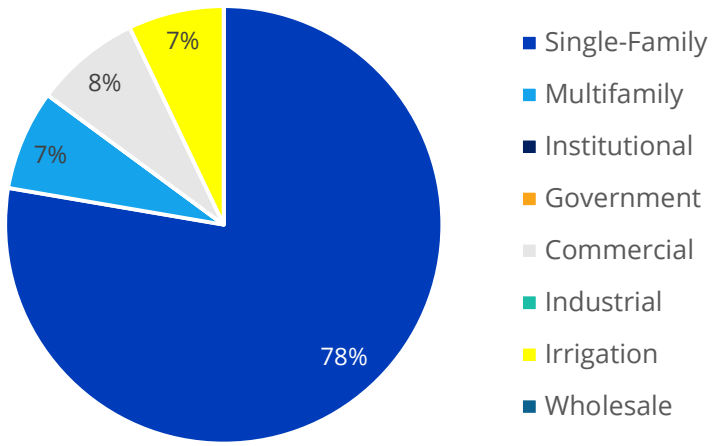
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

LOWER DEL MAR TERR | Miramar | HGL 196



The Lower Del Mar Terrace pressure zone falls within the Miramar service area and is roughly bordered by Los Penasquitos Waterfoul Reserve to the south, Portofino Drive to the east, Via Aprilia and Via Latina to the north, and the intersection of Via Aprilia and Carmel Valley Road to the west. Twain Avenue and Zion. More than 70% of the water use is single-family, with another 17% for irrigation. On average in FY22-24, water use totaled 0.063 mgd and is projected to slightly decline to 0.061 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	561	555	550	546	541	533	521
Household Population	561	555	550	546	541	533	521
Single-Family Households	189	191	191	191	191	191	191
Multifamily Households	51	51	51	51	51	51	51
Total Households	240	242	242	242	242	242	242
Employees	496	498	503	510	518	524	530
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	41,767	41,957	41,892	41,839	41,773	41,666	41,503
Multifamily	3,992	3,924	3,892	3,867	3,835	3,784	3,708
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	4,187	4,187	4,187	4,187	4,187	4,187	4,187
Industrial	0	0	0	0	0	0	0
Irrigation	3,808	3,342	2,877	2,877	2,877	2,877	2,877
Wholesale	0	0	0	0	0	0	0
Potable Total	**53,753**	**53,410**	**52,848**	**52,770**	**52,672**	**52,514**	**52,274**
Recycled	0	0	0	0	0	0	0

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

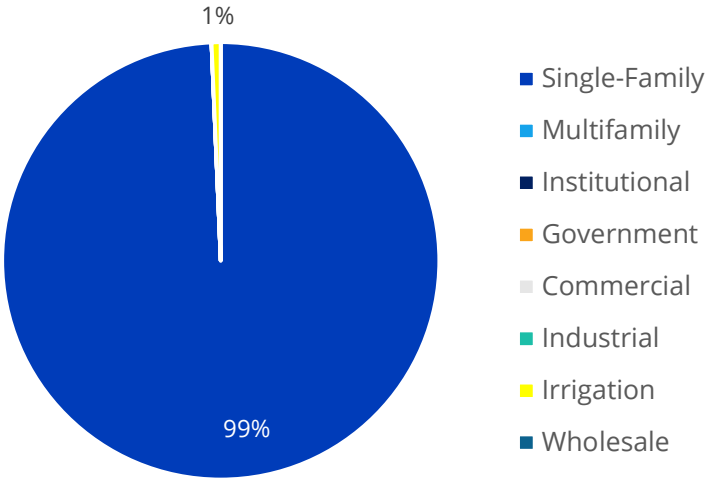
Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	47	47	47	47	47	47	46
Multifamily	4	4	4	4	4	4	4
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	5	5	5	5	5	5	5
Industrial	0	0	0	0	0	0	0
Irrigation	4	4	3	3	3	3	3
Wholesale	0	0	0	0	0	0	0
Potable Total	60	60	59	59	59	59	59
Recycled	0	0	0	0	0	0	0

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

LUSK PARK_1 | Miramar | HGL 470

The Lusk Park 1 pressure zone falls within the Miramar service area and is roughly bordered by Los Pensquitos Canyon Reserve to the north, south, and west and Panoramic Lane to the east. Almost 100% of the water use is single-family, with just another 1% for irrigation. On average in FY22-24, water use totaled 0.026 mgd and is projected to reach 0.034 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	271	274	277	287	370	389	412
Household Population	271	274	277	287	370	389	412
Single-Family Households	94	97	97	97	97	97	97
Multifamily Households	13	13	16	21	56	67	81
Total Households	107	110	113	118	153	164	178
Employees	2,339	2,344	2,350	2,415	2,423	2,428	2,433
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	24,579	25,091	25,023	24,990	24,966	24,884	24,782
Multifamily	0	0	365	966	5,112	6,393	7,981
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	167	158	149	149	149	149	149
Wholesale	0	0	0	0	0	0	0
Potable Total	**24,746**	**25,250**	**25,538**	**26,106**	**30,227**	**31,426**	**32,911**
Recycled	0	0	0	0	0	0	0

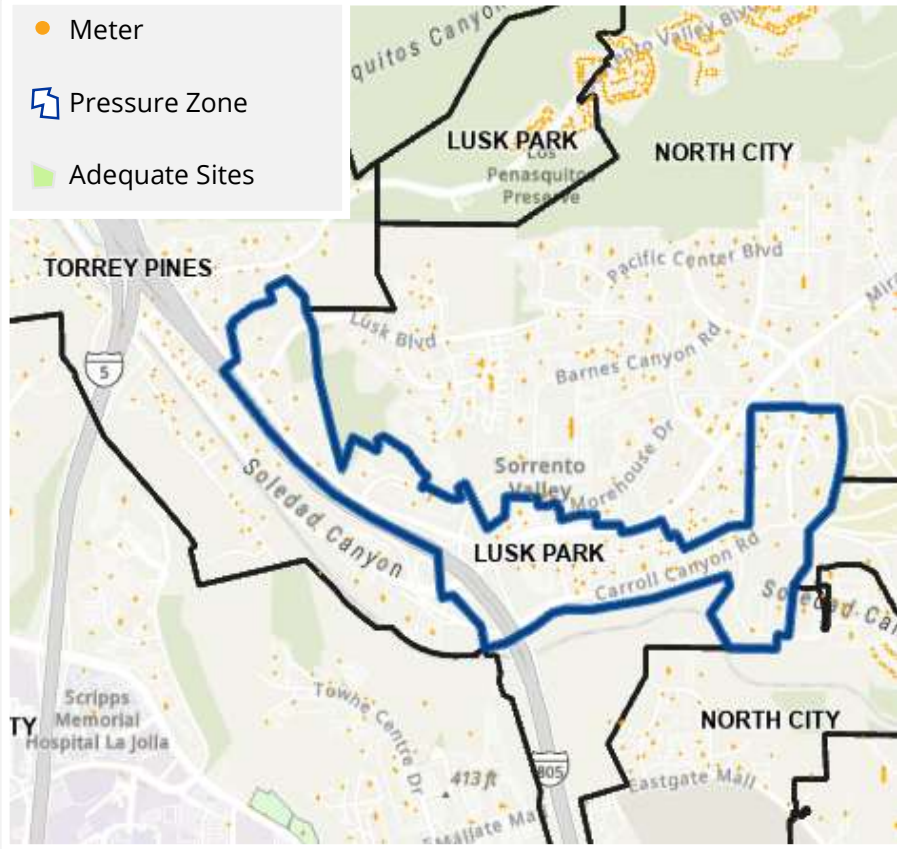
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	28	28	28	28	28	28	28
Multifamily	0	0	0	1	6	7	9
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	0	0	0	0	0	0	0
Wholesale	0	0	0	0	0	0	0
Potable Total	28	28	29	29	34	35	37
Recycled	0	0	0	0	0	0	0

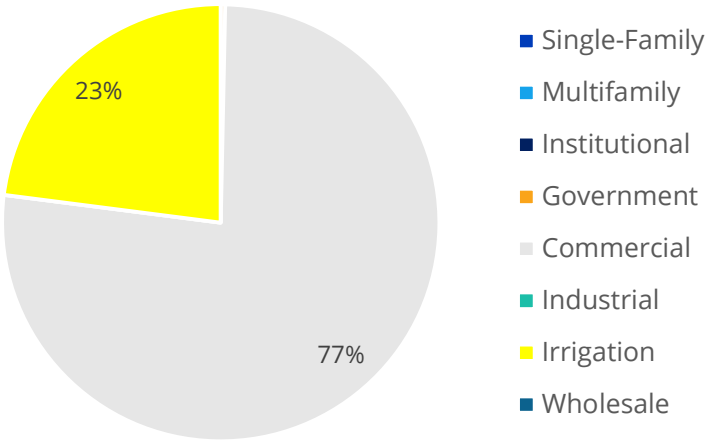
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

LUSK PARK_2 | Miramar | HGL 470



The Lusk Park 2 pressure zone falls within the Miramar service area and is bordered by Carroll Canyon Road to the south, the North City 610 zone to the north, Pacific Heights Boulevard to the east, and I-805 to the west. I-805, Mira Mesa Boulevard, Vista Sorrento Parkway, and Carroll Canyon Road are all major roadways that traverse this zone. Nearly 80% of the water use is commercial, with another 23% irrigation. On average in FY22-24, water use totaled 0.20 mgd and is projected to remain around 0.20 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	195	194	266	273	307	432	443
Household Population	195	194	266	273	307	432	443
Single-Family Households	0	2	1	1	1	3	3
Multifamily Households	71	71	100	104	119	166	175
Total Households	71	73	101	105	120	169	178
Employees	1,702	1,706	1,711	1,735	1,743	1,747	1,750
Additional Nonresidential Parcels (count)	n/a	0	0	0	1	1	1
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	0	365	195	195	195	485	485
Multifamily	0	0	3,737	4,248	6,122	11,947	13,038
Institutional	0	0	0	0	0	0	0
Government	571	571	571	571	571	571	571
Commercial	128,501	125,967	123,432	123,432	123,432	123,432	123,432
Industrial	0	0	0	0	0	0	0
Irrigation	38,467	36,120	33,773	33,773	33,773	33,773	33,773
Wholesale	0	0	0	0	0	0	0
Potable Total	**167,540**	**163,023**	**161,707**	**162,218**	**164,092**	**170,208**	**171,299**
Recycled	12,689	9,567	9,567	9,567	9,567	9,567	9,567

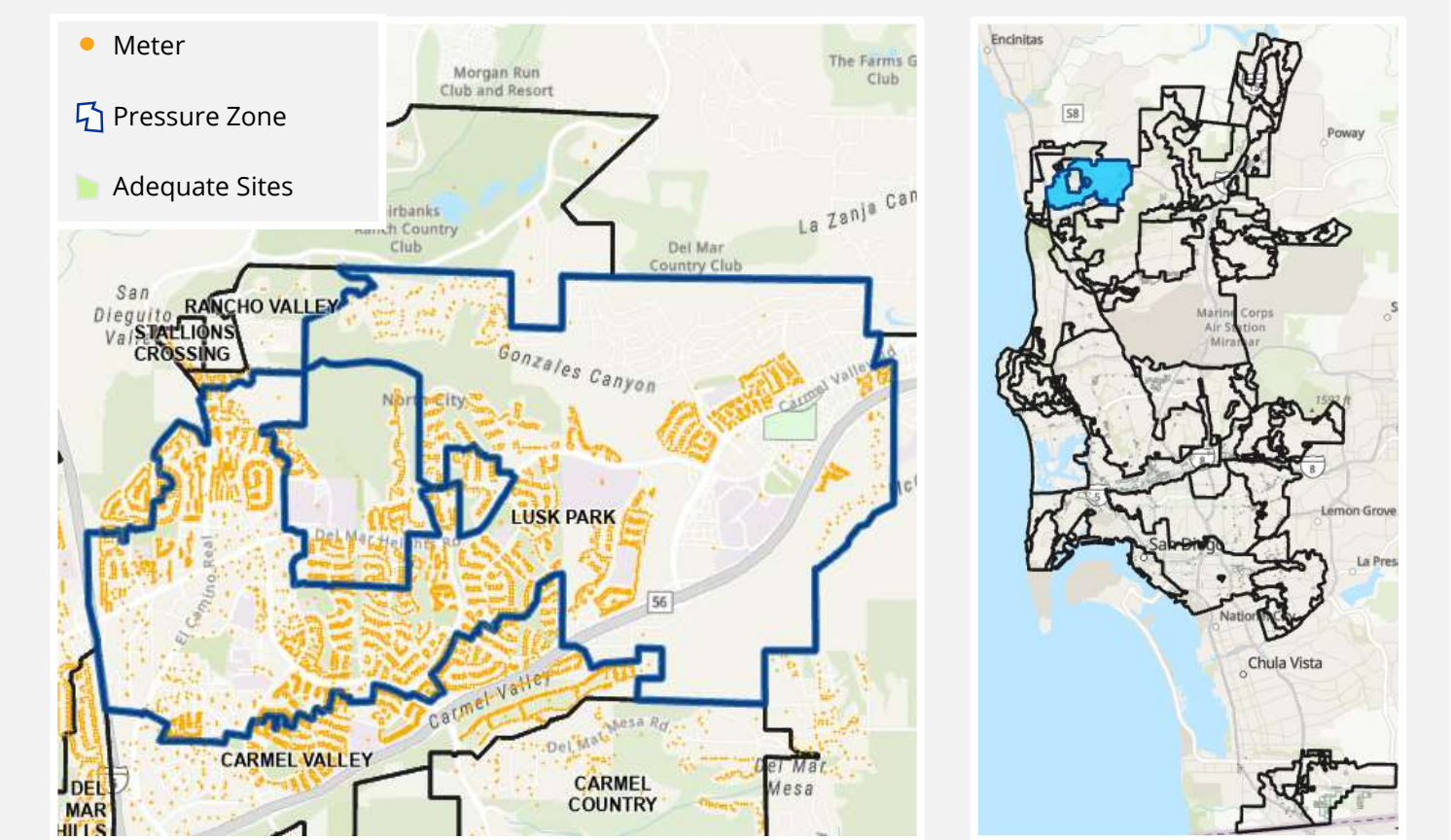
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	0	0	0	0	0	1	1
Multifamily	0	0	4	5	7	13	15
Institutional	0	0	0	0	0	0	0
Government	1	1	1	1	1	1	1
Commercial	144	141	138	138	138	138	138
Industrial	0	0	0	0	0	0	0
Irrigation	43	40	38	38	38	38	38
Wholesale	0	0	0	0	0	0	0
Potable Total	188	183	181	182	184	191	192
Recycled	14	11	11	11	11	11	11

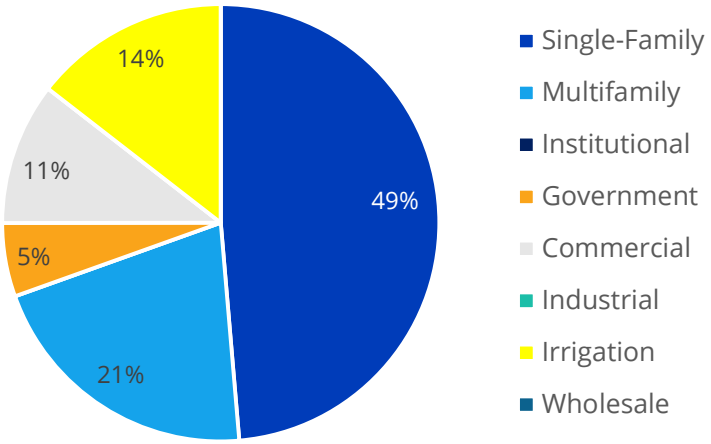
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

LUSK PARK_3 | Miramar | HGL 470



The Lusk Park 3 pressure zone falls within the Miramar service area and is bordered by the Pacific Coast to the west and north, Torrey Pines Road and Bishop Lane to the east, and North Lane and Westbourne Street to the south. La Jolla Boulevard, Pearl Street, and Prospect Street are main roadways traversing the zone. Nearly 50% of the water use is single-family, with another 19% multifamily, and 16% irrigation. On average in FY22-24, water use totaled 3.52 mgd and is projected to slightly decline to 3.48 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	27,930	28,592	28,262	28,033	27,808	27,673	26,956
Household Population	27,802	28,466	28,136	27,907	27,682	27,547	26,834
Single-Family Households	6,552	6,738	6,722	6,719	6,717	6,833	6,822
Multifamily Households	4,599	4,882	4,865	4,876	4,881	4,886	4,887
Total Households	11,151	11,620	11,587	11,595	11,598	11,719	11,709
Employees	21,568	21,723	21,892	22,122	22,517	22,875	23,233
Additional Nonresidential Parcels (count)	n/a	0	2	3	7	8	11
Additional Nonresidential Parcels (square feet)	n/a	0	190,669	245,013	880,715	1,053,219	1,298,232

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	1,615,355	1,646,111	1,640,764	1,637,787	1,635,144	1,648,981	1,640,297
Multifamily	693,845	717,019	713,759	707,572	703,138	694,635	679,929
Institutional	0	0	0	0	0	0	0
Government	181,287	170,955	160,623	160,623	168,352	168,352	168,352
Commercial	349,362	344,159	345,096	347,929	355,684	361,597	370,569
Industrial	0	0	0	0	0	0	0
Irrigation	481,108	452,833	424,558	424,558	424,558	424,558	424,558
Wholesale	0	0	0	0	0	0	0
Potable Total	**3,320,957**	**3,331,077**	**3,284,801**	**3,278,469**	**3,286,876**	**3,298,123**	**3,283,705**
Recycled	153,797	122,121	122,121	122,121	122,121	122,121	122,121

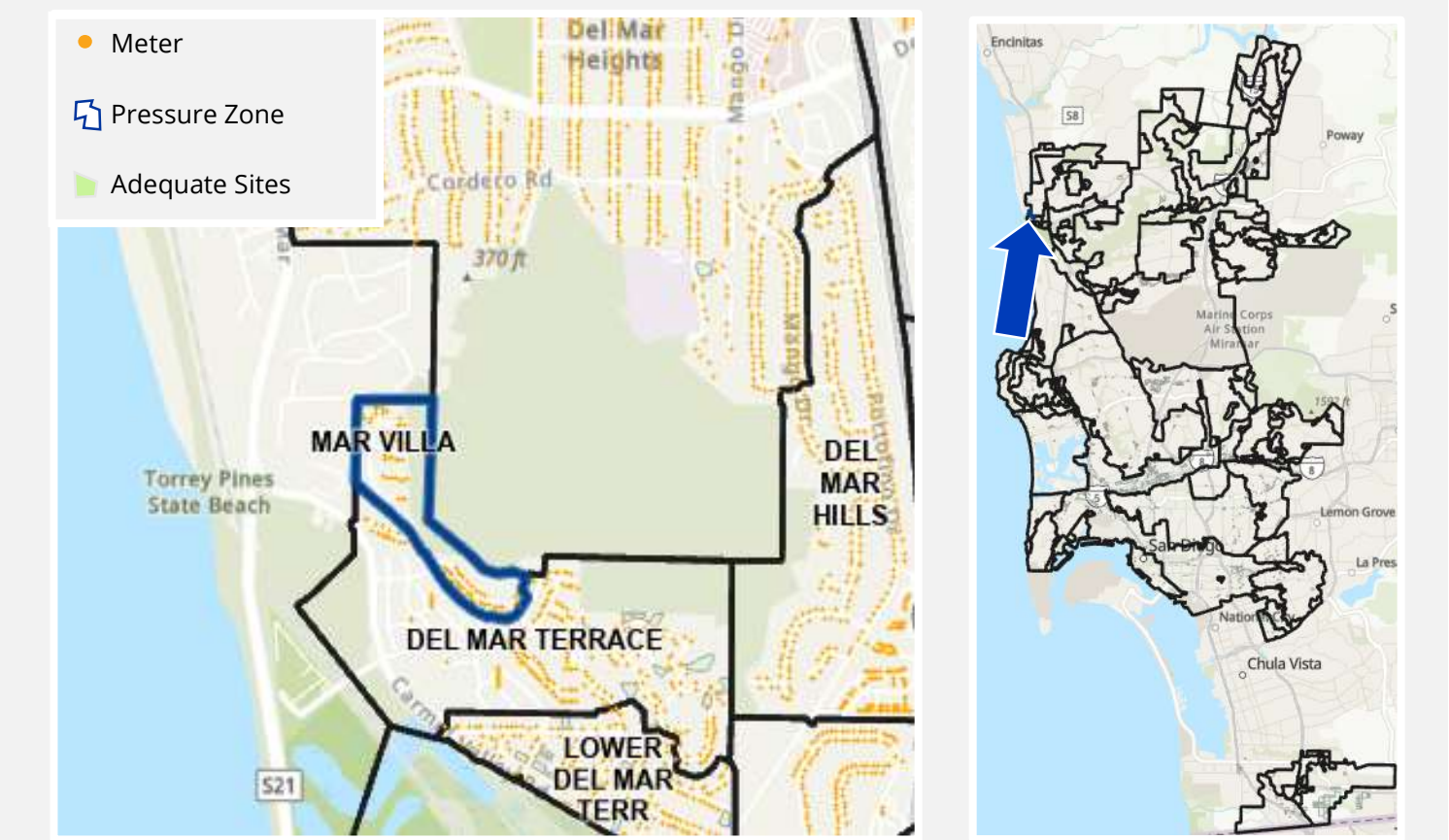
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	1,809	1,844	1,838	1,835	1,832	1,847	1,837
Multifamily	777	803	800	793	788	778	762
Institutional	0	0	0	0	0	0	0
Government	203	191	180	180	189	189	189
Commercial	391	386	387	390	398	405	415
Industrial	0	0	0	0	0	0	0
Irrigation	539	507	476	476	476	476	476
Wholesale	0	0	0	0	0	0	0
Potable Total	3,720	3,731	3,679	3,672	3,682	3,694	3,678
Recycled	172	137	137	137	137	137	137

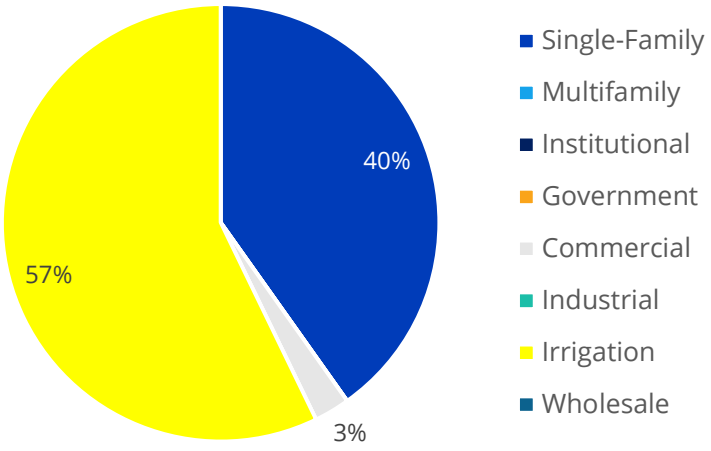
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

MAR VILLA | Miramar | HGL 378



The Mar Villa pressure zone falls within the Miramar service area and is roughly bordered by Via Mar Valle and Torrey Pines Road to the west, Torrey Pines States Reserve to the north and the east, and Del Mar Scenic Parkway to the south. More than 60% of the water use is irrigation, with another 37% single-family. On average in FY22-24, water use totaled 0.018 mgd and is projected to slightly decline to 0.017 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	219	218	216	214	212	209	204
Household Population	219	218	216	214	212	209	204
Single-Family Households	73	74	74	74	74	74	74
Multifamily Households	21	21	21	21	21	21	21
Total Households	94	95	95	95	95	95	95
Employees	89	90	91	93	96	98	100
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	6,766	6,944	6,933	6,922	6,911	6,895	6,867
Multifamily	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	443	443	443	443	443	443	443
Industrial	0	0	0	0	0	0	0
Irrigation	9,632	9,079	8,526	8,526	8,526	8,526	8,526
Wholesale	0	0	0	0	0	0	0
Potable Total	**16,841**	**16,466**	**15,902**	**15,892**	**15,881**	**15,864**	**15,836**
Recycled	0	0	0	0	0	0	0

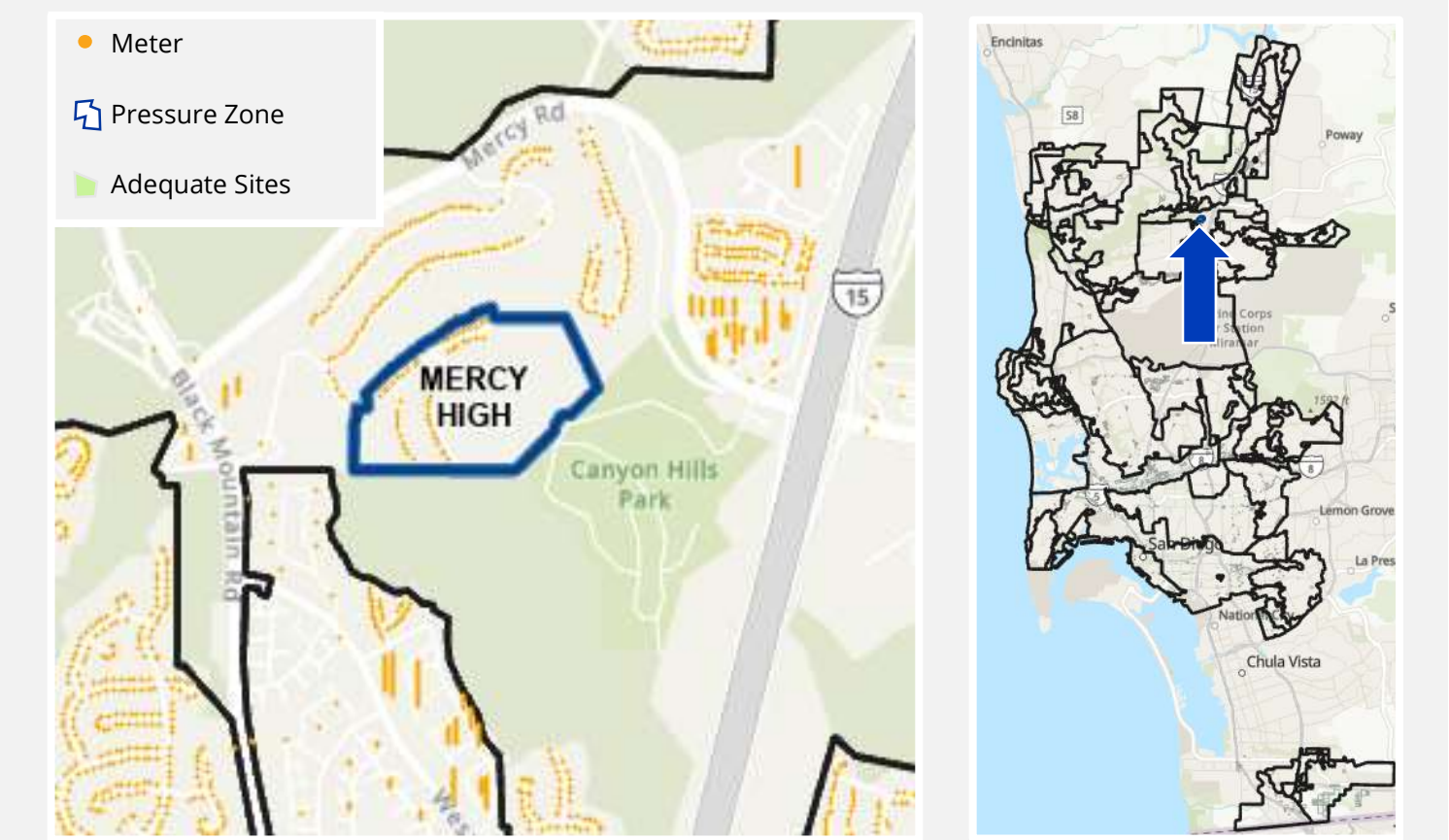
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	8	8	8	8	8	8	8
Multifamily	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	11	10	10	10	10	10	10
Wholesale	0	0	0	0	0	0	0
Potable Total	19	18	18	18	18	18	18
Recycled	0	0	0	0	0	0	0

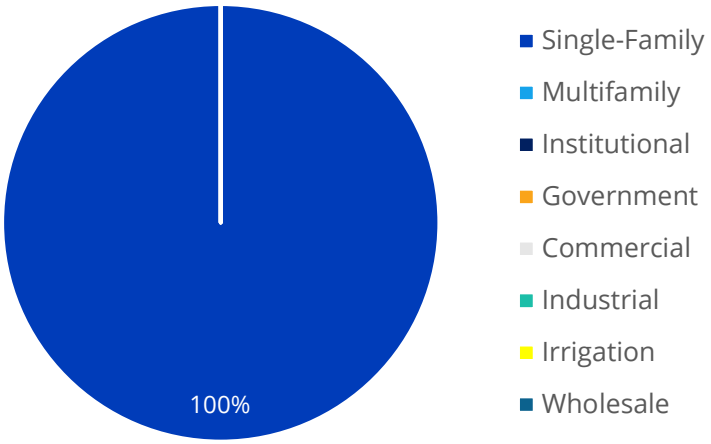
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

MERCY HIGH | Miramar | HGL 750



The Mercy High pressure zone falls within the Miramar service area and is roughly bordered by Canyon Hills Openspace Park to the south and the east and Chabola Road to the north and the west. 100% of the water use is single-family. On average in FY22-24, water use totaled 0.011 mgd and is projected to remain around 0.011 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	441	429	425	424	422	416	406
Household Population	441	429	425	424	422	416	406
Single-Family Households	53	53	53	53	53	53	53
Multifamily Households	113	114	114	115	116	116	117
Total Households	166	167	167	168	169	169	170
Employees	40	40	41	42	43	44	44
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	10,522	10,460	10,444	10,428	10,409	10,383	10,329
Multifamily	0	116	116	229	341	341	448
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	0	0	0	0	0	0	0
Wholesale	0	0	0	0	0	0	0
Potable Total	**10,522**	**10,576**	**10,560**	**10,658**	**10,750**	**10,725**	**10,777**
Recycled	0	0	0	0	0	0	0

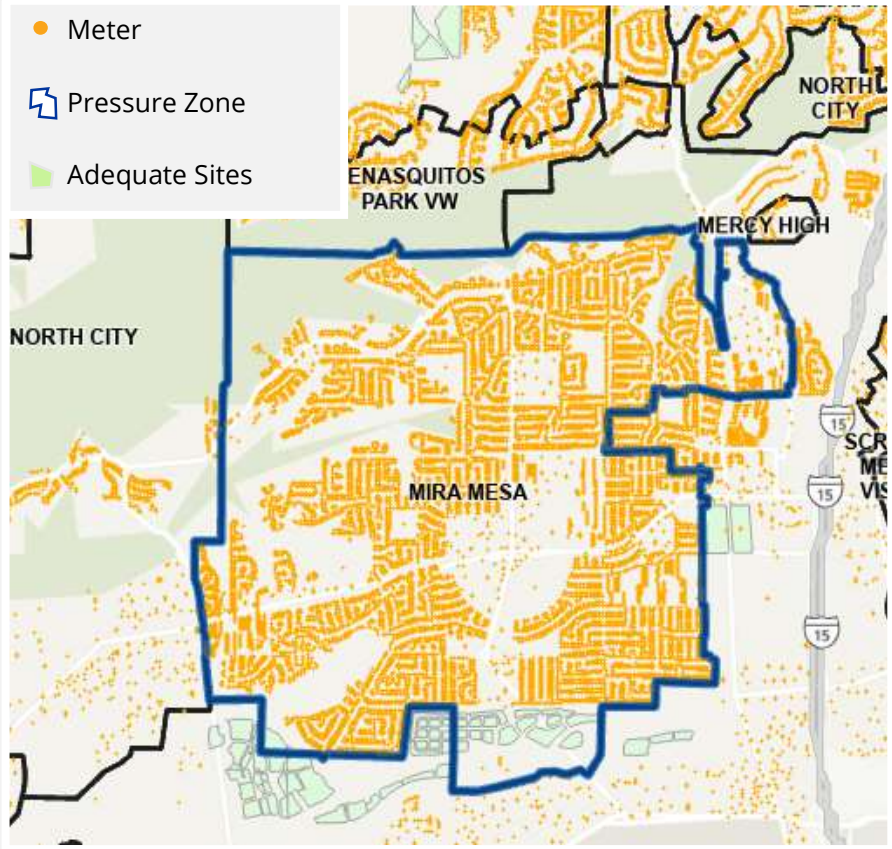
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

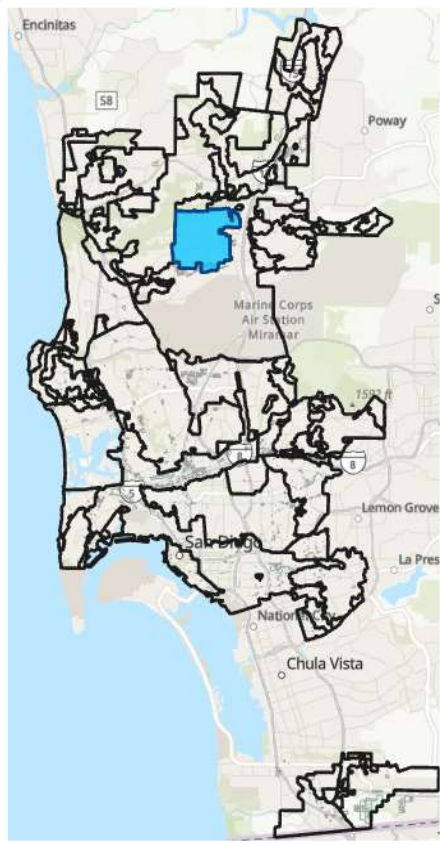
Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	12	12	12	12	12	12	12
Multifamily	0	0	0	0	0	0	1
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	0	0	0	0	0	0	0
Wholesale	0	0	0	0	0	0	0
Potable Total	12	12	12	12	12	12	12
Recycled	0	0	0	0	0	0	0

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

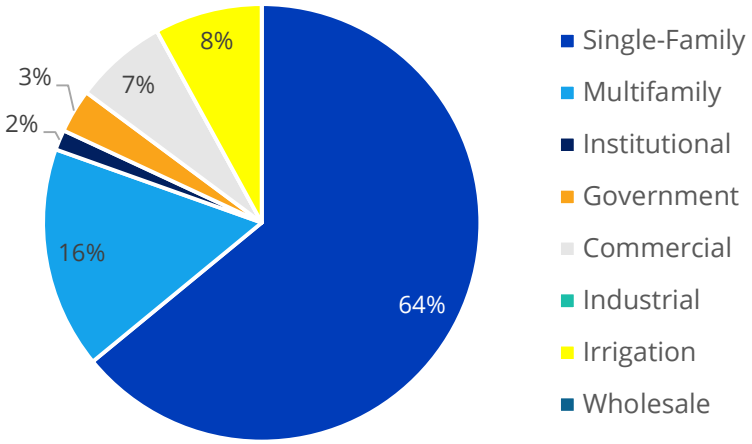
MIRA MESA | Miramar | HGL 625





The Mira Mesa pressure zone falls within the Miramar service area and is bordered by Los Penasquitos Canyon Trail to the north, Camino Santa Fe to the west, Black Mountain Road to the east, and Carroll Canyon Road to the south. Mira Mesa Boulevard, Camino Ruiz, Calle Cristobal, and Flanders Lane are main roadways traversing the zone. 65%% of the water use is single-family, with another 15% multifamily and 9% irrigation. On average in FY22-24, water use totaled 3.74 mgd and is projected to reach 4.29 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	58,708	57,227	59,396	59,626	60,350	67,807	67,366
Household Population	58,686	57,209	59,377	59,606	60,328	67,786	67,355
Single-Family Households	15,063	15,044	15,024	15,021	15,017	15,092	15,081
Multifamily Households	3,867	3,896	5,084	5,380	5,866	9,054	9,622
Total Households	18,930	18,940	20,108	20,401	20,883	24,146	24,703
Employees	64,323	64,477	64,739	65,369	65,841	66,226	66,610
Additional Nonresidential Parcels (count)	n/a	0	0	1	1	1	1
Additional Nonresidential Parcels (square feet)	n/a	0	0	93,467	93,467	93,467	93,467

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	2,343,559	2,329,653	2,317,196	2,312,456	2,307,327	2,306,539	2,293,395
Multifamily	599,905	589,906	730,309	762,456	817,500	1,188,215	1,240,974
Institutional	54,589	52,429	50,269	50,269	50,269	50,269	50,269
Government	118,069	111,432	104,795	104,795	104,795	104,795	104,795
Commercial	250,386	249,450	248,514	253,386	253,386	253,386	253,386
Industrial	0	0	0	0	0	0	0
Irrigation	291,830	274,278	256,726	256,726	256,726	256,726	256,726
Wholesale	0	0	0	0	0	0	0
Potable Total	**3,658,338**	**3,607,148**	**3,707,809**	**3,740,088**	**3,790,003**	**4,159,930**	**4,199,545**
Recycled	48,456	31,260	31,260	31,260	31,260	31,260	31,260

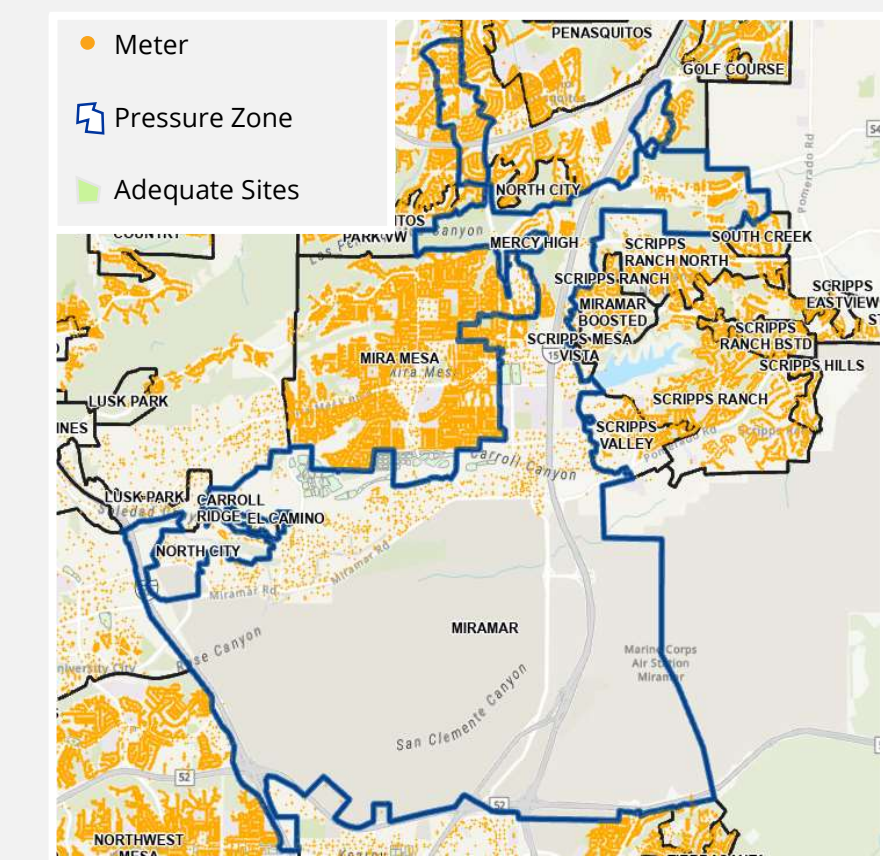
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

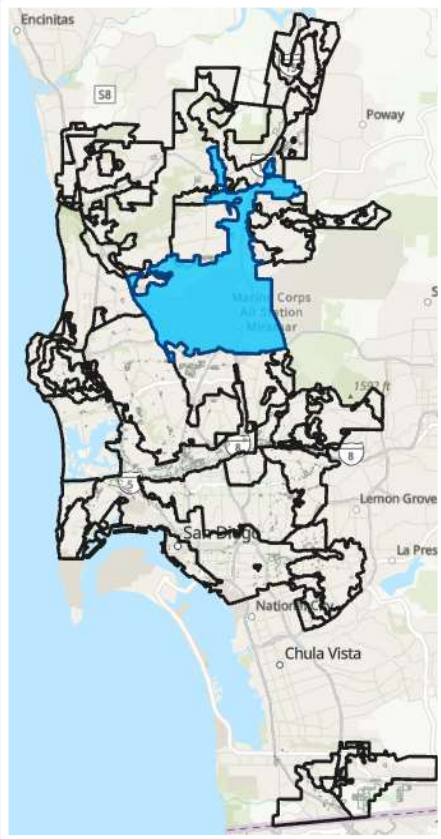
Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	2,625	2,610	2,596	2,590	2,585	2,584	2,569
Multifamily	672	661	818	854	916	1,331	1,390
Institutional	61	59	56	56	56	56	56
Government	132	125	117	117	117	117	117
Commercial	280	279	278	284	284	284	284
Industrial	0	0	0	0	0	0	0
Irrigation	327	307	288	288	288	288	288
Wholesale	0	0	0	0	0	0	0
Potable Total	4,098	4,041	4,153	4,189	4,245	4,660	4,704
Recycled	54	35	35	35	35	35	35

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

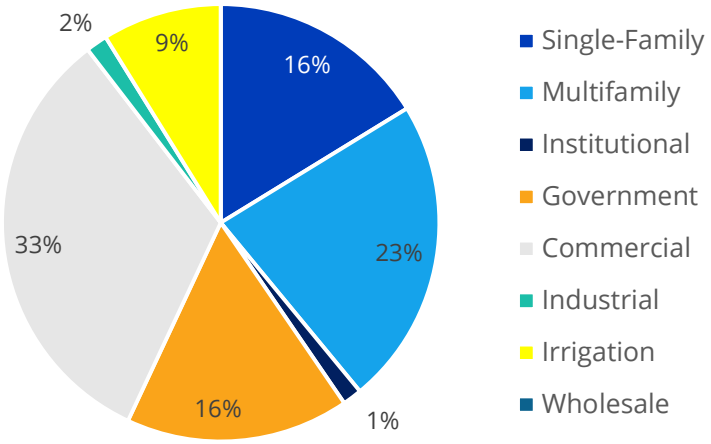
MIRAMAR | Miramar | HGL 712





The Miramar pressure zone falls within the Miramar service area and is bordered by I-805 to the west, open space east of the airport and Scripps Valley 850 to the east, US 52 to the south, and North City, North Valley, and Rancho Bernardo to the north. I-15, US 163, Pomerado Road, and Miramar Road are all major roadways traversing this zone. About one third of the water use is commercial, with another 21% multifamily and 17% single-family. On average in FY22-24, water use totaled 4.75 mgd and is projected to reach 4.76 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	30,990	30,190	31,010	30,974	30,975	32,736	32,045
Household Population	27,706	27,050	27,828	27,732	27,658	29,449	28,849
Single-Family Households	4,169	4,152	4,140	4,145	4,143	4,169	4,164
Multifamily Households	5,755	5,800	6,222	6,279	6,349	7,196	7,276
Total Households	9,924	9,952	10,362	10,424	10,492	11,365	11,440
Employees	34,935	35,003	35,150	35,333	35,550	35,745	35,939
Additional Nonresidential Parcels (count)	n/a	2	6	12	20	26	34
Additional Nonresidential Parcels (square feet)	n/a	16,691	96,826	235,060	501,382	686,937	895,773

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	775,435	768,720	765,042	764,598	763,070	764,665	760,344
Multifamily	1,087,690	1,066,826	1,101,080	1,098,364	1,097,257	1,169,044	1,152,646
Institutional	69,367	68,790	68,214	68,214	68,214	68,214	68,214
Government	789,081	779,769	770,470	770,926	771,396	771,852	774,265
Commercial	1,558,430	1,552,784	1,550,410	1,553,682	1,559,281	1,567,806	1,571,077
Industrial	76,403	76,361	76,320	77,035	78,558	78,558	79,273
Irrigation	421,688	398,810	375,932	375,932	375,932	375,932	375,932
Wholesale	0	0	0	0	0	0	0
Potable Total	**4,778,093**	**4,712,061**	**4,707,467**	**4,708,750**	**4,713,707**	**4,796,071**	**4,781,751**
Recycled	1,565,536	1,461,387	1,461,387	1,461,387	1,461,387	1,461,387	1,461,387

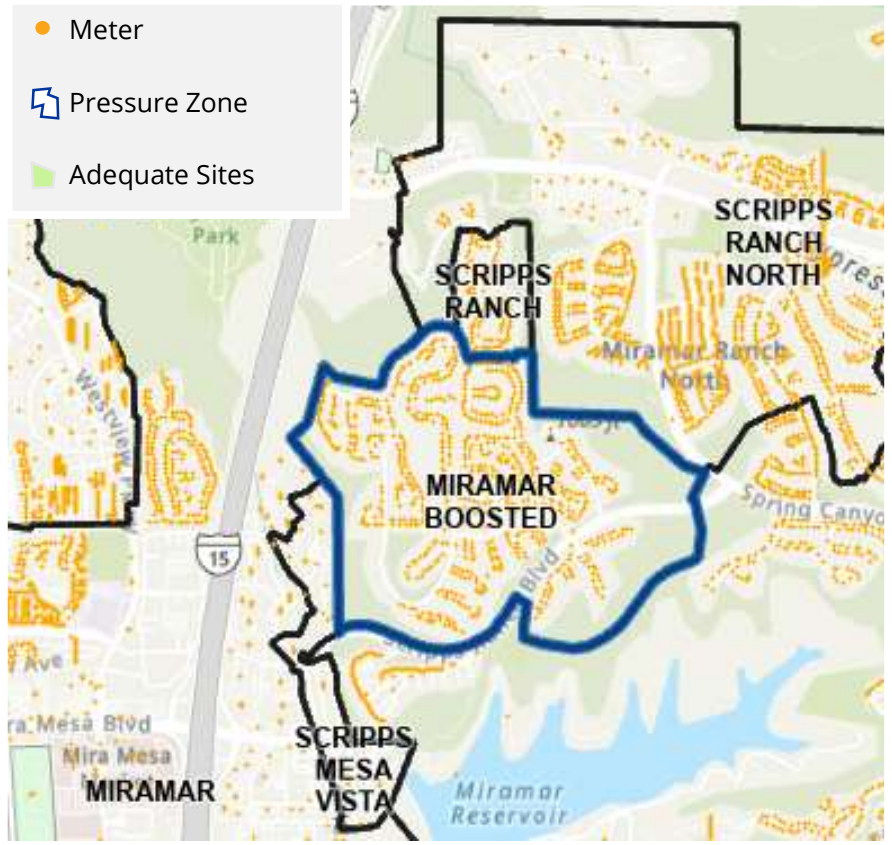
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	869	861	857	856	855	857	852
Multifamily	1,218	1,195	1,233	1,230	1,229	1,309	1,291
Institutional	78	77	76	76	76	76	76
Government	884	873	863	864	864	865	867
Commercial	1,746	1,739	1,737	1,740	1,747	1,756	1,760
Industrial	86	86	85	86	88	88	89
Irrigation	472	447	421	421	421	421	421
Wholesale	0	0	0	0	0	0	0
Potable Total	5,352	5,278	5,273	5,274	5,280	5,372	5,356
Recycled	1,754	1,637	1,637	1,637	1,637	1,637	1,637

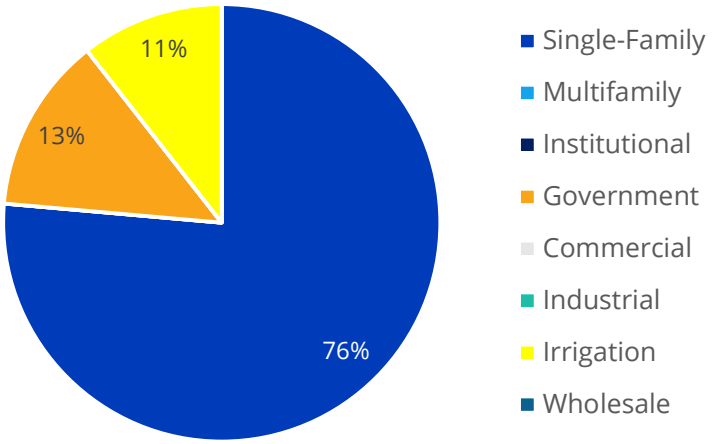
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

MIRAMAR BOOSTED | Miramar | HGL 1150



The Miramar Boosted pressure zone falls within the Miramar service area and is bordered by I-15 to the west, Spring Canyon Road to the east, Scripps Ranch 890 to the north, and Scripps Ranch Boulevard to the south. More than 70% of the water use is single-family, with another 15% government and 11% irrigation. On average in FY22-24, water use totaled 0.34 mgd and is projected to slightly decline to 0.33 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	3,932	3,848	3,806	3,770	3,738	3,671	3,570
Household Population	3,932	3,848	3,806	3,770	3,738	3,671	3,570
Single-Family Households	775	776	774	774	774	774	773
Multifamily Households	582	585	585	585	586	586	585
Total Households	1,357	1,361	1,359	1,359	1,360	1,360	1,358
Employees	2,637	2,660	3,016	3,529	3,668	3,790	3,912
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	234,074	233,275	232,527	232,144	231,771	231,045	229,836
Multifamily	0	378	378	378	500	500	625
Institutional	0	0	0	0	0	0	0
Government	39,931	37,312	34,693	34,693	34,693	34,693	34,693
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	32,343	30,500	28,656	28,656	28,656	28,656	28,656
Wholesale	0	0	0	0	0	0	0
Potable Total	**306,349**	**301,465**	**296,254**	**295,871**	**295,620**	**294,894**	**293,810**
Recycled	87,921	78,595	78,595	78,595	78,595	78,595	78,595

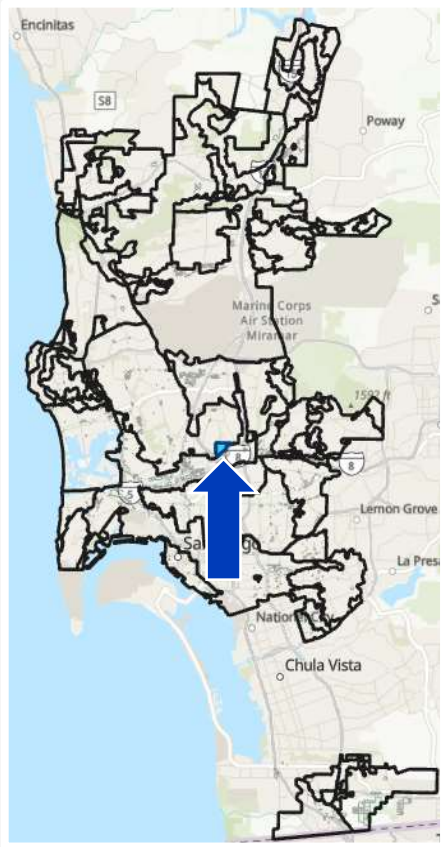
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	262	261	260	260	260	259	257
Multifamily	0	0	0	0	1	1	1
Institutional	0	0	0	0	0	0	0
Government	45	42	39	39	39	39	39
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	36	34	32	32	32	32	32
Wholesale	0	0	0	0	0	0	0
Potable Total	343	338	332	331	331	330	329
Recycled	98	88	88	88	88	88	88

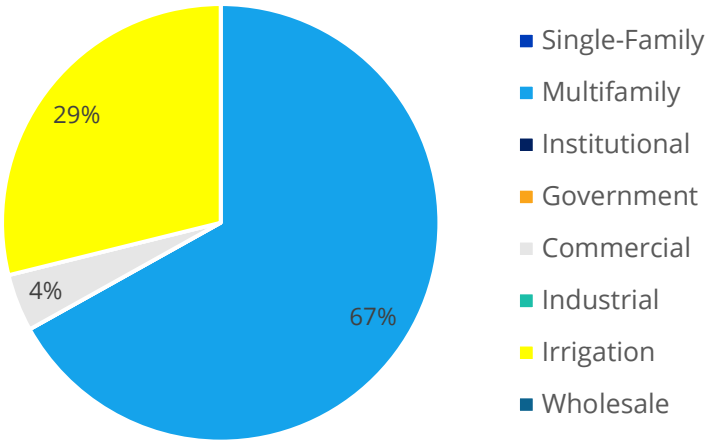
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

MISSION CITY | Alvarado | HGL 430



The Mission City pressure zone falls within the Alvarado service area and is roughly ordered by Friars Road to the south and east, undevelopable land behind Villas Way to the west, and undevelopable land north of Questo Place to the north. The zone consists of small residential streets with Friars Road being the nearest larger road bordering the southern area of the zone. More than 60% of the water use is multifamily, with another 32% irrigation. On average in FY22-24, water use totaled 0.20 mgd and is projected to slightly decline to 0.19 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	552	555	551	545	540	531	518
Household Population	552	555	551	544	539	531	518
Single-Family Households	0	3	3	3	3	2	2
Multifamily Households	233	238	239	237	237	237	236
Total Households	233	241	242	240	240	239	238
Employees	186	187	188	190	193	196	198
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	0	559	559	559	559	408	408
Multifamily	127,034	124,366	123,211	122,969	121,711	120,545	118,473
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	8,038	7,816	7,594	7,594	7,594	7,594	7,594
Industrial	0	0	0	0	0	0	0
Irrigation	54,754	51,587	48,419	48,419	48,419	48,419	48,419
Wholesale	0	0	0	0	0	0	0
Potable Total	**189,825**	**184,327**	**179,784**	**179,541**	**178,283**	**176,967**	**174,895**
Recycled	0	0	0	0	0	0	0

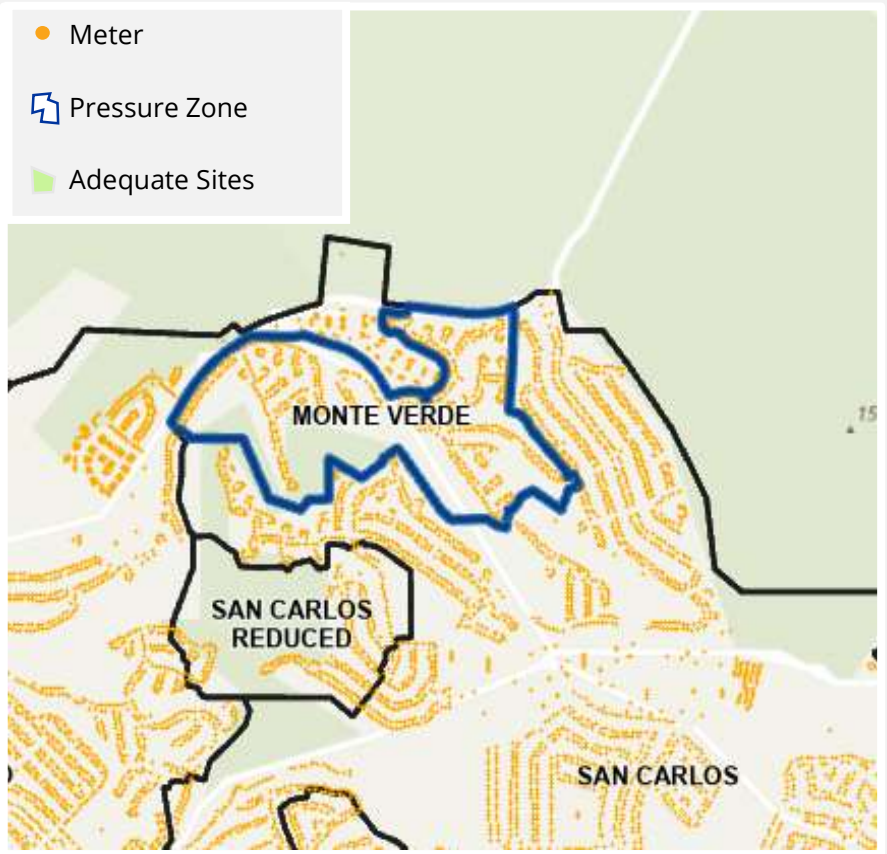
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

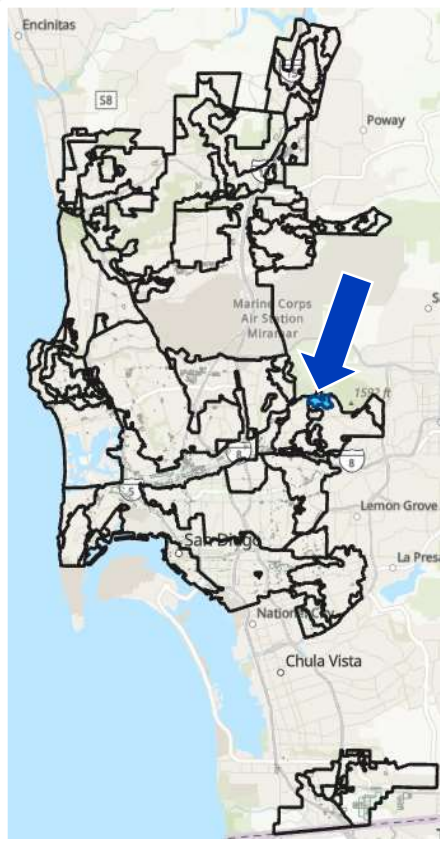
Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	0	1	1	1	1	0	0
Multifamily	142	139	138	138	136	135	133
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	9	9	9	9	9	9	9
Industrial	0	0	0	0	0	0	0
Irrigation	61	58	54	54	54	54	54
Wholesale	0	0	0	0	0	0	0
Potable Total	213	206	201	201	200	198	196
Recycled	0	0	0	0	0	0	0

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

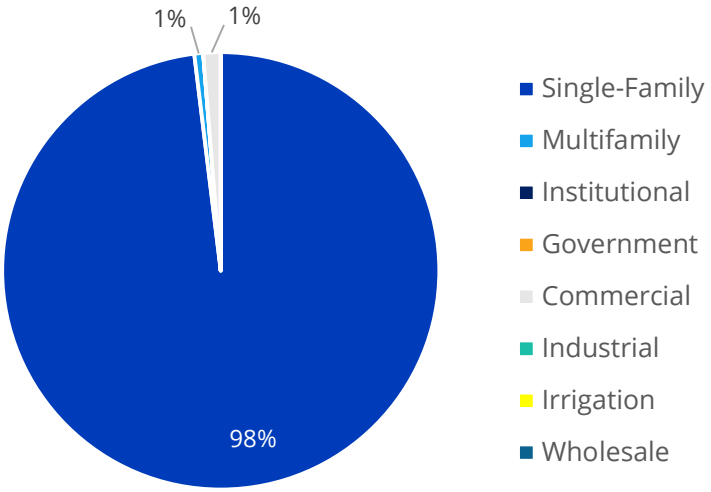
MONTE VERDE | Alvarado | HGL 685





The Monte Verde pressure zone falls within the Alvarado service area and is roughly bordered by Hillandale Dr. to the west, Rowena St. to the east, Mission Gorge Rd. to the north, and San Carlos 849 to the south. Nearly 100% of the water use is single-family, with 1% commercial and 1% multifamily. On average in FY22-24, water use totaled 0.13 mgd and is projected to remain around 0.13 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	2,017	1,976	1,957	1,940	1,924	1,889	1,839
Household Population	2,016	1,975	1,956	1,939	1,922	1,888	1,838
Single-Family Households	639	645	644	644	644	644	642
Multifamily Households	213	205	204	204	203	202	200
Total Households	852	850	848	848	847	846	842
Employees	275	277	279	283	289	294	299
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	124,685	125,553	125,201	125,013	124,849	124,492	123,709
Multifamily	815	1,802	922	790	910	898	1,008
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	1,628	1,628	1,628	1,628	1,628	1,628	1,628
Industrial	0	0	0	0	0	0	0
Irrigation	0	0	0	0	0	0	0
Wholesale	0	0	0	0	0	0	0
Potable Total	**127,128**	**128,984**	**127,751**	**127,432**	**127,388**	**127,019**	**126,345**
Recycled	0	0	0	0	0	0	0

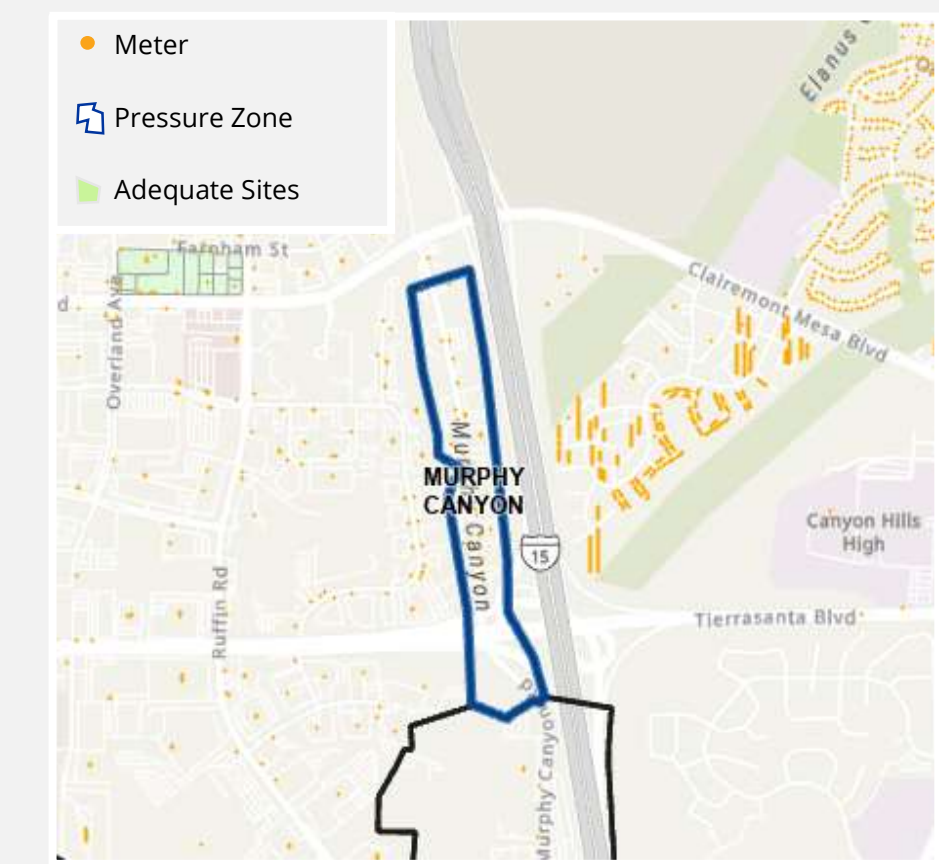
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	140	141	140	140	140	139	139
Multifamily	1	2	1	1	1	1	1
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	2	2	2	2	2	2	2
Industrial	0	0	0	0	0	0	0
Irrigation	0	0	0	0	0	0	0
Wholesale	0	0	0	0	0	0	0
Potable Total	142	144	143	143	143	142	142
Recycled	0	0	0	0	0	0	0

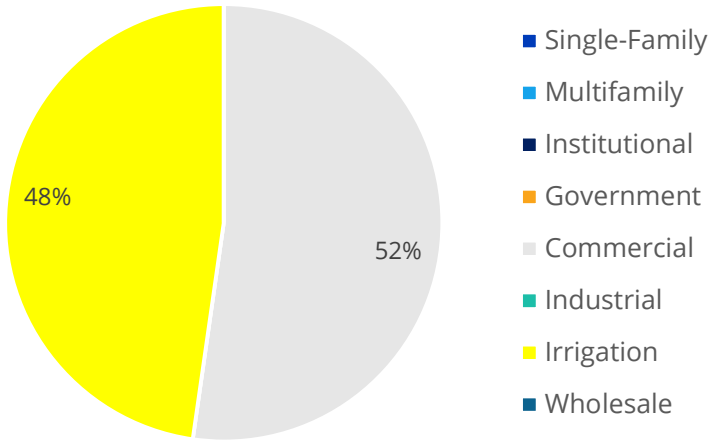
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

MURPHY CANYON | Alvarado/Miramar | HGL 500



The Murphy Canyon pressure zone falls within the Alvarado/Miramar service area and is bordered by Clairemont Mesa Boulevard to the north, Balboa Avenue to the south, I-15 to the east, and a Viewridge Avenue neighborhood to the west. This zone consists entirely of the section of Murphy Canyon Road north of Balboa Avenue. More than 50% of the water use is commercial, with the other 49% irrigation. On average in FY22-24, water use totaled 0.030 mgd and is projected to reach 0.034 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	141	207	209	227	263	271	271
Household Population	137	203	204	223	259	266	267
Single-Family Households	0	0	0	0	0	0	0
Multifamily Households	64	95	96	105	122	128	131
Total Households	64	95	96	105	122	128	131
Employees	2,306	2,312	2,320	2,329	2,339	2,345	2,351
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	0	0	0	0	0	0	0
Multifamily	0	3,016	3,113	3,981	5,611	6,175	6,452
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	14,761	14,657	14,554	14,554	14,554	14,554	14,554
Industrial	0	0	0	0	0	0	0
Irrigation	13,488	12,728	11,968	11,968	11,968	11,968	11,968
Wholesale	0	0	0	0	0	0	0
Potable Total	**28,249**	**30,401**	**29,635**	**30,503**	**32,133**	**32,697**	**32,974**
Recycled	0	0	0	0	0	0	0

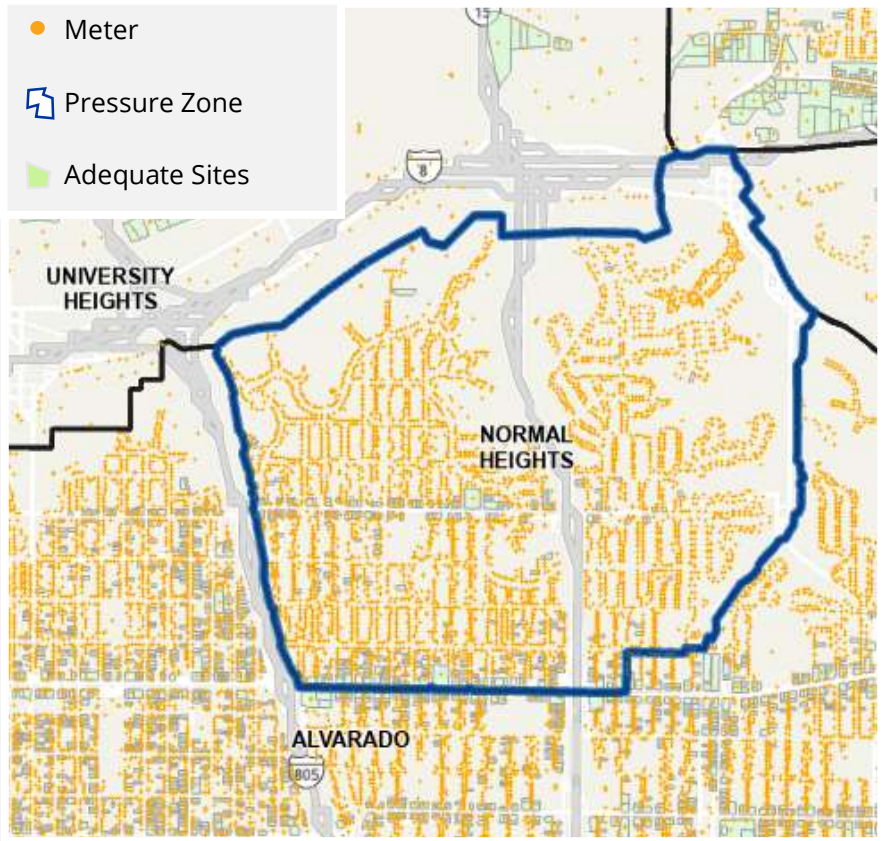
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	0	0	0	0	0	0	0
Multifamily	0	3	3	4	6	7	7
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	17	16	16	16	16	16	16
Industrial	0	0	0	0	0	0	0
Irrigation	15	14	13	13	13	13	13
Wholesale	0	0	0	0	0	0	0
Potable Total	32	34	33	34	36	37	37
Recycled	0	0	0	0	0	0	0

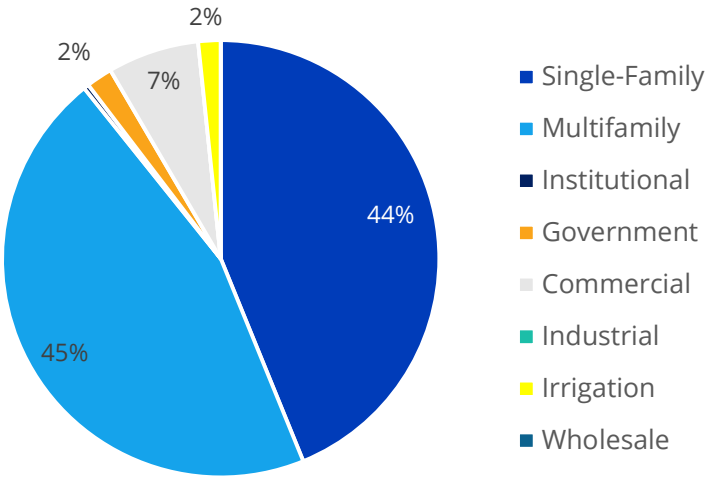
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

NORMAL HEIGHTS | Alvarado | HGL 536



TheNormal Heights pressure zone falls within the Alvarado service area and is bordered by I-805 to the west, Fairmount Avenue to the east, undeveloped land south of Camino Del Rio South to the north, and El Cajon Boulevard to the south. US-15 is a major roadway running north/south through the entire zone. Nearly 50% of the water use is single-family, with another 43% multifamily. On average in FY22-24, water use totaled 1.42 mgd and is projected to reach 1.48 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	19,600	20,124	20,031	20,103	20,653	20,834	21,005
Household Population	19,493	20,025	19,932	20,004	20,555	20,735	20,917
Single-Family Households	3,983	4,192	4,031	3,979	3,784	3,539	3,339
Multifamily Households	5,725	5,890	6,076	6,242	6,749	7,236	7,780
Total Households	9,708	10,082	10,107	10,221	10,533	10,775	11,119
Employees	6,344	6,384	6,484	6,828	7,631	8,997	10,362
Additional Nonresidential Parcels (count)	n/a	1	2	6	16	34	51
Additional Nonresidential Parcels (square feet)	n/a	6,843	13,687	41,061	109,496	232,679	349,018

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	636,800	668,956	644,059	635,924	609,854	576,869	549,473
Multifamily	659,844	668,330	680,780	691,045	733,793	767,757	800,739
Institutional	5,775	5,652	5,529	5,529	5,529	5,529	5,529
Government	27,884	25,920	23,956	23,956	23,956	23,956	23,956
Commercial	98,491	98,685	98,879	100,306	103,873	110,294	116,359
Industrial	0	0	0	0	0	0	0
Irrigation	24,019	22,462	20,906	20,906	20,906	20,906	20,906
Wholesale	0	0	0	0	0	0	0
Potable Total	**1,452,814**	**1,490,005**	**1,474,109**	**1,477,666**	**1,497,911**	**1,505,312**	**1,516,961**
Recycled	0	0	0	0	0	0	0

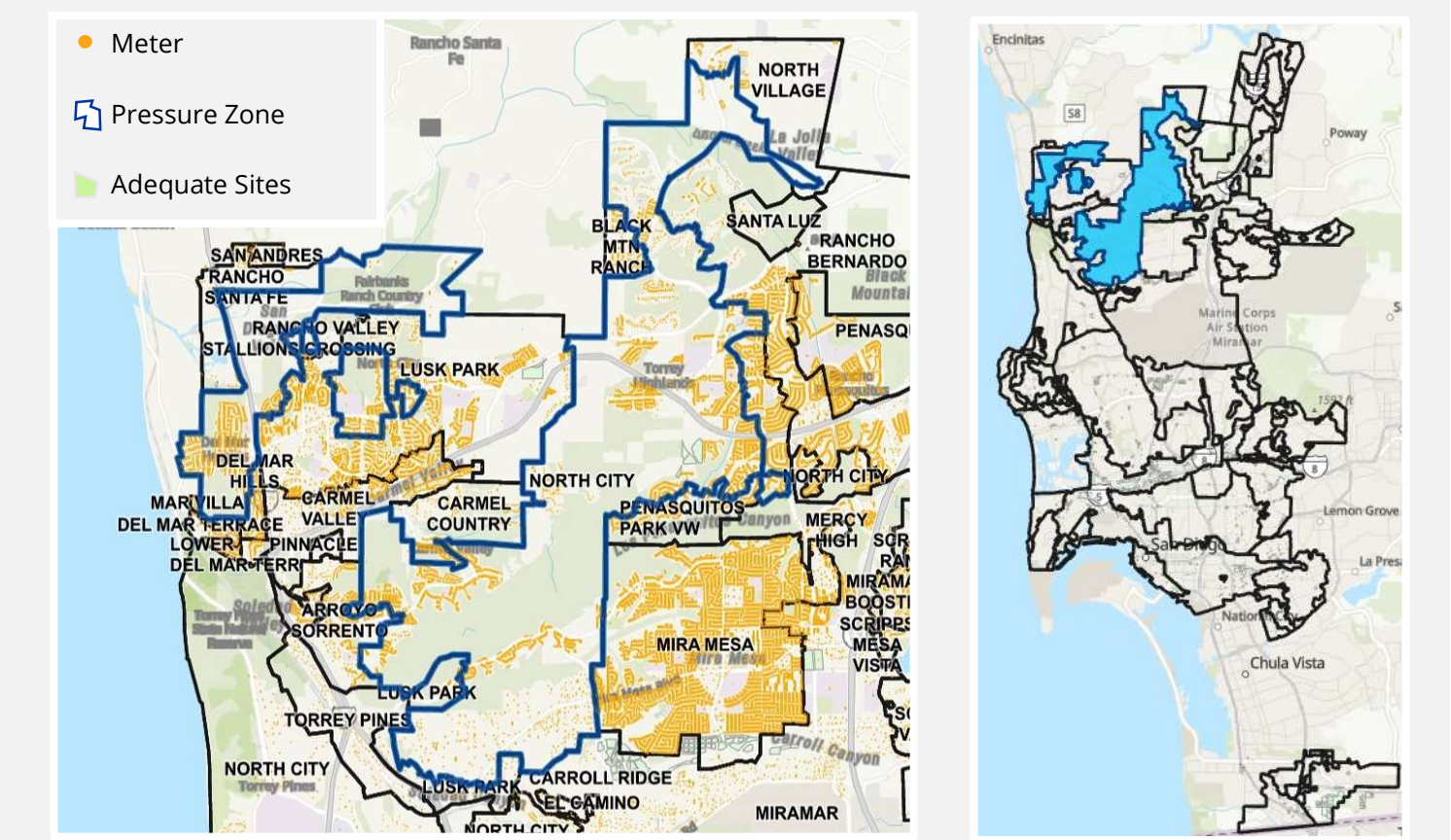
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	713	749	721	712	683	646	615
Multifamily	739	749	763	774	822	860	897
Institutional	6	6	6	6	6	6	6
Government	31	29	27	27	27	27	27
Commercial	110	111	111	112	116	124	130
Industrial	0	0	0	0	0	0	0
Irrigation	27	25	23	23	23	23	23
Wholesale	0	0	0	0	0	0	0
Potable Total	1,627	1,669	1,651	1,655	1,678	1,686	1,699
Recycled	0	0	0	0	0	0	0

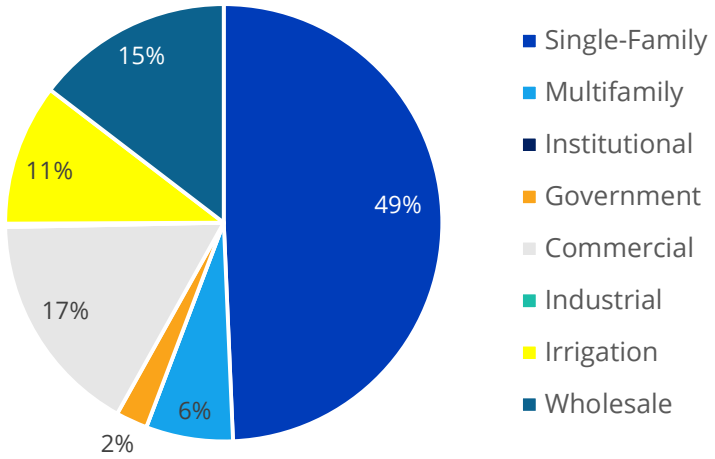
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

NORTH CITY_1 | Miramar | HGL 610



The North City 1 pressure zone falls within the Miramar service area and is bordered mainly by I-5 to the west, the Mira Mesa and Rancho Bernardo zones to the east, areas north of Pacific Highlands Ranch to the north, and land slightly south of Mira Mesa Blvd to the south. The Ted Williams Freeway, Carmel Country Road, and Carmel Valley Road are all main roadways traversing this zone. More than 50% of the water use is single-family, with another 16% commercial and 14% wholesale. On average in FY22-24, water use totaled 6.15 mgd and is projected to reach 6.24 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	38,224	38,003	38,271	38,135	38,736	38,989	38,405
Household Population	38,169	37,950	38,218	38,082	38,682	38,934	38,354
Single-Family Households	10,324	10,413	10,386	10,407	10,403	10,498	10,484
Multifamily Households	3,242	3,416	3,678	3,739	4,126	4,400	4,586
Total Households	13,566	13,829	14,064	14,146	14,529	14,898	15,070
Employees	38,452	38,628	38,866	39,769	40,381	40,900	41,418
Additional Nonresidential Parcels (count)	n/a	1	2	10	16	20	24
Additional Nonresidential Parcels (square feet)	n/a	93,527	187,054	858,631	1,546,616	1,880,403	2,239,598

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	2,889,234	2,895,390	2,885,202	2,884,402	2,878,209	2,884,964	2,869,614
Multifamily	376,149	388,796	416,734	420,880	462,123	487,333	499,652
Institutional	380	380	380	380	3,679	3,679	3,679
Government	137,122	129,272	121,423	123,427	124,721	124,721	124,721
Commercial	970,982	965,206	959,430	987,435	999,439	1,014,065	1,032,320
Industrial	15,751	15,332	14,914	15,818	16,722	17,626	17,626
Irrigation	613,171	578,831	544,491	544,491	544,491	544,491	544,491
Wholesale	854,230	854,230	854,230	854,230	854,230	854,230	854,230
Potable Total	**5,857,018**	**5,827,438**	**5,796,803**	**5,831,063**	**5,883,613**	**5,931,108**	**5,946,331**
Recycled	644,752	583,668	583,668	583,668	583,668	583,668	583,668

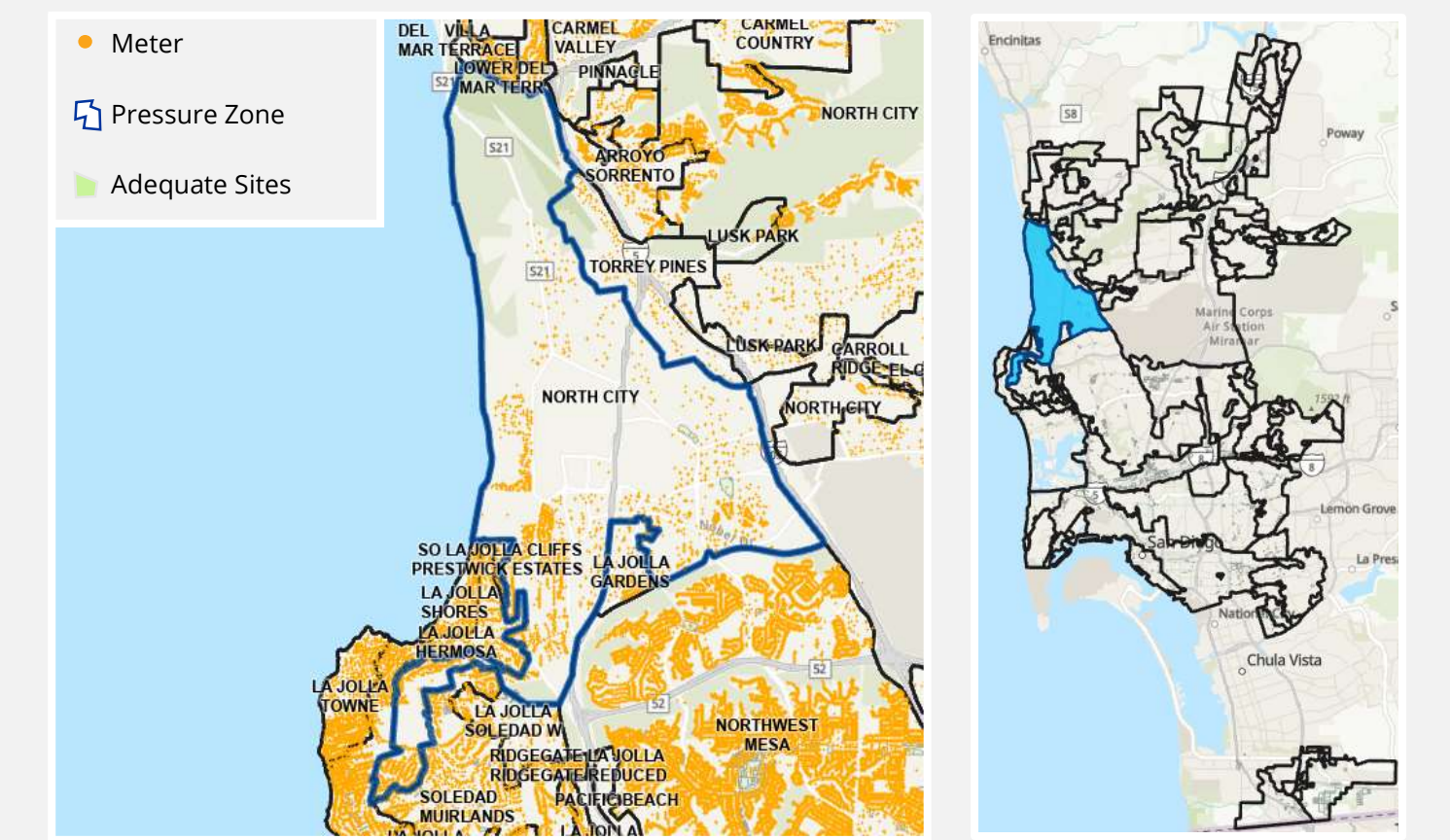
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	3,236	3,243	3,232	3,231	3,224	3,232	3,214
Multifamily	421	436	467	471	518	546	560
Institutional	0	0	0	0	4	4	4
Government	154	145	136	138	140	140	140
Commercial	1,088	1,081	1,075	1,106	1,120	1,136	1,156
Industrial	18	17	17	18	19	20	20
Irrigation	687	648	610	610	610	610	610
Wholesale	957	957	957	957	957	957	957
Potable Total	6,561	6,528	6,493	6,532	6,590	6,644	6,661
Recycled	722	654	654	654	654	654	654

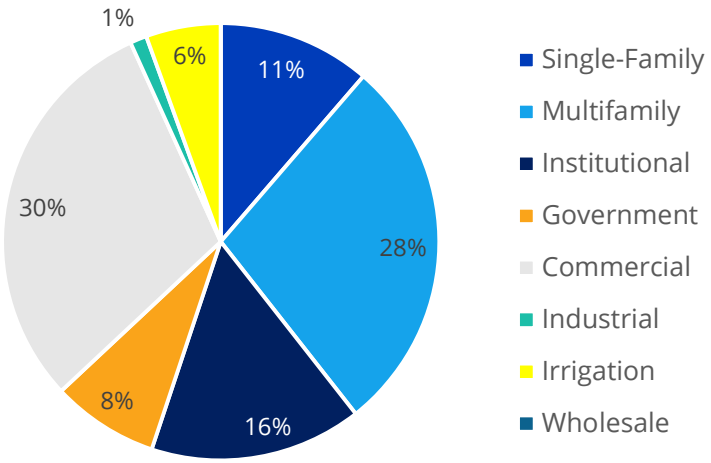
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

NORTH CITY_2 | Miramar | HGL 610



The North City 2 pressure zone falls within the Miramar service area and is bordered mainly by the Pacific Coast to the west, I-805 to the east, Carmel Valley Road to the north, and portions of I-5 and a railway to the south. This zone has several large roadways running through it, including I-5, S21, La Jolla Village Drive, Torrey Pines Road, and Miramar Road. 30% of the water use is multifamily, with another 27% commercial and 14% institutional. On average in FY22-24, water use totaled 6.90 mgd and is projected to slightly decline to 6.88 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	56,432	55,875	55,466	57,969	57,841	57,408	56,674
Household Population	37,349	36,813	36,393	38,893	38,750	38,325	37,641
Single-Family Households	2,201	2,257	2,256	2,255	2,252	2,250	2,247
Multifamily Households	14,665	14,678	14,607	15,918	15,977	16,042	16,097
Total Households	16,866	16,935	16,863	18,173	18,229	18,292	18,344
Employees	88,045	88,257	88,602	89,023	89,651	89,973	90,294
Additional Nonresidential Parcels (count)	n/a	0	2	3	7	7	8
Additional Nonresidential Parcels (square feet)	n/a	0	176,847	283,651	920,068	920,068	1,026,872

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	813,215	821,029	819,841	818,501	817,088	814,763	811,417
Multifamily	2,018,521	1,986,489	1,982,550	2,083,667	2,077,439	2,058,397	2,027,824
Institutional	1,129,551	1,129,186	1,128,820	1,128,820	1,149,182	1,149,182	1,149,182
Government	569,217	567,002	564,788	564,788	564,788	564,788	564,788
Commercial	2,171,037	2,161,956	2,158,444	2,164,011	2,172,099	2,172,099	2,177,667
Industrial	87,387	87,387	88,577	88,577	89,767	89,767	89,767
Irrigation	398,226	375,496	352,765	352,765	352,765	352,765	352,765
Wholesale	0	0	0	0	0	0	0
Potable Total	**7,187,154**	**7,128,545**	**7,095,784**	**7,201,129**	**7,223,128**	**7,201,760**	**7,173,410**
Recycled	1,603,143	1,466,889	1,466,889	1,466,889	1,466,889	1,466,889	1,466,889

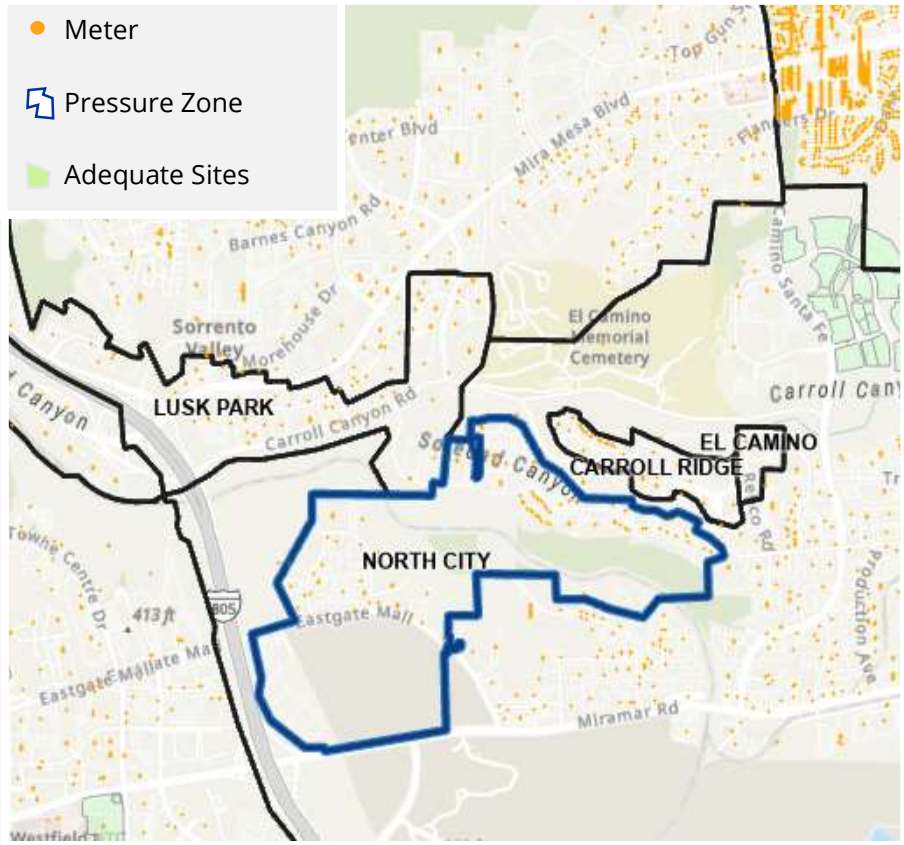
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	911	920	918	917	915	913	909
Multifamily	2,261	2,225	2,221	2,334	2,327	2,306	2,271
Institutional	1,265	1,265	1,264	1,264	1,287	1,287	1,287
Government	638	635	633	633	633	633	633
Commercial	2,432	2,422	2,418	2,424	2,433	2,433	2,439
Industrial	98	98	99	99	101	101	101
Irrigation	446	421	395	395	395	395	395
Wholesale	0	0	0	0	0	0	0
Potable Total	8,051	7,985	7,948	8,066	8,091	8,067	8,035
Recycled	1,796	1,643	1,643	1,643	1,643	1,643	1,643

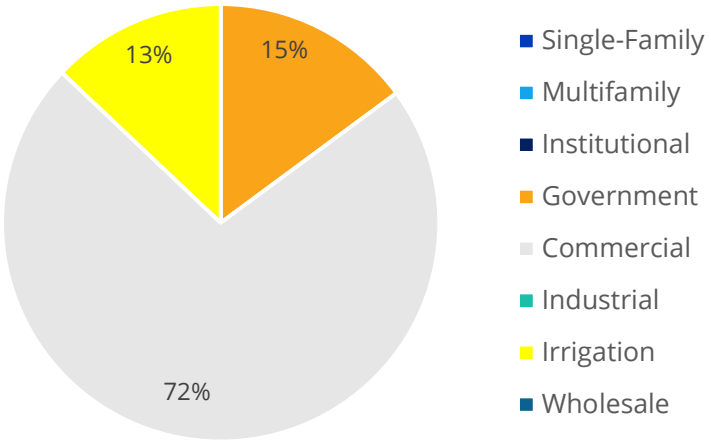
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

NORTH CITY_3 | Miramar | HGL 610



The North City 3 pressure zone falls within the Miramar service area and is bordered by Carroll Road to the north, Miramar Road to the south, I-805 to the west, and Crest Beverage LLC to the east. Eastgate Mall Road, Eastgate Drive, and Nancy Ridge Drive are the main roadways that traverse the zone, but the zone is surrounded by several main roadways on all sides. Nearly 70% of the water use is commercial, with another 18% government, and 15% irrigation. On average in FY22-24, water use totaled 0.11 mgd and is projected to reach 0.13 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	186	183	305	312	325	531	537
Household Population	186	183	305	312	325	531	537
Single-Family Households	0	0	0	0	0	3	3
Multifamily Households	64	64	113	117	122	198	206
Total Households	64	64	113	117	122	201	209
Employees	1,637	1,641	1,646	1,653	1,660	1,664	1,668
Additional Nonresidential Parcels (count)	n/a	0	0	1	1	1	2
Additional Nonresidential Parcels (square feet)	n/a	0	0	156,707	156,707	156,707	313,414

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	0	0	0	0	0	464	464
Multifamily	0	0	5,824	6,296	6,884	15,639	16,541
Institutional	0	0	0	0	0	0	0
Government	15,927	15,927	15,927	15,927	15,927	15,927	15,927
Commercial	77,263	77,154	77,045	77,045	77,045	77,045	77,045
Industrial	0	0	0	2,662	2,662	2,662	5,325
Irrigation	13,835	12,991	12,146	12,146	12,146	12,146	12,146
Wholesale	0	0	0	0	0	0	0
Potable Total	**107,025**	**106,072**	**110,942**	**114,077**	**114,664**	**123,883**	**127,448**
Recycled	22,404	19,919	19,919	19,919	19,919	19,919	19,919

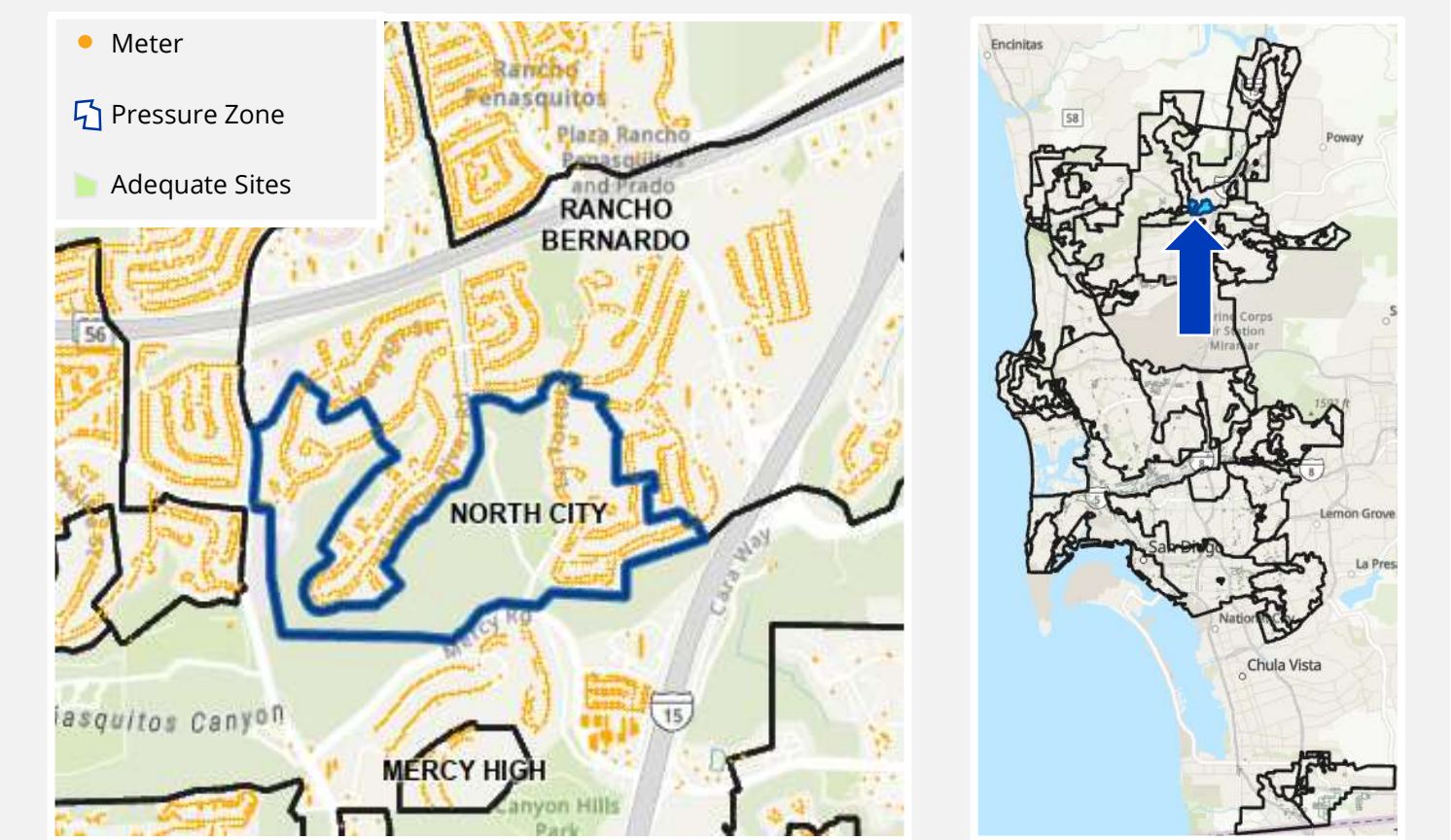
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	0	0	0	0	0	1	1
Multifamily	0	0	7	7	8	18	19
Institutional	0	0	0	0	0	0	0
Government	18	18	18	18	18	18	18
Commercial	87	86	86	86	86	86	86
Industrial	0	0	0	3	3	3	6
Irrigation	15	15	14	14	14	14	14
Wholesale	0	0	0	0	0	0	0
Potable Total	120	119	124	128	128	139	143
Recycled	25	22	22	22	22	22	22

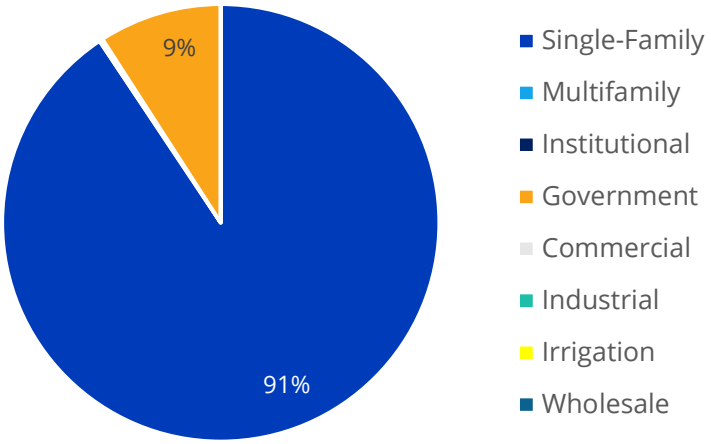
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

NORTH CITY_4 | Miramar | HGL 610



The North City 4 pressure zone falls within the Miramar service area and is bordered mainly by the Black Mountain Road to the west, Benavente Way to the east, Calle De Las Rosas to the north, and Mercy Road to the south. This zone has no major roadways as it is entirely made up of residential streets, but it lies in close proximity to Black Mountain Road, Mercy Road, and I-15. Nearly 90% of the water use is single-family, with another 11% government. On average in FY22-24, water use totaled 0.10 mgd and is projected to remain around 0.10 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	1,307	1,283	1,268	1,255	1,243	1,220	1,187
Household Population	1,307	1,283	1,268	1,255	1,243	1,220	1,187
Single-Family Households	385	389	388	388	388	388	388
Multifamily Households	105	103	103	103	103	103	103
Total Households	490	492	491	491	491	491	491
Employees	260	261	262	264	269	272	275
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	85,828	86,267	85,941	85,788	85,646	85,372	84,970
Multifamily	245	490	238	235	233	229	224
Institutional	0	0	0	0	0	0	0
Government	8,611	8,036	7,460	7,460	7,460	7,460	7,460
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	0	0	0	0	0	0	0
Wholesale	0	0	0	0	0	0	0
Potable Total	**94,683**	**94,793**	**93,638**	**93,484**	**93,340**	**93,061**	**92,654**
Recycled	0	0	0	0	0	0	0

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

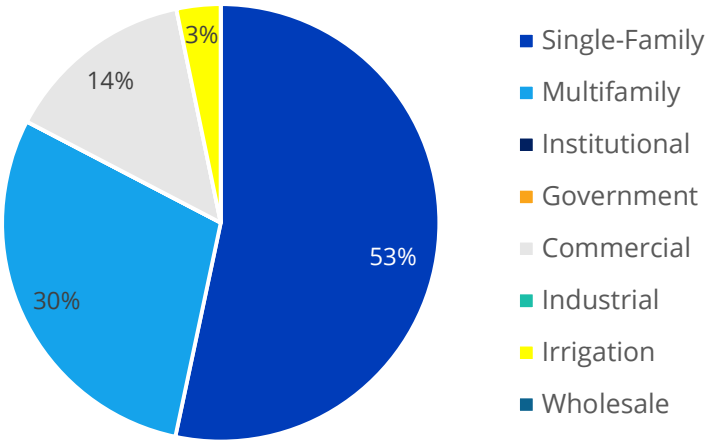
Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	96	97	96	96	96	96	95
Multifamily	0	1	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	10	9	8	8	8	8	8
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	0	0	0	0	0	0	0
Wholesale	0	0	0	0	0	0	0
Potable Total	106	106	105	105	105	104	104
Recycled	0	0	0	0	0	0	0

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

NORTH VILLAGE | Miramar | HGL 730

The North Village pressure zone falls within the Miramar service area and is bordered mainly by the Artesian Road to the west, Black Mountain Road to the east, Camino Del Sur to the north, and Lusardi Creek Loop Trail to the south. Camino Del Sur and Black Mountain Road are the two largest roadways that travel through part of this zone. Otherwise, it consists largely of smaller residential streets. More than 50% of the water use is single-family, with another 27% multifamily and 16% commercial. On average in FY22-24, water use totaled 0.74 mgd and is projected to reach 0.78 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	7,618	7,230	7,103	7,055	7,007	6,939	6,756
Household Population	7,618	7,230	7,103	7,055	7,007	6,939	6,756
Single-Family Households	1,393	1,323	1,304	1,298	1,290	1,266	1,256
Multifamily Households	1,052	1,061	1,064	1,077	1,092	1,142	1,157
Total Households	2,445	2,384	2,368	2,375	2,382	2,408	2,413
Employees	1,634	1,643	1,664	1,724	2,256	2,271	2,286
Additional Nonresidential Parcels (count)	n/a	0	0	2	20	20	21
Additional Nonresidential Parcels (square feet)	n/a	0	0	184,035	2,591,066	2,591,066	2,648,634

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	379,065	361,006	356,142	354,278	352,106	346,294	342,626
Multifamily	208,530	204,738	203,138	203,077	203,260	205,894	202,763
Institutional	0	0	0	0	9,953	9,953	9,953
Government	69	69	69	69	683	683	683
Commercial	100,000	99,823	99,645	106,238	165,568	165,568	165,568
Industrial	0	0	0	863	5,180	5,180	6,043
Irrigation	23,211	21,854	20,498	20,498	20,498	20,498	20,498
Wholesale	0	0	0	0	0	0	0
Potable Total	**710,875**	**687,490**	**679,492**	**685,023**	**757,248**	**754,069**	**748,133**
Recycled	200,069	210,452	210,452	210,452	210,452	210,452	210,452

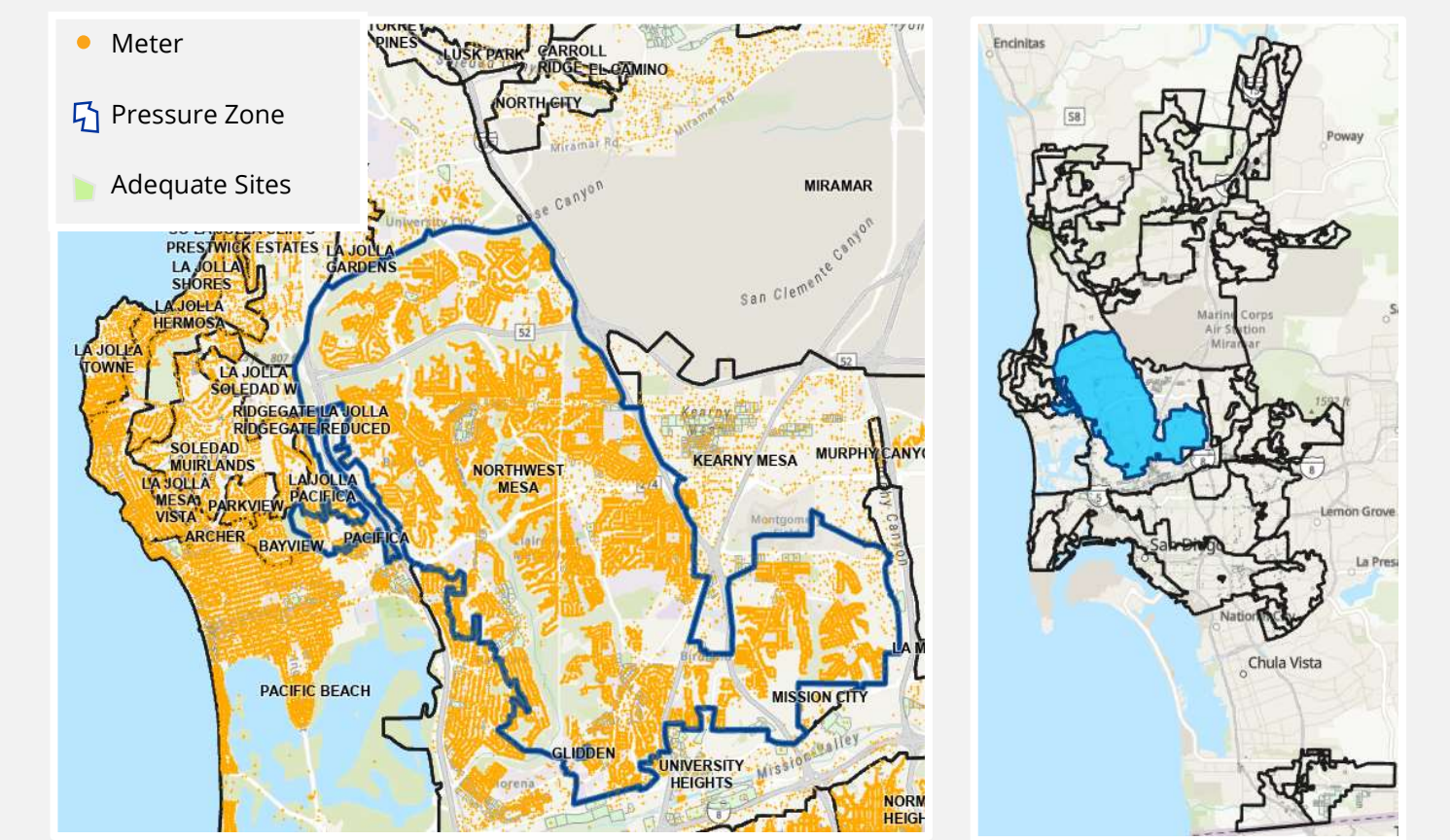
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	425	404	399	397	394	388	384
Multifamily	234	229	228	227	228	231	227
Institutional	0	0	0	0	11	11	11
Government	0	0	0	0	1	1	1
Commercial	112	112	112	119	185	185	185
Industrial	0	0	0	1	6	6	7
Irrigation	26	24	23	23	23	23	23
Wholesale	0	0	0	0	0	0	0
Potable Total	796	770	761	767	848	845	838
Recycled	224	236	236	236	236	236	236

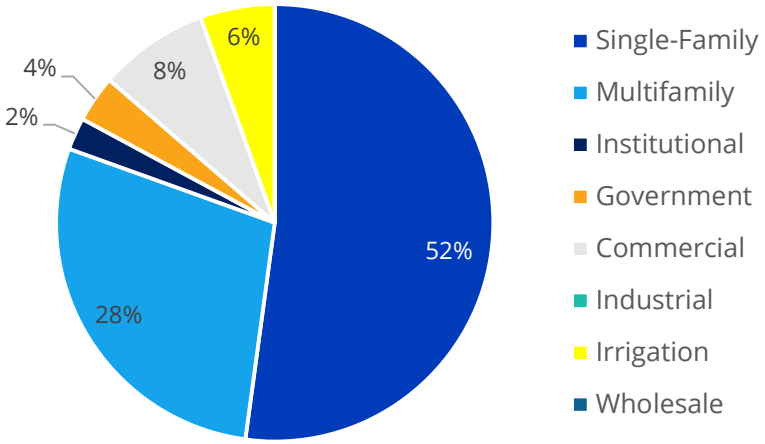
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

NORTHWEST MESA | Alvarado/Miramar | HGL 559



The Northwest Mesa pressure zone falls within the Alvarado/Miramar service area and is bordered roughly by I-5 to the west, I-805 and I-15 to the east, railway south of Caminito Cassis to the north, and a rough border mainly following Friars Road to the south. This is a very large zone with several main roadways traversing throughout. More than 50% of the water use is single-family, with another 27% multifamily. On average in FY22-24, water use totaled 10.92 mgd and is projected to reach 11.12 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	147,761	146,822	148,744	148,145	147,495	147,646	146,575
Household Population	145,646	144,765	146,679	146,075	145,403	145,563	144,567
Single-Family Households	30,567	30,636	30,540	30,524	30,485	30,439	30,374
Multifamily Households	25,629	26,661	28,126	28,449	28,720	30,002	31,264
Total Households	56,196	57,297	58,666	58,973	59,205	60,441	61,638
Employees	76,615	76,857	77,943	79,849	80,953	81,754	82,555
Additional Nonresidential Parcels (count)	n/a	2	10	26	36	44	49
Additional Nonresidential Parcels (square feet)	n/a	94,975	427,386	1,474,126	1,854,024	2,434,763	2,672,200

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	5,434,591	5,422,872	5,397,060	5,385,808	5,372,068	5,347,215	5,313,531
Multifamily	2,956,912	2,996,532	3,118,500	3,127,203	3,132,609	3,208,390	3,262,943
Institutional	248,147	242,404	236,661	237,861	237,861	237,861	237,861
Government	360,352	346,410	332,468	332,468	332,468	332,468	332,468
Commercial	848,356	848,809	861,639	905,460	925,263	949,282	961,659
Industrial	1,687	1,687	1,687	1,687	1,687	2,169	2,169
Irrigation	573,720	541,395	509,070	509,070	509,070	509,070	509,070
Wholesale	0	0	0	0	0	0	0
Potable Total	**10,423,765**	**10,400,108**	**10,457,084**	**10,499,558**	**10,511,027**	**10,586,456**	**10,619,701**
Recycled	219,472	184,322	184,322	184,322	184,322	184,322	184,322

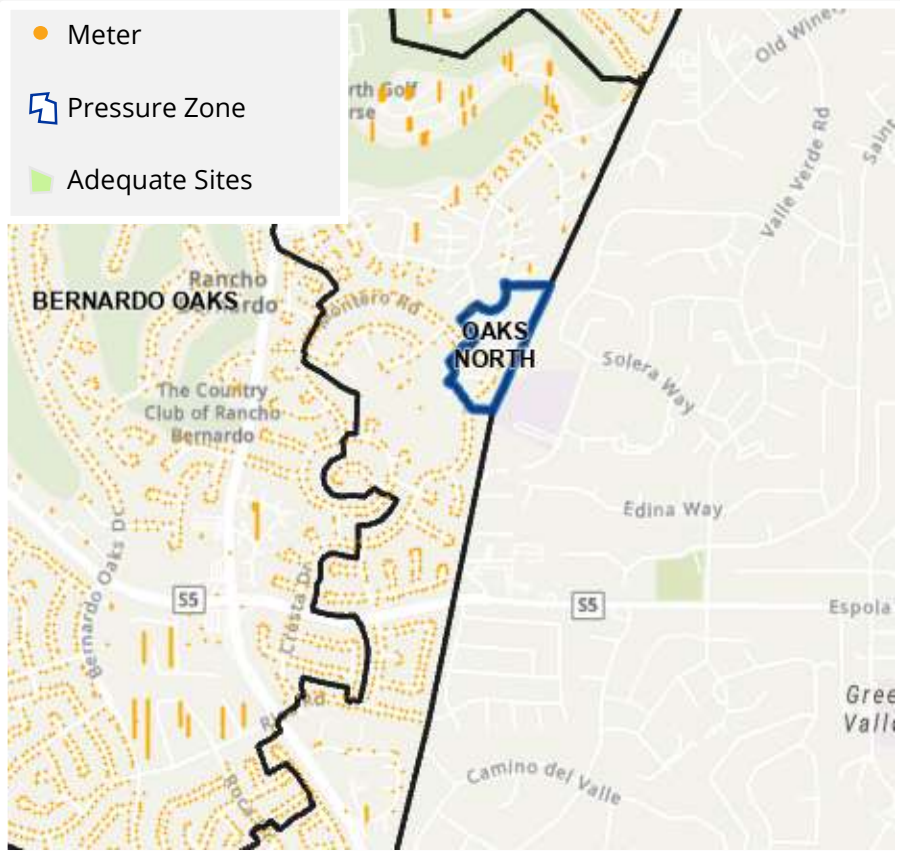
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	6,088	6,074	6,045	6,033	6,017	5,990	5,952
Multifamily	3,312	3,357	3,493	3,503	3,509	3,594	3,655
Institutional	278	272	265	266	266	266	266
Government	404	388	372	372	372	372	372
Commercial	950	951	965	1,014	1,036	1,063	1,077
Industrial	2	2	2	2	2	2	2
Irrigation	643	606	570	570	570	570	570
Wholesale	0	0	0	0	0	0	0
Potable Total	11,676	11,650	11,713	11,761	11,774	11,858	11,896
Recycled	246	206	206	206	206	206	206

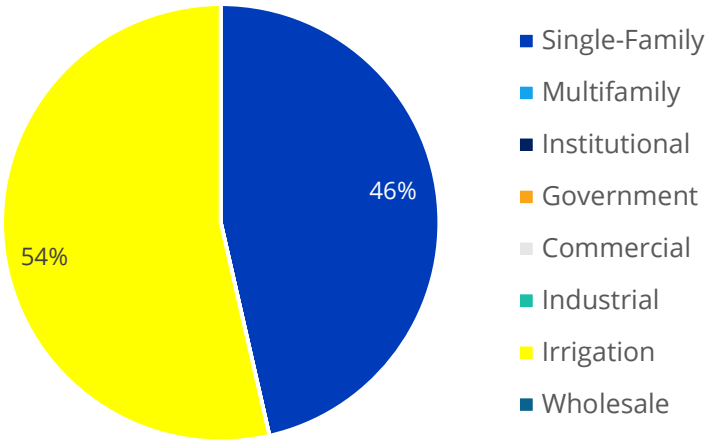
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

OAKS NORTH | Miramar | HGL 865



The Oaks North pressure zone falls within the Miramar service area and is roughly bordered by Chaparral Elementary School to the east, Plaza Maria to the north, and Gibraltar Court to the west. Nearly 60% of water use is irrigation, with another 42% single-family. On average in FY22-24, water use totaled 0.015 mgd and is projected to slightly decline to 0.014 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	63	63	63	62	62	61	60
Household Population	63	63	63	62	62	61	60
Single-Family Households	20	20	20	20	20	20	20
Multifamily Households	11	11	11	11	11	11	11
Total Households	31	31	31	31	31	31	31
Employees	5	5	5	5	5	6	6
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	5,938	5,938	5,938	5,922	5,922	5,905	5,888
Multifamily	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	6,852	6,404	5,957	5,957	5,957	5,957	5,957
Wholesale	0	0	0	0	0	0	0
Potable Total	**12,790**	**12,343**	**11,895**	**11,879**	**11,879**	**11,862**	**11,845**
Recycled	0	0	0	0	0	0	0

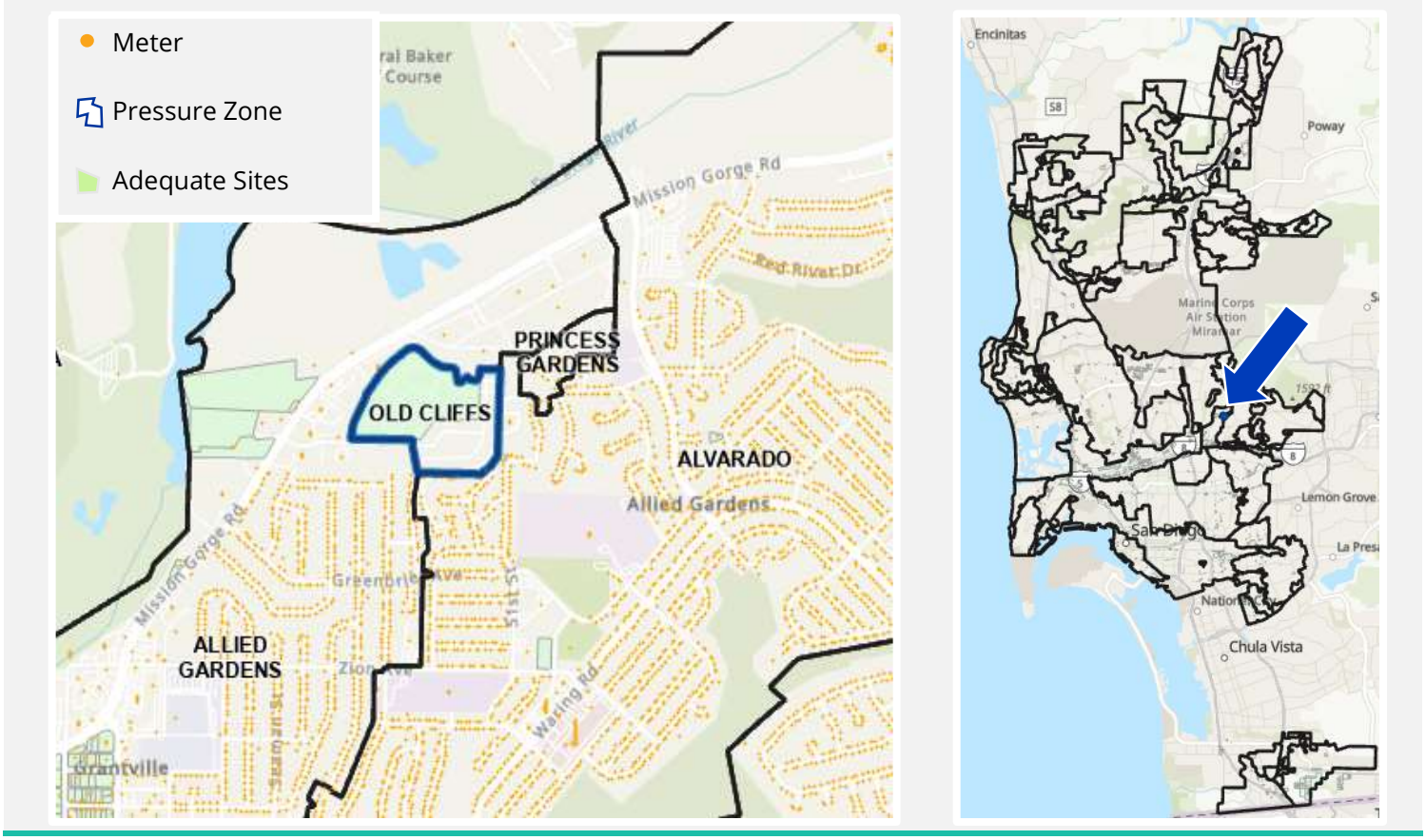
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	7	7	7	7	7	7	7
Multifamily	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	8	7	7	7	7	7	7
Wholesale	0	0	0	0	0	0	0
Potable Total	14	14	13	13	13	13	13
Recycled	0	0	0	0	0	0	0

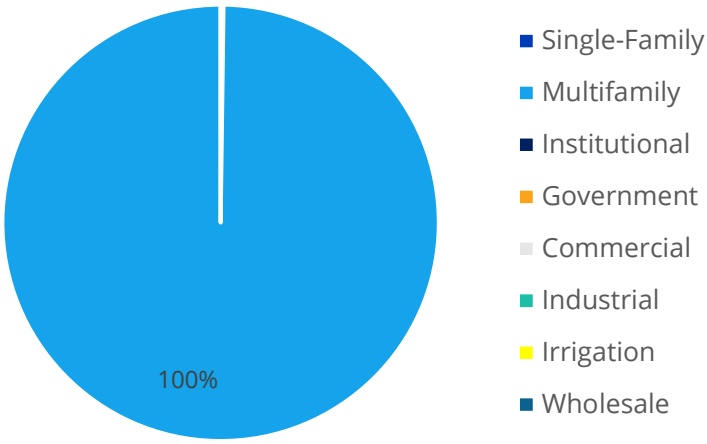
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

OLD CLIFFS | Alvarado | HGL 420



The Old Cliffs pressure zone falls within the Alvarado service area and is entirely bordered by Old Cliffs Road. All of the water use is multifamily. On average in FY22-24, water use totaled 0.027 mgd and is projected to slightly decline to 0.025 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	11	11	11	11	11	10	10
Household Population	11	11	11	11	11	10	10
Single-Family Households	1	1	1	1	1	1	1
Multifamily Households	4	4	4	4	4	4	4
Total Households	5	5	5	5	5	5	5
Employees	5	5	5	5	5	5	5
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	64	64	64	64	64	63	63
Multifamily	28,584	28,584	28,584	28,584	28,584	26,240	26,240
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	0	0	0	0	0	0	0
Wholesale	0	0	0	0	0	0	0
Potable Total	**28,648**	**28,648**	**28,648**	**28,648**	**28,648**	**26,303**	**26,303**
Recycled	0	0	0	0	0	0	0

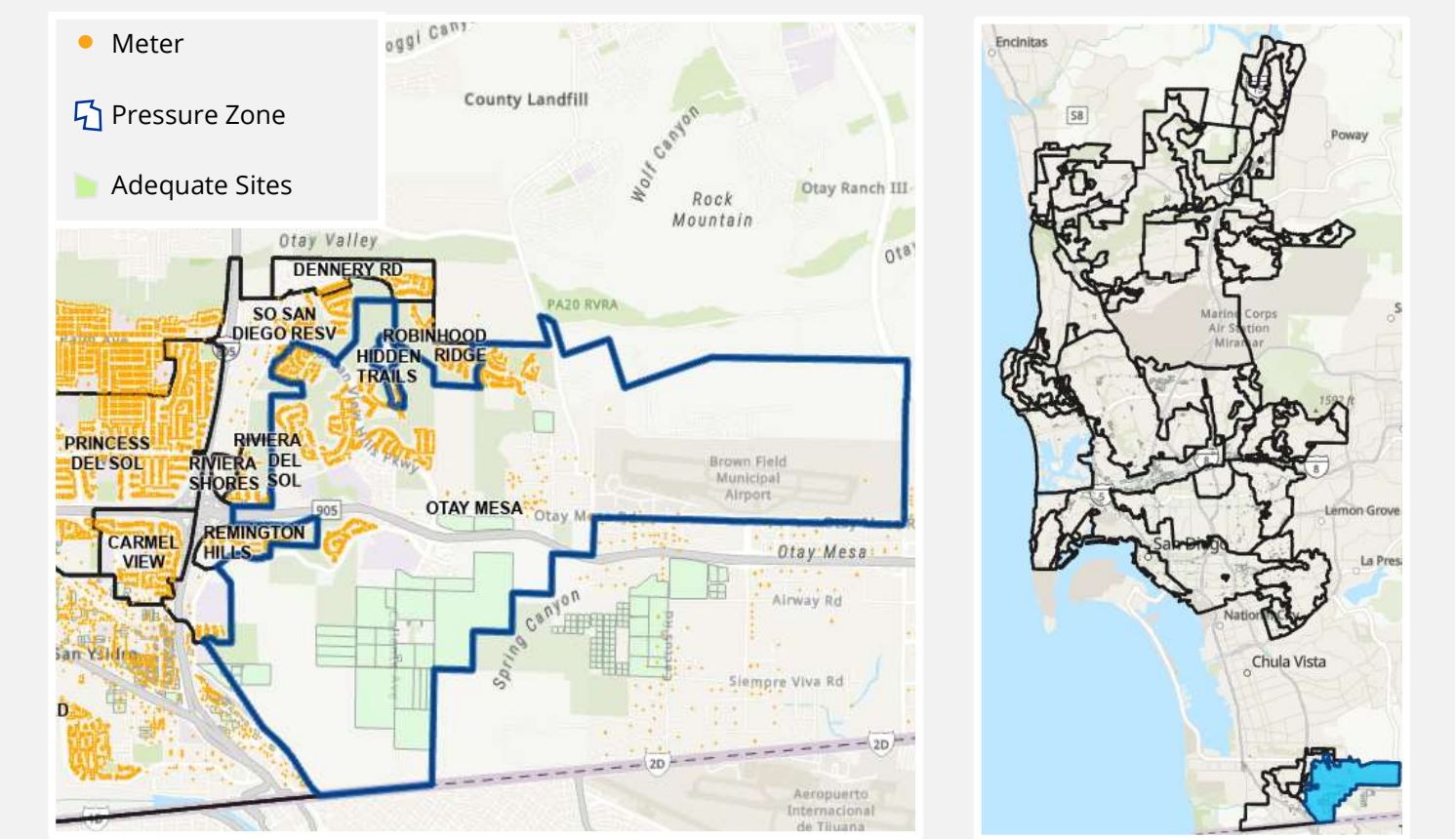
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	0	0	0	0	0	0	0
Multifamily	32	32	32	32	32	29	29
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	0	0	0	0	0	0	0
Wholesale	0	0	0	0	0	0	0
Potable Total	32	32	32	32	32	29	29
Recycled	0	0	0	0	0	0	0

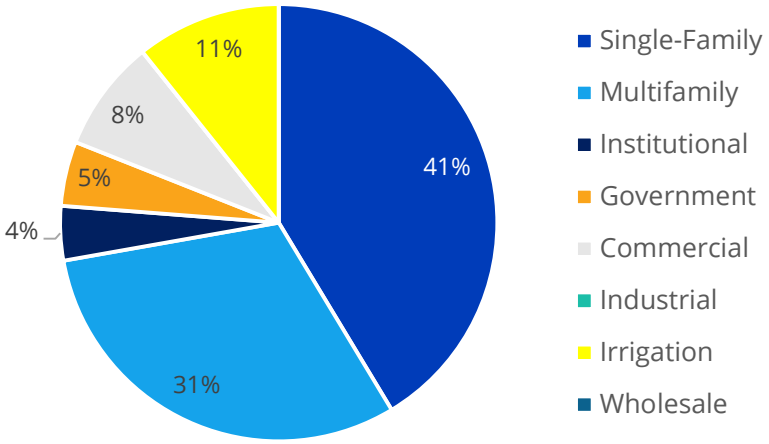
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

OTAY MESA | Otay | HGL 680



The Otay Mesa pressure zone falls within the Otay service area and is roughly bordered by I-805 to the west, Pacific Gateway Park and La Media Road to the east, the US/Mexico border to the south, and the 580 and 490 zones slightly to the north. Otay Mesa Freeway and Otay Mesa Road run east/west through the zone and Ocean Valley Hills Parkway and Otay Valley Road run north/south. More than 40% of the water use is single-family, with another 27% multifamily and 12% irrigation. On average in FY22-24, water use totaled 0.87 mgd and is projected to reach 1.53 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	13,995	15,503	16,747	17,734	18,476	26,194	28,437
Household Population	10,284	11,804	13,046	14,034	14,772	22,490	22,644
Single-Family Households	1,545	2,185	2,451	2,574	2,780	2,888	3,034
Multifamily Households	1,360	1,449	1,654	1,915	2,015	5,049	5,194
Total Households	2,905	3,634	4,105	4,489	4,795	7,937	8,228
Employees	12,362	12,426	12,529	12,739	15,093	15,609	16,124
Additional Nonresidential Parcels (count)	n/a	0	0	1	16	19	21
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	675,572	771,322	782,071

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	341,554	446,978	488,421	505,920	535,739	546,311	564,704
Multifamily	254,938	248,691	272,630	304,869	315,345	672,650	684,751
Institutional	33,183	31,397	29,612	29,612	31,382	31,382	31,382
Government	39,493	37,091	34,689	34,689	34,689	34,689	34,689
Commercial	68,201	66,515	64,830	64,830	76,929	82,554	82,554
Industrial	0	0	0	0	4,248	4,248	4,409
Irrigation	88,447	83,122	77,797	77,797	77,797	77,797	77,797
Wholesale	0	0	0	0	0	0	0
Potable Total	**825,816**	**913,794**	**967,979**	**1,017,717**	**1,076,128**	**1,449,631**	**1,480,285**
Recycled	10,051	4,526	4,526	4,526	4,526	4,526	4,526

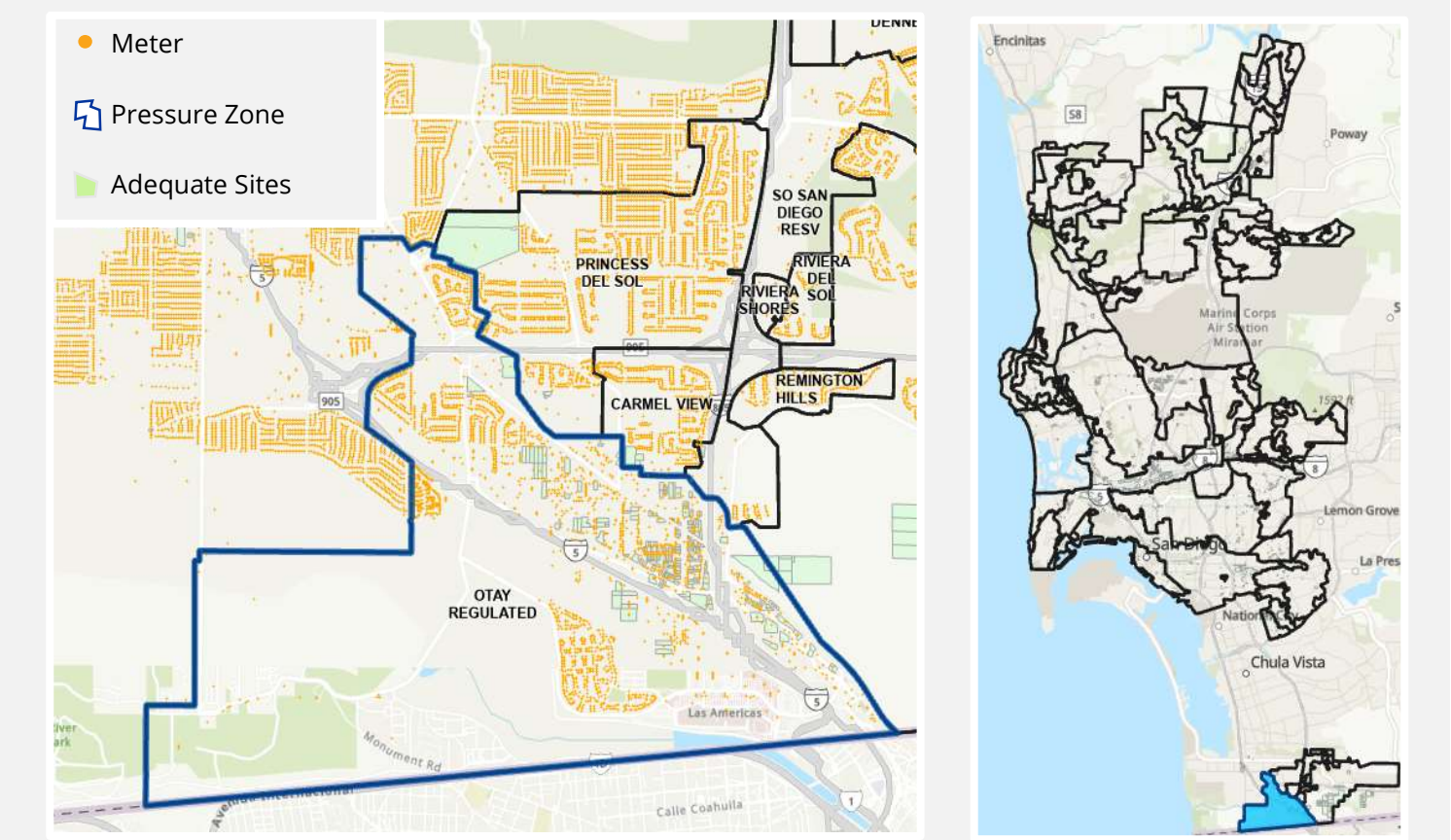
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	383	501	547	567	600	612	633
Multifamily	286	279	305	341	353	753	767
Institutional	37	35	33	33	35	35	35
Government	44	42	39	39	39	39	39
Commercial	76	75	73	73	86	92	92
Industrial	0	0	0	0	5	5	5
Irrigation	99	93	87	87	87	87	87
Wholesale	0	0	0	0	0	0	0
Potable Total	925	1,024	1,084	1,140	1,205	1,624	1,658
Recycled	11	5	5	5	5	5	5

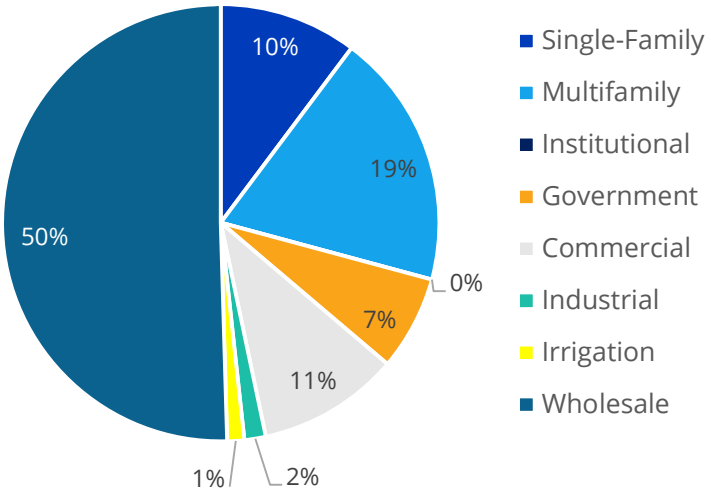
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

OTAY REGULATED | Otay | HGL 270



The Otay-Regulated pressure zone falls within the Otay service area and is bordered roughly by Howard Avenue and Hollister Street to the west, Princess Del Sol and Otay Mesa to the east, Del Sol Boulevard to the north, and Via Internacional to the south. I-5, I-805, and the southern border of Via Internacional are all major roadways that traverse this zone. Nearly 50% of the water use is wholesale, with another 19% multifamily. Single-family accounts for 10% of water use, as well as commercial. On average in FY22-24, water use totaled 3.41 mgd and is projected to reach 3.57 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	32,723	33,105	33,466	33,632	33,816	33,492	32,914
Household Population	32,416	32,802	33,162	33,328	33,511	33,186	32,616
Single-Family Households	1,936	2,343	2,506	2,584	2,699	2,747	2,818
Multifamily Households	6,511	6,650	6,753	6,868	6,945	7,052	7,172
Total Households	8,447	8,993	9,259	9,452	9,644	9,799	9,990
Employees	14,054	14,105	14,188	14,494	14,616	14,722	14,828
Additional Nonresidential Parcels (count)	n/a	1	2	7	11	13	15
Additional Nonresidential Parcels (square feet)	n/a	11,175	79,882	250,822	369,665	389,052	468,934

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	341,023	410,494	436,532	447,754	463,665	468,945	476,502
Multifamily	630,941	625,403	632,039	641,784	646,028	648,924	648,034
Institutional	0	0	0	0	0	0	0
Government	233,734	231,920	230,107	230,107	230,107	230,107	230,107
Commercial	349,351	348,181	350,464	360,284	365,486	366,171	370,789
Industrial	53,214	53,208	53,202	53,202	53,618	53,618	53,618
Irrigation	42,044	39,627	37,211	37,211	37,211	37,211	37,211
Wholesale	1,681,395	1,681,395	1,681,395	1,681,395	1,681,395	1,681,395	1,681,395
Potable Total	**3,331,702**	**3,390,228**	**3,420,949**	**3,451,736**	**3,477,510**	**3,486,370**	**3,497,656**
Recycled	2,594,659	2,309,446	2,309,446	2,309,446	2,309,446	2,309,446	2,309,446

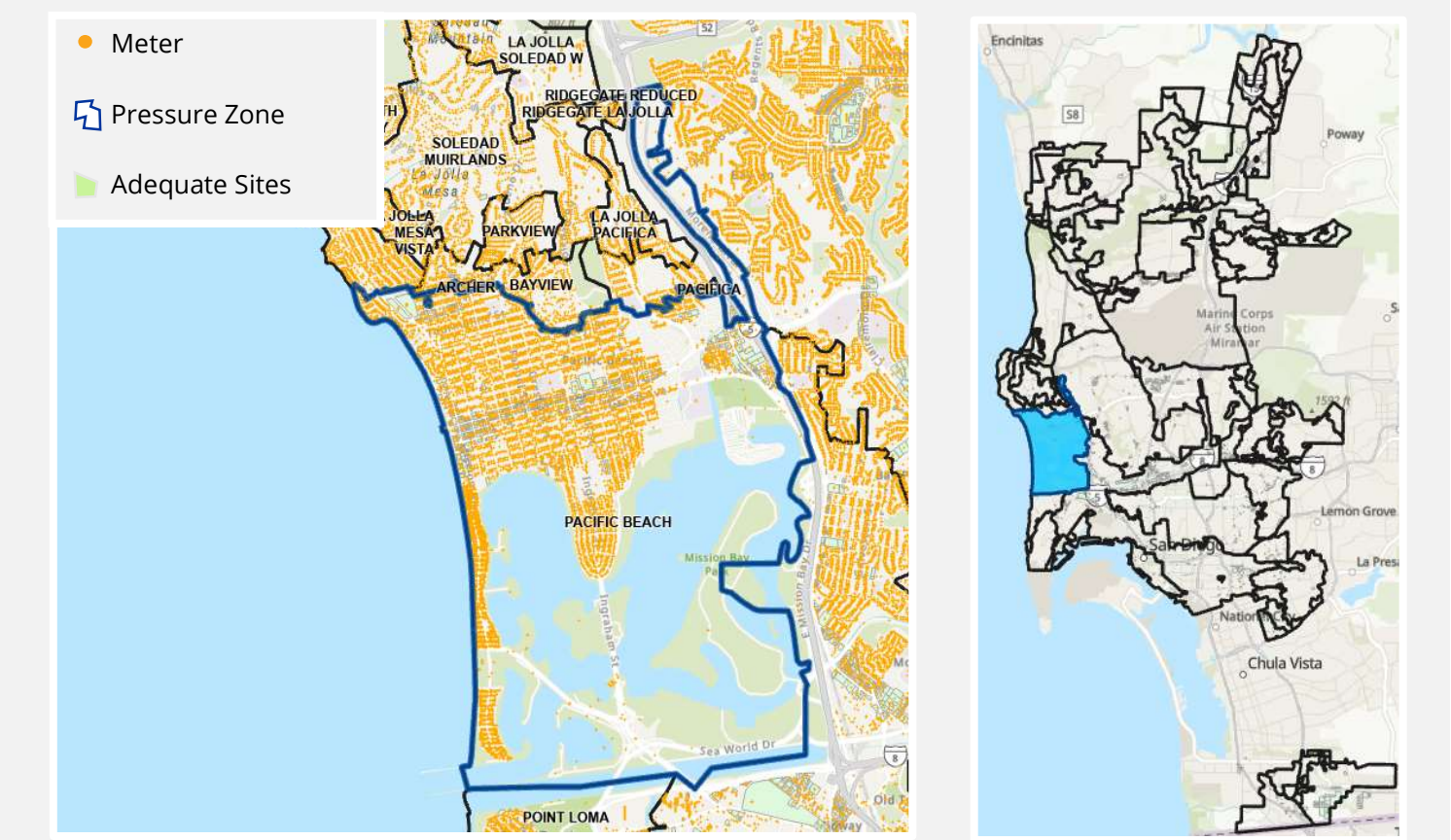
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	382	460	489	502	519	525	534
Multifamily	707	701	708	719	724	727	726
Institutional	0	0	0	0	0	0	0
Government	262	260	258	258	258	258	258
Commercial	391	390	393	404	409	410	415
Industrial	60	60	60	60	60	60	60
Irrigation	47	44	42	42	42	42	42
Wholesale	1,883	1,883	1,883	1,883	1,883	1,883	1,883
Potable Total	3,732	3,798	3,832	3,866	3,895	3,905	3,918
Recycled	2,906	2,587	2,587	2,587	2,587	2,587	2,587

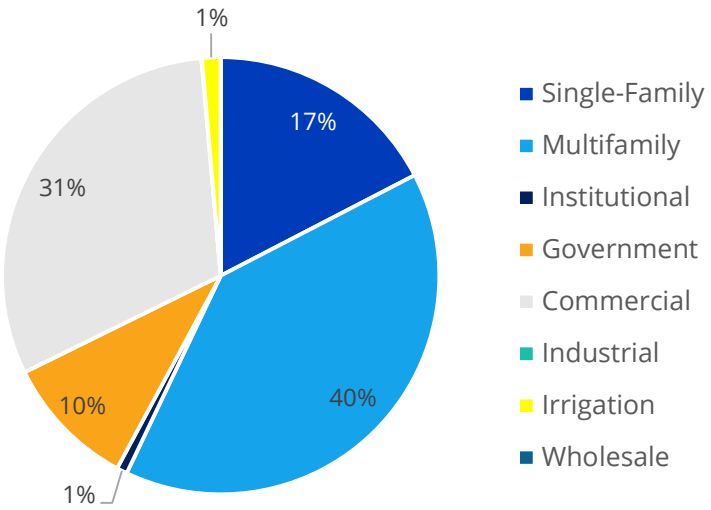
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

PACIFIC BEACH | Alvarado/Miramar | HGL 307



The Pacific Beach pressure zone falls within the Alvarado/Miramar service area and is bordered by I-5, the Pacific Coastline to the west, I-8 to the south with major southern entrances to the zone from Sunset Cliffs Boulevard and W Mission Bay Drive, and (approximately) Turquoise Street, Foothill Boulevard, and Beryl Street to the north. Nearly 40% of the water use is multifamily, with another 31% commercial. Single-family accounts for 18% of water use, with another 10% government. On average in FY22-24, water use totaled 4.91 mgd and is projected to slightly decline to 4.79 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	41,629	40,775	40,347	40,236	40,347	40,234	39,846
Household Population	41,176	40,355	39,916	39,800	39,894	39,790	39,473
Single-Family Households	4,959	4,849	4,768	4,727	4,634	4,448	4,002
Multifamily Households	15,684	15,704	15,697	15,824	16,095	16,509	17,199
Total Households	20,643	20,553	20,465	20,551	20,729	20,957	21,201
Employees	27,519	27,647	27,849	28,162	28,844	29,747	30,650
Additional Nonresidential Parcels (count)	n/a	2	4	8	19	31	43
Additional Nonresidential Parcels (square feet)	n/a	15,872	31,744	63,488	461,120	556,352	907,247

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	858,276	838,154	824,859	817,954	804,545	778,279	718,902
Multifamily	1,961,262	1,935,517	1,924,888	1,923,101	1,936,242	1,949,105	1,974,789
Institutional	38,715	37,433	36,150	36,150	36,150	36,150	36,150
Government	486,876	473,924	460,973	460,973	466,033	466,033	471,094
Commercial	1,525,152	1,524,958	1,524,763	1,526,418	1,543,966	1,548,930	1,553,480
Industrial	1,292	1,292	1,292	1,292	1,292	1,292	1,292
Irrigation	68,196	63,986	59,775	59,775	59,775	59,775	59,775
Wholesale	0	0	0	0	0	0	0
Potable Total	**4,939,770**	**4,875,263**	**4,832,700**	**4,825,663**	**4,848,003**	**4,839,564**	**4,815,482**
Recycled	5,872	4,185	4,185	4,185	4,185	4,185	4,185

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

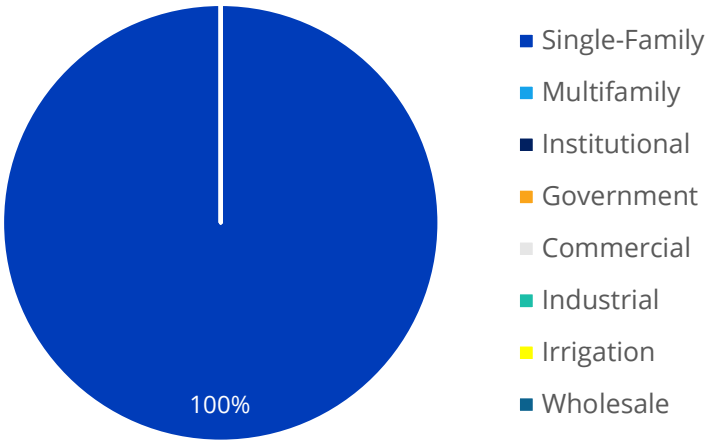
Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	961	939	924	916	901	872	805
Multifamily	2,197	2,168	2,156	2,154	2,169	2,183	2,212
Institutional	43	42	40	40	40	40	40
Government	545	531	516	516	522	522	528
Commercial	1,708	1,708	1,708	1,710	1,729	1,735	1,740
Industrial	1	1	1	1	1	1	1
Irrigation	76	72	67	67	67	67	67
Wholesale	0	0	0	0	0	0	0
Potable Total	5,533	5,461	5,413	5,405	5,430	5,421	5,394
Recycled	7	5	5	5	5	5	5

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

PACIFICA | Alvarado/Miramar | HGL 340

The Pacifica pressure zone falls within the Alvarado/Miramar service area and is roughly bordered by residences on Loring Street to the north, undeveloped land behind Pacific Row to the south, I-5 to the east, and San Anselmo Court/Pacifica Drive to the west. This zone consists entirely of a partial block of residences on Pacifica Drive between Loring Street and San Anselmo Court. 100% of the water use is single-family. On average in FY22-24, water use totaled 0.0043 mgd and is projected to slightly decline to 0.0042 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	85	83	82	81	81	80	78
Household Population	71	69	68	68	67	66	65
Single-Family Households	23	23	23	23	23	23	23
Multifamily Households	7	7	7	7	7	7	7
Total Households	30	30	30	30	30	30	30
Employees	20	20	20	20	21	22	22
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	4,414	4,393	4,382	4,382	4,370	4,359	4,347
Multifamily	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	0	0	0	0	0	0	0
Wholesale	0	0	0	0	0	0	0
Potable Total	**4,414**	**4,393**	**4,382**	**4,382**	**4,370**	**4,359**	**4,347**
Recycled	0	0	0	0	0	0	0

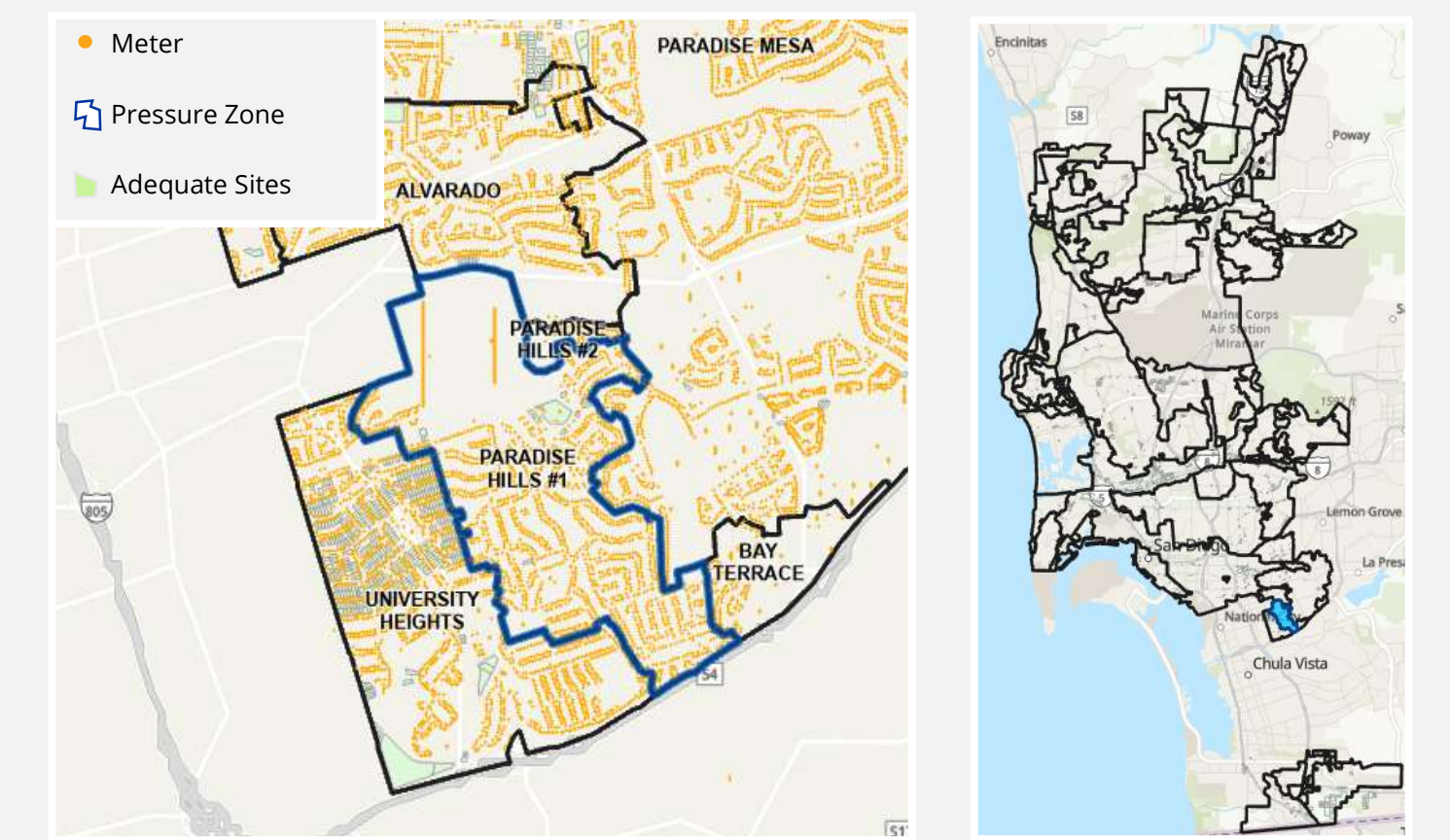
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	5	5	5	5	5	5	5
Multifamily	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	0	0	0	0	0	0	0
Wholesale	0	0	0	0	0	0	0
Potable Total	5	5	5	5	5	5	5
Recycled	0	0	0	0	0	0	0

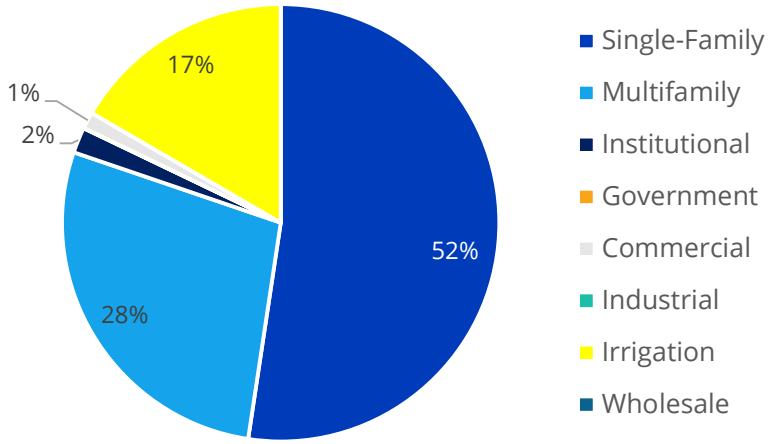
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

PARADISE HILLS #1 | Alvarado/Otay | HGL 472



The Paradise Hills 1 pressure zone falls within the Alvarado/Otay service area and is bordered roughly by Seabreeze Drive to the west, the Paradise Mesa 610 pressure zone to the east, Paradise Valley Road to the north, and S Bay Freeway to the south. Calle Tres Lomas, Munda Road, and Alleghany Street are a few of the main roadways that traverse the zone. More than 50% of the water use is single-family, with another 23% multifamily and 21% irrigation. On average in FY22-24, water use totaled 0.53 mgd and is projected to slightly decline to 0.50 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	8,214	7,983	7,870	7,781	7,705	7,534	7,282
Household Population	8,102	7,879	7,762	7,671	7,590	7,421	7,183
Single-Family Households	1,655	1,668	1,665	1,664	1,660	1,658	1,654
Multifamily Households	613	608	607	607	611	613	614
Total Households	2,268	2,276	2,272	2,271	2,271	2,271	2,268
Employees	984	986	992	1,007	1,015	1,022	1,028
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	274,687	275,422	274,313	273,625	272,549	271,211	269,202
Multifamily	146,012	142,575	140,402	138,855	138,120	135,653	132,059
Institutional	9,893	9,893	9,893	9,893	9,893	9,893	9,893
Government	190	190	190	190	190	190	190
Commercial	6,487	6,487	6,487	6,487	6,487	6,487	6,487
Industrial	0	0	0	0	0	0	0
Irrigation	87,072	81,451	75,830	75,830	75,830	75,830	75,830
Wholesale	0	0	0	0	0	0	0
Potable Total	**524,342**	**516,019**	**507,116**	**504,881**	**503,070**	**499,264**	**493,662**
Recycled	0	0	0	0	0	0	0

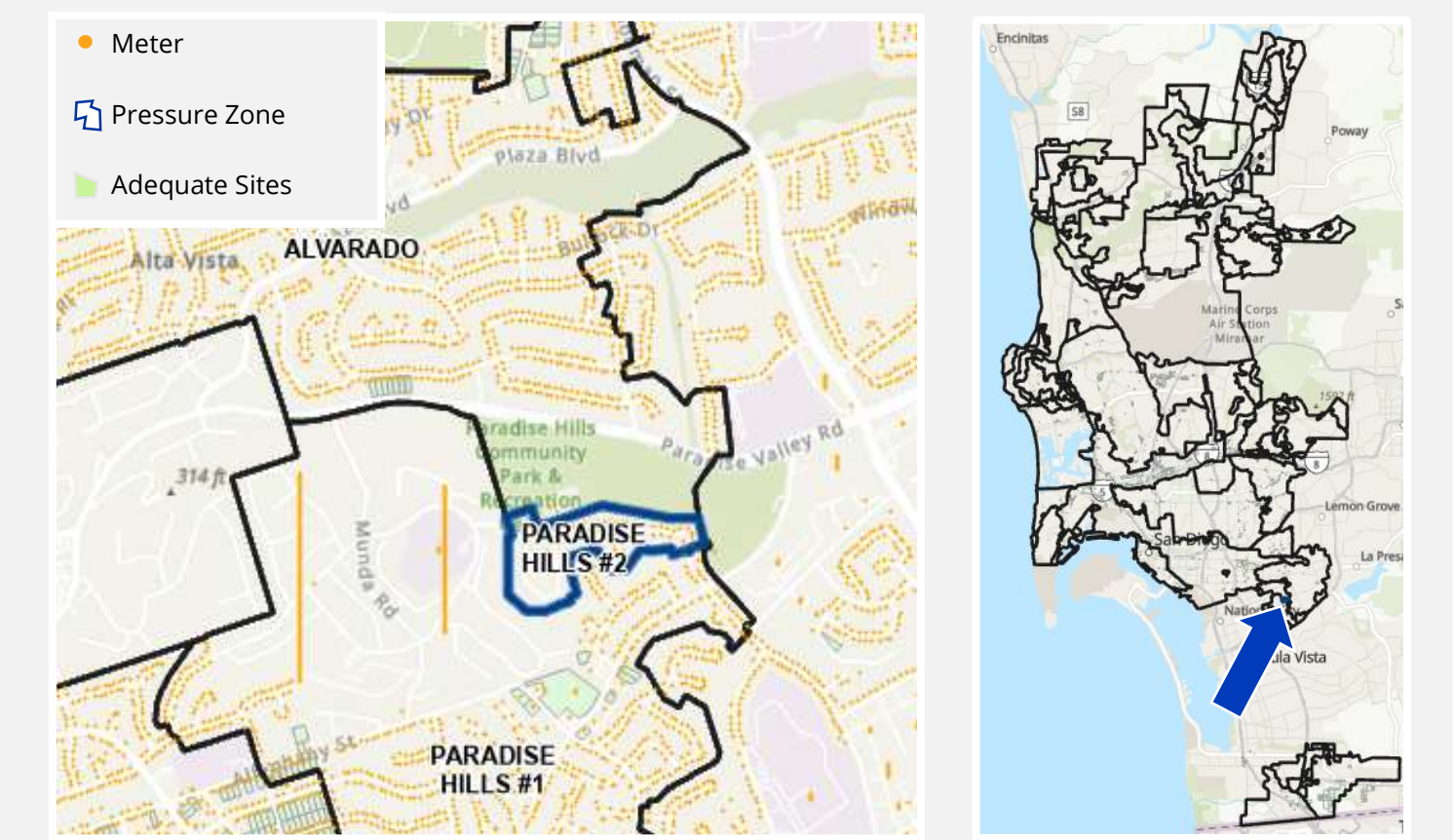
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	308	309	307	306	305	304	302
Multifamily	164	160	157	156	155	152	148
Institutional	11	11	11	11	11	11	11
Government	0	0	0	0	0	0	0
Commercial	7	7	7	7	7	7	7
Industrial	0	0	0	0	0	0	0
Irrigation	98	91	85	85	85	85	85
Wholesale	0	0	0	0	0	0	0
Potable Total	587	578	568	566	564	559	553
Recycled	0	0	0	0	0	0	0

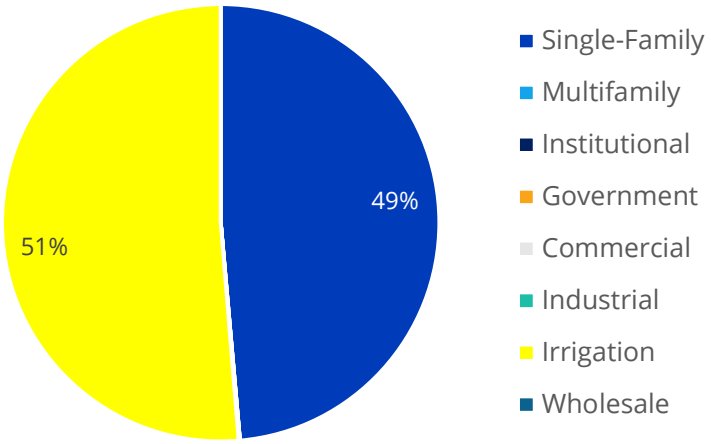
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

PARADISE HILLS #2 | Alvarado/Otay | HGL 590



The Paradise Hills 2 pressure zone falls within the Alvarado/Otay service area and is roughly bordered by Inyo Lane to the north, Pelican Hills Road to the west, Rising Glen Way and Hayard Way to the south, and Paradise Hills Recreation Center to the east. Nearly 60% of the water use is irrigation, with another 43% single-family. On average in FY22-24, water use totaled 0.017 mgd and is projected to remain around 0.017 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	264	280	277	273	271	265	255
Household Population	263	279	275	272	269	263	254
Single-Family Households	59	66	66	65	65	65	65
Multifamily Households	15	15	15	15	15	15	15
Total Households	74	81	81	80	80	80	80
Employees	27	27	28	28	29	29	29
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	7,160	8,398	8,380	8,219	8,206	8,178	8,135
Multifamily	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	15	15	15	15	15	15	15
Industrial	0	0	0	0	0	0	0
Irrigation	7,560	7,092	6,623	6,623	6,623	6,623	6,623
Wholesale	0	0	0	0	0	0	0
Potable Total	**14,735**	**15,505**	**15,018**	**14,858**	**14,844**	**14,816**	**14,774**
Recycled	0	0	0	0	0	0	0

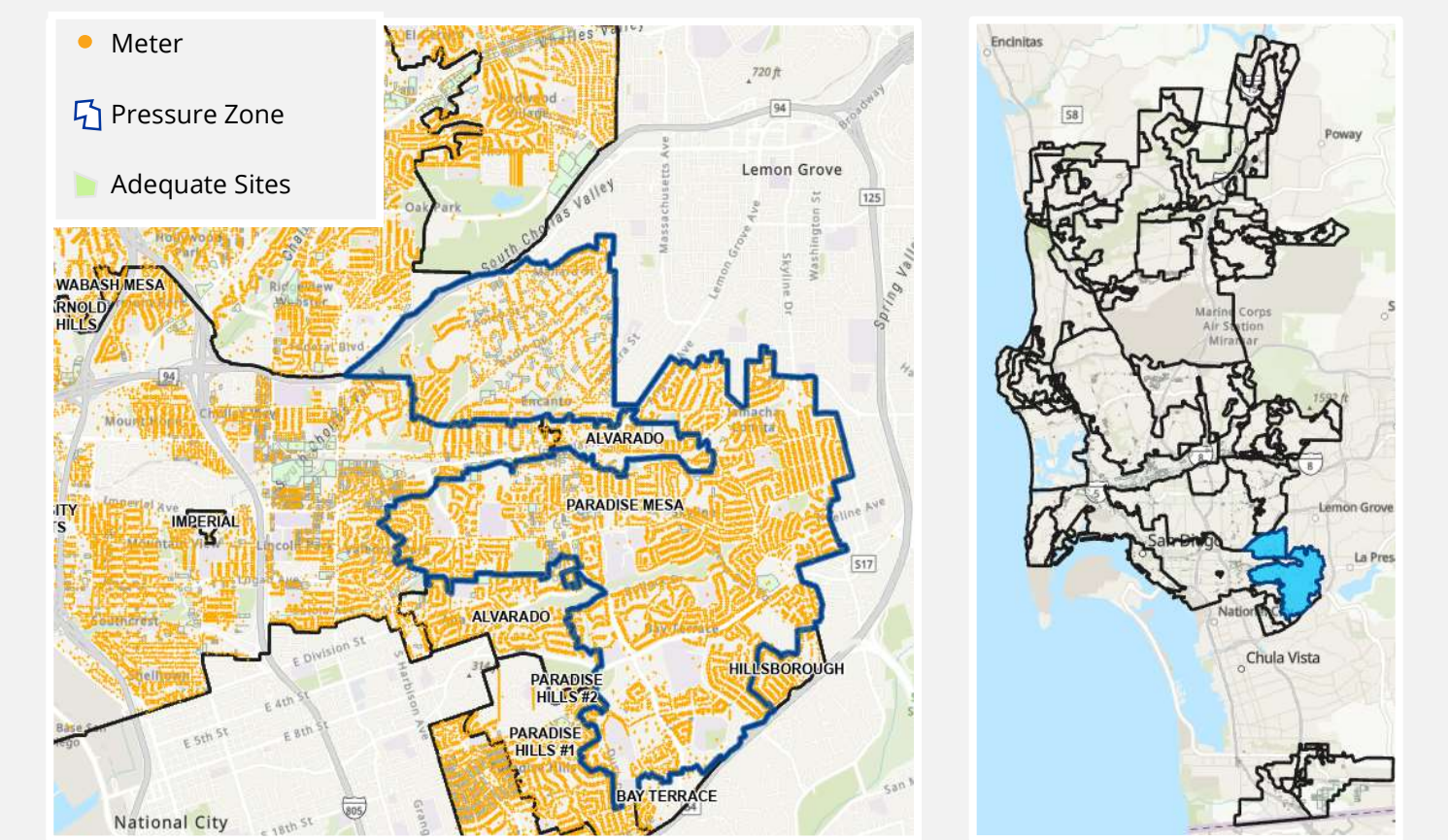
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	8	9	9	9	9	9	9
Multifamily	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	8	8	7	7	7	7	7
Wholesale	0	0	0	0	0	0	0
Potable Total	17	17	17	17	17	17	17
Recycled	0	0	0	0	0	0	0

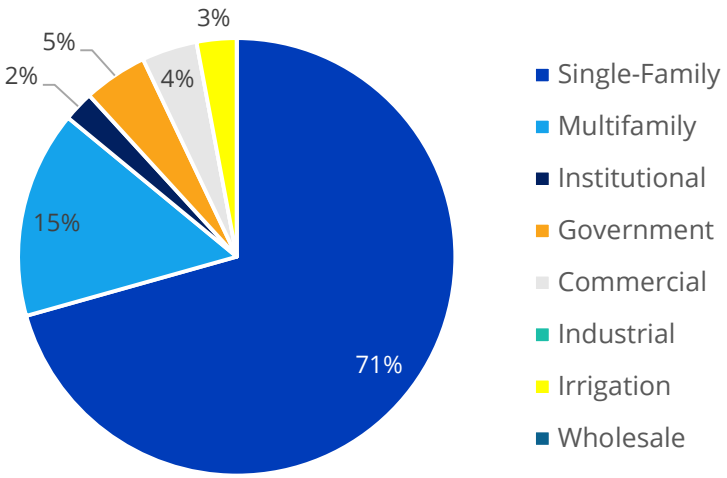
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

PARADISE MESA | Alvarado/Otay | HGL 610



The Paradise Mesa pressure zone falls within the Alvarado/Otay service area and is contained by I-805 to the west, CA-125 to the east, CA-94 to the north, and CA-54 to the south. A few main roadways through the zone running north/south are Woodman Street, 60th Street, and Meadowbrook Drive. Main roadways running east/west include Skyline Drive and Paradise Valley Road. More than 70% of the water use is single-family, with another 14% multifamily. On average in FY22-24, water use totaled 3.26 mgd and is projected to slightly decline to 3.25 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	57,889	56,012	55,309	54,797	55,060	54,474	53,274
Household Population	57,739	55,895	55,185	54,671	54,925	54,343	53,185
Single-Family Households	13,276	13,263	13,256	13,290	13,528	13,715	13,895
Multifamily Households	3,464	3,497	3,504	3,513	3,540	3,564	3,585
Total Households	16,740	16,760	16,760	16,803	17,068	17,279	17,480
Employees	9,247	9,288	9,404	9,672	9,908	9,988	10,067
Additional Nonresidential Parcels (count)	n/a	0	1	4	7	8	8
Additional Nonresidential Parcels (square feet)	n/a	0	7,710	314,089	329,510	337,221	337,221

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	2,274,986	2,259,393	2,253,191	2,253,997	2,285,742	2,304,375	2,317,324
Multifamily	493,581	483,705	479,251	475,492	474,660	468,484	457,956
Institutional	72,154	69,434	66,715	69,767	69,767	69,767	69,767
Government	152,660	146,852	141,044	141,044	141,044	141,044	141,044
Commercial	131,722	131,047	130,774	131,578	132,382	132,784	132,784
Industrial	0	0	0	0	0	0	0
Irrigation	95,276	89,264	83,251	83,251	83,251	83,251	83,251
Wholesale	0	0	0	0	0	0	0
Potable Total	**3,220,378**	**3,179,695**	**3,154,227**	**3,155,129**	**3,186,846**	**3,199,705**	**3,202,125**
Recycled	0	0	0	0	0	0	0

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

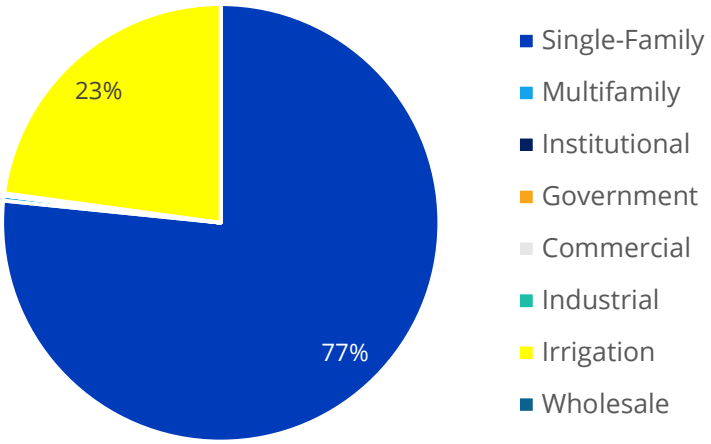
Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	2,548	2,531	2,524	2,525	2,560	2,581	2,596
Multifamily	553	542	537	533	532	525	513
Institutional	81	78	75	78	78	78	78
Government	171	164	158	158	158	158	158
Commercial	148	147	146	147	148	149	149
Industrial	0	0	0	0	0	0	0
Irrigation	107	100	93	93	93	93	93
Wholesale	0	0	0	0	0	0	0
Potable Total	3,607	3,562	3,533	3,534	3,570	3,584	3,587
Recycled	0	0	0	0	0	0	0

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

PARKVIEW | Alvarado/Miramar | HGL 600

The Parkview pressure zone falls within the Alvarado/Miramar service area and is bordered by Soledad Muirlands 725 to the west, Bahia Dr. to the east, Calle De Primra to the north, and Bayview 463 to the south. More than 70% of the water use is single-family, with another 26% irrigation. On average in FY22-24, water use totaled 0.18 mgd and is projected to remain around 0.18 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	1,395	1,433	1,414	1,404	1,395	1,375	1,342
Household Population	1,393	1,431	1,411	1,401	1,393	1,372	1,341
Single-Family Households	597	627	623	623	623	623	621
Multifamily Households	0	0	0	0	0	0	0
Total Households	597	627	623	623	623	623	621
Employees	719	724	733	746	764	782	800
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	119,592	124,687	123,843	123,696	123,578	123,266	122,575
Multifamily	583	572	568	565	562	554	545
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	254	254	254	254	254	254	254
Industrial	0	0	0	0	0	0	0
Irrigation	35,647	33,382	31,118	31,118	31,118	31,118	31,118
Wholesale	0	0	0	0	0	0	0
Potable Total	**156,075**	**158,895**	**155,782**	**155,632**	**155,511**	**155,192**	**154,491**
Recycled	0	0	0	0	0	0	0

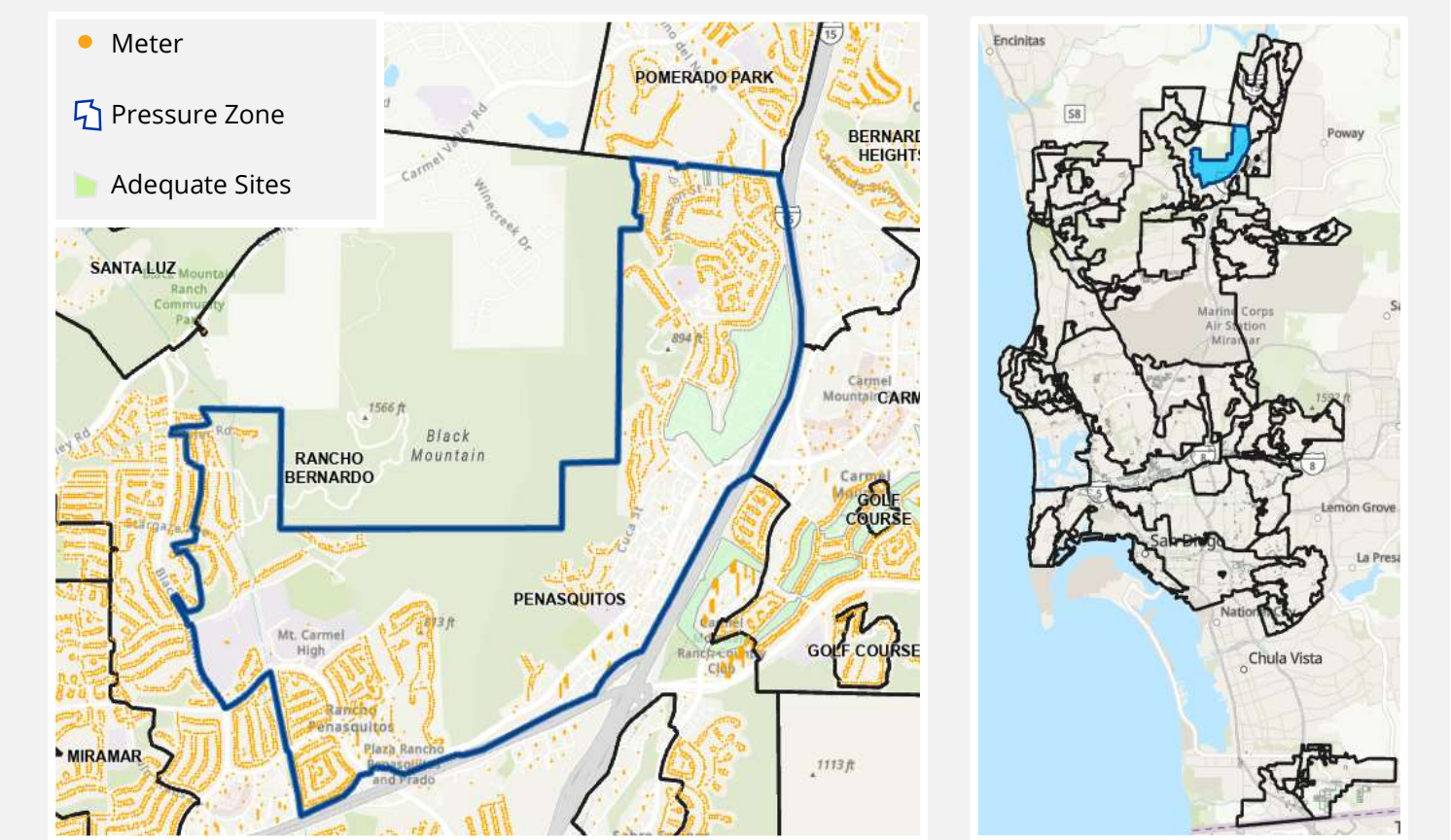
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	134	140	139	139	138	138	137
Multifamily	1	1	1	1	1	1	1
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	40	37	35	35	35	35	35
Wholesale	0	0	0	0	0	0	0
Potable Total	175	178	174	174	174	174	173
Recycled	0	0	0	0	0	0	0

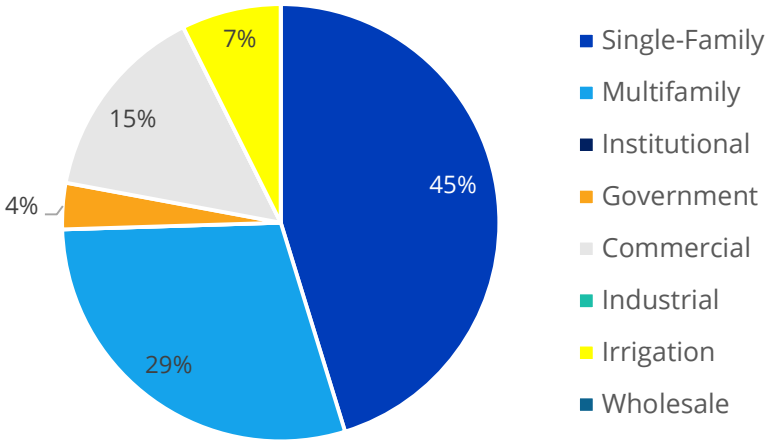
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

PENASQUITOS | Miramar | HGL 920



The Penasquitos pressure zone falls within the Miramar service area and is bordered by Black Mountain Road to the west, I-15 to the east, Black Mountain Open Space Park to the north, and Ted Williams Freeway to the south. Carmel Mountain Road is the only major roadway that crosses through this zone though it is bordered on three sides by major highways. Nearly 50% of the water use is single-family, with another 28% multifamily and 14% commercial. On average in FY22-24, water use totaled 1.38 mgd and is projected to reach 1.44 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	15,335	16,980	16,812	16,641	16,489	16,174	15,720
Household Population	15,328	16,975	16,807	16,636	16,484	16,169	15,715
Single-Family Households	2,934	3,378	3,374	3,372	3,371	3,369	3,364
Multifamily Households	2,464	2,752	2,756	2,756	2,758	2,758	2,757
Total Households	5,398	6,130	6,130	6,128	6,129	6,127	6,121
Employees	3,462	3,476	3,506	3,559	3,665	3,692	3,719
Additional Nonresidential Parcels (count)	n/a	0	0	0	3	3	3
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	82,978	82,978	82,978

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	596,352	680,748	678,989	677,626	676,506	674,250	670,681
Multifamily	385,779	412,290	409,425	406,118	403,262	397,058	388,375
Institutional	0	0	0	0	0	0	0
Government	45,116	42,276	39,437	39,437	41,030	41,030	41,030
Commercial	193,872	192,370	190,868	190,868	190,868	190,868	190,868
Industrial	0	0	0	0	0	0	0
Irrigation	96,834	92,185	87,537	87,537	87,537	87,537	87,537
Wholesale	0	0	0	0	0	0	0
Potable Total	**1,317,953**	**1,419,870**	**1,406,256**	**1,401,586**	**1,399,203**	**1,390,743**	**1,378,491**
Recycled	53,636	48,990	48,990	48,990	48,990	48,990	48,990

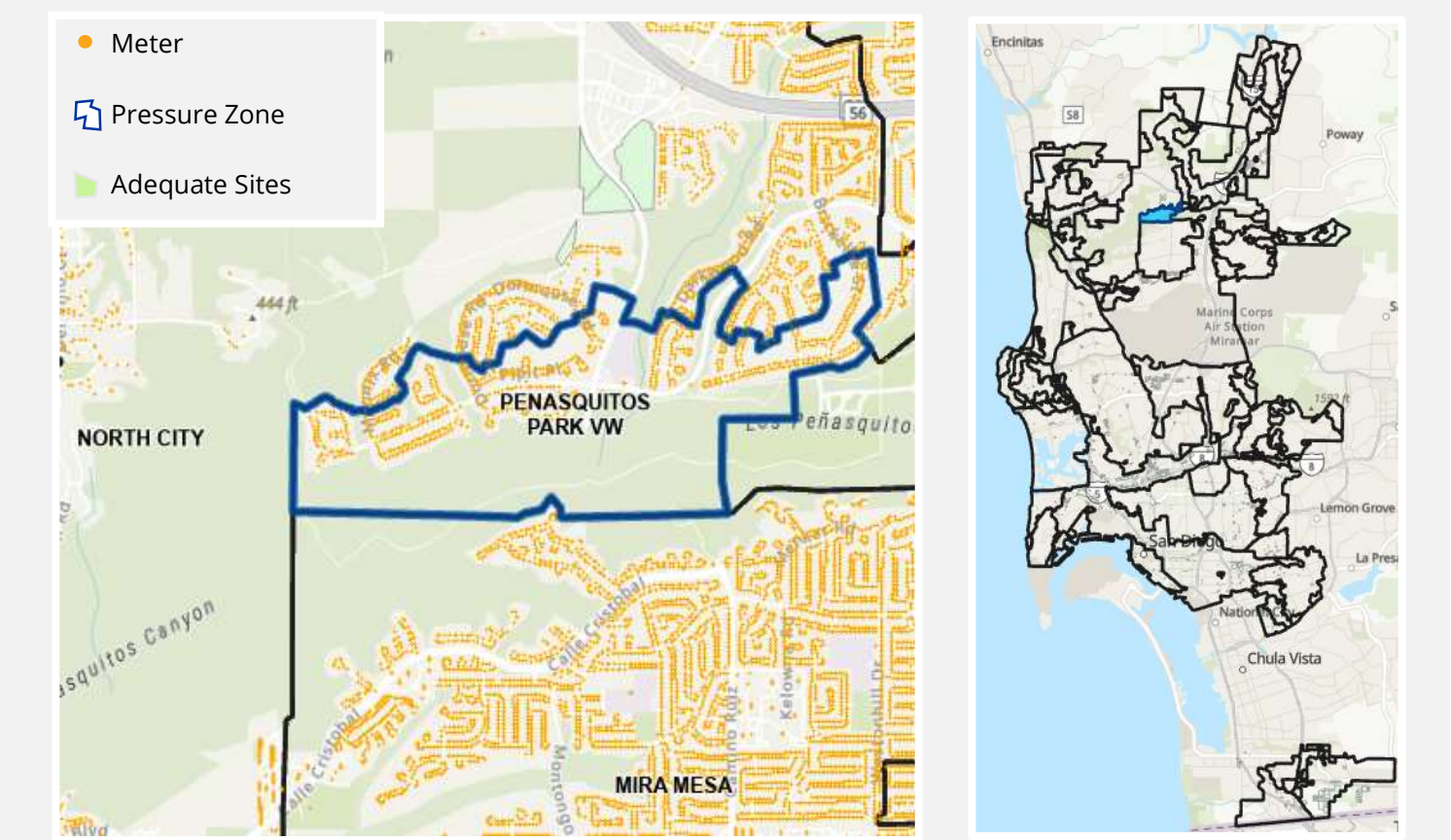
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	668	763	761	759	758	755	751
Multifamily	432	462	459	455	452	445	435
Institutional	0	0	0	0	0	0	0
Government	51	47	44	44	46	46	46
Commercial	217	215	214	214	214	214	214
Industrial	0	0	0	0	0	0	0
Irrigation	108	103	98	98	98	98	98
Wholesale	0	0	0	0	0	0	0
Potable Total	1,476	1,590	1,575	1,570	1,567	1,558	1,544
Recycled	60	55	55	55	55	55	55

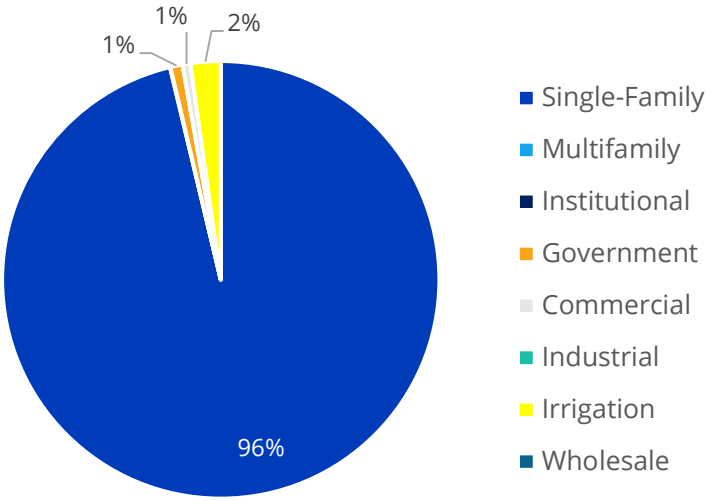
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

PENASQUITOS PARK VW | Miramar | HGL 470



The Penasquitos Park VW pressure zone falls within the Miramar service area and is bordered by Del Mar Mesa to the west, Brickellia Street to the east, hilly terrain south of Del Mar Mesa Preserve to the north, and Los Penasquitos Canyon Trail to the south. This zone is made up entirely of residential streets with no major roadways throughout. Nearly 100% of the water use is single-family, with another 2% irrigation, 1% government, and 1% commercial. On average in FY22-24, water use totaled 0.22 mgd and is projected to reach 0.23 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	2,322	2,254	2,348	2,345	2,326	2,292	2,251
Household Population	2,322	2,254	2,348	2,345	2,326	2,292	2,251
Single-Family Households	806	798	797	803	803	803	803
Multifamily Households	0	2	44	45	46	49	58
Total Households	806	800	841	848	849	852	861
Employees	672	674	679	688	717	787	856
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	197,642	195,152	194,648	195,404	195,088	194,469	193,505
Multifamily	118	366	5,536	5,658	5,779	6,134	7,166
Institutional	0	0	0	0	0	0	0
Government	1,817	1,696	1,576	1,576	1,576	1,576	1,576
Commercial	1,175	1,175	1,175	1,175	1,175	1,175	1,175
Industrial	0	0	0	0	0	0	0
Irrigation	4,562	4,281	4,001	4,001	4,001	4,001	4,001
Wholesale	0	0	0	0	0	0	0
Potable Total	**205,313**	**202,671**	**206,937**	**207,815**	**207,619**	**207,355**	**207,424**
Recycled	12,564	4,993	4,993	4,993	4,993	4,993	4,993

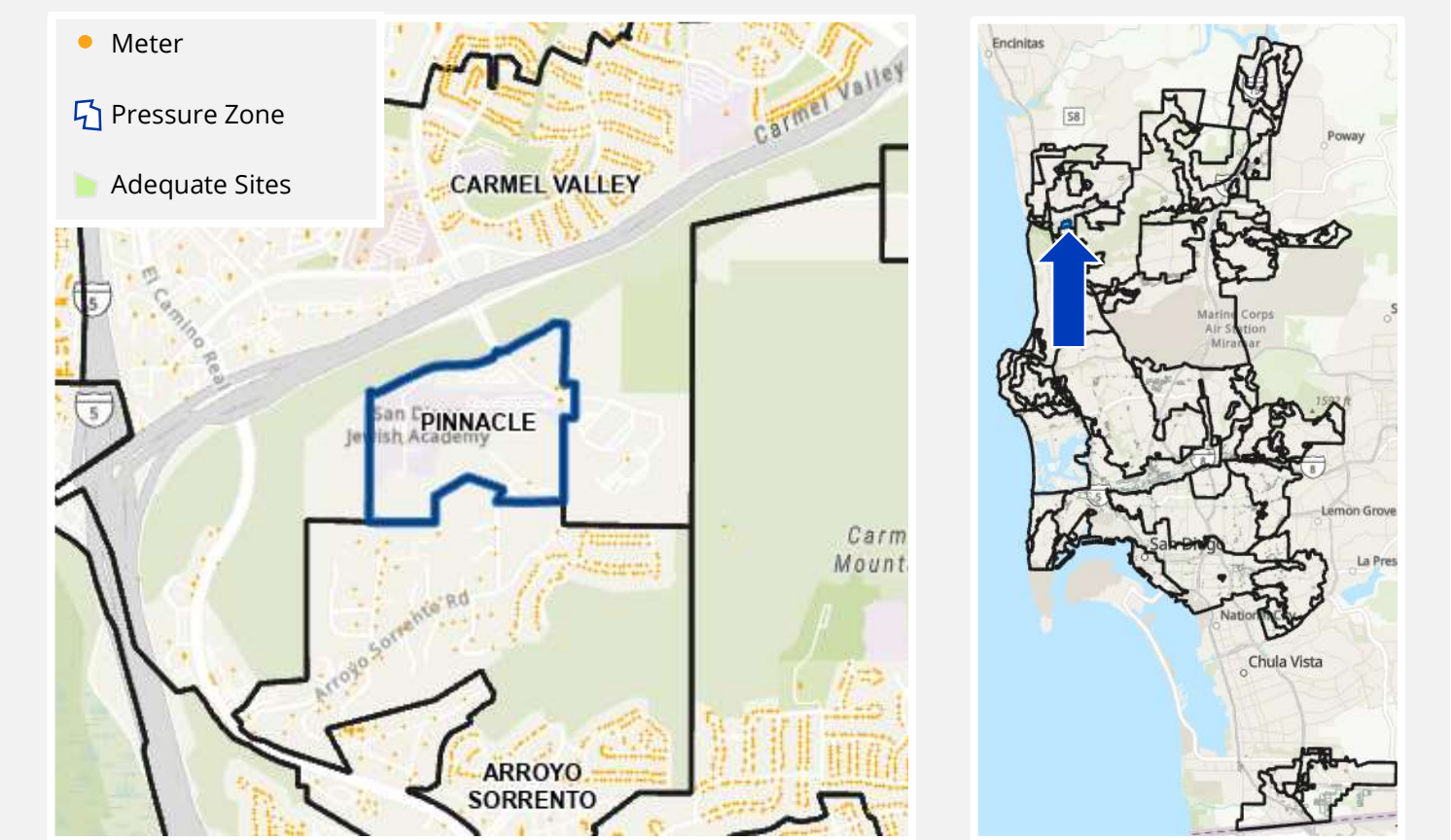
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	221	219	218	219	219	218	217
Multifamily	0	0	6	6	6	7	8
Institutional	0	0	0	0	0	0	0
Government	2	2	2	2	2	2	2
Commercial	1	1	1	1	1	1	1
Industrial	0	0	0	0	0	0	0
Irrigation	5	5	4	4	4	4	4
Wholesale	0	0	0	0	0	0	0
Potable Total	230	227	232	233	233	232	232
Recycled	14	6	6	6	6	6	6

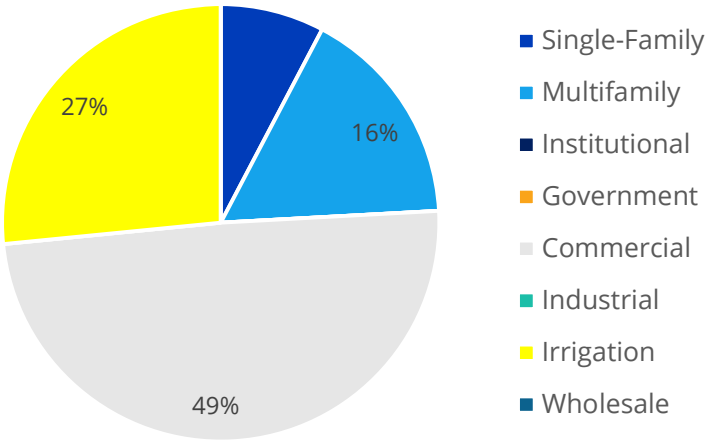
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

PINNACLE | Miramar | HGL 470



The Pinnacle pressure zone falls within the Miramar service area and is roughly bordered by Shaw Ridge Road and Tang Drive to the north, and Arroyo Sorrento Place to the south, and Carmel Creek Apartment Complex to the east. Nearly 60% of the water use is commercial, with another 22% irrigation, and 19% multifamily. On average in FY22-24, water use totaled 0.037 mgd and is projected to slightly decline to 0.034 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	32	30	30	29	29	29	28
Household Population	32	30	30	29	29	29	28
Single-Family Households	1	1	1	1	1	1	1
Multifamily Households	12	12	12	12	12	12	12
Total Households	13	13	13	13	13	13	13
Employees	45	45	45	46	46	47	47
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	3,600	3,560	3,560	3,539	3,539	3,539	3,517
Multifamily	7,704	7,270	7,270	7,052	7,052	7,052	6,833
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	23,101	22,147	21,193	21,193	21,193	21,193	21,193
Industrial	0	0	0	0	0	0	0
Irrigation	12,432	12,248	12,065	12,065	12,065	12,065	12,065
Wholesale	0	0	0	0	0	0	0
Potable Total	**46,837**	**45,225**	**44,088**	**43,849**	**43,849**	**43,849**	**43,609**
Recycled	0	0	0	0	0	0	0

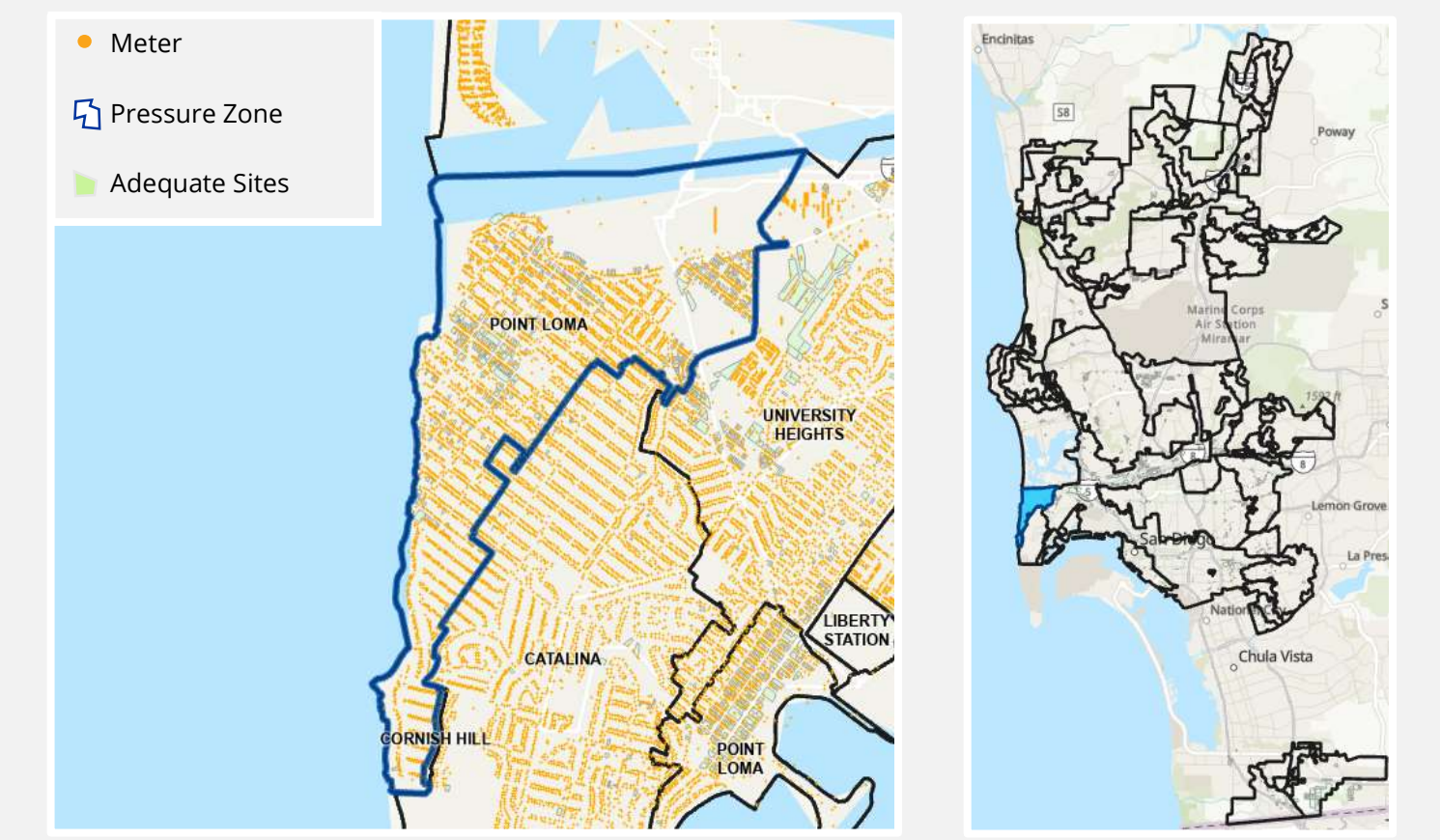
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	4	4	4	4	4	4	4
Multifamily	9	8	8	8	8	8	8
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	26	25	24	24	24	24	24
Industrial	0	0	0	0	0	0	0
Irrigation	14	14	14	14	14	14	14
Wholesale	0	0	0	0	0	0	0
Potable Total	52	51	49	49	49	49	49
Recycled	0	0	0	0	0	0	0

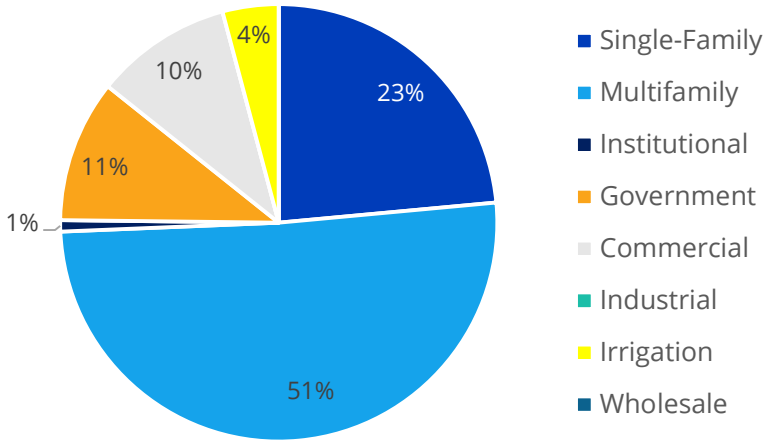
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

POINT LOMA_1 | Alvarado | HGL 260



The Point Loma 1 pressure zone falls within the Alvarado service area and is bordered by the Pacific Coast to the west, Froude Street and Famosa Boulevard to the east, the Ocean Beach Bike Path to the north, and Ladera Street to the south. West Point Loma Boulevard, Sunset Cliffs Boulevard and Nimitz Boulevard are a few of the major roadways that run through this zone. Half of the water use is multifamily, with another 24% single-family, and 11% government. On average in FY22-24, water use totaled 1.46 mgd and is projected to slightly decline to 1.42 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	15,861	15,474	15,449	15,396	15,413	15,377	15,396
Household Population	15,153	14,800	14,771	14,717	14,729	14,697	14,751
Single-Family Households	2,049	2,023	1,984	1,950	1,870	1,759	1,574
Multifamily Households	6,100	6,069	6,140	6,200	6,334	6,534	6,903
Total Households	8,149	8,092	8,124	8,150	8,204	8,293	8,477
Employees	6,260	6,286	6,342	6,478	6,797	7,219	7,641
Additional Nonresidential Parcels (count)	n/a	0	1	3	7	13	19
Additional Nonresidential Parcels (square feet)	n/a	0	6,203	18,610	43,423	80,643	117,863

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	332,170	326,894	320,455	315,063	303,664	287,973	262,698
Multifamily	718,574	711,851	711,070	712,476	721,496	732,009	754,330
Institutional	11,562	11,046	10,530	10,530	10,530	10,530	10,530
Government	148,916	145,490	142,063	142,063	142,063	142,063	142,063
Commercial	143,168	143,118	143,391	144,038	145,331	147,271	149,211
Industrial	0	0	0	0	0	0	0
Irrigation	58,503	55,758	53,013	53,013	53,013	53,013	53,013
Wholesale	0	0	0	0	0	0	0
Potable Total	**1,412,892**	**1,394,156**	**1,380,522**	**1,377,182**	**1,376,097**	**1,372,860**	**1,371,846**
Recycled	0	0	0	0	0	0	0

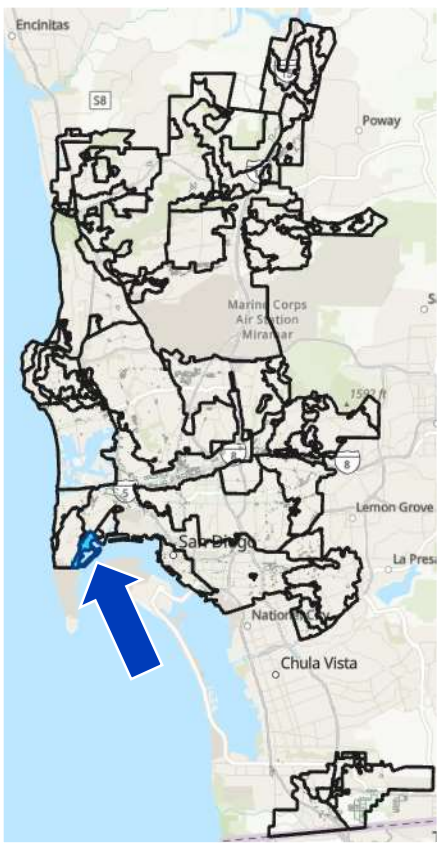
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	372	366	359	353	340	323	294
Multifamily	805	797	797	798	808	820	845
Institutional	13	12	12	12	12	12	12
Government	167	163	159	159	159	159	159
Commercial	160	160	161	161	163	165	167
Industrial	0	0	0	0	0	0	0
Irrigation	66	62	59	59	59	59	59
Wholesale	0	0	0	0	0	0	0
Potable Total	1,583	1,562	1,546	1,543	1,541	1,538	1,537
Recycled	0	0	0	0	0	0	0

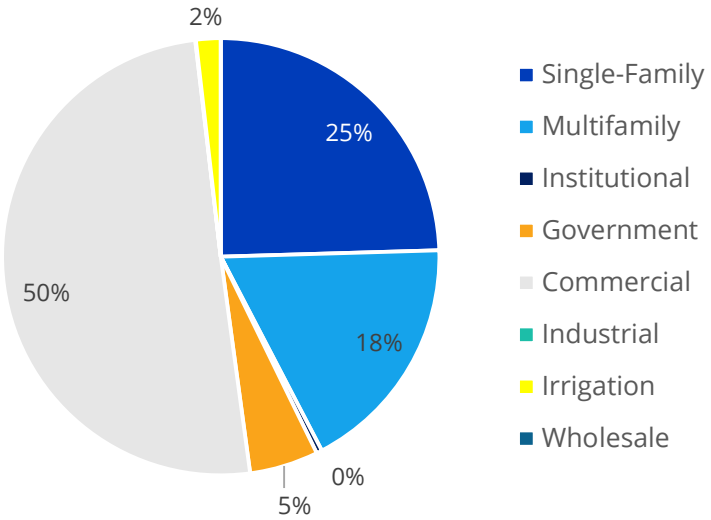
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

POINT LOMA_2 | Alvarado | HGL 260



The Point Loma 2 pressure zone falls within the Alvarado service area and is bordered by the Willow St. to the west, San Diego Bay to the east, Nimitz Boulevard to the north, and Point Loma Naval Base to the south. Rosecrans Street, North Harbor Drive, and Canon Street are a few of the main roadways that run through this zone. More than 50% of the water use is commercial, with another 25% single-family, and 16% multifamily. On average in FY22-24, water use totaled 0.68 mgd and is projected to slightly decline to 0.67 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	3,860	3,773	3,768	3,757	3,752	3,685	3,590
Household Population	3,533	3,471	3,458	3,438	3,426	3,364	3,281
Single-Family Households	695	694	690	689	688	687	683
Multifamily Households	953	924	933	934	939	939	941
Total Households	1,648	1,618	1,623	1,623	1,627	1,626	1,624
Employees	8,546	8,565	9,071	9,130	9,357	9,464	9,570
Additional Nonresidential Parcels (count)	n/a	0	3	3	5	5	6
Additional Nonresidential Parcels (square feet)	n/a	0	47,873	47,873	79,788	79,788	95,746

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	157,870	157,737	156,949	156,656	156,366	155,762	154,636
Multifamily	114,882	118,576	115,254	114,772	114,716	112,939	110,803
Institutional	2,621	2,621	2,621	2,621	2,621	2,621	2,621
Government	32,779	32,666	32,553	32,553	32,553	32,553	32,553
Commercial	323,808	320,897	320,482	320,482	322,146	322,146	322,977
Industrial	433	415	396	396	396	396	396
Irrigation	11,625	10,922	10,219	10,219	10,219	10,219	10,219
Wholesale	0	0	0	0	0	0	0
Potable Total	**644,019**	**643,835**	**638,474**	**637,699**	**639,017**	**636,635**	**634,205**
Recycled	0	0	0	0	0	0	0

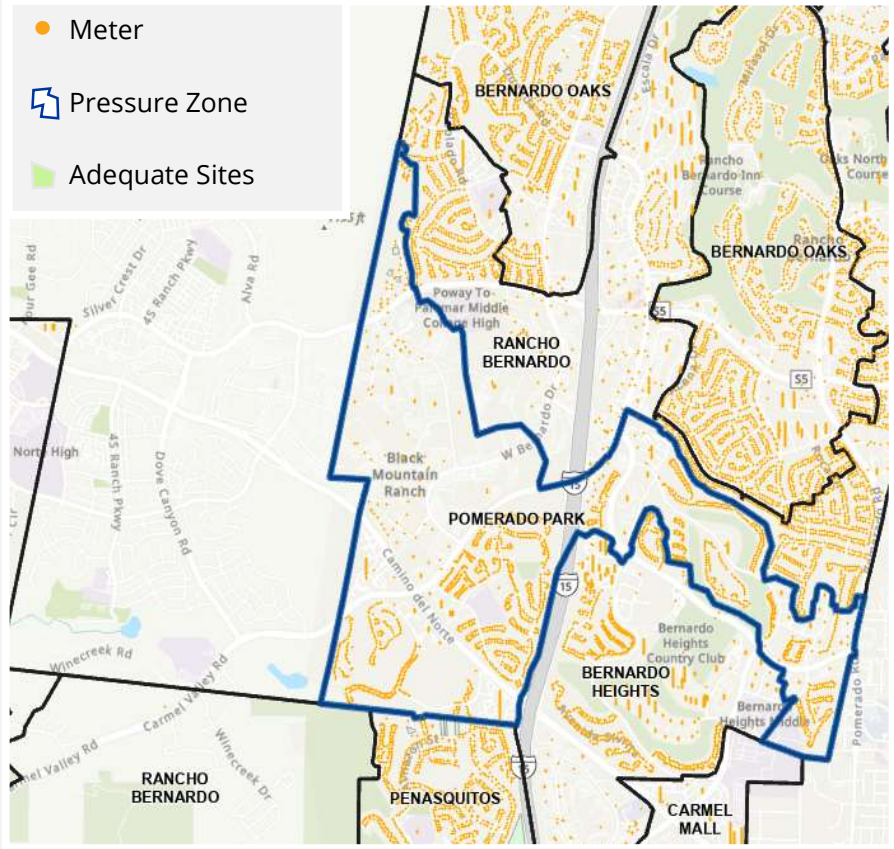
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	177	177	176	175	175	174	173
Multifamily	129	133	129	129	128	127	124
Institutional	3	3	3	3	3	3	3
Government	37	37	36	36	36	36	36
Commercial	363	359	359	359	361	361	362
Industrial	0	0	0	0	0	0	0
Irrigation	13	12	11	11	11	11	11
Wholesale	0	0	0	0	0	0	0
Potable Total	721	721	715	714	716	713	710
Recycled	0	0	0	0	0	0	0

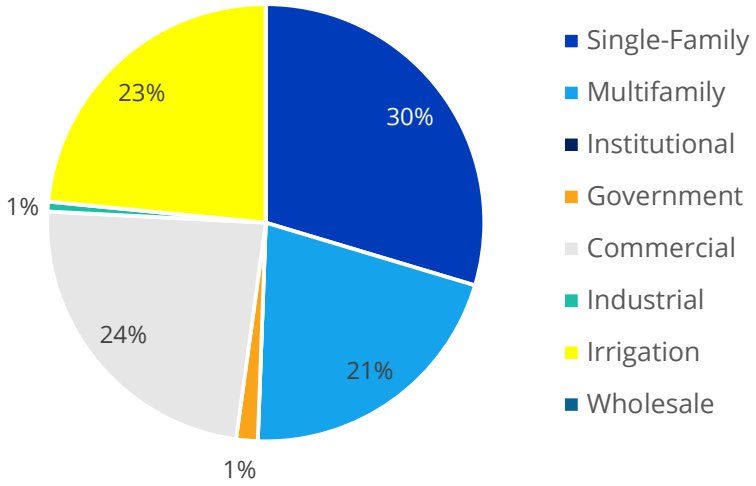
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

POMERADO PARK | Miramar | HGL 920



The Pomerado Park pressure zone falls within the Miramar service area and is roughly bordered by the Flag Hill and Black Mountain to the west, Pomerado Road to the east, I-15 and Lomica Drive to the north, and Bernardo Heights Parkway and Paseo Montanaso to the south. I-15, Bernardo Center Drive, Camino Del Norte, Rancho Bernardo Road, and W Bernardo Drive are a few of the main roadways that run through this zone. 30% of the water use is single-family, with another 26% irrigation and 22% commercial. On average in FY22-24, water use totaled 1.32 mgd and is projected to slightly decline to 1.27 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	8,770	8,711	8,631	8,556	8,488	8,343	8,128
Household Population	8,606	8,549	8,468	8,392	8,324	8,179	7,968
Single-Family Households	1,631	1,647	1,643	1,643	1,641	1,641	1,639
Multifamily Households	1,439	1,467	1,469	1,469	1,471	1,471	1,470
Total Households	3,070	3,114	3,112	3,112	3,112	3,112	3,109
Employees	12,907	12,956	13,084	13,329	13,628	13,834	14,040
Additional Nonresidential Parcels (count)	n/a	0	1	3	7	8	10
Additional Nonresidential Parcels (square feet)	n/a	0	45,659	136,977	273,955	319,614	410,932

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	357,710	359,320	358,090	357,534	356,732	355,653	353,828
Multifamily	252,871	251,569	249,841	247,856	246,315	242,521	237,313
Institutional	0	0	0	0	0	0	0
Government	19,194	18,318	17,442	17,442	17,442	17,442	17,442
Commercial	285,681	283,464	281,247	281,247	281,247	281,247	281,247
Industrial	8,940	8,940	9,625	10,994	13,048	13,733	15,102
Irrigation	283,074	265,949	248,823	248,823	248,823	248,823	248,823
Wholesale	0	0	0	0	0	0	0
Potable Total	**1,207,470**	**1,187,560**	**1,165,068**	**1,163,897**	**1,163,608**	**1,159,419**	**1,153,756**
Recycled	0	0	0	0	0	0	0

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

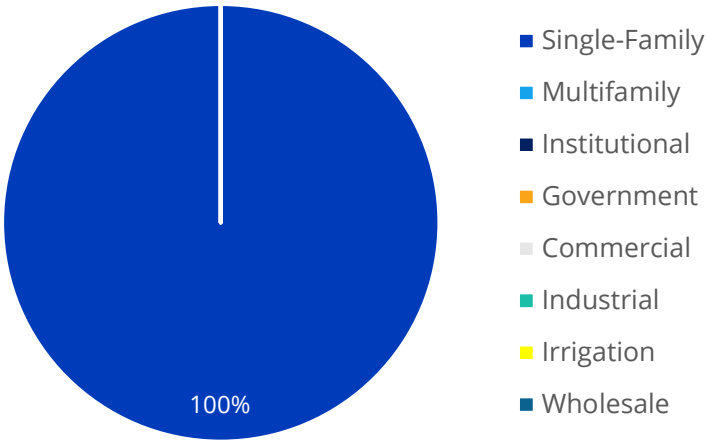
Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	401	402	401	400	400	398	396
Multifamily	283	282	280	278	276	272	266
Institutional	0	0	0	0	0	0	0
Government	21	21	20	20	20	20	20
Commercial	320	318	315	315	315	315	315
Industrial	10	10	11	12	15	15	17
Irrigation	317	298	279	279	279	279	279
Wholesale	0	0	0	0	0	0	0
Potable Total	1,353	1,330	1,305	1,304	1,303	1,299	1,292
Recycled	0	0	0	0	0	0	0

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

PRESTWICK ESTATES | Miramar | HGL 355

The Prestwick Estates pressure zone falls within the Miramar and Alvarado service area and is roughly bordered by Calle Del Cielo to the west, Prestwick Drive to the south and the east, and Ruette Nicole to the north. 100% of the water use is single-family. On average in FY22-24, water use totaled 0.020 mgd and is projected to remain around 0.020 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	73	75	75	74	74	73	71
Household Population	71	73	72	72	71	70	69
Single-Family Households	28	30	30	30	30	30	30
Multifamily Households	6	6	6	6	6	6	6
Total Households	34	36	36	36	36	36	36
Employees	159	159	159	160	161	161	161
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	19,620	19,945	19,899	19,899	19,852	19,804	19,756
Multifamily	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	0	0	0	0	0	0	0
Wholesale	0	0	0	0	0	0	0
Potable Total	**19,620**	**19,945**	**19,899**	**19,899**	**19,852**	**19,804**	**19,756**
Recycled	0	0	0	0	0	0	0

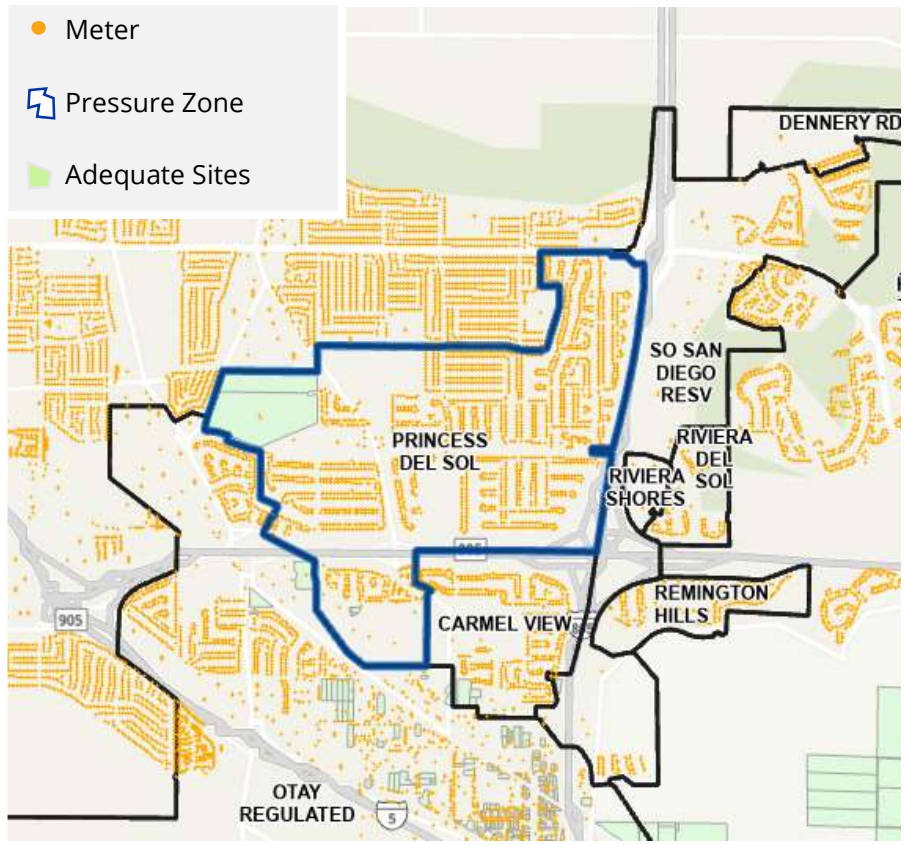
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	22	22	22	22	22	22	22
Multifamily	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	0	0	0	0	0	0	0
Wholesale	0	0	0	0	0	0	0
Potable Total	22	22	22	22	22	22	22
Recycled	0	0	0	0	0	0	0

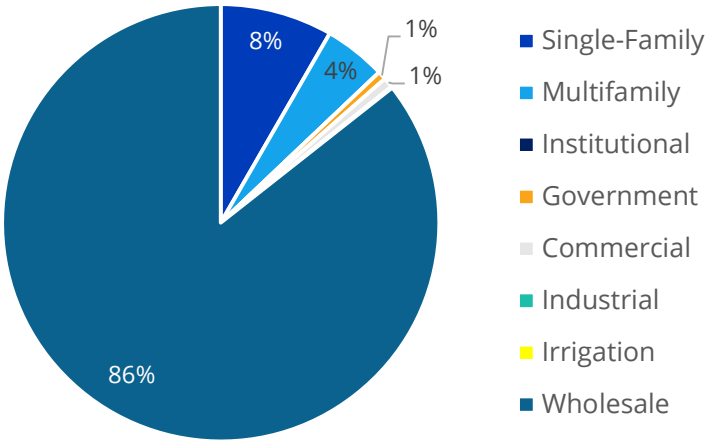
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

PRINCESS DEL SOL | Otay | HGL 390



The Princess del Sol pressure zone falls within the Otay service area and is bordered roughly by Beyer Way to the west, I-805 to the east, Palm Ave. and Arey Drive to the north, and US 905 to the south. Del Sol Boulevard, Picador Boulevard, and Piccard Avenue are a few of the main roadways that run through this zone; it is in close proximity to I-805 and US 905. 85% of the water use is wholesale, with another 8% single-family and 5% multifamily. On average in FY22-24, water use totaled 4.52 mgd and is projected to slightly decline to 4.48 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	19,224	18,453	18,218	18,003	17,804	17,383	16,771
Household Population	19,219	18,450	18,214	17,999	17,800	17,379	16,769
Single-Family Households	2,227	2,193	2,186	2,184	2,183	2,182	2,177
Multifamily Households	3,118	3,119	3,129	3,133	3,138	3,139	3,139
Total Households	5,345	5,312	5,315	5,317	5,321	5,321	5,316
Employees	2,214	2,222	2,249	2,269	2,294	2,316	2,338
Additional Nonresidential Parcels (count)	n/a	0	0	1	1	1	1
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	373,774	365,665	363,665	362,574	361,671	360,003	357,118
Multifamily	206,485	200,320	199,464	197,911	196,590	192,623	186,799
Institutional	0	0	0	0	0	0	0
Government	28,466	28,084	27,702	27,702	27,702	27,702	27,702
Commercial	33,966	33,957	33,949	33,949	33,949	33,949	33,949
Industrial	0	0	0	0	0	0	0
Irrigation	4,087	3,872	3,657	3,657	3,657	3,657	3,657
Wholesale	3,850,036	3,850,036	3,850,036	3,850,036	3,850,036	3,850,036	3,850,036
Potable Total	**4,496,814**	**4,481,934**	**4,478,472**	**4,475,828**	**4,473,604**	**4,467,970**	**4,459,260**
Recycled	0	0	0	0	0	0	0

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

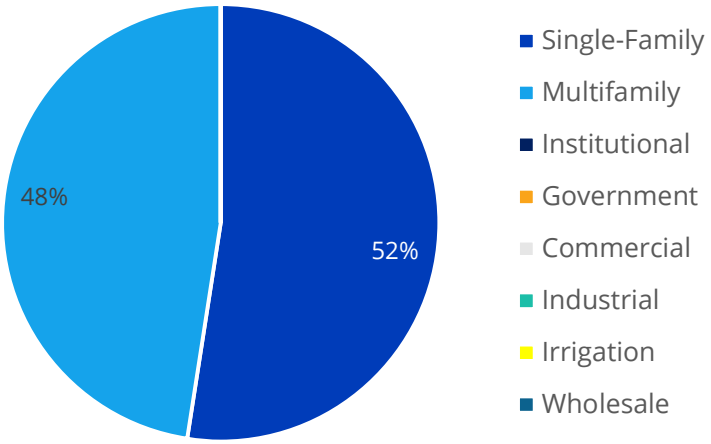
Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	419	410	407	406	405	403	400
Multifamily	231	224	223	222	220	216	209
Institutional	0	0	0	0	0	0	0
Government	32	31	31	31	31	31	31
Commercial	38	38	38	38	38	38	38
Industrial	0	0	0	0	0	0	0
Irrigation	5	4	4	4	4	4	4
Wholesale	4,313	4,313	4,313	4,313	4,313	4,313	4,313
Potable Total	5,037	5,020	5,017	5,014	5,011	5,005	4,995
Recycled	0	0	0	0	0	0	0

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

PRINCESS GARDENS | Alvarado | HGL 345

The Princess Gardens pressure zone falls within the Alvarado service area and is roughly bordered by Fontaine Street to the south, Mission Trails Industrial Park to the north, Excelsior Academy and Romford Court to the east, and Allied Gardens pressure zone to the west. More than 60% of the water use is single-family, with another 37% multifamily. On average in FY22-24, water use totaled 0.0064 mgd and is projected to reach 0.0073 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	60	59	59	58	58	57	56
Household Population	60	59	59	58	58	57	56
Single-Family Households	15	16	16	16	16	16	16
Multifamily Households	9	9	9	9	9	9	9
Total Households	24	25	25	25	25	25	25
Employees	26	26	26	26	27	27	27
Additional Nonresidential Parcels (count)	n/a	0	0	0	1	1	1
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	66,707	66,707	66,707

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	4,054	4,221	4,221	4,209	4,209	4,197	4,185
Multifamily	3,675	3,490	3,490	3,437	3,437	3,384	3,330
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	1,000	1,000	1,000
Irrigation	0	0	0	0	0	0	0
Wholesale	0	0	0	0	0	0	0
Potable Total	**7,729**	**7,711**	**7,711**	**7,646**	**8,646**	**8,581**	**8,515**
Recycled	0	0	0	0	0	0	0

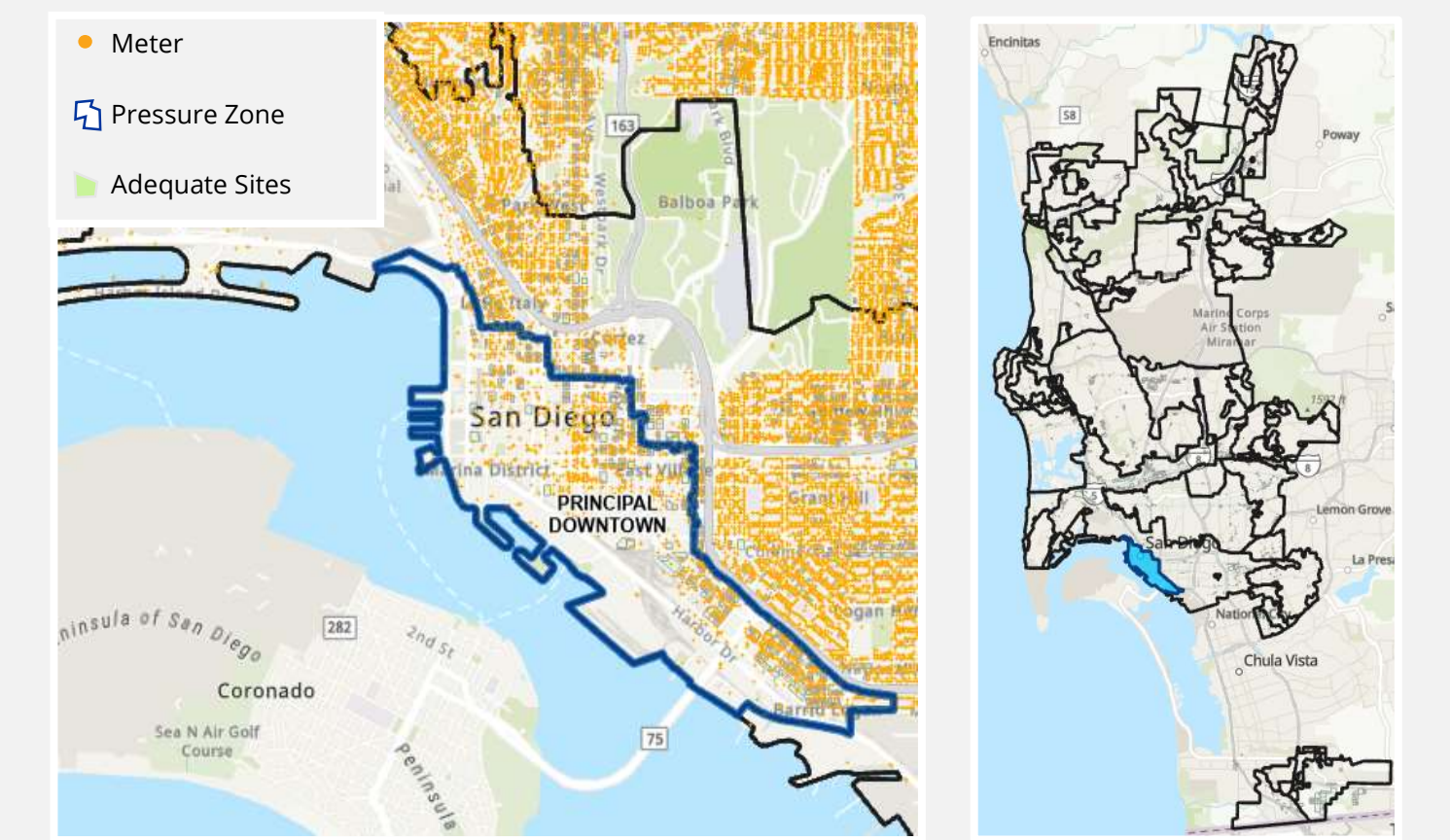
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	5	5	5	5	5	5	5
Multifamily	4	4	4	4	4	4	4
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	1	1	1
Irrigation	0	0	0	0	0	0	0
Wholesale	0	0	0	0	0	0	0
Potable Total	9	9	9	9	10	10	10
Recycled	0	0	0	0	0	0	0

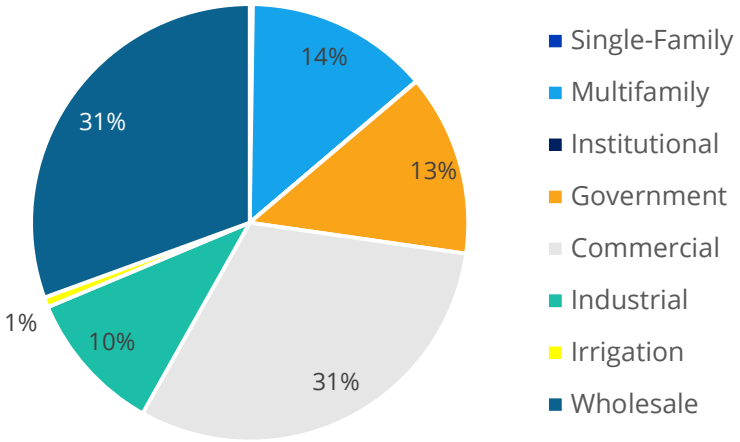
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

PRINCIPAL DOWNTOWN | Alvarado | HGL 231



The Principal Downtown pressure zone falls within the Alvarado service area and is bordered by I-5 to the east and north, San Diego Bay to the west, and University Heights 390 to the south. Harbor Drive, Market Street, and Broadway are just a few of the major roadways for traffic circulation in this zone. More than 30% of the water use is wholesale, with another 31% commercial and 15% government. On average in FY22-24, water use totaled 9.74 mgd and is projected to reach 10.64 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	37,647	47,434	49,351	49,767	52,930	54,319	55,634
Household Population	33,052	42,890	44,797	45,210	48,351	49,745	51,153
Single-Family Households	164	141	133	134	118	98	82
Multifamily Households	20,710	27,435	28,776	29,188	31,410	32,670	34,084
Total Households	20,874	27,576	28,909	29,322	31,528	32,768	34,166
Employees	92,988	98,187	104,235	108,713	109,908	111,593	113,277
Additional Nonresidential Parcels (count)	n/a	28	58	80	86	96	105
Additional Nonresidential Parcels (square feet)	n/a	419,804	885,175	1,199,036	1,282,626	1,458,576	1,585,731

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	23,964	20,841	19,827	19,927	18,150	15,978	14,268
Multifamily	1,369,033	1,812,545	1,900,696	1,923,008	2,067,326	2,139,814	2,216,862
Institutional	3,395	3,322	3,249	3,249	3,249	3,249	3,249
Government	1,354,716	1,353,178	1,352,584	1,352,584	1,352,584	1,353,831	1,353,831
Commercial	3,121,872	3,136,716	3,148,350	3,165,883	3,169,190	3,176,046	3,185,781
Industrial	1,064,337	1,064,576	1,064,759	1,064,814	1,064,997	1,064,997	1,064,997
Irrigation	76,264	72,320	68,376	68,376	68,376	68,376	68,376
Wholesale	3,083,982	3,083,982	3,083,982	3,083,982	3,083,982	3,083,982	3,083,982
Potable Total	**10,097,563**	**10,547,479**	**10,641,823**	**10,681,823**	**10,827,854**	**10,906,274**	**10,991,347**
Recycled	213	249	249	249	249	249	249

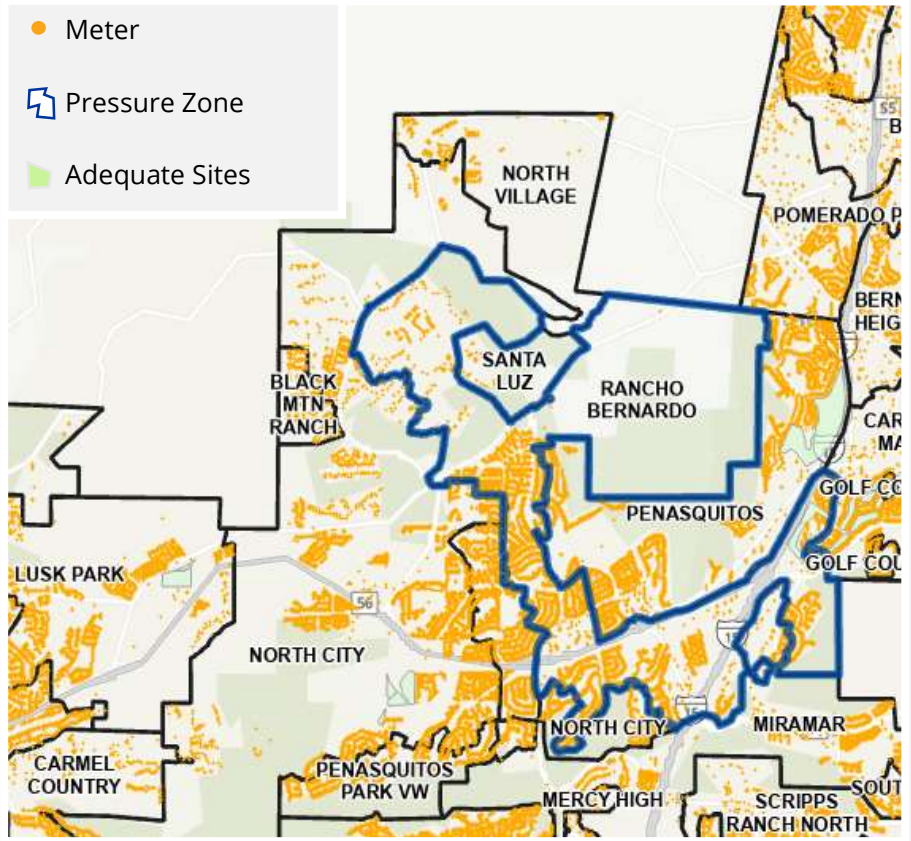
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	27	23	22	22	20	18	16
Multifamily	1,534	2,030	2,129	2,154	2,316	2,397	2,483
Institutional	4	4	4	4	4	4	4
Government	1,517	1,516	1,515	1,515	1,515	1,516	1,516
Commercial	3,497	3,514	3,527	3,546	3,550	3,558	3,569
Industrial	1,192	1,192	1,193	1,193	1,193	1,193	1,193
Irrigation	85	81	77	77	77	77	77
Wholesale	3,455	3,455	3,455	3,455	3,455	3,455	3,455
Potable Total	11,311	11,815	11,920	11,965	12,129	12,217	12,312
Recycled	0	0	0	0	0	0	0

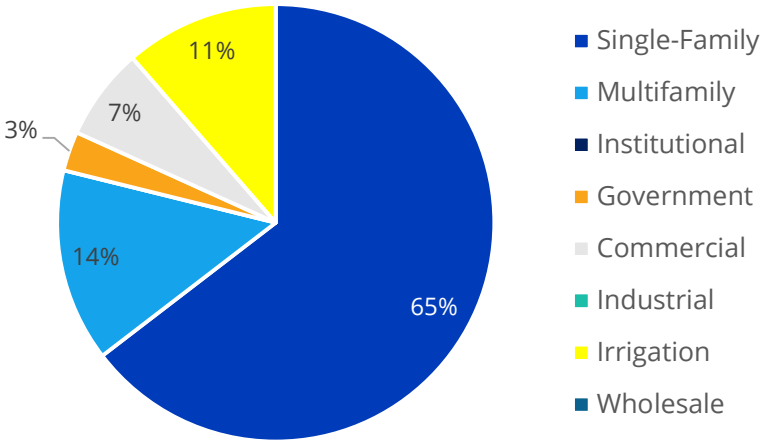
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

RANCHO BERNARDO_1 | Miramar | HGL 793



The Rancho Bernardo pressure zone falls within the Miramar service area and is roughly bordered by portions of Black Mountain Road, and Camino Del Sur to the west, Rancho Carmel Drive and Open Space Trail to the east, Lusardi Creek Loop Trail to the north, and Calle De Las Rosas and Salmon River Rd. to the south. Ted Williams Freeway, I-15, Black Mountain Road, and Carmel Valley Road are major roadways that traverse this zone. Nearly 70% of the water use is single-family, with another 13% multifamily and 13% irrigation. On average in FY22-24, water use totaled 1.99 mgd and is projected to slightly decline to 1.93 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	19,101	18,712	18,495	18,321	18,165	17,823	17,326
Household Population	18,929	18,546	18,328	18,153	17,993	17,653	17,169
Single-Family Households	4,966	4,987	4,974	4,973	4,972	4,968	4,961
Multifamily Households	2,006	2,009	2,005	2,005	2,007	2,007	2,006
Total Households	6,972	6,996	6,979	6,978	6,979	6,975	6,967
Employees	11,644	11,693	11,768	11,882	12,102	12,178	12,254
Additional Nonresidential Parcels (count)	n/a	0	1	1	5	6	6
Additional Nonresidential Parcels (square feet)	n/a	0	151,031	151,031	342,380	493,411	493,411

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	1,203,929	1,203,129	1,198,750	1,196,615	1,194,587	1,190,123	1,183,545
Multifamily	266,009	260,724	259,038	256,357	254,528	250,344	244,565
Institutional	0	0	1,584	1,584	3,168	4,752	4,752
Government	54,625	51,790	48,956	48,956	48,956	48,956	48,956
Commercial	127,140	125,985	124,829	124,829	126,212	126,212	126,212
Industrial	0	0	0	0	0	0	0
Irrigation	212,188	199,533	186,878	186,878	186,878	186,878	186,878
Wholesale	0	0	0	0	0	0	0
Potable Total	**1,863,890**	**1,841,161**	**1,820,036**	**1,815,219**	**1,814,328**	**1,807,264**	**1,794,907**
Recycled	426,515	355,160	355,160	355,160	355,160	355,160	355,160

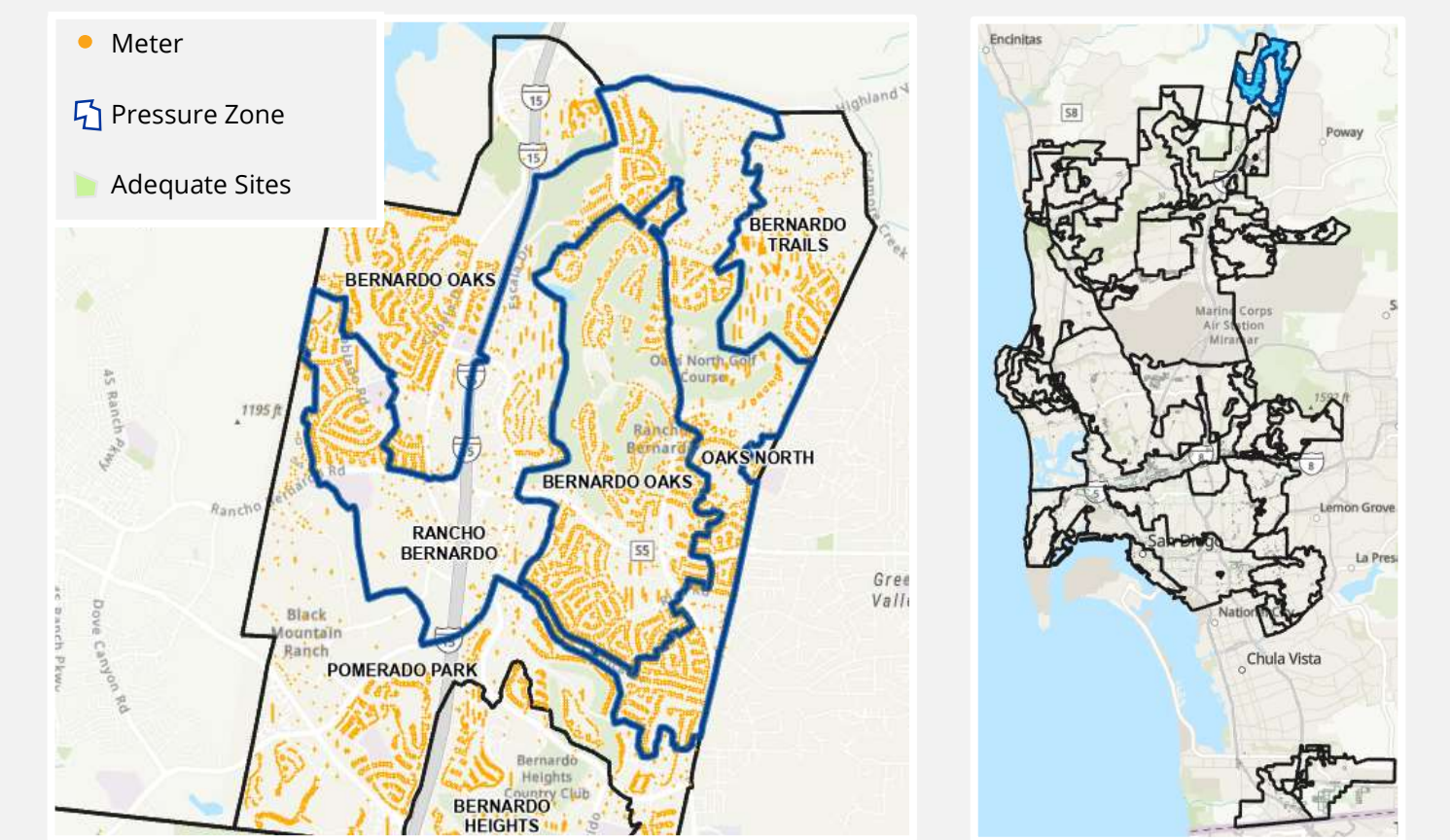
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	1,349	1,348	1,343	1,340	1,338	1,333	1,326
Multifamily	298	292	290	287	285	280	274
Institutional	0	0	2	2	4	5	5
Government	61	58	55	55	55	55	55
Commercial	142	141	140	140	141	141	141
Industrial	0	0	0	0	0	0	0
Irrigation	238	224	209	209	209	209	209
Wholesale	0	0	0	0	0	0	0
Potable Total	2,088	2,062	2,039	2,033	2,032	2,024	2,011
Recycled	478	398	398	398	398	398	398

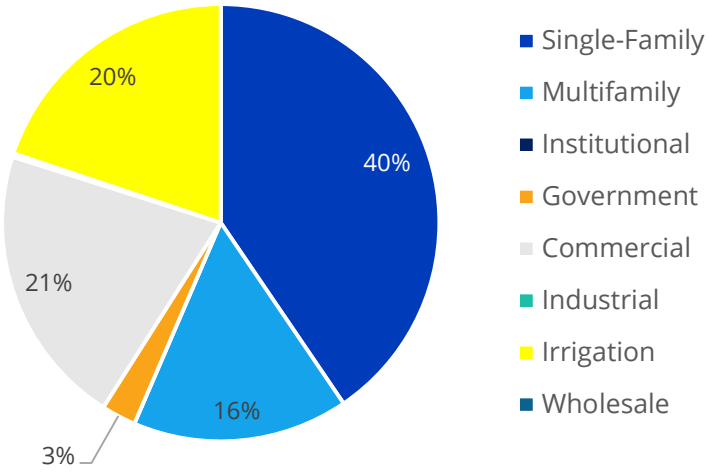
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

RANCHO BERNARDO_2 | Miramar | HGL 793



The Rancho Bernardo 2 pressure zone falls within the Miramar service area and is roughly bordered by Flag Hill to the west, the 865-pressure zone to the east, Highland Valley Road to the north, and the Pomerado Park 920 zone to the south. I-15, Rancho Bernardo Road, Bernardo Center Drive, and Pomerado Road are major roadways that traverse this zone. More than 40% of the water use is single-family, with another 20% irrigation and 20% commercial. On average in FY22-24, water use totaled 1.76 mgd and is projected to slightly decline to 1.73 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	12,564	12,376	12,255	12,153	12,067	11,869	11,582
Household Population	12,520	12,335	12,213	12,110	12,022	11,825	11,547
Single-Family Households	2,971	2,993	2,983	2,981	2,982	2,979	2,976
Multifamily Households	2,329	2,339	2,339	2,339	2,341	2,341	2,340
Total Households	5,300	5,332	5,322	5,320	5,323	5,320	5,316
Employees	5,173	5,221	5,283	5,339	5,409	5,460	5,511
Additional Nonresidential Parcels (count)	n/a	1	2	4	5	7	7
Additional Nonresidential Parcels (square feet)	n/a	356,964	460,440	920,880	1,277,844	1,738,284	1,738,284

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	653,859	655,698	652,991	651,742	651,016	648,760	645,731
Multifamily	257,908	254,161	252,336	250,517	248,967	245,444	240,570
Institutional	0	0	0	0	0	0	0
Government	41,625	39,314	37,004	37,004	37,004	37,004	37,004
Commercial	336,762	345,347	341,696	353,933	366,169	378,405	378,405
Industrial	4,551	4,551	6,102	7,654	7,654	9,206	9,206
Irrigation	320,394	301,295	282,195	282,195	282,195	282,195	282,195
Wholesale	0	0	0	0	0	0	0
Potable Total	**1,615,099**	**1,600,367**	**1,572,325**	**1,583,044**	**1,593,005**	**1,601,014**	**1,593,111**
Recycled	3,952	3,683	3,683	3,683	3,683	3,683	3,683

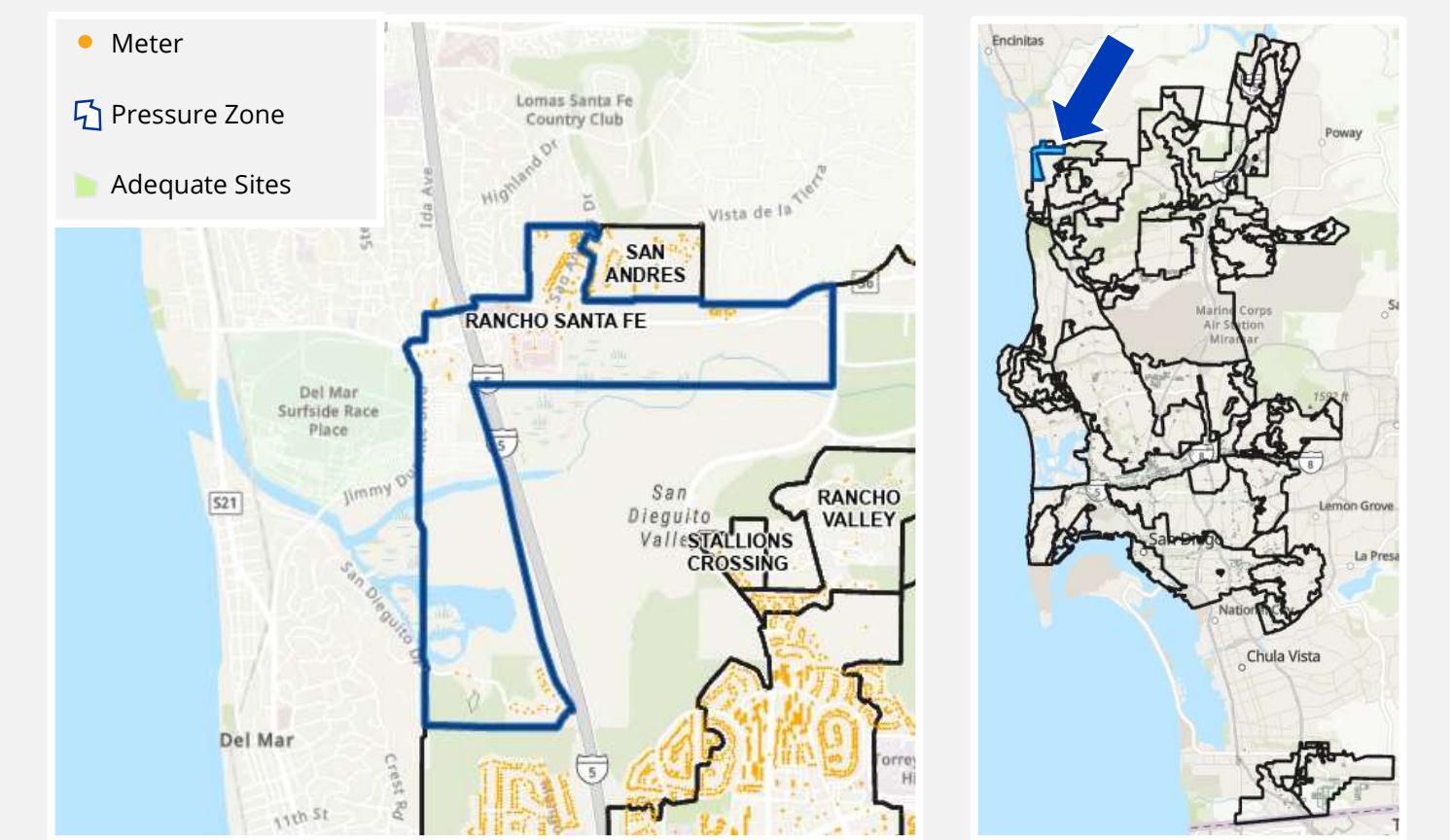
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	732	734	731	730	729	727	723
Multifamily	289	285	283	281	279	275	269
Institutional	0	0	0	0	0	0	0
Government	47	44	41	41	41	41	41
Commercial	377	387	383	396	410	424	424
Industrial	5	5	7	9	9	10	10
Irrigation	359	337	316	316	316	316	316
Wholesale	0	0	0	0	0	0	0
Potable Total	1,809	1,793	1,761	1,773	1,784	1,793	1,785
Recycled	4	4	4	4	4	4	4

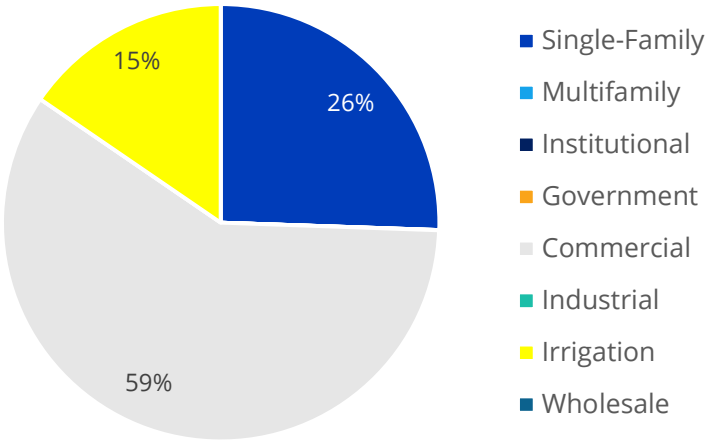
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

RANCHO SANTA FE | Miramar | HGL 284



The Rancho Santa Fe pressure zone falls within the Miramar service area and is roughly bordered by El Camino Real and I-5 to the east, the City of Del Mar to the west, the City of Solana Beach to the north, and Crest Canyon Park and San Dieguito Park to the south. Nearly 60% of the water use is commercial, with another 26% single-family and 15% irrigation. On average in FY22-24, water use totaled 0.16 mgd and is projected to reach 0.20 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	238	240	238	236	234	231	225
Household Population	237	239	237	235	233	229	224
Single-Family Households	122	122	122	122	122	122	122
Multifamily Households	0	0	0	0	0	0	0
Total Households	122	122	122	122	122	122	122
Employees	197	199	200	202	205	208	210
Additional Nonresidential Parcels (count)	n/a	0	1	1	1	1	1
Additional Nonresidential Parcels (square feet)	n/a	0	2,097,653	2,097,653	2,097,653	2,097,653	2,097,653

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	39,118	39,237	39,180	39,123	39,065	38,948	38,799
Multifamily	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	49	45	40,311	40,311	40,311	40,311	40,311
Commercial	90,472	90,111	89,751	89,751	89,751	89,751	89,751
Industrial	0	0	0	0	0	0	0
Irrigation	23,657	22,409	21,161	21,161	21,161	21,161	21,161
Wholesale	0	0	0	0	0	0	0
Potable Total	**153,296**	**151,802**	**190,403**	**190,345**	**190,287**	**190,170**	**190,022**
Recycled	0	0	0	0	0	0	0

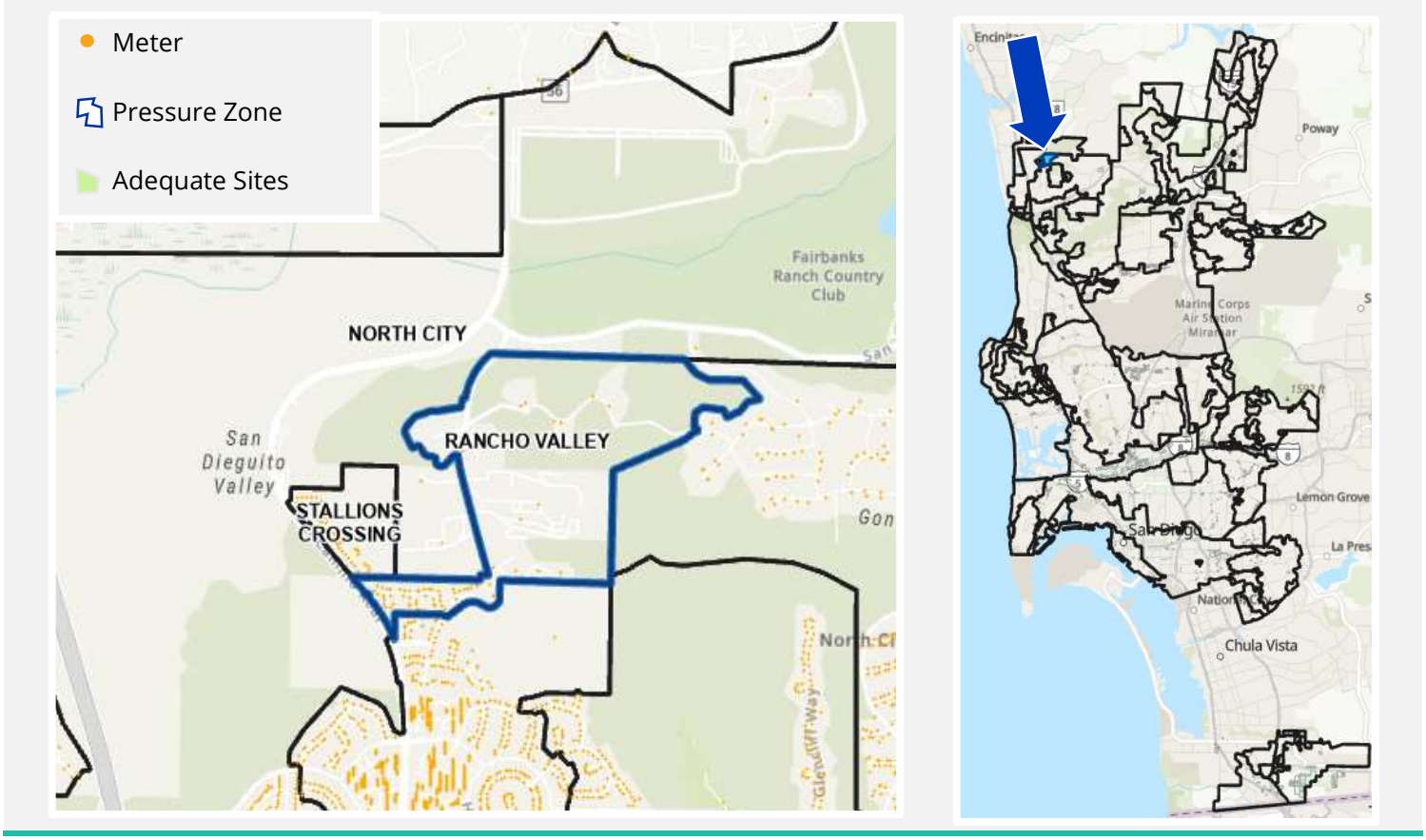
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	44	44	44	44	44	44	43
Multifamily	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	0	0	45	45	45	45	45
Commercial	101	101	101	101	101	101	101
Industrial	0	0	0	0	0	0	0
Irrigation	26	25	24	24	24	24	24
Wholesale	0	0	0	0	0	0	0
Potable Total	172	170	213	213	213	213	213
Recycled	0	0	0	0	0	0	0

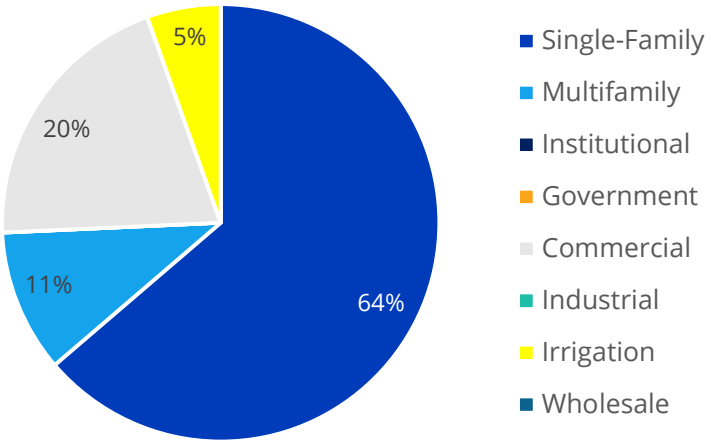
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

RANCHO VALLEY | Miramar | HGL 360



The Rancho Valley pressure zone falls within the Miramar service area and is roughly bordered by San Dieguito Road to the north, Carmel Valley Openspace Park to the south and the east, and Old El Camino Real to the west. Nearly 70% of the water use is single-family, with another 23% commercial. On average in FY22-24, water use totaled 0.060 mgd and is projected to remain around 0.059 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	230	222	220	218	216	213	207
Household Population	224	216	214	212	210	207	201
Single-Family Households	72	71	71	71	71	71	71
Multifamily Households	28	27	27	27	27	27	27
Total Households	100	98	98	98	98	98	98
Employees	86	86	87	89	90	92	93
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	36,312	36,000	35,942	35,883	35,824	35,734	35,551
Multifamily	6,012	6,051	5,876	5,827	5,778	5,703	5,555
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	11,537	11,537	11,537	11,537	11,537	11,537	11,537
Industrial	0	0	0	0	0	0	0
Irrigation	3,116	2,897	2,678	2,678	2,678	2,678	2,678
Wholesale	0	0	0	0	0	0	0
Potable Total	**56,977**	**56,485**	**56,033**	**55,925**	**55,817**	**55,653**	**55,321**
Recycled	0	0	0	0	0	0	0

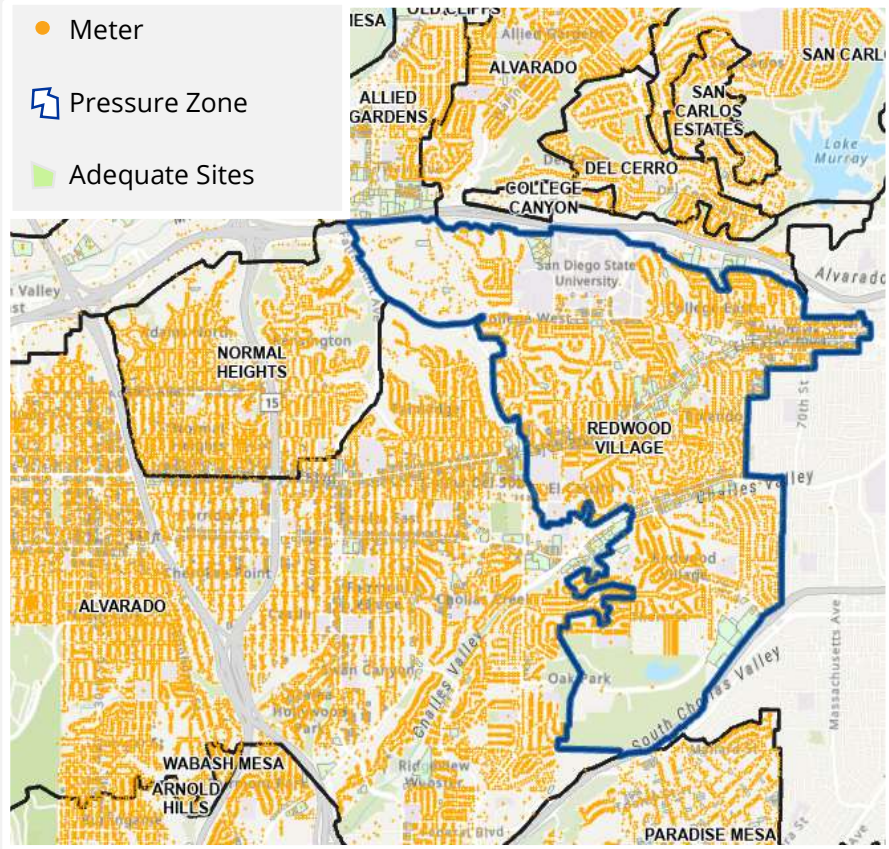
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	41	40	40	40	40	40	40
Multifamily	7	7	7	7	6	6	6
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	13	13	13	13	13	13	13
Industrial	0	0	0	0	0	0	0
Irrigation	3	3	3	3	3	3	3
Wholesale	0	0	0	0	0	0	0
Potable Total	64	63	63	63	63	62	62
Recycled	0	0	0	0	0	0	0

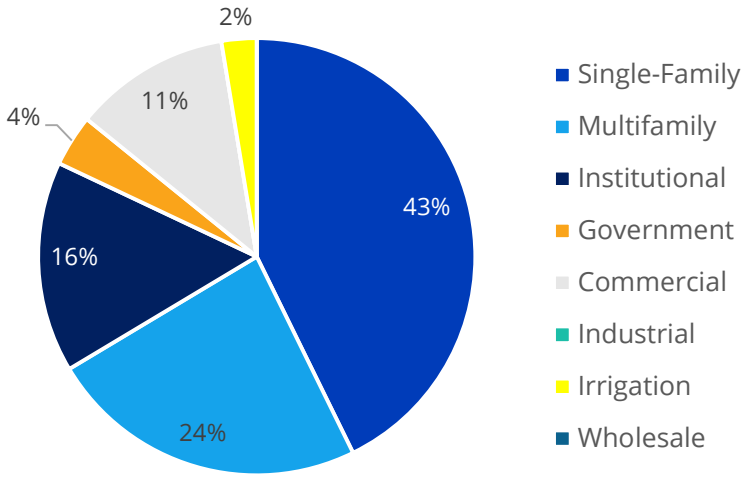
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

REDWOOD VILLAGE | Alvarado | HGL 645



The Redwood Village pressure zone falls within the Alvarado service area and is roughly bordered by portions of Collwood Boulevard to the west, portions of Keeney Street, 68th Street, and 69th Street, to the east, I-8 to the north, and Martin Luther King Jr. Freeway to the south. El Cajon Boulevard, Chollas Parkway, College Avenue, and Montezuma Road are major roadways that traverse this zone. More than 40% of the water use is single-family, with another 23% multifamily and 17% institutional. On average in FY22-24, water use totaled 3.77 mgd and is projected to reach 3.86 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	56,183	55,868	55,776	55,595	56,222	56,568	56,491
Household Population	49,252	49,015	48,901	48,715	49,300	49,663	49,708
Single-Family Households	8,094	8,092	8,044	8,042	8,041	8,007	7,958
Multifamily Households	9,862	10,172	10,333	10,433	10,820	11,348	11,929
Total Households	17,956	18,264	18,377	18,475	18,861	19,355	19,887
Employees	25,751	25,843	26,001	26,385	27,028	27,350	27,671
Additional Nonresidential Parcels (count)	n/a	0	1	2	5	6	8
Additional Nonresidential Parcels (square feet)	n/a	0	17,937	35,874	89,685	107,622	143,497

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	1,528,495	1,522,367	1,512,128	1,509,411	1,506,966	1,497,268	1,483,664
Multifamily	847,651	863,917	874,440	878,059	911,106	950,410	988,256
Institutional	558,594	556,928	555,261	555,261	555,261	555,261	555,261
Government	136,558	134,702	132,847	132,847	132,847	132,847	132,847
Commercial	413,838	413,033	413,162	414,097	416,902	417,837	419,707
Industrial	0	0	0	0	0	0	0
Irrigation	92,329	87,124	81,919	81,919	81,919	81,919	81,919
Wholesale	0	0	0	0	0	0	0
Potable Total	**3,577,466**	**3,578,071**	**3,569,757**	**3,571,595**	**3,605,002**	**3,635,543**	**3,661,654**
Recycled	11,605	3,868	3,868	3,868	3,868	3,868	3,868

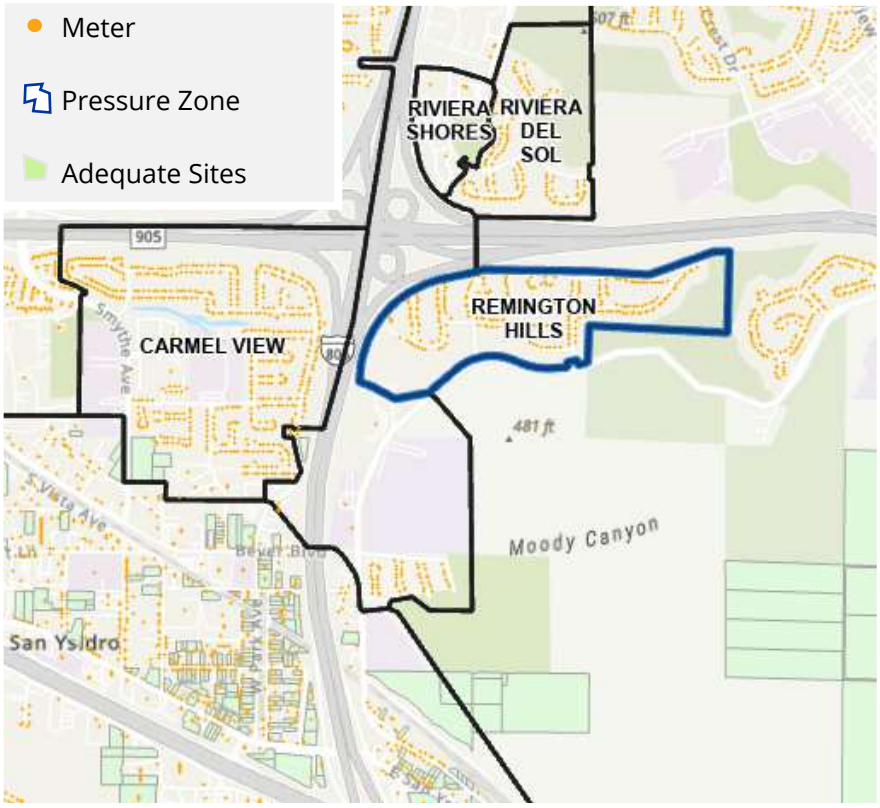
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	1,712	1,705	1,694	1,691	1,688	1,677	1,662
Multifamily	949	968	979	984	1,021	1,065	1,107
Institutional	626	624	622	622	622	622	622
Government	153	151	149	149	149	149	149
Commercial	464	463	463	464	467	468	470
Industrial	0	0	0	0	0	0	0
Irrigation	103	98	92	92	92	92	92
Wholesale	0	0	0	0	0	0	0
Potable Total	4,007	4,008	3,999	4,001	4,038	4,072	4,102
Recycled	13	4	4	4	4	4	4

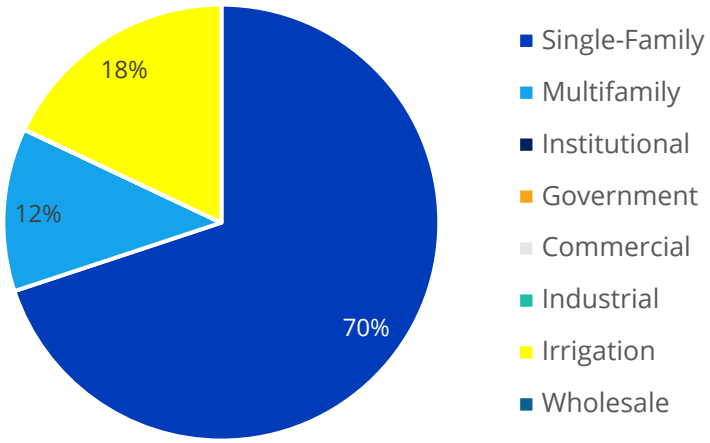
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

REMINGTON HILLS | Otay | HGL 543



The Remington Hills pressure zone falls within the Otay service area and is bordered by I-805 to the west, US 905 to the north, Otay Mesa Road to the south, and Crescent Bay Drive to the east. As this is a small, entirely residential zone, no major roadways run throughout it. 75% of the water use is single-family, with another 25% irrigation. On average in FY22-24, water use totaled 0.088 mgd and is projected to reach 0.52 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	2,236	4,725	6,406	7,533	8,479	9,125	9,818
Household Population	1,616	4,109	5,789	6,916	7,863	8,509	9,205
Single-Family Households	269	1,150	1,523	1,694	1,979	2,129	2,334
Multifamily Households	136	260	484	728	800	937	1,079
Total Households	405	1,410	2,007	2,422	2,779	3,066	3,413
Employees	7,749	7,766	7,787	7,811	7,890	8,001	8,111
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	62,340	210,827	270,335	295,890	336,049	356,470	383,561
Multifamily	10,789	24,178	52,660	83,297	92,222	108,806	125,438
Institutional	0	0	0	0	0	0	0
Government	18	17	16	16	16	16	16
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	16,026	14,935	13,844	13,844	13,844	13,844	13,844
Wholesale	0	0	0	0	0	0	0
Potable Total	**89,172**	**249,957**	**336,855**	**393,047**	**442,131**	**479,136**	**522,859**
Recycled	0	0	0	0	0	0	0

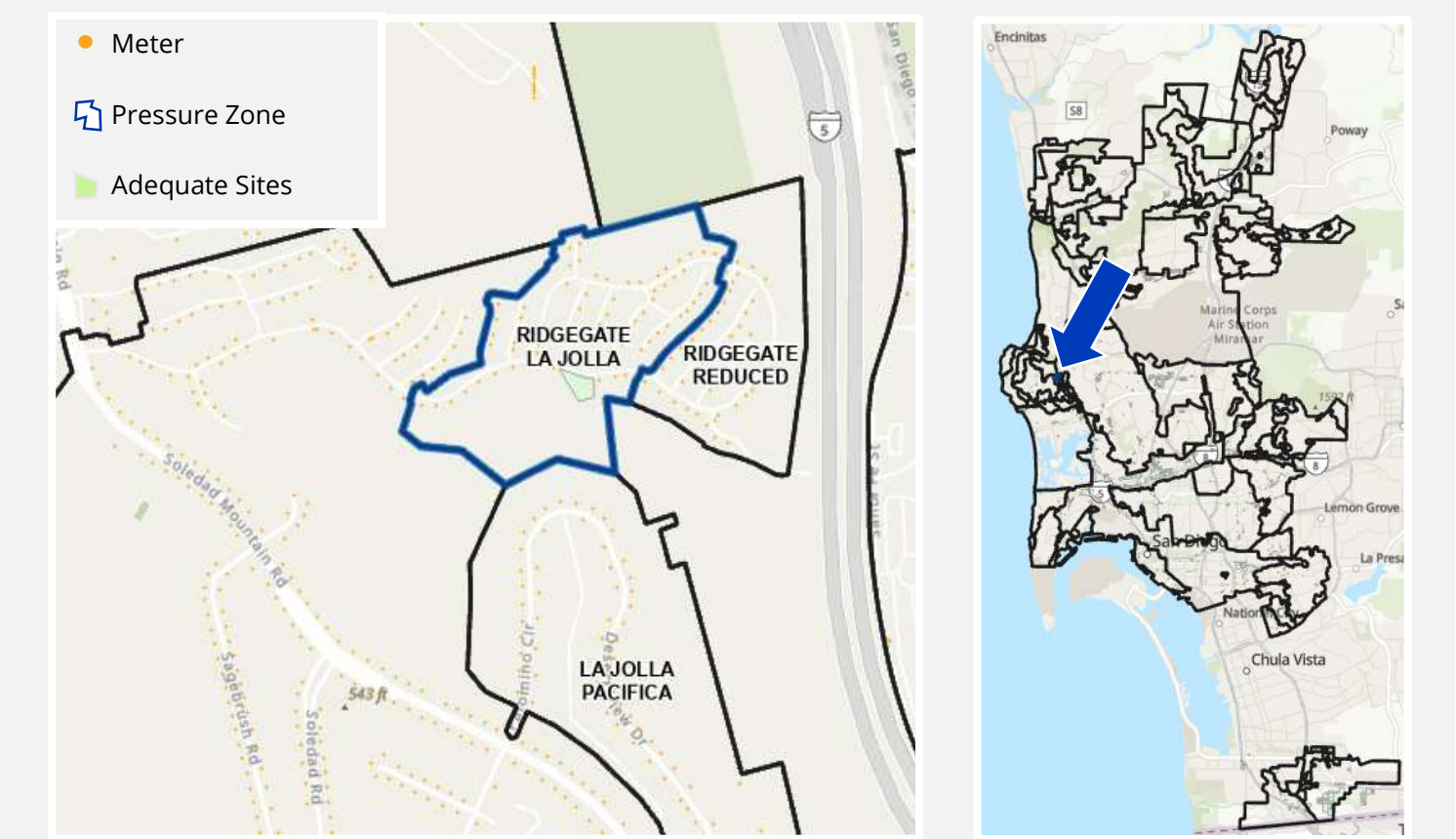
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	70	236	303	331	376	399	430
Multifamily	12	27	59	93	103	122	141
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	18	17	16	16	16	16	16
Wholesale	0	0	0	0	0	0	0
Potable Total	100	280	377	440	495	537	586
Recycled	0	0	0	0	0	0	0

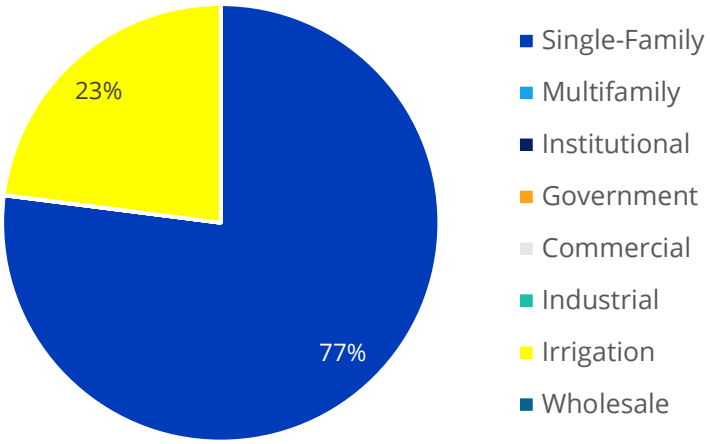
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

RIDGEGATE LA JOLLA | Alvarado/Miramar | HGL 575



The Ridgegate La Jolla pressure zone falls within the Alvarado/Miramar service area and is roughly bordered by Deerford Row to the west, Hillpoint to the east, and two canyons to the north and south. Nearly 80% of the water use is single-family, with another 23% irrigation. On average in FY22-24, water use totaled 0.023 mgd and is projected to remain around 0.023 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	158	163	161	159	158	156	152
Household Population	158	162	160	159	158	156	152
Single-Family Households	61	65	64	64	64	64	64
Multifamily Households	5	4	4	4	4	4	4
Total Households	66	69	68	68	68	68	68
Employees	82	83	83	85	87	89	91
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	16,724	17,429	17,257	17,239	17,220	17,184	17,109
Multifamily	0	125	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	2	2	2	2	2	2	2
Industrial	0	0	0	0	0	0	0
Irrigation	4,984	4,719	4,454	4,454	4,454	4,454	4,454
Wholesale	0	0	0	0	0	0	0
Potable Total	**21,710**	**22,276**	**21,713**	**21,695**	**21,677**	**21,640**	**21,566**
Recycled	0	0	0	0	0	0	0

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

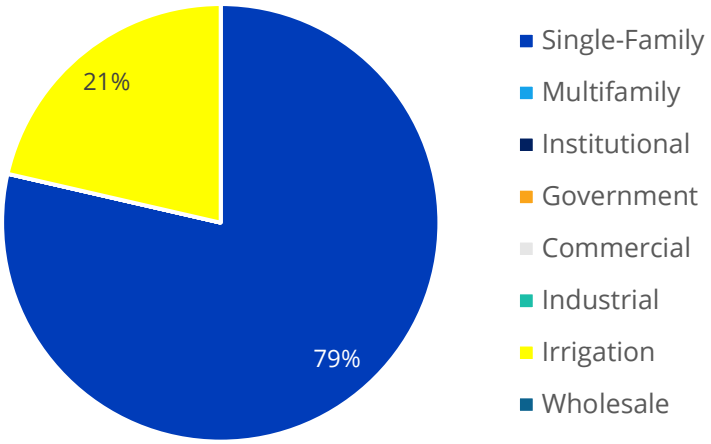
Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	19	20	19	19	19	19	19
Multifamily	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	6	5	5	5	5	5	5
Wholesale	0	0	0	0	0	0	0
Potable Total	24	25	24	24	24	24	24
Recycled	0	0	0	0	0	0	0

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

RIDGEGATE REDUCED | Alvarado/Miramar | HGL 425

The Ridgegate Reduced pressure zone falls within the Alvarado/Miramar service area and is roughly bordered to the Ridgegate La Jolla pressure zone to the west, the I-5 to the east, and two canyons to the north and south. More than 70% of the water use is single-family, with another 26% irrigation. On average in FY22-24, water use totaled 0.013 mgd and is projected to remain around 0.013 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	103	106	104	103	103	101	99
Household Population	103	105	104	103	103	101	99
Single-Family Households	41	44	43	43	43	43	43
Multifamily Households	2	1	1	1	1	1	1
Total Households	43	45	44	44	44	44	44
Employees	53	54	54	55	57	58	59
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	9,933	10,406	10,265	10,249	10,249	10,215	10,181
Multifamily	0	125	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	2,705	2,533	2,361	2,361	2,361	2,361	2,361
Wholesale	0	0	0	0	0	0	0
Potable Total	**12,638**	**13,064**	**12,626**	**12,609**	**12,609**	**12,576**	**12,542**
Recycled	0	0	0	0	0	0	0

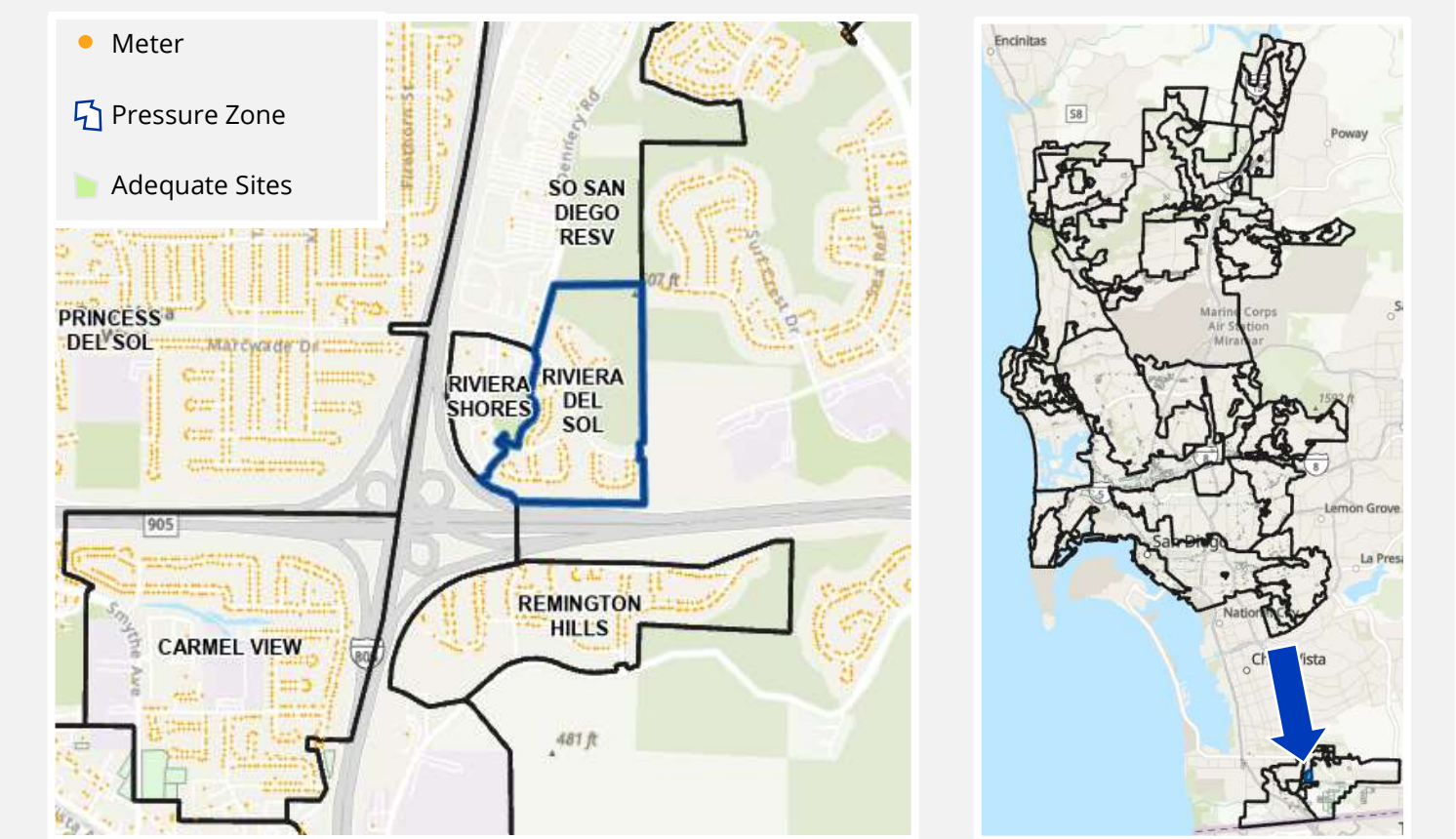
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	11	12	11	11	11	11	11
Multifamily	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	3	3	3	3	3	3	3
Wholesale	0	0	0	0	0	0	0
Potable Total	14	15	14	14	14	14	14
Recycled	0	0	0	0	0	0	0

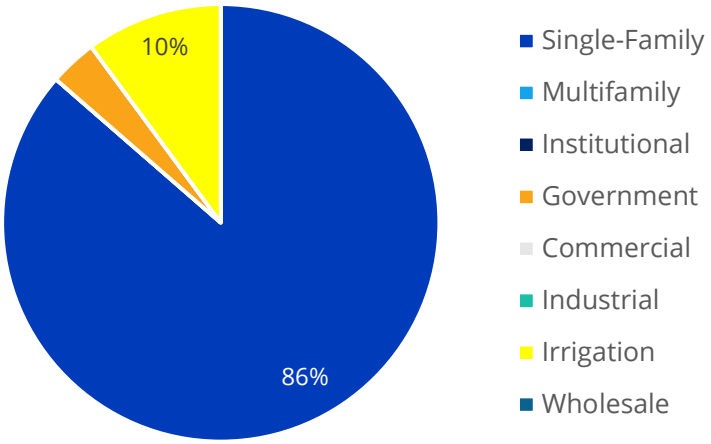
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

RIVIERA DEL SOL | Otay | HGL 550



The Riviera del Sol pressure zone falls within the Otay service area and is bordered by I-805 to the south, South San Diego to the north, Riviera Shores 440 to the west, and Otay Mesa 680 to the east. As this is a small, entirely residential zone, no major roadways run throughout it. Nearly 90% of the water use is single-family, with another 11% irrigation. On average in FY22-24, water use totaled 0.034 mgd and is projected to reach 0.036 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	924	877	874	868	882	884	877
Household Population	924	877	874	868	882	884	877
Single-Family Households	123	121	120	120	120	120	119
Multifamily Households	118	115	118	119	126	133	140
Total Households	241	236	238	239	246	253	259
Employees	279	286	299	328	331	333	335
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	27,744	27,218	26,985	26,932	26,871	26,749	26,456
Multifamily	0	375	482	640	1,730	2,790	3,817
Institutional	0	0	0	0	0	0	0
Government	1,125	1,125	1,125	1,125	1,125	1,125	1,125
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	3,240	3,069	2,898	2,898	2,898	2,898	2,898
Wholesale	0	0	0	0	0	0	0
Potable Total	**32,109**	**31,787**	**31,489**	**31,595**	**32,623**	**33,561**	**34,296**
Recycled	0	0	0	0	0	0	0

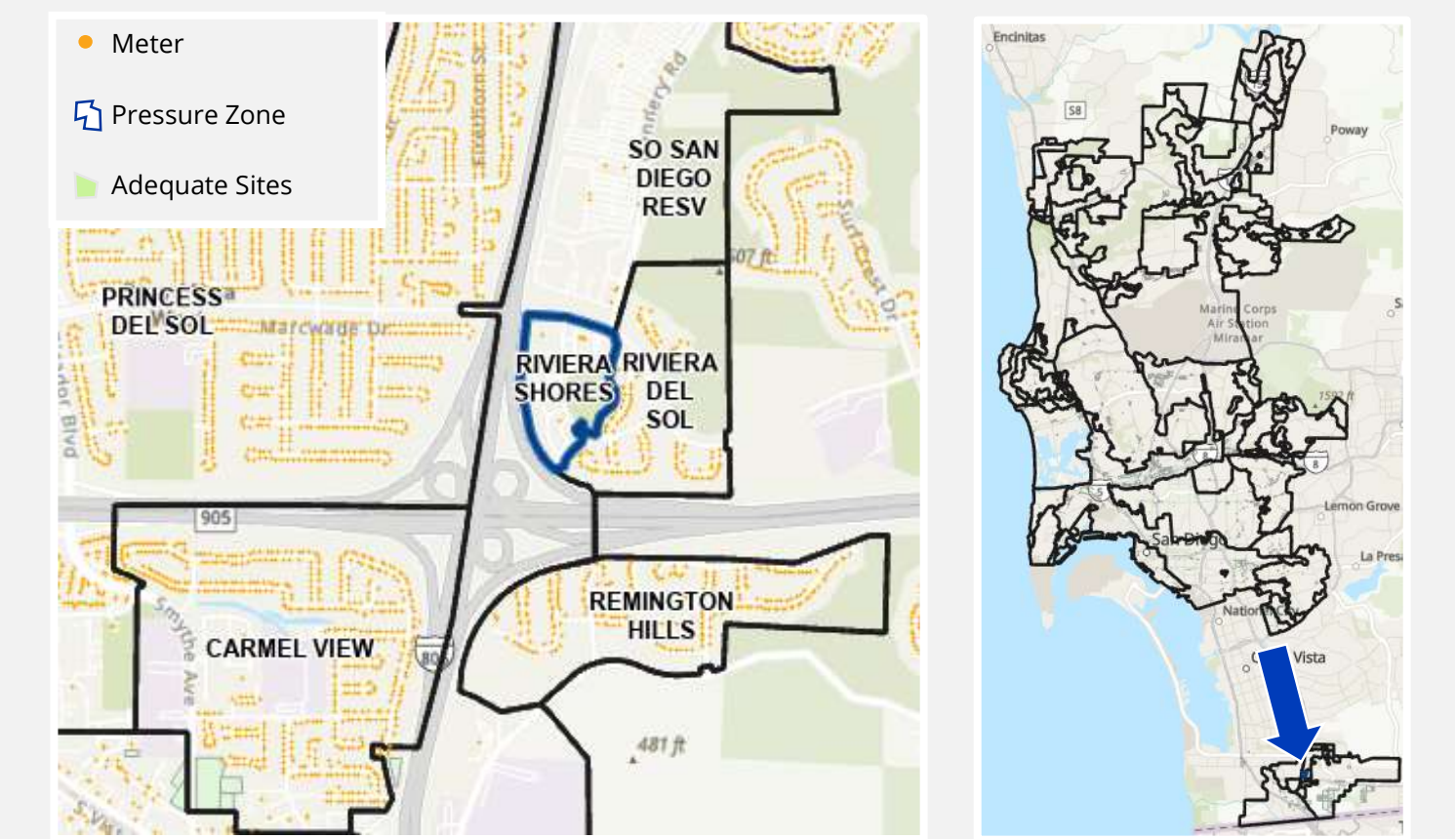
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	31	30	30	30	30	30	30
Multifamily	0	0	1	1	2	3	4
Institutional	0	0	0	0	0	0	0
Government	1	1	1	1	1	1	1
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	4	3	3	3	3	3	3
Wholesale	0	0	0	0	0	0	0
Potable Total	36	36	35	35	37	38	38
Recycled	0	0	0	0	0	0	0

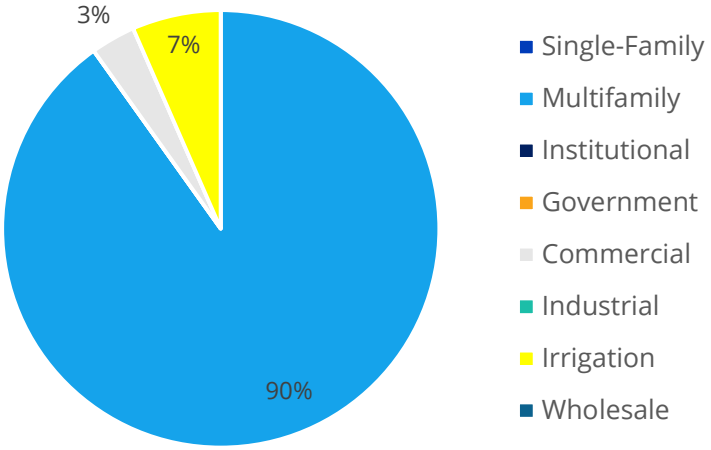
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

RIVIERA SHORES | Otay | HGL 440



The Riviera Shores pressure zone falls within the Otay service area and is roughly bordered by Del Sol Boulevard to the north, the I-805 to the west and the south, and Riviera Summit Road to the east. 85% of the water use is multifamily, with another 12% irrigation and 3% commercial. On average in FY22-24, water use totaled 0.049 mgd and is projected to slightly decline to 0.044 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	57	54	54	54	54	54	54
Household Population	57	54	54	54	54	54	54
Single-Family Households	0	0	0	0	0	0	0
Multifamily Households	16	16	16	16	16	17	17
Total Households	16	16	16	16	16	17	17
Employees	17	18	19	21	21	21	21
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	0	0	0	0	0	0	0
Multifamily	41,271	39,316	39,316	39,316	39,316	37,373	37,373
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	1,512	1,442	1,371	1,371	1,371	1,371	1,371
Industrial	0	0	0	0	0	0	0
Irrigation	3,000	2,731	2,461	2,461	2,461	2,461	2,461
Wholesale	0	0	0	0	0	0	0
Potable Total	**45,784**	**43,488**	**43,148**	**43,148**	**43,148**	**41,205**	**41,205**
Recycled	0	0	0	0	0	0	0

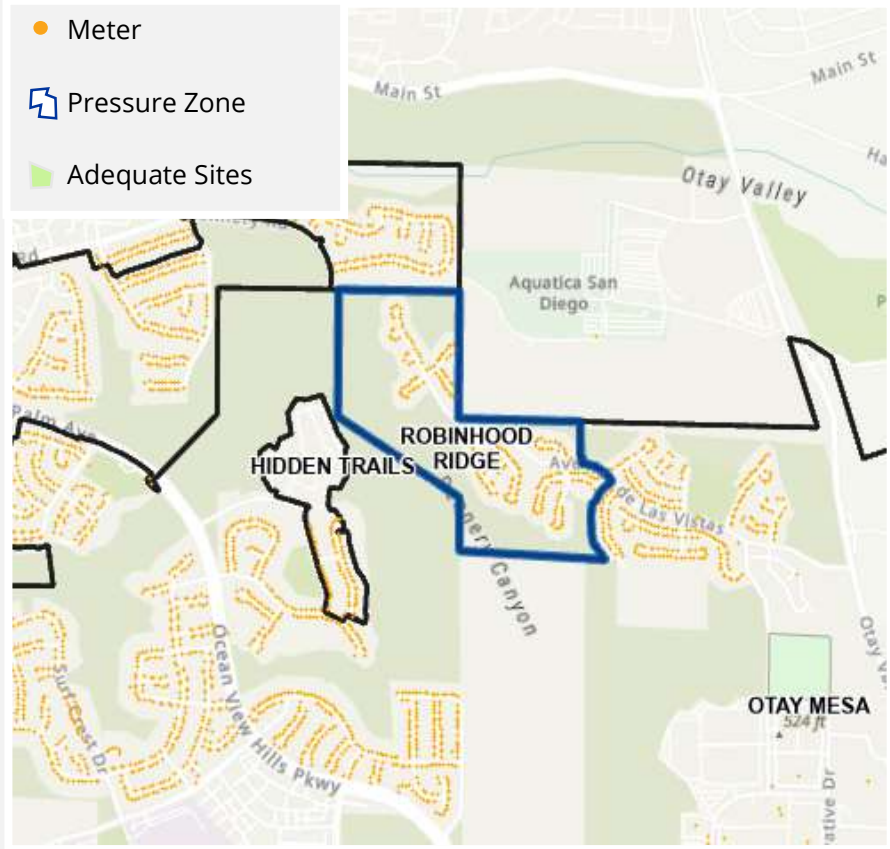
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	0	0	0	0	0	0	0
Multifamily	46	44	44	44	44	42	42
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	2	2	2	2	2	2	2
Industrial	0	0	0	0	0	0	0
Irrigation	3	3	3	3	3	3	3
Wholesale	0	0	0	0	0	0	0
Potable Total	51	49	48	48	48	46	46
Recycled	0	0	0	0	0	0	0

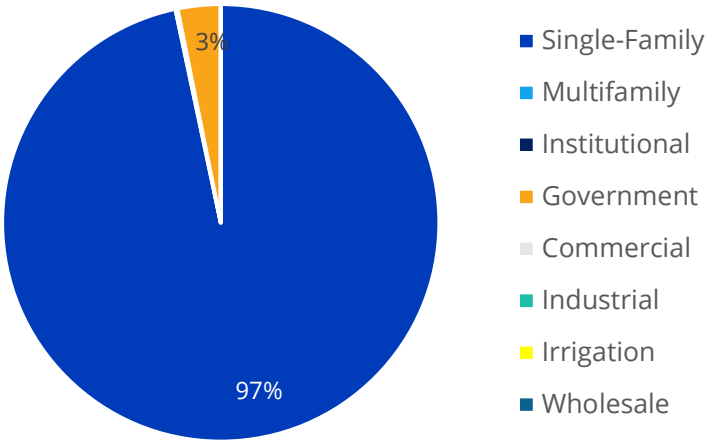
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

ROBINHOOD RIDGE | Otay | HGL 580



The Robinhood Ridge pressure zone falls within the Otay service area and is roughly bordered by Aquatica Seaworld Waterpark to the north, Otay Mesa Openspace Park to the south and the west, and Vista San Matias to the east. More than 90% of the water use is single-family, with another 7% government. On average in FY22-24, water use totaled 0.052 mgd and is projected to reach 0.055 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	1,057	1,005	1,060	1,061	1,066	1,058	1,036
Household Population	1,054	1,002	1,057	1,058	1,063	1,055	1,034
Single-Family Households	217	213	212	211	210	208	206
Multifamily Households	138	135	159	164	171	179	185
Total Households	355	348	371	375	381	387	391
Employees	334	335	336	338	340	342	344
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	47,065	46,032	45,763	45,514	45,265	44,772	44,234
Multifamily	78	451	3,122	3,752	4,621	5,589	6,292
Institutional	0	0	0	0	0	0	0
Government	1,543	1,362	1,180	1,180	1,180	1,180	1,180
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	0	0	0	0	0	0	0
Wholesale	0	0	0	0	0	0	0
Potable Total	**48,686**	**47,844**	**50,066**	**50,446**	**51,066**	**51,541**	**51,707**
Recycled	0	0	0	0	0	0	0

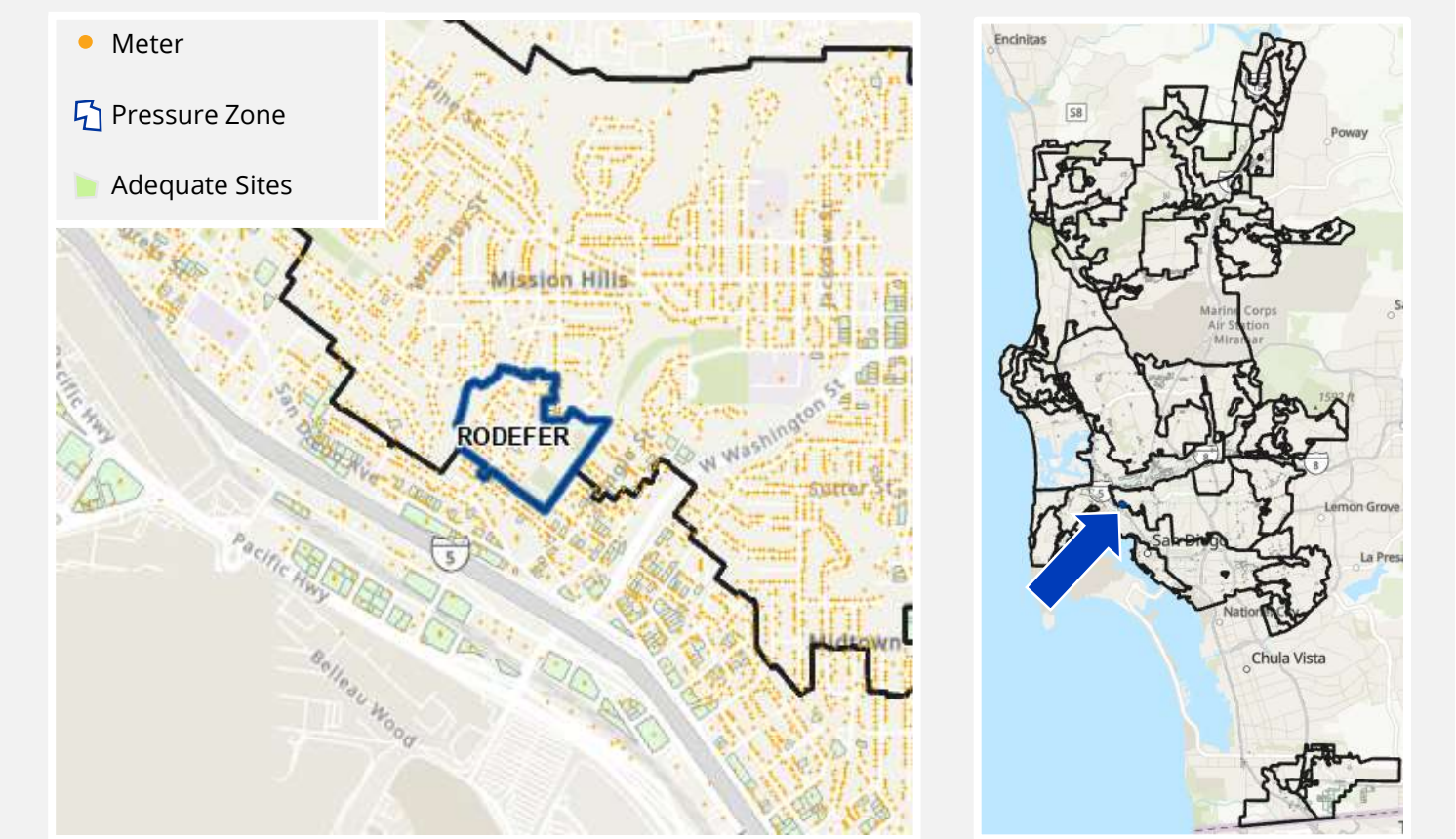
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	53	52	51	51	51	50	50
Multifamily	0	1	3	4	5	6	7
Institutional	0	0	0	0	0	0	0
Government	2	2	1	1	1	1	1
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	0	0	0	0	0	0	0
Wholesale	0	0	0	0	0	0	0
Potable Total	55	54	56	57	57	58	58
Recycled	0	0	0	0	0	0	0

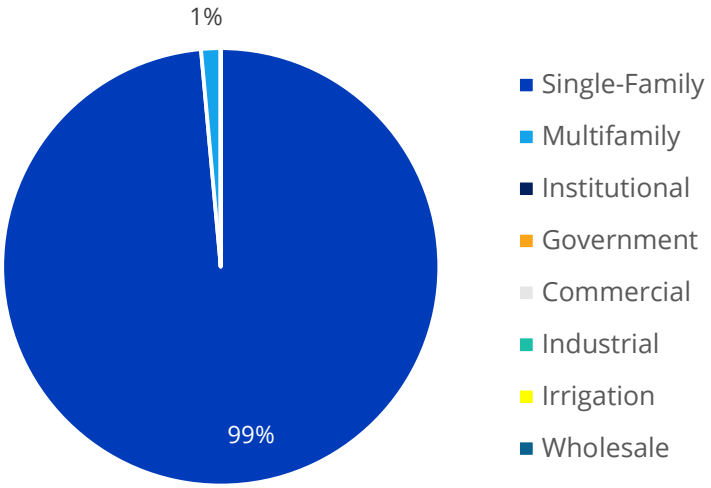
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

RODEFER | Alvarado | HGL 370



The Rodefer pressure zone falls within the Alvarado service area and is roughly bordered Alameda Drive and St. James Place to the north, Mission Hills Openspace Park to the east, Titus Street to the south, and a canyon to the west. Nearly 100% of the water use is single-family, with just 2% multifamily. On average in FY22-24, water use totaled 0.020 mgd and is projected to remain around 0.020 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	189	187	186	185	185	183	179
Household Population	189	187	186	185	185	183	179
Single-Family Households	81	84	84	84	84	84	83
Multifamily Households	0	0	0	0	0	0	0
Total Households	81	84	84	84	84	84	83
Employees	62	62	62	62	62	63	63
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	17,745	18,180	18,164	18,147	18,147	18,114	17,936
Multifamily	261	250	249	248	248	245	243
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	0	0	0	0	0	0	0
Wholesale	0	0	0	0	0	0	0
Potable Total	**18,006**	**18,430**	**18,412**	**18,395**	**18,395**	**18,359**	**18,179**
Recycled	0	0	0	0	0	0	0

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

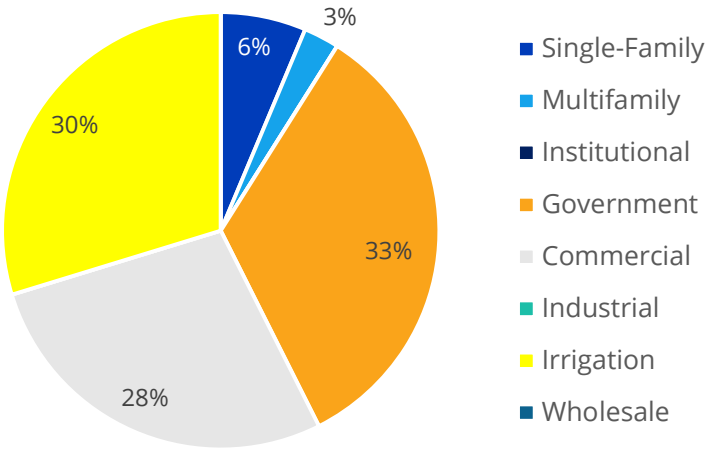
Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	20	20	20	20	20	20	20
Multifamily	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	0	0	0	0	0	0	0
Wholesale	0	0	0	0	0	0	0
Potable Total	20	21	21	21	21	21	20
Recycled	0	0	0	0	0	0	0

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

ROSECRANS | Alvarado | HGL 225

The Rosecrans pressure zone falls within the Alvarado service area and is roughly bordered by Rosecrans Street and Lyfton Street to the north, North Harbor Drive to the south, Laning Street the west, and Marine Corps Recruit Depot San Diego and San Diego International Airport to the east. 35% of the water use is government, with another 30% irrigation and 26% commercial. On average in FY22-24, water use totaled 0.52 mgd and is projected to reach 0.54 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	1,417	1,393	1,390	1,402	1,396	1,410	1,394
Household Population	1,258	1,244	1,237	1,247	1,235	1,251	1,239
Single-Family Households	206	211	209	207	207	202	198
Multifamily Households	255	261	266	277	277	295	307
Total Households	461	472	475	484	484	497	505
Employees	2,379	2,384	2,399	2,430	2,468	2,524	2,580
Additional Nonresidential Parcels (count)	n/a	0	0	0	4	4	6
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	141,556	141,556	1,147,076

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	31,224	31,591	31,315	31,025	30,973	30,424	29,898
Multifamily	12,995	13,365	13,862	15,113	15,006	17,033	18,173
Institutional	0	0	0	0	552	552	552
Government	166,105	162,230	158,354	158,354	158,354	158,354	176,815
Commercial	136,778	136,089	135,400	135,400	147,111	147,111	156,808
Industrial	0	0	0	0	0	0	0
Irrigation	146,846	139,188	131,531	131,531	131,531	131,531	131,531
Wholesale	0	0	0	0	0	0	0
Potable Total	**493,947**	**482,462**	**470,462**	**471,422**	**483,527**	**485,005**	**513,777**
Recycled	0	0	0	0	0	0	0

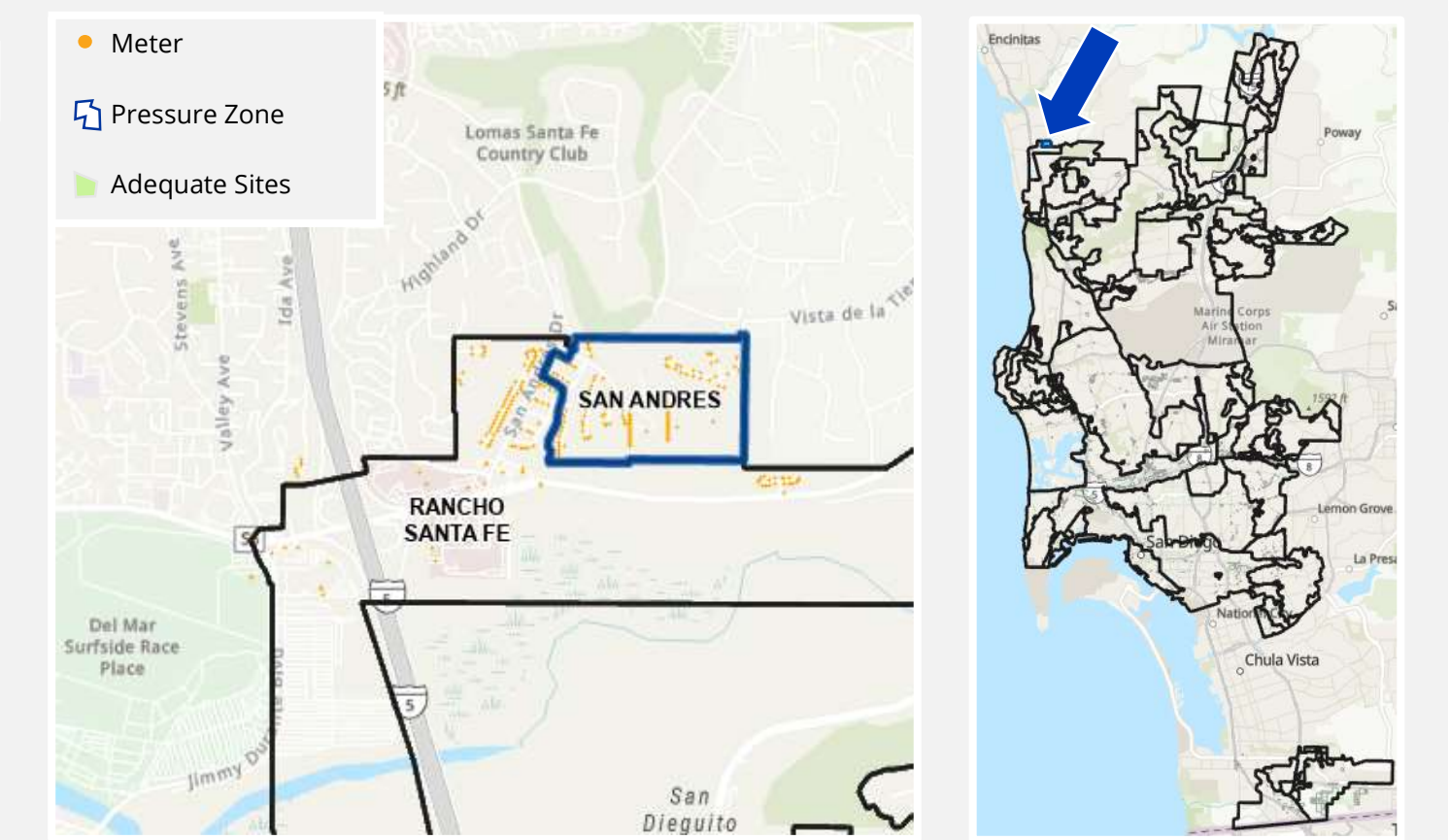
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	35	35	35	35	35	34	33
Multifamily	15	15	16	17	17	19	20
Institutional	0	0	0	0	1	1	1
Government	186	182	177	177	177	177	198
Commercial	153	152	152	152	165	165	176
Industrial	0	0	0	0	0	0	0
Irrigation	164	156	147	147	147	147	147
Wholesale	0	0	0	0	0	0	0
Potable Total	553	540	527	528	542	543	576
Recycled	0	0	0	0	0	0	0

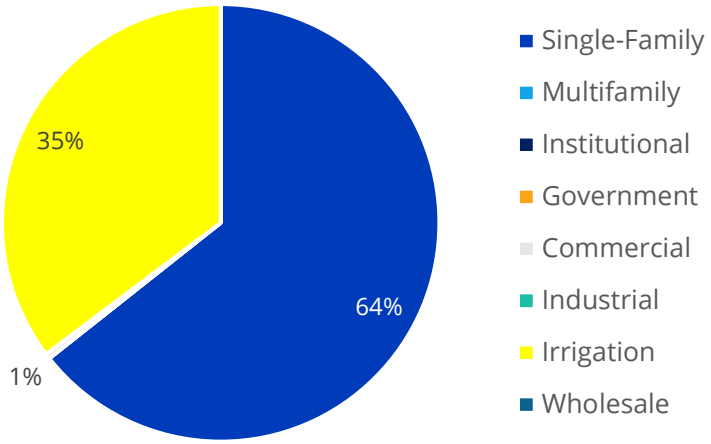
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

SAN ANDRES | Miramar | HGL 440



The San Andres pressure zone falls within the Miramar service area and is roughly bordered by San Andreas Drive to the west, Camanito Daniella to the east, and Via de la Valle to the south. More than 60% of the water use is single-family, with another 34% irrigation. On average in FY22-24, water use totaled 0.058 mgd and is projected to slightly decline to 0.056 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	121	127	126	125	124	122	119
Household Population	121	127	126	125	124	122	119
Single-Family Households	130	130	130	130	130	130	130
Multifamily Households	0	0	0	0	0	0	0
Total Households	130	130	130	130	130	130	130
Employees	168	169	170	171	173	175	176
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	33,532	33,814	33,768	33,722	33,675	33,580	33,435
Multifamily	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	195	195	195	195	195	195	195
Industrial	0	0	0	0	0	0	0
Irrigation	18,380	17,370	16,360	16,360	16,360	16,360	16,360
Wholesale	0	0	0	0	0	0	0
Potable Total	**52,107**	**51,380**	**50,324**	**50,277**	**50,230**	**50,136**	**49,991**
Recycled	0	0	0	0	0	0	0

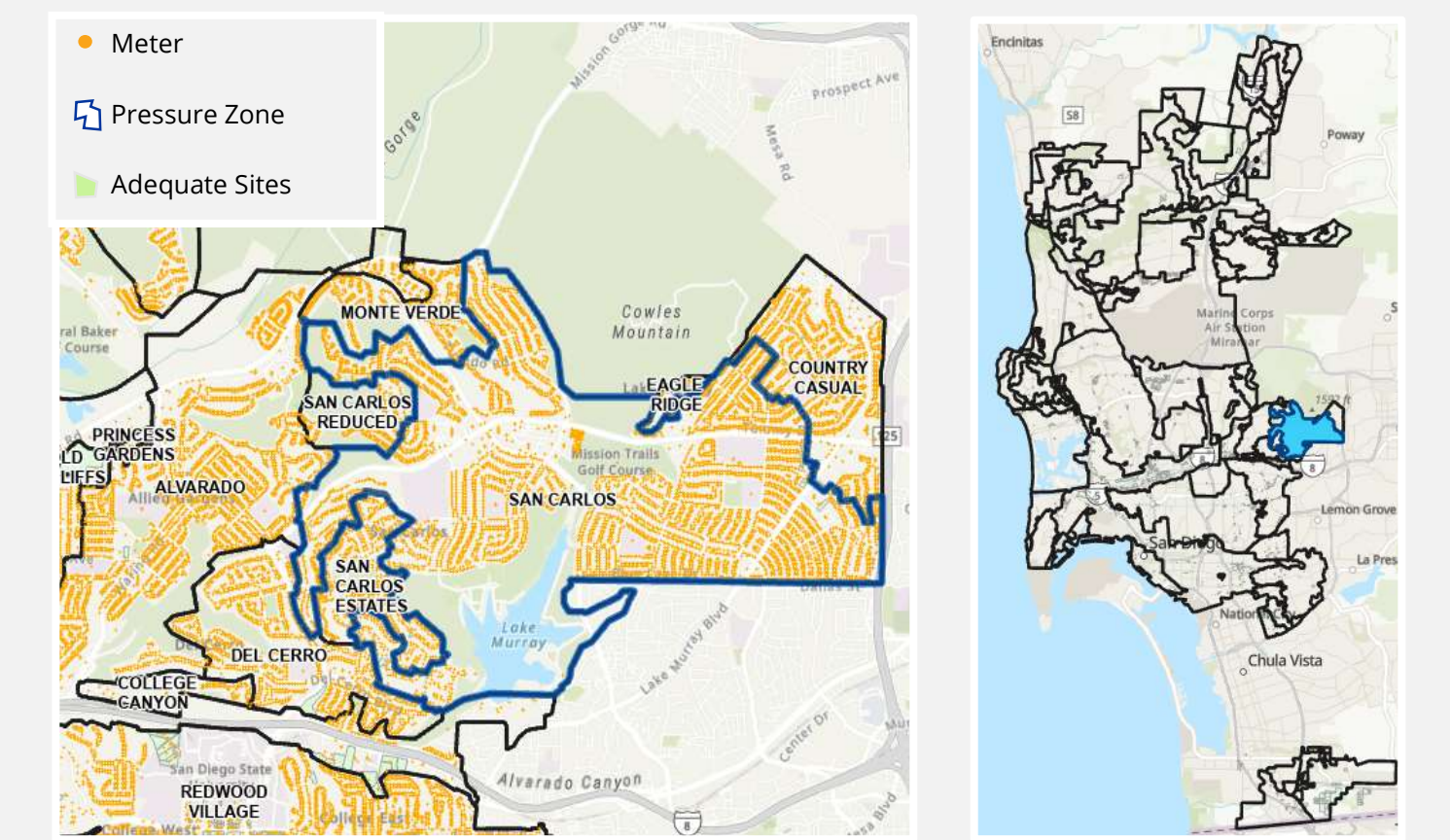
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	38	38	38	38	38	38	37
Multifamily	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	21	19	18	18	18	18	18
Wholesale	0	0	0	0	0	0	0
Potable Total	58	58	56	56	56	56	56
Recycled	0	0	0	0	0	0	0

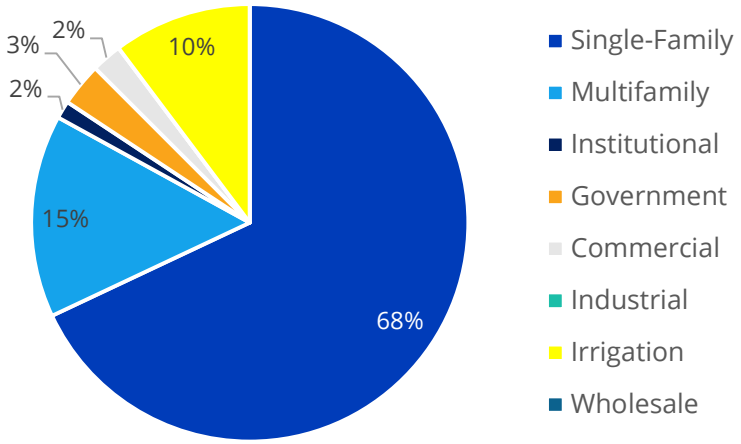
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

SAN CARLOS | Alvarado | HGL 849



The San Carlos pressure zone falls within the Alvarado service area and is roughly bordered by the Alvarado 4 536 zone to the west, US 125 to the east, Mission Trails Regional Park to the north, and Flume Road as well as another portion of the Alvarado 4 536 zone to the south. Lake Murray Boulevard, Murray Park Drive, Jackson Drive, and Navajo Road are a few of the main roadways that traverse this zone. Nearly 70% of the water use is single-family, with another 14% multifamily and 11% irrigation. On average in FY22-24, water use totaled 2.00 mgd and is projected to slightly decline to 1.93 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	21,489	21,052	20,862	20,677	20,513	20,168	19,656
Household Population	21,469	21,036	20,846	20,661	20,494	20,151	19,647
Single-Family Households	6,063	6,071	6,060	6,058	6,056	6,053	6,047
Multifamily Households	2,471	2,464	2,469	2,468	2,467	2,462	2,456
Total Households	8,534	8,535	8,529	8,526	8,523	8,515	8,503
Employees	4,767	4,790	4,838	4,946	5,029	5,092	5,154
Additional Nonresidential Parcels (count)	n/a	0	1	4	4	4	4
Additional Nonresidential Parcels (square feet)	n/a	0	9,944	20,235	20,235	20,235	20,235

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	1,312,633	1,309,496	1,305,647	1,303,378	1,301,312	1,297,267	1,291,017
Multifamily	289,522	285,120	282,670	280,635	278,691	275,241	269,544
Institutional	25,330	24,455	23,684	23,788	23,788	23,788	23,788
Government	61,482	57,896	54,310	54,310	54,310	54,310	54,310
Commercial	43,741	43,657	43,573	43,585	43,585	43,585	43,585
Industrial	0	0	0	0	0	0	0
Irrigation	197,447	186,553	175,660	175,660	175,660	175,660	175,660
Wholesale	0	0	0	0	0	0	0
Potable Total	**1,930,156**	**1,907,177**	**1,885,543**	**1,881,355**	**1,877,345**	**1,869,850**	**1,857,903**
Recycled	0	0	0	0	0	0	0

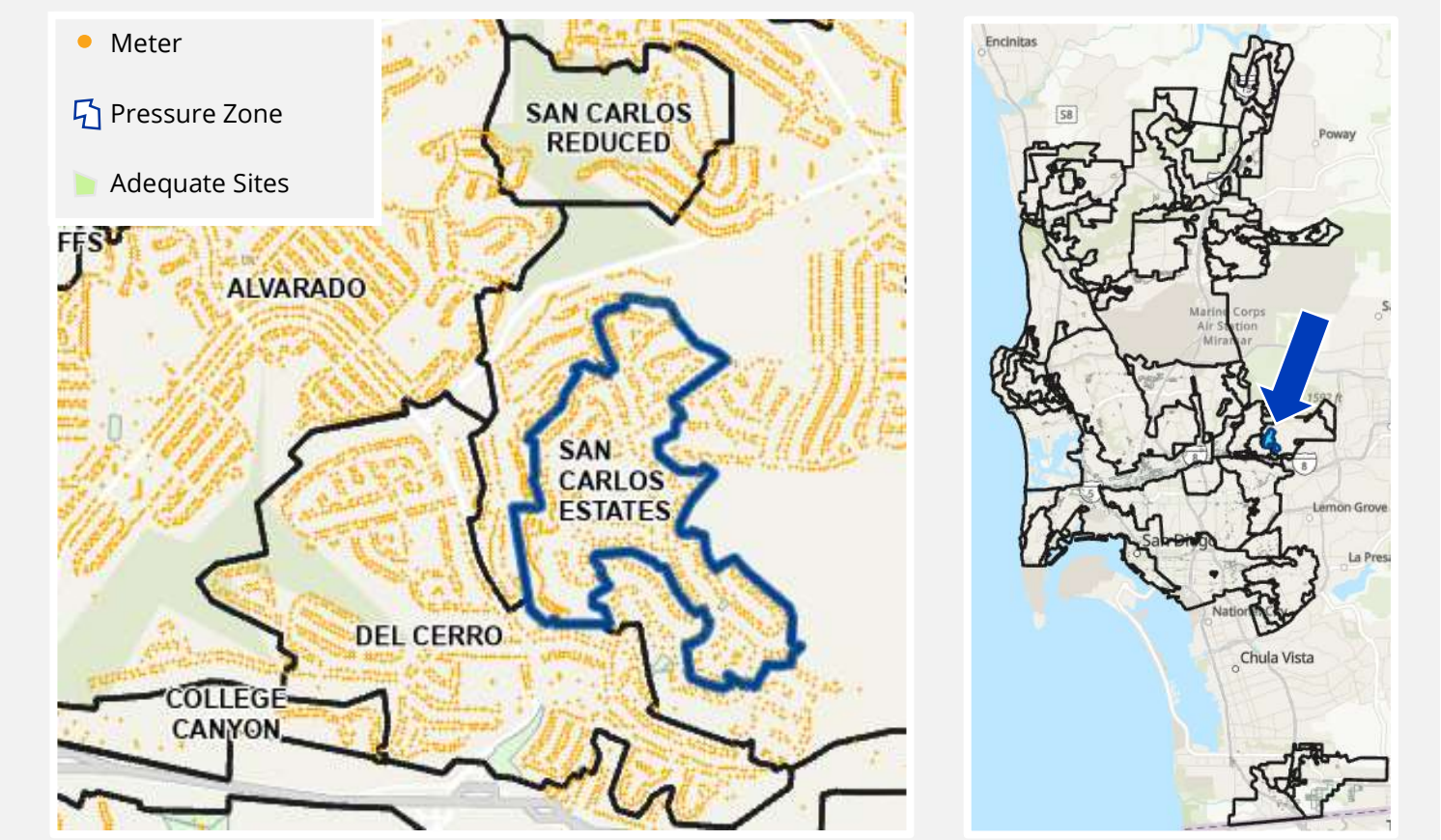
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	1,470	1,467	1,463	1,460	1,458	1,453	1,446
Multifamily	324	319	317	314	312	308	302
Institutional	28	27	27	27	27	27	27
Government	69	65	61	61	61	61	61
Commercial	49	49	49	49	49	49	49
Industrial	0	0	0	0	0	0	0
Irrigation	221	209	197	197	197	197	197
Wholesale	0	0	0	0	0	0	0
Potable Total	2,162	2,136	2,112	2,107	2,103	2,095	2,081
Recycled	0	0	0	0	0	0	0

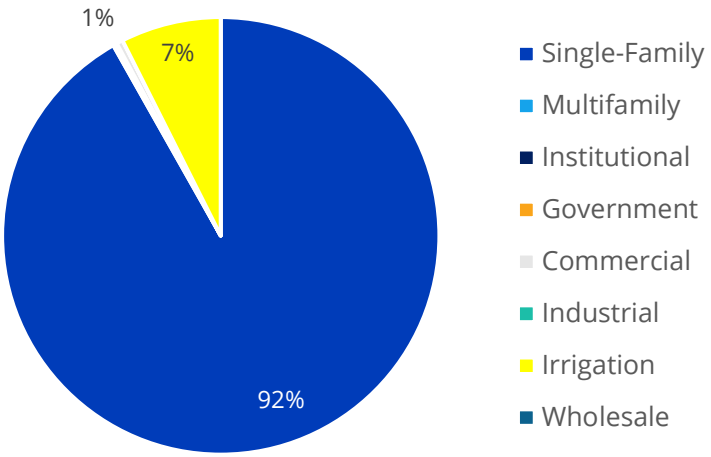
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

SAN CARLOS ESTATES | Alvarado | HGL 930



The San Carlos Estates pressure zone falls within the Alvarado service area and is roughly bordered by Caminito De La Taza and Del Paso Avenue to the west and partially developed land of the San Carlos 849 zone to the east, north, and south. Being that this is a small, completely residential zone, there are no major roadways that run throughout. More than 90% of the water use is single-family, with another 8% multifamily. On average in FY22-24, water use totaled 0.22 mgd and is projected to remain around 0.22 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	1,825	1,802	1,789	1,773	1,760	1,732	1,688
Household Population	1,823	1,801	1,788	1,772	1,758	1,730	1,688
Single-Family Households	596	601	600	600	600	600	599
Multifamily Households	89	89	92	92	91	90	89
Total Households	685	690	692	692	691	690	688
Employees	474	476	479	484	492	499	505
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	189,900	190,299	189,773	189,479	189,267	188,790	187,926
Multifamily	572	562	557	552	674	667	657
Institutional	0	0	0	0	0	0	0
Government	38	38	37	37	37	37	37
Commercial	975	975	975	975	975	975	975
Industrial	0	0	0	0	0	0	0
Irrigation	15,316	14,395	13,474	13,474	13,474	13,474	13,474
Wholesale	0	0	0	0	0	0	0
Potable Total	**206,802**	**206,269**	**204,816**	**204,517**	**204,427**	**203,943**	**203,068**
Recycled	0	0	0	0	0	0	0

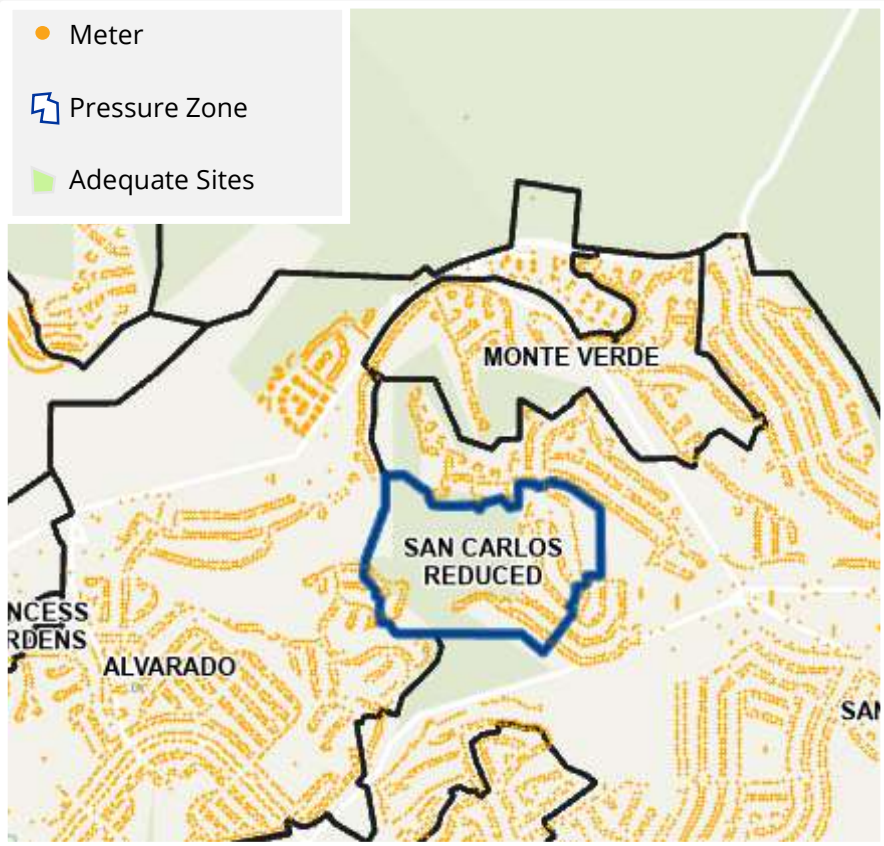
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

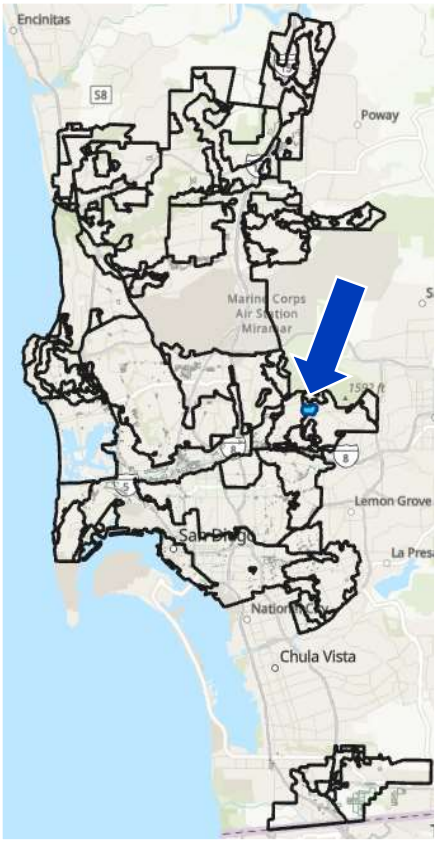
Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	213	213	213	212	212	211	211
Multifamily	1	1	1	1	1	1	1
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	1	1	1	1	1	1	1
Industrial	0	0	0	0	0	0	0
Irrigation	17	16	15	15	15	15	15
Wholesale	0	0	0	0	0	0	0
Potable Total	232	231	229	229	229	228	227
Recycled	0	0	0	0	0	0	0

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

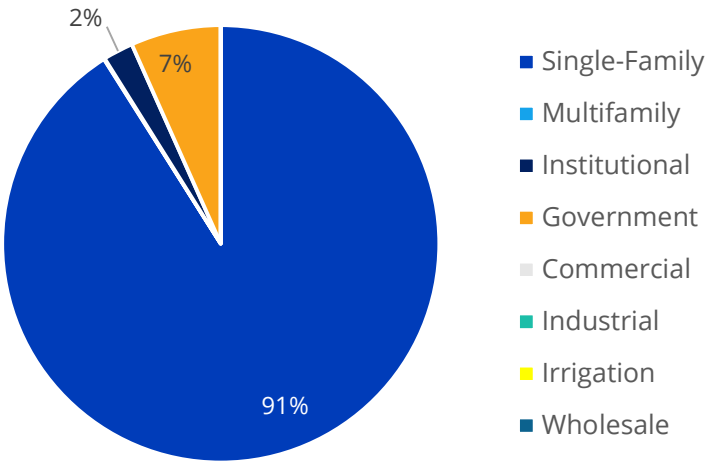
SAN CARLOS REDUCED | Alvarado | HGL 692





The San Carlos Reduced pressure zone falls within the Alvarado service area and is roughly bordered by the Alvarado 4 pressure zone to the west and the San Carlos pressure zone to the east. More than 90% of the water use is single-family, with another 7% government. On average in FY22-24, water use totaled 0.063 mgd and is projected to slightly decline to 0.061 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	879	852	843	836	828	813	790
Household Population	879	852	843	836	828	813	790
Single-Family Households	255	255	254	254	254	254	254
Multifamily Households	117	112	111	111	110	109	108
Total Households	372	367	365	365	364	363	362
Employees	142	143	144	146	149	152	154
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	52,139	51,980	51,746	51,671	51,609	51,470	51,238
Multifamily	44	668	168	43	167	167	166
Institutional	1,273	1,273	1,273	1,273	1,273	1,273	1,273
Government	3,824	3,613	3,403	3,403	3,403	3,403	3,403
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	0	0	0	0	0	0	0
Wholesale	0	0	0	0	0	0	0
Potable Total	**57,280**	**57,534**	**56,589**	**56,389**	**56,452**	**56,312**	**56,080**
Recycled	0	0	0	0	0	0	0

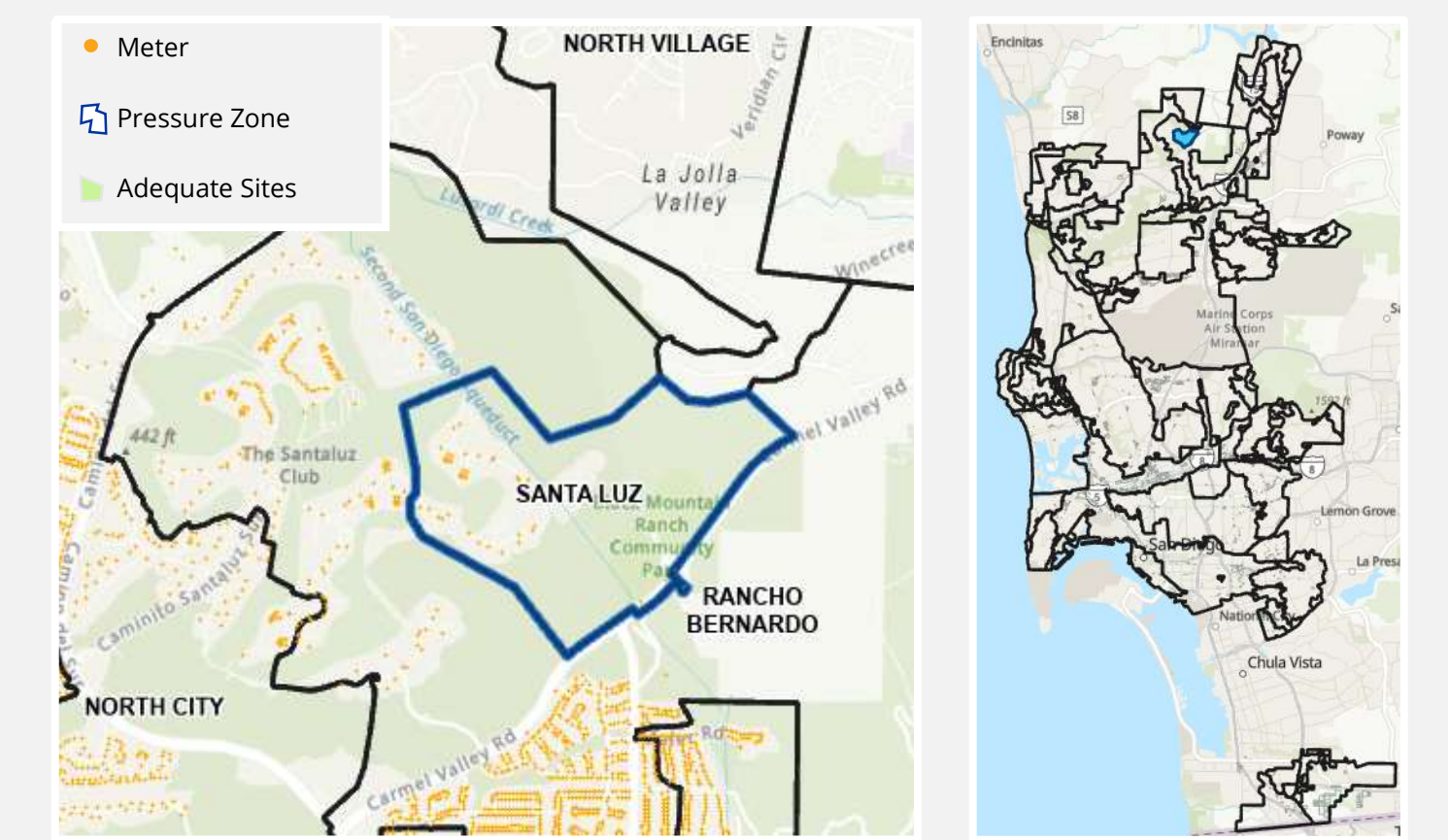
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	58	58	58	58	58	58	57
Multifamily	0	1	0	0	0	0	0
Institutional	1	1	1	1	1	1	1
Government	4	4	4	4	4	4	4
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	0	0	0	0	0	0	0
Wholesale	0	0	0	0	0	0	0
Potable Total	64	64	63	63	63	63	63
Recycled	0	0	0	0	0	0	0

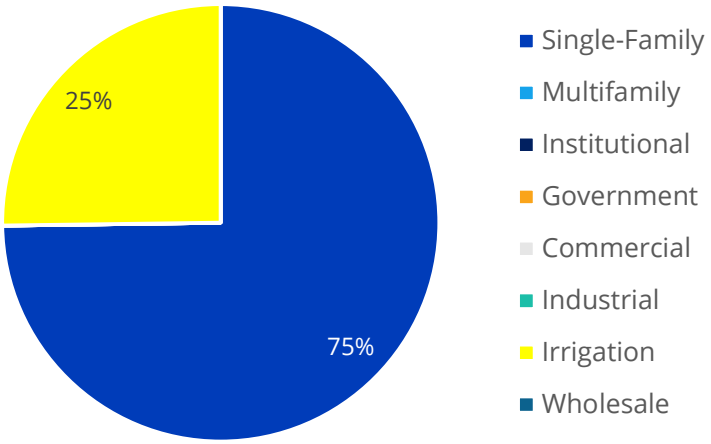
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

SANTA LUZ | Miramar | HGL 950



The Santa Luz pressure zone falls within the Miramar service area and is roughly bordered by Carmel Valley Road to the south and the east and Black Mountain Openspace Park to the north. Nearly 80% of the water use is single-family, with another 23% irrigation. On average in FY22-24, water use totaled 0.083 mgd and is projected to slightly decline to 0.082 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	57	66	66	66	65	64	62
Household Population	57	66	66	66	65	64	62
Single-Family Households	59	63	64	64	63	63	63
Multifamily Households	0	0	0	0	0	0	0
Total Households	59	63	64	64	63	63	63
Employees	43	43	43	44	44	45	45
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	57,328	58,286	58,182	58,182	58,164	58,011	57,699
Multifamily	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	4	4	4	4	4	4	4
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	19,317	18,353	17,389	17,389	17,389	17,389	17,389
Wholesale	0	0	0	0	0	0	0
Potable Total	**76,649**	**76,643**	**75,576**	**75,576**	**75,558**	**75,405**	**75,093**
Recycled	0	0	0	0	0	0	0

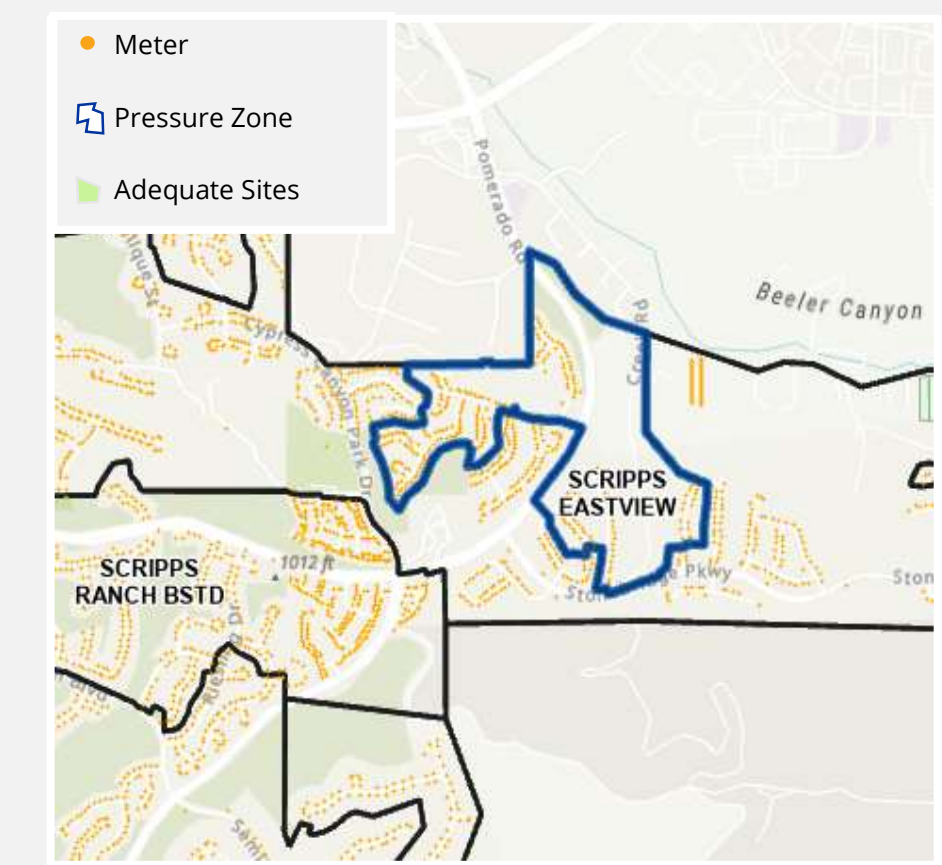
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

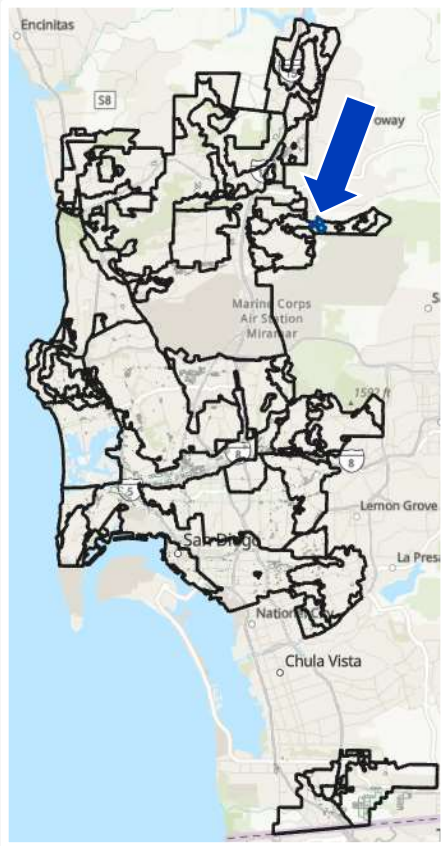
Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	64	65	65	65	65	65	65
Multifamily	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	22	21	19	19	19	19	19
Wholesale	0	0	0	0	0	0	0
Potable Total	86	86	85	85	85	84	84
Recycled	0	0	0	0	0	0	0

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

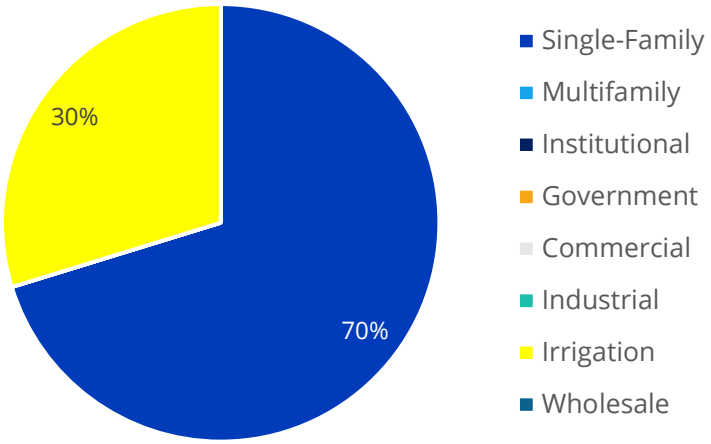
SCRIPPS EASTVIEW | Miramar | HGL 890





The Scripps Eastview pressure zone falls within the Miramar service area and is roughly bordered by Creek Road and Stonemill Drive to the north, Stonebridge Drive to the south, Cypress Canyon Park Drive and Cypress Woods Drive to the west, and Wild Meadow Place to the east. Nearly 70% of the water use is single-family, with another 33% irrigation. On average in FY22-24, water use totaled 0.095 mgd and is projected to slightly decline to 0.092 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	511	513	508	504	499	490	477
Household Population	488	490	485	481	476	467	455
Single-Family Households	239	244	244	244	244	244	243
Multifamily Households	0	0	0	0	0	0	0
Total Households	239	244	244	244	244	244	243
Employees	114	115	116	117	119	120	121
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	59,311	59,916	59,811	59,727	59,621	59,427	59,076
Multifamily	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	25,094	23,580	22,066	22,066	22,066	22,066	22,066
Wholesale	0	0	0	0	0	0	0
Potable Total	**84,405**	**83,496**	**81,877**	**81,793**	**81,686**	**81,492**	**81,142**
Recycled	0	0	0	0	0	0	0

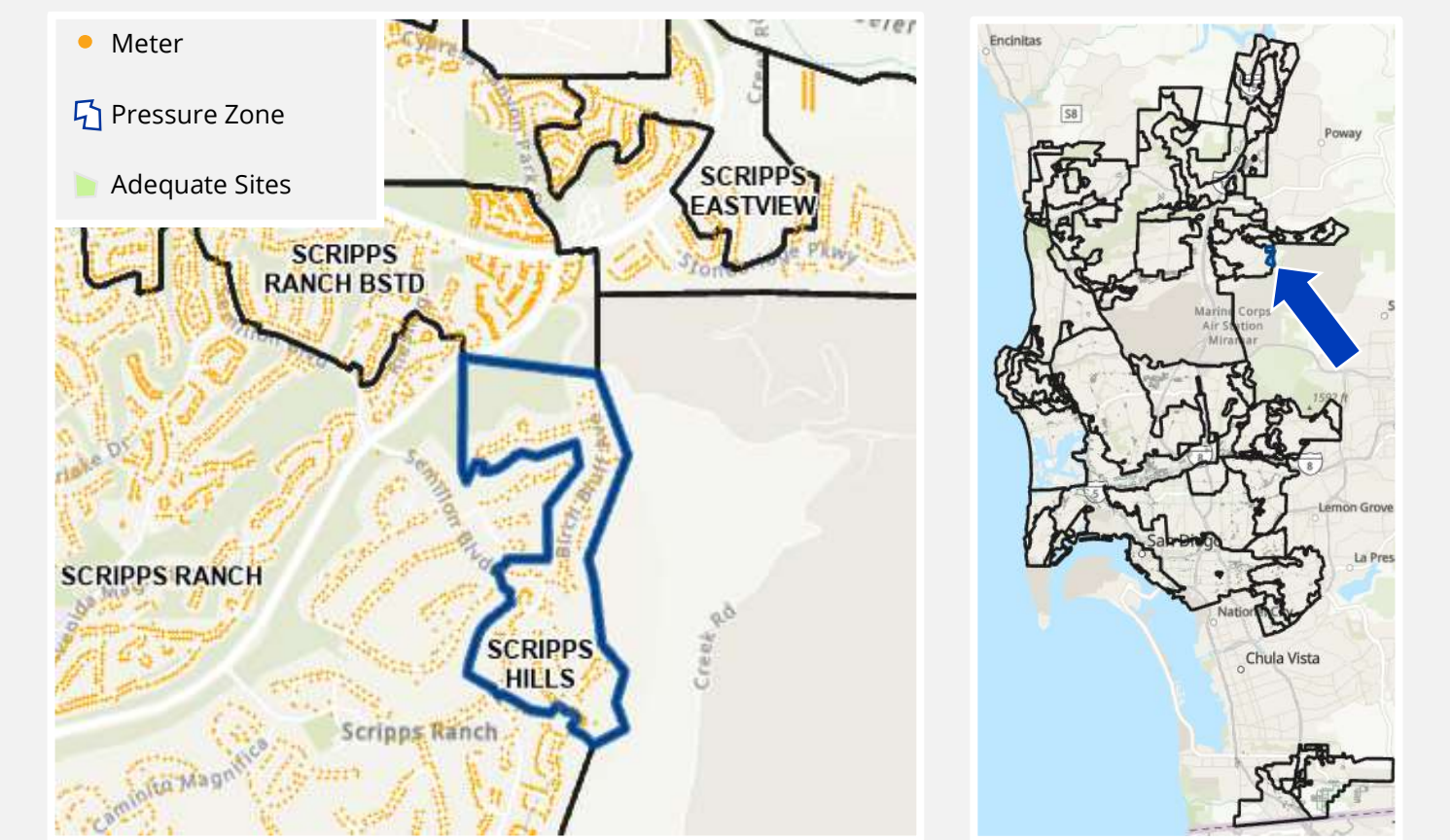
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	66	67	67	67	67	67	66
Multifamily	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	28	26	25	25	25	25	25
Wholesale	0	0	0	0	0	0	0
Potable Total	95	94	92	92	92	91	91
Recycled	0	0	0	0	0	0	0

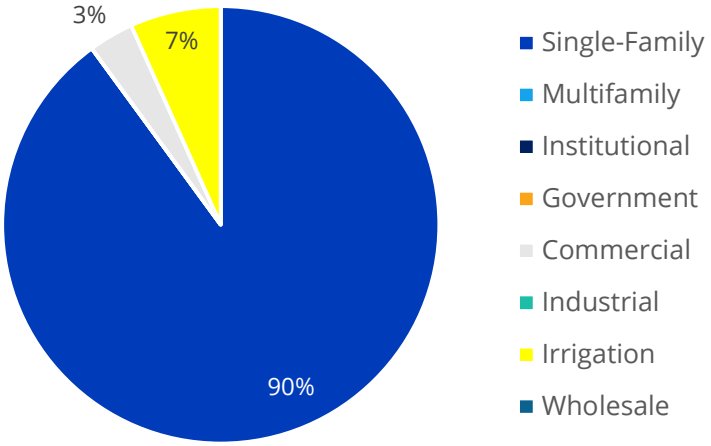
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

SCRIPPS HILLS | Miramar | HGL 1200



The Scripps Hills pressure zone falls within the Miramar service area and is roughly bordered by Scripps Miramar Openspace to the north, Kingspire Avenue to the west, Rue Finisterre to the south, and Marine Corp Air Station Miramar to the east. Nearly 90% of the water use is single-family, with another 7% irrigation and 6% commercial. On average in FY22-24, water use totaled 0.10 mgd and is projected to slightly decline to 0.099 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	713	714	706	700	695	684	667
Household Population	637	639	631	625	620	608	593
Single-Family Households	212	218	217	217	217	217	217
Multifamily Households	14	14	14	14	14	14	14
Total Households	226	232	231	231	231	231	231
Employees	223	225	229	233	237	241	244
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	83,112	84,139	83,809	83,672	83,557	83,278	82,923
Multifamily	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	3,063	2,881	2,699	2,699	2,699	2,699	2,699
Industrial	0	0	0	0	0	0	0
Irrigation	6,208	5,828	5,449	5,449	5,449	5,449	5,449
Wholesale	0	0	0	0	0	0	0
Potable Total	**92,382**	**92,848**	**91,956**	**91,819**	**91,705**	**91,426**	**91,071**
Recycled	0	0	0	0	0	0	0

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

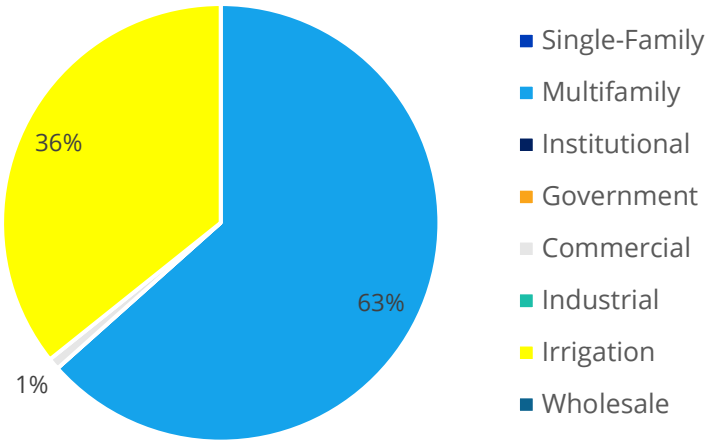
Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	93	94	94	94	94	93	93
Multifamily	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	3	3	3	3	3	3	3
Industrial	0	0	0	0	0	0	0
Irrigation	7	7	6	6	6	6	6
Wholesale	0	0	0	0	0	0	0
Potable Total	103	104	103	103	103	102	102
Recycled	0	0	0	0	0	0	0

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

SCRIPPS MESA VISTA | Miramar | HGL 892

The Scripps Mesa Vista pressure zone falls within the Miramar service area and is roughly bordered by Erma Road to the north, Affinity Court and Scripps Ranch Boulevard to the west, Miro Circle and Miramar Reservoir to the east, and Hilbert Street to the south. More than 70% of the water use is multifamily, with another 28% irrigation, and 1% commercial. On average in FY22-24, water use totaled 0.095 mgd and is projected to slightly decline to 0.087 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	178	174	172	171	169	166	162
Household Population	178	174	172	171	169	166	162
Single-Family Households	0	0	0	0	0	0	0
Multifamily Households	64	64	64	64	64	64	64
Total Households	64	64	64	64	64	64	64
Employees	86	87	97	112	116	120	124
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	0	0	0	0	0	0	0
Multifamily	63,837	62,547	61,901	61,578	60,931	59,959	58,661
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	858	858	858	858	858	858	858
Industrial	0	0	0	0	0	0	0
Irrigation	35,970	34,422	32,874	32,874	32,874	32,874	32,874
Wholesale	0	0	0	0	0	0	0
Potable Total	**100,665**	**97,828**	**95,634**	**95,311**	**94,664**	**93,692**	**92,393**
Recycled	7,559	6,609	6,609	6,609	6,609	6,609	6,609

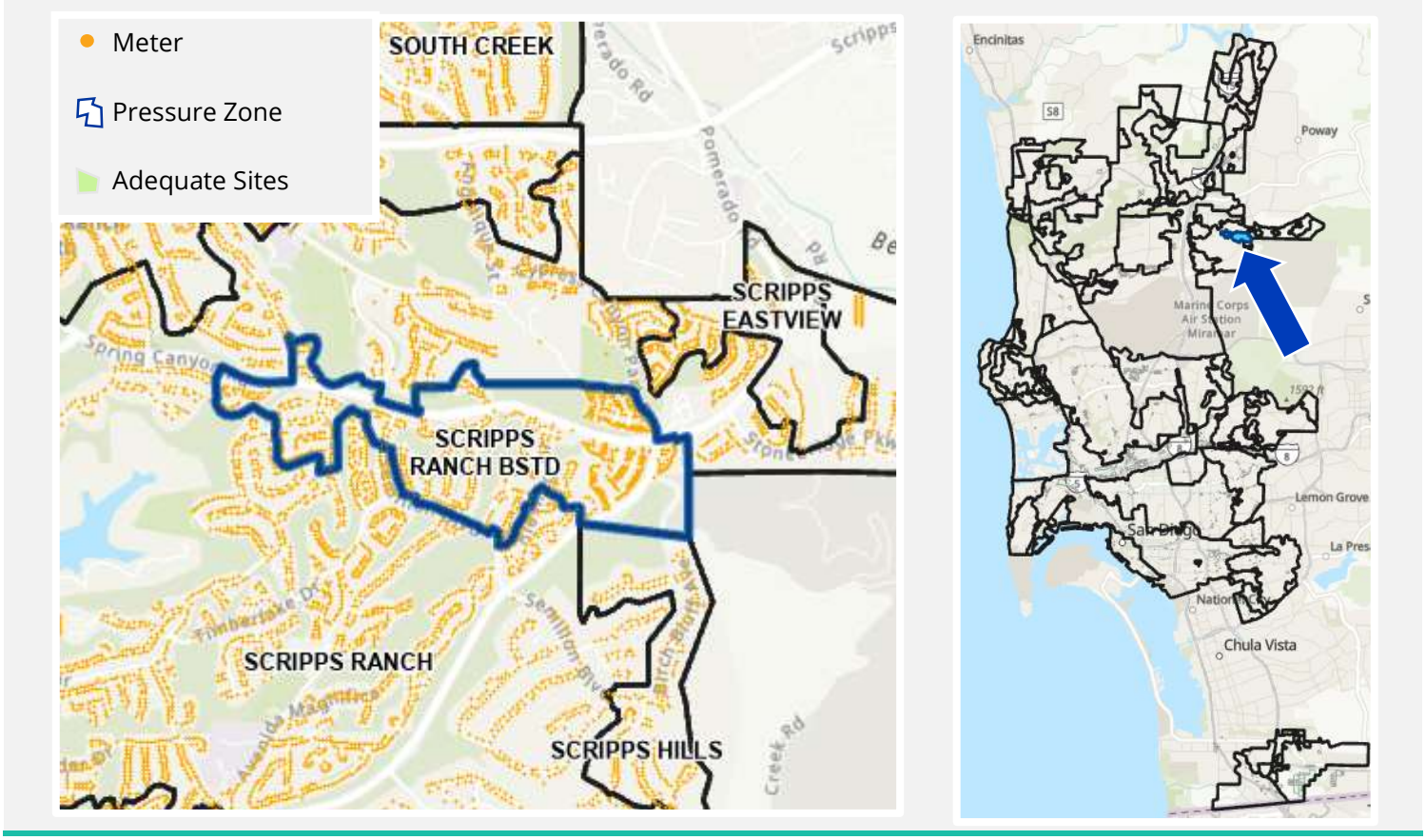
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	0	0	0	0	0	0	0
Multifamily	72	70	69	69	68	67	66
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	1	1	1	1	1	1	1
Industrial	0	0	0	0	0	0	0
Irrigation	40	39	37	37	37	37	37
Wholesale	0	0	0	0	0	0	0
Potable Total	113	110	107	107	106	105	103
Recycled	8	7	7	7	7	7	7

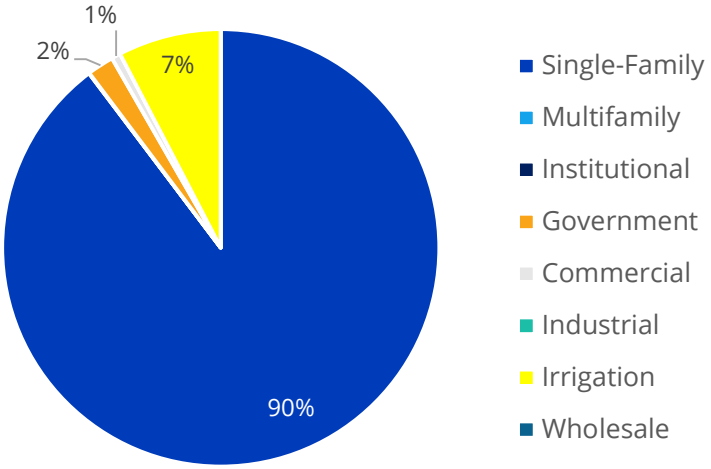
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

SCRIPPS RANCH BSTD | Miramar | HGL 1150



The Scripps Ranch Boosted pressure zone falls within the Miramar service area and is bordered by Semillon Boulevard to the south, Scripps Ranch 1020 to the north, Poche Point to the west, and Sycamore Test Road to the east. Spring Canyon Road is a major roadway that traverses this zone. Nearly 90% of the water use is single-family, with another 9% irrigation. On average in FY22-24, water use totaled 0.21 mgd and is projected to slightly decline to 0.210 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	2,545	2,463	2,437	2,415	2,394	2,350	2,288
Household Population	2,535	2,453	2,427	2,405	2,384	2,340	2,278
Single-Family Households	823	816	815	815	814	814	813
Multifamily Households	70	69	69	69	69	69	69
Total Households	893	885	884	884	883	883	882
Employees	440	442	444	447	452	458	464
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	178,334	176,213	175,735	175,455	175,057	174,487	173,549
Multifamily	52	175	50	50	49	48	47
Institutional	0	0	0	0	0	0	0
Government	3,945	3,742	3,539	3,539	3,539	3,539	3,539
Commercial	1,291	1,291	1,291	1,291	1,291	1,291	1,291
Industrial	0	0	0	0	0	0	0
Irrigation	15,153	14,130	13,106	13,106	13,106	13,106	13,106
Wholesale	0	0	0	0	0	0	0
Potable Total	**198,776**	**195,552**	**193,721**	**193,441**	**193,043**	**192,473**	**191,533**
Recycled	0	0	0	0	0	0	0

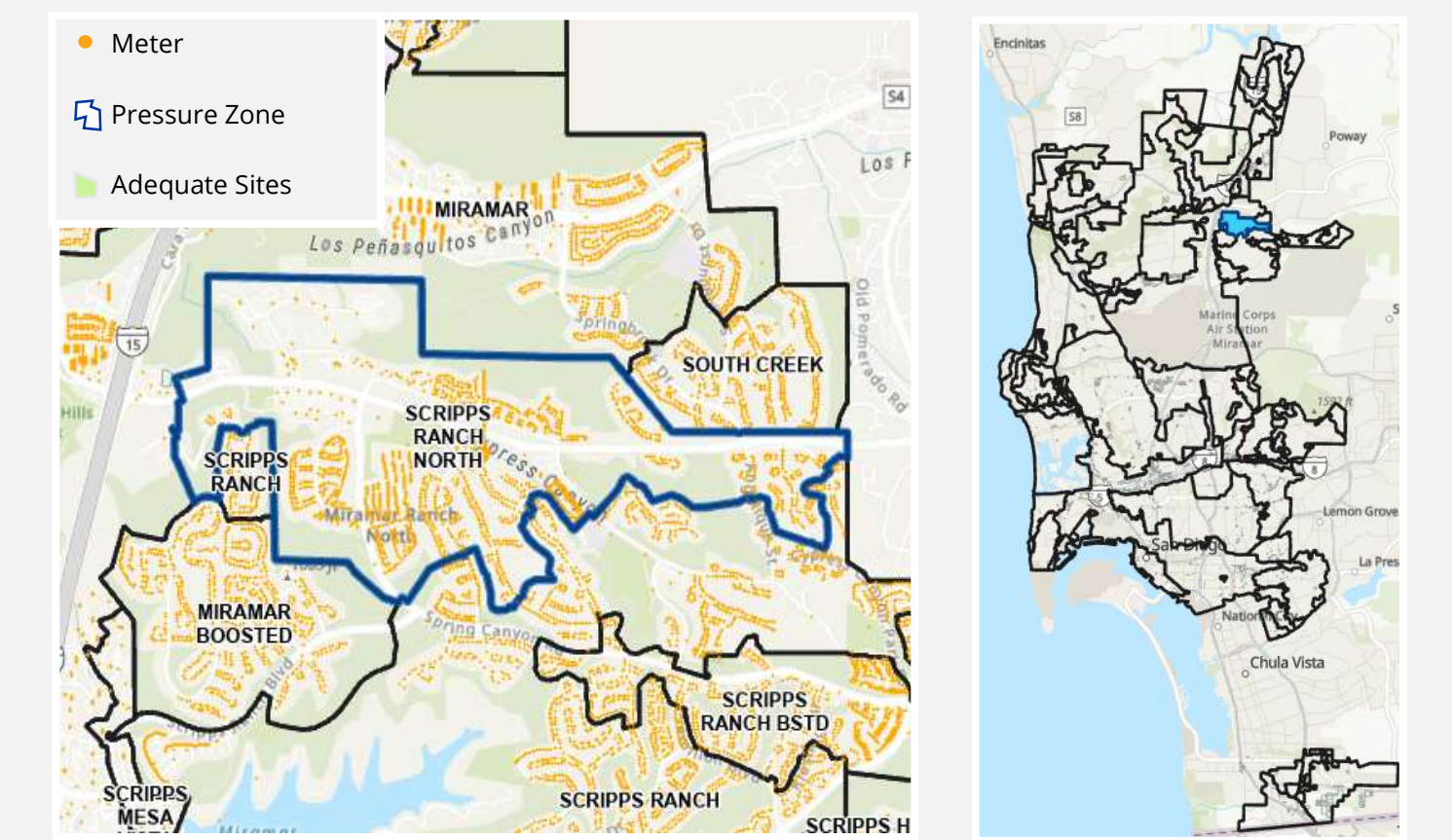
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	200	197	197	197	196	195	194
Multifamily	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	4	4	4	4	4	4	4
Commercial	1	1	1	1	1	1	1
Industrial	0	0	0	0	0	0	0
Irrigation	17	16	15	15	15	15	15
Wholesale	0	0	0	0	0	0	0
Potable Total	223	219	217	217	216	216	215
Recycled	0	0	0	0	0	0	0

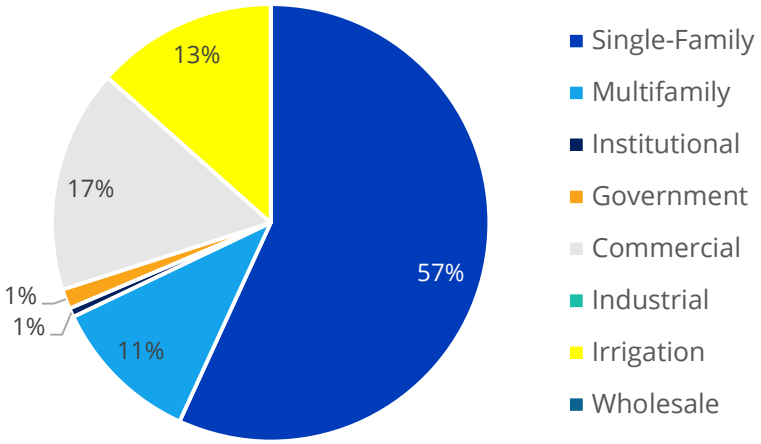
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

SCRIPPS RANCH NORTH | Miramar | HGL 890



The Scripps Ranch North pressure zone falls within the Miramar service area and is bordered by Miramar 712 to the north, I-15 to the west, Scripps Ranch 1020 to the south, and Candy Rose Way to the east. Spring Canyon Road and Scripps Poway Parkway are major roadways that traverse this zone. Nearly 60% of the water use is single-family, with 15% irrigation and another 15% commercial. On average in FY22-24, water use totaled 0.680 mgd and is projected to slightly decline to 0.66 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	6,852	6,732	6,660	6,595	6,539	6,415	6,241
Household Population	6,852	6,732	6,660	6,595	6,539	6,415	6,241
Single-Family Households	1,736	1,749	1,747	1,746	1,746	1,745	1,744
Multifamily Households	665	670	670	670	671	671	671
Total Households	2,401	2,419	2,417	2,416	2,417	2,416	2,415
Employees	2,668	2,681	2,836	3,059	3,130	3,191	3,251
Additional Nonresidential Parcels (count)	n/a	0	3	3	3	3	3
Additional Nonresidential Parcels (square feet)	n/a	0	291,900	291,900	291,900	291,900	291,900

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	371,379	372,207	371,218	370,451	369,881	368,536	366,670
Multifamily	72,514	71,513	70,884	70,294	69,857	68,704	67,072
Institutional	4,288	4,220	7,214	7,214	7,214	7,214	7,214
Government	9,554	8,985	8,417	8,417	8,417	8,417	8,417
Commercial	108,115	106,497	104,880	104,880	104,880	104,880	104,880
Industrial	0	0	0	0	0	0	0
Irrigation	87,553	82,413	77,274	77,274	77,274	77,274	77,274
Wholesale	0	0	0	0	0	0	0
Potable Total	**653,403**	**645,836**	**639,887**	**638,530**	**637,522**	**635,024**	**631,526**
Recycled	486,355	352,976	352,976	352,976	352,976	352,976	352,976

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

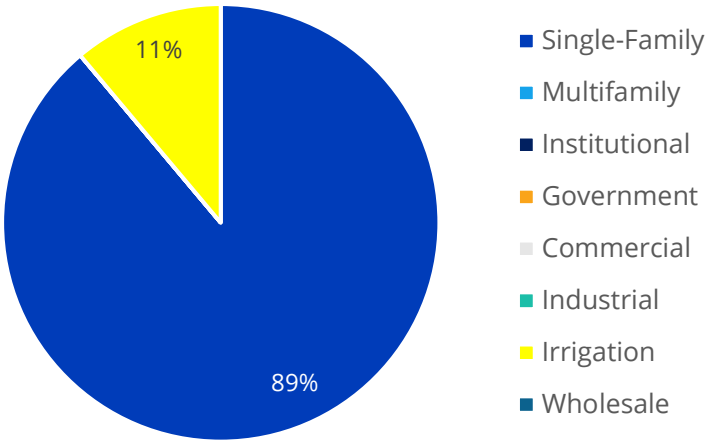
Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	416	417	416	415	414	413	411
Multifamily	81	80	79	79	78	77	75
Institutional	5	5	8	8	8	8	8
Government	11	10	9	9	9	9	9
Commercial	121	119	117	117	117	117	117
Industrial	0	0	0	0	0	0	0
Irrigation	98	92	87	87	87	87	87
Wholesale	0	0	0	0	0	0	0
Potable Total	732	723	717	715	714	711	707
Recycled	545	395	395	395	395	395	395

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

SCRIPPS RANCH_1 | Miramar | HGL 1020

The Scripps Ranch 1 pressure zone falls within the Miramar service area and is roughly bordered by Jepson Lane to the north, Stony Ridge Lane to the west, Swan Lake Drive to the south, and Pickford Road to the east. Nearly 90% of the water use is single-family, with another 12% irrigation. On average in FY22-24, water use totaled 0.031 mgd and is projected to slightly decline to 0.0310 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	489	478	473	469	465	456	444
Household Population	489	478	473	469	465	456	444
Single-Family Households	100	100	100	100	100	100	100
Multifamily Households	68	69	69	69	69	69	69
Total Households	168	169	169	169	169	169	169
Employees	342	345	391	459	477	493	509
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	26,914	26,780	26,732	26,692	26,653	26,563	26,440
Multifamily	0	126	126	126	126	126	126
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	3,363	3,172	2,980	2,980	2,980	2,980	2,980
Wholesale	0	0	0	0	0	0	0
Potable Total	**30,277**	**30,078**	**29,837**	**29,798**	**29,758**	**29,668**	**29,546**
Recycled	3,788	3,417	3,417	3,417	3,417	3,417	3,417

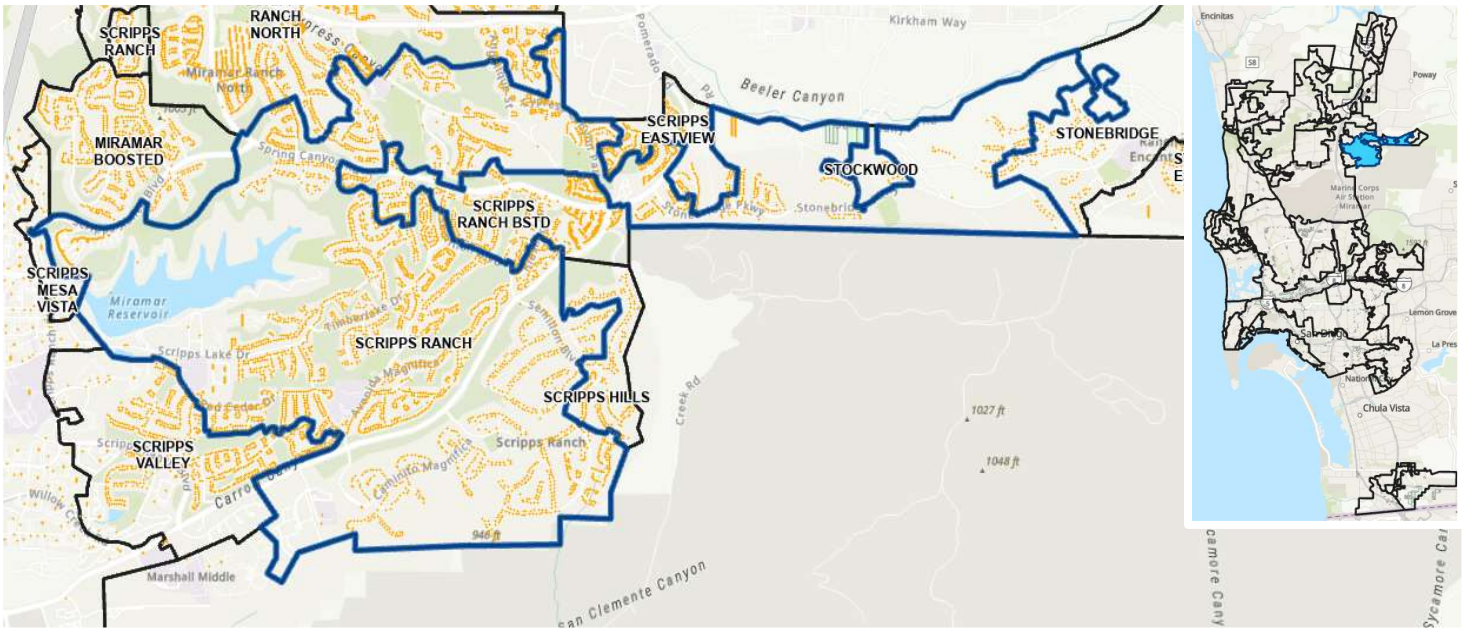
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	30	30	30	30	30	30	30
Multifamily	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	4	4	3	3	3	3	3
Wholesale	0	0	0	0	0	0	0
Potable Total	34	34	33	33	33	33	33
Recycled	4	4	4	4	4	4	4

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

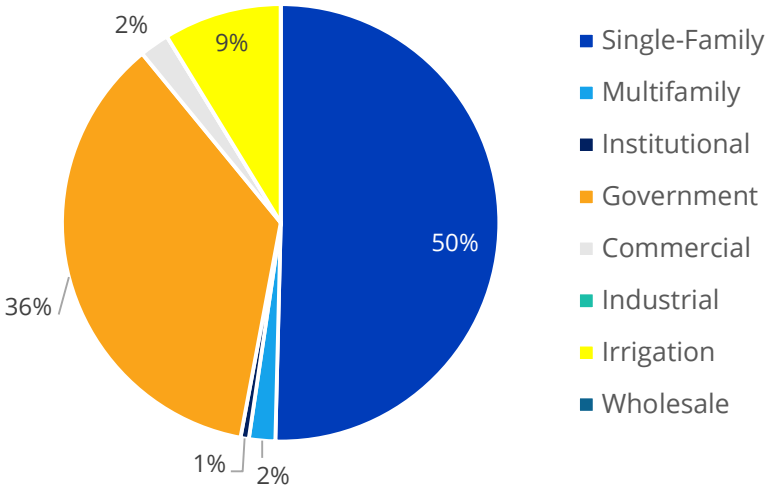
SCRIPPS RANCH_2 | Miramar | HGL 1020



- Meter
- Pressure Zone
- Adequate Sites

The Scripps Ranch 2 pressure zone falls within the Miramar service area and the major routes to and from this zone are I-15 and Scripps-Poway Parkway. Interior traffic circulation is handled by Pomerado Road, Spring Canyon Road, Scripps Ranch Boulevard and Stonebridge Parkway. More than 50% of the water use is single-family, with another 36% government. On average in FY22-24, water use totaled 2.66 mgd and is projected to slightly decline to 2.64 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	13,755	13,473	13,336	13,216	13,107	12,874	12,551
Household Population	13,354	13,077	12,938	12,818	12,707	12,475	12,159
Single-Family Households	4,164	4,177	4,170	4,169	4,168	4,166	4,162
Multifamily Households	717	717	717	717	718	718	723
Total Households	4,881	4,894	4,887	4,886	4,886	4,884	4,885
Employees	6,367	6,394	6,443	6,497	6,565	6,618	6,670
Additional Nonresidential Parcels (count)	n/a	0	0	0	1	1	1
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	769,523	769,523	769,523

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	1,261,967	1,259,546	1,256,154	1,253,989	1,251,930	1,247,697	1,241,476
Multifamily	48,446	47,430	47,038	46,654	46,407	45,664	45,167
Institutional	15,630	14,885	14,140	14,140	54,729	54,729	54,729
Government	904,876	899,354	893,833	893,833	893,833	893,833	893,833
Commercial	54,915	54,645	54,375	54,375	54,375	54,375	54,375
Industrial	0	0	0	0	0	0	0
Irrigation	218,516	206,495	194,474	194,474	194,474	194,474	194,474
Wholesale	0	0	0	0	0	0	0
Potable Total	**2,504,350**	**2,482,356**	**2,460,013**	**2,457,465**	**2,495,748**	**2,490,772**	**2,484,054**
Recycled	15,433	12,862	12,862	12,862	12,862	12,862	12,862

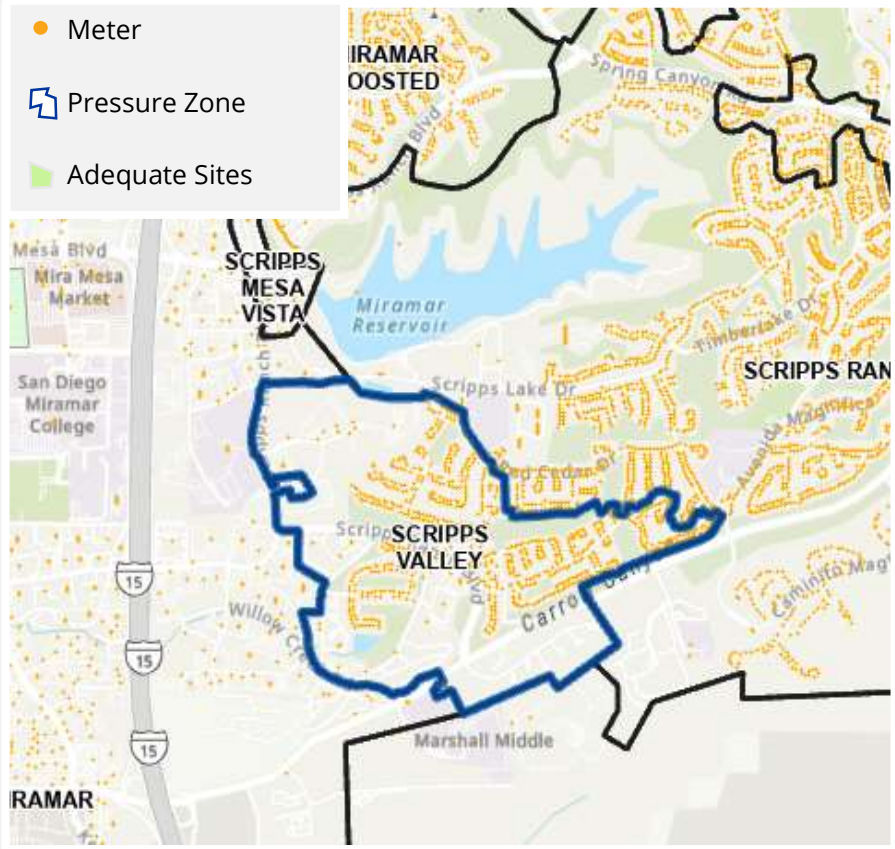
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

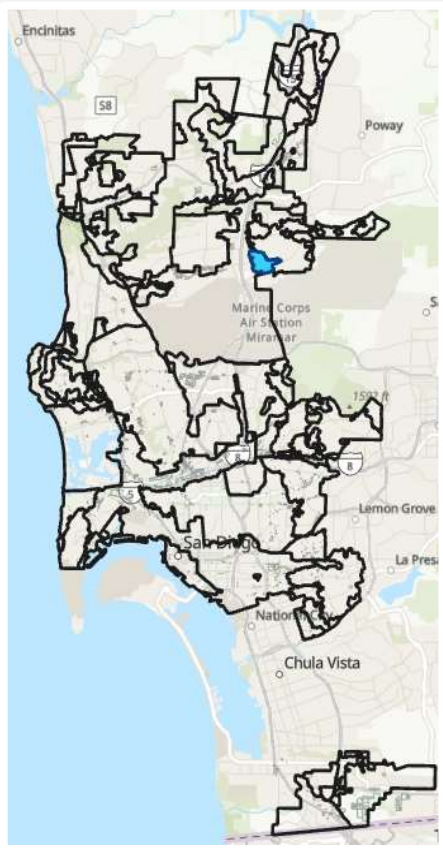
Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	1,414	1,411	1,407	1,405	1,402	1,398	1,391
Multifamily	54	53	53	52	52	51	51
Institutional	18	17	16	16	61	61	61
Government	1,014	1,007	1,001	1,001	1,001	1,001	1,001
Commercial	62	61	61	61	61	61	61
Industrial	0	0	0	0	0	0	0
Irrigation	245	231	218	218	218	218	218
Wholesale	0	0	0	0	0	0	0
Potable Total	2,805	2,781	2,756	2,753	2,796	2,790	2,782
Recycled	17	14	14	14	14	14	14

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

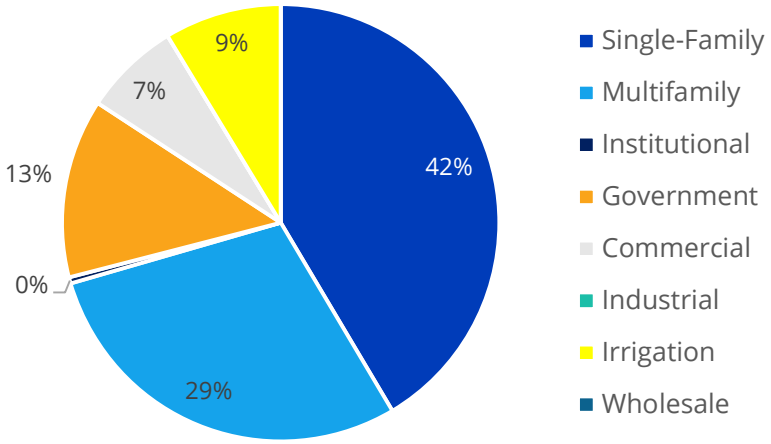
SCRIPPS VALLEY | Miramar | HGL 850





The Scripps Valley pressure zone falls within the Miramar service area and is roughly bordered by Miramar 712 to the west, Scripps Ranch 1020 to the north and east, and Miramar Station to the south. Scripps Ranch Boulevard and Pomerado Road are major roadways that traverse this zone. 45% of the water use is single-family, with another 31% multifamily. On average in FY22-24, water use totaled 0.43 mgd and is projected to slightly decline to 0.41 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	3,372	3,266	3,237	3,210	3,183	3,128	3,070
Household Population	3,372	3,266	3,237	3,209	3,182	3,127	3,069
Single-Family Households	717	704	704	704	704	703	702
Multifamily Households	744	742	742	742	742	742	751
Total Households	1,461	1,446	1,446	1,446	1,446	1,445	1,453
Employees	7,143	7,166	7,207	7,253	7,308	7,343	7,378
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	1
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	185,804	182,588	182,302	182,023	181,753	181,064	180,143
Multifamily	130,201	127,948	126,680	125,696	124,746	122,885	121,094
Institutional	2,003	1,943	1,882	1,882	1,882	1,882	1,882
Government	59,420	56,964	54,509	54,509	54,509	54,509	54,509
Commercial	31,787	31,715	31,643	31,643	31,643	31,643	31,643
Industrial	0	0	0	0	0	0	0
Irrigation	38,855	36,185	33,516	33,516	33,516	33,516	33,516
Wholesale	0	0	0	0	0	0	0
Potable Total	**448,069**	**437,343**	**430,532**	**429,270**	**428,050**	**425,499**	**422,787**
Recycled	57,528	48,773	48,773	48,773	48,773	48,773	48,773

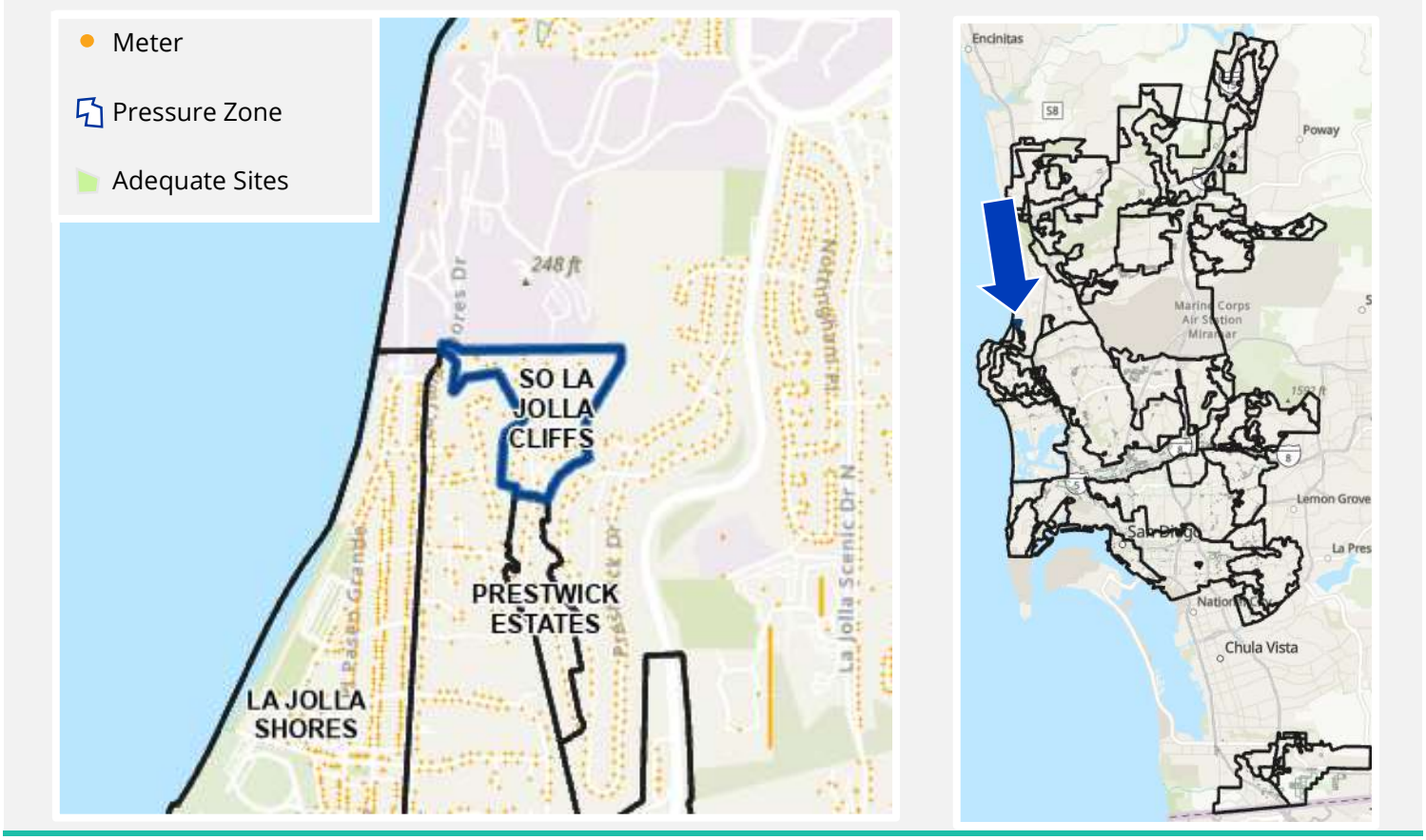
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	208	205	204	204	204	203	202
Multifamily	146	143	142	141	140	138	136
Institutional	2	2	2	2	2	2	2
Government	67	64	61	61	61	61	61
Commercial	36	36	35	35	35	35	35
Industrial	0	0	0	0	0	0	0
Irrigation	44	41	38	38	38	38	38
Wholesale	0	0	0	0	0	0	0
Potable Total	502	490	482	481	479	477	474
Recycled	64	55	55	55	55	55	55

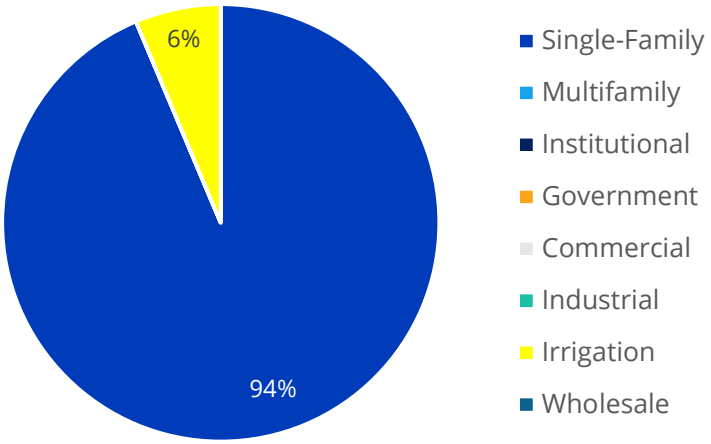
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

SO LA JOLLA CLIFFS | Miramar | HGL 447



The South La Jolla Cliffs pressure zone falls within the Miramar service area and is roughly bordered by Avenida de las Ondas to the west, Birch Aquarium to the north, vacant land to the east, and Ruette Monte Carlo to the south. More than 90% of the water use is commercial, with another 6% irrigation. On average in FY22-24, water use totaled 0.024 mgd and is projected to remain around 0.024 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	95	98	97	96	95	94	92
Household Population	91	94	93	93	92	91	89
Single-Family Households	34	36	36	36	36	36	36
Multifamily Households	10	10	10	10	10	10	10
Total Households	44	46	46	46	46	46	46
Employees	206	206	207	207	208	209	209
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	21,546	21,895	21,855	21,855	21,815	21,775	21,692
Multifamily	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	1,456	1,373	1,289	1,289	1,289	1,289	1,289
Wholesale	0	0	0	0	0	0	0
Potable Total	**23,003**	**23,268**	**23,145**	**23,145**	**23,104**	**23,064**	**22,982**
Recycled	0	0	0	0	0	0	0

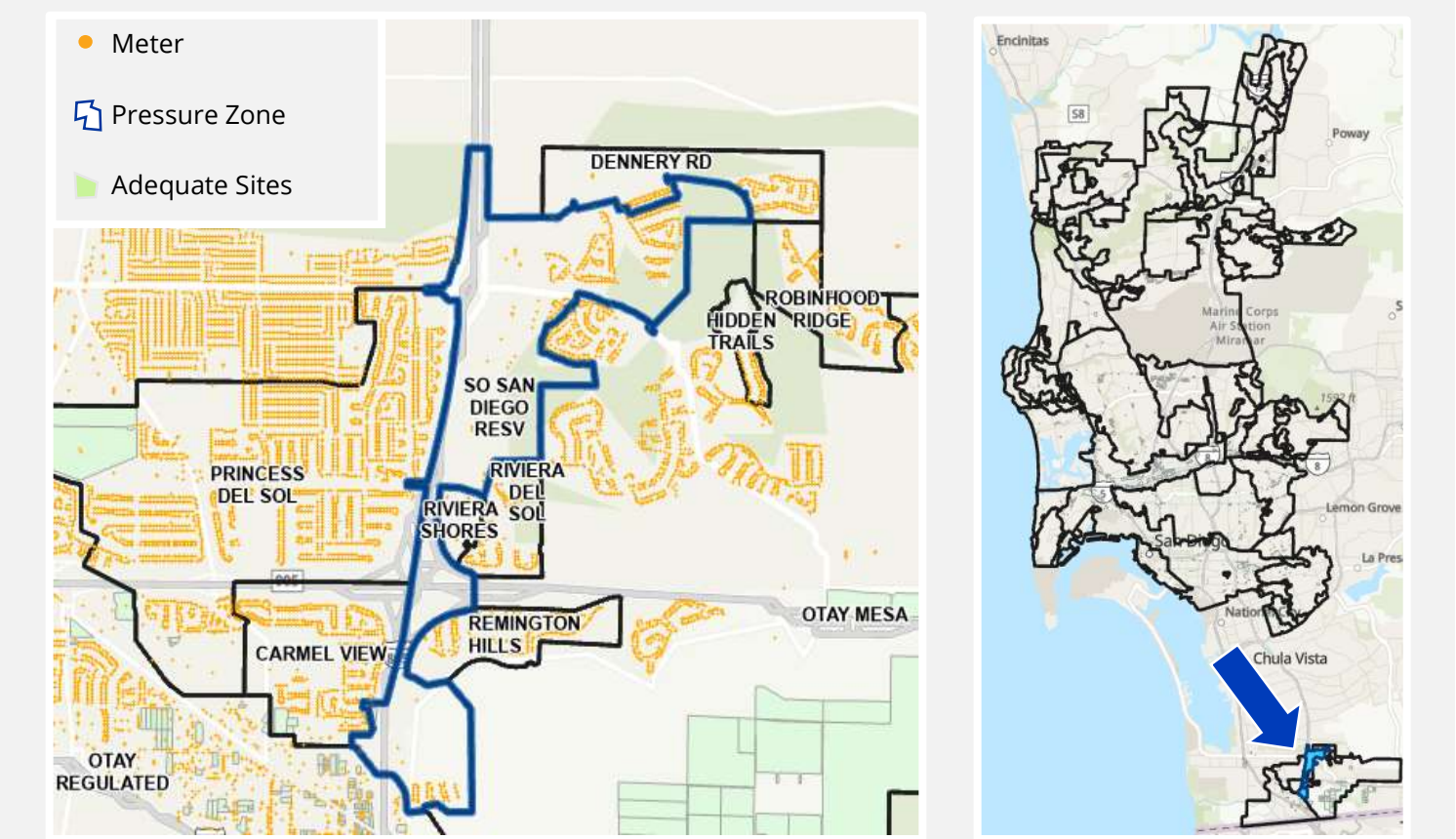
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	24	25	24	24	24	24	24
Multifamily	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	2	2	1	1	1	1	1
Wholesale	0	0	0	0	0	0	0
Potable Total	26	26	26	26	26	26	26
Recycled	0	0	0	0	0	0	0

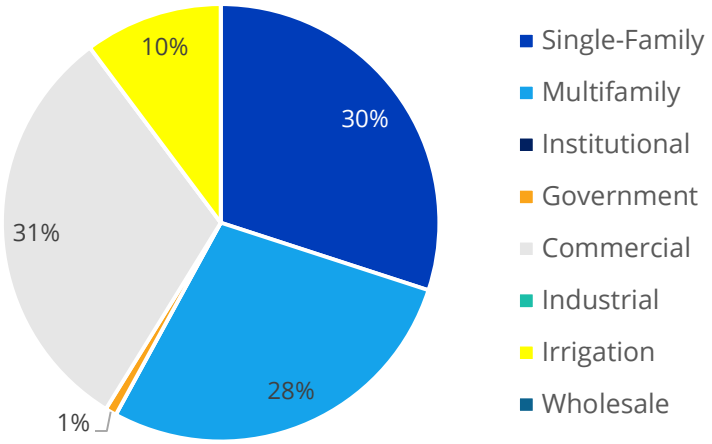
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

SO SAN DIEGO RESV | Otay | HGL 490



The South San Diego Reservoir pressure zone falls within the Otay service area and is bordered by Otay Mesa 680 on the east, Carmel View 346 on the west, Otay Regulated 270 on the south, and Dennery Road. 365 on the north. Major roadways in the zone are I-805 and Route 905 and Ocean View Hills Parkway. More than 30% of the water use is single-family, with another 30% multifamily and 25% commercial. On average in FY22-24, water use totaled 0.27 mgd and is projected to reach 0.37 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	3,026	3,538	3,881	4,243	4,438	4,529	4,604
Household Population	2,891	3,404	3,747	4,109	4,303	4,395	4,471
Single-Family Households	387	586	666	703	764	797	841
Multifamily Households	457	493	544	641	662	694	727
Total Households	844	1,079	1,210	1,344	1,426	1,491	1,568
Employees	2,335	2,346	2,365	2,408	2,431	2,459	2,487
Additional Nonresidential Parcels (count)	n/a	0	0	1	2	2	3
Additional Nonresidential Parcels (square feet)	n/a	0	0	43,685	43,685	43,685	87,369

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	84,235	119,276	132,572	138,236	147,063	151,444	157,039
Multifamily	78,572	77,997	83,752	95,950	97,910	100,592	102,706
Institutional	0	0	0	0	0	0	0
Government	2,288	2,158	2,027	3,241	3,241	3,241	4,456
Commercial	87,063	86,315	85,566	85,566	85,566	85,566	85,566
Industrial	0	0	0	0	0	0	0
Irrigation	28,674	27,136	25,599	25,599	25,599	25,599	25,599
Wholesale	0	0	0	0	0	0	0
Potable Total	**280,832**	**312,882**	**329,516**	**348,592**	**359,379**	**366,443**	**375,366**
Recycled	0	0	0	0	0	0	0

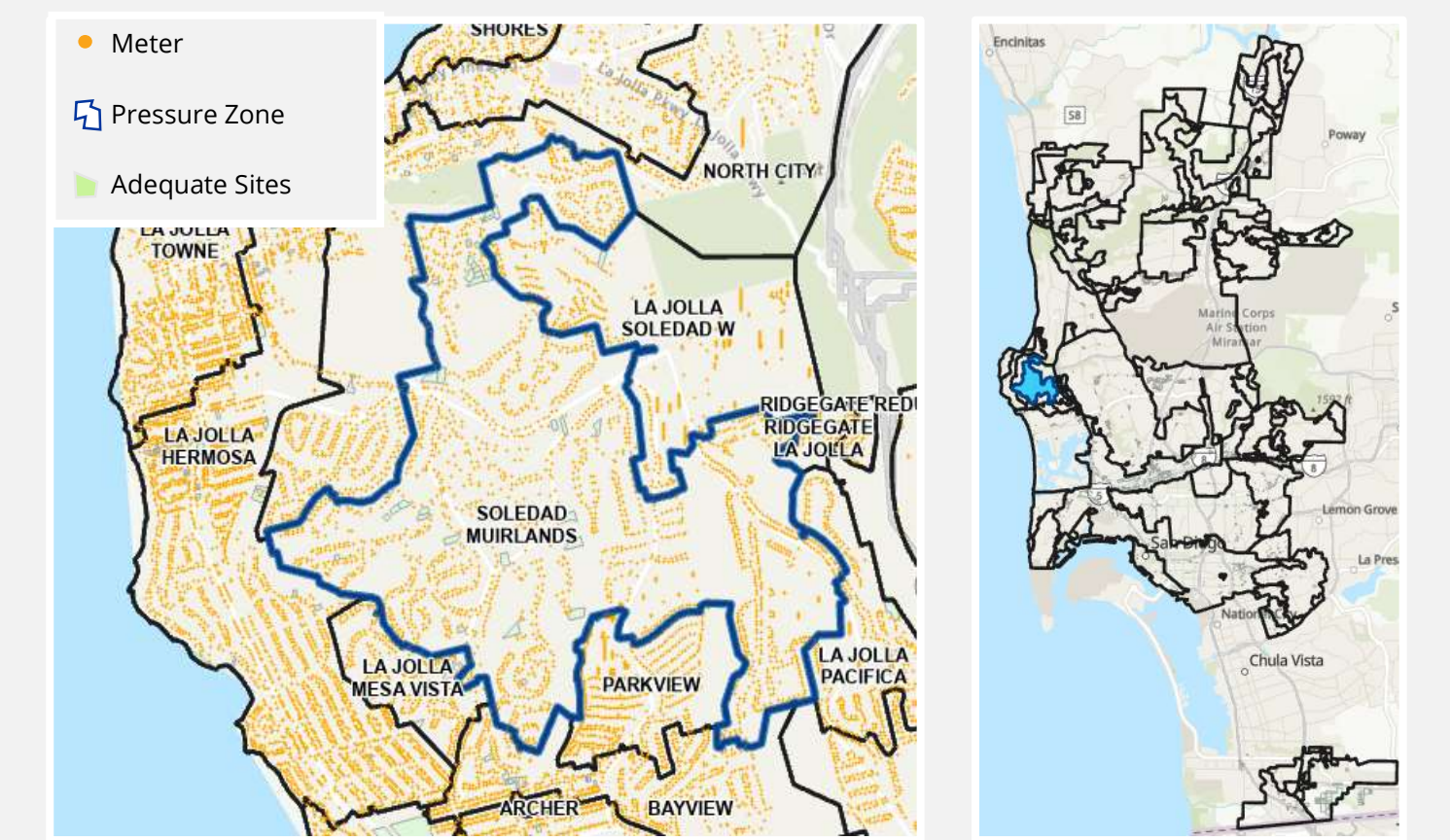
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	94	134	148	155	165	170	176
Multifamily	88	87	94	107	110	113	115
Institutional	0	0	0	0	0	0	0
Government	3	2	2	4	4	4	5
Commercial	98	97	96	96	96	96	96
Industrial	0	0	0	0	0	0	0
Irrigation	32	30	29	29	29	29	29
Wholesale	0	0	0	0	0	0	0
Potable Total	315	350	369	390	403	410	420
Recycled	0	0	0	0	0	0	0

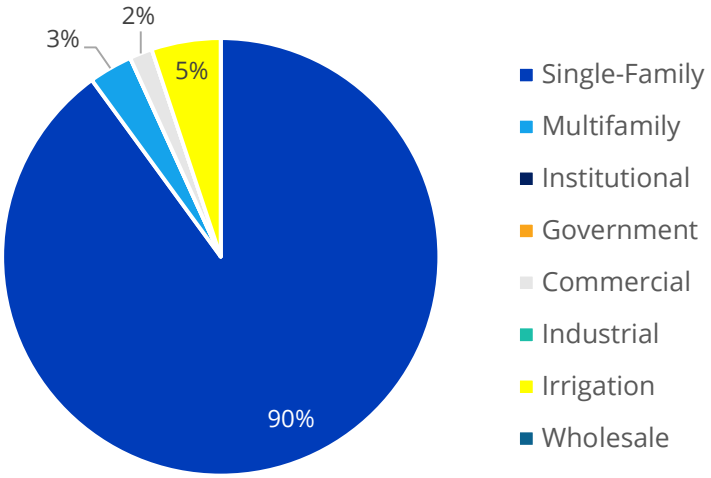
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

SOLEDAD MUIRLANDS | Alvarado/Miramar | HGL 725



The Soledad Muirlands pressure zone falls within the Alvarado/Miramar service area and is bordered by Caminito De La Taza and Del Paso Avenue to the west and partially developed land of the San Carlos 849 zone to the east, north, and south. Being that this is a small, completely residential zone, there are no major roadways that run throughout. Nearly 90% of the water use is single-family, with another 6% irrigation. On average in FY22-24, water use totaled 1.16 mgd and is projected to remain around 1.16 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	4,827	4,949	4,897	4,861	4,827	4,757	4,647
Household Population	4,713	4,835	4,783	4,747	4,713	4,643	4,535
Single-Family Households	1,959	2,052	2,047	2,046	2,045	2,045	2,037
Multifamily Households	9	10	9	9	8	8	10
Total Households	1,968	2,062	2,056	2,055	2,053	2,053	2,047
Employees	1,902	1,910	1,927	1,949	1,986	2,025	2,063
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	962,836	981,216	978,807	977,429	976,206	973,730	968,885
Multifamily	34,464	33,924	33,810	33,473	33,412	32,844	32,443
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	18,003	17,597	17,191	17,191	17,191	17,191	17,191
Industrial	0	0	0	0	0	0	0
Irrigation	54,816	51,448	48,079	48,079	48,079	48,079	48,079
Wholesale	0	0	0	0	0	0	0
Potable Total	**1,070,119**	**1,084,185**	**1,077,887**	**1,076,172**	**1,074,889**	**1,071,845**	**1,066,599**
Recycled	0	0	0	0	0	0	0

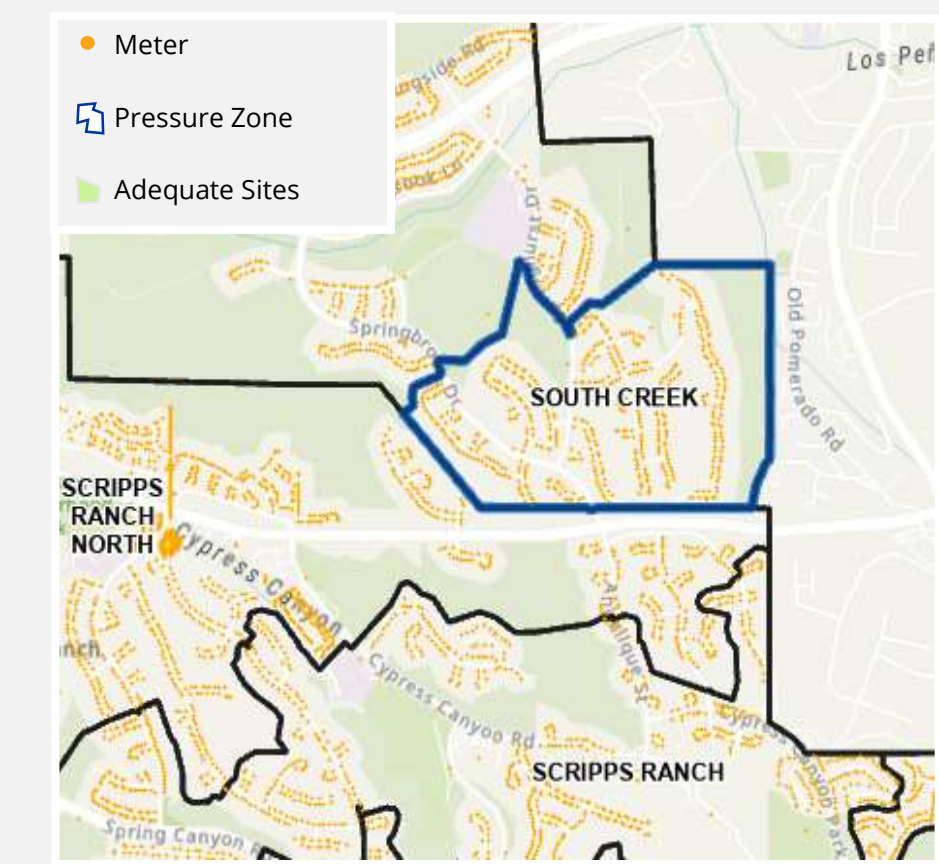
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	1,079	1,099	1,096	1,095	1,093	1,091	1,085
Multifamily	39	38	38	37	37	37	36
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	20	20	19	19	19	19	19
Industrial	0	0	0	0	0	0	0
Irrigation	61	58	54	54	54	54	54
Wholesale	0	0	0	0	0	0	0
Potable Total	1,199	1,214	1,207	1,205	1,204	1,201	1,195
Recycled	0	0	0	0	0	0	0

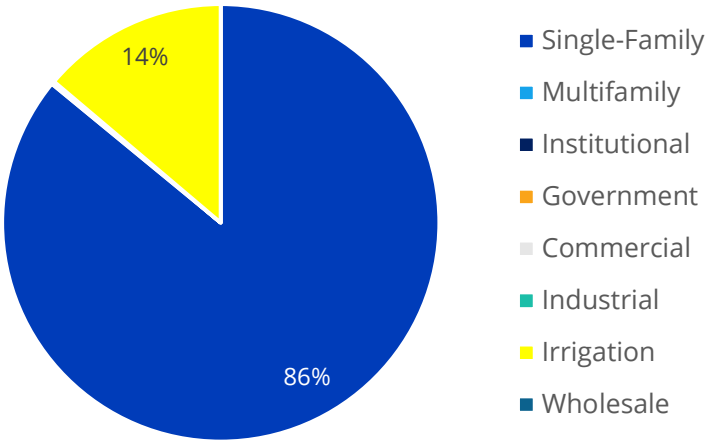
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

SOUTH CREEK | Miramar | HGL 815



The South Creek pressure zone falls within the Miramar service area and is bordered by Aspen View Drive to the west, Old Pomerado Road to the east, the Miramar 712 zone to the north, and Scripps Poway Parkway to the south. Being that this is a small, completely residential zone, there are no major roadways that run throughout. Nearly 90% of the water use is single-family, with another 12% irrigation. On average in FY22-24, water use totaled 0.18 mgd and is projected to decline to 0.17 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	1,519	1,489	1,474	1,461	1,450	1,425	1,385
Household Population	1,467	1,439	1,423	1,410	1,398	1,373	1,336
Single-Family Households	535	540	539	539	539	539	538
Multifamily Households	0	0	0	0	0	0	0
Total Households	535	540	539	539	539	539	538
Employees	593	594	596	599	606	612	617
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	146,027	146,363	145,950	145,719	145,504	145,052	144,272
Multifamily	382	373	370	367	364	359	351
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	23,462	22,412	21,362	21,362	21,362	21,362	21,362
Wholesale	0	0	0	0	0	0	0
Potable Total	**169,871**	**169,148**	**167,682**	**167,448**	**167,231**	**166,773**	**165,984**
Recycled	0	0	0	0	0	0	0

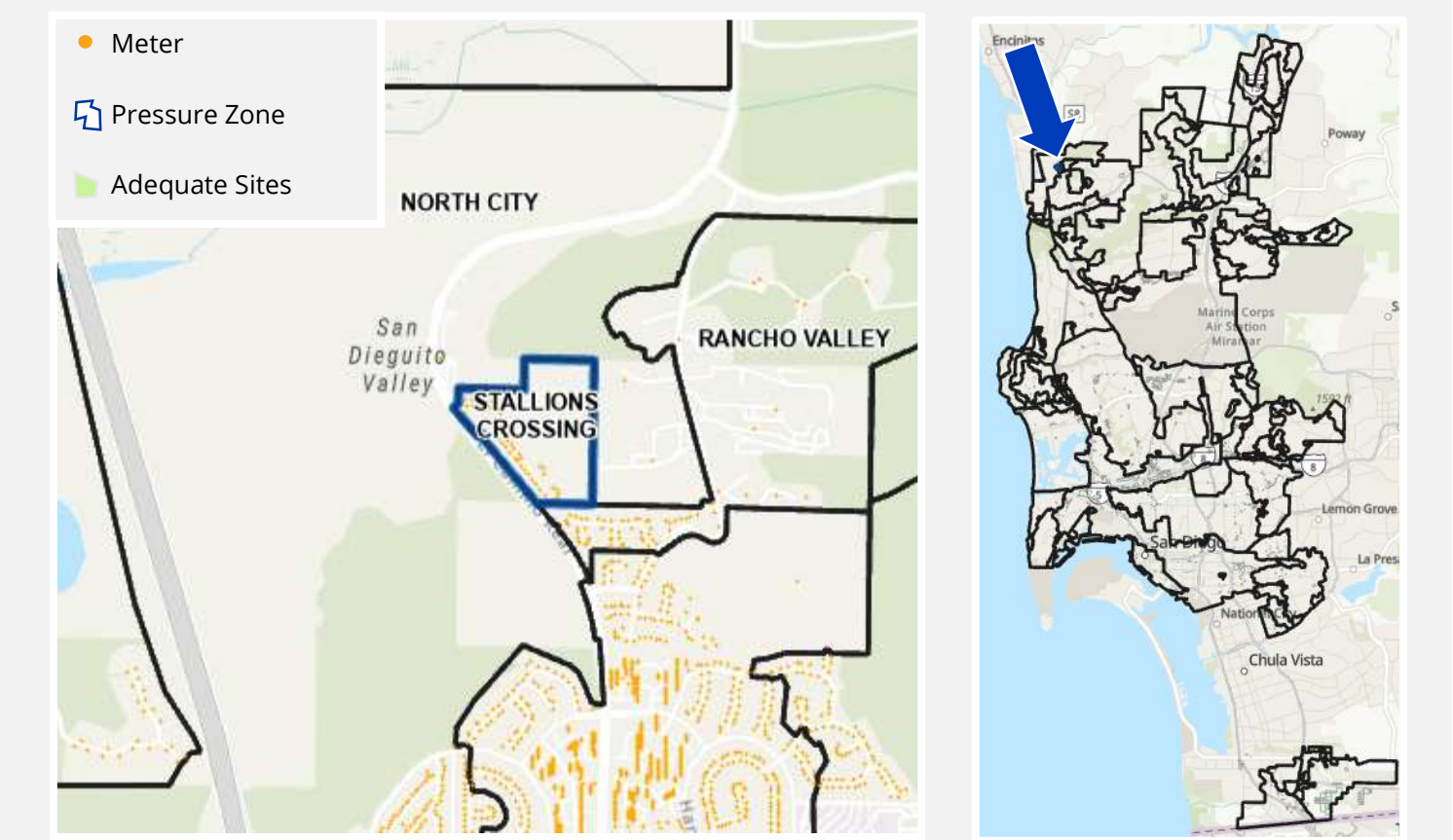
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	164	164	163	163	163	162	162
Multifamily	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	26	25	24	24	24	24	24
Wholesale	0	0	0	0	0	0	0
Potable Total	190	189	188	188	187	187	186
Recycled	0	0	0	0	0	0	0

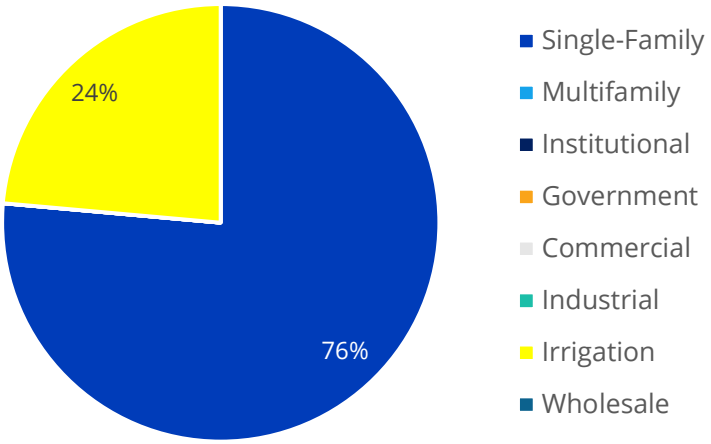
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

STALLIONS CROSSING | Miramar | HGL 263



The Stallions Crossing pressure zone falls within the Miramar service area and is roughly bordered by El Camino Real to the west, Modena Place to the south, and Rancho El Camino Equestrian to the north and east. More than 70% of the water use is single-family, with another 26% irrigation. On average in FY22-24, water use totaled 0.018 mgd and is projected to slightly decline to 0.017 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	129	123	122	121	120	118	115
Household Population	125	120	118	117	116	114	111
Single-Family Households	47	46	46	46	46	46	46
Multifamily Households	10	10	10	10	10	10	10
Total Households	57	56	56	56	56	56	56
Employees	52	52	53	54	55	56	56
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	11,636	11,406	11,372	11,355	11,338	11,303	11,250
Multifamily	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	3,590	3,357	3,124	3,124	3,124	3,124	3,124
Wholesale	0	0	0	0	0	0	0
Potable Total	**15,226**	**14,763**	**14,497**	**14,480**	**14,463**	**14,428**	**14,375**
Recycled	0	0	0	0	0	0	0

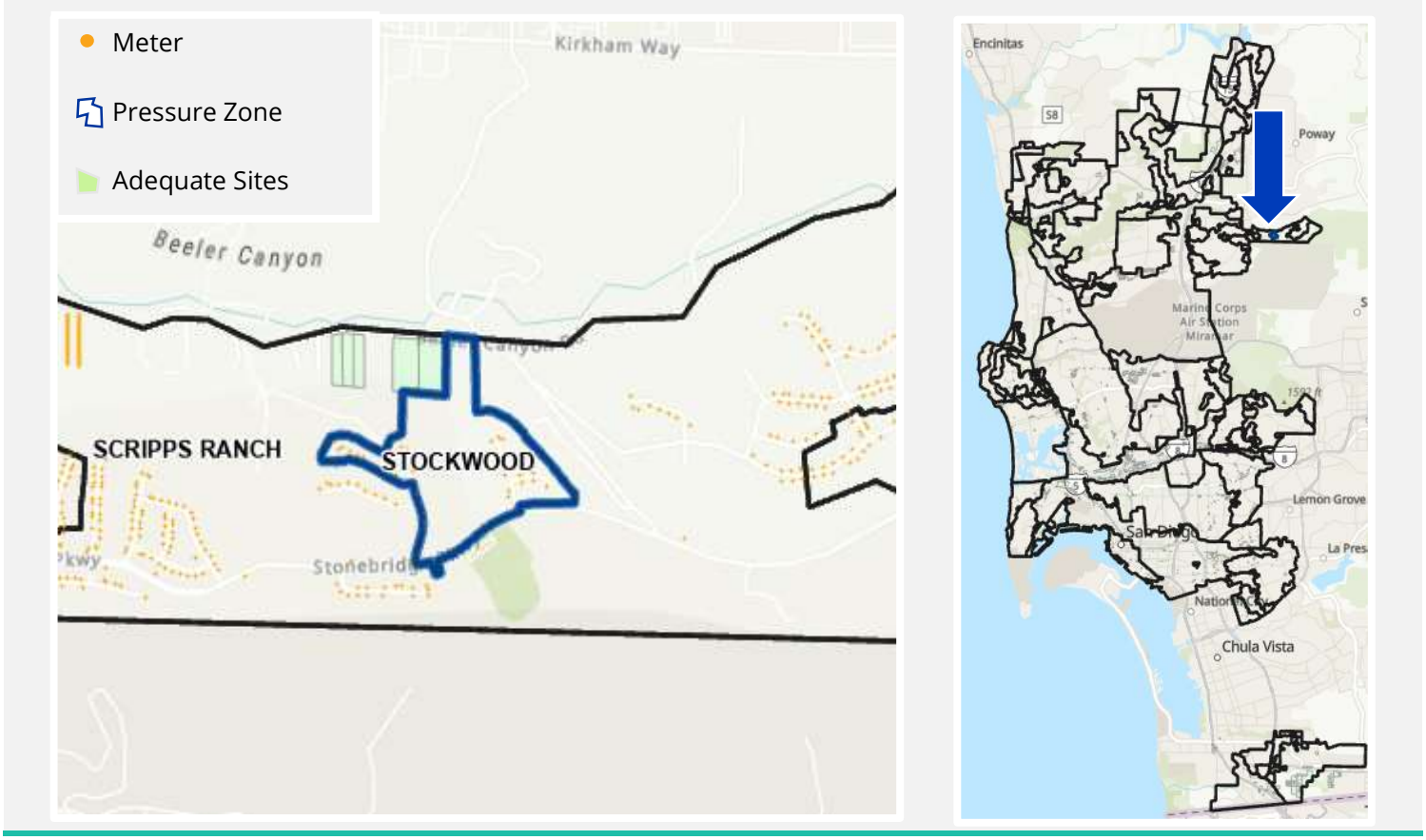
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	13	13	13	13	13	13	13
Multifamily	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	4	4	3	3	3	3	3
Wholesale	0	0	0	0	0	0	0
Potable Total	17	17	16	16	16	16	16
Recycled	0	0	0	0	0	0	0

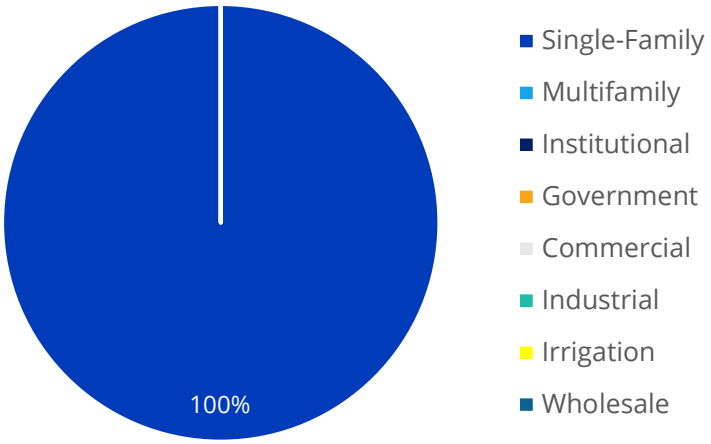
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

STOCKWOOD | Miramar | HGL 925



The Stockwood pressure zone falls within the Miramar service area and is bordered by Beeler Canyon Road to the north, Stonebridge Parkway to the south, Stonecroft Terrace to the west, and Green Valley Court to the east. 100% of the water use is single-family. On average in FY22-24, water use totaled 0.017 mgd and is projected to remain around 0.017 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	108	108	107	106	105	104	101
Household Population	97	97	96	95	94	92	90
Single-Family Households	34	34	34	34	34	34	34
Multifamily Households	1	2	2	2	2	2	2
Total Households	35	36	36	36	36	36	36
Employees	34	34	35	36	36	37	37
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	14,853	14,781	14,754	14,728	14,701	14,646	14,590
Multifamily	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	0	0	0	0	0	0	0
Wholesale	0	0	0	0	0	0	0
Potable Total	**14,853**	**14,781**	**14,754**	**14,728**	**14,701**	**14,646**	**14,590**
Recycled	0	0	0	0	0	0	0

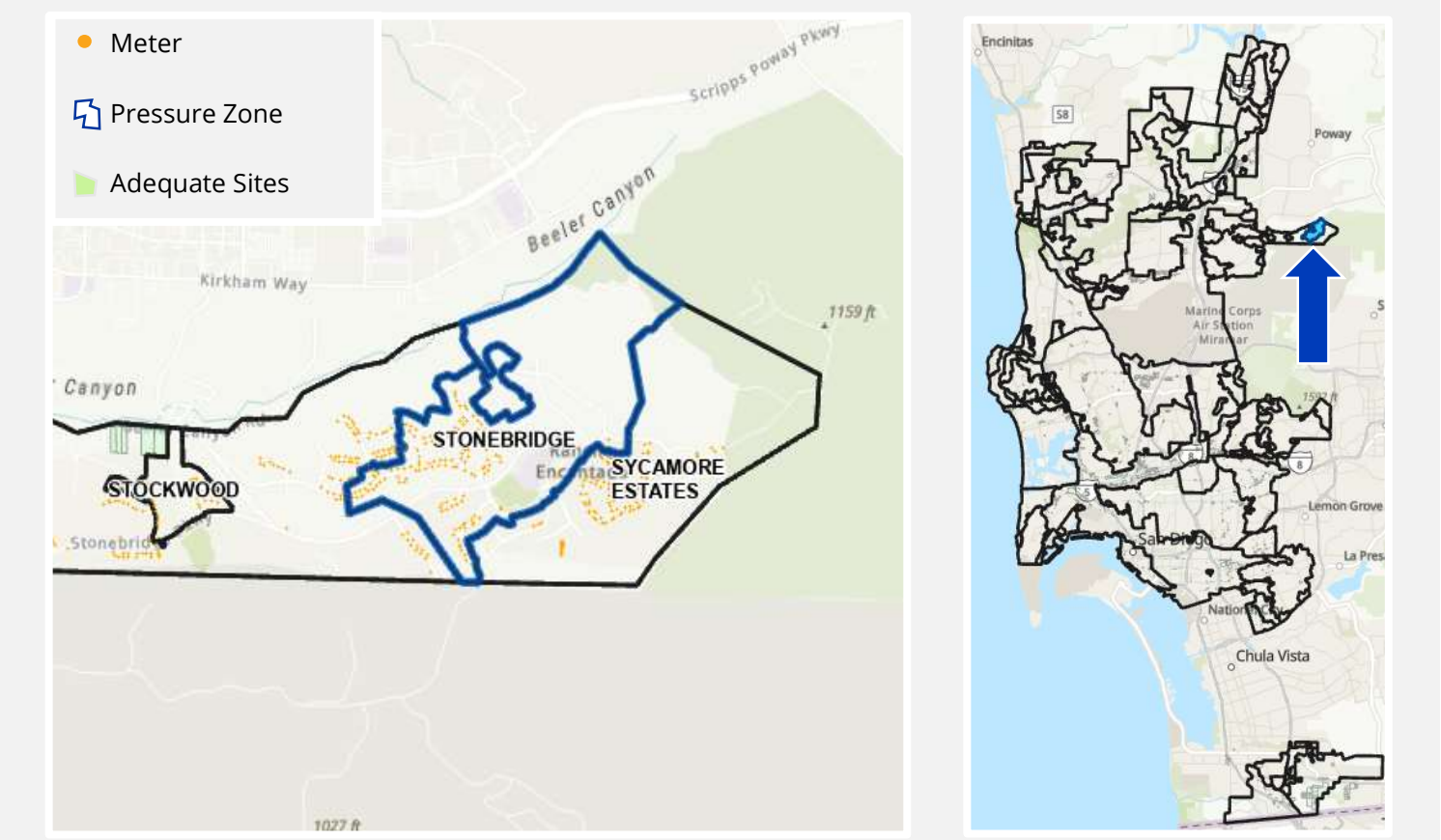
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	17	17	17	16	16	16	16
Multifamily	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	0	0	0	0	0	0	0
Wholesale	0	0	0	0	0	0	0
Potable Total	17	17	17	16	16	16	16
Recycled	0	0	0	0	0	0	0

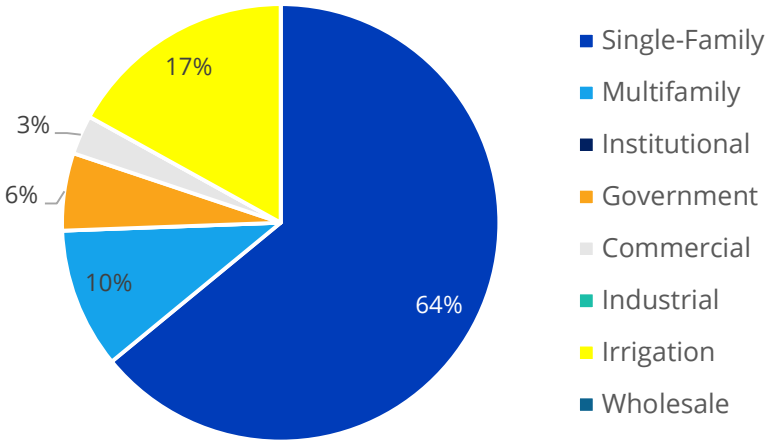
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

STONEBRIDGE | Miramar | HGL 1135



The Stonebridge pressure zone falls within the Miramar service area and is bordered by Montecito to the west, Via Santa Pradera to the east, Beeler Canyon Road to the north, and Sycamore Estates to the south. Being that this is a small residential zone, there are no major roadways that run throughout. 65% of the water use is single-family, with another 17% irrigation. On average in FY22-24, water use totaled 0.26 mgd and is projected to slightly decline to 0.25 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	865	866	857	849	843	829	809
Household Population	773	775	766	758	752	738	719
Single-Family Households	239	246	245	245	245	245	245
Multifamily Households	35	36	36	36	36	36	36
Total Households	274	282	281	281	281	281	281
Employees	270	272	277	282	288	292	296
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	147,495	148,591	148,149	147,882	147,681	147,205	146,548
Multifamily	23,842	23,287	23,118	22,901	22,738	22,358	21,841
Institutional	0	0	0	0	0	0	0
Government	13,217	12,744	12,271	12,271	12,271	12,271	12,271
Commercial	6,656	6,327	5,997	5,997	5,997	5,997	5,997
Industrial	0	0	0	0	0	0	0
Irrigation	39,017	36,904	34,790	34,790	34,790	34,790	34,790
Wholesale	0	0	0	0	0	0	0
Potable Total	**230,226**	**227,853**	**224,326**	**223,842**	**223,478**	**222,622**	**221,448**
Recycled	0	0	0	0	0	0	0

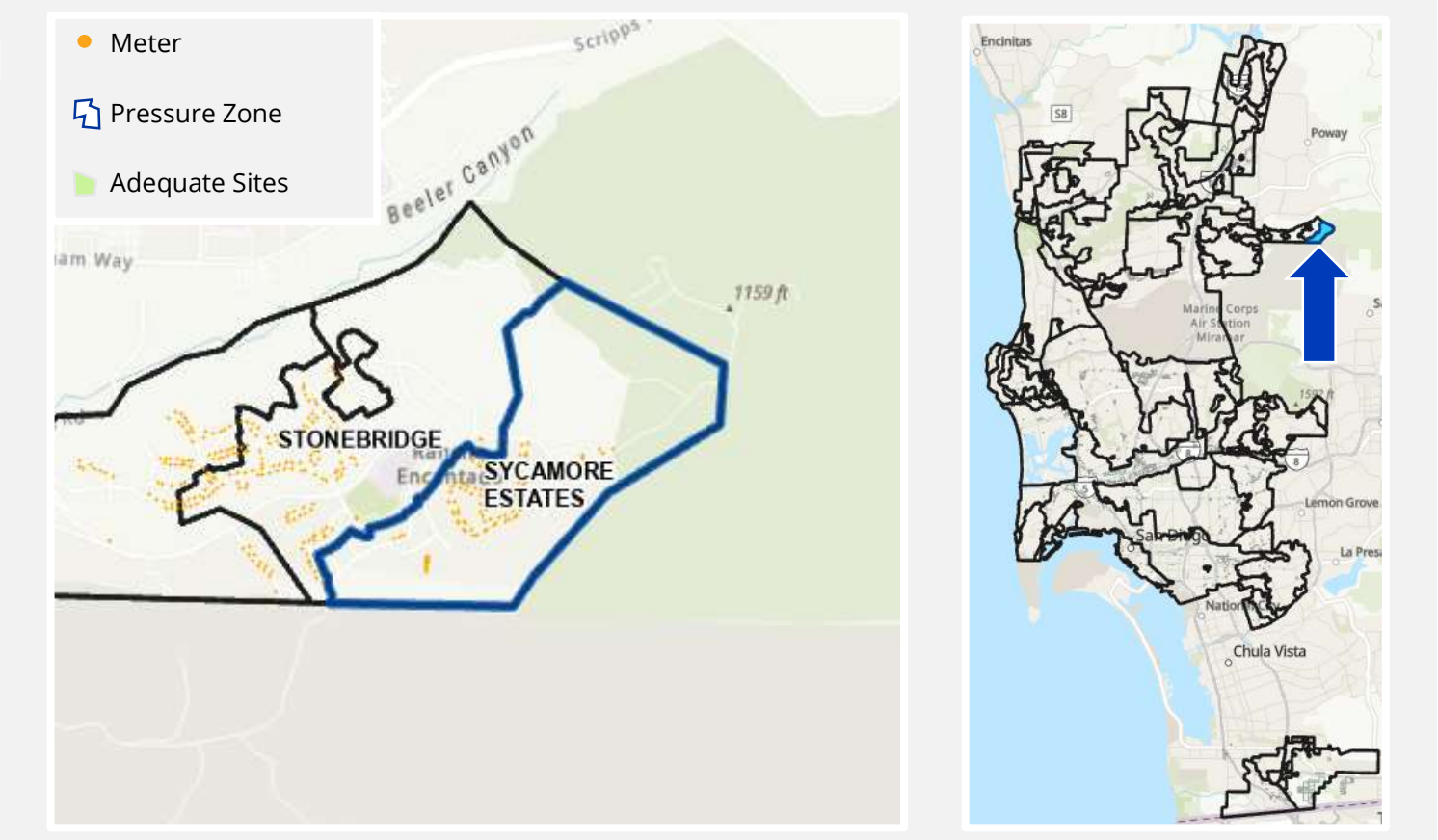
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	165	166	166	166	165	165	164
Multifamily	27	26	26	26	25	25	24
Institutional	0	0	0	0	0	0	0
Government	15	14	14	14	14	14	14
Commercial	7	7	7	7	7	7	7
Industrial	0	0	0	0	0	0	0
Irrigation	44	41	39	39	39	39	39
Wholesale	0	0	0	0	0	0	0
Potable Total	258	255	251	251	250	249	248
Recycled	0	0	0	0	0	0	0

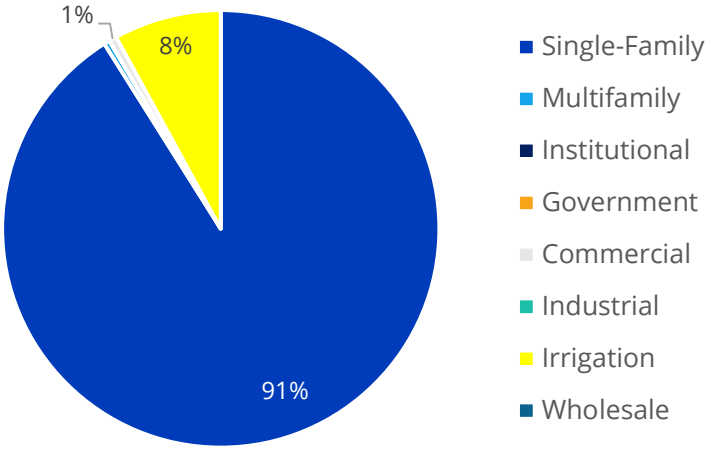
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

SYCAMORE ESTATES | Miramar | HGL 1250



The Sycamore Estates pressure zone falls within the Miramar service area and is bordered by Montecito to the west, Via Santa Pradera to the east, Beeler Canyon Road to the north, and Sycamore Estates to the south. Being that this is a small residential zone, there are no major roadways that run throughout. More than 90% of the water use is single-family, with another 7% irrigation. On average in FY22-24, water use totaled 0.14 mgd and is projected to remain around 0.140 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	691	691	684	678	673	662	646
Household Population	617	619	612	606	600	590	574
Single-Family Households	202	207	206	206	206	206	206
Multifamily Households	17	18	18	18	18	18	18
Total Households	219	225	224	224	224	224	224
Employees	216	218	222	225	230	234	237
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	111,178	112,036	111,659	111,470	111,280	110,960	110,437
Multifamily	537	526	522	518	513	506	493
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	677	677	677	677	677	677	677
Industrial	0	0	0	0	0	0	0
Irrigation	9,705	9,183	8,662	8,662	8,662	8,662	8,662
Wholesale	0	0	0	0	0	0	0
Potable Total	**122,097**	**122,422**	**121,520**	**121,327**	**121,132**	**120,804**	**120,269**
Recycled	0	0	0	0	0	0	0

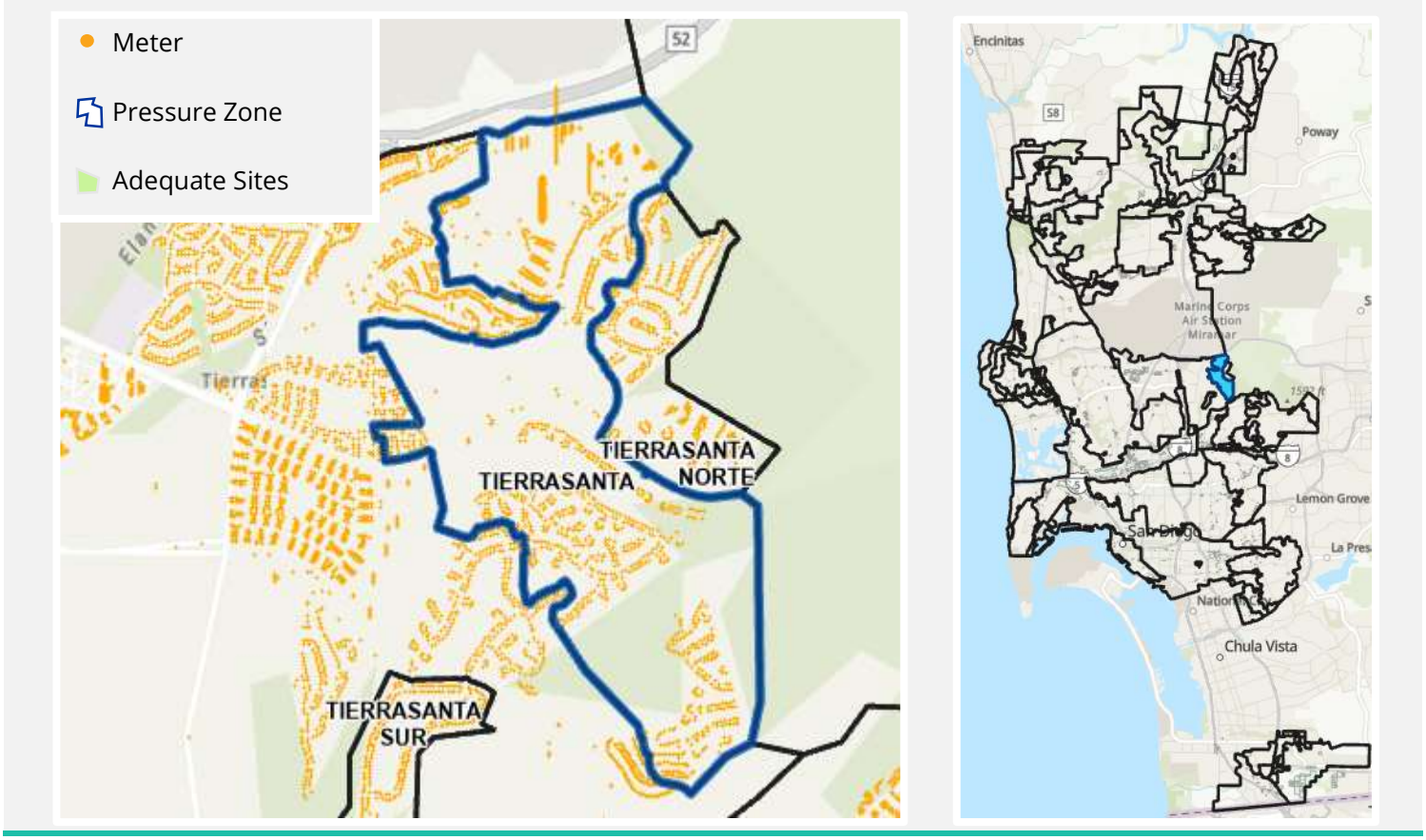
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	125	125	125	125	125	124	124
Multifamily	1	1	1	1	1	1	1
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	1	1	1	1	1	1	1
Industrial	0	0	0	0	0	0	0
Irrigation	11	10	10	10	10	10	10
Wholesale	0	0	0	0	0	0	0
Potable Total	137	137	136	136	136	135	135
Recycled	0	0	0	0	0	0	0

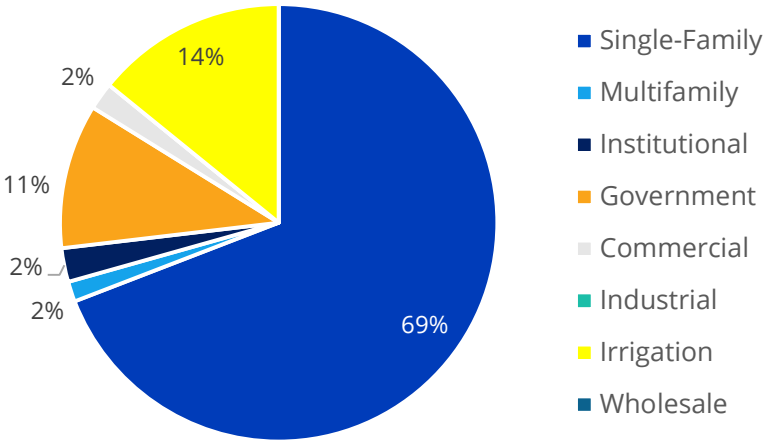
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

TIERRASANTA | Alvarado/Miramar | HGL 752



The Tierrasanta pressure zone falls within the Alvarado/Miramar service area and is bordered by US 52 to the north, Kearny Mesa to the west, Mission Trails Regional Park to the east, and Colina Dorada Drive to the south. Clairemont Mesa Boulevard and Via Valerta are two of the main roadways that run through this zone. Nearly 70% of the water use is single-family, with another 15% irrigation and 12% government. On average in FY22-24, water use totaled 0.52 mgd and is projected to slightly decline to 0.50 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	5,631	5,193	5,141	5,093	5,053	4,962	4,831
Household Population	5,631	5,193	5,141	5,093	5,053	4,962	4,831
Single-Family Households	1,929	1,859	1,857	1,856	1,856	1,855	1,854
Multifamily Households	373	335	335	335	335	335	335
Total Households	2,302	2,194	2,192	2,191	2,191	2,190	2,189
Employees	956	961	974	992	1,014	1,036	1,058
Additional Nonresidential Parcels (count)	n/a	0	0	0	1	1	1
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	581,390	581,390	581,390

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	343,232	328,773	327,896	327,212	326,747	325,561	323,881
Multifamily	7,420	11,954	7,145	7,088	7,038	6,927	6,765
Institutional	12,341	11,773	11,206	11,206	17,303	17,303	17,303
Government	53,097	51,379	49,662	49,662	49,662	49,662	49,662
Commercial	10,025	9,759	9,492	9,492	9,492	9,492	9,492
Industrial	0	0	0	0	0	0	0
Irrigation	70,172	66,251	62,330	62,330	62,330	62,330	62,330
Wholesale	0	0	0	0	0	0	0
Potable Total	**496,288**	**479,889**	**467,730**	**466,989**	**472,572**	**471,275**	**469,433**
Recycled	0	0	0	0	0	0	0

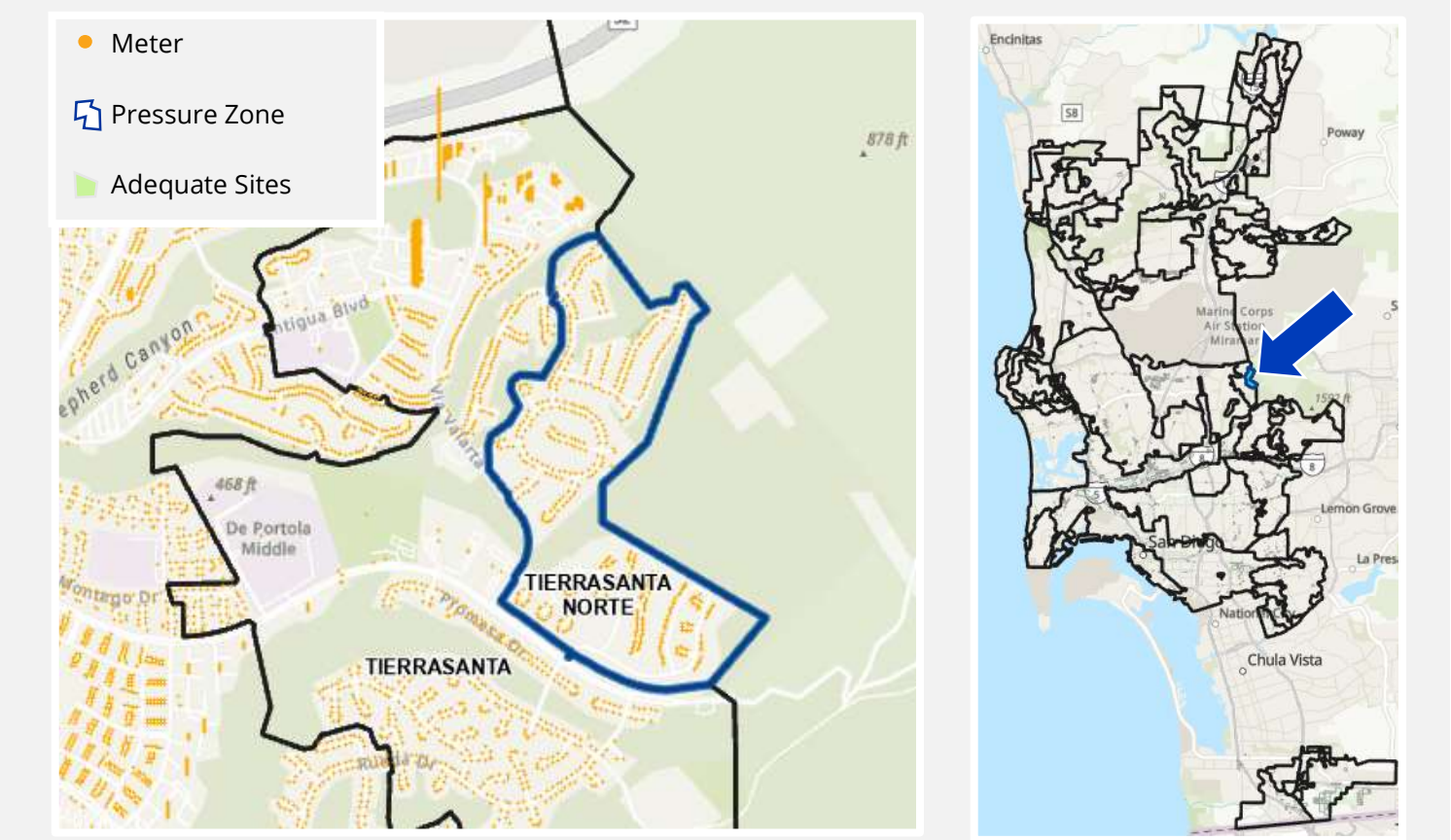
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	384	368	367	367	366	365	363
Multifamily	8	13	8	8	8	8	8
Institutional	14	13	13	13	19	19	19
Government	59	58	56	56	56	56	56
Commercial	11	11	11	11	11	11	11
Industrial	0	0	0	0	0	0	0
Irrigation	79	74	70	70	70	70	70
Wholesale	0	0	0	0	0	0	0
Potable Total	556	538	524	523	529	528	526
Recycled	0	0	0	0	0	0	0

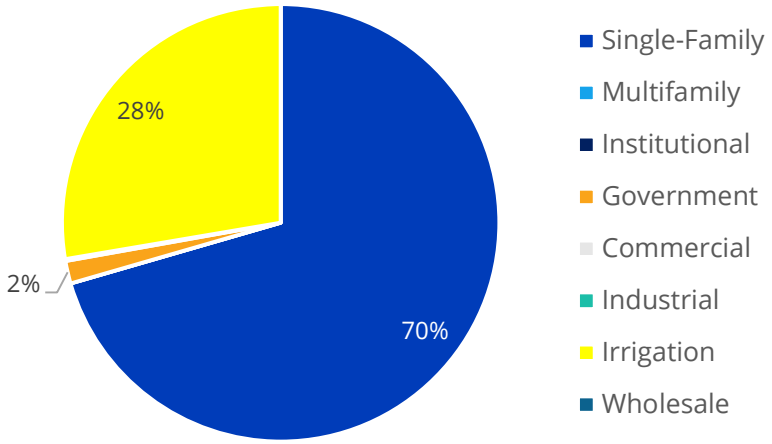
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

TIERRASANTA NORTE | Alvarado/Miramar | HGL 900



The Tierrasanta Norte pressure zone falls within the Alvarado/Miramar service area and is roughly bordered by Clairemont Mesa Boulevard to the south, Via Valarta and Via Playa de Cortes to the west, Mission Trails Openspace Park to the north, and Tierrasanta Park to the east. Nearly 70% of the water use is single-family, with another 30% irrigation. On average in FY22-24, water use totaled 0.14 mgd and is projected to decline to 0.13 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	1,219	1,117	1,106	1,096	1,087	1,067	1,039
Household Population	1,219	1,117	1,106	1,096	1,087	1,067	1,039
Single-Family Households	511	493	492	492	492	492	491
Multifamily Households	2	0	0	0	0	0	0
Total Households	513	493	492	492	492	492	491
Employees	198	199	200	203	208	212	215
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	90,961	86,967	86,663	86,521	86,393	86,103	85,574
Multifamily	0	250	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	2,175	2,017	1,860	1,860	1,860	1,860	1,860
Commercial	167	167	167	167	167	167	167
Industrial	0	0	0	0	0	0	0
Irrigation	35,674	33,593	31,512	31,512	31,512	31,512	31,512
Wholesale	0	0	0	0	0	0	0
Potable Total	**128,976**	**122,994**	**120,202**	**120,060**	**119,931**	**119,642**	**119,113**
Recycled	0	0	0	0	0	0	0

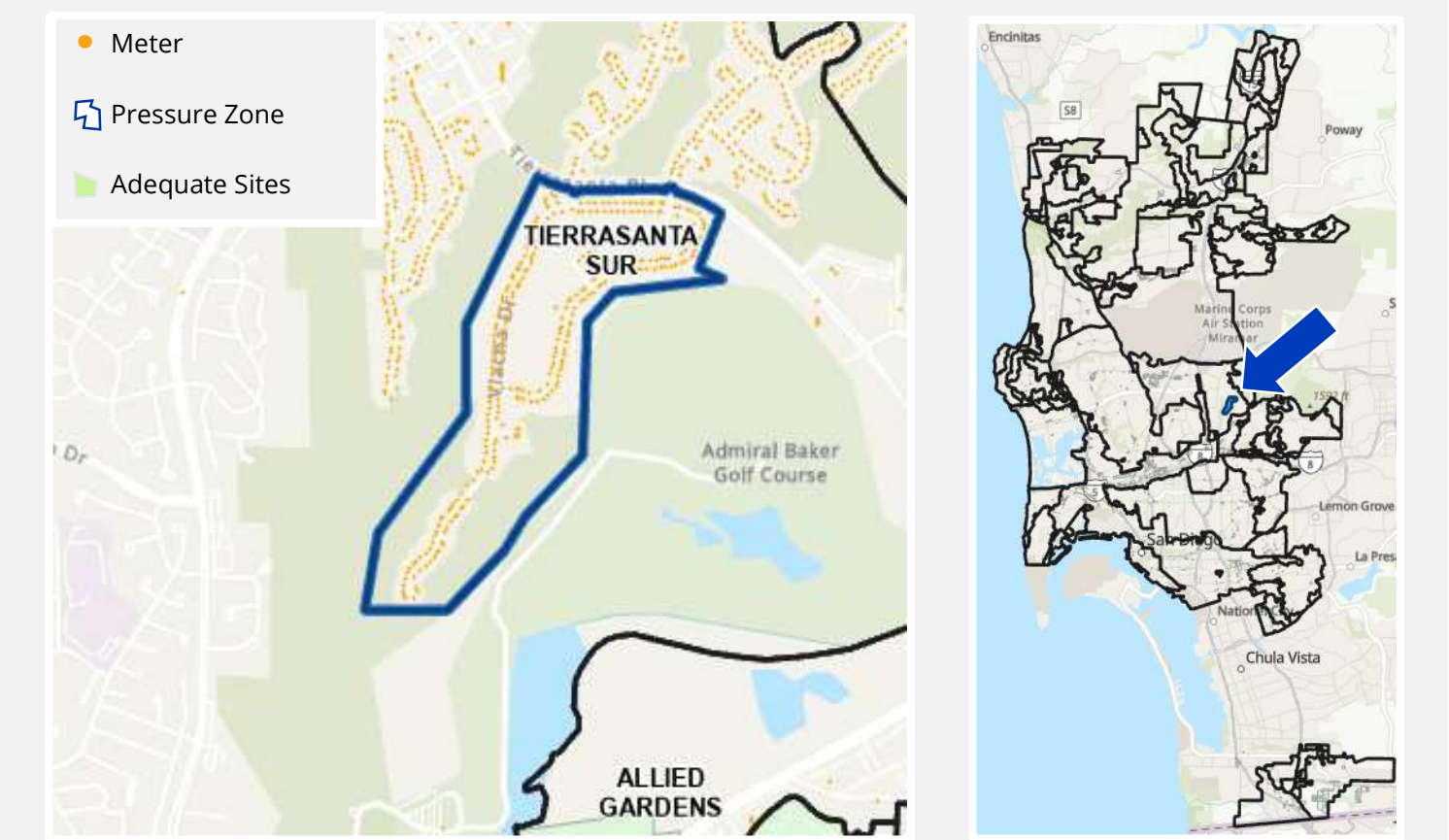
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	102	97	97	97	97	96	96
Multifamily	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	2	2	2	2	2	2	2
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	40	38	35	35	35	35	35
Wholesale	0	0	0	0	0	0	0
Potable Total	144	138	135	134	134	134	133
Recycled	0	0	0	0	0	0	0

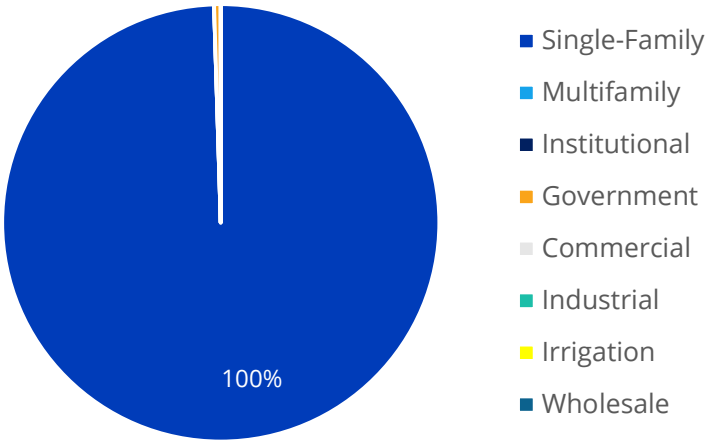
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

TIERRASANTA SUR | Alvarado/Miramar | HGL 450



The Tierrasanta Sur pressure zone falls within the Alvarado/Miramar service area and is roughly bordered by Tierrasanta Boulevard to the north, Catamarca Drive and Admiral Baker Golf Course to the east, and Viacha Drive to the south and west. Being that it's a very small residential zone, there are no major roadways that traverse throughout, but it is located close to I-15. 100% of the water use is single-family. On average in FY22-24, water use totaled 0.075 mgd and is projected to reach 0.090 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	2,430	2,644	2,619	2,596	2,574	2,529	2,461
Household Population	2,430	2,644	2,619	2,596	2,574	2,529	2,461
Single-Family Households	293	335	335	335	335	335	334
Multifamily Households	867	959	959	959	959	958	957
Total Households	1,160	1,294	1,294	1,294	1,294	1,293	1,291
Employees	1,124	1,130	1,142	1,178	1,252	1,269	1,285
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	68,618	75,466	75,353	75,249	75,149	74,950	74,515
Multifamily	0	8,567	8,567	8,567	8,567	8,692	8,692
Institutional	0	0	0	0	0	0	0
Government	329	311	293	293	293	293	293
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	0	0	0	0	0	0	0
Wholesale	0	0	0	0	0	0	0
Potable Total	**68,947**	**84,344**	**84,214**	**84,110**	**84,009**	**83,936**	**83,500**
Recycled	0	0	0	0	0	0	0

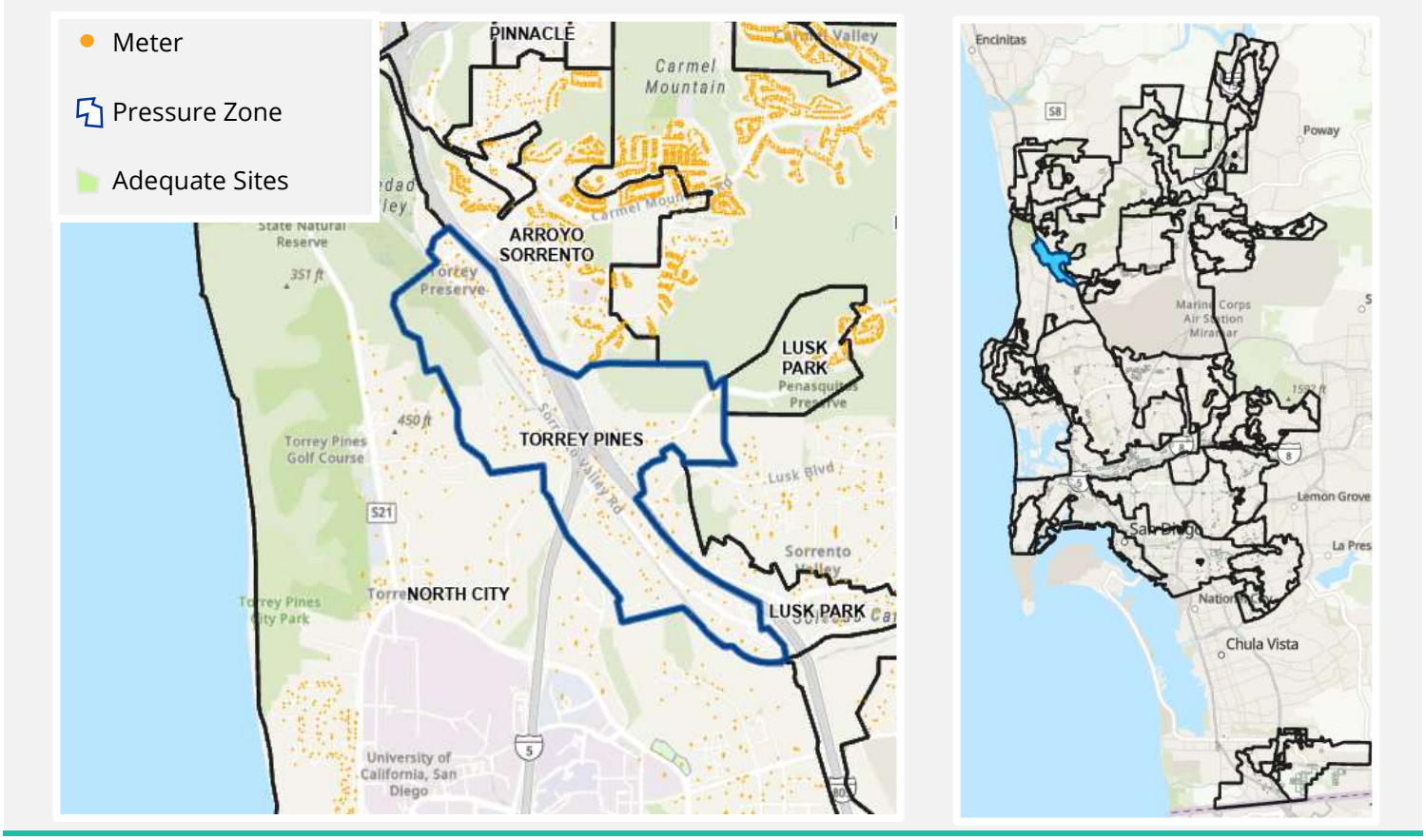
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	77	85	84	84	84	84	83
Multifamily	0	10	10	10	10	10	10
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	0	0	0	0	0	0	0
Wholesale	0	0	0	0	0	0	0
Potable Total	77	94	94	94	94	94	94
Recycled	0	0	0	0	0	0	0

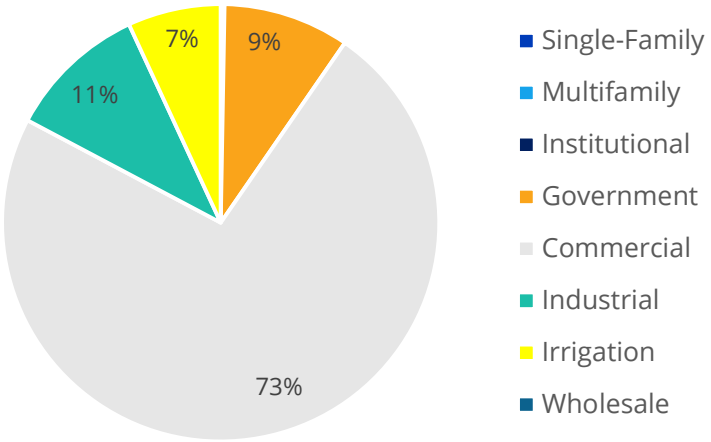
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

TORREY PINES | Miramar | HGL 330



The Torrey Pines pressure zone falls within the Miramar service area and is bordered by Carmel Mountain Road and undeveloped land to the north, railroad tracks south of Carroll Canyon Road to the south, I-805 and North City 1 610 to the east, and North City 2 610 to the west. I-5, Sorrento Valley Road, and Roselle Street are a few of the main roadways that traverse this pressure zone. More than 70% of the water use is commercial, with another 10% industrial and 10% government. On average in FY22-24, water use totaled 0.31 mgd and is projected to reach 0.32 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	784	743	738	733	744	736	725
Household Population	784	743	738	733	744	736	725
Single-Family Households	0	0	0	0	0	0	0
Multifamily Households	337	326	326	327	333	335	337
Total Households	337	326	326	327	333	335	337
Employees	20,107	20,163	20,248	20,351	20,479	20,549	20,618
Additional Nonresidential Parcels (count)	n/a	0	2	2	3	4	4
Additional Nonresidential Parcels (square feet)	n/a	0	210,646	210,646	221,762	421,292	421,292

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	0	0	0	0	0	0	0
Multifamily	0	1,375	0	102	706	905	1,099
Institutional	898	898	898	898	898	898	898
Government	30,295	29,789	29,283	29,283	29,283	29,283	29,283
Commercial	237,408	236,845	236,282	236,282	236,282	236,282	236,282
Industrial	33,586	33,586	37,142	37,142	37,309	40,699	40,699
Irrigation	22,360	21,120	19,880	19,880	19,880	19,880	19,880
Wholesale	0	0	0	0	0	0	0
Potable Total	**324,546**	**323,612**	**323,485**	**323,587**	**324,358**	**327,946**	**328,140**
Recycled	0	0	0	0	0	0	0

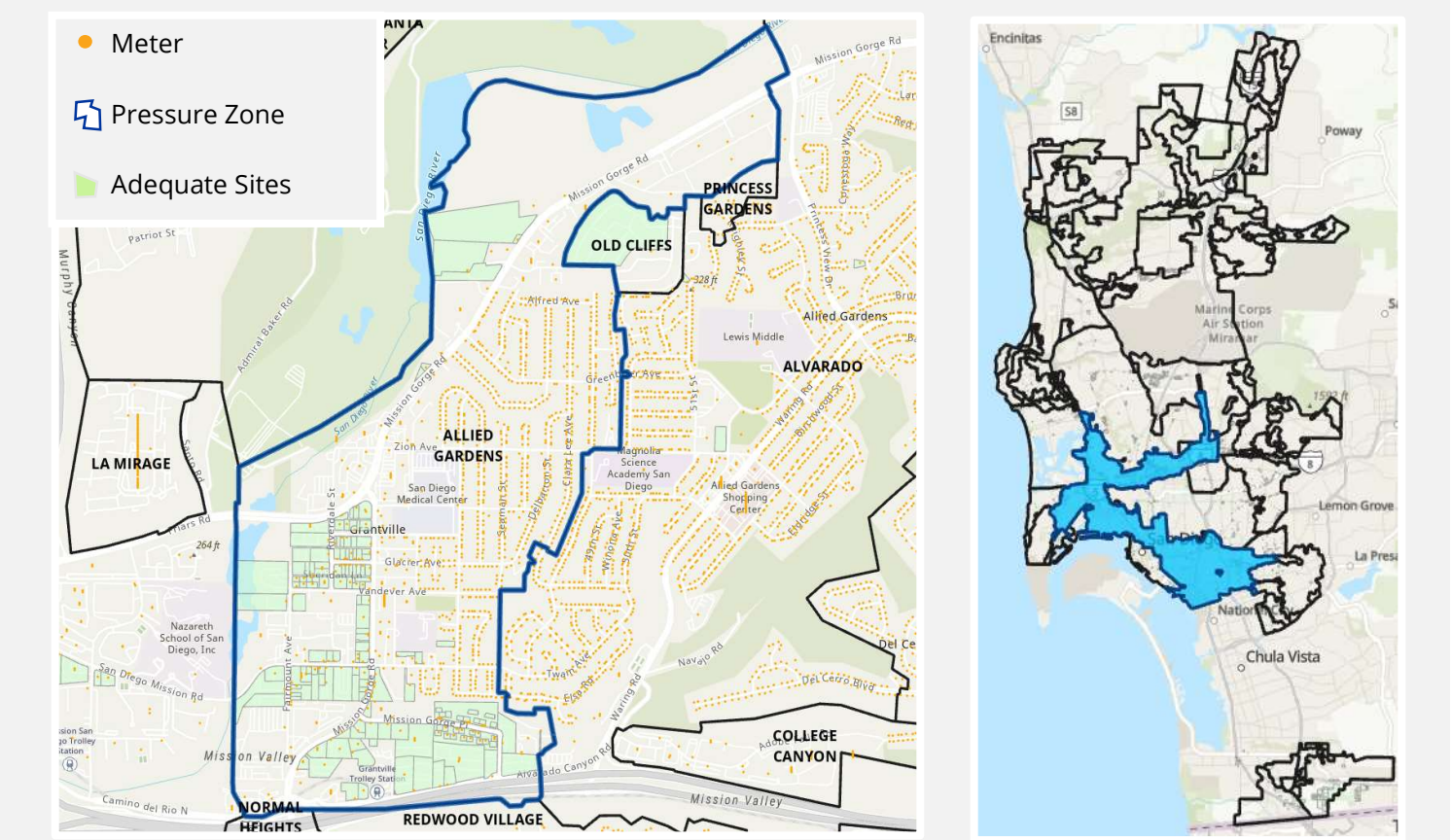
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	0	0	0	0	0	0	0
Multifamily	0	2	0	0	1	1	1
Institutional	1	1	1	1	1	1	1
Government	34	33	33	33	33	33	33
Commercial	266	265	265	265	265	265	265
Industrial	38	38	42	42	42	46	46
Irrigation	25	24	22	22	22	22	22
Wholesale	0	0	0	0	0	0	0
Potable Total	364	362	362	362	363	367	368
Recycled	0	0	0	0	0	0	0

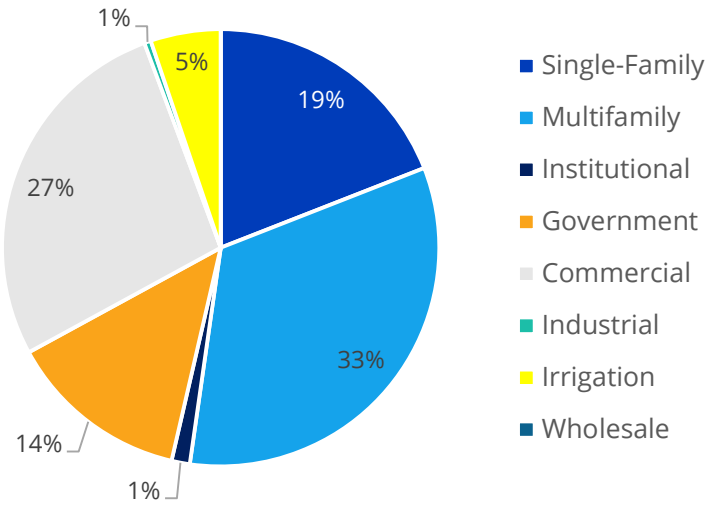
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

UNIVERSITY HEIGHTS_1 | Alvarado | HGL 390



The University Heights 1 pressure zone falls within the Alvarado service area and is roughly bordered by Northwest Mesa and Normal Heights to the north, Catalina and Point Loma to the west, Redwood Village and Paradise Mesa to the east, and Division Street to the south. I-5, I-8, and I-805 are all major roadways that run throughout this zone. More than 30% of the water use is multifamily, with another 28% commercial and 20% single-family. On average in FY22-24, water use totaled 17.61 mgd and is projected to reach 19.56 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	191,414	200,678	212,972	215,785	221,425	224,222	225,289
Household Population	174,458	184,218	196,388	199,055	204,470	207,370	208,943
Single-Family Households	19,599	19,829	19,742	19,613	19,412	19,159	18,735
Multifamily Households	50,802	58,214	65,401	67,772	71,450	74,740	78,327
Total Households	70,401	78,043	85,143	87,385	90,862	93,899	97,062
Employees	210,691	211,425	214,100	216,505	221,274	223,835	226,396
Additional Nonresidential Parcels (count)	n/a	8	42	73	134	171	202
Additional Nonresidential Parcels (square feet)	n/a	154,080	883,838	1,540,956	2,807,061	4,208,148	4,808,979

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	3,457,981	3,467,590	3,440,186	3,413,621	3,378,620	3,333,491	3,263,008
Multifamily	6,027,282	6,551,452	7,172,784	7,351,024	7,658,720	7,889,289	8,108,849
Institutional	243,822	239,271	234,720	234,720	234,720	234,720	234,720
Government	2,443,682	2,416,100	2,388,656	2,388,794	2,389,805	2,389,943	2,389,943
Commercial	4,946,244	4,936,405	4,952,120	4,998,208	5,055,288	5,118,725	5,147,471
Industrial	87,735	87,735	88,464	89,193	90,760	91,489	92,217
Irrigation	941,497	890,917	840,337	840,337	840,337	840,337	840,337
Wholesale	0	0	0	0	0	0	0
Potable Total	**18,148,243**	**18,589,471**	**19,117,268**	**19,315,897**	**19,648,251**	**19,897,994**	**20,076,545**
Recycled	77,827	73,909	73,909	73,909	73,909	73,909	73,909

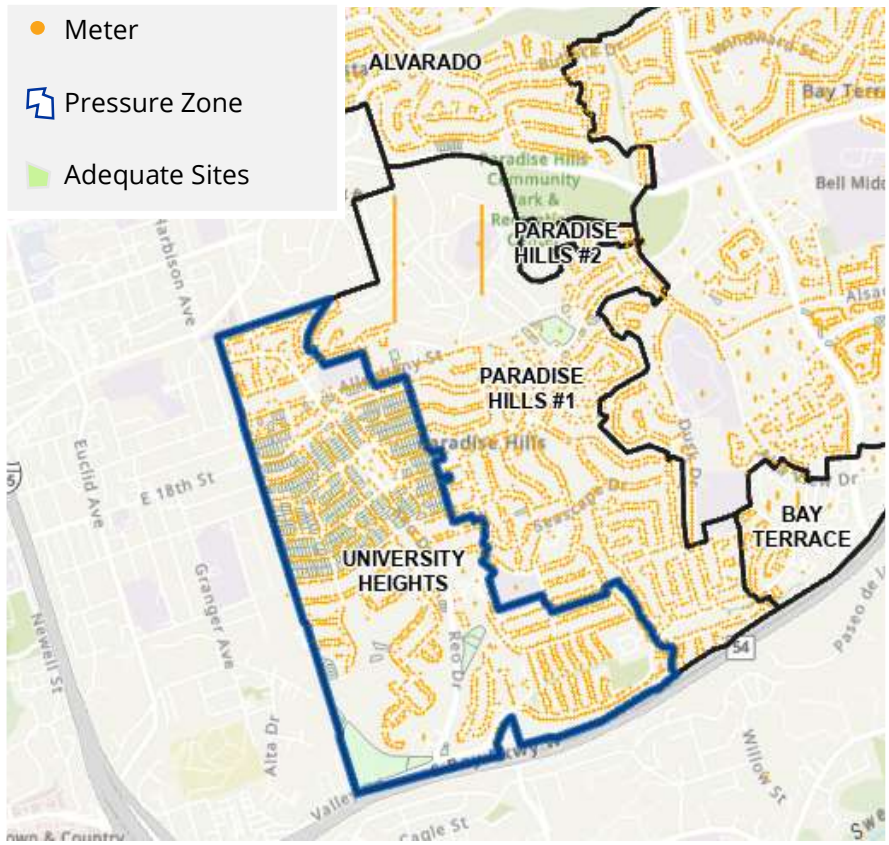
Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

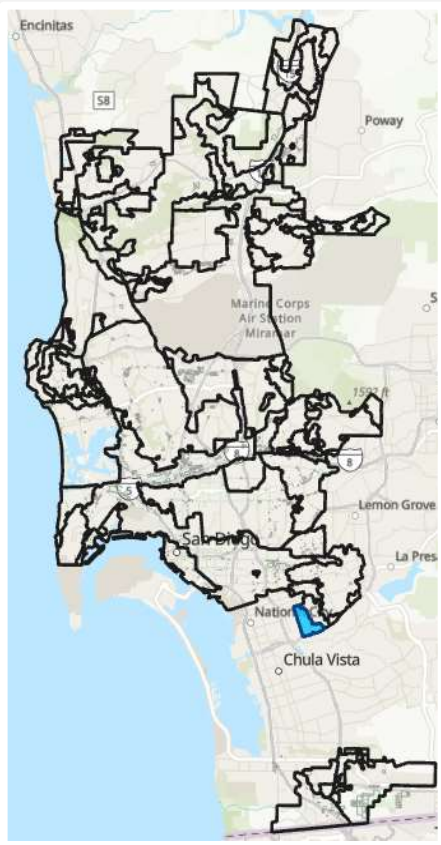
Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	3,873	3,884	3,854	3,824	3,785	3,734	3,655
Multifamily	6,751	7,339	8,035	8,234	8,579	8,837	9,083
Institutional	273	268	263	263	263	263	263
Government	2,737	2,706	2,676	2,676	2,677	2,677	2,677
Commercial	5,541	5,529	5,547	5,599	5,663	5,734	5,766
Industrial	98	98	99	100	102	102	103
Irrigation	1,055	998	941	941	941	941	941
Wholesale	0	0	0	0	0	0	0
Potable Total	20,329	20,823	21,414	21,637	22,009	22,289	22,489
Recycled	87	83	83	83	83	83	83

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

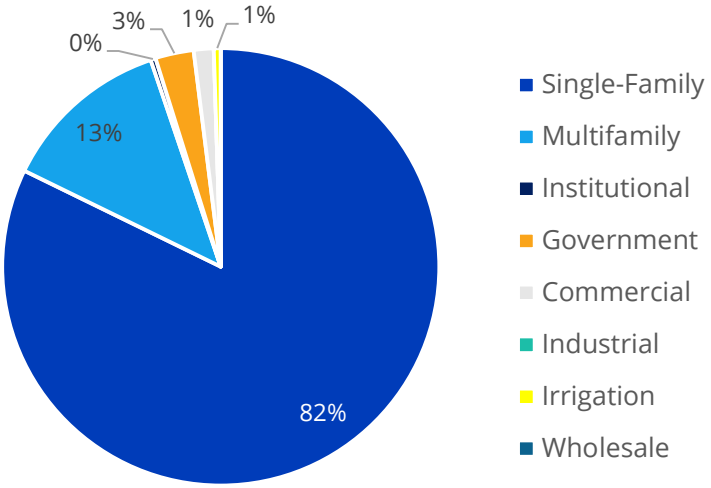
UNIVERSITY HEIGHTS_2 | Alvarado/Otay | HGL 390





The University Heights 2 pressure zone falls within the Alvarado service area and is bordered by Plumas Street to the north, Rachael Avenue to the west, Seabreeze Drive to the east, and Filipino American Highway to the south. Reo Drive and Rancho Hills Drive are a few of the major roadways that run throughout this zone. More than 80% of the water use is single-family, with another 11% multifamily. On average in FY22-24, water use totaled 0.39 mgd and is projected to slightly decline to 0.37 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	10,788	10,197	10,090	9,984	9,893	9,692	9,391
Household Population	10,625	10,043	9,930	9,824	9,726	9,527	9,242
Single-Family Households	1,852	1,776	1,773	1,775	1,775	1,775	1,776
Multifamily Households	1,206	1,188	1,188	1,188	1,191	1,193	1,195
Total Households	3,058	2,964	2,961	2,963	2,966	2,968	2,971
Employees	1,836	1,840	1,852	1,894	1,909	1,957	2,004
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	1	1
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	5,747	5,747

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	312,556	297,680	296,624	296,324	295,731	294,588	293,055
Multifamily	47,667	48,854	46,175	45,705	45,685	45,107	44,147
Institutional	1,486	1,486	1,486	1,486	1,486	1,486	1,486
Government	10,740	10,009	9,277	9,277	9,277	9,277	9,277
Commercial	5,582	5,582	5,582	5,582	5,582	5,779	5,779
Industrial	0	0	0	0	0	0	0
Irrigation	1,950	1,827	1,704	1,704	1,704	1,704	1,704
Wholesale	0	0	0	0	0	0	0
Potable Total	**379,981**	**365,439**	**360,849**	**360,078**	**359,466**	**357,942**	**355,448**
Recycled	0	0	0	0	0	0	0

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

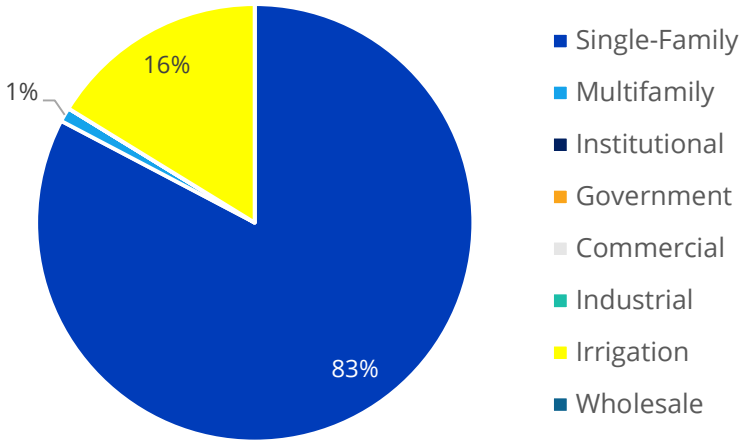
Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	350	333	332	332	331	330	328
Multifamily	53	55	52	51	51	51	49
Institutional	2	2	2	2	2	2	2
Government	12	11	10	10	10	10	10
Commercial	6	6	6	6	6	6	6
Industrial	0	0	0	0	0	0	0
Irrigation	2	2	2	2	2	2	2
Wholesale	0	0	0	0	0	0	0
Potable Total	426	409	404	403	403	401	398
Recycled	0	0	0	0	0	0	0

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

WABASH MESA | Alvarado | HGL 355

The Wabash Mesa pressure zone falls within the Alvarado service area and is roughly bordered by the I-15 (Escondido Freeway) to the south and east, Pentuckett Avenue to the west, and Vancouver Avenue to the north. 80% of the water use is single-family, with another 19% irrigation. On average in FY22-24, water use totaled 0.024 mgd and is projected to reach 0.025 mgd by 2050.

Average Water Use Breakdown by Sector (FY22-24)



Projected Demographics and Land Use

Component	2022	2025	2030	2035	2040	2045	2050
Total Population	452	465	458	457	466	469	459
Household Population	444	457	450	449	458	461	451
Single-Family Households	161	170	169	169	169	169	169
Multifamily Households	9	9	9	11	17	23	22
Total Households	170	179	178	180	186	192	191
Employees	119	119	119	119	124	125	126
Additional Nonresidential Parcels (count)	n/a	0	0	0	0	0	0
Additional Nonresidential Parcels (square feet)	n/a	0	0	0	0	0	0

Water Demand Forecast (GPD)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-Family	18,711	20,217	20,021	19,978	19,937	19,856	19,802
Multifamily	238	234	232	229	226	221	343
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	3,673	3,453	3,233	3,233	3,233	3,233	3,233
Wholesale	0	0	0	0	0	0	0
Potable Total	**22,622**	**23,903**	**23,486**	**23,440**	**23,395**	**23,310**	**23,378**
Recycled	0	0	0	0	0	0	0

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

Water Demand Forecast (AFY)

Sector	Base Period	2025	2030	2035	2040	2045	2050
Single-family	21	23	22	22	22	22	22
Multifamily	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Irrigation	4	4	4	4	4	4	4
Wholesale	0	0	0	0	0	0	0
Potable Total	25	27	26	26	26	26	26
Recycled	0	0	0	0	0	0	0

Fiscal year data; base period is an average of FY22-24; FY25 is a forecast. Does not include NRW.

ATTACHMENT E On Trend Scenario Water Demand Forecast by Pressure Zone

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On Trend Scenario Demand Forecast by Pressure Zone (mgd)[1]

Pressure Zone Name	Service Area	Base Period[2]	2030	2035	2040	2045	2050
ALLIED GARDENS	Alvarado	1.1	1.1	1.1	1.1	1.1	1.2
ALVARADO_1	Alvarado	13.6	13.5	13.8	13.8	14.0	14.0
ALVARADO_2	Alvarado/Otay	0.3	0.3	0.3	0.3	0.3	0.3
ALVARADO_3	Alvarado/Otay	0.1	0.1	0.1	0.1	0.1	0.1
ALVARADO_4	Alvarado	1.8	1.7	1.7	1.7	1.7	1.7
ARCHER	Alvarado/Miramar	0.01	0.01	0.01	0.01	0.00	0.00
ARNOLD HILLS	Alvarado	0.01	0.01	0.01	0.01	0.01	0.01
ARROYO SORRENTO	Miramar	0.8	0.7	0.7	0.7	0.7	0.7
BAY TERRACE	Alvarado/Otay	0.2	0.2	0.2	0.2	0.2	0.2
BAYVIEW	Alvarado/Miramar	0.3	0.2	0.2	0.2	0.2	0.2
BERNARDO HEIGHTS	Miramar	0.8	0.7	0.7	0.6	0.6	0.6
BERNARDO OAKS_1	Miramar	0.7	0.7	0.6	0.6	0.6	0.6
BERNARDO OAKS_2	Miramar	0.9	0.8	0.8	0.7	0.7	0.7
BERNARDO TRAILS	Miramar	0.4	0.3	0.3	0.3	0.3	0.3
BLACK MTN RANCH	Miramar	0.2	0.2	0.2	0.2	0.2	0.2
CARMEL COUNTRY	Miramar	0.5	0.4	0.4	0.4	0.4	0.4
CARMEL MALL	Miramar	1.3	1.4	1.4	1.4	1.4	1.4
CARMEL VALLEY	Miramar	0.9	0.9	0.8	0.8	0.8	0.8
CARMEL VIEW	Otay	0.2	0.1	0.1	0.1	0.1	0.1
CARROLL RIDGE	Miramar	0.1	0.1	0.1	0.1	0.1	0.1
CATALINA	Alvarado	1.8	1.7	1.6	1.6	1.5	1.5
COLLEGE CANYON	Alvarado	0.2	0.1	0.1	0.1	0.1	0.1
CORNISH HILL	Alvarado	0.01	0.01	0.01	0.01	0.00	0.00
COUNTRY CASUAL	Alvarado	0.5	0.5	0.5	0.4	0.4	0.4
DEL CERRO	Alvarado	0.4	0.3	0.3	0.3	0.3	0.3
DEL MAR HILLS	Miramar	0.1	0.1	0.1	0.1	0.1	0.1
DEL MAR TERRACE	Miramar	0.1	0.1	0.1	0.1	0.1	0.1
DENNERY RD	Otay	0.1	0.1	0.1	0.1	0.1	0.1
EAGLE RIDGE	Alvarado	0.02	0.02	0.02	0.02	0.02	0.02
EL CAMINO	Miramar	0.01	0.01	0.01	0.01	0.01	0.01
GATEWAY	Alvarado	0.1	0.1	0.1	0.1	0.1	0.1
GLIDDEN	Alvarado/Miramar	0.01	0.005	0.005	0.004	0.004	0.004
GOLF COURSE_1	Miramar	0.04	0.04	0.03	0.03	0.03	0.03
GOLF COURSE_2	Miramar	0.01	0.02	0.01	0.01	0.01	0.01
HIDDEN TRAILS	Otay	0.1	0.1	0.05	0.05	0.05	0.05

On Trend Water Demand Forecast by Pressure Zone (mgd)[1] *(continued)*

Pressure Zone Name	Service Area	Based Period[2]	2030	2035	2040	2045	2050
HILLSBOROUGH	Alvarado/Otay	0.1	0.1	0.1	0.1	0.1	0.1
IMPERIAL	Alvarado	0.02	0.03	0.03	0.03	0.03	0.03
KEARNY MESA	Alvarado/Miramar	5.6	5.6	5.7	5.7	5.7	5.7
LA JOLLA GARDENS	Miramar	0.4	0.4	0.4	0.4	0.4	0.4
LA JOLLA HERMOSA	Miramar	1.4	1.3	1.2	1.2	1.2	1.2
LA JOLLA MESA VISTA	Alvarado/Miramar	0.1	0.1	0.1	0.1	0.1	0.1
LA JOLLA PACIFICA	Alvarado/Miramar	0.2	0.2	0.2	0.1	0.1	0.1
LA JOLLA SHORES	Miramar	0.3	0.3	0.3	0.2	0.2	0.2
LA JOLLA SOLEDAD W	Alvarado/Miramar	0.3	0.3	0.3	0.3	0.3	0.3
LA JOLLA TOWNE	Miramar	0.7	0.7	0.7	0.7	0.7	0.7
LA MIRAGE	Alvarado	0.2	0.2	0.2	0.2	0.2	0.2
LIBERTY STATION	Alvarado	0.1	0.1	0.1	0.1	0.1	0.1
LOWER DEL MAR TERR	Miramar	0.1	0.1	0.05	0.05	0.05	0.04
LUSK PARK_1	Miramar	0.03	0.03	0.03	0.03	0.03	0.04
LUSK PARK_2	Miramar	0.2	0.2	0.2	0.2	0.2	0.2
LUSK PARK_3	Miramar	3.6	3.3	3.2	3.2	3.1	3.1
MAR VILLA	Miramar	0.02	0.02	0.02	0.02	0.02	0.02
MERCY HIGH	Miramar	0.01	0.01	0.01	0.01	0.01	0.01
MIRA MESA	Miramar	4.0	4.2	4.4	4.5	4.7	4.8
MIRAMAR	Miramar	5.2	5.0	5.1	5.1	5.1	5.1
MIRAMAR BOOSTED	Miramar	0.3	0.3	0.3	0.3	0.3	0.3
MISSION CITY	Alvarado	0.2	0.2	0.2	0.2	0.2	0.2
MONTE VERDE	Alvarado	0.1	0.1	0.1	0.1	0.1	0.1
MURPHY CANYON	Alvarado/Miramar	0.03	0.03	0.03	0.04	0.04	0.04
NORMAL HEIGHTS	Alvarado	1.6	1.6	1.6	1.6	1.6	1.6
NORTH CITY_1	Miramar	6.4	5.9	5.8	5.8	5.7	5.7
NORTH CITY_2	Miramar	7.8	7.7	7.7	7.7	7.7	7.7
NORTH CITY_3	Miramar	0.1	0.1	0.1	0.1	0.1	0.1
NORTH CITY_4	Miramar	0.1	0.1	0.1	0.1	0.1	0.1
NORTH VILLAGE	Miramar	0.8	0.7	0.7	0.7	0.7	0.6
NORTHWEST MESA	Alvarado/Miramar	11.4	10.7	10.5	10.4	10.3	10.1
OAKS NORTH	Miramar	0.01	0.01	0.01	0.01	0.01	0.01
OLD CLIFFS	Alvarado	0.03	0.03	0.03	0.03	0.03	0.03
OTAY MESA	Otay	0.9	1.3	1.6	1.8	1.9	2.1
OTAY REGULATED	Otay	3.6	3.9	4.0	4.0	4.0	4.0

On Trend Water Demand Forecast by Pressure Zone (mgd)[1] *(continued)*

Pressure Zone Name	Service Area	Base Period[2]	2030	2035	2040	2045	2050
PACIFIC BEACH	Alvarado/Miramar	5.4	5.2	5.2	5.2	5.2	5.2
PACIFICA	Alvarado/Miramar	0.005	0.004	0.004	0.004	0.004	0.003
PARADISE HILLS #1	Alvarado/Otay	0.6	0.6	0.6	0.5	0.5	0.5
PARADISE HILLS #2	Alvarado/Otay	0.02	0.02	0.02	0.02	0.02	0.02
PARADISE MESA	Alvarado/Otay	3.5	3.5	3.3	3.4	3.4	3.4
PARKVIEW	Alvarado/Miramar	0.2	0.1	0.1	0.1	0.1	0.1
PENASQUITOS	Miramar	1.4	1.5	1.4	1.4	1.4	1.3
PENASQUITOS PARK VW	Miramar	0.2	0.2	0.2	0.2	0.2	0.2
PINNACLE	Miramar	0.1	0.05	0.05	0.05	0.05	0.05
POINT LOMA_1	Alvarado	1.5	1.5	1.5	1.5	1.5	1.4
POINT LOMA_2	Alvarado	0.7	0.7	0.7	0.7	0.7	0.7
POMERADO PARK	Miramar	1.3	1.2	1.2	1.1	1.1	1.1
PRESTWICK ESTATES	Miramar	0.02	0.02	0.02	0.02	0.02	0.02
PRINCESS DEL SOL	Otay	4.9	4.9	4.9	4.9	4.9	4.9
PRINCESS GARDENS	Alvarado	0.01	0.01	0.01	0.01	0.01	0.01
PRINCIPAL DOWNTOWN	Alvarado	11.0	11.7	11.9	12.0	12.2	12.3
RANCHO BERNARDO_1	Miramar	2.0	1.8	1.7	1.7	1.6	1.6
RANCHO BERNARDO_2	Miramar	1.8	1.6	1.6	1.6	1.5	1.5
RANCHO SANTA FE	Miramar	0.2	0.2	0.2	0.2	0.2	0.2
RANCHO VALLEY	Miramar	0.1	0.1	0.1	0.1	0.1	0.1
REDWOOD VILLAGE	Alvarado	3.9	3.7	3.7	3.7	3.7	3.7
REMINGTON HILLS	Otay	0.1	0.6	0.7	0.8	0.8	0.9
RIDGEGATE LA JOLLA	Alvarado/Miramar	0.02	0.02	0.02	0.02	0.02	0.02
RIDGEGATE REDUCED	Alvarado/Miramar	0.01	0.01	0.01	0.01	0.01	0.01
RIVIERA DEL SOL	Otay	0.03	0.03	0.03	0.03	0.03	0.03
RIVIERA SHORES	Otay	0.05	0.05	0.05	0.05	0.04	0.04
ROBINHOOD RIDGE	Otay	0.05	0.05	0.05	0.05	0.05	0.05
RODEFER	Alvarado	0.02	0.02	0.02	0.02	0.02	0.01
ROSECRANS	Alvarado	0.5	0.5	0.5	0.5	0.5	0.6
SAN ANDRES	Miramar	0.1	0.05	0.05	0.05	0.04	0.04
SAN CARLOS	Alvarado	2.1	1.9	1.8	1.8	1.7	1.7
SAN CARLOS ESTATES	Alvarado	0.2	0.2	0.2	0.2	0.2	0.2
SAN CARLOS REDUCED	Alvarado	0.1	0.1	0.1	0.1	0.05	0.05
SANTA LUZ	Miramar	0.1	0.1	0.1	0.1	0.1	0.1
SCRIPPS EASTVIEW	Miramar	0.1	0.1	0.1	0.1	0.1	0.1

On Trend Water Demand Forecast by Pressure Zone (mgd)[1] *(continued)*

Pressure Zone Name	Service Area	Base Period[2]	2030	2035	2040	2045	2050
SCRIPPS HILLS	Miramar	0.1	0.1	0.1	0.1	0.1	0.1
SCRIPPS MESA VISTA	Miramar	0.1	0.1	0.1	0.1	0.1	0.1
SCRIPPS RANCH BSTD	Miramar	0.2	0.2	0.2	0.2	0.2	0.2
SCRIPPS RANCH NORTH	Miramar	0.7	0.6	0.6	0.6	0.6	0.6
SCRIPPS RANCH_1	Miramar	0.03	0.03	0.03	0.03	0.03	0.03
SCRIPPS RANCH_2	Miramar	2.7	2.5	2.5	2.4	2.4	2.3
SCRIPPS VALLEY	Miramar	0.5	0.4	0.4	0.4	0.4	0.4
SO LA JOLLA CLIFFS	Miramar	0.03	0.02	0.02	0.02	0.02	0.02
SO SAN DIEGO RESV	Otay	0.3	0.4	0.4	0.4	0.5	0.5
SOLEDAD MUIRLANDS	Alvarado/Miramar	1.2	1.1	1.0	1.0	0.9	0.9
SOUTH CREEK	Miramar	0.2	0.2	0.2	0.1	0.1	0.1
STALLIONS CROSSING	Miramar	0.02	0.01	0.01	0.01	0.01	0.01
STOCKWOOD	Miramar	0.02	0.01	0.01	0.01	0.01	0.01
STONEBRIDGE	Miramar	0.3	0.2	0.2	0.2	0.2	0.2
SYCAMORE ESTATES	Miramar	0.1	0.1	0.1	0.1	0.1	0.1
TIERRASANTA	Alvarado/Miramar	0.5	0.5	0.4	0.4	0.4	0.4
TIERRASANTA NORTE	Alvarado/Miramar	0.1	0.1	0.1	0.1	0.1	0.1
TIERRASANTA SUR	Alvarado/Miramar	0.1	0.1	0.1	0.1	0.1	0.1
TORREY PINES	Miramar	0.4	0.3	0.3	0.4	0.4	0.4
UNIVERSITY HEIGHTS_1	Alvarado	19.8	20.8	21.3	21.6	21.8	21.9
UNIVERSITY HEIGHTS_2	Alvarado/Otay	0.4	0.4	0.4	0.4	0.4	0.4
WABASH MESA	Alvarado	0.02	0.03	0.03	0.03	0.03	0.03

Notes:
(1) The forecast includes potable water demand only. NRW is included and assumed constant across zones.
(2) Average water use from FY 2022 through FY 2024.

On Trend Scenario Demand Forecast by Pressure Zone (AFY)[1]

Pressure Zone Name	Service Area	Base Period[2]	2030	2035	2040	2045	2050
ALLIED GARDENS	Alvarado	1,192	1,206	1,238	1,252	1,275	1,291
ALVARADO_1	Alvarado	15,264	15,128	15,453	15,494	15,652	15,629
ALVARADO_2	Alvarado/Otay	326	359	342	337	329	330
ALVARADO_3	Alvarado/Otay	157	159	153	152	154	150
ALVARADO_4	Alvarado	2,038	1,957	1,953	1,945	1,952	1,943
ARCHER	Alvarado/Miramar	7	7	6	6	5	5
ARNOLD HILLS	Alvarado	8	8	8	8	7	7
ARROYO SORRENTO	Miramar	881	799	778	764	749	731
BAY TERRACE	Alvarado/Otay	182	180	177	176	173	170
BAYVIEW	Alvarado/Miramar	306	276	262	253	244	234
BERNARDO HEIGHTS	Miramar	849	748	733	725	715	705
BERNARDO OAKS_1	Miramar	827	741	711	694	676	657
BERNARDO OAKS_2	Miramar	966	878	849	831	811	789
BERNARDO TRAILS	Miramar	415	349	333	325	317	308
BLACK MTN RANCH	Miramar	221	199	189	183	176	170
CARMEL COUNTRY	Miramar	523	459	445	435	431	421
CARMEL MALL	Miramar	1,412	1,592	1,557	1,550	1,537	1,522
CARMEL VALLEY	Miramar	1,039	957	933	917	911	893
CARMEL VIEW	Otay	176	165	159	160	159	156
CARROLL RIDGE	Miramar	66	68	71	72	74	75
CATALINA	Alvarado	2,001	1,859	1,795	1,752	1,710	1,667
COLLEGE CANYON	Alvarado	176	164	163	161	159	156
CORNISH HILL	Alvarado	7	6	6	6	5	5
COUNTRY CASUAL	Alvarado	595	535	515	502	488	473
DEL CERRO	Alvarado	436	387	367	355	342	330
DEL MAR HILLS	Miramar	115	101	95	92	88	85
DEL MAR TERRACE	Miramar	115	99	96	94	92	90
DENNERY RD	Otay	168	157	155	153	151	148
EAGLE RIDGE	Alvarado	24	21	20	19	18	17
EL CAMINO	Miramar	12	12	13	13	13	13
GATEWAY	Alvarado	119	151	150	149	148	146
GLIDDEN	Alvarado/Miramar	6	6	5	5	5	5
GOLF COURSE_1	Miramar	47	40	38	37	35	34
GOLF COURSE_2	Miramar	12	17	17	17	17	16

On Trend Water Demand Forecast by Pressure Zone (AFY)[1] *(continued)*

Pressure Zone Name	Service Area	Based Period[2]	2030	2035	2040	2045	2050
HIDDEN TRAILS	Otay	59	56	56	56	56	55
HILLSBOROUGH	Alvarado/Otay	153	151	146	146	144	141
IMPERIAL	Alvarado	18	28	28	28	28	28
KEARNY MESA	Alvarado/Miramar	6,263	6,298	6,365	6,381	6,418	6,427
LA JOLLA GARDENS	Miramar	489	468	461	457	451	444
LA JOLLA HERMOSA	Miramar	1,575	1,435	1,392	1,360	1,328	1,291
LA JOLLA MESA VISTA	Alvarado/Miramar	114	103	98	94	90	87
LA JOLLA PACIFICA	Alvarado/Miramar	204	178	169	164	158	152
LA JOLLA SHORES	Miramar	301	289	281	276	271	265
LA JOLLA SOLEDAD W	Alvarado/Miramar	359	317	308	301	295	288
LA JOLLA TOWNE	Miramar	789	771	778	780	784	783
LA MIRAGE	Alvarado	249	226	225	224	222	218
LIBERTY STATION	Alvarado	129	129	129	129	129	128
LOWER DEL MAR TERR	Miramar	66	58	55	53	51	50
LUSK PARK_1	Miramar	30	31	34	36	38	40
LUSK PARK_2	Miramar	204	195	203	206	212	217
LUSK PARK_3	Miramar	4,052	3,748	3,634	3,564	3,511	3,425
MAR VILLA	Miramar	21	21	20	20	20	19
MERCY HIGH	Miramar	13	12	11	11	11	10
MIRA MESA	Miramar	4,464	4,679	4,910	5,060	5,287	5,396
MIRAMAR	Miramar	5,830	5,633	5,667	5,675	5,702	5,700
MIRAMAR BOOSTED	Miramar	374	326	311	301	292	282
MISSION CITY	Alvarado	232	212	212	210	209	206
MONTE VERDE	Alvarado	155	138	129	123	118	113
MURPHY CANYON	Alvarado/Miramar	34	36	39	40	41	42
NORMAL HEIGHTS	Alvarado	1,773	1,756	1,790	1,776	1,771	1,749
NORTH CITY_1	Miramar	7,146	6,647	6,545	6,468	6,421	6,342
NORTH CITY_2	Miramar	8,770	8,616	8,635	8,653	8,651	8,627
NORTH CITY_3	Miramar	131	136	145	149	157	161
NORTH CITY_4	Miramar	116	102	96	93	89	85
NORTH VILLAGE	Miramar	867	798	777	761	741	720
NORTHWEST MESA	Alvarado/Miramar	12,719	11,981	11,800	11,657	11,533	11,344
OAKS NORTH	Miramar	16	13	12	12	12	12
OLD CLIFFS	Alvarado	35	35	35	35	32	32
OTAY MESA	Otay	1,008	1,424	1,757	1,969	2,157	2,342

On Trend Water Demand Forecast by Pressure Zone (AFY)[1] *(continued)*

Pressure Zone Name	Service Area	Base Period[2]	2030	2035	2040	2045	2050
OTAY REGULATED	Otay	4,077	4,409	4,441	4,493	4,513	4,522
PACIFIC BEACH	Alvarado/Miramar	6,028	5,846	5,862	5,862	5,852	5,778
PACIFICA	Alvarado/Miramar	5	5	4	4	4	4
PARADISE HILLS #1	Alvarado/Otay	640	642	619	612	600	584
PARADISE HILLS #2	Alvarado/Otay	18	23	22	22	21	21
PARADISE MESA	Alvarado/Otay	3,930	3,914	3,752	3,811	3,811	3,776
PARKVIEW	Alvarado/Miramar	190	168	159	154	149	144
PENASQUITOS	Miramar	1,608	1,627	1,578	1,549	1,517	1,484
PENASQUITOS PARK VW	Miramar	251	224	215	208	201	194
PINNACLE	Miramar	57	53	52	52	52	52
POINT LOMA_1	Alvarado	1,724	1,650	1,657	1,646	1,635	1,602
POINT LOMA_2	Alvarado	786	757	749	746	739	731
POMERADO PARK	Miramar	1,473	1,330	1,304	1,286	1,267	1,245
PRESTWICK ESTATES	Miramar	24	22	21	20	19	18
PRINCESS DEL SOL	Otay	5,507	5,518	5,486	5,478	5,463	5,439
PRINCESS GARDENS	Alvarado	9	9	9	8	8	8
PRINCIPAL DOWNTOWN	Alvarado	12,307	13,119	13,370	13,482	13,653	13,770
RANCHO BERNARDO_1	Miramar	2,274	2,023	1,940	1,887	1,831	1,772
RANCHO BERNARDO_2	Miramar	1,971	1,790	1,777	1,748	1,732	1,713
RANCHO SANTA FE	Miramar	187	224	222	220	218	217
RANCHO VALLEY	Miramar	70	63	62	60	58	57
REDWOOD VILLAGE	Alvarado	4,365	4,188	4,176	4,163	4,152	4,140
REMINGTON HILLS	Otay	109	638	734	844	913	994
RIDGEGATE LA JOLLA	Alvarado/Miramar	26	24	23	22	21	20
RIDGEGATE REDUCED	Alvarado/Miramar	15	14	13	13	12	12
RIVIERA DEL SOL	Otay	39	35	35	35	36	36
RIVIERA SHORES	Otay	56	52	52	52	50	50
ROBINHOOD RIDGE	Otay	59	56	55	54	53	52
RODEFER	Alvarado	22	20	19	18	17	16
ROSECRANS	Alvarado	603	575	582	597	603	617
SAN ANDRES	Miramar	64	54	52	51	49	48
SAN CARLOS	Alvarado	2,355	2,102	2,031	1,975	1,917	1,854
SAN CARLOS ESTATES	Alvarado	252	222	210	203	195	187
SAN CARLOS REDUCED	Alvarado	70	62	59	57	55	53
SANTA LUZ	Miramar	94	83	80	78	75	73
SCRIPPS EASTVIEW	Miramar	103	88	84	82	79	77

On Trend Water Demand Forecast by Pressure Zone (AFY)[1] *(continued)*

Pressure Zone Name	Service Area	Base Period[2]	2030	2035	2040	2045	2050
SCRIPPS HILLS	Miramar	113	100	95	92	88	85
SCRIPPS MESA VISTA	Miramar	123	113	114	113	112	110
SCRIPPS RANCH BSTD	Miramar	243	209	196	189	181	174
SCRIPPS RANCH NORTH	Miramar	797	720	700	684	667	649
SCRIPPS RANCH_1	Miramar	37	33	32	30	29	28
SCRIPPS RANCH_2	Miramar	3,056	2,844	2,770	2,717	2,663	2,609
SCRIPPS VALLEY	Miramar	547	497	490	481	471	460
SO LA JOLLA CLIFFS	Miramar	28	25	24	23	23	22
SO SAN DIEGO RESV	Otay	343	439	469	493	505	518
SOLEDAD MUIRLANDS	Alvarado/Miramar	1,306	1,183	1,127	1,087	1,047	1,005
SOUTH CREEK	Miramar	207	182	173	167	161	154
STALLIONS CROSSING	Miramar	19	16	15	14	14	13
STOCKWOOD	Miramar	18	16	15	15	14	13
STONEBRIDGE	Miramar	281	250	241	235	228	222
SYCAMORE ESTATES	Miramar	149	133	126	122	117	112
TIERRASANTA	Alvarado/Miramar	606	521	499	485	470	455
TIERRASANTA NORTE	Alvarado/Miramar	157	128	122	118	114	110
TIERRASANTA SUR	Alvarado/Miramar	84	99	101	99	97	93
TORREY PINES	Miramar	396	389	392	392	393	393
UNIVERSITY HEIGHTS_1	Alvarado	22,144	23,305	23,899	24,215	24,399	24,563
UNIVERSITY HEIGHTS_2	Alvarado/Otay	464	454	444	440	431	418
WABASH MESA	Alvarado	28	33	31	31	30	30

Notes:
(1) The forecast includes potable water demand only. NRW is included and assumed constant across zones.
(2) Average water use from FY 2022 through FY 2024.

ATTACHMENT F WSPP Demand Forecast

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INTRODUCTION

The City of San Diego (City) has retained Carollo Engineers (Carollo) to prepare a 2025 Water Supply Portfolio Plan (WSPP), which requires a long-range demand forecast. The WSPP is a high-level strategy document intended to reflect current and future water supply planning, objectives, and goals for the City that support Pure Water San Diego Phase 2 Planning, the Public Utility Department's (PUD) Capital Improvements Program, as well as the Water Production Division and Dam Safety Programs. The City's 2025 WSPP will inform decision-makers about the tradeoffs of future water resource investments through the 2100 planning horizon.

PURPOSE

This appendix documents the approach, data, and results for two water demand forecast scenarios through 2100. Two scenarios were developed to represent a reasonable upper and lower bound for future water demands: S15 and On Trend. Both scenarios to 2050 are from the City's 2025 Urban Water Management Plan (UWMP) and were extended from 2050 to 2100 for the WSPP. The forecast extensions were applied using the demand model framework described in the 2025 Water Demand Forecast Report.

EXTENDED FORECASTING METHODOLOGY

Since San Diego Association of Governments' (SANDAG's) Series 15 growth projections are published through the year 2050, additional analysis was required to develop extended water demand forecasts through the year 2100. Carollo used build-out parcel information from SANDAG to generate growth trends for residential and non-residential land use types.

Climate change impacts on demand were extended for both scenarios. **Table 1** presents the temperature assumptions for the central tendency and hot/dry ensembles to 2100.

Table 1 Climate Change Assumptions

Time Period	Max Daily Temp (deg F)		Avg Daily Temp (deg F)	
	Central	Hot/Dry	Central	Hot/Dry
Historical 20-Year Average	71.7	71.6	64.7	64.6
Future 2050	73.9	74.0	66.9	67.0
Future 2100	76.3	77.1	69.4	70.0

Notes:
deg F - degrees Fahrenheit
(1) From CalAdapt, two ensembles were created based on clustering of data. Grid cell containing the San Diego Airport weather station was selected.
(2) Climate inputs averaged over two decades to approximate average future warming conditions.

S15 WATER DEMAND SCENARIO

The S15 scenario incorporated Series 15 land use data to consider buildout conditions. Assumptions were made to project the continuation of declining persons per household and smaller lot sizes.

Based on engineering judgement, the model incorporates only half of the mixed-use redevelopment for multifamily units due to an overly large amount of growth potential. Additional water conservation was incorporate from 2050 to 2100. Specifically, the Irrigation sector water use was assumed to reach a 20 percent reduction by the year 2100.

CLIMATE CHANGE IMPACTS

ON TREND WATER DEMAND SCENARIO

To extend projections from 2050 to 2100 for the On Trend scenario, a logistic growth model was developed and applied. A logistic model of population growth assumes that the growth rate slows over time and eventually decreases to zero once the population size stabilizes. A carrying capacity is considered where birth and death rates are equalized, and the environment is able to sustainably support the population long term. Another factor included is density dependence in which the rate of population growth depends on the population density itself preventing unlimited growth. This is unlike an exponential model where it is assumed resources are unlimited and growth population can grow indefinitely.

The fitted logistic population curve was developed using data of the City's population from 1920 through 2021, and SANDAG's projections from 2022 through 2050. The data and results are shown in **Figure 1**. As shown, the logistic curve is a near-perfect fit for the City's population growth, reflecting slowed growth over time and eventual stable population. Residential and non-residential growth was fit to population projections from the years 2050 to 2100.

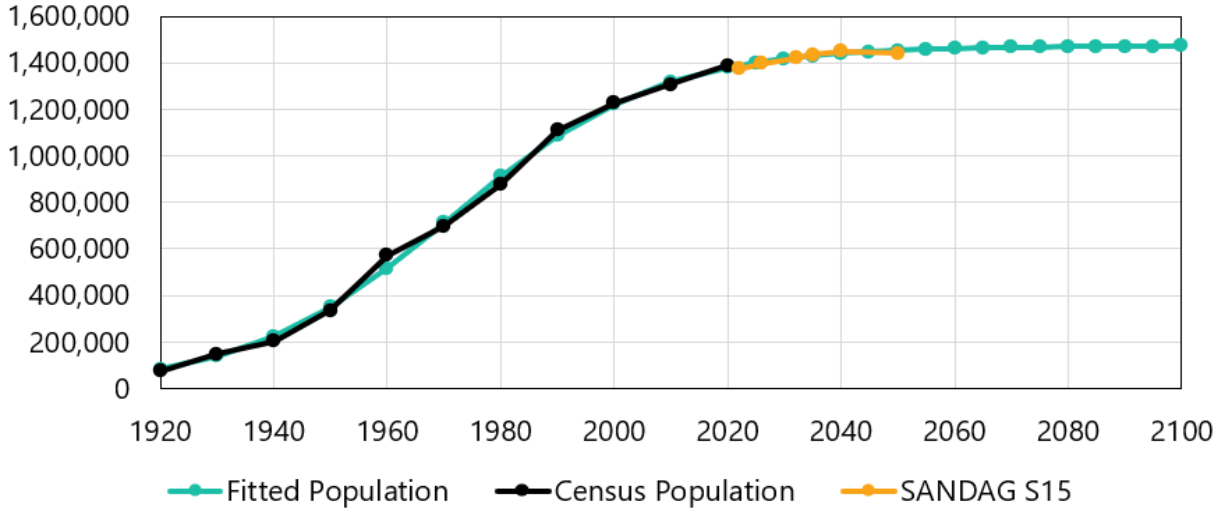


Figure 1 On Trend Scenario Logistic Curve for Long-Term Forecast of Population

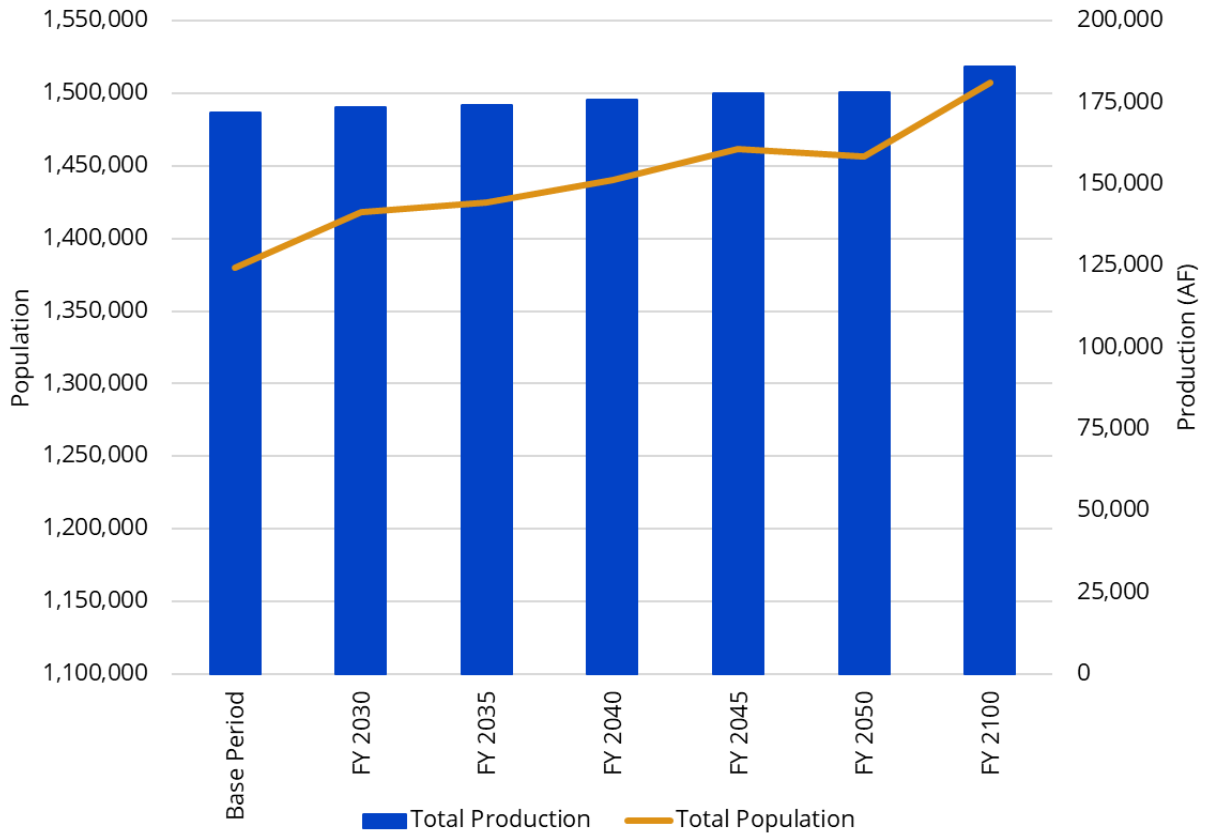
Similar to the S15 scenario, declining persons per household and smaller lot sizes were assumed. The On Trend scenario already incorporates a higher water conservation rate of 20 percent and the SFR price response, so no additional conservation assumptions were made.

EXTENDED FORECAST RESULTS

The extend demand forecast results for the S15 and On Trend demand scenarios are presented in this section, including forecasts by primary sector and service area, water production, and other statistics.

S15 WATER DEMAND SCENARIO

As shown in **Table 2** and **Figure 2**, the S15 forecast represents a City population that reaches 1.5 million by 2100. With the water demand and conservation assumptions in conjunction with population growth projections, total production is projected to reach approximately 186,000 acre-feet (AF) by 2100, an increase of 8.1 percent over the 75 years. The range under climate change is more pronounced, with production reaching 203,900 acre-feet per year (AFY) by 2100 under the hot and dry climate scenario. Both residential gallons per capita per day (gpcd) and the City's potable gpcd (which excludes wholesale) are projected to stabilize with little change.



Notes: Base period is the average water use from FY 2022 through FY 2024.

Figure 2 S15 Scenario Extended Production and Population Forecast

Table 2 S15 Scenario City-Wide Extended Water Demand Summary

Component	Base Period [1]	2030	2035	2040	2045	2050	2100
Demographic Projections							
SFR Dwelling Units	230,391	233,676	233,530	233,265	232,833	231,362	236,853
MFR Dwelling Units	288,004	324,821	332,955	345,597	365,676	380,588	462,756
Total Dwelling Units	518,395	558,497	566,485	578,862	598,509	611,950	699,608
Total Population	1,380,210	1,418,515	1,424,765	1,440,431	1,462,016	1,456,893	1,507,170
Household Population	1,309,005	1,348,405	1,354,134	1,369,283	1,391,205	1,385,650	1,437,637
Water Demand Projections[1] (AFY)							
SFR	51,794	52,153	52,049	51,940	51,725	51,291	55,365
MFR	38,437	41,132	41,711	42,739	44,445	45,190	50,735
Institutional	3,290	3,249	3,254	3,355	3,357	3,364	3,491
Government	13,143	12,761	12,765	12,785	12,787	12,817	14,278
Commercial	28,863	28,802	29,048	29,371	29,578	29,739	32,095
Industrial	1,675	1,683	1,698	1,718	1,731	1,738	1,873
Irrigation	10,034	8,881	8,881	8,881	8,881	8,881	9,288
Total Retail	**147,236**	**148,661**	**149,406**	**150,789**	**152,503**	**153,020**	**167,125**
Wholesale	10,622	10,622	10,622	10,622	10,622	10,622	10,622
Total Metered Consumption	**157,858**	**159,283**	160,028	161,411	163,126	163,642	**177,747**
NRW[2]	14,101	14,228	14,294	14,418	14,571	14,617	15,247
Total Production	**171,959**	**173,511**	**174,322**	**175,829**	**177,697**	**178,259**	**185,943**

Notes:
(1) Average water use from FY 2022 through FY 2024. Demographics units are as of 2022.
(2) Assumed a constant 8.2 percent for forecast years. See Section 3.2 for more information.

Table 2 S15 Scenario City-Wide Extended Water Demand Summary *(continued)*

Component	Base Period	2030	2035	2040	2045	2050	2100
Climate Change Adjusted Production (AFY)							
Production under Central Tendency	171,959	173,510	174,321	178,400	181,595	183,470	199,616
Production under Hot/Dry	171,959	173,510	174,321	179,397	183,108	185,493	203,905
Statistics							
Single-family Gallons per Housing Unit per Day	201	199	199	199	198	198	201
Multifamily Gallons per Housing Unit per Day	119	114	113	111	109	107	119
Residential gpcd	62	62	62	62	62	62	63
Persons Per Household	2.5	2.4	2.4	2.4	2.4	2.3	2.3
City Potable gpcd(4)	104	104	103	103	102	102	103

Notes:
MFR - multifamily residential; NRW - non-revenue water; SFR - single-family residential
(1) The forecast includes potable water demand only.
(2) Average water use from FY 2022 through FY 2024.
(3) Assumed a constant 8.2 percent for forecast years. See Section 3.2 for more information in the 2025 Demand Forecast Report.
(4) Excludes wholesale water use [(Total Production – Wholesale) / Total Population].

The S15 scenario water demand forecast by service area is presented in **Table 3**. The summary includes all retail sectors, wholesale use, and NRW (assumed consistent across all service areas). The greatest growth is projected in the Alvardo service area. The other service areas are projected to see a slight increase or decrease in water demand.

Table 3 S15 Scenario City-Wide Extended Water Demand Summary by Service Area (AFY)[1]

Service Area	Base Period[2]	FY 2030	FY 2035	FY 2040	FY 2045	FY 2050	FY 2100
Miramar	56,939	56,483	56,686	56,993	57,574	57,461	58,190
Alvarado/Miramar	28,432	28,352	28,433	28,569	28,650	28,630	29,553
Alvarado	69,118	70,737	71,075	71,927	72,615	73,218	78,883
Alvarado/Otay	5,869	5,725	5,726	5,762	5,769	5,761	5,662
Otay	11,601	12,214	12,402	12,578	13,089	13,189	13,655
Total	171,959	173,511	174,322	175,829	177,697	178,259	**185,943**

Notes:
(1) The forecast includes potable water demand only.
(2) Average water use from FY 2022 through FY 2024.

ON TREND WATER DEMAND SCENARIO

Table 4 and **Figure 3** present the On Trend scenario extended water demand forecasts. The total City population is predicted to reach 1.46 million in 2100, with a corresponding water production of approximately 175,100 AF to meet water demands while incorporating City-wide conservation savings. Essentially, the modeled compounding impacts result in a slight decline in production and then rebound to current levels. The increase in water production from the base period to 2100 is estimated to be 1.8 percent. The range under climate change is more pronounced, with production reaching 185,200 AFY by 2100 under the hot and dry climate scenario.

Table 4 On Trend Scenario City-Wide Extended Water Demand Summary

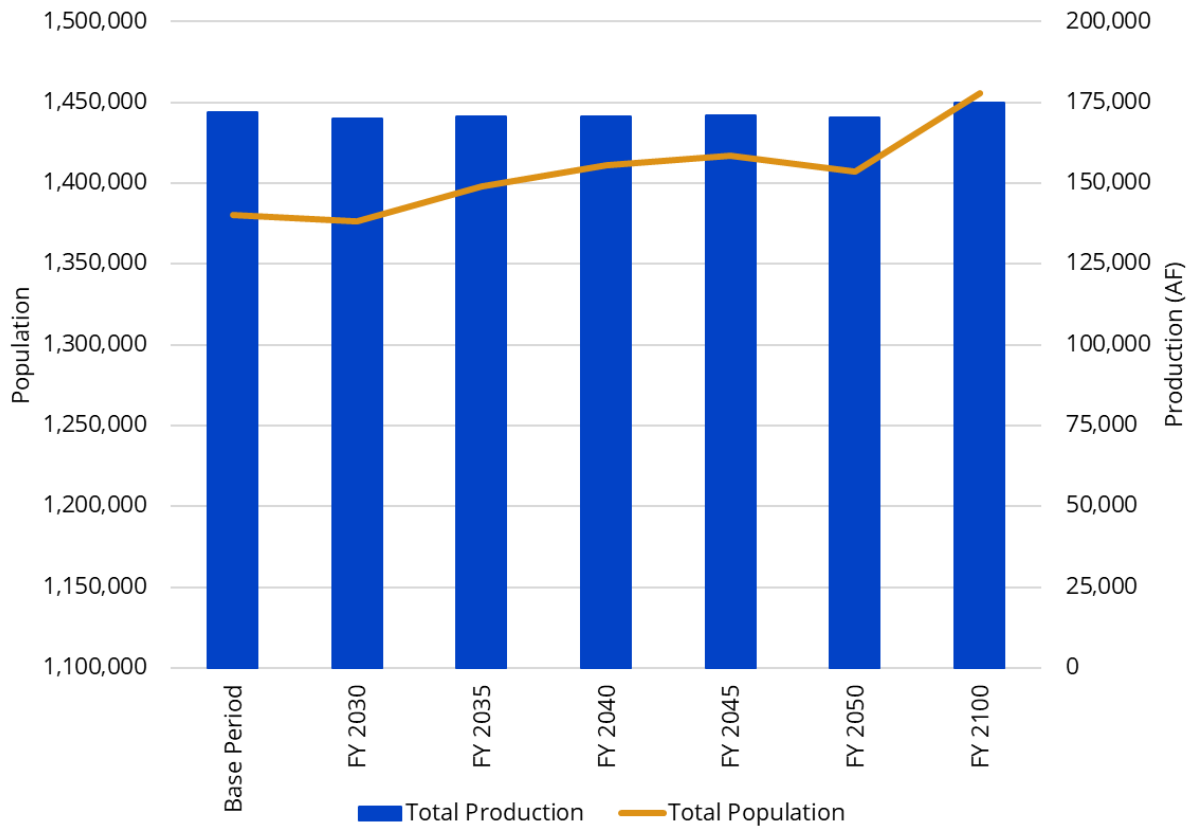
Component	Base Period[1]	FY 2030	FY 2035	FY 2040	FY 2045	FY 2050	FY 2100
Demographic Projections							
SFR Dwelling Units	230,391	233,676	233,530	233,265	232,833	231,362	236,853
MFR Dwelling Units	288,004	324,821	332,955	345,597	365,676	380,588	462,756
Total Dwelling Units	518,395	558,497	566,485	578,862	598,509	611,950	699,608
Total Population	1,380,210	1,418,515	1,424,765	1,440,431	1,462,016	1,456,893	1,507,170
Household Population	1,309,005	1,348,405	1,354,134	1,369,283	1,391,205	1,385,650	1,437,637
Water Demand Projections[1] (AFY)							
SFR	51,794	47,896	44,978	43,520	41,849	40,012	32,860
MFR	38,437	43,125	46,295	47,656	49,281	50,293	60,306
Institutional	3,290	3,371	3,374	3,401	3,405	3,412	3,574
Government	13,143	12,898	12,942	12,991	13,023	13,068	13,142
Commercial	28,863	28,890	29,023	29,144	29,283	29,427	30,793
Industrial	1,675	1,674	1,674	1,674	1,674	1,674	1,674
Irrigation	10,034	7,727	7,727	7,727	7,727	7,727	7,727
Total Retail	**147,236**	**145,581**	**146,013**	**146,113**	**146,242**	**145,613**	**150,076**
Wholesale	10,622	10,622	10,622	10,622	10,622	10,622	10,622
Total Metered Consumption	157,858	156,203	156,635	156,735	156,864	156,235	**163,627**
NRW[2]	14,101	13,953	13,991	14,000	14,012	13,956	14,354
Total Production	**171,959**	**170,156**	**170,626**	**170,735**	**170,876**	**170,191**	**175,052**

Notes:
(1) Average water use from FY 2022 through FY 2024. Demographics units are as of 2022.
(2) Assumed a constant 8.2 percent for forecast years. See Section 3.2 for more information.

Table 4 On Trend Scenario City-Wide Extended Water Demand Summary *(continued)*

Component	Base Period	FY 2030	FY 2035	FY 2040	FY 2045	FY 2050	FY 2100
Climate Change Adjusted Production (AFY)							
Production under Central Tendency	171,959	170,154	170,625	171,820	172,577	172,538	182,611
Production under Hot/Dry	171,959	170,154	170,625	172,268	173,278	173,504	185,217
Statistics							
Single-family Gallons per Housing Unit per Day	201	169	186	192	199	204	143
Multifamily Gallons per Housing Unit per Day	119	115	114	113	112	110	105
Residential gpcd	62	62	61	61	60	60	60
Persons Per Household	2.3	2.3	2.3	2.2	2.2	2.1	1.9
City Potable gpcd(4)	103	103	102	101	101	101	101

Notes:
MFR - multifamily residential; NRW - non-revenue water; SFR - single-family residential
(1) The forecast includes potable water demand only.
(2) Average water use from FY 2022 through FY 2024.
(3) Assumed a constant 8.2 percent for forecast years. See Section 3.2 for more information in the 2025 Demand Forecast Report.
(4) Excludes wholesale water use [(Total Production – Wholesale) / Total Population].



Notes: Base period is the average water use from FY 2022 through FY 2024.

Figure 3 On Trend Scenario Extended Production and Population Forecast

Table 5 provides a summary of the water demand forecast by service area for the On Trend scenario, including all retail sectors, wholesale use, and NRW (assumed consistent across all service areas). With these forecast assumptions, Miramar demands decrease by approximately 5,100 AFY, but Alvardo demands increase by about 7,300 AFY.

Table 5 On Trend Scenario City-Wide Extended Water Demand Summary by Service Area (AFY)(1)

Service Area	Base Period(2)	FY 2030	FY 2035	FY 2040	FY 2045	FY 2050	FY 2100
Miramar	56,939	54,143	53,598	53,197	52,930	52,373	51,867
Alvarado/Miramar	28,432	27,189	26,964	26,744	26,555	26,206	25,932
Alvarado	69,118	69,991	71,007	71,308	71,669	71,709	76,351
Alvarado/Otay	5,869	5,884	5,656	5,697	5,665	5,589	5,033
Otay	11,600	12,948	13,400	13,788	14,056	14,312	15,869
Total	**171,959**	**170,154**	**170,625**	**170,734**	**170,875**	**170,190**	**175,052**

Notes:
(1) The forecast includes potable water demand only.
(2) Average water use from FY 2022 through FY 2024.

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APPENDIX G

2024 Urban Water Use Objectives and Water Use Report

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Annual Urban Water Use Objective and Water Use Report (2025)

Reporting Year Cycle	State Fiscal Year
Start Date	7/1/2023
End Date	6/30/2024
Number of Days in Reporting Year	366

In the table below, provide the contact information of the employee who prepared this report in cells B14-B19
If more than one employee was involved in report preparation, please select a main point of contact that will be able to respond to any follow up questions by State Water Board staff.
If a third party prepared the report, please provide a supplier point of contact in cells B14-B19 and answer "No" in cell B21. Then fill out cells B24-28.

Urban Retail Water Supplier Contact Information (Required)	
Name of Urban Retail Water Supplier (select from dropdown list in B11)	San Diego City Of
Urban Retail Water Supplier Organization Identifier (ORG ID)	2160
Number of Public Water Systems	1
Supplier Contact Person Name	Brian Hojnacki
Supplier Contact Person Title	Supervising Management Analyst
Supplier Contact Person Phone Number	619-838-2593
Supplier Contact Person Email Address	bhojnacki@sandiego.gov
Supplier Street Address	525 B St Suite 400
Supplier ZIP Code	92101

Was this report prepared by the staff of the supplier named in cell B11?	Yes

Form Version 2.3

Navigation:

Summary of Actual Water Use Vs. Objective
Sum of Individual Objective Components (966)
Individual Budgets:
Residential Indoor Budget (967)
Residential Outdoor Budget (968)
CII DIMs Budget - [Until June 30th, 2028, CII DIMs (969) is equivalent to CII DIMs water deliveries]
Real Water Loss Budget (970)
Bonus Incentive (971)
Actual Water Use:
Reported Actual Water Use (975)
Reported Real Water Loss (975)
CII Performance Measures:
Classification of CII Water Users (972)
Converting CII landscapes with Mixed Meters to DIMs or Employing In-Lieu Tech (973)
CII Best Management Practices for Users Exceeding Defined Threshold (974(a) and (b))
User will fill out one of 1) through 6) depending on the information provided:
--1) CII Best Management Practices for Users Exceed Defined Threshold (974(c)(1))
--2) CII Best Management Practices for Users Exceed Defined Threshold (974(c)(1)) with 10% or less CII
--3) CII Best Management Practices for Users Exceed Defined Threshold (974(c)(2))
--4) CII Best Management Practices for Users Exceed Defined Threshold (974(c)(2)) with 10% or less CII
--5) CII Best Management Practices for Users Exceed Defined Threshold (974(c)(3))
--6) CII Best Management Practices for Users Exceed Defined Threshold (974(c)(3)) with 10% or less CII
CII Best Management Practices for Users Exceed Defined Threshold (974(c)(3) Property Types) [974(c)(3) only]
Supplemental Tables for Objective Calculations (Only required if specified):
Residential Agriculture Variance Calculation for 1% Threshold Equation
Recycled Water Network Tracing
Tables for Bonus Incentive: Groundwater Augmentation and Extraction
Tables for Bonus Incentive: Surface Reservoir Augmentation and Extraction

WHEN COMPLETE:
The authorized representative for the urban retail water supplier must fill out the certification statement (see the "certification_statement.pdf" file in the reporting package)

Actual Use Compared to Urban Water Use Objective

The source datasets are located on the Open Data Portal.

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In Gallons/Year

Water Use Component	Actual Water Use (Gallons)	Urban Water Use Objective (Gallons)
Total Residential Water Use, Indoor + Outdoor	29,256,056,292.54	43,432,071,740.62
Outdoor Irrigation of CII landscapes associated with DIMs	5,598,270,071.46	5,598,270,071.46
System Water Loss	4,318,765,008.50	4,318,765,008.50
Variances, Provisions, and 20% INI buffer, if applicable	N/A	0.00
Bonus Incentive	N/A	0.00
Sum of Water Use Components (Specific to Objective)	39,173,091,372.50	53,349,106,820.58
Excluded Demands	16,873,865,521.98	16,873,865,521.98
Sum of Water Use Components (Objective + Excluded)	56,046,956,894.48	70,222,972,342.56
SB X7-7 Target Volume Plus Previously Excluded Process and Recycled Water	N/A	71,450,585,880.00
"Capped" Objective	N/A	53,349,106,820.58
Regional Alliance Met Regional Target? (If Applicable)	N/A	Not Applicable
Final Comparison of Actual Water Use to Objective	39,173,091,372.50	53,349,106,820.58

In Acre-Feet/Year

Water Use Component	Actual Water Use (Acre-Feet)	Urban Water Use Objective (Acre-Feet)
Total Residential Water Use, Indoor + Outdoor	89,783.42	133,287.96
Outdoor Irrigation of CII landscapes associated with DIMs	17,180.44	17,180.44
System Water Loss	13,253.79	13,253.79
Variances, Provisions, and 20% INI buffer, if applicable	N/A	0.00
Bonus Incentive	N/A	0.00
Sum of Water Use Components (Specific to Objective)	120,217.64	163,722.18
Excluded Demands	51,783.99	51,783.99
Sum of Water Use Components (Objective + Excluded)	172,001.79	215,506.39
SB X7-7 Target Volume Plus Previously Excluded Process and Recycled Water	N/A	219,273.80
"Capped" Objective	N/A	163,722.40
Regional Alliance Met Regional Target?	N/A	Not Applicable
Final Comparison of Actual Water Use to Objective	120,217.80	163,722.40

List of Supplier Public Water Systems

PWSID	Water System Name	County	Residential Population	Number of months with non-zero potable deliveries in Clearinghouse	Annual Potable Municipal Deliveries (Acre-Feet)	Annual Nonpotable Municipal Deliveries (Acre-Feet)	Reported Real Water Loss (per Open Data table) (Acre-Feet)	Water System Included in Objective Calculations?
CA3710020	SAN DIEGO, CITY OF	SAN DIEGO	1,374,790	12	148,408.18	10,339.81	31,029.20	Yes

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Urban Water Use Objective	Value	Units	Calculation Instructions and Notes	Reference(s)
Residential Indoor Budget (no provisions or variances)	27,674,522,700	Gallons/Year	Calculated in "Residential Indoor Budget" tab	966(c)(1)
Residential Indoor Variances and Provisions	0	Gallons/Year	Calculated in "Residential Indoor Budget" tab	966(c)(1), 966(c)(5)
Residential Outdoor Budget (no provisions or variances)	15,757,549,041	Gallons/Year	Calculated in "Residential Outdoor Budget" tab	966(c)(2)
Residential Outdoor Variances and Provisions	0	Gallons/Year	Calculated in "Residential Outdoor Budget" tab	966(c)(2), 966(c)(5)
CII Landscapes with DIMs Budget (no provisions or variances)	5,598,270,071	Gallons/Year	Until June 30th, 2028, the CII with DIMs budget shall be equivalent to water deliveries to CII landscapes with DIMs.	966(c)(3)
CII Landscapes with DIMs Variances and Provisions	0	Gallons/Year	Until CII with DIMs budgets are calculated with measured landscapes, associated variances and provisions will not be included in the objective.	966(c)(5)
Real Water Loss Budget	4,318,765,009	Gallons/Year	Calculated in "Real Water Loss Budget" tab	966(c)(4)
Bonus Incentive for Potable Recycled Water	0	Gallons/Year	Calculated in "Bonus Incentive" tab	966(c)(6)
Sum of objective components, without inclusion of INI area	**53,349,106,821**	**Gallons/Year**		
Total Potable Residential Water Use	29,256,056,293	Gallons/Year	Reported in "Actual Water Use" tab	966(c)(1)
Total Non-Potable Residential Water Use	0	Gallons/Year	Reported in "Actual Water Use" tab	966(c)(2)
Total Potable Deliveries to CII Landscapes with DIMs	5,598,270,071	Gallons/Year	Reported in "Actual Water Use" tab	966(c)(3)
Total Non-Potable Deliveries to CII Landscapes with DIMs	0	Gallons/Year	Reported in "Actual Water Use" tab	966(c)(3)
Annual Aggregate Real Water Loss	4,318,765,009	Gallons/Year	Calculated in "Reported Real Water Loss" tab	966(c)(4)
Sum total actual water use	**39,173,091,373**	**Gallons/Year**		
Residential Outdoor Budget associated with 20% INI	618,924,280	Gallons/Year	Calculated in "Residential Outdoor Budget" tab	
INI Included in objective?	No	Yes/No	If actual water use is greater than the objective without the inclusion of INI, this will be "Yes" and the residential outdoor budget associated with 20% INI will be included.	
Objective, before being capped by SB X7-7	53,349,106,821	Gallons/Year	If B18 is "No", this value is equal to B10; if B18 is "Yes", this value is equal to B10 + B17	966(h)
Excluded demands	16,873,865,522	Gallons/Year	Calculated in "Actual Water Use" tab. Sum of other; commercial and institutional; and industrial deliveries.	966(h)(3)
Objective-based total use	**70,222,972,343**	**Gallons/Year**		
SB X7-7 Target	142	GPCD	Obtained from SB X7-7 Targets Table	966(h)(1)-(4)
SB X7-7 Annual Volume	71,450,585,880	Gallons/Year	Individual SB X7-7 target * Residential Population * Number of days in year. If no target is available, objective-based total use value is used instead.	966(h)
Process water excluded from the target	0	Gallons/Year	Obtained from SB X7-7 Targets Table, converted from reported units to Gallons	966(h)(2)
Indirect recycled water excluded from the target	0	Gallons/Year	Obtained from SB X7-7 Targets Table, converted from reported units to Gallons	966(h)(2)
Target-based total use	71,450,585,880	Gallons/Year	SB X7-7 Annual Volume + Process and recycled water	966(h)(1)-(4)
Is target-based total use more efficient than objective-based total use?	No	Yes/No	If target-based total use is lower than objective-based total use, this will be "Yes" and the SB X7-7 cap will be applied.	966(h)(4)
"Capped" Urban Water Use Objective	**53,349,106,821**	**Gallons/Year**		
Regional Alliance Name, if Applicable	Not Applicable	N/A	Obtained from SB X7-7 Targets Table	966(h)
Regional Target Met	Not Applicable	N/A	Obtained from SB X7-7 Targets Table	966(h)
Final Urban Water Use Objective	**53,349,106,821**	**Gallons/Year**		

Comments regarding the Objective calculations:

Components of the Indoor Residential Budget	Value	Units	Calculation Instructions and Notes	Reference(s)
Indoor Residential Water Use Standard	55	GPCD		WC 10609.4(a)(1)
Residential Service Area Population	1,374,790	Number of persons	Obtained from SDWIS Residential Population Table	965(zz)
Residential Indoor Water Use Budget (not including provisions or variances)	**27,674,522,700**	**Gallons/Year**	**Calculated. Indoor Residential Water Use Standard * Residential Population * Number of days in year**	**967(a)(1)**

Variance Thresholds and Total Variance Volume	Value	Units	Calculation Instructions and Notes	Reference(s)
5% Threshold for Variances (Indoor Residential Budget)	1,383,726,135	Gallons	This is the equivalent of 5% of the residential indoor budget	967(b)(1)(B)
1% Threshold for Variances (Indoor Residential Budget)	276,745,227	Gallons	This is the equivalent of 1% of the residential indoor budget	967(c)(2)(C)
Utilizing Evaporative Cooler Variance?	No	Yes/No	If B9 is "Yes", fill out the information for the Evaporative Cooler Variance	
Utilizing Seasonal Population Variance?	No	Yes/No	If B10 is "Yes", fill out the information for the Seasonal Population Variance	
Utilizing Wastewater Provision?	No	Yes/No	If B11 is "Yes", fill out the information for the Wastewater Provision	
Total Volume of Variances and Provisions associated with Residential Indoor Volume (individual variances and provisions calculated below)	**0**	**Gallons/year**	**Sum of variances that individually meet either the 5% or 1% threshold (depending on the selected method), plus provisions**	**967(b)(1)**

Comments regarding the Residential Indoor Budget calculations:

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Components of the Residential Outdoor Budget	Value	Units	Calculation Instructions and Notes	Reference(s)
Residential Outdoor Water Use Budget (without INI)	14,596,510,320	Gallons/Year	Calculated below, starting on row 27	968(b)(1)
Newly Constructed Residential Landscapes Budget (no SLAs)	0	Gallons/Year	Calculated below, starting on row 35	968(e)(1)
Residential Special Landscape Areas Budget (existing and new construction, and pools)	1,161,038,720	Gallons/Year	Calculated below, starting on row 40	968(c)(1)
Residential Outdoor Water Use Budget (not including INI, provisions, or variances; individual components calculated below)	**15,757,549,041**		**Sum of individual residential outdoor water use budget components, as calculated in linked tables**	

Variance Thresholds and Total Variance Volume	Value	Units	Calculation Instructions and Notes	Reference(s)
5% Threshold for Variances	787,877,452	Gallons	This is the equivalent of 5% of the residential outdoor budget	
1% Threshold for Variances	157,575,490	Gallons	This is the equivalent of 1% of the residential outdoor budget	
Utilizing Livestock Water Use Variance?	No	Yes/No	If B10 is "Yes", the table to fill out the information for the Livestock Water Use Variance will be revealed	
Utilizing Dust Control Variance?	No	Yes/No	If B11 is "Yes", the table to fill out the information for the Dust Control Variance will be revealed	
Utilizing Residential Agriculture Variance?	No (Any classified Res-Ag will be SLA)	Yes/No	If B12 is "No (Any classified Res-Ag will be SLA)" then any water associated with the residential agriculture budget will be added to the Residential Special Landscapes Budget. If B12 is "Yes", go to the table for the Residential Agriculture variance to choose the appropriate method.	
Utilizing State or Local Emergency Variance?	No	Yes/No	If B13 is "Yes", the table to fill out the information for the State or Local Emergency Variance will be revealed.	
Utilizing High TDS Variance?	No	Yes/No	If B14 is "Yes", the table to fill out the information for the High TDS Variance will be revealed.	
Utilizing Ponds and Lakes Variance?	No	Yes/No	If B15 is "Yes", the table to fill out the information for the Ponds and Lakes Variance will be revealed.	
Utilizing Existing Residential Trees Variance?	No	Yes/No	If B16 is "Yes", the table to fill out the information for the Existing Residential Trees Variance will be revealed.	
Utilizing New Climate-Ready Trees Provision?	No	Yes/No	If B17 is "Yes", the table to fill out the information for the New Climate-Ready Trees Provision will be revealed.	
Utilizing Qualifying Landscapes Provision?	No	Yes/No	If B18 is "Yes", the table to fill out the information for the Qualifying Landscapes Provision will be revealed.	
Total Volume of Variances and Provisions associated with Residential Outdoor Volume (individual variances and provisions calculated below)	**0**	**Gallons/Year**	**Sum of variances that individually meet either the 5% or 1% threshold (depending on the selected method), plus provisions**	

Residential Outdoor Water Use Components

Net ETo Calculation	Value	Units	Calculation Instructions and Notes	Reference(s)
Reference Evapotranspiration (ET_0)	48.77	Inches/Year	Obtained from Annual Weather Data Table	965(vv)
Effective Precipitation	4.18	Inches/Year	Obtained from Annual Weather Data Table	965(s)
Net ET_0	44.59	Inches/Year	Net ET_0 = ET_0 - Effective Precipitation	965(kk)

Components of the Residential Outdoor Budget (excluding Special Landscapes and New Construction)	Value	Units	Calculation Instructions and Notes	Reference(s)
Unit Conversion Factor	0.62	Gallon-Feet/Inches	Value of 0.62 is derived from the conversion of inches to feet (for ET_0) and 1 cubic foot to 7.48 gallons (7.48/12).	
LEF for Residential Landscapes	0.8	Unitless		968(a)(1)-(3)
Irrigable Irrigated Residential Landscape Area, as measured by the Department	668,342,621	Square Feet	Obtained from Landscape Area Measurement Table	968(b)(2)(A)(i)
*Landscape area categorized as residential in the DWR LAM data but identified by supplier as CII	0	Square Feet	*If not applicable: enter 0	968(b)(5)
Irrigable Irrigated Residential Landscape Area, excluding SLAs, pools, and area identified by supplier as CII	659,978,655	Square Feet	Calculated. Irrigable Irrigated Area - Irrigable Irrigated SLA (not recycled) - Irrigable Irrigated SLA (recycled) - identified CII - Existing Pool Area (see the SLA section starting at row 31)	
Residential Outdoor Water Use Budget (without INI)	**14,596,510,320**	**Gallons/Year**	**Calculated. Irrigable Irrigated Area excluding SLA * Net ET_0 * LEF * Unit Conversion Factor.**	**968(b)(1)**

Components of the Residential Outdoor Budget (New Construction, excluding RSLAs)	Value	Units	Calculation Instructions and Notes	Reference(s)
LEF for Newly Constructed Residential Landscape Area (excluding newly constructed RSLAs)	0.55	Unitless		968(a)(5)
*Newly Constructed Residential Landscape Area (excluding newly constructed RSLAs)	0	Square Feet	*If not applicable: enter 0	965(mm)
Newly Constructed Residential Landscapes Budget (no RSLAs)	**0**	**Gallons/Year**	**Calculated. Newly Constructed Area * Net ET_0 * LEF * Unit Conversion Factor**	**968(e)(1)**

Components of the Residential Outdoor Budget (RSLAs)	Value	Units	Calculation Instructions and Notes	Reference(s)
LEF for Residential Special Landscape Areas and Pools	1.0	Unitless		968(a)(4)
Square footage of existing pools, spas, and similar water features	8,363,966	Square Feet	Obtained from Landscape Area Measurement Table	968(c)(3)(A)
*Residential Landscape Area identified by the supplier as Special Landscape Areas (excluding recycled water)	0	Square Feet	*If not applicable: enter 0	965(aaa)
*Residential Landscape Area identified by the supplier as being irrigated with recycled water	0	Square Feet	*If not applicable: enter 0	965(aaa)
*Newly Constructed Residential Special Landscape Area (excluding recycled water)	0	Square Feet	*If not applicable: enter 0	968(e)(1)
*Newly Constructed Residential Landscape Area irrigated with recycled water	0	Square Feet	*If not applicable: enter 0	968(c)(1)
Residential Agriculture SLA volume (if not applying for variance)	929,810,189	Gallons/Year	If "Special Landscape Area" is selected in cell B79, the calculated volume is included here. Otherwise, the calculated volume will be included in the variances sum in cell B19.	968(g)(3)(A)
Residential Special Landscape Areas Budget (existing and new construction, and pools)	**1,161,038,720**	**Gallons/Year**	**Calculated. SLA Area * Net ET_0 * LEF * Unit Conversion Factor + Residential Agriculture SLA volume (when applicable)**	

Components of the INI Budget	Value	Units	Calculation Instructions and Notes	Reference(s)
Irrigable Not Irrigated Residential Landscape Area	139,922,764	Square Feet	Obtained from Landscape Area Measurement Table	968(b)(2)(B)(i)
Residential Outdoor Water Use associated with INI	**618,924,280**	**Gallons/Year**	**Calculated. (0.2 * Irrigable Not Irrigated Area) * Net ET_0 * Unit Conversion Factor. Only included if supplier's actual water use exceeds objective.**	**968(b)(2)(B)(i)**

Variances and Provisions Calculations

For the 2023/2024 report, the State Water Board will not be taking or reviewing variance applications. Suppliers may input the necessary information to calculate variances if available. Guidance and variance applications will be available in the future.

Components of the Residential Agriculture Variance/RSLA	Value	Units	Calculation Instructions and Notes	Reference(s)
Chosen Method for Calculating Water Use associated with Residential Agricultural Landscapes	Special Landscape Area		By default, the "Special Landscape Area" method is selected, and this number is added to the SLA budget above. Change to the 5% or 1% threshold method (must change B12 to "Yes") to reveal the corresponding cells and calculate as a variance.	968(g)(3)(A)
Area of residential agricultural landscapes	32,902,454.0	Square Feet	Obtained from Landscape Area Measurement Table	968(d)(1)
Unit Conversion Factor	0.62	Gallon-Feet/Inches	Value of 0.62 is derived from the conversion of inches to feet (for ET_0) and 1 cubic foot to 7.48 gallons (7.48/12).	
Seasonal Reference Evapotranspiration	51.78	Inches/Year	Obtained from the Seasonal Weather Data Table	968(d)(1)
Seasonal Effective Precipitation	6.20	Inches/Year	Obtained from the Seasonal Weather Data Table	968(d)(1)
Seasonal Net ET_0	45.58	Inches/Year		968(d)(1)
Special Landscape LEF	1.0	Unitless		968(a)(4)
Residential agriculture volume (SLA)	**929,810,189**	**Gallons**	**Calculated. Standard for RSLA * sq × Net ET_0 Ag × 0.62**	**968(d)(1)**

Comments regarding the Residential Outdoor Budget calculations:

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Table 1: Water Loss Budget Calculator

Until the submission of the report due on January 1, 2029 (covering the time period July 1, 2027-June 30th, 2028), the water loss budget can be either:
1) the individual water system budget/s calculated using the standard/s or 2) the reported real water losses.
The water loss standards, if available, are in the System-Specific Standards Table on the Open Data Portal
In cell B10, choose between "Water Loss Standards" and "Reported Real Water Loss" to select the method for calculating the real water loss budget
If choosing "Water Loss Standards," please review the number of connections and length of mains data in Table 2 below.
If the "Water Loss Standard Type" in Column D is "Not Applicable" or "No Data," then reported real loss (as determined in the "Reported Real Water Loss" tab) is substituted in its place, regardless of the selection in Cell B10.
The sum of the standard-based volumes (or real water losses) in H27 will populate the efficient real water loss budget in the Objective tab.

Select budget calculation method from dropdown	Reported Real Water Loss

PWSID	PWS Name	Water Loss Standard (per specified unit)	Water Loss Standard Type	Number of Service Connections (active + inactive) (selected in Table 2)	Length of Mains (miles) (selected in Table 2)	Water Loss Budget or Reported Real Loss used?	Estimated Annual Efficient Water Loss Budget (gallons/year) or Reported Real Loss
CA3710020	SAN DIEGO, CITY OF	32.3	Gallons per service connection per day	372,378	3,719.03	Reported Real Loss	4,318,765,009
						TOTAL GALLONS/YEAR:	4,318,765,009

Table 2: Number of Service Connections and Length of Mains

The number of service connections and length of mains are used to calculate the water loss budget in Table 1 if "Water Loss Standards" is chosen in B10.

In cell B33, select "Open Data values" or "Water Loss Audit due Jan 1 2025."

Select "Open Data Values" if all data are present for each water system in Columns C through F and the values are current.
Otherwise, select "Water Loss audit values due Jan 1 2025" and fill in the requisite information in Columns G through J.

Select source for number of connection or length of mains	Water Loss audit values due Jan 1 2025

PWSID	PWS Name	Open Data: Number of Service Connections (active + inactive)	Open Data: Length of Mains (miles)	Open Data: Reporting Period Start Date	Open Data: Reporting Period End Date	2025 Audit: Number of Service Connections (active + inactive)	2025 Audit: Length of Mains (miles)	2025 Audit: Reporting Period Start Date	2025 Audit: Reporting Period End Date
CA3710020	SAN DIEGO, CITY OF	366,323	3715.18	7/1/2022	6/30/2023	372,378	3719.03	7/1/2023	6/30/2024

Comments regarding the Real Water Loss Budget:

Bonus Incentive Calculation [skip if not planning to utilize bonus incentive]

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The bonus incentive shall not exceed 15 percent of the urban retail water supplier's UWUO for potable recycled water produced at an Existing Facility.

For the purpose of bonus incentive calculations, an Existing Facility means a facility that meets all of the following

· The facility has a certified environmental impact report, mitigated negative declaration, or negative declaration on or before January 1, 2019.

· The facility begins producing and delivering potable reuse water on or before January 1, 2022.

· The facility uses microfiltration and reverse osmosis technologies to produce the potable reuse water.

Also,

· For purposes of WC Section 10609.20, and notwithstanding paragraph (4) of subdivision (d) of WC Section 10609.20, "Existing Facility" also includes the North City Project, phase one of the Pure Water San Diego Program, for which an environmental impact report was certified on April 10, 2018 (WC Section 10609.21(a)).

The bonus incentive shall not exceed 10 percent of the urban retail water supplier's UWUO for potable recycled water produced at a facility that does not qualify as an Existing Facility (i.e., Other Facility)

For the purpose of bonus incentive calculations, a facility that does not meet the requirements for "Existing Facility" is considered "Other Facility."

Bonus Incentive Methodology and Volume	Value	Units	Calculation Instructions and Notes	Reference(s)
Is the supplier calculating the bonus incentive according to 971(a)(1) or 971(a)(2)?		N/A	Indicate whether the bonus incentive is based on 971(a)(1) (Qualifying Existing Facilities) or 971(a)(2)(Qualifying Other Faciliies)	971(a)
10% of the UWUO	5,334,910,682	Gallons/Year		
15% of the UWUO	8,002,366,023	Gallons/Year		
Is the supplier providing information on potable reuse relative to augmented groundwater?		Yes/No		
Is the supplier providing information on potable reuse relative to augmented surface reservoirs?		Yes/No		
Is the supplier providing information on potable reuse relative to direct potable reuse?		Yes/No		
Volume of bonus incentive associated with qualifying facilities (V_{PR})	0	Gallons/Year	Sum of V_{PRG} (B37), V_{PRS} (B45), and V_{PRD} (B50), when applicable	
Annual potable water deliveries to single and multi-family residential and landscape irrigation (D_{RLI})	34,854,326,364	Gallons/Year	Sum of potable single-family and multifamily residential deliveries, plus potable irrigation of CII landcapes with DIMS, from the "Actual Water Use" tab	971(b)
Annual total potable water production	58,655,632,600	Gallons/Year	TOTAL_POTABLESUPPLY_GAL in the Potable Supply and Sold/Exported table	971(b)
Annual total water exported outside supplier's service area	3,333,911,921	Gallons/Year	PD_VOLUMESOLD_DELIVERED_OTHER_WATERSYSTEMS in the Potable Supply and Sold/Exported table	965(eee)
Annual total water placed into storage and not withdrawn for use	0	Gallons/Year		965(eee)
Annual total potable water production, excluding water exported outside service area or placed into storage and not withdrawn (T_{PW})	55,321,720,678	Gallons/Year	Calculated. Total potable water production - sold/exported water - stored water	965(eee)
Bonus Incentive Volume, before applying cap	0	Gallons/Year	Calculated. $V_{PR}*D_{RLI}/T_{PW}$	971(b)
Final Bonus Incentive Water Volume	**0**	**Gallons/year**		**971(a)(1) or 971(a)(2)**

Bonus Incentive: Augmented Groundwater	Value	Units	Calculation Instructions and Notes	Reference(s)
Loss Factor for groundwater recharge and recovery (LF_G)	0			971(b)(1)
Volume of potable recycled water recharging the groundwater basin (R)	0	Gallons/Year	Calculated. Click here to navigate to the table to select the facilities associated with groundwater recharge	971(b)(1)
Name of augmented groundwater Basin			Select groundwater basin name from dropdown	
Name of augmented groundwater sub-basin			Select groundwater sub-basin name from dropdown (if there is no sub-basin, it will be the same as the basin)	
Bulletin 118 Identification Number			Pre-filled based on selected basin and sub-basin	
Supplier's groundwater basin extraction (V_G)	0	Gallons/Year	Calculated. Click here to navigate to the table to select the water systems and individual sources associated with groundwater extraction.	971(b)(1)
Total groundwater basin extractions (V_{BP})	0	Gallons/Year	To be obtained from the proper groundwater authority	971(b)(1)
Potable reuse water obtained from groundwater sources (V_{PRG})	**0**	**Gallons/Year**	$V_{PRG} = V_G*(LF_G*R)/V_{BP}$	**971(b)(1)**

Bonus Incentive: Augmented Surface Reservoir	Value	Units	Calculation Instructions and Notes	Reference(s)
Loss Factor for evaporation and seepage (LF_S)	0			971(b)(2)
Volume of potable recycled water augmenting the surface reservoir (A)	0	Gallons/Year	Calculated. Click here to navigate to the table to select the facilities associated with surface reservoir recharge	971(b)(2)
Name of augmented surface reservoir	0			
Volume of water obtained by supplier from augmented reservoir (V_{SWP})	0	Gallons/Year	Calculated. Click here to navigate to the table to select the water systems and individual sources associated with surface reservoir extraction.	971(b)(2)
Total volume of water produced from augmented reservoir (V_{SW})	0	Gallons/Year		971(b)(2)
Potable reuse water obtained from augmented reservoir sources (V_{PRS})	**0**	**Gallons/Year**	$V_{PRS} = V_{SW}*(LF_S*A)/V_{SWP}$	**971(b)(2)**

Bonus Incentive: Direct Potable Reuse	Value	Units	Calculation Instructions and Notes	Reference(s)
Volume of finished water produced from the DPR project ($V_{FIN\text{-}DPR}$)	0	Gallons/Year		965(y)
Fraction of water the supplier derived from the facility producing the finished water (F)	0		Enter a value between 0 and 1	971(b)(3)
Volume of potable recycled water obtained from DPR project (V_{PRD})	**0**	**Gallons/Year**	$V_{PRD} = V_{FIN\text{-}DPR}*F$	**971(b)(3)**

Comments regarding the Bonus Incentive:

Direct Potable Reuse will be operational in the future.

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Actual Water Use (Potable and Non-Potable), Demands Relevant to the Objective	Value	Units	Calculation Instructions and Notes	Reference(s)
Annual, aggregate potable deliveries to Single-family Residential connections	16,325,109,032	Gallons/Year	See RESIDENTIAL_SINGLEFAMILY_GAL in the Potable and Non-Potable Water Deliveries for URWS on the Open Data Portal	975(c)(1)(A)(i)
Annual, aggregate potable deliveries to Multi-family Residential connections	12,930,947,261	Gallons/Year	See RESIDENTIAL_MULTIFAMILY_GAL in the Potable and Non-Potable Water Deliveries for URWS on the Open Data Portal	975(c)(1)(A)(ii)
Total Potable Residential Water Use	29,256,056,293	Gallons/Year	Sum of single-family and multi-family potable deliveries	
Annual, aggregate residential Recycled Water Demand (excluding metered irrigation)	0	Gallons/Year	See NONPOTABLE_DEMAND_RESIDENTIAL_RECYCLED_WATER_GAL in the Potable and Non-Potable Water Deliveries for URWS on the Open Data Portal	975(c)(1)(A)(iii)
Annual, aggregate residential Non-potable Demand (non-recycled, excluding metered irrigation)	0	Gallons/Year	See NONPOTABLE_DEMAND_RESIDENTIAL_NONPOTABLE_WATER_GAL in the Potable and Non-Potable Water Deliveries for URWS on the Open Data Portal	975(c)(1)(A)(iv)
Annual, aggregate residential non-potable metered irrigation	0	Gallons/Year	See NONPOTABLE_DEMAND_RESIDENTIAL_METERED_LANDSCAPE_IRRIGATION_GAL in the Potable and Non-Potable Water Deliveries for URWS on the Open Data Portal	975(c)(1)(A)(iv)
Total Non-Potable Residential Water Use	0	Gallons/Year	Sum of residential recycled water demand, nonpotable water demand (excluding recycled and irrigation), and residential nonpotable metered irrigation	
Volume of water delivered to residential landscapes that the Department excluded from its LAM analysis and are not currently a part of the residential outdoor budget. (This does not include new construction)	0	Gallons/Year	Reported by the supplier below in cell B36 (hidden unless B35 is "Yes"). This value is subtracted from the total volume of residential water use.	975(c)(1)(A)(viii)
Total Residential Water Use	**29,256,056,293**	**Gallons/Year**	**Calculated. Sum of total potable and total non-potable residential water use.**	**975(c)(1)(A)**
Annual, aggregate potable deliveries to Commercial, Industrial, or Institutional Landscapes with dedicated irrigation meters	5,598,270,071	Gallons/Year	See NONRESIDENTIAL_METERED_IRRIGATION_GAL in the Potable and Non-Potable Water Deliveries for URWS on the Open Data Portal	975(c)(1)(B)(i)
Annual, aggregate non-potable deliveries to Commercial, Industrial, or Institutional Landscapes with dedicated irrigation meters	0	Gallons/Year	See NONPOTABLE_DEMAND_NONRESIDENTIAL_METERED_IRRIGATION_GAL in the Potable and Non-Potable Water Deliveries for URWS on the Open Data Portal	975(c)(1)(B)(ii)
Total deliveries to Commercial, Industrial, or Institutional Landscapes with dedicated irrigation meters	**5,598,270,071**	**Gallons/Year**	**Calculated. Sum of total potable and total non-potable deliveries to CII landscapes with dedicated irrigation meters**	**975(c)(1)(B)**
Annual, aggregate real water losses	**4,318,765,009**	**Gallons/Year**	Go to the "Reported Real Water Loss" tab to review real water loss data from Open Data, provide values from the water loss audit due Jan 1, 2025, or provide own estimates.	**975(c)(1)(C)**
Total Demands Relevant to the Objective	**39,173,091,373**	**Gallons/Year**	**Calculated. Sum of total residential water use, total deliveries to CII landscapes with dedicated irrigation meters, and annual aggregate real water losses. Please check the Potable and Non-Potable Water Deliveries for URWS table to ensure that all 12 months and all water systems are accounted for.**	**975(c)(1)(D)**

Actual Water Use (Potable and Non-Potable), Excluded Demands	Value	Units	Calculation Instructions and Notes	Reference(s)
Annual, aggregate potable deliveries to Commercial & Institutional connections	13,316,595,178	Gallons/Year	See COMMERCIAL_INSTITUTIONAL_GAL in the Potable and Non-Potable Water Deliveries for URWS on the Open Data Portal	975(c)(2)(A)
Annual, aggregate potable deliveries to Industrial connections	0	Gallons/Year	See INDUSTRIAL_GAL in the Potable and Non-Potable Water Deliveries for URWS on the Open Data Portal	975(c)(2)(B)
Annual, aggregate potable deliveries to Other connections	188,032,320	Gallons/Year	See OTHER_GAL in the Potable and Non-Potable Water Deliveries for URWS on the Open Data Portal	975(c)(2)(C)
Annual, aggregate nonpotable nonresidential deliveries (excluding non-potable deliveries to CII DIMs)	3,369,238,025	Gallons/Year	Sum of NONPOTABLE_DEMAND_NONRESIDENTIAL_RECYCLED_GAL and NONPOTABLE_DEMAND_NONRESIDENTIAL_NONPOTABLE_WATER_GAL in the Potable and Non-Potable Water Deliveries for URWS on the Open Data Portal	975(c)(2)
Total Excluded Demands	**16,873,865,522**	**Gallons/Year**		**975(c)(2)(E)**
Annual, aggregate potable commercial agriculture deliveries	0	Gallons/Year	See AGRICULTURE_GAL in the Potable and Non-Potable Water Deliveries for URWS on the Open Data Portal. Not included in the sum of excluded demands.	975(c)(2)(D)
Annual, aggregate nonpotable commercial agriculture deliveries		Gallons/Year	If any nonpotable water as reported in B21 is used for commercial agriculture purposes, provide the commercial agriculture-specific volume in gallons here. This number will be subtracted from the total excluded demands. **Optional field.**	

Actual Residential Water Use (Potable and Non-Potable), 90th Percentile Water Use	Value	Units	Calculation Instructions and Notes	Reference(s)
Total Volume of deliveries to single-family residential customers that are at or above the 90th percentile for single-family residential water use across the supplier's service area	0	Gallons/Year		975(c)(1)(A)(v)
Total Volume of deliveries to multi-family residential customers that are at or above the 90th percentile for multi-family residential water use across the supplier's service area	0	Gallons/Year		975(c)(1)(A)(vi)

Cost-of-Service Analysis	Value	Units	Calculation Instructions and Notes	Reference(s)
Cost-of-service for the highest users incurred		Dollar	"High water users" means the top 10 percent of water, in terms of volume of water consumed. **Optional field.**	WC 390.
Link to cost-of-service analysis, if available		URL	**Optional field.**	WC 390.

Landscapes misclassified or not captured in initial LAM analysis or not considered residential by supplier	Value	Units	Calculation Instructions and Notes	Reference(s)
Are there any residential landscapes that were not captured by the Department's LAM analysis and are therefore not contributing to the residential outdoor budget? (This does not include new construction reported in the Residential Outdoor Budget tab.)	No	Yes/No	Answer this question if the landscape area measurement provided by the Department omitted existing residential landscapes that were present at the time of the analysis.	975(c)(1)(A)(viii)
Are there any residential landscapes with DIMs included in the Department's LAM analysis designated by the supplier as residential?	No	Yes/No	Answer this question if any of the residential landscapes included in the Department's landscape area measurement analysis were associated with a dedicated irrigation meter.	975(c)(1)(A)(vii)
Are there any parcel with DIMs that were classified as residential landscapes in the Department's LAM analysis that the supplier considers as CII landscapes?	No	Yes/No	Answer this question if any of the landscapes included in the Department's landscape area measurement analysis are considered CII landscapes with DIMs by the supplier.	975(b)(3)(F)

Comments regarding the Actual Water Use:

Actual Residential Water Use (Potable and Non-Potable), 90th Percentile Water Use will be completed in the next reproting period.

Annual, Aggregate Real Water Loss Calculator

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This tab calculates the value of the aggregate real water loss that occurred during the time period covered by this report (July 2023-June 2024).
By default, the values from the Open Data Portal are used ("Open Data values" in B8).
If the "Reporting Period" values are blank, or the values in the Method 1 table do not reflect the water loss conditions for the time period specified above,
choose either "Water Loss Audit due Jan 1 2025" in B8 to provide values that will be submitted to the Department, but have not yet been submitted;
or "Own estimate" to provide an alternative value based on a method of the supplier's choosing.
If "Own estimate" is chosen, please describe the calculation procedure in the comment box below the tables.

Specify Water Loss data source from dropdown	Water Loss Audit due Jan 1 2025

Method 2: Water loss data, self-reported (audit due Jan 1, 2025, or own estimate)
If not using the values in Method 1, provide per-water-system information for:
Total Annual Volume of Real Losses (Column C, with the units specified in Column D)
The reporting period start and end dates (Columns F and G)
The rest of the information will auto-populate/auto-calculate
The sum of these values populates the annual, aggregate real water losses value in the Actual Water Use tab

(Autofill) PWSIDs as shown in the supplier-PWSID crosswalk	(Autofill) PWS Name	(Fill in) Total Annual Volume of Real Losses (Units specified in Column D)	(Dropdown) Units of Reported Real Losses	(Autofill) Conversion Factor	(Fill in) Reporting Period Start Date	(Fill in) Reporting Period End Date	(Calculated) Calendar Type	(Calculated) Total Annual Volume of Real Losses (Gallon/year)
CA3710020	SAN DIEGO, CITY OF	4,318,765,008.5	Gallons	1	7/1/2023	6/30/2024	Fiscal	4,318,765,009
							TOTAL GALLONS/YEAR:	4,318,765,009

Comments regarding the Reported Real Water Loss:

The Water Loss Audit will be submitted by the Jan 1 due date. The above numbers are from the compiled audit not yet submitted.

Reporting requirements associated with implementing Section 972:
Commercial, Industrial and Institutional (CII) classification system

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Pursuant to 972(c), a supplier shall classify "existing CII water users" by June 30, 2027. By June 30, 2028 and thereafter, the supplier shall maintain, for each reporting year, at least a 95 percent classification rate of all its CII water users
Pursuant to 965(x), "existing CII water users" are those served by the supplier on or before the "effective date" of the regulation (January 1, 2025).
In cells B14 through B38, indicate the number of CII water users classified **to date** for each of the classification categories
If no classification progress has been made, please enter "0" in all sub-categories for which no users have been identified and, optionally, note in the comment box below that classification is in progress.

CII Classification Sub-Category	Value	Units	Calculation Instructions and Notes	Reference(s)
Select source of Commercial, Institutional, and Industrial (CII) service connections data	Open Data	N/A	Review CII connections data from "Open Data" (Calendar Year 2023 data from eAR) or provide "Updated Values."	
Total number of Commercial, Institutional, and Industrial (CII) service connections	17213	Number of service connections		975(d)(1)(A)
Number of classified CII water users	0	Accounts	Auto-calculated sum of CII water users provided below. CII water users may be defined in terms of "Connections", "Accounts", or "Other". Please select the units in Cell C11; these units will be used throughout the rest of the CII BMP sections	975(d)(1)(B)
Total number of Commercial, Institutional, and Industrial (CII) water users		Accounts	Total number of CII water users, in terms of the specified units. **Optional field.**	
Number of water users in **banking/financial services** category	0	Accounts		975(d)(1)(C)
Number of water users in **education** category	0	Accounts		975(d)(1)(C)
Number of water users in **entertainment/public assembly** category	0	Accounts		975(d)(1)(C)
Number of water users in **food sales and service** category	0	Accounts		975(d)(1)(C)
Number of water users in **health care** category	0	Accounts		975(d)(1)(C)
Number of water users in **lodging/residential** category	0	Accounts		975(d)(1)(C)
Number of water users in **manufacturing/industrial** category	0	Accounts		975(d)(1)(C)
Number of water users in **mixed-use** category	0	Accounts		975(d)(1)(C)
Number of water users in **office** category	0	Accounts		975(d)(1)(C)
Number of water users in **parking** category	0	Accounts		975(d)(1)(C)
Number of water users in **public services** category	0	Accounts		975(d)(1)(C)
Number of water users in **religious worship** category	0	Accounts		975(d)(1)(C)
Number of water users in **retail** category	0	Accounts		975(d)(1)(C)
Number of water users in **technology/science** category	0	Accounts		975(d)(1)(C)
Number of water users in **services** category	0	Accounts		975(d)(1)(C)
Number of water users in **utility** category	0	Accounts		975(d)(1)(C)
Number of water users in **warehouse/storag**e category	0	Accounts		975(d)(1)(C)
Number of water users in **"other"** category	0	Accounts		975(d)(1)(C)
Number of water users in **CII laundries** category	0	Accounts		975(d)(1)(C)
Number of water users in **landscapes with dedicated irrigation meters (DIMs)** category	0	Accounts		975(d)(1)(C)
Number of water users in **water recreation** category	0	Accounts		975(d)(1)(C)
Number of water users in **car wash** category (property type: **standalone car wash**)	0	Accounts		975(d)(1)(C)
Number of water users in **car wash** category (property type: **vehicle dealership**)	0	Accounts		975(d)(1)(C)
Number of water users in **car wash** category (property type: **convenience store with gas station**)	0	Accounts		975(d)(1)(C)
Number of water users in **car wash** category (property type: **repair services**)	0	Accounts		975(d)(1)(C)

Metered Commercial (C) & Institutional (I) connections, as reported in the eAR for CY 2023	17213
Unmetered Commercial (C) & Institutional (I) connections, as reported in the eAR for CY 2023	0
Metered Industrial (I) connections, as reported in the eAR for CY 2023	0
Unmetered Industrial (I) connections, as reported in the eAR for CY 2023	0
Total number of CII connections, as reported in the eAR for Calendar Year 2023	17213
Updated number of metered Commercial (C) and Institutional (I) connections	
Updated number of unmetered Commercial (C) and Institutional (I) connections	
Updated number of metered Industrial (I) connections	
Updated number of unmetered Industrial (I) connections	
Updated total number of CII connections	0

Comments regarding the CII Classification (972):

Classification is in progress.

Reporting requirements associated with implementing Section 973:

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Converting CII landscapes with mixed-meters to Dedicated Irrigation Meters (DIMs) or employing in-lieu technologies

Pursuant to 973(a), a supplier shall identify CII water users associated with "large landscapes." Large landscapes are CII landscapes that are 1/2 acre in size or larger with mixed-use meters.
Pursuant to 973(a)(1), a supplier shall identify all existing CII water users associated with large landscapes by June 30, 2027
Pursuant to 973(a)(2), a supplier shall alternatively identify, by June 30, 2029, just those CII water users associated with large landscapes and that exceed the water budget calculated according to the formula in 973(c)(1).
In cell B12, select one of two options: 973(a)(1) or 973(a)(2)
If you select 973(a)(1) in cell B12, enter values in cells B13 through B15 before moving to Cell B3e.
If you select 973(a)(2) in cell B12, also enter values in cells B16 through B19 before moving to Cell B33.
If no large landscapes have yet been identified, enter "0" in cells B13 through B15 (and, if choosing 973(a)(1), B17 through B19 as well), and, optionally, note in the comment box below that identification is in progress.

Reporting requirements associated with implementing Section 973(a)	Value	Units	Calculation Instructions and Notes	Reference(s)
Did your agency identify CII water users pursuant to section 973(a)(1) or 973(a)(2)?	973(a)(1)	N/A		975(d)(2)(B)
Total number of water users associated with large landscapes	0	Accounts	Units are prefilled from the selection in the CII Classification tab	975(d)(2)(A)(i)
Total estimated aggregate volume of water applied to large landscapes	0	Gallons/Year		975(d)(2)(A)(ii)
Total aggregate square footage of large landscapes	0	Square Feet		975(d)(2)(A)(iii)

Pursuant to 973(b), a supplier shall, by June 30, 2039, have either installed DIMs on, or employed in-lieu technologies for and offered best management practices (BMPs) to, existing CII water users identified persuant to 973(a).
By June 30, 2040 and thereafter, a supplier shall either have installed DIMs on, or employed in-lieu technologies for & offered BMPs to, at least 95% of CII water users associated with large landscapes, as assessed on an annual basis.
If employing in-lieu technologies and offering BMPs, a supplier shall employ ***at least one*** *of the in-lieu technologies listed in the drop-down menu in* ***Cell B39.***
With regard to BMPs, a supplier must:
Offer at least one of the BMPs listed in the drop-down menu in ***Cell B42****, which are the "Outreach, Technical Assistance, and Education" BMPs listed in 974(f)(1).*
Offer the BMPs described in ***Cells A45*** *and* ***A46****, which are the "Landscape" BMPs identified in section 974 (f)(3)(B) and (C).*
In addition to the required in-lieu technologies and BMPs, a supplier may also indicate if additional in-lieu technologies were employed or if additional BMPs were offered.
If no BMPs or in-lieu technologies have yet been offered/employed, select "Other" in required dropdowns and put "In progress" in the appropriate comment box below.

Reporting requirements associated with implementing Section 973(b)	Value	Units	Calculation Instructions and Notes	Reference(s)
Did your agency install DIMs on the landscapes identified pursuant to 973(a) during the 2023-2024 fiscal year?	No	Yes/No	Please select "yes" or "no"	975(d)(2)(C)
Did your agency employ in-lieu technologies and offer BMPs during the 2023-2024 fiscal year for the landscapes identified pursuant to 973(a)?	No	Yes/No	Please select "yes" or "no"	975(d)(2)(D)
973(b)(3): "Outreach, Technical Assistance, and Education" BMP offered	**Drop-down. Selection required.**	N/A	If "Other" is selected, click here to describe the BMP offered.	975(d)(2)(D)(v)
973(b)(3): "Outreach, Technical Assistance, and Education" BMP offered (optional)	Drop-down. Selection optional.	N/A		
973(b)(3): "Outreach, Technical Assistance, and Education" BMP offered (optional)	Drop-down. Selection optional.	N/A		
973(b)(3): Landscape BMP: Did your agency offer irrigation system inspections, audits, or surveys during the 2023-2024 fiscal year?	Yes	Yes/No	Please select "yes" or "no"	975(d)(2)(D)(v)
973(b)(3): Landscape BMP: Did your agency offer training and guidance on irrigation scheduling or maintenance during the 2023-2024 fiscal year?	Yes	Yes/No	Please select "yes" or "no"	975(d)(2)(D)(v)
973(b)(3): Other landscape best management practices offered (optional)	(E) Programs to remove turf and replace it with climate-ready vegetation	N/A	If "Other" is selected, click here to describe the BMP offered.	
973(b)(3): Other landscape best management practices offered (optional)	(E) Programs to remove turf and replace it with climate-ready vegetation	N/A		
The estimated annual water savings associated with section 973(b)	12916816	Gallons/Year		975(d)(2)(D)(vi)

975(d)(2)(D)(iv) requires a supplier provide a narrative description of an in-lieu technology employed, if different from those listed in the drop-down menus.
Describe the technology used to identify, estimate, and analyze outdoor water use or improve outdoor water use efficiency. The use of this technology to meet compliance obligations is subject to Board approval.

Provide a narrative description of the "Other" BMP, if different from those listed in the drop-down menus. The use of "other" BMPs to meet compliance obligations is subject to Board approval.

General comments regarding DIMs or In-Lieu Technologies:

Identification is in progress.

Reporting requirements associated with implementing Section 974:
CII Best Management Practices (BMPs) for water users that exceed a recommended size, volume of water use, or other threshold

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974(a) requires a supplier to, by January 1, 2025, identify the disclosable buildings within its service area using the list of disclosable buildings the California Energy Comission (CEC) has on its website
On the CEC's website a supplier may "download submitted benchmarking information."
A supplier is required to provide the information described in 974(b), if the disclosable building's owner or owner's agent requests it.
This information includes the last four characters of each building meter's serial number and each meter's aggregate water use data in monthly intervals.

Reporting requirements associated with implementing Section 974(a) and (b)	Value	Units	Calculation Instructions and Notes	Reference(s)
Total number of disclosable buildings identified pursuant to 974(a)	1174	Number of buildings	Go to the guidance document to see an example of a procedure that may be used to determine the number of disclosable buildings	975(d)(3)(A)
Number of CII customers that have asked for the information required pursuant to 974(b)	0	Number of CII customers	**Optional field.**	
Total number of CII customers for which the supplier has provided the information required pursuant to 974(b)	0	Number of CII customers		975(d)(3)(B)

Pursuant to 974(c), a supplier shall identify CII water users that exceed the thresholds identified in paragraphs (1), (2), or (3).
The thresholds identified in 974(c)(1) are (A) CII water users at or above the 97.5th percentile for CII water use & (B) CII water users at or above the 80th percentile for CII water use
The thresholds identified in 974(c)(2) are (A) CII water users at or above the 97.5th percentile for CII water use & (B) CII water users at or above the 80th percentile for water use in each of the 972 classification categories
The threshold identified in 974(c)(3) are CII water users that appear to be inefficient according to key business activity indicators (KBAI) the supplier has developed for the 972 classification categories.

Pursuant to 974(g)(1), a supplier for which annual CII water deliveries are 10 percent or less of total deliveries (5-year average) shall design and implement a conservation program including at least two BMPs from subdivision (f)(1)
If you wish to pursue this route, please fill out B19 and provide supporting information along with the report submission.

5-year average CII % of total deliveries (provide a %):	
Implementing conservation program pursuant to 974(g)?	No

After completing the table below, use the link that appears, corresponding to the selection made in B23 (and optionally, B19) to navigate to the appropriate tab and complete the rest of the requirements for 974(c)

Reporting requirements associated with implementing Section 974(c)	Value	Units	Calculation Instructions and Notes	Reference(s)
The method used to identify which CII customers would be offered Best Management Practices (BMPs)		N/A		975(d)(4)
Number of classified CII water users	0	Accounts	Autofilled from the "CII Classification (972)" tab, cell B11. Units are based on the defined units from the same tab.	975(d)(1)(B)

Comments regarding the BMPs (974) tab:

Accounts are in process of being anlyzed.

Reporting requirements associated with implementing Section 974(c)(1):
CII BMPs for water users that exceed a recommended size, volume of water use, or other threshold

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A supplier shall identify the CII water users that exceed the thresholds identified in paragraph 974(c)(1) by June 30, 2025.
The thresholds for **974(c)(1)** are (A) CII water users at or above the **97.5th percentile for CII water use** & (B) CII water users at or above the supplier's **80th percentile for CII water use.**
Complete all green fields in the table below. If a value is 0, enter 0; do not leave blank.

Reporting requirements associated with implementing Section 974(c)(1)	Value	Units	Calculation Instructions and Notes	Reference(s)
The number of CII water users at or above the 97.5th percentile for CII water use	0	Accounts	Indicate the number of CII water users in Cell B8. The units in Cell C8 are based on the units specified in the CII Classification tab.	975(d)(4)(A)(i)
The estimated annual water savings associated with the BMPs offered to CII water users at or above the 97.5th percentile for CII water use	0	Gallons/Year		975(d)(4)(A)(iii)
The number of CII water users at or above the 80th percentile for CII water use	0	Accounts	Indicate the number of CII water users in Cell B11. The units in Cell C11 are based on the units specified in the CII Classification tab.	975(d)(4)(A)(vi)
The estimated annual water savings associated with the BMPs offered to CII water users at or above the 80th percentile for CII water use	0	Gallons/Year		975(d)(4)(A)(vi)

Provide a narrative description of the "Other" BMP, if different from those listed in the drop-down menus. The use of "other" BMPs to meet compliance obligations is subject to Board approval.

General comments regarding 974(c)(1):

Analysis is in process.

Reporting requirements associated with implementing Section 974(c)(1):
CII BMPs for water users that exceed a recommended size, volume of water use, or other threshold

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A supplier shall identify the CII water users that exceed the thresholds identified in paragraph 974(c)(1) by June 30, 2025.
The thresholds for **974(c)(1)** are (A) CII water users at or above the **97.5th percentile for CII water use** & (B) CII water users at or above the supplier's **80th percentile for CII water use.**
Complete all green fields in the table below. If a value is 0, enter 0; do not leave blank.

Reporting requirements associated with implementing Section 974(c)(1)	Value	Units	Calculation Instructions and Notes	Reference(s)
The number of CII water users at or above the 97.5th percentile for CII water use	0	Accounts	Indicate the number of CII water users in Cell B8. The units in Cell C8 are based on the units specified in the CII Classification tab.	975(d)(4)(A)(i)
The estimated annual water savings associated with the BMPs offered to CII water users at or above the 97.5th percentile for CII water use	0	Gallons/Year		975(d)(4)(A)(iii)
The number of CII water users at or above the 80th percentile for CII water use	0	Accounts	Indicate the number of CII water users in Cell B11. The units in Cell C11 are based on the units specified in the CII Classification tab.	975(d)(4)(A)(vi)
The estimated annual water savings associated with the BMPs offered to CII water users at or above the 80th percentile for CII water use	0	Gallons/Year		975(d)(4)(A)(vi)

Provide a narrative description of the "Other" BMP, if different from those listed in the drop-down menus. The use of "other" BMPs to meet compliance obligations is subject to Board approval.

General comments regarding 974(c)(1):

Analysis is in process

Reporting requirements associated with implementing Section 974(c)(2):
CII BMPs for water users that exceed a recommended size, volume of water use, or other threshold

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A supplier shall identify the CII water users that exceed the thresholds identified in paragraph 974(c)(2) by June 30, 2027.
The thresholds for **974(c)(2)** are (A) CII water users at or above the **97.5th percentile for CII water use** & (B) CII water users at or above the supplier's **80th percentile for water use in each of the classification categories described in section 972**.

Reporting requirements associated with implementing Section 974(c)(2)	Value	Units	Calculation Instructions and Notes	Reference(s)
The total number of CII water users at or above the 97.5th percentile for CII water use		Accounts	If 0, enter 0. Do not leave blank.	975(d)(4)(B)(i)
For the water users in cell B8, indicate the specific BMPs offered from each of the BMP categories			Complete Table 1 if B8 is greater than 0	975(d)(4)(B)(ii)
The estimated annual water savings associated with the BMPs offered to CII water users at or above the 97.5th percentile for CII water use		Gallons/Year		975(d)(4)(B)(iii)
The total number of CII water users at or above the 80th percentile for CII water use in each of the classification categories specified in 972	0	Accounts	Calculated based on the table below	975(d)(4)(B)(vi)
The estimated annual water savings associated with the BMPs offered to CII water users at or above the supplier's 80th percentile for CII water use in each of the classification categories described in section 972		Gallons/Year		975(d)(4)(B)(vi)

For each of the classification categories described in section 972, provide the number of water users that are at or above the 80th percentile of CII water use in Column C. **If 0, enter 0 (do not leave blank).**
If the number of users in Column C is greater than 0, use the provided hyperlink to navigate to the corresponding table and report on BMPs.
If the number of classified users in Column C is 0, then the corresponding tables are not required.

CII Classification categories	Number of classified water users	Number of users at or above 80th percentile	Water User Units	Reference(s)
Banking/financial services category	0	0	Accounts	975(d)(4)(B)(iv)
Education category	0	0	Accounts	975(d)(4)(B)(iv)
Entertainment/public assembly category	0	0	Accounts	975(d)(4)(B)(iv)
Food sales and service category	0	0	Accounts	975(d)(4)(B)(iv)
Health care category	0	0	Accounts	975(d)(4)(B)(iv)
Lodging/residential category	0	0	Accounts	975(d)(4)(B)(iv)
Manufacturing/industrial category	0	0	Accounts	975(d)(4)(B)(iv)
Mixed-use category	0	0	Accounts	975(d)(4)(B)(iv)
Office category	0	0	Accounts	975(d)(4)(B)(iv)
Parking category	0	0	Accounts	975(d)(4)(B)(iv)
Public services category	0	0	Accounts	975(d)(4)(B)(iv)
Religious worship category	0	0	Accounts	975(d)(4)(B)(iv)
Retail category	0	0	Accounts	975(d)(4)(B)(iv)
Technology/science category	0	0	Accounts	975(d)(4)(B)(iv)
Services category	0	0	Accounts	975(d)(4)(B)(iv)
Utility category	0	0	Accounts	975(d)(4)(B)(iv)
Warehouse/storage category	0	0	Accounts	975(d)(4)(B)(iv)
"**Other**" category	0	0	Accounts	975(d)(4)(B)(iv)
CII laundries category	0	0	Accounts	975(d)(4)(B)(iv)
Landscapes with DIMs category	0	0	Accounts	975(d)(4)(B)(iv)
Water recreation category	0	0	Accounts	975(d)(4)(B)(iv)
Car wash category	0	0	Accounts	975(d)(4)(B)(iv)
Total	0	0	Accounts	

974(d) directs suppliers -- that have identified water users **at or above the 97.5th percentile for CII water use** -- to design and implement a conservation program that includes **at least two** BMPs from each of the BMP categories identified in 974(f).
Suppliers are required to offer these BMPs to CII water users that exeed the 97.5th percentile threshold. In addition to the required BMPs , a supplier may also indicate if additional BMPs were offered.
If "Other" is selected for any of the specific BMPs, in any of the BMP categories, click here to describe the BMP offered.
If no BMPs have yet been offered for one of the BMP categories, select the "Other" option and put "In progress" in the "Other" description box.
Table 1: For the water users identified according to (c)(2)(A), identify at least two BMPs from the drop-down menu in column B for each of the BMP categories identified in column A

BMP Category	Specific BMPs offered
(1) Outreach, Technical Assistance, and Education	**Drop-down. Selection required.**
(1) Outreach, Technical Assistance, and Education	**Drop-down. Selection required.**
(1) Outreach, Technical Assistance, and Education	Drop-down. Selection optional.
(1) Outreach, Technical Assistance, and Education	Drop-down. Selection optional.
(2) Incentive best management practices	**Drop-down. Selection required.**
(2) Incentive best management practices	**Drop-down. Selection required.**
(2) Incentive best management practices	Drop-down. Selection optional.
(2) Incentive best management practices	Drop-down. Selection optional.
(3) Landscape best management practices	**Drop-down. Selection required.**
(3) Landscape best management practices	**Drop-down. Selection required.**
(3) Landscape best management practices	Drop-down. Selection optional.
(3) Landscape best management practices	Drop-down. Selection optional.
(4) Collaboration and coordination best management practices	**Drop-down. Selection required.**
(4) Collaboration and coordination best management practices	**Drop-down. Selection required.**
(4) Collaboration and coordination best management practices	Drop-down. Selection optional.
(4) Collaboration and coordination best management practices	Drop-down. Selection optional.
(5) Operational best management practices	**Drop-down. Selection required.**
(5) Operational best management practices	**Drop-down. Selection required.**
(5) Operational best management practices	Drop-down. Selection optional.
(5) Operational best management practices	Drop-down. Selection optional.

General comments regarding 974(c)(2):

Analysis is in process

Reporting requirements associated with implementing Section 974(c)(2):
CII BMPs for water users that exceed a recommended size, volume of water use, or other threshold

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A supplier shall identify the CII water users that exceed the thresholds identified in paragraph 974(c)(2) by June 30, 2027
The thresholds for 974(c)(2) are (A) CII water users at or above the 97.5th percentile for CII water use & (B) CII water users at or above the supplier's 80th percentile for water use in each of the classification categories described in section 972.

Reporting requirements associated with implementing Section 974(c)(2)	Value	Units	Calculation Instructions and Notes	Reference(s)
The total number of CII water users at or above the 97.5th percentile for CII water use	0	Accounts	If 0, enter 0. Do not leave blank.	975(d)(4)(B)(i)
The estimated annual water savings associated with the BMPs offered to CII water users at or above the 97.5th percentile for CII water use	0	Gallons/Year		975(d)(4)(B)(iii)
The total number of CII water users at or above the 80th percentile for CII water usein each of the classification categories specified in 972	0	Accounts	Calculated based on the table below	975(d)(4)(B)(vi)
The estimated annual water savings associated with the BMPs offered to CII water users at or above the supplier's 80th percentile for CII water use in each of the classification categories described in section 972	0	Gallons/Year		975(d)(4)(B)(vi)

For each of the classification categories described in section 972, provide the number of water users that are at or above the 80th percentile of CII water use in Column C**If 0, enter 0 (do not leave blank).**
If the number of classified users in Column C is greater than 0, use the provided hyperlink to navigate to the corresponding table and report on BMPs
If the number of classified users in Column C is 0, then the corresponding table is not required

CII Classification categories	Number of classified water users	Users at or above 80th percentile	Water User Units	Reference(s)
Banking/financial services category	0	0	Accounts	975(d)(4)(B)(iv)
Education category	0	0	Accounts	975(d)(4)(B)(iv)
Entertainment/public assembly category	0	0	Accounts	975(d)(4)(B)(iv)
Food sales and service category	0	0	Accounts	975(d)(4)(B)(iv)
Health care category	0	0	Accounts	975(d)(4)(B)(iv)
Lodging/residential category	0	0	Accounts	975(d)(4)(B)(iv)
Manufacturing/industrial category	0	0	Accounts	975(d)(4)(B)(iv)
Mixed-use category	0	0	Accounts	975(d)(4)(B)(iv)
Office category	0	0	Accounts	975(d)(4)(B)(iv)
Parking category	0	0	Accounts	975(d)(4)(B)(iv)
Public services category	0	0	Accounts	975(d)(4)(B)(iv)
Religious worship category	0	0	Accounts	975(d)(4)(B)(iv)
Retail category	0	0	Accounts	975(d)(4)(B)(iv)
Technology/science category	0	0	Accounts	975(d)(4)(B)(iv)
Services category	0	0	Accounts	975(d)(4)(B)(iv)
Utility category	0	0	Accounts	975(d)(4)(B)(iv)
Warehouse/storage category	0	0	Accounts	975(d)(4)(B)(iv)
"Other" category	0	0	Accounts	975(d)(4)(B)(iv)
CII laundries category	0	0	Accounts	975(d)(4)(B)(iv)
Landscapes with DIMs category	0	0	Accounts	975(d)(4)(B)(iv)
Water recreation category	0	0	Accounts	975(d)(4)(B)(iv)
Car wash category	0	0	Accounts	975(d)(4)(B)(iv)
Total	0	0	Accounts	

Analysis is in process

Reporting requirements associated with implementing Section 974(c)(3):
CII BMPs for water users that exceed a recommended size, volume of water use, or other threshold

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A supplier shall identify the CII water users that exceed the thresholds identified in paragraph 974(c)(3) by June 30, 2029.
The thresholds for **974(c)(3)** are CII water users that appear to be inefficient according to **key business activity indicators (KBAI) the supplier has developed for the classification categories described in section 972.**
The KBAI is the activity or variable that affects water use. It may be a single value or a range. If a single value, enter the same value in both columns B and C. If a range, enter the smaller value in Column B and the larger value in Column C.
For example:
For the banking/financial services category, the variable might be the square footage, with units of Gallons/Sq. Ft./Day
For the education category, the variable might be the number of students, with units of gallons/student/day
Go to the "974(c)(3) PT" tab to identify KBAIs the supplier has developed for specific ENERGY STAR Portfolio Manager (ESPM) property types
In Column F, indicate the number of CII water users that appear to be inefficient according to the KBAIs developed by the supplier. **If 0, enter 0 (do not leave blank)**. For categories with non-zero inefficient users, fill out the linked table.

CII Classification categories	Lower Value	Upper Value	KBAI Units	Number of classified water users	Number of inefficient water users	Water User Units	Reference(s)
Banking/financial services category				0	0	Accounts	975(d)(4)(C)(i) and (iii)
Education category				0	0	Accounts	975(d)(4)(C)(i) and (iii)
Entertainment/public assembly category				0	0	Accounts	975(d)(4)(C)(i) and (iii)
Food sales and service category				0	0	Accounts	975(d)(4)(C)(i) and (iii)
Health care category				0	0	Accounts	975(d)(4)(C)(i) and (iii)
Lodging/residential category				0	0	Accounts	975(d)(4)(C)(i) and (iii)
Manufacturing/industrial category				0	0	Accounts	975(d)(4)(C)(i) and (iii)
Mixed-use category				0	0	Accounts	975(d)(4)(C)(i) and (iii)
Office category				0	0	Accounts	975(d)(4)(C)(i) and (iii)
Parking category				0	0	Accounts	975(d)(4)(C)(i) and (iii)
Public services category				0	0	Accounts	975(d)(4)(C)(i) and (iii)
Religious worship category				0	0	Accounts	975(d)(4)(C)(i) and (iii)
Retail category				0	0	Accounts	975(d)(4)(C)(i) and (iii)
Technology/science category				0	0	Accounts	975(d)(4)(C)(i) and (iii)
Services category				0	0	Accounts	975(d)(4)(C)(i) and (iii)
Utility category				0	0	Accounts	975(d)(4)(C)(i) and (iii)
Warehouse/storage category				0	0	Accounts	975(d)(4)(C)(i) and (iii)
"Other" category				0	0	Accounts	975(d)(4)(C)(i) and (iii)
CII laundries category				0	0	Accounts	975(d)(4)(C)(i) and (iii)
Landscapes with DIMs category				0	0	Accounts	975(d)(4)(C)(i) and (iii)
Water recreation category				0	0	Accounts	975(d)(4)(C)(i) and (iii)
Car wash category				0	0	Accounts	975(d)(4)(C)(i) and (iii)
Total				0	0	Accounts	

Annual Water Savings associated with BMPs	Value	Units	Reference
The estimated annual water savings associated with the BMPs offered to CII water users that appear to be inefficient according to the KBAIs the supplier has developed		Gallons/Year	975(d)(4)(C)(v)

974(e) directs suppliers -- that have identified water users **that appear to be inefficient according to KBAIs the supplier has developed**- to design and implement a conservation program that includes **at least one** BMP from each of the BMP categories*
Suppliers are required to offer these BMPs to CII water users that exeed the KBAI the supplier has developed. In addition to the required BMPs , a supplier may also indicate if additional BMPs were offered.
If "Other" is selected for any of the specific BMPs, in any of the BMP categories, click here to describe the BMP offered. If no BMPs have yet been offered for one of the BMP categories, select the "Other" option and put "In progress" in the "Other" description box.
*No tables are required if the total number of inefficient water users is 0.
Provide a narrative description of the "Other" BMP, if different from those listed in the drop-down menus. The use of "other" BMPs to meet compliance obligations is subject to Board approval.

General comments regarding 974(c)(3):
Analysis is in process

Reporting requirements associated with implementing Section 974(c)(3):
CII BMPs for water users that exceed a recommended size, volume of water use, or other threshold

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A supplier shall identify the CII water users that exceed the thresholds identified in paragraph 974(c)(3) by June 30, 2029.
The thresholds for 974(c)(3) are CII water users that appear to be inefficient according tc **key business activity indicators (KBAI) the supplier has developed for the classification categories described in section 972.**
The KBAI is the activity or variable that affects water use. It may be a single value or a range. If a single value, enter the same value in both columns B and C. If a range, enter the smaller value in Column B and the larger value in Column C
For example:
For the banking/financial services category, the variable might be the square footage, with units of Gallons/Sq. Ft./Day
For the education category, the variable might be the number of students, with units of gallons/student/day
Go to the "974(c)(3)_PT" tab to identify KBAIs the supplier has developed for specific ENERGY STAR Portfolio Manager (ESPM) property types
In Column F, indicate the number of CII water users that appear to be inefficient according to the KBAIs developed by the supplier.**If 0, enter 0 (do not leave blank)**. For categories with non-zero inefficient users, fill out the linked table.

CII Classification categories	Lower Value	Upper Value	KBAI Units	Number of classified water users	Number of inefficient water users	Water User Units	Reference(s)
Banking/financial services category				0	0	Accounts	975(d)(4)(C)(i) and (iii)
Education category				0	0	Accounts	975(d)(4)(C)(i) and (iii)
Entertainment/public assembly category				0	0	Accounts	975(d)(4)(C)(i) and (iii)
Food sales and service category				0	0	Accounts	975(d)(4)(C)(i) and (iii)
Health care category				0	0	Accounts	975(d)(4)(C)(i) and (iii)
Lodging/residential category				0	0	Accounts	975(d)(4)(C)(i) and (iii)
Manufacturing/industrial category				0	0	Accounts	975(d)(4)(C)(i) and (iii)
Mixed-use category				0	0	Accounts	975(d)(4)(C)(i) and (iii)
Office category				0	0	Accounts	975(d)(4)(C)(i) and (iii)
Parking category				0	0	Accounts	975(d)(4)(C)(i) and (iii)
Public services category				0	0	Accounts	975(d)(4)(C)(i) and (iii)
Religious worship category				0	0	Accounts	975(d)(4)(C)(i) and (iii)
Retail category				0	0	Accounts	975(d)(4)(C)(i) and (iii)
Technology/science category				0	0	Accounts	975(d)(4)(C)(i) and (iii)
Services category				0	0	Accounts	975(d)(4)(C)(i) and (iii)
Utility category				0	0	Accounts	975(d)(4)(C)(i) and (iii)
Warehouse/storage category				0	0	Accounts	975(d)(4)(C)(i) and (iii)
"Other" category				0	0	Accounts	975(d)(4)(C)(i) and (iii)
CII laundries category				0	0	Accounts	975(d)(4)(C)(i) and (iii)
Landscapes with DIMs category				0	0	Accounts	975(d)(4)(C)(i) and (iii)
Water recreation category				0	0	Accounts	975(d)(4)(C)(i) and (iii)
Car wash category				0	0	Accounts	975(d)(4)(C)(i) and (iii)
Total				0	0	Accounts	

Annual Water Savings associated with BMPs	Value	Units	Reference
The estimated annual water savings associated with the BMPs offered to CII water users that appear to be inefficient according to the KBAIs the supplier has developed		Gallons/Year	975(d)(4)(C)(v)

974(g)(1) directs suppliers to design and implement a conservation program that includes **at least two** BMP from the Outreach, Technical Assistance, and Education BMP category*
Suppliers are required to offer these BMPs to CII water users that exeed the KBAI the supplier has developed. In addition tc the required BMPs, a supplier may also indicate if additional BMPs were offered.
If "Other" is selected for any of the specific BMPs, in any of the BMP categories, click here to describe the BMP offered
If no BMPs have yet been offered for one of the BMP categories, select the "Other" option and put "In progress" in the "Other" description box.
*No tables are required if the total number of inefficient water users is 0.
Provide a narrative description of the "Other" BMP, if different from those listed in the drop-down menus. The use of "other" BMPs to meet compliance obligations is subject to Board approval.

General comments regarding 974(c)(3):

Analysis is in process.

Reporting requirements associated with implementing Section 974(c)(3):
CII BMPs for water users that exceed a recommended size, volume of water use, or other threshold

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A supplier shall identify the CII water users that exceed the thresholds identified in paragraph 974(c)(3) by June 30, 2029
The threshold for 974(c)(3) are CII water users that appear to be inefficient according to key business activity indicators (KBAI) the supplier has developed for the classification categories described in section 972.
If a supplier also developed KBAIs for specific ENERGYSTAR Portfolio Manager Property Types, use the table below to define them.
The KBAI is the activity or variable that affects water use. It may be a single value or a range. If a single value, enter the same value in both columns C and D. If a range, enter the smaller value in Column C and the larger value in Column D

Portfolio Manager_categories	Portfolio Manager_Property Types	Lower Value	Upper Value	KBAI Units	Calculation Instructions and Notes	Reg Text Citation
Drop-down_Select Categories	Drop-down_Select Property Type					975(d)(4)(C)(ii)

Residential Agriculture Variance (1% Threshold) [DO NOT COMPLETE UNLESS USING THE 1% THRESHOLD METHODOLOGY FOR THE RES-AG VARIANCE]

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Crop Type	Landscape Area Square Footage Associated with Crop	Crop Coefficient	Irrigation Efficiency	Crop-Specific Efficiency Factor	Reference Evapotranspiration associated with crop growing season	Effective Precipitation associated with crop growing season	Net Reference Evapotranspiration associated with crop growing season	Crop-Specific Water Volume
							Total Residential Agriculture Volume	0

Recycled Water Production and Delivery [DO NOT COMPLETE UNLESS THE SQUARE FOOTAGE OF RESIDENTIAL LANDSCAPES IRRIGATED WITH RECYCLED WATER IS GREATER THAN 0]

ORG_ID: 2160

Residential irrigation, recycled water network tracing

This section is intended to begin gathering information on the connections between facilities that produce recycled water, and the water systems that distribute them **for the purpose of residential landscape irrigation**.

In each row, begin by selecting in Column A the name of the facility that produces recycled water distributed by one or more of the water systems associated with your service area.

In column E, select the PWSID/PWS Name of the water system that receives the recycled water from the facility named in Column A.

In column F, select the PWSID/PWS Name of the water system in your service area that delivered recycled water to customers for residential irrigation.

Facility names and PWSIDs may be repeated as many times as necessary to report all connections between facilities and water systems.

Name of wastewater treatment plant or recycled water facility that produced the recycled water	GeoTracker Facility Global ID	Place ID	Waste Discharge Identification Number (WDID)	PWSID and PWS name of water system that distributes the recycled water produced by the plant or facility in Column A	PWSID and PWS name of water system delivering recycled water to residential landscapes in the supplier's service area	Did the public water system in column F receive the recycled water directly from the public water system in column E?

Go back to the Bonus Incentive tab

Facilities and Groundwater Recharge, as reported in the Volumetric Annual Report [DO NOT COMPLETE UNLESS PROVIDING INFORMATION FOR POTABLE REUSE RELATIVE TO GROUNDWATER AUGMENTATION]

In the table below, select the names of all facilities that produced recycled water used to recharge the groundwater basin (Column A)

The rest of the table will prefill using available data from the Volumetric Annual Report (VAR).

The values in Columns C and E were calculated using annual average VAR values for the preceding five years, if available.

If five years of VAR data are not available, the average is calculated using available VAR data.

Facility Name	GeoTracker Global ID	Average annual amount of groundwater recharge (AF)	Reporting years used to obtain average	Average amount of groundwater recharge (Gallons)
				0
				0
				0
				0
				0
				0
				0
				0
				0
				0
				0
				0
				0
				0
				0
				0
			TOTAL GALLONS/YEAR:	0

Groundwater Basin Extractions, as determined by per-source information from the Clearinghouse [DO NOT COMPLETE UNLESS PROVIDING INFORMATION FOR POTABLE REUSE RELATIVE TO GROUNDWATER AUGMENTATION]

In the table below, select all water systems (Column A) and corresponding sources (Facility Name from Column B) that correspond to groundwater extraction.

The rest of the table will prefill with relevant data from the Clearinghouse

PWSID and PWS Name	Facility Name	Primary Station Code/Facility ID	PWSID_Facility_ID_Index	Annual amount of water produced from the augmented basin (Gallons)
				0
				0
				0
				0
				0
				0
				0
				0
				0
				0
				0
				0
				0
				0
				0
				0
				0
				0
			TOTAL GALLONS/YEAR:	0

Facilities and Surface Reservoir Recharge, as reported in the Volumetric Annual Report [DO NOT COMPLETE UNLESS PROVIDING INFORMATION FOR POTABLE REUSE RELATIVE TO SURFACE WATER AUGMENTATION

Go back to the Bonus Incentive tab

In the table below, select the names of all facilities that produced recycled water that was used to recharge the surface reservoi

The rest of the table will prefill using available data from the Volumetric Annual Report (VAR).

The values in Columns C and E were calculated using annual average VAR values for the preceding five years, if available.

If five years of VAR data are not available, the average is calculated using available VAR data.

Facility Name	GeoTracker Global ID	Average annual amount of surface reservoir recharge (AF)	Reporting years used to obtain average	Average amount of surface reservoir recharge (Gallons)
				0
				0
				0
				0
				0
				0
				0
				0
				0
				0
				0
				0
				0
				0
				0
				0
			TOTAL GALLONS/YEAR:	0

Augmented Surface Reservoir Extractions, as determined by per-source information from the Clearinghouse

In the table below, select all water systems (Column A) and corresponding sources (Facility Name from Column B) that correspond to surface reservoir extractior

The rest of the table will prefill with relevant data from the Clearinghouse

PWSID and PWS Name	Facility Name	Primary Station Code/Facility ID	PWSID_Facility_ID_Index	Annual amount of water produced from the augmented surface reservoir (Gallons)
				0
				0
				0
				0
				0
				0
				0
				0
				0
				0
				0
				0
				0
				0
				0
				0
				0
			TOTAL GALLONS/YEAR:	0

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APPENDIX H

Article 7 City Emergency Water Use Regulations

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Article 7: Water System

Division 38: Emergency Water Regulations

("Emergency Water Regulations" added 10-19-1998 by O-18596 N.S.)

§67.3801 Declaration of Necessity and Intent

(a) This Division establishes water management requirements necessary to conserve water, enable effective water supply planning, assure reasonable and beneficial use of water, prevent waste of water, prevent unreasonable use of water, prevent unreasonable method of use of water within the City of San Diego Water Department service area in order to assure adequate supplies of water to meet the needs of the public, and further the public health, safety, and welfare, recognizing that water is a scarce natural resource that requires careful management not only in times of drought, but at all times.

(b) In addition to the general provisions of Section 67.3803, this Division establishes regulations to be implemented during times of declared water shortages, or declared water shortage emergencies. It establishes four levels of drought response actions to be implemented in times of shortage, with increasing restrictions on water use in response to worsening drought conditions and decreasing available water supplies.

(c) Drought Response Level 1 measures are voluntary and will be reinforced through local and regional public education and awareness measures. Drought Response condition Levels 2 or higher become increasingly restrictive in order to attain escalating conservation goals.

(d) During a Drought Response Level 2 condition or higher, the water conservation measures and water use restrictions established by this Division are mandatory and violations are subject to criminal, civil, and administrative penalties and remedies as provided in Chapter 1 of this Code.

(Renumbered from Sec. 67.38 and retitled to "Declaration of Emergency" on 10-19-1998 by O-18596 N.S.)
(Former Section 67.3801 repealed and added "Declaration of Necessity and Intent" 12-15-08 by O-19812 N.S; effective 1-14-2009.)

§67.3802 Definitions

The following words and phrases whenever used in this Division will have the meaning defined in this section:

Cascading Fountain means a water feature with a flow which does not eject water up into the air.

Customer means any person, corporation, public or private entity, public or private association, public or private agency, government agency or institution, school district, college, university, or any other user of water provided by the City of San Diego.

Days are defined as calendar days, unless otherwise indicated.

Disaster means a catastrophic, naturally occurring or man-made event, including earthquake, flood, fire, riot, or storm, for which a state of emergency has been declared by the President of the United States, the Governor of California, or the executive officer or legislative body of the City or County of San Diego.

Drought means any shortage in water supply based upon expected demands that are caused by hydrological, environmental, legislative, judicial actions, or by infrastructure failure.

Grower means a *customer* engaged in the growing or raising, in conformity with recognized practices of husbandry, for the purpose of commerce, trade, or industry, or for use by public educational or correctional institutions, of agricultural, horticultural or floricultural products, and produced: (1) for human consumption or for the market, or (2) for the feeding of fowl or livestock produced for human consumption or for the market, or (3) for the feeding of fowl or livestock for the purpose of obtaining their products for human consumption or for the market. Grower does not refer to customers who purchase water subject to the Metropolitan Interim Agricultural Water Program or the San Diego County Water Authority Special Agricultural Rate Programs.

Industrial Use means any of the following Subcategories of the Industrial Use Category in San Diego Municipal Code section 131.0112(a)(10): (A) Heavy Manufacturing; (B) Light Manufacturing; or (D) Research and Development.

Measurable Rainfall means a period during and within 48 hours after rainfall of 1/8 of an inch or more recorded at the nearest reporting weather station for the *customer*.

Metropolitan means the Metropolitan Water District of Southern California.

Ornamental Fountain means a water feature with an external forced flow or stream of water against gravity that is not used for recreational purposes or to support aquatic life.

Potted Plant means any plant or group of plants contained in a pot or other receptacle that can be moved, including plants on boards, bark, driftwood or airplants (epiphytes).

Recreational Fountain means any recreational structure, other than swimming pools or spa pools, which is open to the general public or which may be open to the general public, and uses re-circulated water in which people come into contact. This includes, but is not limited to, zero depth water features, interactive fountains, water slides, waterfalls, or combinations of such water features. Water features not intended for human contact, such as *ornamental fountains*, are not included.

Water Authority means the San Diego County Water Authority.

Water Conservation means the efficient management of water resources for beneficial uses, preventing waste, or accomplishing additional benefits with the same amount of water.

(Renumbered from Sec. 67.38.1 and retitled to "Comprehensive Water Conservation Plan" on 10-19-1998 by O-18596 N.S.)
(Former Section 67.3802 repealed and added "Definitions"12-15-08 by O-19812 N.S; effective 1-14-2009.)
(Amended 10-28-2009 by O-19904 N.S.; effective 11-27-2009.)
(Amended 6-29-2015 by O-20517 N.S.; effective 6-29-2015.)
(Amended 8-4-2016 by O-20699 N.S.; effective 9-3-2016.)
(Amended 11-20-2019 by O-21156 N.S.; effective 12-20-2019.)

§67.3803 Water Waste Prohibitions

To prevent the waste and unreasonable use of water and to promote water conservation, each of the following actions is prohibited, except where necessary to address an immediate health and safety need or to comply with a term or condition in a permit issued by a state or federal agency:

(a) The application of potable water to outdoor landscapes in a manner that causes runoff such that water flows onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or structures.

(b) *Customers* shall repair or stop all water leaks upon discovery or within seventy-two hours of notification by the City of San Diego.

(c) A *customer* shall not wash down sidewalks, driveways, parking areas, tennis courts or other paved areas without using a power washer or a hose with a shutoff nozzle. Washing any paved areas is only allowed to alleviate immediate safety or sanitation hazards. Wash water shall be collected and prevented from leaving the property and entering the municipal separate storm sewer system pursuant to Chapter 4, Article 3, Division 3 of this Code.

(d) A *customer* shall not overfill swimming pools and spas.

(e) A *customer* shall not use non-recirculating *ornamental fountains* or *cascading fountains*.

(f) Using a hose that dispenses potable water to wash a motor vehicle, except where the hose is fitted with a shut-off nozzle or device attached to it that causes it to cease dispensing water immediately when not in use.

(g) Single pass-through cooling systems as part of water service connections shall be prohibited after the effective date of this section. Non-recirculating systems in all conveyer car wash and commercial laundry systems shall be prohibited after the effective date of this section.

(h) Serving drinking water other than upon request in eating or drinking establishments, including but not limited to restaurants, hotels, cafes, cafeterias, bars, or other public places where food or drink are served or purchased.

(i) Operating a hotel or motel without providing guests the option of choosing not to have towels and linens laundered daily, or operating a hotel or motel without prominently displaying notice of this option in each guestroom using clear and easily understood language.

(j) A *customer* may only irrigate *potted plants*, non-commercial vegetable gardens and fruit trees, residential and commercial landscapes, including golf courses, parks, school grounds and recreation fields, before 10:00 a.m. and after 6:00 p.m. A *customer* may irrigate at any time the following:

(1) as required by a landscape permit;

(2) for erosion control;

(3) for establishment, repair, or renovation of public use fields for schools and parks;

(4) for landscape establishment following a *disaster*. Such irrigation is permitted for a period of up to two months, after which a hardship variance is required in accordance with Section 67.3810;

(5) for renovation or repair of an irrigation system with an operator present; or

(6) for nursery and commercial *growers* using a hand-held hose equipped with a positive shut-off nozzle, a hand held container, or when a drip or micro-irrigation system or equipment is used. Irrigation of nursery propagation beds is permitted at any time.

(k) The irrigation with potable water of ornamental turf on public street medians.

(l) The irrigation with potable water of landscapes outside of newly constructed homes and buildings in a manner inconsistent with regulations or other requirements established by the California Building Standards Commission and the Department of Housing and Community Development.

(m) The application of potable water to outdoor landscapes during and within 48 hours after measurable rainfall.

(Renumbered from Sec. 67.38.2 and amended 10-19-1998 by O-18596 N.S.)
(Former Section 67.3803 repealed and added "Water Waste Prohibitions" 12-15-08 by O-19812 N.S; effective 1-14-2009.)
(Amended 12-7-2010 by O-20008 N.S.; effective 1-6-2011.)
(Amended 10-3-2011 by O-20093 N.S.; effective 11-2-2011.)
(Amended 6-29-2015 by O-20517 N.S.; effective 6-29-2015.)
(Amended 8-4-2016 by O-20699 N.S.; effective 9-3-2016.)

§67.3804 Application

(a) This Division applies to any *customer* in the use of any water provided by the City of San Diego.

(b) This Division is intended solely to further the conservation of water. It is not intended to implement or replace any provision of federal, state, or local statutes, ordinances, or regulations relating to protection of water quality or control of drainage or runoff.

(b) Nothing in this Division is intended to affect or limit the ability of the City Manager to declare and respond to an unforeseeable *disaster* or water emergency such as an earthquake, *drought*, aqueduct break, or other major disruption in the water supply, pursuant to the City Charter or other provisions of this Code.

(d) This Division does not apply to use of water from private wells or to reclaimed water, or the use of grey water systems.

(e) This Division does not apply to use of water that is subject to a special supply program, such as the *Metropolita*n Interim Agricultural Water Program or the *Water Authority* Special Agricultural Rate Programs. Violations of the conditions of special supply programs are subject to the penalties established under the applicable program. A *customer* using both water subject to a special supply program and other water provided by the City of San Diego is subject to this Division in the use of water provided by the City of San Diego.

(f) The use of potable water by any *customer* for *industrial use*, including the evaporative cooling of *industrial use* facilities, is exempt from the provisions of Municipal Code section 67.3806(c) if all of the following conditions are met to the satisfaction of the City Manager:

(1) The *customer* has satisfactorily implemented the Best Management Practices identified by the City Manager; and

(2) The *customer* is in compliance with the California Plumbing Code, title 24, part 5 of the California Code of Regulations, including using all applicable water-conserving fixtures and fittings on the premises to the fullest extent possible.

(g) If a *customer's* premises is located in an area where City reclaimed water is available for *customer* use by direct connection to the City's reclaimed water infrastructure, the use of potable water by that *customer* for *industrial use*, including the evaporative cooling of *industrial use* facilities, is exempt from the provisions of Municipal Code section 67.3806(c), if all of the following conditions are met to the satisfaction of the City Manager:

(1) the *customer* uses reclaimed water on its premises to the fullest extent possible, including in landscape irrigation and evaporative cooling, if applicable; and

(2) The *customer* is in compliance with the California Plumbing Code, title 24, part 5 of the California Code of Regulations, including using all applicable water-conserving fixtures and fittings on the premises to the fullest extent possible.

(h) This Division does not apply to areas serviced by the Park and Recreation Department, including public rights-of-way, and street trees, or areas with significant public benefit requiring enhanced irrigation schedules, such as public parks. Irrigation of the areas serviced by the Park and Recreation Department shall be operated and maintained according to a schedule determined by the City Manager, consistent with section 67.3801.

(Renumbered from Sec. 67.38.3, retitled to "Authority to Implement Water Conservation Stages" and amended 10-19-1998 by O-18596 N.S.)
(Former Section 67.3804 repealed and added "Application" 12-15-08 by O-19812 N.S; effective 1-14-2009.)
(Amended 6-29-2015 by O-20517 N.S.; effective 6-29-2015.)
(Amended 11-20-2019 by O-21156 N.S.; effective 12-20-2019.)

§67.3805 Drought Response Level 1 – Drought Watch Condition

(a) A Drought Response Level 1 condition is also referred to as a "Drought Watch" condition. The City Manager may recommend, and upon resolution of the City Council, declare a Drought Response Level 1 when there is a reasonable probability, due to *drought*, that there will be a supply shortage and that a consumer demand reduction of up to 10 percent is required in order to ensure that sufficient supplies will be available to meet anticipated demands. Upon such declaration, the City Manager shall take action to implement the voluntary Level 1 conservation practices identified in this Division.

(b) During a Level 1 Drought Watch condition, City of San Diego will increase its public education and outreach efforts to increase public awareness of the need to implement the following *water conservation* practices.

(1) Limit all landscape irrigation to no more than three assigned *days* per week on a schedule established and posted by the City Manager. This provision does not apply to commercial *growers* or nurseries, nor to the irrigation of golf course greens and tees.

(2) Use a hand-held hose equipped with a positive shut-off nozzle or hand held container or a garden hose sprinkler system on a timer to water landscaped areas, including trees and shrubs located on residential and commercial properties that are not irrigated by a landscape irrigation system.

(3) The washing of automobiles, trucks, trailers, airplanes and other types of mobile equipment is permitted only before 10:00 a.m. or after 6:00 p.m. with a hand-held container or a hand-held hose equipped with a positive shut-off nozzle for quick rinses. Boats and boat engines are permitted to be washed down after use. Washing is permitted at any time on the immediate premises of a commercial car wash. The use of water by all types of commercial car washes which do not use partially recirculated water will be reduced in volume by an amount determined by resolution of the City Council. Mobile equipment washings are exempt from these regulations where the health, safety and welfare of the public are contingent upon frequent vehicle cleanings, such as garbage trucks and vehicles to transport food products, livestock and perishables.

(4) Use recycled or non-potable water for construction purposes when available.

(5) Use of water from fire hydrants will be limited to fire fighting, meter installation by the Water Department as part of its Fire Hydrant Meter Program, and related activities or other activities necessary to maintain the health, safety and welfare of the citizens of San Diego.

(6) Construction operations receiving water from a fire hydrant meter or water truck will not use water beyond normal construction activities, consistent with Section 67.3803 and that required by regulatory agencies. Construction projects requiring watering for new landscaping materials shall adhere to the designated irrigation hours of only before 10:00 a.m. and after 6:00 p.m.

(Renumbered from Sec. 67.38.4 and amended 10-19-1998 by O-18596 N.S.)
(Former Section 67.3805 repealed and added "Drought Response Level 1 – Drought Watch Condition" 12-15-08 by O-19812 N.S; effective 1-14-2009.)
(Amended 10-28-2009 by O-19904 N.S; effective 11-27-2009.)
(Amended 12-7-2010 by O-20008 N.S.; effective 1-6-2011.)
(Amended 10-3-2011 by O-20093 N.S.; effective 11-2-2011.)
(Amended 6-29-2015 by O-20517 N.S.; effective 6-29-2015.)
(Amended 8-4-2016 by O-20699 N.S.; effective 9-3-2016.)

§67.3806 Drought Response Level 2 – Drought Alert Condition

(a) A Drought Response Level 2 condition is also referred to as a "Drought Alert" condition. The City Manager may recommend and, upon resolution of the City Council, declare a Drought Response Level 2 when, due to *drought*, a consumer demand reduction of up to 20 percent is required in order to ensure that sufficient supplies will be available to meet anticipated demands. Upon declaration of Drought Response Level 2, the City Manager shall take action to implement the mandatory Level 2 conservation practices identified in this Division.

(b) All City of San Diego water *customers* shall comply with all Level 1 Drought Watch *water conservation* practices during a Level 2 Drought Alert, and shall also comply with the following conservation measures:

(1) Limit all landscape irrigation using sprinklers to no more than five minutes per watering station during the two assigned *days* per week on a schedule established and posted by the City Manager. This provision does not apply to landscape irrigation systems using water efficient devices, including drip/micro-irrigation systems and stream rotor sprinklers.

(2) Landscaped areas, including trees and shrubs not irrigated by a landscape irrigation system governed by Section 67.3806(b)(1) shall be watered no more than two assigned *days* per week by using a hand held container, hand-held hose with positive shut-off nozzle, or low volume non-spray irrigation (soaker hose.)

(3) Stop operating *ornamental fountains* except to the extent needed for maintenance.

(4) *Potted plants*, non-commercial vegetable gardens and fruit trees may be irrigated on any *day*, but must be irrigated only before 10:00 a.m. or after 6:00 p.m.

(5) Irrigation is permitted any *day* at any time, as follows:

(A) as required by a landscape permit;

(B) for erosion control;

(C) for establishment, repair or renovation of public use fields for schools and parks; or

(D) for landscape establishment following a *disaster*. Such irrigation is permitted for a period of up to two months, which a hardship variance is required in accordance with Section 67.3810.

(c) The City Manager may recommend and, upon resolution of the City Council, implement a water allocation per *customer* account served by the City of San Diego, and a schedule of surcharges or penalties for exceeding the water allocation. If the City Council adopts or modifies water allocations, the City Manager will post notice of the water allocation prior to the effective date(s). Following the effective date(s) of the water allocation as established by the City Council, any *customer* that uses water in excess of the allocation will be subject to a surcharge or penalty for each billing unit of water in excess of the allocation. The surcharge or penalty for excess water usage will be in addition to any other remedy or penalty that may be imposed for violation of this Division. The *water conservation* measures required under Level 1 Drought Watch and Level 2 Drought Alert conditions, may be suspended by resolution of the City Council during the period a water allocation is in effect.

(Renumbered from Sec. 67.38.5 and amended 10-19-1998 by O-18596 N.S.)
(Former Section 67.3806 repealed and added "Drought Response Level 2 – Drought Alert Condition" 12-15-08 by O-19812 N.S; effective 1-14-2009.)
(Amended 10-28-2009 by O-19904 N.S; effective 11-27-2009.)
(Amended 12-7-2010 by O-20008 N.S.; effective 1-6-2011.)
(Amended 10-3-2011 by O-20093 N.S.; effective 11-2-2011.)
(Amended 6-29-2015 by O-20517 N.S.; effective 6-29-2015.)

§67.3807 Drought Response Level 3 – Drought Critical Condition

(a) A Drought Response Level 3 condition is also referred to as a "Drought Critical" condition. The City Manager may recommend and, upon resolution of the City Council, declare a Drought Response Level 3 when, due to *drought*, there will be a supply shortage and that a consumer demand reduction of up to 40 percent is required in order to ensure that sufficient supplies will be available to meet anticipated demands. Upon declaration of Drought Response Level 3, the City Manager shall take action to implement the mandatory Level 3 conservation practices identified in this Division.

(b) All City of San Diego water *customers* shall comply with all Level 1 Drought Watch and Level 2 Drought Alert *water conservation* practices during a Level 3 Drought Critical condition and shall also comply with the following additional mandatory conservation measures:

(1) Limit all landscape irrigation to no more than five minutes per watering station during the two assigned *days* per week on a schedule established and posted by the City Manager. This provision will not apply to commercial *growers* or nurseries, nor to the irrigation of golf course greens. *Customers* with irrigation systems that use non-standard spray heads, such as impact rotors, rotating nozzles or micro-spray heads shall limit irrigation to no more than 18 minutes per *day* total on assigned watering *days*.

(2) Stop filling or re-filling ornamental lakes or ponds, except to the extent needed to sustain plants or animals that have been actively managed within the water feature prior to declaration of a *drought* response level under this Division.

(3) Stop washing vehicles except at commercial carwashes that re-circulate water, or by high pressure/low volume wash systems.

(4) Stop operating *cascading fountains* and *recreational fountains* except to the extent needed for maintenance.

(c) Upon the declaration of a Drought Response Level 3 condition requiring a 30 percent or greater demand reduction, new potable water services, temporary or permanent water meters, and statements of immediate ability to serve or provide potable water service (such as, will serve letters, certificates, or letters of availability) will be allowed only under the circumstances listed below. This provision does not preclude the resetting or turn-on of meters to provide continuation of water service or to restore service that has been interrupted.

(1) A valid building permit has been issued for the project; or

(2) The project is necessary to protect the public's health, safety, and welfare; or

(3) The number of new fire hydrant meters will not exceed the existing number of currently authorized fire hydrant meters. A new fire hydrant meter will be issued only when an old meter is returned; or

(4) The applicant provides substantial evidence satisfactory to the City Manager of an enforceable commitment that the new water demands for the project will be offset prior to the provision of new water meter(s). Such offset shall be in the form of additional *water conservation* measures, the provision of recycled water use in place of existing potable water demands, or other such offsets developed and approved by the City Manager. These offsets shall be reflected in a reduced capacity fee from the project's initially calculated demand (for example, an offset of 75 equivalent dwelling units ("edu") is provided so that the project's 200 edu demand is reduced to 125 edus and fees are paid on 125 edus but the service and meter will be sized at 200 edus).

Development projects with approved tentative maps and related entitlements shall have their maps and related entitlement's expiration dates tolled for the period of time that the Drought Response Level 3 condition is in place but not to exceed 5 years, unless the development project applicant chooses to proceed with development under subsections (c)(1) through (c)(4) above.

(d) Upon the declaration of a Drought Response Level 3 condition, the City Manager will suspend consideration of annexations to its service area.

(e) The City Manager may recommend and, upon resolution of the City Council, implement a water allocation per *customer* served by the City of San Diego, and a schedule of surcharges or penalties for exceeding the water allocation. If the City Council adopts or modifies a water allocation, the City Manager will post notice of the allocation prior to the effective date(s). Following the effective date(s) of the water allocation as established by the City Council, any *customer* that uses water in excess of the allocation will be subject to a surcharge or penalty for each billing unit of water in excess of the allocation. The surcharge or penalty for excess water usage will be in addition to any other remedy or penalty that may be imposed for violation of this Division. The *water conservation* measures required under Level 1 Drought Watch, Level 2 Drought Alert, and Level 3 Drought Critical conditions may be suspended by resolution of the City Council during the period a water allocation is in effect.

(Renumbered from Sec. 67.38.6 and amended 10-19-1998 by O-18596 N.S.)
(Former Section 67.3807 repealed and added "Drought Response Level 3 – Drought Critical Condition" 12-15-08 by O-19812 N.S; effective 1-14-2009.)
(Amended 10-3-2011 by O-20093 N.S.; effective 11-2-2011.)
(Amended 6-29-2015 by O-20517 N.S.; effective 6-29-2015.)

§67.3808 Drought Response Level 4 – Drought Emergency

(a) A Drought Response Level 4 condition is also referred to as a "Drought Emergency" condition. The City Manager may recommend and, upon resolution of the City Council, declare a water shortage emergency pursuant to California Water Code section 350 and declare a Drought Response Level 4 when there is a reasonable probability that there will be a supply shortage and that a consumer demand reduction of more than 40 percent is required in order to ensure that sufficient supplies will be available to meet anticipated demands. Upon declaration of a Drought Response Level 4, the City Manager shall take action to implement the mandatory Level 4 conservation practices identified in this Division and on the grounds provided in California Water Code section 350.

(b) All City of San Diego water *customers* shall comply with all *water conservation* measures required during Level 1 Drought Watch, Level 2 Drought Alert, and Level 3 Drought Critical conditions and shall also comply with the following additional mandatory conservation measures:

(1) Stop all landscape irrigation, except crops and landscape products of commercial *growers* and nurseries. This restriction does not apply to:

(A) Maintenance of trees and shrubs that are watered no more than two assigned days per week on a schedule established and posted by the City Manager, and by using a hand held container, hand-held hose with an automatic shut-off nozzle, or low-volume non-spray irrigation;

(B) Maintenance of existing landscaping necessary for fire protection;

(C) Maintenance of existing landscaping for erosion control;

(D) Maintenance of plant materials identified to be rare, protected by City Council Policy or essential to the well being of rare animals;

(E) Maintenance of landscaping within active public parks and playing fields, day care centers, school grounds, cemeteries, and golf course greens, provided that such irrigation does not exceed two days per week according to the schedule established under Section 67.3807(b)(1);

(F) Watering of livestock; and

(G) Public works projects and actively irrigated environmental mitigation projects.

(2) Stop filling or refilling residential pools and spas.

(3) No new commitments or agreements will be entered into to provide water to *customers* or agencies located outside of the City of San Diego.

(Renumbered from Sec. 67.38.7 and amended 10-19-1998 by O-18596 N.S.) (Former Section 67.3808 repealed and added "Drought Response Level 4 – Drought Emergency" 12-15-08 by O-19812 N.S; effective 1-14-2009.) (Amended 10-3-2011 by O-20093 N.S.; effective 11-2-2011.)

§67.3809 Procedures for Determination and Notification of Drought Response Level

(a) The existence of a Drought Response Level 1 condition may be declared upon recommendation by the City Manager and resolution of the City Council, upon a written determination of the existence of the facts and circumstances supporting the determination. A copy of the written determination will be filed with the City Clerk. The City Manager will publish a notice of the determination of existence of Drought Response Level 1 condition in the City's official newspaper. The City of San Diego may also post notice of the condition on its website.

The Water Department will monitor the projected supply and demand for water during periods of emergency or *drought* and will recommend to the City Manager the extent of the conservation required. The City Manager will recommend to the City Council the implementation or termination of the appropriate level of *water conservation* in accordance with this Division.

(b) The existence of Drought Response Level 2 or Level 3 conditions may be declared upon recommendation by the City Manager and resolution of the City Council. The mandatory conservation measures applicable to Drought Response Level 2 or Level 3 conditions will take effect on the tenth day after the date the response level is declared. Within five days following the declaration of the response level, the City Manager will publish a notice giving the extent, terms and conditions respecting the use and consumption of water a minimum of one time for three consecutive days in the City's official newspaper. If the City Council adopts a water allocation, the City Manager will publish notice of this adoption in the City's official newspaper. Water allocation will be effective on the fifth day following the date of publication or at such later date as specified in the notice.

(c) The existence of a Drought Response Level 4 condition may be declared upon recommendation by the City Manager and resolution of the City Council and in accordance with the procedures specified in California Water Code Sections 351 and 352. The mandatory conservation measures applicable to Drought Response Level 4 conditions will take effect on the tenth day after the date the response level is declared. Within five days following the declaration of the response level, the City Manager will publish a notice giving the extent, terms and conditions respecting the use and consumption of water in the City's official newspaper. If the City Council adopts a water allocation, the City Manager will publish notice of the allocation in the City's official newspaper. Water allocation will be effective on the fifth day following the date of publication or at such later date as specified in the notice.

(d) The City of San Diego may declare an end to Drought Response Levels 1, 2, 3 and 4 upon recommendation of the City Manager and resolution by the City Council at any regular or special meeting of the City Council.

(Renumbered from Sec. 67.38.8 and amended 10-19-1998 by O-18596 N.S.) (Former Section 67.3809 repealed and added "Procedures for Determination and Notification of Drought Response Level" 12-15-08 by O-19812 N.S; effective 1-14-2009.)

§67.3810 Hardship Variance

(a) If, due to unique circumstances, a specific requirement of this Division would result in undue hardship to a *customer* using City of San Diego water or to property upon which City of San Diego water is used, that is disproportionate to the impacts to City of San Diego water users generally or to similar property or classes of water uses, then the *customer* may apply for a variance to the requirements as provided in this Section.

(b) The variance may be granted or conditionally granted, only upon a written finding of the existence of facts demonstrating an undue hardship to a *customer* using City of San Diego water or to property upon which City of San Diego water is used, that is disproportionate to the impacts to City of San Diego water users generally or to similar property or classes of water user due to specific and unique circumstances of the user or the user's property.

(1) Application.

Application for a variance will be in written form prescribed by the City Manager and will be accompanied by a non-refundable processing fee in an amount set by resolution of the City Council.

(2) Supporting Documentation.

The written application will be accompanied by photographs, maps, drawings, or other pertinent information as applicable, including a written statement of the applicant.

(3) Approval Authority.

The City Manager will exercise approval authority and act upon any completed application after submittal and may approve, conditionally approve, or deny the variance. The applicant requesting the variance will be promptly notified in writing of any action taken. The decision of the City Manager is final. Unless specified otherwise at the time a variance is approved, the variance applies to the subject property during the term of the mandatory *drought* response.

(4) Required Findings for Variance.

(A) Except as set forth in Section 67.3810(B), an application for a variance will be denied unless the approving authority finds, based on the information provided in the application, supporting documents, or such additional information as may be requested, and on water use information for the property as shown by the records of the City of San Diego, all of the following:

(i) that the variance does not constitute a grant of special privilege inconsistent with the limitations upon other City of San Diego *customers*; and

(ii) that because of special circumstances applicable to the property or its use, the strict application of this Division would have a disproportionate impact on the property or use that exceeds the impacts to *customers* generally; and

(iii) that the authorizing of such variance will not be of substantial detriment to adjacent properties, and will not materially affect the ability of the City of San Diego to effectuate the purpose of this Division and will not be detrimental to the public interest; and

(iv) that the condition or situation of the subject property or the intended use of the property for which the variance is sought is not common, recurrent or general in nature.

(B) An application for a variance will be denied unless the approving authority finds, based on the information provided in the application, supporting documents, or such additional information as may be requested, and on water use information for the property as shown by the records of the City of San Diego, either of the following:

(i) that the property has been adversely impacted by a *disaster*; or

(ii) that proposed alternative water use restrictions for the property would result in greater water savings than the existing water use restrictions.

(5) No relief will be granted to any *customer* for any reason in the absence of a showing by the *customer* that the *customer* has achieved the maximum practical reduction in water consumption in the *customer's* residential, commercial, industrial, institutional, agricultural or governmental water consumption.

(Renumbered from Sec. 67.38.9 on 10-19-1998 by O-18596 N.S.)
(Former Section 67.3810 repealed and added "Hardship Variance" 12-15-08 by O-19812 N.S; effective 1-14-2009.)
(Amended 10-28-2009 by O-19904 N.S; effective 11-27-2009.)

§67.3811 Violations and Penalties

It is unlawful for any *customer* to violate the mandatory provisions of this Division. Violations are subject to criminal, civil, and administrative penalties and remedies as provided in Chapter 1 of this Code. In addition, service of water may be discontinued or appropriately limited through the installation of flow-restricting devices to any *customer* who willfully uses water in violation of this Division.

(Renumbered from Sec. 67.39 and retitled to "Publication of Terms of Water Use" on 10-19-1998 by O-18596 N.S.)
(Former Section 67.3811 repealed and added "Violations and Penalties" 12-15-08 by O-19812 N.S; effective 1-14-2009.)

APPENDIX I Hazard Mitigation Plan

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Multi-Jurisdictional Hazard Mitigation Plan: City of San Diego Annex

San Diego County, California

2023

The City *of* SAN DIEGO

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1. SECTION ONE: Determine the Planning Area & Resources

1.1 Planning Area: City of San Diego

The City of San Diego is the central and largest city in the San Diego Operational Area. (The Operational Area is defined by the geographical boundaries of San Diego County.) The City's population of approximately 1.43 million makes it the eighth largest in the nation and the second largest in California. Over 42% of the County of San Diego's population resides within the City of San Diego. It is the southernmost major metropolitan area in California, encompassing the world's busiest international border. According to U.S. Customs and Border Protection, 55.6 million people entered the City of San Diego from Mexico in 2018 utilizing the two land ports of entry (San Ysidro and Otay Mesa).

The City of San Diego is made up of 342.4 square miles of land area and 90 square miles of water area that includes San Diego Bay and Mission Bay. With over 53 miles of shoreline (ocean and bay), the City is bounded on the west by the Pacific Ocean and on the south by the international border with Mexico. Smaller cities and unincorporated areas lie to the east; these areas are bounded by belts of mountains and desert. The Camp Pendleton Marine Corps Base and Riverside County are located beyond smaller incorporated cities to the north. The community of San Ysidro is geographically isolated from the rest of the City of San Diego. It is physically connected to the City by a narrow strip of land along the coast.

The terrain varies and includes coastal areas consisting of sea level beaches to rocky cliff interfaces with the Pacific Ocean, extensive canyon systems with thick vegetation that penetrate urbanized areas, and mountainous areas that define watersheds and are the source of streams, rivers, and dammed reservoirs.

Hazard Assessment

The San Diego region is classified as a Mediterranean climate with hot, sunny, dry, and rainless summers with cooler, wetter winters although precipitation is lower than any other part of the U.S. west coast. A mountain barrier crosses north to south through the eastern half of the County separating desert to the east and semi-arid coastal plains to the west. The highlands on the coastal side of the barrier are a significant source of water that feed streams of varying capacities as they descend seaward to the Pacific Ocean.

The City of San Diego is exposed and at risk for multiple hazards, all of which have the potential to disrupt communities, damage infrastructure, and create casualties. Notable risks for our region include wildfires, floods, landslides, drought, earthquakes, tropical storms, hurricanes, tsunamis, and freezes. A significant and well-established military footprint with supporting industrial sectors to include a significant biomedical technology and research industry further expose our region to the risk of chemical, biological, radiological, nuclear, and kinetic incident as a result of terrorism, war, or accident. Additional disaster risks may be realized from a hazardous materials incident, conflagration, water or air pollution, major transportation accident, water, gas or energy shortage, nuclear power plant accident, or civil disorder. Since 1965 in the County of San Diego, there have been 48 federal disasters declarations[1] (28 fires, 9 floods, 5 severe storms, 2 severe freezes, 2 for the COVID-19 Pandemic, 1 hurricane (evacuation from Katrina), and 1 severe coastal storm). Out of those 48 disasters, 45 qualified for various FEMA Public Assistance Programs and 22 received support from FEMA's Individual Assistance and/or Households Program.

[1] https://www.fema.gov/openfema-data-page/disaster-declarations-summaries-v2

1.2. Community Rating System Requirements

The Community Rating System (CRS) is a FEMA program and rewards communities that go beyond the minimum standards for floodplain management under the National Flood Insurance Program (NFIP). Communities can potentially improve their Community Rating System and lower NFIP premiums by developing a CRS Plan. **The City of San Diego participates in NFIP.**

Information for the National Flood Insurance Program can be found at:
https://www.fema.gov/flood-insurance

Community Rating System (CRS) Planning Steps	Local Mitigation Planning Handbook Tasks (44 CFR Part 201)
Step 1. Organize	**Task 1:** Determine the Planning Area and Resources **Task 2:** Build the Planning Team 44 CFR 201.6(c)(1)
Step 2. Involve the public	**Task 3:** Create an Outreach Strategy 44 CFR 201.6(b)(1)
Step 3. Coordinate	**Task 4:** Review Community Capabilities 44 CFR 201.6(b)(2) & (3)
Step 4. Assess the hazard	**Task 5:** Conduct a Risk Assessment 44 CFR 201.6(c)(2)(i) 44 CFR 201.6(c)(2)(ii) & (iii)
Step 5. Assess the problem	
Step 6. Set goals	**Task 6:** Develop a Mitigation Strategy 44 CFR 201.6(c)(3)(i) 44 CFR 201.6(c)(3)(ii) 44 CFR 201.6(c)(3)(iii)
Step 7. Review possible activities	
Step 8. Draft an action plan	
Step 9. Adopt the plan	**Task 8:** Review and Adopt the Plan 44 CFR 201.6(c)(5)
Step 10. Implement, evaluate, revise	**Task 7:** Keep the Plan Current **Task 9:** Create a Safe and Resilient Community 44 CFR 201.6(c)(4)

TABLE 1: FEMA LOCAL MITIGATION PLANNING HANDBOOK WORKSHEET 1.1 DESCRIBES THE CRS REQUIREMENTS MET BY THE SAN DIEGO COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN.

Any jurisdiction or special district may participate in the hazard mitigation planning process. However, to request FEMA approval, each of the local jurisdictions must meet all requirements of 44 CFR §201.6. In addition to the requirement for participation in the process, the Federal regulation specifies the following requirements for multi-jurisdictional plans:

- The risk assessment must assess each jurisdiction's risk where they may vary from the risks facing the entire planning area. (44 CFR §201.6(c)(2)(iii))
- There must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (44 CFR §201.6(c)(3)(iv))

- Each jurisdiction requesting approval of the plan must document that is has been formally adopted. (44 CFR §201.6(c)(5))

The County of San Diego Hazard Mitigation Base Plan lists the jurisdictions that participated in the plan and are seeking plan approval, including for this plan on behalf of the City of San Diego. The San Diego County Multi-Jurisdictional Hazard Mitigation Plan and annexes meet all requirements.

2. SECTION TWO: Build the Planning Team

2.1. Planning Participants

- Kurt Grube – Sergeant, San Diego Police Department
- Darren Bennett – IT Security Department Deputy Director
- Roy Kirby – Deputy Director, Public Works
- Gene Matter – Assistant Deputy Director, Transportation and Storm Water
- Anthony Tosca – Deputy Chief/Fire Marshall San Diego Fire Rescue
- James Holmes – Advanced Planning, Office of Emergency Services
- Jennifer Dymicki – Advanced Planning, Office of Emergency Services
- Eugene Ruzzini – Provisional Program Manager, Office of Emergency Services
- Tiffany Allen – Senior Homeland Security Coordinator, Office of Emergency Services
- Hannah Chasteene – Senior Homeland Security Coordinator, Office of Emergency Services
- Mehdi Shadyab – Senior Structural Engineer, Development Services
- Eriberto Valdez - Planning
- Bill White – Manager Security and Emergency Response Public Utilities
- Danielle Nourie-Burns – Assistant Grants Administrator Park and Recreation
- Mark Zu Hone – Associate Civil Engineer, Environmental Services
- Andrew Kleis – Deputy Director Transportation Storm Water
- Erin Williams – Associate Engineer Transportation Storm Water

2.2. Planning Process

The goals and objectives were developed by considering the risk assessment findings, localized hazard identification with loss/exposure estimates, and an analysis of the jurisdiction's current capabilities assessment. These preliminary goals, objectives and actions were developed to represent a vision of long-term hazard reduction or enhancement capabilities.

The Local Planning Group (LPG) identified current capabilities available for implementing hazard mitigation activities. The Capability Assessment (Assessment) portion of the jurisdictional hazard mitigation plan identifies administrative, technical, legal and fiscal capabilities. This includes a summary of departments and their responsibilities associated to hazard mitigation planning as well as codes, ordinances, and plans already in place associated to hazard mitigation and planning. The second part of the Assessment provides San Diego's fiscal capabilities that may be applicable to providing financial resources to implement identified

mitigation action items. *See the San Diego County Multi-Jurisdictional Hazard Mitigation Plan's Section Two for details about the county-wide Planning Process.*

3. SECTION THREE: Create an Outreach Strategy

See the *San Diego County Multi-Jurisdictional Hazard Mitigation Plan's* Section Three for details about the county-wide outreach strategy.

4. SECTION FOUR: Review Community Capabilities

Local mitigation capabilities are existing authorities, policies, programs, and resources that reduce hazard impacts or that could be used to implement hazard mitigation activities and must be included in a hazard mitigation plan by the planning team.
The planning team also may identify additional types of capabilities relevant to mitigation planning.

4.1. Capability Assessment

The primary types of capabilities for reducing long-term vulnerability through mitigation planning are:

- Planning and regulatory
- Administrative and technical
- Financial
- Education and outreach

4.1.1. Planning and Regulatory

Planning and regulatory capabilities are the plans, policies, codes, and ordinances that prevent and reduce the impacts of hazards. Please indicate which of the following your jurisdiction has in place:

Plans	Yes/No Year	Does the plan address hazards? Does the plan identify projects to include in the mitigation strategy? Can the plan be used to implement mitigation actions?
Comprehensive/Master Plan	YES	The City of San Diego General Plan serves as its Master Plan. (Adopted in 2008 with a 20-to-30-year horizon for City growth and development, sections are updated as needed). The General Plan and associated Action Plan contain policies that place consideration of future development, hazard assessment and limit development in areas with identified hazards. The County of San Diego maintains the County of San Diego General Plan, which includes the Safety Element and references back to the Multi-Jurisdictional Hazard Mitigation Plan, establishes policies and programs to protect the community from risks associated with regional identified hazards and threats, natural and human caused.
Capital Improvements Plan	YES	The CIP will be used to implement mitigation actions as new projects are identified funded.

Economic Development Plan	YES	The Plan was approved by the City Council; it does not appear to address hazards or mitigation actions.
Local Emergency Operations Plan	YES	The City of San Diego EOP is developed to be inclusive of multiple hazards. The City EOP includes annexes in the following relevant categories: Emergency Management, Fire and Law Mutual Aid, Multi-Causality Operations, Public Health Operations, and Terrorism.
Continuity of Operations Plan	YES	The City of San Diego requires through Administrative Regulation that all City functional organizations (i.e., Departments/offices/agencies) maintain a Continuity of Operation plan (COOP) that will provide for an "all-hazards" planning approach, encompassing preparation and planning for any natural and man-made hazards, and ranges from planned events to large-scale disasters. Our Office of Emergency Services administers the City's COOP Program that coordinates annual updates and maintains the primary repository for all current COOP's as a resource for leadership and EOC Activations.
Transportation Plan	YES	The Planning department maintains City Transportation plans which are integrated into the City General Plan.
Stormwater Management Plan	YES	The current plan identifies mitigation strategies and can be used to implement mitigation activities.
Community Wildfire Protection Plan	YES	Several wildfire-prone communities in the City of San Diego have initiated and received approval on their community-led CWPP. The International Fire Chiefs Association released their guide to help develop and implement a Community Wildfire Preparedness Plan in communities and across the country. It has a local community level approach to include code, development review, ordinances and local authority, and is used by leaders in the Fire Service, including subject matter experts, and local, state, and federal officials.
Real estate disclosure requirements	YES	California Natural Hazard Disclosure (NHD) report was put into effect in 1998 under California Civil Code 1103. required to disclose Special Flood Hazard, Dam Inundation, Very High Fire, Wildland Fire, Earthquake Fault Zone, and Seismic Hazard areas.
Other special plans (e.g., brownfields redevelopment, disaster recovery, coastal zone management, climate change adaptation)	YES	There is an adopted Climate Protection Plan in place. This Plan will be replaced by the Climate Action Plan currently in draft form.

How can these capabilities be expanded and improved to reduce risk?
Based on the capability assessment, the City of San Diego has existing regulatory, administrative/technical, and fiscal mechanisms in place that facilitate hazard mitigation. In addition to these existing capabilities, there are opportunities for the City to expand or improve on these policies and programs to further protect the community. Future opportunities for regulatory enhancement should focus on compliance with Assembly Bill 2140 and any future regulatory updates, including amending the City of San Diego Emergency Operations Plan and associated plans included in the table above.

TABLE 2: FEMA LOCAL MITIGATION PLANNING HANDBOOK WORKSHEET 4.1 DATA.

4.1.2. Administrative and Technical

Administrative and technical capabilities include staff and their skills and tools that can be used for mitigation planning and to implement specific mitigation actions. For smaller jurisdictions without local staff resources, if there are public resources at the next higher-level government that can provide technical assistance, indicate so in your comments:

Administration	Yes/No	Describe capability Is coordination effective?
Planner(s) or engineer(s) with knowledge of land development and land management practices	YES	Development Services Division is liaison to the Planning Commission. The Planning Department works closely with the Planning Commission and other plans and policies related to land development. These plans address climate change and sea level rise and often include specific recommendations for adoption and mitigation strategies for identified hazards.
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	YES	Conduct inspections of private and public construction projects inspecting materials and workmanship to ensure compliance with approved plans and specifications, inspect conditions prior to the start of construction, during construction and upon completion.
Planners or Engineer(s) with an understanding of natural and/or manmade hazards	YES	City of San Diego Planners and Engineers understand the importance of mitigation measures in their respective area of expertise as it relates to both natural and manmade hazards.
Mitigation Planning Committee	YES	City of San Diego LPG participates in the City-internal Committee as well as engage/participate with the San Diego County Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) Planning Team.
Maintenance programs to reduce risk (e.g., tree trimming, clearing drainage systems)	YES	The City employs Public Works, Transportation and Stormwater crews that inspect and maintain public drainage facilities and perform maintenance as necessary to ensure optimal conveyance. They employ proactive measures to mitigate potential hazards caused by weather or other occurrences to include tree trimming, and vegetation/brush clearance for our designated Wildland Urban Interface (WUI) zones.

Mutual aid agreements	YES	California legislates mutual aid throughout the State to provide a systematic mobilization, organization, and operation of necessary fire, rescue, and hazardous material resources of the state in mitigating the effects of disasters outlined by the California Emergency Services Act which further designates, through the Ca Office of Emergency Services (Cal OES), 6 Mutual Aid regions throughout the State. San Diego, in region VI, participates in Region I/VI Medical Health Operational Area (MHOAC) Mutual Aid agreement. Automatic Aid and Mutual Aid agreements are established between San Diego mutual zones (North/Metro/Central/East); to include mutual aid agreement between Public Works departments in the San Diego Region.
Staff	**Yes/No FT/PT**	**Is staffing adequate to enforce regulations? Is staff trained on hazards and mitigation?** **Is coordination between agencies and staff effective?**
Chief Building Official	YES / FT	YES
Floodplain Administrator	YES / FT	YES
Emergency Manager	YES / FT	YES
Surveyors	YES / FT	YES
Staff with education or expertise to assess the community's vulnerability to hazards	YES / FT	YES
Community Planner	YES / FT	YES
Scientists familiar with the hazards of the community	NO	The City of San Diego leverages the County of San Diego for Scientist OA support. The County has scientists on staff in several departments to assist with hazard identification and mitigation.
Civil Engineer	YES / FT	YES
Personnel skilled in GIS and/or HAZUS	YES / FT	YES
Grant writers	YES / FT	YES

TABLE 3: FEMA LOCAL MITIGATION PLANNING HANDBOOK WORKSHEET 4.1 DATA CONTINUED.

Technical	**Yes/No**	**Describe capability** **Has capability been used to assess/mitigate risk in the past?**
Warning Systems/services (Reverse 9-1-1, outdoor warning signals)	YES	The City operates and utilizes shared services contracted through the OA. The County has multiple notification systems and protocols used during emergency events. AlertSanDiego is the opt-in notification system, WEA (Wireless Emergency Alert) is coordinated and used, as well as the *SDEmergency* App and website.
Hazard data and information	YES	Maps identifying type and location of hazards in relation to specific sites
Grant writing	YES	Mitigation grants (HMA / HMGP) Grants are applied for by multiple departments within the City (Flood Authority / OES / PDS). All of which have grant writing experience.
HAZUS analysis	YES	HAZUS Analysis is utilized for the Hazard Mitigation Plan.
How can these capabilities be expanded and improved to reduce risk?		
Based on the capability assessment, the City of San Diego has existing regulatory, administrative/technical, fiscal mechanisms in place that help to mitigate hazards. In addition to these existing capabilities, there are opportunities for the City to expand or improve on these policies and programs to further protect the community. Future enhancements may include providing hazard training for staff or hazard mitigation grant funding in partnership with the County of San Diego and CalOES. Existing City emergency management staff are aware of the benefits of participating in training and webinars offered by Cal OES Hazard Mitigation Assistance (HMA) Team related to HMGP opportunities, and other funding programs. Other opportunities may be related to coordinating and educating key stakeholders in the City.		

4.1.3. Financial

Identify whether your jurisdiction has access to or is eligible to use the following funding resources for hazard mitigation:

Funding Resource	Access/ Eligibility (Yes/No)	Has the funding resource been used in past and for what type of activities? Could the resource be used to fund future mitigation actions?
Community Development Block Grants (CDBG)	YES	This is a dedicated Federal grant that benefits census tracts with 51% of the population being low or moderate income according to the 2010 census tract. The eligibility requirements may limit the possible uses for hazard mitigation.
Capital improvements project funding	YES	Capital improvement projects and needs are presented to Capital Improvements Program Review and Advisory Committee (CIPRAC) for prioritization and funding determination.
Authority to levy taxes for specific purposes	YES	Levying a tax for specific purpose but would require public vote with 2/3 majority.
Fees for water, sewer, gas, or electric service	YES	The uses of this funding source may be possible if it pertains to hazards associated with water, sewer, gas, or electrical services.
Impact fees for homebuyers or developers for new developments/homes	YES	Special Drainage Area Developer Fees provided to Flood Control District.
Incur debt through general obligation bonds	YES	The use of this funding mechanism may be limited due to financial capacity and competing Citywide projects.
Incur debt through special tax and revenue bonds	YES	The use of this funding mechanism may be limited due to financial capacity and competing Citywide projects.
Incur debt through private activity bonds	YES	The Office of Emergency Services can discuss the possible use of this funding resource with Financial Management and debt management.

How can these capabilities be expanded and improved to reduce risk?
Based on the capability assessment, the City of San Diego has existing regulatory, administrative/technical, fiscal mechanisms in place that help to mitigate hazards. In addition to these existing capabilities, there are opportunities for the City to expand or improve on these policies and programs to further protect the community. The City can update other plans, such as their Capital Improvement Project (CIP) to incorporate hazard information and include hazard mitigation actions and climate adaptation strategies that relate to infrastructure systems resiliency. Once projects related to hazard mitigation are approved, the recent CIP can be shared with key community partners and stakeholders. Additionally, the City should apply for HMGP grants to fund implementation costs associated with key CIP projects, and related projects in the City's mitigation strategy. These fiscal capabilities may be supported by City staff or augmented with consultant staff.

TABLE 4: FEMA LOCAL MITIGATION PLANNING HANDBOOK WORKSHEET 4.1 DATA CONTINUED.

4.1.4. Education and Outreach

Identify education and outreach programs and methods already in place that could be used to implement mitigation activities and communicate hazard-related information:

Program/Organization	Yes/No	Describe program/organization and how relates to disaster resilience and mitigation. Could the program/organization help implement future mitigation activities?
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access, and functional needs populations, etc.	YES	The City has recognized Community Planning Groups for each community planning area. These groups are made up of property owners, business owners, and renters within specific areas. They meet regularly and are very familiar with their communities and could be useful in implementing future disaster mitigation activities.
Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	YES	The City of San Diego has several community educational programs in many of its departments, as well as our Communication & Engagement Department designated as our lead in public outreach and education related to many topics benefiting our citizens health, safety and security. Those programs cover a range of education topics from water use, brush abatement and emergency preparedness.
Natural disaster or safety related school programs	YES	The City of San Diego Office of Emergency Services employs 1 fulltime Urban Area Security Initiative (UASI) training position to facilitate the full spectrum of emergency preparedness and security training opportunities that encompass natural disaster response training. Both our Fire and Police Departments provide disaster and safety programs for local schools. Utilized services through coordination with the

Natural disaster or safety related school programs		County of San Diego: County Department of Environmental Health & Quality (DEHQ) does educational outreach to public schools on environmental education.
StormReady certification	YES	Utilized services through coordination with the County of San Diego: The National Weather Service Storm Ready Program was created to help communities develop disaster mitigation plans and prepare for extreme weather events. San Diego County Flood Control District's (SDCFCD) applied for a Storm Ready certification in 2018 and received it shortly afterward. SDCFCD's ALERT flood warning system has over 450 sensors continuously monitoring and transmitting hydrologic and weather information to the base station at the Kearny Mesa Weather Center. During precipitation events, Flood Control staff monitor weather conditions and ensure flood warning system integrity 24/7.
Firewise Communities certification	YES	Firewise Certification is initiated by several local communities within San Diego and supported by the City. Firewise Communities is a program of the National Fire Protection Association. Firewise offers information and free resources to help communities protect homes and lives against the risks of wildfire.
Public-private partnership initiatives addressing disaster-related issues	YES	Continued coordination and partnership developments for disaster response and mitigation is primarily focused through our City Office of Emergency Services and Fire Department. They have established relationships with multiple non-profit relief agencies such as the Red Cross. Planning and coordination with private industry to include San Diego Gas and Electric's Community Fire Safety Program and regional Weather Awareness System. Establishment of a Community Emergency Response Team (CERT) and continued engagement with local community groups to provide education and mitigation information for wildfire and WUI safety.
How can these capabilities be expanded and improved to reduce risk?		
Based on the capability assessment, the City of San Diego has existing regulatory, administrative/technical, fiscal mechanisms in place that help to mitigate hazards. In addition to these existing capabilities, there are opportunities for the City to expand or improve on these policies and programs to further protect the community. The City can also expand their outreach capabilities related to hazard mitigation plans. Specific enhancements may include continued public involvement through social media and public engagement focused on project successes related to our hazard mitigation strategy. Analysis of current focus for outreach efforts to ensure equality of messaging and identify/better understand potential gaps in education and outreach to a diverse population intermingled by advocacy and special interest groups.		

TABLE 5: FEMA LOCAL MITIGATION PLANNING HANDBOOK WORKSHEET 4.1 DATA CONTINUED.

4.2. Safe Growth Audit

Identify gaps in your community's growth guidance instruments and improvements that could be made to reduce vulnerability to future development:

Comprehensive Plan	Yes	No
Land Use		
1. Does the future land-use map clearly identify natural hazard areas?	X	
2. Do the land-use policies discourage development or redevelopment within natural hazard areas?	X	
3. Does the plan provide adequate space for expected future growth in areas located outside natural hazard areas?	X	
Transportation		
1. Does the transportation plan limit access to hazard areas?	X	
2. Is transportation policy used to guide growth to safe locations?	X	
3. Are movement systems designed to function under disaster conditions (e.g., evacuation)?	X	

TABLE 6: FEMA LOCAL MITIGATION PLANNING HANDBOOK WORKSHEET 4.2 DATA.

Comprehensive Plan (continued)	Yes	No
Environmental Management		
1. Are environmental systems that protect development from hazards identified and mapped?	X	
2. Do environmental policies maintain and restore protective ecosystems?	X	
3. Do environmental policies provide incentives to development that is located outside protective ecosystems?	X	
Public Safety		
1. Are the goals and policies of the comprehensive plan related to those of the FEMA Local Hazard Mitigation Plan?	X	
2. Is safety explicitly included in the plan's growth and development policies?	X	
3. Does the monitoring and implementation section of the plan cover safe growth objectives?	X	

TABLE 7: FEMA LOCAL MITIGATION PLANNING HANDBOOK WORKSHEET 4.2 DATA CONTINUED.

Zoning Ordinance	Yes	No
1. Does the zoning ordinance conform to the comprehensive plan in terms of discouraging development or redevelopment within natural hazard areas?	X	
2. Does the ordinance contain natural hazard overlay zones that set conditions for land use within such zones?	X	
3. Do rezoning procedures recognize natural hazard areas as limits on zoning changes that allow greater intensity or density of use?	X	
4. Does the ordinance prohibit development within, or filling of, wetlands, floodways, and floodplains?	X	
Subdivision Regulations	**Yes**	**No**
1. Do the subdivision regulations restrict the subdivision of land within or adjacent to natural hazard areas?		X
2. Do the regulations provide for conservation subdivisions or cluster subdivisions in order to conserve environmental resources?		X
3. Do the regulations allow density transfers where hazard areas exist?		X

TABLE 8: FEMA LOCAL MITIGATION PLANNING HANDBOOK WORKSHEET 4.2 DATA CONTINUED.

Capital Improvement Program and Infrastructure Policies	Yes	No
1. Does the capital improvement program limit expenditures on projects that would encourage development in areas vulnerable to natural hazards?		X
2. Do infrastructure policies limit extension of existing facilities and services that would encourage development in areas vulnerable to natural hazards?	X	
3. Does the capital improvement program provide funding for hazard mitigation projects identified in the FEMA Mitigation Plan?		X
Other	**Yes**	**No**
1. Do small area or corridor plans recognize the need to avoid or mitigation natural hazards?		X
2. Does the building code contain provisions to strengthen or elevate construction to withstand hazard forces?	X	
3. Do economic development or redevelopment strategies include provisions for mitigation natural hazards?		X
4. Is there an adopted evacuation and shelter plan to deal with emergencies from natural hazards?		X

TABLE 9: FEMA LOCAL MITIGATION PLANNING HANDBOOK WORKSHEET 4.2 DATA CONTINUED.

Questions were adapted from Godschalk, David R. Practice Safe Growth Audits, Zoning Practice, Issue Number 10, October 2009, American Planning Association.

4.2.1. Developments

A summary of development in hazard zones since 2018 is shown in the table below:

Year	Hazard-Non-Hazard	Non-Residential	Residential	Total
2018	**Hazard**	346	410	756
	Non-Hazard	3,349	4,044	7,393
2019	**Hazard**	389	215	604
	Non-Hazard	3,321	4,461	7,782
2020	**Hazard**	216	94	310
	Non-Hazard	2,330	2,937	5,267
2021	**Hazard**	199	130	329
	Non-Hazard	2,450	3,500	5,950
Total		12,600	15,791	28,391
"Hazard" for purposes of this document means permits issued on properties located within the following two map layers: "FEMA National Flood Hazard" and "CAL FIRE Fire Threat."				

Projects requiring building permits reviewed by the department are expected to comply with applicable regulations, including those designed to avoid or mitigate hazard based on the environment and factors related to natural disaster. With the exception of more people living in the City potentially exposed to natural hazards, these changes in development should not cause a significant increase in vulnerability.

4.3. National Flood Insurance Program (NFIP)

The City of San Diego is a participant in the National Flood Insurance Program.

As a participant in the National Flood Insurance Program (NFIP), a community develops capabilities for conducting flood mitigation activities. The hazard mitigation plan must describe each jurisdiction's participation in the NFIP. Participating communities must describe their continued compliance with NFIP requirements. The mitigation plan must do more than state that the community will continue to comply with the NFIP. Each jurisdiction must describe their floodplain management program and address how they will continue to comply with the NFIP requirements. The local floodplain administrator is often the primary source for this information.

Jurisdictions where FEMA has issued a floodplain map but are currently not participating in the NFIP may meet this requirement by describing the reasons why the community does not participate. Plan updates must meet the same requirements and document any change in floodplain management programs.

NFIP Topic	Source of Information	Comments
Insurance Summary		
How many NFIP policies are in the community? What is the total premium and coverage?	State NFIP Coordinator or FEMA NFIP Specialist	Total Policies: 2,970 Total Premium: $2,645,433 Total Coverage: $676,862,000

How many claims have been paid in the community? What is the total amount of paid claims? How many of the claims were for substantial damage?	FEMA NFIP or Insurance Specialist	Total Claims: 520 Total Claims Unpaid: $5,583,886 Number of Claims from Substantial Damage: Unknown
How many structures are exposed to flood risk within the community?	Community Floodplain Administrator (FPA)	Exact number is not determined at this time, but not many
Describe any areas of flood risk with limited NFIP policy coverage	Community FPA and FEMA Insurance Specialist	Open areas with no structures, specifically in TJ River areas.
Staff Resources		
Is the Community FPA or NFIP Coordinator certified?	Community FPA	No
Is floodplain management an auxiliary function?	City Staff	No. It is a function of the permitting and development process.
Provide an explanation of NFIP administration services (e.g., permit review, GIS, education or outreach, inspections, engineering capability)	Community FPA	No
What are the barriers to running an effective NFIP program in the community, if any?	City Staff	The existing program meets the physical requirements in the City.
Compliance History		
Is the community in good standing with the NFIP?	State NFIP Coordinator, FEMA NFIP Specialist, community records	Yes
Are there any outstanding compliance issues (i.e., current violations)?	Community Records	No
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	Community Records	January 2008
Is a CAV or CAC scheduled or needed?	City Staff	CAV is not scheduled and no immediate need for it.

TABLE 10: FEMA LOCAL MITIGATION PLANNING HANDBOOK WORKSHEET 4.3 DATA.

NFIP Topic	Source of Information	Comments
Regulation		
When did the community enter the NFIP?	Community Status Book https://www.fema.gov/cis/CA.html	8/15/1983 City of San Diego 6/15/1984 County of San Diego
Are the FIRMs digital or paper?	Community FPA	Digital

Do floodplain development regulations meet or exceed FEMA or State minimum requirements? If so, in what ways?	Community FPA	They meet and exceed the FEMA and State requirements. The floodway increase is set to zero.
Provide an explanation of the permitting process.	Community FPA, State, FEMA NFIP Flood Insurance Manual https://www.fema.gov/flood-insurance/work-with-nfip/manuals#flood-insurance	No
Community Rating System (CRS)		
Does the community participate in CRS?	Community FPA, State, FEMA NFIP	No
What is the community's CRS Class Ranking?	Flood Insurance Manual https://www.fema.gov/flood-insurance/work-with-nfip/manuals#flood-insurance	No
What categories and activities provide CRS points and how can the class be improved?		No
Does the plan include CRS planning requirements	Community FPA, FEMA CRS Coordinator, ISO representative	No

TABLE 11: FEMA LOCAL MITIGATION PLANNING HANDBOOK WORKSHEET 4.3 DATA CONTINUED.

5. SECTION FIVE: Conduct a Risk Assessment

The planning team conducts a risk assessment to determine the potential impacts of hazards to the people, economy, and built and natural environments of the community. The risk assessment provides the foundation for the rest of the mitigation planning process, which is focused on identifying and prioritizing actions to reduce risk to hazards.

In addition to informing the mitigation strategy, the risk assessment also can be used to establish emergency preparedness and response priorities, for land use and comprehensive planning, and for decision making by elected officials, city and county departments, businesses, and organizations in the community.

5.1. Hazards Summary

Summarize hazard description information and identify which hazards are most significant to the planning area:

Summary of Potential Hazard-Related Exposure/Loss in San Diego

		Residential		Commercial		Critical Facilities	
Hazard Type	**Exposed Population**	**Number of Residential Buildings**	**Potential Exposure/ Loss for Residential Buildings (x $1,000)**	**Number of Commercial Buildings**	**Potential Exposure/ Loss for Commercial Buildings (x $1,000)**	**Number of Critical Facilities**	**Potential Exposure for Critical Facilities (x $1,000)**
Coastal Storm / Erosion	9322	4	1,554.40	3	907.05	1	719.79
Sea Level Rise (Coastal Flooding)	5,490	108	41,968.80	85	25,699.75	7	756.96
Dam Failure	89,183	32,128	12,484,940.80	4,597	1,389,902.95	292	4,022,035.15
Earthquake (Annualized Loss - Shaking & liquefaction components)	1,184,880*	280,311*	108,900,823.50*	36,762*	11,114,990.70*	1,205*	48,264,575.85*
Floods (Loss)							
100 Year	35,523	4,976	1,933,673.60	733	221,622.55	154	1,794,012.50
500 Year	68,368	14,269	5,544,933.40	1,706	515,809.10	218	3,155,540.50
Rain-Induced Landslide							
High Risk	1,222	9	3,496.50	0	0	0	0
Moderate Risk	560	4	1,554.00	0	0	0	0
Tsunami	34,592	5,749	2,234,061.40	875	264,556.25	13	797,932.50
Wildfire/ Structure Fire							
New Fire (High Results)	30,619	9,281	3,605,668.50	1,427	431,453.45	20	483,228.00
New Fire (Very High)	341,251	123,699	48,069,431.40	3,517	1,063,364.95	430	26,339,631.35

*Represents Rose Canyon Event

Hazard	Location (Geographic Area Affected)	Maximum Probable Extent (Magnitude/Strength)	Probability of Future Events	Overall Significance Ranking
Avalanche	Negligible	Weak	Unlikely	Low
Hazardous Materials/CBRNE Threats	Limited	Moderate	Occasional	Low
Climate Change	Extensive	Extreme	Highly Likely	Medium
Dam Failure	Negligible	Weak	Unlikely	Low
Drought	Limited	Moderate	Likely	Medium
Earthquake	Extensive	Severe	Occasional	Medium
Coastal Storms/Erosion	Negligible	Weak	Unlikely	Low
Expansive Soils	Negligible	Weak	Unlikely	Low
Extreme Cold	Negligible	Weak	Unlikely	Low
Extreme Heat	Significant	Moderate	Likely	Medium
Flood	Limited	Moderate	Likely	Medium
Hail	Negligible	Weak	Unlikely	Low
Hurricane	Negligible	Weak	Unlikely	Low
Landslide	Limited	Weak	Occasional	Low
Lightning	Limited	Weak	Occasional	Low
Pandemic	Extensive	Extreme	Occasional	Medium
Sea Level Rise	Negligible	Weak	Unlikely	Low
Severe Wind	Limited	Weak	Occasional	Medium
Severe Winter Weather	Negligible	Moderate	Occasional	Low
Storm Surge	Negligible	Weak	Unlikely	Low
Subsidence	Negligible	Weak	Unlikely	Low
Terrorism / Cyber Terrorism	Extensive	Extreme	Occasional	Medium
Tornado	Negligible	Weak	Unlikely	Low
Tsunami	Negligible	Weak	Unlikely	Low
Wildfire/Structure Fire	Limited	Moderate	Likely	Medium

TABLE 12: FEMA LOCAL MITIGATION PLANNING HANDBOOK WORKSHEET 5.1 DATA.

Definitions for Classifications

Location (Geographic Area Affected)

- **Negligible:** Less than 10 percent of planning area or isolated single-point occurrences
- **Limited:** 10 to 25 percent of the planning area or limited single-point occurrences
- **Significant:** 25 to 75 percent of planning area or frequent single-point occurrences
- **Extensive:** 75 to 100 percent of planning area or consistent single-point occurrences

Maximum Probable Extent (Magnitude/Strength based on historic events or future probability)

- **Weak:** Limited classification on scientific scale, slow speed of onset or short duration of event, resulting in little to no damage
- **Moderate:** Moderate classification on scientific scale, moderate speed of onset or moderate duration of event, resulting in some damage and loss of services for days
- **Severe:** Severe classification on scientific scale, fast speed of onset or long duration of event, resulting in devastating damage and loss of services for weeks or months
- **Extreme:** Extreme classification on scientific scale, immediate onset or extended duration of event, resulting in catastrophic damage and uninhabitable conditions

Hazard	Scale / Index	Weak	Moderate	Severe	Extreme
Drought	Palmer Drought Severity Index3	-1.99 to +1.99	-2.00 to -2.99	-3.00 to -3.99	-4.00 and below
Earthquake	Modified Mercalli Scale4	I to IV	V to VII	VII	IX to XII
	Richter Magnitude5	2, 3	4, 5	6	7, 8
Hurricane Wind	Saffir-Simpson Hurricane Wind Scale6	1	2	3	4, 5
Tornado	Fujita Tornado Damage Scale7	F0	F1, F2	F3	F4, F5

Probability of Future Events

- **Unlikely:** Less than 1 percent probability of occurrence in the next year or a recurrence interval of greater than every 100 years.
- **Occasional:** 1 to 10 percent probability of occurrence in the next year or a recurrence interval of 11 to 100 years.
- **Likely:** 10 to 90 percent probability of occurrence in the next year or a recurrence interval of 1 to 10 years
- **Highly Likely:** 90 to 100 percent probability of occurrence in the next year or a recurrence interval of less than 1 year.

Overall Significance

- **Low:** Two or more criteria fall in lower classifications, or the event has a minimal impact on the planning area. This rating is sometimes used for hazards with a minimal or unknown record of occurrences or for hazards with minimal mitigation potential.
- **Medium:** The criteria fall mostly in the middle ranges of classifications and the event's impacts on the planning area are noticeable but not devastating. This rating is sometimes used for hazards with a high extent rating but very low probability rating.
- **High:** The criteria consistently fall in the high classifications and the event is likely/highly likely to occur with severe strength over a significant to extensive portion of the planning area.

  - *Cumulative meteorological drought and wet conditions: https://www.ncei.noaa.gov*
  - *Earthquake magnitude as a logarithmic scale, measured by a seismograph, intensity, effect on population and structures: https://earthquake.usgs.gov*
  - *Hurricane and Tornado rating based on wind speed and associated damage: https://www.nhc.noaa.gov*

The LPG reviewed all the hazards above according to FEMA's overall significance rating. Based on FEMA's criteria for a "high" significant rating, the San Diego LPG did not rate any of its potential hazards as "high" due to the hazards not having potential to occur with severe strength over a significant to extensive portion of the planning area.

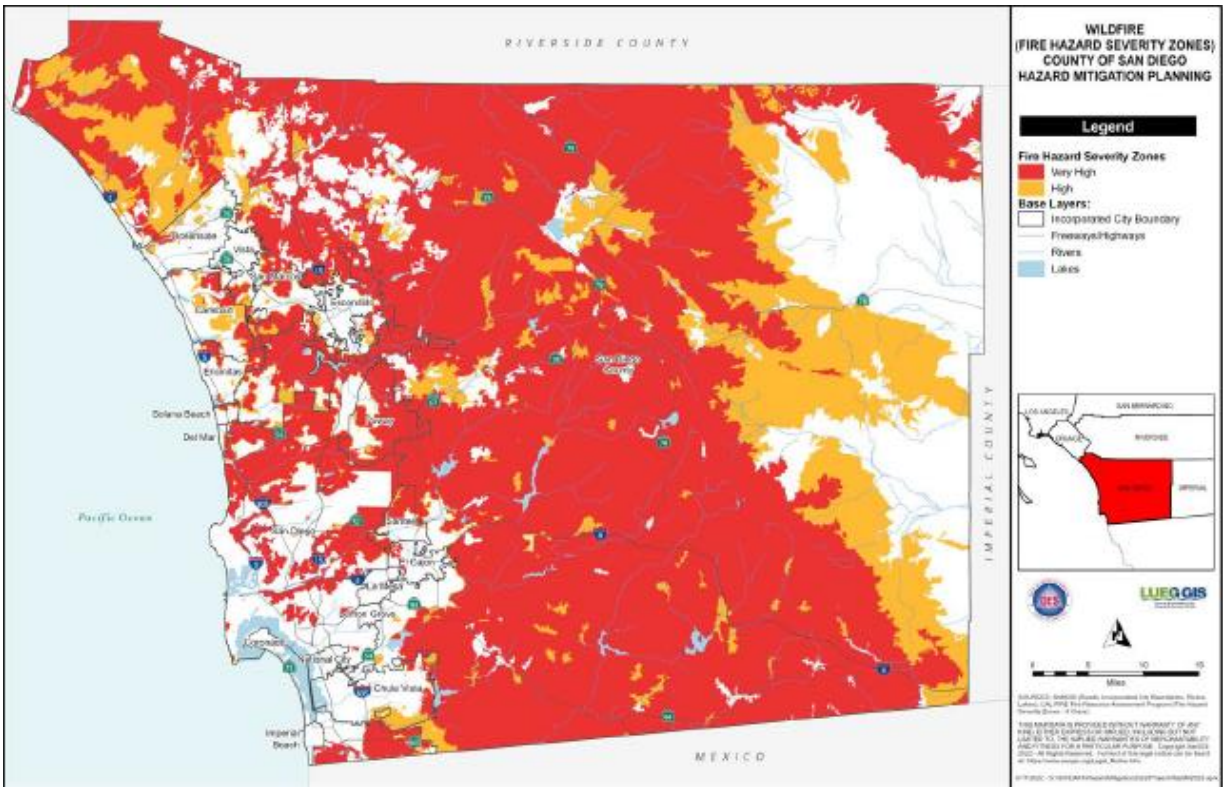
TOP HAZARDS IN CITY OF SAN DIEGO

The following top five hazards were identified by the Local Planning Group (LPG) to have an impact on the City of San Diego:Wildfire/Structure Fire, Flood, Drought, Extreme Heat, and Earthquake were chosen as the top five hazards because of the historical occurrence of the first four since 1998. Earthquake was chosen because of the 1 to 10 percent of occurrence in the next year. The other four medium ranked hazards have not significantly impacted the City of San Diego as much as the ones chosen as the top five, so they were not included.

1. **Wildfire/Structure Fire**
   - **Likely:** *10 to 90 percent probability of occurrence in the next year or a recurrence interval of 1 to 10 years.*
   - **Medium:** The criteria fall mostly in the middle ranges of classifications and the event's impacts on the planning area are noticeable but not devastating. This rating is sometimes used for hazards with a high extent rating but very low probability rating.

   - A structure fire hazard is one where there is a risk of a fire starting in an urban setting and spreading uncontrollably from one building to another across several city blocks, or within high-rise buildings.

- A wildfire is an uncontrolled fire spreading through vegetative fuels and exposing or possibly consuming structures. They often begin unnoticed and spread quickly. Naturally occurring and non-native species of grasses, brush, and trees fuel wildfires.
- A wildfire is in a wildland area in which development is essentially nonexistent—except for roads, railroads, power lines and similar facilities. An Urban-Wildland/Urban Interface fire is a wildfire in a geographical area where structures and other human development meet or intermingle with wildland or vegetative fuels. Significant development in San Diego County is located along canyon ridges at the wildland/urban interface. Areas that have experienced prolonged droughts or are excessively dry are at risk of wildfires.
- San Diego County's topography consists of a semi-arid coastal plain and rolling highlands which, when fueled by shrub overgrowth, occasional Santa Ana winds and high temperatures, creates an ever-present threat of wildland fire. Extreme weather conditions such as high temperature, low humidity, and/or winds of extraordinary force may cause an ordinary fire to expand into one of massive proportions.
- Large fires would have several indirect effects beyond those that a smaller, more localized fire would create. These may include air quality and health issues, road closures, business closures, and others that increase the potential losses that can occur from this hazard. Modeling for a larger type of fire would be difficult, but the consequences of the three largest San Diego fires this century (October, 2003, October 2007 and May 2014) should be used as a guide for fire planning and mitigation.
- The wildfire maps use the CAL Fire Resource Assessment Program data for Fire Hazard Severity Zones.



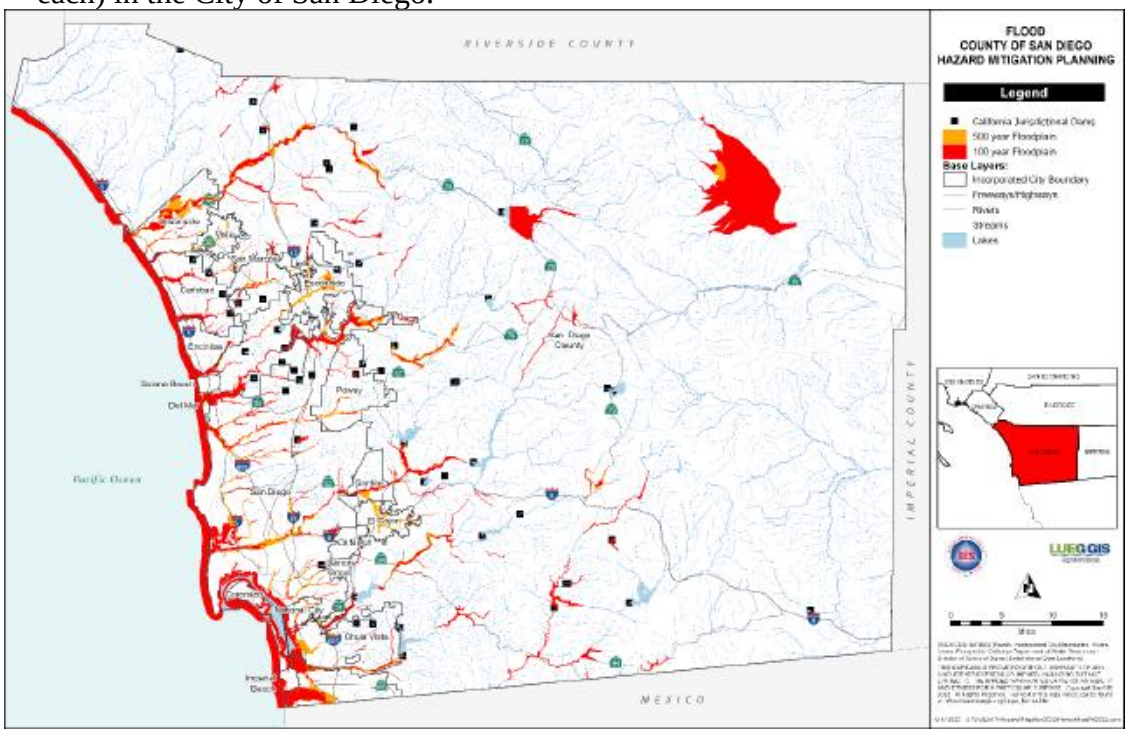
Additional regional mapping can be found in the County of San Diego Multi-Jurisdictional Hazard Mitigation Base Plan.

2. Flood

- **Likely:** *10 to 90 percent probability of occurrence in the next year or a recurrence interval of 1 to 10 years.*
- **Medium:** The criteria fall mostly in the middle ranges of classifications and the event's impacts on the planning area are noticeable but not devastating. This rating is sometimes used for hazards with a high extent rating but very low probability rating.
- A flood occurs when excess water from snowmelt, rainfall, or storm surge accumulates and overflows onto a river's bank or to adjacent floodplains. Floodplains are lowlands adjacent to rivers, lakes, and oceans that are subject to recurring floods. Most injuries and deaths from flood occur when people are swept away by flood currents, and property damage typically occurs because of inundation by sediment-filled water.
- Several factors determine the severity of floods, including rainfall intensity and duration. A large amount of rainfall over a short time span can result in flash flood conditions. A sudden thunderstorm or heavy rain, dam failure, or sudden spills can cause flash flooding. The National Weather Service's definition of a flash flood is a flood occurring in a watershed where the time of travel of the peak of flow from one end of the watershed to the other is less than six hours.
- There are no watersheds in San Diego County that have a longer response time than six hours. In this county, flash floods range from the stereotypical wall of water to a gradually rising stream. The central and eastern portions of San Diego County are most

susceptible to flash floods where mountain canyons, dry creek beds, and high deserts are the prevailing terrain.

- In regions, such as San Diego, without extended periods of below-freezing temperatures, floods usually occur during the season of highest precipitations or during heavy rainfalls after long dry spells. The areas surrounding the river valleys in all of San Diego County are susceptible to flooding because of the wide, flat floodplains surrounding the riverbeds, and the numerous structures that are built in the floodplains.
- One unusual characteristic of San Diego's hydrology is that it has a high level of variability in its runoff. The western watershed of the County of San Diego extends about 80 miles north from the Mexican border and approximately 45 miles east of the Pacific Ocean. From west to east, there are about 10 miles of rolling, broken coastal plain, 10 to 15 miles of foothill ranges with elevations of 600 to 1,700 feet; and approximately 20 miles of mountain country where elevations range from 3,000 to 6,000 feet. This western watershed constitutes about 75% of the County, with the remaining 25% mainly desert country.
- There are over 3,600 miles of rivers and streams which threaten residents and over 200,000 acres of flood-prone property. Seven principal streams originate or traverse through the unincorporated area. From north to south, they are the Santa Margarita, San Luis Rey, San Dieguito, San Diego, Sweetwater, Otay, and Tijuana Rivers (Unified San Diego County Emergency Services Organization Operational Area Emergency Plan, 2006).
- Based on FEMA records, there have been 53 repetitive losses (losses of at least $1,000 each) in the City of San Diego.

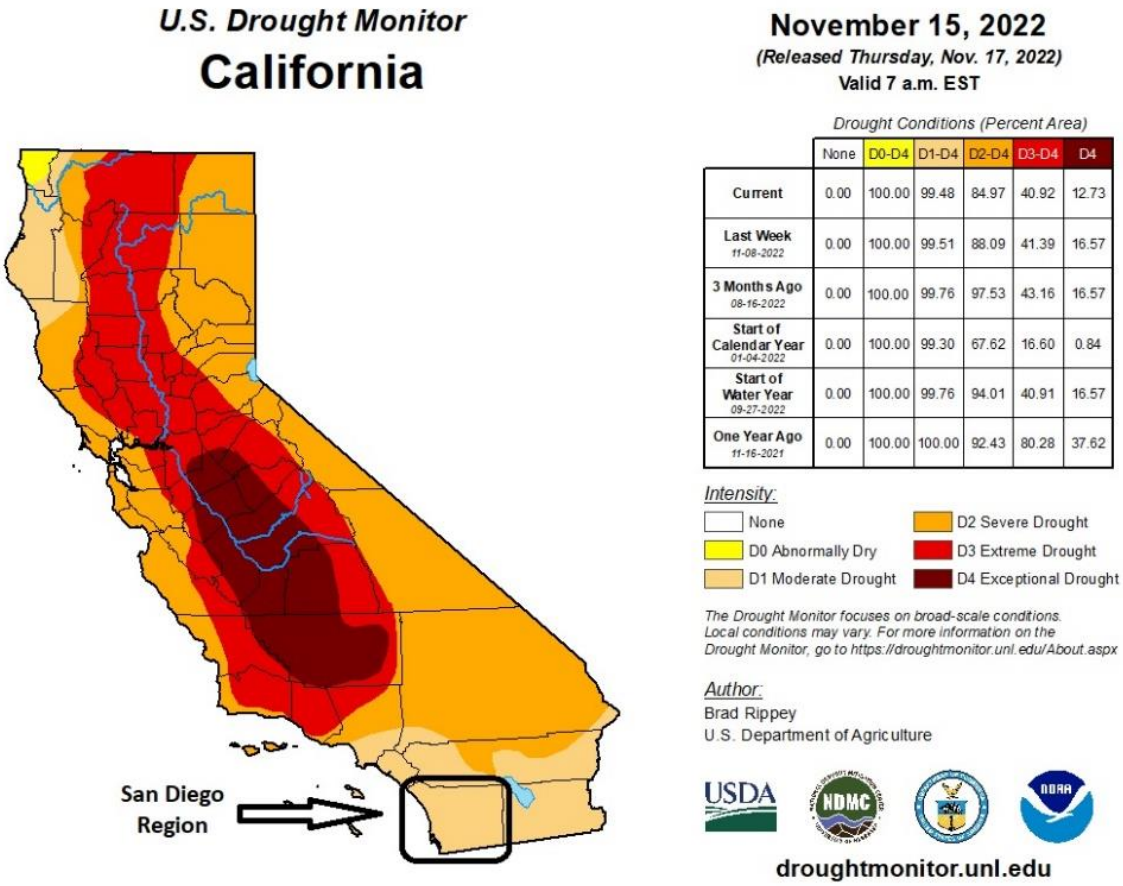


Additional regional mapping can be found in the County of San Diego Multi-Jurisdictional Hazard Mitigation Base Plan.

3. Drought

- **Likely:** *10 to 90 percent probability of occurrence in the next year or a recurrence interval of 1 to 10 years.*
- **Medium:** The criteria fall mostly in the middle ranges of classifications and the event's impacts on the planning area are noticeable but not devastating. This rating is sometimes used for hazards with a high extent rating but very low probability rating.
- A drought is A period of abnormally dry weather sufficiently long enough to cause a serious hydrological imbalance.
- Warming temperatures statewide could result in reduced water supply for the San Diego region. The State Water Project and Colorado River provide 75% to 95% of the water supply for the San Diego region, depending on the year. Both of these water supplies originate in mountain snowpack. Over the past 50 years across most of the Southwest, there has been less late-winter precipitation falling as snow, earlier snowmelt, and earlier arrival of most of the year's streamflow. Projections of further warming will result in reduced snowpack, which could translate into reduced water supply for the San Diego region's cities, agriculture, and ecosystems. In fact, studies indicate that San Diego's sources of water could shrink by 20 percent or more by 2050. An additional threat to water supply is the vulnerability of the levees protecting the California Delta, which feeds the State Water Project. According to the California Adaptation Planning Guide, jurisdictions in the San Diego region must carefully consider the vulnerability of their water supply.
- Although there is a lot of variability, projections indicate that there will be longer and more frequent drought that will be punctuated by extreme precipitation. The evaporative demand (atmospheric thirst) is an important component in driving the extent of future droughts.
- Drought can increase wildfire risk and lead to fine fuel regrowth after a fire. This type of vegetation is more susceptible to fires, creating a feedback.
- Extreme drought has the potential to intensify and change community composition and structure of ecosystems. Drought has severe consequences because it operates at spatial scales larger than other disturbances such as fire.
- The highest priority mitigation actions to reduce Climate Change impacts on this hazard should include water supply reliability that originates from a diversity of water supplies and conservation planning that addresses the impacts of drought on ecosystems.

U.S. Drought Monitor, using the Palmer Drought Severity Index.

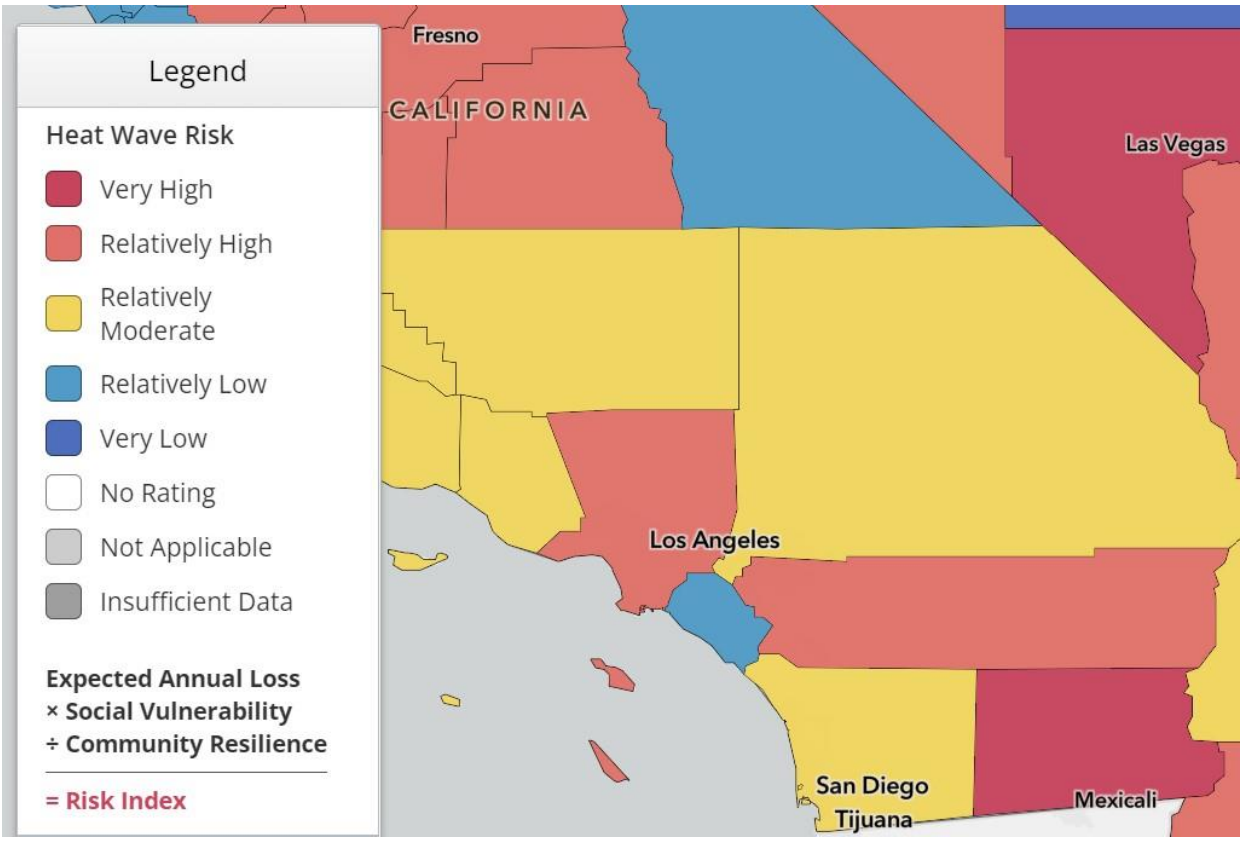


	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	99.48	84.97	40.92	12.73
Last Week 11-08-2022	0.00	100.00	99.51	88.09	41.39	16.57
3 Months Ago 08-16-2022	0.00	100.00	99.76	97.53	43.16	16.57
Start of Calendar Year 01-04-2022	0.00	100.00	99.30	67.62	16.60	0.84
Start of Water Year 09-27-2022	0.00	100.00	99.76	94.01	40.91	16.57
One Year Ago 11-16-2021	0.00	100.00	100.00	92.43	80.28	37.62

Additional regional mapping can be found in the County of San Diego Multi-Jurisdictional Hazard Mitigation Base Plan.

4. **Extreme Heat**
   - **Likely:** *10 to 90 percent probability of occurrence in the next year or a recurrence interval of 1 to 10 years.*
   - **Medium:** The criteria fall mostly in the middle ranges of classifications and the event's impacts on the planning area are noticeable but not devastating. This rating is sometimes used for hazards with a high extent rating but very low probability rating.
   - Although extreme heat does not cause structural damage like floods, fires, and earthquakes, heat waves claim many lives due to heat exhaustion and heat stroke. According to a California Energy Commission Study, from 1994 to 2009, heat waves have claimed more lives in California than all declared disaster events combined.
   - Extreme heat is exacerbated by the "urban heat island effect", whereby impervious surfaces, such as concrete and asphalt, absorb heat and result in greater warming in urban areas compared to rural areas. Urban heat islands exacerbate the public health impacts that heat waves have upon the more vulnerable populations.
   - San Diego County has among the highest percentages of impervious surfaces in the United States.

- Extreme heat events put vulnerable populations (older adults, children, the chronically ill, and people who work outside) at risk of heat-related illnesses and death. Extreme heat events highlight the importance of thoughtful social vulnerability analysis to identify populations most at risk.
- Power outages and poor air quality are further effects of extreme heat events with increased use of air conditioning and the potential increase in ozone formation, a component of smog.
- San Diego is facing an increase in the frequency, duration, and strength of heat waves with many residents less likely to have air conditioning living near the coast this leaves residence in San Diego in greater risk during temperature spikes.
- Research indicates regional heat waves will likely become more humid with higher nighttime temperatures, further stressing public health. Extreme warm temperatures in the San Diego region historically occur in July and August, as climate change takes hold, our region is seeing higher temperatures run earlier and later each year.
  FEMA risk index for extreme heat: https://hazards.fema.gov/nri/map

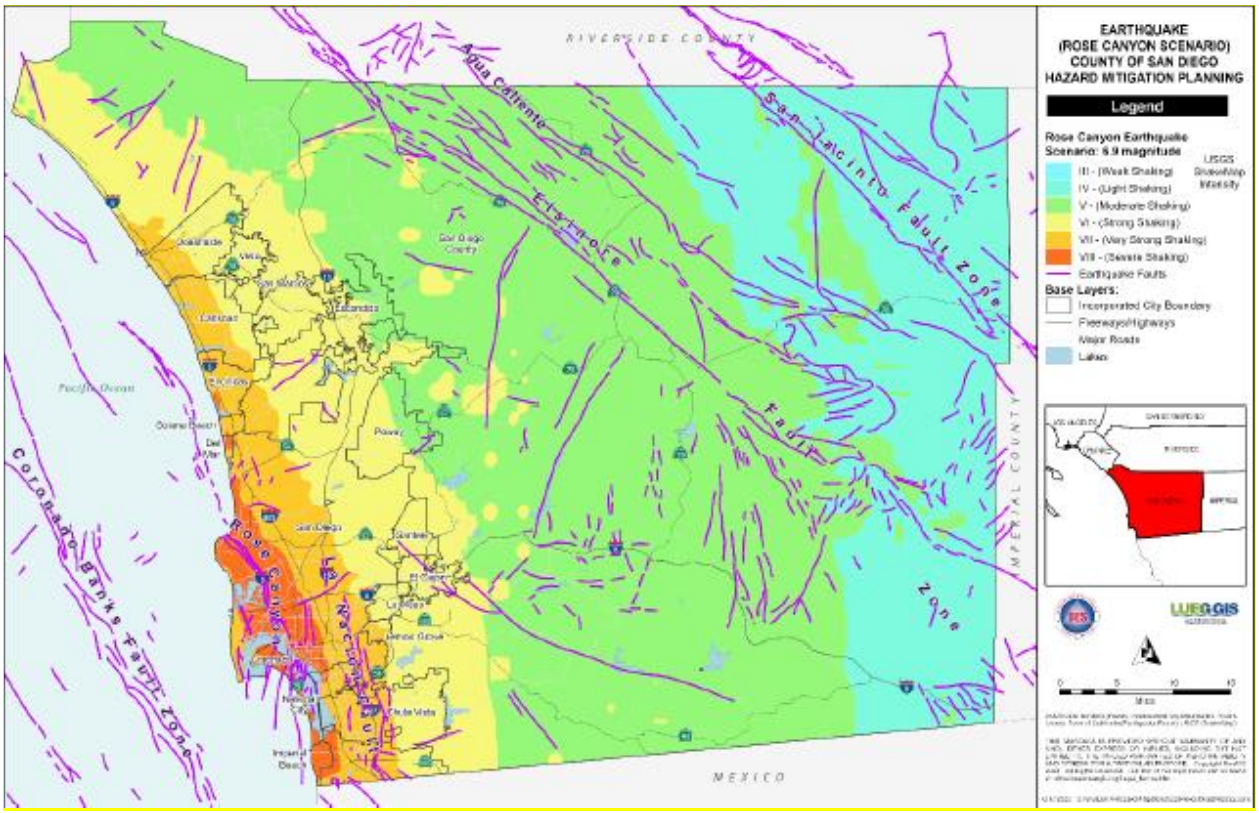


Additional regional mapping can be found in the County of San Diego Multi-Jurisdictional Hazard Mitigation Base Plan.

5. Earthquakes

- **Occasional:** *1 to 10 percent probability of occurrence in the next year or a recurrence interval of 11 to 100 years.*
- **Medium:** The criteria fall mostly in the middle ranges of classifications and the event's impacts on the planning area are noticeable but not devastating. This rating is sometimes used for hazards with a high extent rating but very low probability rating.
- An earthquake is a sudden motion or trembling that is caused by a release of strain accumulated within or along the edge of the Earth's tectonic plates. The effects of an earthquake can be felt far beyond the site of its occurrence. They usually occur without warning and, after just a few seconds, can cause massive damage and extensive casualties. Common effects of earthquakes are ground motion and shaking, surface fault ruptures, and ground failure. Ground motion is the vibration or shaking of the ground during an earthquake.
- When a fault ruptures, seismic waves radiate, causing the ground to vibrate. The severity of the vibration increases with the amount of energy released and decreases with distance from the causative fault or epicenter. Soft soils can further amplify ground motions. The severity of these effects is dependent on the amount of energy released from the fault or epicenter. One way to express an earthquake's severity is to compare its acceleration to the normal acceleration due to gravity. The acceleration due to gravity is often called "g". A 100% g earthquake is very severe.
- The effects of an earthquake can be felt far beyond the site of its occurrence. They usually occur without warning and, after just a few seconds, can cause massive damage and extensive casualties. Common effects of earthquakes are ground motion and shaking, surface fault ruptures, and ground failure. Ground motion is the vibration or shaking of the ground during an earthquake.
- Several major active faults exist in San Diego County, including the Rose Canyon, La Nacion, Elsinore, San Jacinto, Coronado Bank and San Clemente Fault Zones. The Rose Canyon Fault Zone is part of the Newport-Inglewood fault zone, which originates to the north in Los Angeles, and the Vallecitos and San Miguel Fault Systems to the south in Baja California. The Rose Canyon Fault extends inland from La Jolla Cove, south through Rose Canyon, along the east side of Mission Bay, and out into San Diego Bay.
- The Rose Canyon Fault is considered the greatest potential threat to San Diego as a region, due to its proximity to areas of high population. The La Nacion Fault Zone is located near National City and Chula Vista. The Elsinore Fault Zone is a branch of the San Andreas Fault System. It originates near downtown Los Angeles and enters San Diego County through the communities of Rainbow and Pala; it then travels in a southeasterly direction through Lake Henshaw, Santa Ysabel, Julian; then down into Anza-Borrego Desert State Park at Agua Caliente Springs, ending at Ocotillo, approximately 40 miles east of downtown.

- The San Jacinto Fault is also a branch of the San Andreas Fault System. This fault branches off from the major fault as it passes through the San Bernardino Mountains. Traveling southeasterly, the fault passes through Clark Valley, Borrego Springs, Ocotillo Wells, and then east toward El Centro in Imperial County. This fault is the most active large fault within County of San Diego. The Coronado Bank fault is located about 10 miles offshore. The San Clemente Fault lies about 40 miles off La Jolla and is the largest offshore fault at 110 miles or more in length (Unified San Diego County Emergency Services Organization Operational Area Emergency Plan, 2014).



Additional regional mapping can be found in the County of San Diego Multi-Jurisdictional Hazard Mitigation Base Plan.

CAPABILITIES ASSESSMENT

The LPG identified current capabilities available for implementing hazard mitigation activities. This Capability Assessment (Assessment) portion of the jurisdictional mitigation plan identifies administrative, technical, legal, and fiscal capabilities. **This includes a summary of departments and their responsibilities associated to hazard mitigation planning as well as planning area development, codes, ordinances, and plans already in place to reduce hazard vulnerabilities.** The departments described below consist of, and support, over 11,000 City personnel serving the populous of the eighth largest City in the United States and the second largest City in California. The second part of this Assessment provides San Diego's fiscal

capabilities that may be applicable to providing financial resources to implement identified mitigation action items.

EXISTING INSTITUTIONS, PLANS, POLICIES AND ORDINANCES

The following is a summary of existing departments in San Diego and their responsibilities related to hazard mitigation planning area development, planning and implementation, as well as existing planning documents and regulations related to hazard mitigation development and efforts within the community. The administrative and technical capabilities of the City of San Diego provide an identification of the staff, personnel, and department resources available to implement the actions identified in the mitigation section of the Plan. Specific resources reviewed include those involving technical personnel such as planners/engineers with knowledge of land development and land management practices, engineers trained in construction practices related to building and infrastructure, planners and engineers with an understanding of natural or manmade hazards, floodplain managers, surveyors, and personnel with GIS skills.

DEVELOPMENT SERVICES DEPARTMENT

The Development Services Department manages the City of San Diego's land development process from concept to completion. The scope of responsibility for construction and development projects includes permit issuance; review of subdivision maps and public improvement and grading plans; compliance with land use regulations, community plans and environmental status; review of construction plans; and construction projects.

Land Development Code/Environmentally Sensitive Land Regulations and Coastal Development Regulations: These sections of the Land Development Code restrict development in areas prone to hazards, such as floodplains, steep slopes, and unstable soils or geologic formations and would require permits and compliance with specific requirements for any disturbance of defined environmentally sensitive lands (habitat, wetlands, steep hillsides, coastal bluffs, etc.) or for any work done to repair or restore an area damaged by those hazards included in this plan. However, provisions are provided to allow emergency work without delay.

ECONOMIC DEVELOPMENT DEPARTMENT

The May 2014 revision to the FY 2015 budget contains the re-establishment of the Economic Development Department which will separate the function from the current Planning, Neighborhoods, and Economic Development Department. This action reflects the Mayor's commitment to foster economic development throughout the City. This proposal creates a single department to coordinate economic development opportunities with local, national, and international stakeholders. This new department will assure new and existing businesses the City of San Diego is open for business and truly values business' contributions in creating a successful and diversified economy.

ENVIRONMENTAL SERVICES DEPARTMENT

The Environmental Services Department (ESD) was established to protect the environment, ensure the proper disposal of municipal solid waste and mitigation of litter and illegal dumping.

ESD's mission also includes waste reduction/recycling, composting, landfill management to meet the City of San Diego's long-term waste disposal needs. In addition, ESD oversees the City's management of energy, pursues innovative energy independence goals and works to advance more sustainable practices within the City organization and the community.

The Department is organized into three operational divisions:

Collections Services Division provides weekly refuse and every-other-week recyclables and yard waste collection services to 290,000 homes and places, and services street litter bins in commercial districts throughout the City.
Energy Sustainability and Environmental Protection Division develops and manages programs relating to energy use, sustainability, climate change, and the proper management of hazardous waste. This division includes energy, sustainability, and environmental protection programs.

Waste Reduction and Disposal Division develops and implements the City's solid waste reduction and diversion programs and policies, conducts disposal and composting operations at the City's Miramar Landfill, manages the City's inactive landfill sites, provides illegal dump and community cleanup services throughout the City, and enforces the City's solid waste codes.

FIRE-RESCUE DEPARTMENT

The Fire-Rescue Department is a multi-faceted organization that provides City residents with fire and life safety services including fire protection, emergency medical services, and lifeguard protection at San Diego beaches.

They protect lives, property, and environment through fire suppression, emergency medical care and transport, technical rescue, hazardous materials response and mitigation, fire investigation, explosive device mitigation, fire safety inspections/code enforcement, fire prevention and education programs, disaster preparedness, waterway and swift-water rescue, swimmer safety, and operation of the 911 communications/dispatch center.

OFFICE OF EMERGENCY SERVICES

The San Diego Office of Emergency Services (OES) oversees the City's Preparedness Grant, Emergency Preparedness, Emergency Operations Center, and Public and Disaster Assistance programs. The collective purpose of these four programs and mission is to promote a secure and resilient city with the capabilities required across the whole community to prevent, protect against, mitigate, respond to, and recover from threats and hazards that pose the greatest risk. Those risks include the full spectrum of natural and man-made disasters or events most likely to jeopardize the health and safety of our populous and the critical infrastructure it depends upon.

The Preparedness Grant Program involves securing and managing Federal Homeland Security grant funds for the San Diego region through the FEMA Urban Area Security Initiative. The UASI grants are intended to address the needs of high-threat, high-density urban areas, and assist them in building an enhanced and sustainable capacity to prevent, protect against, mitigate, respond to, and recover from acts of terrorism. The UASI grants focus on enhancing preparedness through regional collaboration and the development of integrated regional capabilities.

Through the State Homeland Security Program and Emergency Management Performance Grants the City is awarded or allocated resources dedicated to improving our emergency preparedness capabilities.

The Emergency Preparedness Program enhances and supports the City's preparedness for major emergencies and disasters. This program leads the development, review and internal/external integration for all City emergency plans. Provides coordination and collaboration with County, State, and federal jurisdictions/agencies, manages/supports the City's readiness and utilization of the Regional Community Emergency Notification System (i.e, Alert San Diego), facilitates the provision of information to the public and the business community to assist in emergency preparations/response, and coordinates/oversees relevant citywide emergency training and exercises.

During major emergencies and disasters, the City's Emergency Operations Center (EOC) may be activated to support and coordinate the City's overall multi-departmental emergency response and recovery operations. The EOC Program maintains operational readiness of the City's primary EOC and alternate EOC. This program develops and updates EOC protocols and processes, manages the assignment, training, and readiness of EOC staff members, maintains and enhances EOC facilities, equipment, and information management systems. This includes developing, updating protocols and resources in support of the OES Duty Officer who is a 24/7 emergency point of contact and resource for City officials and regional partners.

Through the Public and Disaster Assistance Program, we manage and coordinates the City's participation in State and federal recovery-related financial assistance programs such as the FEMA Public Assistance Grant Program and the California Disaster Assistance Act Program to facilitate the City's recovery from major emergencies and disasters.

INFORMATION TECHNOLOGY DEPARTMENT

The department is responsible for providing the City of San Diego's Information Technology strategic direction, policies, procedures, and standards. The goals of the department are to effectively manage the delivery of City-wide technology services, guide technology decision-making to ensure consistency with the City-wide business direction, ensure a skilled, responsive, and innovative workforce that keeps current with evolving business-critical technologies, and provide a high quality of customer service. This department provides communication and technology solutions to all City departments and operational locations to ensure the effective utilization of technology is resourced, procured, implemented and maintained to meet all mission critical requirements for the City; including emergency and disaster response efforts.

PARK AND RECREATION DEPARTMENT

The mission of the Park and Recreation Department is to acquire, develop, and maintain open park and recreation areas/programs for the City. The department is responsible for overseeing nearly 41,000 acres of developed and undeveloped space, more than 340 parks including Balboa Park, Mission Trails Regional Park, and Mission Bay Park. This includes 26 miles of shoreline from Sunset Cliffs to La Jolla, 13 pools, 3 public golf complexes, and 56 recreation centers. Park and recreation department is also tasked with emergency shelter operations for the City, maintaining the readiness and training to provide emergency shelter in 17 locations throughout the City with combined capacity to support 7754 emergent evacuee's or 4092 persons for temporary sheltering.

PLANNING DEPARTMENT

The Planning department is responsible for the development and implementation of land use and transportation policies, as well as long-range fiscal planning for public facilities. San Diego's General Plan, adopted in 2008, provides the 20–30-year blueprint for how the City will be developed. Planning staff also work with other agencies, including the San Diego Association of Governments (SANDAG), to help ensure the City and regional plans together represent a unified version and implementation strategy. As a participating jurisdiction in the County's Multi-Jurisdictional Hazard Mitigation Plan, the City, through its General Plan, has adopted policies that guide development away from hazardous sites while utilizing hazardous mitigation and other safety measures in the provision of future developments. The policies addressing hazardous mitigation are concentrated in the Land Use, Mobility, Urban Design, and Public Facilities, Services and Safety Elements.

On July 7, 2009, the City Council adopted the General Plan Action Plan, the implementation and monitoring document accompanying the General Plan. Both the General Plan and Action Plan contain policies that limit future development in hazardous areas. Because the General Plan does not address specific community zoning issues, these mitigation measures are achieved through the Community Plan Update process.

The City's community plans are integral components of the General Plan, refining the broad City–wide policies to more community–specific policies which remain consistent with the General Plan. The Department's primary responsibilities related to hazardous mitigation are implemented through the update of Community Plans.

POLICE DEPARTMENT

The San Diego Police Department provides law enforcement, scene and event security, evacuations, public emergency notifications, traffic and crowd control, traffic and criminal investigations, records management, permits and licensing for police regulated businesses, laboratory services, and support services. The City is represented by nine area commands, divided into 19 service areas, policing 122 neighborhoods. The Department plans for and implements the Dam Failure Plan and the San Diego River Road Closure Plan. The Police Department coordinates with local and regional law enforcement agencies with shared intelligence fusion centers which assist in potential threat identification, mitigation, and disaster planning for the City of San Diego.

PUBLIC UTILITIES DEPARTMENT

The Public Utilities Department is comprised of the Wastewater and Water Sections. The emphasis for this department is to provide a streamlined, effective organization in oversight, strategic planning, and administration for the City's water storage, treatment, and delivery systems, the regional wastewater treatment and disposal services, and the Municipal Sewage System.

Metropolitan Wastewater's mission is to provide the public with a safe and efficient regional sewer system, supplements our limited water supply, and ensures all federal standards are met. Through state-of-the-art facilities, water reclamation, biosolids production and cogeneration, the City is a leader in maximizing the conservation of water and energy as part of the wastewater treatment process.

San Diego operates more than 3,302 miles of water lines, 49 water pump plants, 90+ pressure zones, and more than 200 million gallons of potable water storage capacity in 32 standpipes, elevated tanks, and concrete and steel reservoirs. In addition to supplying more than 280,000 metered service connections within its own incorporated boundaries, San Diego conveys and sells potable water to the City of Del Mar, the Santa Fe and San Dieguito Irrigation Districts, and the California American Water Company, which, in turn, serves the Cities of Coronado and Imperial Beach and portions of south San Diego. San Diego also maintains several emergency connections to and from neighboring water agencies, including Santa Fe Irrigation District, the Poway Municipal Water District, and Otay Water District, the California American Water Company, and the Sweetwater Authority.

PUBLIC WORKS DEPARTMENT

Engineering Branch

The department is responsible for planning, design, project management, and construction management of public improvement projects, quality control and inspection of private work permitted in the right-of –way, surveying and material testing, and providing traffic operations and transportation engineering services.

Engineering activities include work on various public infrastructure assets to rehabilitate, restore, improve, and add to the City of San Diego's capital facilities. The Capital Improvement Program (CIP) covers a wide range of projects including: airports, bikeways, drainage and flood control facilities, libraries, parks and recreation centers, police, fire and lifeguard stations, street improvements, street lights, traffic signals, utilities undergrounding, water and sewer facilities and pipelines.

Traffic engineering services include transportation system forecasting and program management, responding to traffic requests from the public, maintaining the City's traffic signal system, and traffic safety analysis.

General Services Branch

This branch of Public Works is composed of five distinct elements providing a range of services to the City of San Diego.

Communications provides primary service delivery for wireless communications technologies; engineers, installs, operates, and maintains private, metropolitan-wide, wireless voice and data communications systems and equipment; and contracts for commercially-provided wireless services. They ensure the provision of life-line voice and data communications for emergency first responders.

Facilities is responsible for ensuring the facilities where library, park and recreation centers, and other government services are provided and maintained in a safe and operable manner. More than 1,600 City facilities are in constant use and require preventive maintenance, custodial service, scheduled maintenance, and, in some cases, emergency repair to keep them in full operation. The Facilities staff, which includes plumbers, painters, electricians, carpenters, locksmiths, and other skilled-trades people, provides these services to City departments.

Fleet Services provides all City departments with motive equipment and a full range of fleet management services. These services include acquisition, fitting, maintenance and repair, the provision of parts and fuel, body repair, painting, metal fabrication, disposal services, and other motive equipment-related support services, such as machining, equipment rental, and operator training.

Publishing Services provides full reproduction capability, including offset press operations, high-volume copying and finishing services, to include graphic design and electronic publishing services.

TRANSPORTATION & STORM WATER DEPARTMENT

The Transportation & Storm Water Department is responsible for the operation and maintenance of streets and storm drains, leads efforts to protect and improve the water quality of rivers, creeks, bays, and the ocean, performs traffic and transportation system engineering, manages the Utilities Undergrounding Program, and coordinates work in the public right-of-way. The department is comprised of four divisions:

The ROW Coordination Division provides centralized policies and ensures improvements are reviewed, permitted, and inspected for quality assurance and conformity to policies, procedures, and standards. The Division is responsible for coordination of activities within the public ROW among City departments, public and private utilities, developers, and other entities planning and performing work within the public ROW. In addition, the ROW Coordination Division manages the planning and implementation of the City's Utilities Undergrounding Program. The Utilities Undergrounding Program removes overhead utility lines (electric, phone, cable, etc.,) and relocates them underground in accordance with the City's Utilities Undergrounding Master Plan.

The Storm Water Division leads the City's efforts to protect and improve the water quality of rivers, creeks, bays, and the ocean. The Division's efforts are conducted to ensure compliance with the Municipal Storm Water Permit and other surface water quality regulations issued by the State of California. The Division's priorities are to identify and abate sources of pollution through the implementation of innovative and efficient public education, watershed management, storm water development and construction regulations, enforcement, City-wide training programs, and to provide the most efficient storm drain system operation and maintenance services to residents. The City has over 48,000 storm drain structures, 700 miles of drainage pipe, 15 storm water pump stations, and 26 Best Management Practices (BMPs). The Division is responsible for the inspection, maintenance, repair of storm drain systems in the public ROW and drainage easements, and ensuring this work is conducted in compliance with all local, State, and Federal environmental regulations. The Division manages maintenance efforts for 84 miles of drainage channels and ditches located throughout the City. The Division is also responsible for street sweeping program which removes debris that collects in gutters and can potentially clog drains. The City currently has over 2,700 miles of improved streets that are included in the sweeping program.

The Street Division maintains and repairs all streets, alleys, sidewalks, bridges, guardrails, streetlights, traffic signals, pavement markings, and trees in the right-of-way. The Division also manages the City's Resurfacing Program and administers annual resurfacing and slurry seal contracts.

The Transportation Engineering and Operations Division manages the City's transportation network to include coordination of traffic investigations for signs, markings, traffic control devices, speeding concerns, and parking issues; crash data collection and analysis; traffic volume data collection; establishment of speed zones; traffic signal management (signal timing, installation, and modification); conducting mobility studies; and investigating and responding to the need for street lights, pedestrian safety improvements, traffic calming, and school safety improvements.

Overall, these departments work continue to work in tandem since the last plan update to decrease the probability of the planning area's hazard vulnerability in regards to development, planning, and implementation of projects such as the Goals, Objectives, and Actions listed in this plan.

6. SECTION SIX: Develop a Mitigation Strategy

The mitigation strategy serves as the long-term blueprint for reducing potential losses identified in the risk assessment. The mitigation strategy describes how the community will accomplish the overall purpose, or mission, of the planning process.

The mitigation strategy is made up of three main required components: mitigation goals, mitigation actions, and an action plan for implementation. These provide the framework to identify, prioritize, and implement actions to reduce risk to hazards.

Mitigation goals are general guidelines that explain what the community wants to achieve with the plan.

These are usually broad policy-type statements that are long-term, and they represent visions for reducing or avoiding losses from the identified hazards

Mitigation actions are specific projects and activities that help achieve the goals.

The action plan describes how the mitigation actions will be implemented, including how those actions will be prioritized, administered, and incorporated into the community's existing planning mechanisms. In a multi-jurisdictional plan, each jurisdiction must have an action plan specific to that jurisdiction and its vulnerabilities.

Although not required, some communities choose to develop **objectives** to help define or organize mitigation actions. Objectives are broader than specific actions, but are measurable, unlike goals. Objectives connect goals with the actual mitigation actions.

6.1. Mitigation Action Evaluation

Use this worksheet to help evaluate and prioritize each mitigation action being considered by the planning team. For each action, evaluate the potential benefits and/or likelihood of successful implementation for the criteria defined below.
Rank each of the criteria with a -1, 0 or 1 using the following scale:

- 1 = Highly effective or feasible
- 0 = Neutral
- -1 = Ineffective or not feasible

Example Evaluation Criteria:

- **Life Safety** – How effective will the action be at protecting lives and preventing injuries?
- **Property Protection** – How significant will the action be at eliminating or reducing damage to structures and infrastructure?
- **Technical** – Is the mitigation action technically feasible? Is it a long-term solution? Eliminate actions that, from a technical standpoint, will not meet the goals.
- **Political** – Is there overall public support for the mitigation action? Is there the political will to support it?
- **Legal** – Does the community have the authority to implement the action?
- **Environmental** – What are the potential environmental impacts of the action? Will it comply with environmental regulations?
- **Social** – Will the proposed action adversely affect one segment of the population? Will the action disrupt established neighborhoods, break up voting districts, or cause the relocation of lower income people?
- **Administrative** – Does the community have the personnel and administrative capabilities to implement the action and maintain it or will outside help be necessary?
- **Local Champion** – Is there a strong advocate for the action or project among local departments and agencies that will support the action's implementation?
- **Other Community Objectives** – Does the action advance other community objectives, such as capital improvements, economic development, environmental quality, or open space preservation? Does it support the policies of the comprehensive plan?

TABLE 13: FEMA LOCAL MITIGATION PLANNING HANDBOOK WORKSHEET 6.1 DATA.

In the following Section 6.2, the plan will outline our general goals and actions, our prioritization of those goals, and how we plan to deliver on the actions outlined. This identification and prioritization process were facilitated through the City of San Diego's local planning group (LPG). The team relies on input from stakeholders to ensure that the goals and actions align with the whole community approach and the feasible facilitation of all stakeholders involved.

6.2. Mitigation Action Implementation

A mitigation action is a specific action, project, activity, or process taken to reduce or eliminate long-term risk to people and property from hazards and their impacts. Implementing mitigation actions helps achieve the plan's mission and goals. The actions to reduce vulnerability to threats and hazards form the core of the plan and are a key outcome of the planning process. For more information on potential funding sources and grants, please see the County of San Diego Multi-jurisdictional Hazard Mitigation Base Plan, Section 6.2. This annex details the following mitigation action implementations:

Goal 1: Promote public understanding, support and demand for hazard mitigation.	
Objective 1.A: Promote partnerships between the state, counties, local and tribal governments to identify, prioritize, and implement mitigation actions.	
Action 1.A.1	Develop a comprehensive approach to educating the public of the importance of "defensible space" for protection of their homes and property.

Goal 2: Improve hazard mitigation coordination and communication with federal, state, local, and tribal governments.	
Objective 2.A: Establish and maintain closer working relationships with state agencies, local, and tribal governments.	
Action 2.A.1	Strengthen City and region-wide threat and hazard identification through the use of a Risk Management Program that enables regional stakeholders to utilize and assess quantitative and qualitative data, e.g. Critical Infrastructure/Key Resources (CIKR) databases, relative risk rankings of CIKR sites, core capability assessments, etc.

Goal 3: Reduce the possibility of damage and losses to existing assets, particularly people, critical facilities/infrastructure, and State-owned facilities, due to <u>wildfire/structure fire, coastal storms/erosion/tsunami, landslide, hazardous materials, and other manmade hazards</u>.	
Objective 3.A: Develop a comprehensive approach to reducing the possibility of damage and losses due to <u>wildfire/structural fire, coastal storms/erosion/tsunami, landslide, hazardous materials, and manmade hazards</u>.	
Action 3.A.1	Perform brush management activities within the open space, public owned brush management zone, on a bi-annual basis.
Action 3.A.2	Maintain brush management inspection cycle of 42,505 parcels that are divided into 19 inspection areas and accomplished every 3.8 years.
Action 3.A.3	Create buffer zones around residential and non-residential structures through the removal or reduction of flammable vegetation, including vertical clearance of tree branches and removal of dead or dry leaves, needles, twigs, and combustibles from roofs, decks, eaves, porches, and yards.
Action 3.A.4	Create buffer zones around power lines, oil and gas lines, and other infrastructure systems, including replacing flammable vegetation with less flammable.
Action 3.A.5	Maintain critical water and wastewater services to the region through effective critical infrastructure management, to include the use of multi-source power distribution systems, installation and maintenance of permanent alternate power

Goal 3: Reduce the possibility of damage and losses to existing assets, particularly people, critical facilities/infrastructure, and State-owned facilities, due to <u>wildfire/structure fire, coastal storms/erosion/tsunami, landslide, hazardous materials, and other manmade hazards</u>.	
	generators at all plants and pumping stations, and the further development of redundancies in the data transmission of control systems.

Goal 4: Reduce the possibility of damage and losses to existing assets, particularly people, critical facilities/infrastructure, and State-owned facilities, due to <u>severe weather</u> (e.g., El Nino storms/, thunderstorms, lightning, tsunami, and extreme heat and drought).	
Objective 4.A: Develop a comprehensive approach to reducing the possibility of damage and losses due to severe weather.	
Action 4.A.1	Enhance existing City partnerships with appropriate local agencies, community support groups, and service providers to better mitigate hazards that may increasingly result from severe weather and/or climate change.
Action 4.A.2	Support water conservation policies and programs to enforce water use restrictions. These include municipal code enforcement and other restrictions on outdoor water use and indoor practices to mitigate the effects of severe weather and drought.

Goal 5: Reduce the possibility of damage and losses to existing assets, particularly people, critical facilities/infrastructure, and State-owned facilities, due to <u>earthquake and dam failure</u>.	
Objective 5.A: Develop a comprehensive approach to reducing the possibility of damage and losses due to earthquake and dam failure.	
Action 5.A.1	Take actions to safeguard against dam failure, to include supporting public awareness initiatives, initiating structural studies and improvements in coordination with the State's Division of Safety of Dams, and maintaining effective disaster planning in collaboration with local, state, and Federal agencies.

Goal 6: Reduce the high probability of damage and losses to existing assets, particularly people, critical facilities/infrastructure, and State-owned facilities, due to <u>floods</u>.	
Objective 6.A: Develop a comprehensive approach to reducing the high probability of damage and losses due to floods.	
Action 6.A.1	Work with U.S. Fish and Wildlife Service (USFWS), U.S. Army Corps of Engineers (USACE), and other Federal, State, and local agencies to restore the conveyance capacity of the following channels by removing deposited sediment, trash and accumulated vegetation to restore original channel cross sections: Cowles

	Mountain/San Carlos, Alvarado (Section 59 and 60 and 61-63), Industrial Court, Smythe, Auburn, Jamacha, Rancho Bernardo, South Chollas, Solola/Cottonwood, Sweetwater, and Tijuana River Valley.
Action 6.A.2	Participate in the National Flood Insurance Program (NFIP) and meet the requirements for conformance with NFIP standards.

Prioritization and Implementation of Action Items

Another important implementation mechanism that is highly effective and low-cost is the incorporation of the hazard mitigation plan (HMP) recommendations and their underlying principles into other jurisdictional plans and mechanisms. Mitigation is most successful when it is incorporated into the day-to-day functions and priorities of government and development. Properly implemented, the HMP should serve as one of the foundational documents of the jurisdictions' emergency management programs, since everything emergency management relates back to most hazards in the jurisdiction.

Implementation through existing plans and/or programs is recommended wherever possible. Based on this Plan's capability assessment and progress made on mitigation actions. The participating jurisdictions continue to implement policies and programs to reduce losses to life and property from natural and human-caused hazards. The Planning Team will be responsible for integrating the data, goals and objectives, and other elements of this Plan into other plans, as appropriate.

The following sections provides some guidance on how the City may use the updated HMP to inform and improve other plans, procedures, and programs.

Comprehensive Plans
Integrating hazard mitigation into the jurisdiction's comprehensive or general plan is considered a best practice by both FEMA and the American Planning Association.

Threat and Hazard Identification and Risk Assessment (THIRA)
The City of San Diego Threat and Hazard Identification and Risk Assessment performed on a 3-year cycle in accordance with best practices outlined by FEMA in the Comprehensive Preparedness guide (CPG 201). The outputs of the 3-step THIRA provide identification and context for local/regional threats and hazards to facilitate and identify capability gaps which in turn inform the HMP. The THIRA spans across three categories; natural hazards, technological hazards and human-caused incidents. In turn, the THIRA output provides the bases of the Stakeholder Preparedness Review (SPR) which further assess current capability to meet and mitigate local/regional threats and hazards identified by the THIRA. This process is key to identifying capability gaps, strategies to address those gaps, and the impact funding may have on our ability to mitigate identified threats and hazards.

Response Plans
All participating jurisdictions have local emergency operations plans (EOP). While the EOP is an all hazards document, it also contains hazard-specific information and concerns. Hazard information from this HMP update will be incorporated into the next EOP update. At a

minimum, all hazards of high significance identified in this Plan should be addressed in future EOP updates.

Several other operational or functional response plans are also influenced by information contained in the HMP. These plans include but are not limited to:

- **Damage Assessment Plan:** A review of the vulnerability and estimated losses detailed in the hazard profiles can help identify what areas to initially prioritize following a hazard event.
- **Debris Management Plan:** HAZUS runs conducted for earthquake scenarios include an estimate of how many tons of debris would likely be generated by those scenarios. These estimates can be used as bounding limits for how much and what type of debris generation is likely to be required, as well as what areas are most likely to see heavy debris generations.
- **Evacuation & Sheltering Plan:** A review of the vulnerability and estimated losses detailed in the hazard profiles can help identify what areas are more likely to need evacuation in different hazard scenarios. This review can also help evaluate the impacts of multiple or cascading hazards, so that evacuees are not relocated into an area that puts them at risk from other hazards.

Recovery Plan

The risk and vulnerability data in the HMP should help inform the post-disaster recovery planning process, especially by ensuring that the recovery elements of those plans fully take into account the dangers posed by other hazards, rather than focusing exclusively on the most recent hazard event. The HMP in turn will be revisited during recovery to help identify opportunities to incorporate mitigation in the recovery and rebuilding process.

The FEMA publication "Pre-Disaster Recovery Planning Guide for State Governments" notes: "…much of the research involved in the development of mitigation plans can be used to inform the pre-disaster recovery planning effort.

"The pre-disaster recovery planning process will benefit from and build upon hazard mitigation as:

- The mitigation planning process identifies local hazards, risks, exposures, and vulnerabilities;
- Implementation of mitigation policies and strategies will reduce the likelihood or degree of disaster related damage, decreasing demand on resources post-disaster;
- The process will identify potential solutions to future anticipated community problems;
- And mitigation activities will increase public awareness of the need for disaster preparedness."

"Pre-disaster recovery planning efforts also increase resilience by:

- Establishing partnerships, organizational structures, communication resources, and access to resources that promote a more rapid and inclusive recovery process;
- Describing how hazard mitigation will underlie all considerations for reinvestment;
- Laying out a process for implementation of activities that will increase resilience; and

- Increasing awareness of resilience as an important consideration in all community activities."

Continuity of Operations Plans (COOP)
Each department in the City of San Diego is required to maintain a Continuity of Operations Plan (COOP) that details that department's critical functions and how they will protect those functions in order to continue to provide essential services during a disaster or interruption. By defining and describing the hazards facing the City, including frequency and severity, the HIRA informs agency COOP plans by giving context to what types of disasters of interruptions are most likely to occur.

Training and Exercise Plan
Training on hazard mitigation principles and procedures should be included in the City's training and exercise planning. Any training and exercise needs identified in the Capabilities Assessment and Mitigation Strategy can be incorporated in the City's training and exercise planning.

Public Awareness and Education Programs
The jurisdictions' ongoing public education and outreach efforts should reflect the hazards and vulnerabilities described in this Plan. In addition to preparing for disasters, public education should include ways in which the public can reduce their vulnerability to natural and human caused hazards. Furthermore, mitigation activities and success stories should be communicated to the public to show the benefits of effective mitigation planning.

Additional Implementations

In addition to the actions taken in this update, the City of San Diego continues to conduct various preparedness and planning activities related to all hazards. This includes ongoing training and exercises covering a broad range of applicable topics related to natural and man-made disaster, power and essential services disruption, anti-terrorism, CBRNE, explosive device mitigation, counter sUAS, active shooter, civil unrest, cyber disruption, and public health threat response.

All training is structured to introduce best practice, emphasis, develop, and instill capability for those involved utilizing core tenants and key principles of leadership and emergency management codified in the National Incident Management System and Incident Command System (NIMS/ICS).

The San Diego Regional THIRA comprehensively provides mechanism for continuous hazard and threats mitigation. This ongoing assessment of regional threat and hazard identification, probability, impact and mitigation capability serve as a basis for our training scenarios, planning, and resource requirements. This ensures our ability to best address applicable hazards and threats to our region based on the National Preparedness Goal, its five mission areas and 32 core capabilities. Scenarios driven by the THIRA process are based on notional or real-world/recent events, vetted, and observed by outside examiners and/or subject matter experts.

The City has well established Tsunami evacuation routes with associated Public Outreach Plan and is a designated National Weather Service/National Oceanographic and Atmospheric Agency (NWS/NOAA) certified Tsunami/Storm Ready Jurisdiction that routinely participates in enhanced engagement with NWS as a registered NWS Ambassador.

We are a partner in the Regional Cyber Disruption Plan, participate in the State committee Public Outreach for drought, collaborate with the Earthquake Engineering Institute, partner with County Cool Zones, maintain a 100-yr Flood Plan, and a robust Wildfire Urban Interface (WUI) Plan and supporting programs.

Prioritized Mitigation Actions

The prioritized actions below reflect progress in local mitigation efforts as well as changes in development.

Implementation consists of identifying who is responsible for which action, type of funding mechanisms and resources available or will be pursued, and when the action will be completed. The **12** prioritized mitigation actions as well as an implementation strategy for each are:

1. **Action** 1.A.1 - Develop a comprehensive approach to educating the public of the importance of "defensible space" for protection of their homes and property.

Coordinating Department/Organization: Fire Rescue

Potential Funding Source: General Fund

Implementation Timeline: On-going

Hazard Addressed: Wildfire Structural Fire

2. **Action** 3.A.1 - Perform brush management activities within the open space, public owned brush management zone, on a bi-annual basis.

Coordinating Department/Organization: Fire Rescue

Potential Funding Source: General Fund

Implementation Timeline: On-going

Hazard Addressed: Wildfire Structural Fire

3. **Action** 3.A.2 - Maintain bush management inspection cycle of 42,505 parcels that are divided into 19 inspection areas and accomplished every 3.8 years.

Coordinating Department/Organization: Fire Rescue

Potential Funding Source: General Fund

Implementation Timeline: On-going

Hazard Addressed: Wildfire Structural Fire

4. **Action** 3.A.3 - Create buffer zones around residential and non-residential structures through the removal or reduction of flammable vegetation, including vertical clearance of tree branches and removing dead or dry leaves, needles, twigs, and combustibles from roofs, decks, eaves, porches, and yards.

Coordinating Department/Organization: Fire Rescue

Potential Funding Source: General Fund

Implementation Timeline: On-going

Hazard Addressed: Wildfire Structural Fire

5. **Action** 3.A.4 - Create buffer zones around power lines, oil and gas lines, and other infrastructure systems, including replacing flammable vegetation with less flammable.

Coordinating Department/Organization: Fire Rescue

Potential Funding Source: General Fund

Implementation Timeline: On-going

Hazard Addressed: Wildfire Structural Fire

6. **Action** 3.A.5 - Maintain critical water and wastewater services to the region through effective critical infrastructure management, to include the use of multi-source power distribution systems, installation and maintenance of permanent alternate power generators at all plants and pumping stations, and the further development of redundancies in the data transmission of control systems.

Coordinating Department/Organization: Public Utilities

Potential Funding Source: General Fund

Implementation Timeline: On-going

Hazards Addressed: Drought/Extreme Heat

7. **Action** 4.A.2 – Support water conservation policies and programs to enforce water use restrictions. These include municipal code enforcement and other restrictions on outdoor water use and indoor practices to mitigate the effects of severe weather and drought.

Coordinating Department/Organization: Public Utilities

Potential Funding Source: General Fund

Implementation Timeline: On-going

Hazards Addressed: Drought/Extreme Heat

8. **Action** 4.A.1 – Enhance existing City partnerships with appropriate local agencies, community support groups, and service providers to better mitigate hazards that may increasingly result from severe weather and/or climate change.

Coordinating Department/Organization: Office of Emergency Services

Potential Funding Source: General Fund

Implementation Timeline: On-going

Hazards Addressed: Drought/Extreme Heat/All Hazards

9. **Action** 6.A.1 – Work with U.S. Fish and Wildlife (USFWS), U.S. Army Corps of Engineers (USACE), and other federal, state, and local agencies to restore the conveyance capacity of the following channels by removing deposited sediment, trash and accumulated vegetation, to restore original channel cross sections: Cowles Mountain/San Carlos, Alvarado (Section 59 and 60 and 61-63), Industrial Court, Smythe, Auburn, Jamacha, Rancho Bernardo, South Chollas, Solola/Cottonwood, Sweetwater, and Tijuana River Valley.

Coordinating Department/Organization: Transportation/Storm Water

Potential Funding Source: General Fund/Public Assistance

Implementation Timeline: On-going

Hazard Addressed: Flooding

10. **Action** 6.A.2 - Participate in the National Flood Insurance Program (NFIP) and meet the requirements for conformance with NFIP standards.

Coordinating Department/Organization: Transportation Storm Water

Potential Funding Source: General Fund

Implementation Timeline: On-going

Hazard Addressed: Flooding

11. **Action** 5.A.1 – Take actions to safeguard against dam failure, to include supporting public awareness initiatives, initiating structural studies and improvements in coordination with the State's Division of Safety of Dams, and maintaining effective disaster planning in collaboration with local, state, and federal agencies.

Coordinating Department/Organization: Public Utilities

Potential Funding Source: General Fund/Mitigation Grants

Implementation Timeline: On-going

Hazard Addressed: Earthquake

12. **Action** 2.A.1 – Strengthen City and region-wide threat and hazard identification through the use of a Risk Management Project that enables regional stakeholders to utilize and assess quantitative and qualitative data, e.g. Critical Infrastructure/Key Resources (CIKR) databases, relative risk rankings of CIKR sites, core capability assessments, etc.

Coordinating Department/Organization: Office of Emergency Services

Potential Funding Source: General Fund

Implementation Timeline: On-going

Hazards Addressed: All

7. SECTION SEVEN: Keep the Plan Current

Hazard Mitigation Plan maintenance is the process the planning team establishes to track the plan's implementation progress and to inform the plan update. The plan must include a description of the method and schedule for monitoring, evaluating, and updating it within a 5-year cycle. These procedures help to:

- Ensure that the mitigation strategy is implemented according to the plan.
- Provide the foundation for an ongoing mitigation program in your community.
- Standardize long-term monitoring of hazard-related activities.
- Integrate mitigation principles into community officials' daily job responsibilities and department roles.
- Maintain momentum through continued engagement and accountability in the plan's progress.

Hazard Mitigation Plan updates provide the opportunity to consider how well the procedures established in the previously approved plan worked and revise them as needed. This annex is part of the most recent *San Diego County Multi-Jurisdictional Hazard Mitigation Plan* update. The plan was last updated in 2018. See the *San Diego County Multi-Jurisdictional Hazard Mitigation Plan* for more information.

7.1. Mitigation Action Progress

Plan monitoring means tracking the implementation of the plan over time. The plan must identify how, when, and by whom the plan will be monitored.

Following the 2018 Hazard Mitigation Plan update, the planning team convened to talk through new ideas to pull into future updates, including updated best practices, policy, and improvements in coordination and operation for all stakeholders involved with the plan. The planning team worked with city departments and stakeholder agencies to review, monitor, and evaluate the 2018 HMP.

Following this 2023 update, the planning team will support the integration of this HMP into other City plans. Throughout the update cycle for these additional City plans, the planning team will gather information that will be relevant to incorporate into future HMP updates.

Existing City of San Diego Plans	Implementation & Integration
Dam Emergency Action Plans (EAP)	Various dam locations - 2022 update - outlines the thresholds, hazards, and response process.
Climate Action Plan - 2022	Mitigation plan to guide and transition the City of San Diego into a Net Zero emissions municipality by 2035
Emergency Operations Plan (EOP)	Outlines response considerations for any emergency affecting the City of San Diego, currently under revision.
Continuity of Operations Plan (COOP)	Outlines the core responsibilities for an organization and how to ensure City operations continue during and after an interruption in service, caused by a disaster, emergency or other cause.
City's General Plan and Action Plan	Both the General Plan and Action Plan contain policies that place consideration of future development, hazard assessment and limit development in areas with identified hazards. (Adopted in 2008 with a 20-to-30-year horizon for City growth and development, sections are updated as needed).

HMP 2015 UPDATE (APPROVED BY FEMA 2018)

The City of San Diego has developed the following **6** Goals for their Hazard Mitigation Plan.

Goal 1. Promote public understanding, support, and demand for hazard mitigation.

Goal 2. Improve hazard mitigation coordination and communication with federal, state, local, and tribal governments.

Goal 3. Reduce the possibility of damage and losses to people, critical facilities/infrastructure, and State-owned facilities, due to wildfire/structural fire, coastal storms/erosion/ tsunami, landslide, hazardous materials, and other manmade hazards.

Goal 4. Reduce the possibility of damage and losses to people, critical facilities/infrastructure and State-owned facilities due to severe weather (e.g., El Nino storms, thunderstorms, lightning, tsunami, and extreme heat and drought).

Goal 5. Reduce the possibility of damage and losses to people, critical facilities/infrastructure and State-owned facilities due to earthquake and dam failure.

Goal 6. Reduce the high probability of damage and losses to people, critical facilities/ infrastructure and State-owned facilities due to floods.

The City of San Diego developed the following broad list of objectives, and action items to assist in achieving and implementing each of its **six** identified hazard mitigation goals.

Goal 1: Promote public understanding, support and demand for hazard mitigation.	
Objective 1.A: *Promote partnerships between the state, counties, local and tribal governments to identify, prioritize, and implement mitigation actions.*	
Action 1.A.1	Develop a comprehensive approach to educating the public of the importance of "defensible space" for protection of their homes and property.

Goal 2: Improve hazard mitigation coordination and communication with federal, state, local, and tribal governments.	
Objective 2.A*: Establish and maintain closer working relationships with state agencies, local, and tribal governments.*	
Action 2.A.1	Strengthen the development and enhancement of standardized City Emergency Operations Plan(s), and ensure they are coordinated with the appropriate County- wide Emergency Operations Plan(s).
Action 2.A.2	Enhance operating the City's Emergency Operations Center (EOC) and Department Operations Centers (DOC) following the Standardized Emergency Management System (SEMS) and Incident Command System (ICS). This includes training multiple staff members for each position in the EOC.
Action 2.A.3	Strengthen City and region-wide threat and hazard identification through the use of a Risk Management Program that enables regional stakeholders to utilize and assess quantitative and qualitative data, e.g. Critical Infrastructure/Key Resources (CIKR) databases, relative risk rankings of CIKR sites, core capability assessments, etc.

Goal 3: Reduce the possibility of damage and losses to existing assets, particularly people, critical facilities/infrastructure, and State-owned facilities, due to wildfire/structure fire, coastal storms/erosion/tsunami, landslide, hazardous materials, and other manmade hazards.	
Objective 3.A*: Develop a comprehensive approach to reducing the possibility of damage and losses due to wildfire/structural fire, coastal storms/erosion/tsunami, landslide, hazardous materials, and manmade hazards.*	
Action 3.A.1	Perform brush management activities within the open space, public owned brush management zone, on a bi-annual basis.

Action 3.A.2	Maintain brush management inspection cycle of 42,505 parcels that are divided into 19 inspection areas and accomplished every 3.8 years.
Action 3.A.3	Create buffer zones around residential and non-residential structures through the removal or reduction of flammable vegetation, including vertical clearance of tree branches and removal of dead or dry leaves, needles, twigs, and combustibles from roofs, decks, eaves, porches, and yards.
Action 3.A.4	Create buffer zones around power lines, oil and gas lines, and other infrastructure systems, including replacing flammable vegetation with less flammable.
Action 3.A.5	Maintain critical water and wastewater services to the region through effective critical infrastructure management, to include the use of multi- source power distribution systems, installation and maintenance of permanent alternate power generators at all plants and pumping stations, and the further development of redundancies in the data transmission of control systems.

Goal 4: Reduce the possibility of damage and losses to existing assets, particularly people, critical facilities/infrastructure, and State-owned facilities, due to <u>severe weather</u> (e.g., El Nino storms/, thunderstorms, lightning, tsunami, and extreme heat and drought)	
Objective 4.A: Develop a comprehensive approach to reducing the possibility of damage and losses due to severe weather.	
Action 4.A.1	Enhance procedures to better support storm mitigation measures including identifying coastal inundation zones, evacuation routes, alert warning notification procedures, staging areas, temporary shelters, community engagement, public information requirements, and enhancing collaboration with local, state and federal partners.
Action 4.A.2	Update the Land Development Code to require private development in the coastal zone to elevate storm drains above anticipated sea level rise along the San Diego coastline.
Action 4.A.3	Enhance existing City partnerships with appropriate local agencies, community support groups, and service providers to better mitigate hazards that may increasingly result from severe weather and/or climate change.
Action 4.A.4	Support water conservation policies and programs to enforce water use restrictions. These include municipal code enforcement and other restrictions on outdoor water use and indoor practices to mitigate the effects of severe weather and drought.

Goal 5: Reduce the possibility of damage and losses to existing assets, particularly people, critical facilities/infrastructure, and State- owned facilities, due to <u>earthquake and dam failure</u>.	
Objective 5.A: Develop a comprehensive approach to reducing the possibility of damage and losses due to earthquake and dam failure.	
Action 5.A.1	Complete a seismic retrofit of the California Tower section of the Museum of Man in Balboa Park.
Action 5.A.2	Take actions to safeguard against dam failure, to include supporting public awareness initiatives, initiating structural studies and improvements in coordination with the State's Division of Safety of Dams, and maintaining effective disaster planning in collaboration with local, state, and Federal agencies.
Action 5.A.3	Enhance the means of providing water for fire-fighting when service is disrupted because of earthquake.

Goal 6: Reduce the high probability of damage and losses to existing assets, particularly people, critical facilities/infrastructure, and State-owned facilities, due to <u>floods</u>.	
Objective 6.A: Develop a comprehensive approach to reducing the high probability of damage and losses due to floods.	
Action 6.A.1	Work with U.S. Fish and Wildlife Service (USFWS), U.S. Army Corps of Engineers (USACE), and other Federal, State, and local agencies to restore the conveyance capacity of the following channels by removing deposited sediment, trash and accumulated vegetation to restore original channel cross sections: Cowles Mountain/San Carlos, Alvarado (Section 59 and 60 and 61-63), Industrial Court, Smythe, Auburn, Jamacha, Rancho Bernardo, South Chollas, Solola/Cottonwood, Sweetwater, and Tijuana River Valley.
Action 6.A.2	Support a "Green Street" ordinance to protect and improve water quality of rivers, creeks, bays, and the ocean by reducing pollutants in compliance with water quality regulations and orders.
Action 6.A.3	Participate in the National Flood Insurance Program (NFIP) and meet the requirements for conformance with NFIP standards.

Action Item #	Priority Action Item #	Status of 2015 Plan Update Approved by FEMA 2018
1.A.1	1	FIRE – ONGOING 2023 PLAN
2.A.1	17	COMPLETED 6/5/17
2.A.2	18	COMPLETED 9/8/16
2.A.3	19	OES CHANGED TO 2.A.1 FOR 2023 UPDATE
3.A.1	2	FIRE – ONGOING 2023 PLAN
3.A.2	3	FIRE – ONGOING 2023 PLAN
3.A.3	4	FIRE – ONGOING 2023 PLAN
3.A.4	5	FIRE – ONGOING 2023 PLAN
3.A.5	6	PUBLIC UTILITIES – ONGOING 2023 PLAN
4.A.1	13	COMPLETED 8/3/17
4.A.2	9	NOT COMPLETED 10/26/15 – NOT PRACTICAL TO ACCOMPLISH
4.A.3	8	OES CHANGED TO 4.A.1 FOR 2023 UPDATE
4.A.4	7	PUBLIC UTILITIES CHANGED TO 4.A.2 FOR 2023 UPDATE
5.A.1	16	COMPLETED 2/26/21
5.A.2	15	PUBLIC UTILITIES CHANGED TO 5.A.1 FOR 2023 UPDATE
5.A.3	14	COMPLETED 10/6/20
6.A.1	10	TSW – ONGOING 2023 PLAN
6.A.2	12	COMPLETED 6/30/18
6.A.3	11	TSW CHANGED TO 6.A.2 FOR 2023 UPDATE

COMPLETED AND DELETED MITIGATION ACTIONS FROM THE 2015 HMP (APPROVED BY FEMA 2018)

The Action Items removed did not match the current priorities for this plan update. For the actions carried over, the naming convention was changed based on the new plan.

The **19** prioritized mitigation actions as well as an implementation strategy for each are:

1. **Action** 1.A.1 - Develop a comprehensive approach to educating the public of the importance of "defensible space" for protection of their homes and property.

   Coordinating Department/Organization: Fire Rescue

   Potential Funding Source: General Fund

   Implementation Timeline: On-going

2. **Action** 3.A.1 - Perform brush management activities within the open space, public owned brush management zone, on a bi-annual basis.

   Coordinating Department/Organization: Fire Rescue

   Potential Funding Source: General Fund

   Implementation Timeline: On-going

3. **Action** 3.A.2 - Maintain bush management inspection cycle of 42,505 parcels that are divided into 19 inspection areas and accomplished every 3.8 years.

   Coordinating Department/Organization: Fire Rescue

   Potential Funding Source: General Fund

   Implementation Timeline: On-going

4. **Action** 3.A.3 - Create buffer zones around residential and non-residential structures through the removal or reduction of flammable vegetation, including vertical clearance of tree branches and removing dead or dry leaves, needles, twigs, and combustibles from roofs, decks, eaves, porches, and yards.

   Coordinating Department/Organization: Fire Rescue

   Potential Funding Source: General Fund

   Implementation Timeline: On-going

5. **Action** 3.A.4 - Create buffer zones around power lines, oil and gas lines, and other infrastructure systems, including replacing flammable vegetation with less flammable.

   Coordinating Department/Organization: Fire Rescue

   Potential Funding Source: General Fund

   Implementation Timeline: On-going

6. **Action** 3.A.5 - Maintain critical water and wastewater services to the region through effective critical infrastructure management, to include the use of multi-source power distribution systems, installation and maintenance of permanent alternate power generators at all plants and pumping stations, and the further development of redundancies in the data transmission of control systems.

   Coordinating Department/Organization: Public Utilities

   Potential Funding Source: General Fund

   Implementation Timeline: On-going

7. **Action** 4.A.4 – Support water conservation policies and programs to enforce water use restrictions. These include municipal code enforcement and other restrictions on outdoor water use and indoor practices to mitigate the effects of severe weather and drought.

   Coordinating Department/Organization: Public Utilities

   Potential Funding Source: Budgeted

   Implementation Timeline: On-going (Changed to 4.A.2 for 2023 plan)

8. **Action** 4.A.3 – Enhance existing City partnerships with appropriate local agencies, community support groups, and service providers to better mitigate hazards that may increasingly result from severe weather and/or climate change.

   Coordinating Department/Organization: Office of Emergency Services

   Potential Funding Source: General Fund

   Implementation Timeline: On-going (Changed to 4.A.1 for 2023 Plan)

9. **Action** 4.A.2 - Update the Land Development Code to require private development in the coastal zone to elevate storm drains above anticipated sea level rise along the San Diego coastline.

   Coordinating Department/Organization: Planning

   Potential Funding Source: General Fund

   Implementation Timeline: Not completed 10/26/15 (not practical to implement)

10. **Action** 6.A.1 – Work with U.S. Fish and Wildlife (USFWS), U.S. Army Corps of Engineers (USACE), and other federal, state, and local agencies to restore the conveyance capacity of the following channels by removing deposited sediment, trash and accumulated vegetation, to restore original channel cross sections: Cowles Mountain/San Carlos, Alvarado (Section 59 and 60 and 61- 63), Industrial Court, Smythe, Auburn, Jamacha, Rancho Bernardo, South Chollas, Solola/Cottonwood, Sweetwater, and Tijuana River Valley.

    Coordinating Department/Organization: Transportation/Storm Water

    Potential Funding Source: General/Public Assistance

    Implementation Timeline: On-going

11. **Action** 6.A.3 - Participate in the National Flood Insurance Program (NFIP) and meet the requirements for conformance with NFIP standards.

    Coordinating Department/Organization: Transportation Storm Water

    Potential Funding Source: General Fund

    Implementation Timeline: On-going (Changed to 6.A.2 for 2023 plan)

12. **Action** 6.A.2 - Support a "Green Street" ordinance to protect and improve water quality of rivers, creeks, bays, and the ocean by reducing pollutants in compliance with water quality regulations and orders.

    Coordinating Department/Organization: Transportation/Storm Water

    Potential Funding Source: General Fund

    Implementation Timeline: Completed 6/30/18

13. **Action** 4.A.1 – Enhance procedures to better support storm preparedness measures, including identifying coastal inundation zones, evacuation routes, alert warning notification procedures, staging areas, temporary shelters, community engagement, public information requirements, and enhancing collaboration with local, state, and federal partners.

    Coordinating Department/Organization: Office of Emergency Services

    Potential Funding Source: General Fund

    Implementation Timeline: Completed 8/3/17

14. **Action** 5.A.3 – Enhance the means of providing water for firefighting when service is disrupted because of earthquake.

    Coordinating Department/Organization: Fire Rescue

    Potential Funding Source: General Fund

    Implementation Timeline: Completed 10/6/20

15. **Action** 5.A.2 – Take actions to safeguard against dam failure, to include supporting public awareness initiatives, initiating structural studies and improvements in coordination with the State's Division of Safety of Dams, and maintaining effective disaster planning in collaboration with local, state, and federal agencies.

    Coordinating Department/Organization: Public Utilities

    Potential Funding Source: General Fund/Mitigation Grants

    Implementation Timeline: On-going (Changed to 5.A.1 for 2023 plan)

16. **Action** 5.A.1 - Complete a seismic retrofit of the California Tower section of the Museum of Man in Balboa Park.

    Coordinating Department/Organization: Park and Recreation

    Potential Funding Source: Mitigation Grant Funded

    Implementation Timeline: Completed 2/26/21

17. **Action** 2.A.1 – Strengthen the development and enhancement of standardized City Emergency Operations Plan (s), and ensure they are coordinated with the appropriate County-wide Emergency Operations Plan (s).

    Coordinating Department/Organization: Office of Emergency Services

    Potential Funding Source: General Fund

    Implementation Timeline: Completed 6/5/17

18. **Action** 2.A.2 – Enhance operating the City's Emergency Operations Center (EOC), and Department Operations Centers (DOC) following the Standardized Emergency Management System (SEMS) and Incident Command System (ICS). This includes training multiple staff members for each position in the EOC.

    Coordinating Department/Organization: Office of Emergency Services

    Potential Funding Source: General Fund

    Implementation Timeline: Completed 9/8/16

19. **Action** 2.A.3 – Strengthen City and region-wide threat and hazard identification through the use of a Risk Management Project that enables regional stakeholders to utilize and assess quantitative and qualitative data, e.g. Critical Infrastructure/Key Resources (CIKR) databases, relative risk rankings of CIKR sites, core capability assessments, etc.

    Coordinating Department/Organization: Office Emergency Services

    Potential Funding Source: General Fund

    Implementation Timeline: On-going (**Changed to 2.A.1 for 2023 plan**)

7.2. Plan Update Evaluation

Plan Section	Considerations	Explanation
Planning Process	Should new jurisdictions and/or districts be invited to participate in future plan updates?	Yes, as new business and/or community sector organizations form during the next project period.
	Have any internal or external agencies been invaluable to the mitigation strategy?	City of San Diego Development Services Dept. City of San Diego Fire Dept. City of San Diego General Services Dept. City of San Diego Information Technology Dept. San Diego Geographic Information Source City of San Diego Parks & Recreation Dept. City of San Diego Public Utilities Dept. California Department of Water Resources American Red Cross California Department of Forestry and Fire Protection
	Can any procedures (e.g., meeting announcements, plan updates) be done differently or more efficiently?	Yes, the continuance of virtual meetings developed during the worldwide pandemic.
	Has the Planning Team undertaken any public outreach activities?	Yes, a variety of outreach activities continue to be developed and implemented and are ongoing.
	How can public participation be improved?	Public participation may be improved with continued partner outreach, seminars, surveys, public education opportunities/presentations and other methods (both virtual and in-person) outlined in Section 6 of this plan.
	Have there been any changes in public support and/or decision- maker priorities related to hazard mitigation?	Yes, the worldwide pandemic saw several conflicting priorities related to public mitigation support.
Capability Assessment	Have jurisdictions adopted new policies, plans, regulations, or reports that could be incorporated into this plan?	Yes, updated hazard mitigation plans are part of an ongoing aspect of San Diego's mitigation efforts.
	Are there different or additional administrative, human, technical, and financial resources available for mitigation planning?	Potentially, as staff positions change, and budget priorities shift, this capability may see some limitation of available resources.
	Are there different or new education and outreach programs and resources available for mitigation activities?	San Diego has begun conversations regarding how to incorporate new outreach programs and resources into its mitigation activities.
	Has NFIP participation changed in the participating jurisdictions?	No change noted.
Risk Assessment	Has a natural and/or technical or human-caused disaster occurred?	Worldwide SARS CoV-2 viral pandemic.

Risk Assessment	Should the list of hazards addressed in the plan be modified?	Not currently. The Planning Team will continue to monitor, assess, and update as needed.
	Are there new data sources and/or additional maps and studies available? If so, what are they and what have they revealed? Should the information be incorporated into future plan updates?	As new sources of GIS products, and technological tools (mobile apps, etc.) emerged, they have been identified and incorporated in the plan.
	Do any new critical facilities or infrastructure need to be added to the asset lists?	Not currently. The Planning Team will continue to monitor, assess, and update as needed.
	Have any changes in development trends occurred that could create additional risks?	Changes to development and land use planning is included in Plan considerations. These potential changes will be included for monitoring and projection of any future mitigation risks.
	Are there repetitive losses and/or severe repetitive losses to document?	Yes. According to the 2022 FEMA Repetitive Loss Summary Report, the City of San Diego had 47 Repetitive Loss properties, and 4 Severe Repetitive Loss properties.

Table 14: FEMA LOCAL MITIGATION PLANNING HANDBOOK WORKSHEET 7.2 DATA.

Plan Section	Considerations	Explanation
Mitigation Strategy	Is the mitigation strategy being implemented as anticipated? Were the cost and timeline estimates accurate?	Yes
	Should new mitigation actions be added to the Action Plan? Should existing mitigation actions be revised or eliminated from the plan?	Not currently. The Planning Team will continue to monitor, assess, and update as needed.
	Are there new obstacles that were not anticipated in the plan that will need to be considered in the next plan update?	Not currently. The Planning Team will continue to monitor, assess, and update as needed.
	Are there new funding sources to consider?	Not currently. The Planning Team will continue to monitor, assess, and update as needed.
	Have elements of the plan been incorporated into other planning mechanisms?	Yes, there is a strong connection between mitigation planning and San Diego's General Plan. Several plans are used to inform the HazMit plan, including the THIRA, Response and Recovery Plans. Please see the comprehensive list under Section 6 titled "Prioritization and Implementation of Action Items."
Plan Maintenance Procedures	Was the plan monitored and evaluated as anticipated?	Yes
	What are needed improvements to the procedures?	Continued monitoring and evaluation by our Office of Emergency Services during the next project period.

TABLE 15: FEMA LOCAL MITIGATION PLANNING HANDBOOK WORKSHEET 7.2 DATA CONTINUED

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APPENDIX J Energy Intensity

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Optional Submittal Table O-1A: Recommended Energy Reporting - SINGLE DELIVERY PRODUCT - WATER SUPPLY PROCESS APPROACH

Water Delivery Product drop down list (If delivering more than one type of product recommend using Table O-1C)	Multiple Products (if unable to use table O-1C)	Only for Water Delivery Products Under the Urban Water Supplier's Operational Control								
Start Date of Reporting Period	1/1/2024	Water Management Process							Non-Consequential Hydropower (if applicable)	
End Date of Reporting Period	12/31/2024									
Is upstream embedded energy included in the values reported?	No									
		Units for Water Volume	Extract and Divert	Place into Storage	Conveyance	Treatment	Distribution	**Total Utility** See DWR NOTES	Hydropower	Net Utility
Volume of Water Entering Process		AF						163927		163927
Energy Consumed (kWh)		N/A				14250303	27308462	41558765		41558765
Energy Intensity (kWh/vol. converted to MG)		N/A	0.0	0.0	0.0	0.0	0.0	778.0	0.0	778.03

DWR NOTES: Total Utility: The volume of water entered in the "Total Utility" column should equal the volume of water entering the distribution system (excluding recycled water); in most cases, this is the total volume calculated in UWMP Table 4-1: 2025 Actual Total Uses for Potable and Non-Potable Water. Note if recycled water is included in your Submittal Table 4-1, you must exclude it from your volume in this table.

Quantity of Self-Generated Renewable Energy

2602812 kWh

Data Quality (Estimate, Metered Data, Combination of Estimates and Metered Data)

Combination of Estimates and Metered Data

Data Quality Narrative:

Narrative:

The energy use for conveyance and treatment is combined in City records and therefore is combined in the treatment column in this table. Self-Generated Renewable Energy includes solar production from Alvarado, Otay, and Miramar on-site PV systems and solar production at Bayview Reservoir and Water Pump Station.

NOTES:

Table O-2: Recommended Energy Reporting - WASTEWATER AND RECYCLED WATER

Start Date of Reporting Period	1/1/2024	**Urban Water Supplier Operational Control**			
End Date of Reporting Period	12/31/2024				
Is upstream embedded energy in the values reported?	No	**Water Management Process**			
Units of Measure for Water	AF	Collection / Conveyance	Treatment	Discharge / Distribution	**Total**
Volume of Wastewater Entering Process (volume units selected above)					116703
Wastewater Energy Consumed (kWh)		53088323	20118714		73207037
Wastewater Energy Intensity (kWh/volume)		0.0	0.0	0.0	1925
Volume of Recycled Water Entering Process (volume units selected above)					16668
Recycled Water Energy Consumed (kWh)			34579880	1293879	35873759
Recycled Water Energy Intensity (kWh/volume converted to MG)		0.0	0.0	0.0	6605

Quantity of Self-Generated Renewable Energy related to recycled water and wastewater operations

19927479 kWh

Data Quality (drop down)

Combination of Estimates and Metered Data

Data Quality Narrative:

Narrative:

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