2025

Urban Water Management Plan

EL TORO WATER DISTRICT

Final Draft | May 2026

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2025 URBAN WATER MANAGEMENT PLAN

FINAL DRAFT

May 2026

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ACRONYMS AND ABBREVIATIONS

%	Percent
20x2020	20% water use reduction in GPCD by year 2020
AB	Assembly Bill
ACS	American Community Survey
ACTM	Aufdenkamp Connection Transmission Main
ADU	Accessory Dwelling Unit
AF	Acre-Feet
AFY	Acre-Feet per Year
AMI	Advanced Metering Infrastructure
AMP	Allen-McColloch Pipeline
AMR	Automatic Meter Reading
AVEK	Antelope Valley-East Kern Water Agency
AWIA	American Water Infrastructure Act
AWSDA	Annual Water Supply and Demand Assessment
AWWA	American Water Works Association
BiOps	Biological Opinions
BMP	Best Management Practice
CAG	Community Advisory Group
CAMP4W	Climate Adaptation Master Plan for Water
CCF	Hundred Cubic Feet
CEE	Consortium for Energy Efficiency
CII	Commercial/Industrial/Institutional
CIP	Capital Improvement Program
CRA	Colorado River Aqueduct
CVP	Central Valley Project
CY	Calendar Year
DCP	Delta Conveyance Project
DCR	Delivery Capability Report
Delta	Sacramento-San Joaquin River Delta
DIM	Dedicated Irrigation Meter
District	El Toro Water District
DMM	Demand Management Measure
DPR	Direct Potable Reuse
DRA	Drought Risk Assessment
DVL	Diamond Valley Lake
DWR	California Department of Water Resources
EOCF	East Orange County Feeder
ERP	Emergency Response Plan
ETWD	El Toro Water District
FY	Fiscal Year

GIS	Geographic Information System
GPCD	Gallons per Capita per Day
gpf	Gallons per Flush
GWRS	Groundwater Replenishment System
HECW	High Efficiency Clothes Washer
HET	High Efficiency Toilet
HOA	Homeowner Association
ICS	Intentionally Created Surplus
IPR	Indirect Potable Reuse
IRP	Integrated Water Resources Plan
IRWD	Irvine Ranch Water District
JADU	Junior Accessory Dwelling Unit
JRWSS	Joint Regional Water Supply System
LBCWD	Laguna Beach County Water District
LEF	Landscape Efficiency Factor
LRP	Local Resources Program
MAF	Million Acre-Feet
MET	Metropolitan Water District of Southern California
MG	Million Gallon
MGD	Million Gallons per Day
MJHMP	Multi-Jurisdictional Hazard Mitigation Plan
MNWD	Moulton Niguel Water District
MWD	Metropolitan Water District of Southern California
MWDOC	Municipal Water District of Orange County
NAICS	North American Industry Classification System
NDMA	N-nitrosodimethylamine
OC	Orange County
OC Basin	Orange County Groundwater Basin
OC San	Orange County Sanitation District
OCWD	Orange County Water District
ORP	On-Site Retrofit Program
PFAS	Per- and Polyfluoroalkyl Substances
Poseidon	Poseidon Resources LLC
PPCP	Pharmaceuticals and Personal Care Products
QWEL	Qualified Water Efficient Landscaper
RCP	Representative Concentration Pathway
RHNA	Regional Housing Needs Assessment
RRA	Risk and Resilience Assessment
RW	Recycled Water
SARCCUP	Santa Ana River Conservation and Conjunctive Use Program
SBVMWD	San Bernardino Valley Municipal Water District
SB X7-7	Water Conservation Act of 2009

SCAB	South Coast Air Basin
SCWD	South Coast Water District
SDCWA	San Diego County Water Authority
sf	Square Feet
SGMA	Sustainable Groundwater Management Act
SMWD	Santa Margarita Water District
SNWA	Southern Nevada Water Authority
SOCWA	South Orange County Wastewater Authority
SWP	State Water Project
SWRCB	California State Water Resources Control Board
TAF	Thousand Acre-Feet
TAP	Technical Assistance Program
TCWD	Trabuco Canyon Water District
TDS	Total Dissolved Solids
TM	Technical Memorandum
USBR	United States Bureau of Reclamation
UWMP	Urban Water Management Plan
UWMP Act	Urban Water Management Planning Act of 1983
UWUO	Urban Water Use Objective
Water Code	California Water Code
WBIC	Weather-Based Irrigation Controller
WEROC	Water Emergency Response Organization of Orange County
WRP	Water Recycling Plant
WSAP	Water Supply Allocation Plan
WSCP	Water Shortage Contingency Plan
WSIP	Water Savings Incentive Program
WSRA	Water Service Reliability Assessment
WTP	Water Treatment Plant

EXECUTIVE SUMMARY

INTRODUCTION AND UWMP OVERVIEW

El Toro Water District (District or ETWD) has prepared this 2025 Urban Water Management Plan (UWMP or Plan) to satisfy the requirements of the Urban Water Management Planning Act (California Water Code Sections 10610 through 10656) and related provisions of California Water Code Section 10608. This Plan updates the District's 2020 UWMP and provides a current assessment of the District's service area, water demands, water supplies, water use efficiency, drought risk, and long-term water service reliability over a 25-year planning horizon through 2050. ETWD is a retail urban water supplier and has prepared this UWMP in coordination with its regional wholesaler, the Municipal Water District of Orange County (MWDOC), as well as the Metropolitan Water District of Southern California (Metropolitan or MET), the South Orange County Wastewater Authority (SOCWA), and other regional planning partners.

The 2025 UWMP has been prepared in accordance with the California Department of Water Resources (DWR) 2025 UWMP Guidebook and reflects current operational, demographic, supply, and regulatory conditions. The Plan also addresses California's evolving urban water use efficiency framework, including the State Water Resources Control Board's Making Conservation a California Way of Life regulation adopted in July 2024, which established annual Urban Water Use Objectives for retail urban water suppliers.

UWMP PREPARATION

ETWD prepared the 2025 UWMP as an individual retail urban water supplier and coordinated planning, supply, and demand assumptions with its wholesale and regional partners. Key documents informing the Plan include MWDOC's 2025 UWMP and Water Shortage Contingency Plan (WSCP); the 2025 Orange County Water Demand Forecast Technical Memorandum (a collaborative effort among MWDOC, the Orange County Water District, and Orange County retail agencies); Metropolitan's 2025 UWMP and WSCP; Metropolitan's Climate Adaptation Master Plan for Water (CAMP4W); MWDOC's 2023 Orange County Water Reliability Study; and the 2024 Orange County Water and Wastewater Multi-Jurisdictional Hazard Mitigation Plan. The District informed MWDOC of its projected water use in accordance with Water Code Section 10631(h) and notified the cities and County within its service area of the preparation of the Plan as required by Water Code Section 10621(b).

SYSTEM DESCRIPTION

The District was formed in 1960 under the California Water District Law and is governed by a publicly elected five-member Board of Directors. ETWD's service area encompasses approximately 5,430 acres in southern Orange County and includes all of the City of Laguna Woods and portions of Lake Forest, Aliso Viejo, Laguna Hills, and Mission Viejo. The District operates 12 pressure zones, 6 reservoirs, 9 pump stations, 19 pressure reducing stations, and approximately 180 miles of water mains, serving roughly 10,000 service connections.

The service area lies within the South Coast Air Basin and experiences a Mediterranean climate of mild winters, warm summers, average annual precipitation of approximately 11.6 inches, and annual evapotranspiration in excess of 45 inches. Land use within the District is substantially built out and is dominated by single- and multi-family residential development with associated commercial, institutional, open space, and park uses. The most significant planned land use change is the Village at Laguna Hills mixed-use redevelopment of the former Laguna Hills Mall site, which is approved for up to 1,500 multifamily residential units along with commercial, hotel, office, open-space, and public infrastructure components. In addition, two related housing redevelopment projects along the Mill Creek Drive corridor in the City of Laguna Hills (Terravita and 23161 Mill Creek Drive) are entitled or in process and would together convert approximately seven acres of existing office and surface-parking uses to attached single-family and multi-family residential uses, adding on the order of 516 dwelling units to the District's service area. The District’s 2025 service-area population is estimated at 53,415 and is projected to grow modestly to approximately 54,440 by 2050. Future growth is expected to occur primarily through redevelopment, infill, accessory dwelling units, and implementation of the cities’ Regional Housing Needs Assessment (RHNA) programs rather than through expansion of the District’s service area.

WATER USE CHARACTERIZATION AND PROJECTIONS

Water use within the District’s service area has remained relatively stable over the past decade, with year-to-year variation driven primarily by weather, irrigation demand, and continuing conservation effects. In Fiscal Year 2024-25, the District delivered 8,097 acre-feet (AF) of water to its customers, consisting of 6,689 AF of potable water and 1,408 AF of recycled water. The largest potable sectors were multi-family residential (2,573 AF), single-family residential (1,831 AF), and potable landscape irrigation (1,117 AF), with smaller volumes for commercial, institutional/governmental, and other uses. Recycled water continued to meet all of the District’s non-potable landscape irrigation demand.

Total water use is projected to remain generally stable through the 2050 planning horizon, ranging from approximately 7,705 AF in 2030 to 7,751 AF in 2050. Potable use is projected to range from approximately 6,274 AF to 6,386 AF over the planning period, while recycled water use is projected to remain at approximately 1,431 AF per year. These projections reflect the District’s substantially built-out service area, modest demographic change, ongoing redevelopment and infill, the continuing influence of state and local conservation requirements, and the continuing role of recycled water in meeting non-potable irrigation demand.

The District’s most recent validated water audit (Calendar Year 2024) reports real water loss of 22.4 gallons per service connection per day and apparent water loss of 5.4 gallons per service connection per day, both below the State Water Resources Control Board’s 2028 performance standards calculated for ETWD (24.3 and 7.1 gallons per service connection per day, respectively).

WATER USE EFFICIENCY AND COMPLIANCE

ETWD met its 2020 SB X7-7 target. Using the simple 20 percent reduction approach (Option 1) developed in coordination with MWDOC, the District established a 2020 target of 163 gallons per capita per day (GPCD) and reported actual 2020 use of 134 GPCD, well below the target. ETWD also participated in the Orange County 20x2020 Regional Alliance, which collectively achieved compliance with SB X7-7 prior to the 2020 deadline.

Beginning in Fiscal Year 2023-24, the District’s urban water use efficiency obligations are governed by the State Water Resources Control Board’s Making Conservation a California Way of Life regulation, which establishes annual Urban Water Use Objectives (UWUOs) for retail urban water suppliers. ETWD calculates and reports its UWUO annually through the WUEdata online portal and, in its most recent report, demonstrated that it met its applicable UWUO. Although formal UWUO reporting is administered separately from the UWMP, the District has incorporated the framework into its long-range planning context and demand projections.

WATER SUPPLY CHARACTERIZATION

The District meets its demands through a diversified supply portfolio comprising imported water purchased from MWDOC (which is, in turn, a member agency of MET), local recycled water produced at the District’s Water Recycling Plant (WRP), and surface water from Irvine Lake delivered through the

Baker Water Treatment Plant. In Fiscal Year 2024-25, the District's actual water supply totaled 8,108 AF, consisting of 6,563 AF of imported water purchased from MWDOC, 1,408 AF of recycled water produced at the WRP, and 137 AF of surface water from Irvine Lake delivered through the Baker Water Treatment Plant. Imported water from MET originates from the Colorado River, conveyed through the Colorado River Aqueduct, and from Northern California through the State Water Project.

The District owns and operates the wastewater collection system and treatment facilities serving its service area. Almost all wastewater generated within the District is conveyed to the WRP, where it is treated and either recycled for non-potable use or discharged through SOCWA's Effluent Transmission Main and the Aliso Creek Ocean Outfall. The WRP has tertiary treatment capacity of 3.7 million gallons per day, and the District operates approximately 25 miles of recycled water distribution pipelines serving more than 275 sites, including HOA common-area landscapes, the Laguna Woods Village Golf Course, and on-site uses at the WRP.

The District's projected supply portfolio remains generally stable through 2050, with imported potable supplies of approximately 6,274 AF to 6,386 AF and recycled water supplies of approximately 1,431 AF per year. ETWD may also benefit from regional projects, including Metropolitan's Pure Water Southern California advanced water purification program (initial deliveries possible in the early 2030s), South Coast Water District's Doheny Ocean Desalination Project (Phase 1 operation scheduled for 2028-2029), the San Juan Watershed Project, and the ongoing South Orange County emergency interconnection expansion.

WATER SERVICE RELIABILITY AND DROUGHT RISK ASSESSMENT

The District evaluated water service reliability under three hydrologic scenarios, normal year, single dry year, and a drought period lasting five consecutive years, in five-year increments from 2030 through 2050. The reliability analysis is consistent with the regional approach used in MWDOC's 2025 UWMP, Metropolitan's 2025 UWMP, the 2025 Update to Metropolitan's Integrated Resources Plan Needs Assessment, and the November 2025 CAMP4W Implementation Strategy, and is anchored to the demand multipliers from the 2025 Orange County Demand Forecast Technical Memorandum. Under all three scenarios, normal year, single dry year, and progressively escalating multi-year drought conditions (with demand multipliers ranging from 106 percent in Year 1 to 117 percent in Year 5), the District is projected to meet 100 percent of its customer demand through 2050.

The District also performed a near-term Drought Risk Assessment (DRA) evaluating annual supply and demand for Fiscal Years 2025-26 through 2029-30, assuming a five-year consecutive drought beginning in FY 2025-26. The DRA likewise concludes that available water supplies are expected to balance projected total demand throughout the assessment period and that no WSCP-driven supply augmentation or demand reduction action would be required. The District's diversified supply portfolio, the continuing role of recycled water, MWDOC's regional supply augmentation programs, and Metropolitan's substantial in-region storage (including Diamond Valley Lake) collectively support these reliability conclusions.

WATER SHORTAGE CONTINGENCY PLANNING

The District's WSCP, provided as Appendix G to this UWMP, serves as the District's operating manual for preventing service disruptions and responding to actual or anticipated water shortages. The 2026 WSCP aligns with the six standard state water shortage levels established by Water Code Section 10632(a)(3)(B), corresponding to progressive shortage ranges of up to 10, 20, 30, 40, 50, and more than 50 percent. For each level, the WSCP defines specific demand reduction measures and supply augmentation actions, communication protocols, compliance and enforcement procedures, monitoring and reporting requirements, and procedures for an Annual Water Supply and Demand Assessment.

Legal authority to implement and enforce the WSCP is established through the District's Water Shortage Contingency Response Ordinance 2026-1, adopted concurrently with this UWMP and superseding Ordinance 2022-1. Ordinance 2026-1 also incorporates the statewide prohibition on the use of potable water to irrigate nonfunctional turf established under Assembly Bill 1572 (Water Code Sections 10608.12 and 10608.14) and includes permanent water conservation requirements applicable at all times.

The WSCP also includes a Seismic Risk Assessment and Mitigation Plan prepared in accordance with Water Code Section 10632.5. The District satisfies this requirement through reliance on the 2024 Orange County Water and Wastewater Multi-Jurisdictional Hazard Mitigation Plan, supplemented by the District's American Water Infrastructure Act Risk and Resilience Assessment and Emergency Response Plan, the Water Emergency Response Organization of Orange County (WEROC) Emergency Operations Plan, and the District's ongoing Capital Improvement Program.

DEMAND MANAGEMENT MEASURES

The District implements a comprehensive set of demand management measures (DMMs) to support efficient water use and to support compliance with the Making Conservation a California Way of Life regulation. The District's DMM portfolio addresses all categories required by Water Code Section 10631(e), including water waste prevention, metering, conservation pricing, public education and outreach, distribution system real loss control, water conservation program coordination and staffing, and additional measures with significant impact on per-capita water use.

Under Ordinance 2026-1, the District's Water Budget-Based Tiered Conservation Rate Structure assigns indoor and outdoor water budgets to each customer and applies higher rates to use above the customer's budget. During a declared shortage, the Board may impose a "drought factor" that reduces customer water budgets in proportion to the declared shortage level. Since adoption of the 2020 UWMP, the District has elevated water use efficiency to a dedicated, full-time position responsible for conservation program coordination, UWUO calculation and reporting, Commercial, Industrial, and Institutional (CII) Performance Measure implementation, water loss compliance, and coordination with MWDOC, MET, the California Water Efficiency Partnership, and the State Water Resources Control Board.

Through MWDOC, the District also provides its customers with access to a comprehensive suite of regionally administered residential, CII, and landscape rebate, retrofit, and education programs. The District's distribution system water loss program is supported by MWDOC's Water Loss Control Technical Assistance and Shared Services programs, which over their history have surveyed more than 7,000 miles of distribution main across participating Orange County agencies and have supported recovery of more than 1,000 acre-feet of water annually region-wide.

PLAN ADOPTION, SUBMITTAL, AND IMPLEMENTATION

The Water Code requires the UWMP to be adopted by the Supplier's governing body. Before the adoption of the UWMP, the District notified the public and the cities and counties within its service area per the Water Code and held a public hearing to receive input from the public on the UWMP. Post adoption, the District submitted the UWMP to DWR and other key agencies and made the document available for public review no later than 30 days after filing with DWR.

CHAPTER 1: INTRODUCTION AND UWMP OVERVIEW

1.1 Overview of Urban Water Management Plan Requirements

El Toro Water District (District or ETWD) has prepared this 2025 Urban Water Management Plan (UWMP or Plan) in accordance with the Urban Water Management Planning Act, California Water Code sections 10610 through 10656, and related requirements under California Water Code section 10608. This Plan updates ETWD's 2020 UWMP and provides a current assessment of the District's service area, water demands, water supplies, water shortage planning framework, and long-term water reliability over the 25-year planning horizon.

The Urban Water Management Planning Act requires every urban water supplier that provides water for municipal purposes to more than 3,000 customers or supplies more than 3,000 acre-feet of water annually to prepare, adopt, and submit a UWMP every five years. This 2025 UWMP has been prepared to satisfy those requirements and to serve as ETWD's principal long-range urban water planning document for the 2025 reporting cycle. ETWD's adopted UWMP is also intended to support sound policy decision-making, transparent public communication, and coordinated planning with regional partners and other governmental agencies.

ETWD's 2025 UWMP is designed to document the District's current and projected water service conditions, evaluate the reliability of available supplies in normal, single dry, and multiple dry year conditions, and demonstrate how ETWD will continue to provide reliable service while complying with state planning and water use efficiency requirements. As in prior planning cycles, the UWMP also serves as an important linkage between local operations, regional water resource planning, drought preparedness, recycled water planning, demand management, and state reporting requirements.

1.2 Updated Guidance for 2025 UWMP

This 2025 Urban Water Management Plan has been prepared in accordance with the requirements and guidance governing preparation of the 2025 UWMP. The California Department of Water Resources' 2025 UWMP Guidebook provides the framework for the preparation, organization, documentation, and submittal of urban water management plans. ETWD has used that framework in developing the 2025 UWMP and the associated appendices, technical materials, and required reporting tables.

In preparing the 2025 UWMP, ETWD has updated the document to reflect current service area conditions, 2025 baseline information, actual operational and water use data through 2025, current water supply and regional planning assumptions, updated demand projections for the applicable planning horizon, current water shortage and reliability information, and applicable DWR submittal tables and WUEdata reporting requirements.

ETWD has also prepared the 2025 UWMP in the context of California's long-term urban water use efficiency framework, including the State Water Resources Control Board's "Making Conservation a California Way of Life" regulation. Although detailed discussion of ETWD's compliance and implementation approach is provided in later chapters, the District recognizes that this framework is an important component of the current urban water management planning context.

In preparing this 2025 UWMP, ETWD has emphasized consistency between the narrative text of the UWMP, the supporting appendices, and the corresponding DWR submittal tables. ETWD has also sought to maintain readability for the public while providing sufficient technical detail to support regulatory review and agency decision-making.

1.3 UWMP Organization

This 2025 UWMP is organized into 10 major sections consistent with DWR's 2025 guidebook recommendations. It begins with an introduction and concludes with plan adoption, submittal, and implementation. The chapter content and supporting materials reflect DWR's 2025 guidance and ETWD's current planning conditions.

This 2025 UWMP is organized as follows:

Chapter 1 – Introduction and UWMP Overview.
Provides an overview of the UWMP Act, the purpose of the Plan, updated 2025 guidance, submittal table and WUEdata context, ETWD's planning setting, and the relationship of the UWMP to other planning efforts.

Chapter 2 – UWMP Preparation.
Describes the basis for preparing the Plan, identifies ETWD's planning approach, and summarizes coordination, outreach, and public participation conducted for the 2025 UWMP.

Chapter 3 – Service Area Description.
Describes ETWD's service area, facilities, climate, population, demographics, socioeconomic characteristics, and land use conditions.

Chapter 4 – Water Use Characterization.
Presents historical, current, and projected water use conditions, demand forecasts, household demand information, and water loss reporting context.

Chapter 5 – Water Use Efficiency and Compliance Context.
Summarizes ETWD's baseline and per-capita reporting framework, historic conservation target context, and applicable current water use efficiency reporting and compliance considerations for the 2025 cycle.

Chapter 6 – Water Supply Characterization.
Describes ETWD's existing and projected water supplies, including imported water, recycled water, wastewater-related planning information, potential water supply projects and water exchange and transfer opportunities, and energy intensity reporting context.

Chapter 7 – Water Service Reliability and Drought Risk Assessment.
Evaluates supply reliability under normal, single dry, and multiple dry year scenarios and presents ETWD's drought risk assessment.

Chapter 8 – Water Shortage Contingency Plan.
Presents ETWD's adopted Water Shortage Contingency Plan and related shortage response framework.

Chapter 9 – Demand Management Measures.
Describes ETWD's demand management measures, implementation progress, and related efficiency programs.

Chapter 10 – Plan Adoption, Submittal, and Implementation.
Describes adoption, filing, submittal, and implementation procedures for the 2025 UWMP.

Taken together, these chapters are intended to provide a clear, comprehensive, and policy-relevant description of ETWD's current conditions and future water management strategy.

CHAPTER 2: UWMP PREPARATION

ETWD's 2025 Urban Water Management Plan (UWMP) has been prepared to satisfy applicable requirements of the Urban Water Management Planning Act as an individual retail urban water supplier. Development of the 2025 UWMP included coordination with the District's wholesale and regional partners to maintain consistency with applicable regional planning assumptions, imported water supply planning, water shortage response planning, and related technical analyses. This chapter describes ETWD's individual planning and compliance approach, coordination and outreach activities, and the Chapter 2 submittal tables included with the UWMP.

2.1 Individual Planning and Compliance

ETWD has prepared the 2025 UWMP as an individual urban water management plan in accordance with the applicable requirements of the Urban Water Management Planning Act. The District is a retail urban water supplier and has prepared this UWMP to reflect its current service area, water use characteristics, supply conditions, and planning assumptions.

In preparing the 2025 UWMP, ETWD coordinated projected water demands and related planning information with its wholesale supplier and other regional planning partners, as appropriate, to support consistency with regional water supply and reliability planning assumptions.

ETWD's retail public water system information is presented in Table 2-1. The District serves retail customers through Public Water System No. CA3010079. For 2025, ETWD reported 9,971 municipal connections and a total 2025 water supply volume of 6,378 acre-feet, consistent with the District's reported level of retail water service for 2025.

Table 2-1: Public Water System

Submittal Table 2-1 Retail: Public Water Systems

Public Water System Number	Public Water System Name	Number of Municipal Connections 2025	Volume of Water Supplied 2025 (AF)
CA3010079	El Toro Water District	9,971	6,378
	Total	9,971	6,378

NOTES: Water supply volume shown in the table represents potable water connections only and is reported in acre-feet (AF) for FY 2024–25. Recycled water deliveries for FY 2024–25 totaled 1,408 AF across 278 connections.

As shown in Table 2-2, ETWD is preparing an Individual UWMP. As shown in Table 2-3, ETWD is identified as a retail supplier, UWMP tables are prepared on a fiscal year basis, the fiscal year begins on July 1, and the unit of measure used in the UWMP is acre-feet.

The UWMP checklist prepared to document compliance with applicable Water Code requirements is included in Appendix A. Standardized DWR submittal tables are included in Appendix B.

Table 2-2: Plan Identification

Submittal Table 2-2: Plan Identification		
Select One	**Type of Plan**	**Name of Regional Alliance or RUWMP** (Drop Down List)
☑	**Individual UWMP**	
	If Water Supplier is also a member of a SB X7-7 Regional Alliance, select name from the drop-down.	Orange County 20x2020 Regional Alliance
☐	**Regional Urban Water Management Plan (RUWMP)**	
	If Supplier selected RUWMP, select name from the drop-down.	
NOTES:		

Table 2-3: Supplier Identification

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
NOTES:	

2.2 Coordination and Outreach

The District prepared the 2025 UWMP through a coordinated planning process involving District staff, regional partner agencies, and other entities with responsibilities or planning interests relevant to water supply reliability, demand forecasting, wastewater and recycled water management, water shortage response, and long-range infrastructure planning. This section describes the District's integration with related planning efforts, coordination with wholesale and regional agencies, and public participation process for the 2025 UWMP.

2.2.1 Integration with Other Planning Efforts

The District coordinated preparation of the 2025 UWMP with key agencies and planning entities relevant to ETWD's service area, supply conditions, and long-range resource planning. These entities include the Municipal Water District of Orange County (MWDOC), the Metropolitan Water District of Southern California (Metropolitan), the South Orange County Wastewater Authority (SOCWA), and other local and regional entities that provide planning data, technical support, or related resource management information.

In preparing the 2025 UWMP, ETWD considered current state, regional, and local planning documents and technical work products relevant to water demand forecasting, imported water reliability, water shortage response, infrastructure planning, and related compliance obligations. These materials were used, as appropriate, to support ETWD's demand projections, supply assumptions, reliability assessment, and consistency with regional planning frameworks.

Some of the key planning and reporting documents and efforts used to develop this UWMP include the following:

- **MWDOC's 2025 UWMP**, which provides regional wholesale planning information and supporting assumptions relevant to the availability of imported supplies to Orange County retail agencies.
- **MWDOC's 2025 Water Shortage Contingency Plan (WSCP)**, which provides a regional water supply availability assessment and structured shortage response framework applicable to MWDOC's member agencies.
- **2025 OC Water Demand Forecast for MWDOC and OCWD Technical Memorandum (Demand Forecast TM)**, which is a collaborative effort amongst MWDOC, OCWD, and all retail water suppliers in Orange County that developed water demand projections to produce regionally consistent forecasts across all Orange County water agencies.
- **MET's 2020 Draft Integrated Water Resources Plan (IRP)** is a long-term planning document to ensure water supply availability in Southern California and provides a basis for water supply reliability in Orange County.
- **MET's 2025 UWMP,** which supports assumptions regarding imported supply reliability for Southern California and, by extension, Orange County member agency planning.
- **MET's 2025 Water Shortage Contingency Plan (WSCP),** which provides a water supply assessment and shortage response framework for MET's regional system.
- **MET's Climate Adaptation Master Plan for Water (CAMP4W)**, which is an ongoing planning and decision-making tool that accounts for the complexities and uncertainties of climate change. Part of the second phase of MET's long-term IRP planning process, CAMP4W incorporates the results and findings of MET's 2020 IRP Regional Needs Assessment into a collaborative process to identify and evaluate integrated regional solutions.
- **MWDOC's 2023 Orange County Water Reliability Study**, which is a planning document to evaluate the Orange County regional water system's ability to meet demands under a variety of stressors, such as drought, climate variability, or emergencies, to ensure long-term sustainability and future water supply reliability; while also providing insights for regional water supply issues for MET from an Orange County perspective.

- **Orange County Water & Wastewater Multi-Jurisdictional Hazard Mitigation Plan (2024)**, which provides the basis for the seismic and other natural and natural disaster risk analyses of the water system facilities.
- **Orange County Local Agency Formation Commission's 2020 Municipal Service Review for MWDOC Report** provides a comprehensive review of the municipal services provided by MWDOC.
- **Water and Sewer Master Plan** of the District provides information on water infrastructure planning projects and plans to address any required water system improvements.

In addition to regional coordination with the agencies identified above, ETWD prepared the 2025 UWMP in the context of broader statewide water planning efforts intended to improve long-term water supply reliability, strengthen regional self-reliance, and reduce vulnerability associated with imported supplies and hydrologic uncertainty.

Through continued investment in efficient water use, recycled water planning, infrastructure reliability, and regional coordination, the District supports broader statewide and regional planning objectives intended to improve long-term water supply reliability. Detailed discussion of ETWD's supply portfolio, reliability conditions, and related planning context is provided in later chapters of this UWMP.

2.2.2 Wholesale and Retail Coordination

The District developed the 2025 UWMP in coordination with MWDOC's regional planning process. ETWD provided current and historical water use information, service area data, and planning assumptions to support regional demand forecasting and imported supply planning.

This coordination supports consistency between ETWD's retail planning assumptions and the regional supply planning framework used by Orange County water agencies. The District also continues to participate in regional programs coordinated through MWDOC to support compliance, technical consistency, and water resource planning among Orange County retail agencies. These efforts may include regional demand forecasting, water use efficiency coordination, water loss control, and related planning initiatives. Additional information regarding these efforts is provided in the applicable chapters of this UWMP.

Consistent with Water Code Section 10631(h), ETWD informed its wholesale supplier of projected water use for regional supply planning and coordination. As shown in Table 2-4, the District has informed the MWDOC of projected water use in accordance with Water Code requirements.

Table 2-4: Retail: Water Supplier Information Exchange

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.
Wholesale Water Supplier Name
Municipal Water District of Orange County
NOTES:

2.2.3 Public Participation

For further coordination with other key agencies and to encourage public participation in the review and update of the 2025 UWMP, the District will provide notice to affected agencies and the public and will hold a public hearing in accordance with Water Code requirements.

The draft UWMP will be made available for public review prior to adoption. Interested agencies, stakeholders, and members of the public will be provided an opportunity to review and comment on the draft UWMP before consideration by the ETWD Board of Directors.

Sections 10.2 and 10.3 describe ETWD's agency coordination, public participation, adoption, and submittal efforts in further detail.

CHAPTER 3: SYSTEM DESCRIPTION

Currently governed by a five-member Board of Directors, the District was formed in 1960 under provisions of California Water District Law, Division 13 of the Water Code of the State of California, commencing with Section 34000 for the purpose of providing water supply for the service area.

The District encompasses approximately 5,430 acres and is almost entirely developed, encompassing all of the City of Laguna Woods and portions of four other cities: Lake Forest, Aliso Viejo, Laguna Hills, and Mission Viejo. The District operates 12 different pressure zones, 6 reservoirs, 9 pump stations, 19 pressure reducing stations and manages 180 miles of water mains with approximately 10,000 service connections.

The District lies within the South Coast Air Basin (SCAB), where the climate is characterized by Southern California's Mediterranean conditions, including mild winters, warm summers, moderate seasonal rainfall, and relatively high evapotranspiration. These conditions influence water demands within the service area, particularly outdoor irrigation needs during warmer and drier months. The District is substantially built out and consists primarily of single-family and multi-family residential development, with areas of commercial, industrial, institutional, open space, and park uses. As a result, future growth is expected to occur primarily through redevelopment, accessory dwelling units, infill housing, and local housing programs rather than through outward expansion of the District's service area.

The most significant planned land use change is the redevelopment of the former Laguna Hills Mall site through the Village at Laguna Hills project. For purposes of this UWMP, ETWD has relied on the currently approved project entitlements, which allow redevelopment of the site as a mixed-use village including up to 1,500 multi-family residential units, along with associated commercial, hotel, office, open-space, and public infrastructure uses. Separately, two related housing redevelopment projects along the Mill Creek Drive corridor in the City of Laguna Hills, Terravita and 23161 Mill Creek Drive, are entitled or in process and would together convert approximately seven acres of existing office and surface-parking uses to attached single-family and multi-family residential uses. These projects are expected to add on the order of 516 dwelling units to the District's service area.

Beyond these identified redevelopment projects, the cities within the District's service area will continue planning for and implementing their Regional Housing Needs Assessment obligations, which may result in additional incremental housing growth, including accessory dwelling units and other infill development. Overall, however, this growth is expected to be modest and to occur within the existing urbanized footprint of the District. The population is estimated at 53,415 in 2025 and is projected to increase gradually to approximately 54,440 by 2050.

3.1 Agency Overview

This section provides information on the formation of the District, its organizational structure, roles, and relationship to MWDOC.

3.1.1 Formation and Purpose

The District, located within the southern portion of the County of Orange, was formed in 1960 under provisions of California Water District Law, Division 13 of the Water Code of the State of California, commencing with Section 34000 for the purpose of providing water supply for the service area.

3.1.2 Board of Directors

The District is governed by a publicly elected five-member Board of Directors. The Board members serving during calendar year 2026 are:

- Kathryn Freshley, President
- Kay Havens, Vice President
- Mike Gaskins, Director
- Wyatt McClean, Director
- Mark Monin, Director

3.1.3 Relationship to MWDOC

The District is one of MWDOC's 28 member agencies purchasing imported water from MWDOC, Orange County's wholesale water supplier and a member agency of MET. The District's location within MWDOC's service is shown on Figure 3-1.

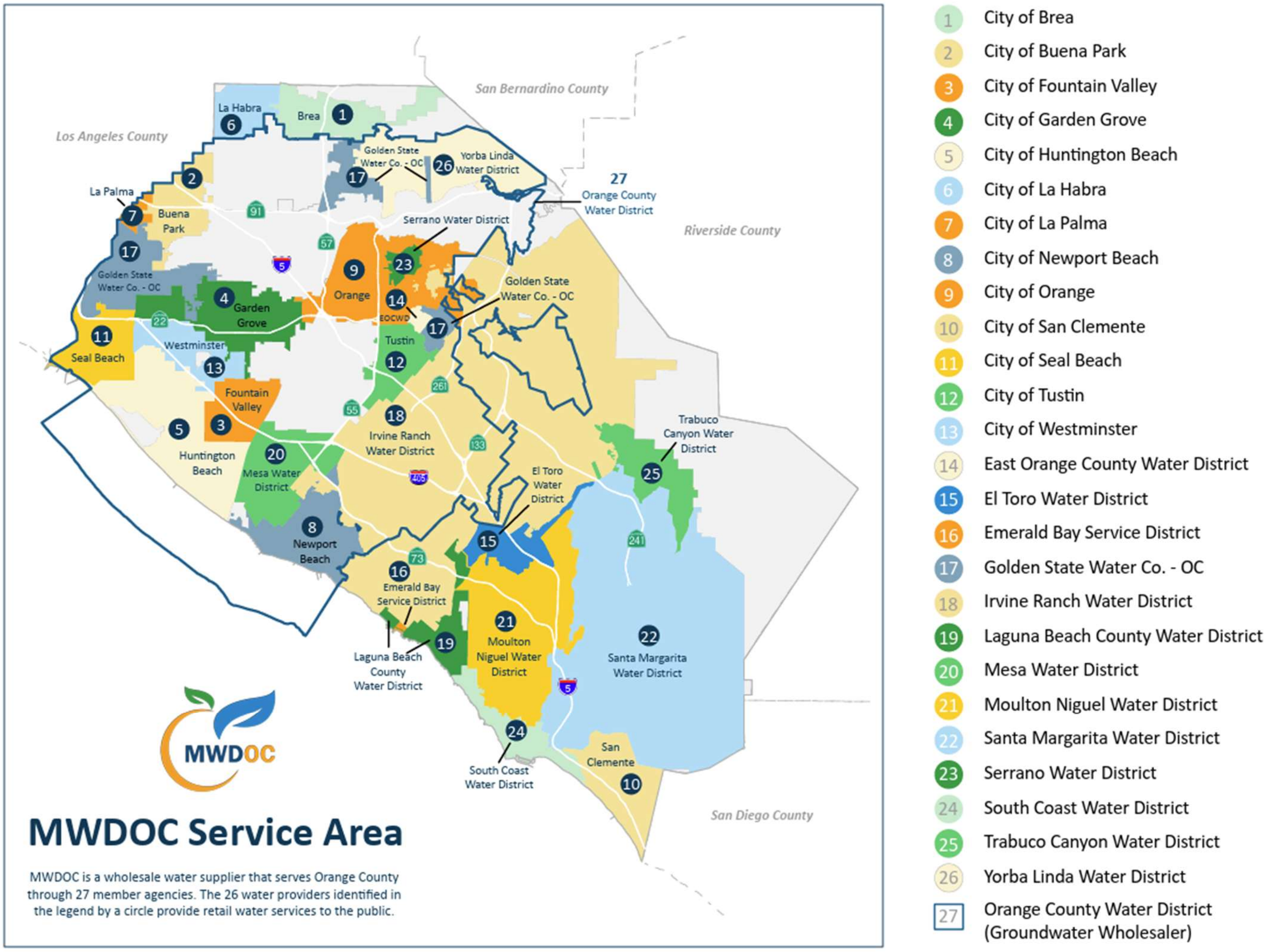


Figure 3-1: Regional Location of El Toro Water District and Other MWDOC Member Agencies

3.2 Water Service Area and Facilities

3.2.1 Water Service Area

The District encompasses approximately 5,430 acres and is almost entirely developed and encompasses all of the City of Laguna Woods and portions of four other cities: Lake Forest, Aliso Viejo, Laguna Hills, and Mission Viejo.

The District service area ranges in elevation between 230 feet above sea level at its lowest point to 904 feet at its highest. In general, elevations increase from west to east. Interstate 5 bisects the District from north to south, with the higher elevations located on the east side. The District is bordered by the Irvine Ranch Water District (IRWD) to the north, the Laguna Beach County Water District (LBCWD) to the west, the Moulton Niguel Water District (MNWD) to the west and south, and the Santa Margarita Water District (SMWD) to the south and east. The District also shares a small border with the Trabuco Canyon Water District (TCWD) in the north.

A map of the District 's water service area is shown as Figure 3-2.

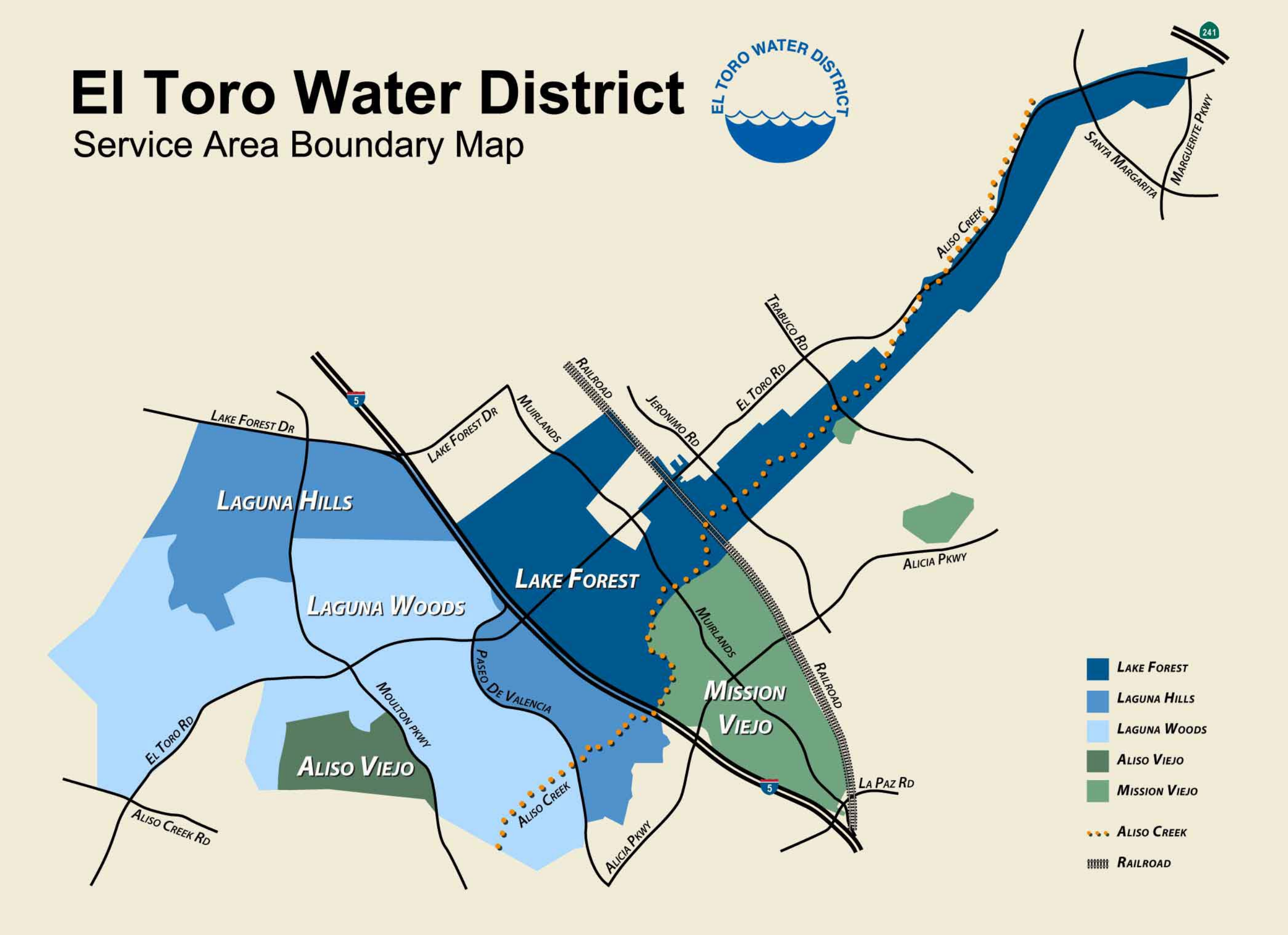


Figure 3-2: El Toro Water District Water Service Area

3.2.2 Water Facilities

The District operates and maintains a system that has approximately 10,000 service connections, 12 different pressure zones, 6 reservoirs, 9 pump stations, 19 pressure reducing stations and approximately 180 miles of transmission and distribution pipelines of varying diameters between four inches and 24 inches.

The imported water from MET fills the District's 275 million gallon (MG) R-6 reservoir or directly feeds the distribution system. Water from MET and/or the R-6 reservoir is fed by gravity, through pressure reducing valves or via pumping stations to provide adequate system pressures at the District's service connections.

3.3 Climate

The District is located within the South Coast Air Basin (SCAB), which includes all of Orange County and urbanized portions of Los Angeles, Riverside, and San Bernardino counties. The Basin is characterized by Southern California's Mediterranean climate, with mild winters, warm summers, and precipitation occurring primarily during the winter season. Current Orange County regional planning information indicates average annual precipitation of approximately 11.6 inches and annual evapotranspiration in excess of 45 inches, conditions that continue to influence outdoor irrigation demand and broader water use patterns within the District.

Within ETWD's substantially urbanized service area, local precipitation has a limited effect on overall water demand and is most directly reflected in outdoor landscape irrigation requirements. Because much of the District is developed with impervious surfaces, a significant portion of rainfall is conveyed through storm drain infrastructure rather than contributing to substantial local recharge. ETWD's water supply portfolio does not include groundwater because the District does not have access to a designated groundwater basin, pump groundwater, or conduct groundwater recharge. As a result, the District's water supply reliability is influenced more directly by imported water availability, regional hydrologic conditions, conservation, recycled water use, and long-term resource management than by local rainfall alone.

ETWD's imported water supplies are tied to Metropolitan's regional delivery system, which relies significantly on supplies from the State Water Project and the Colorado River Aqueduct. Consequently, the reliability of those supplies is affected by hydrologic, operational, and regulatory conditions in Northern California, the Sacramento-San Joaquin Delta, and the Colorado River Basin. Metropolitan's current regional planning materials continue to identify imported supply reliability, climate variability, and long-term hydrologic uncertainty as central planning considerations for Southern California water agencies.

Conditions in the Colorado River Basin remain an important consideration for long-range planning. Federal operating guidance for 2025 continues shortage-related reservoir operations at Lake Powell and Lake Mead, reflecting the Basin's ongoing vulnerability to prolonged dry conditions and long-term hydrologic stress. Accordingly, ETWD's 2025 UWMP is prepared in the context of continued uncertainty affecting imported water supplies and the need for prudent long-term planning to address climate-related supply risks.

3.4 Population, Demographics, and Socioeconomics

3.4.1 Service Area Population

ETWD's service-area population is estimated at 53,415. This estimate represents the population served within the District's retail water service area, which encompasses all of the City of Laguna Woods and portions of Laguna Hills, Mission Viejo, Lake Forest, and Aliso Viejo. Because the District's service area does not coincide exactly with city boundaries, the service-area population is distinct from jurisdiction-wide population totals and instead reflects the portion of each city located within ETWD's service area. Projected service-area population is presented in five-year increments through 2050 in Table 3-1. The projection series indicates modest long-term growth over the planning horizon, consistent with the District's substantially developed service area and the expectation that future change will occur primarily through redevelopment, infill, and incremental housing growth.

Table 3-1: Retail: Population - Current and Projected

Submittal Table 3-1 Retail: Population - Current and Projected **Water Code Section 10631(a)**						
Population Served	2025	2030	2035	2040	2045	2050(opt)
	53,415	53,791	54,441	54,744	54,712	54,440
NOTES: Source - California Department of Finance E-5 January 1, 2025 city population estimates as the current-year baseline. Future projections were developed by applying Orange County population growth factors from the Center for Demographic Research's (CDR) Orange County Projections 2022 to the 2025 ETWD service-area baseline.						

3.4.2 Demographics and Socioeconomics

ETWD's service area reflects a mix of demographic conditions. Laguna Woods contributes a substantial senior population component, while the portions of Laguna Hills, Mission Viejo, Lake Forest, and Aliso Viejo within the District contribute more typical suburban household patterns. These demographic characteristics are relevant to water planning because household size, age distribution, housing type, and redevelopment patterns affect both indoor and outdoor water use over time. Given the District's built-out condition, projected population growth over the planning horizon is modest.

- City of Laguna Woods: One of the largest age-restricted (55+) senior retirement communities in the United States, centered on Laguna Woods Village (formerly Leisure World). Per the 2020 Census, the city's median age is 74.9 years. Households are predominantly composed of one or two senior residents. Median household income is approximately $66,235 (ACS 2019–2023 5-Year estimates).

- Cities of Lake Forest, Laguna Hills, Mission Viejo, and Aliso Viejo: These established suburban communities generally have above-average median household incomes, predominantly single-family residential land uses, and larger landscaped lots that influence outdoor water demand. However, portions of Lake Forest and Laguna Hills within ETWD's service area include census tracts that qualify as disadvantaged communities (DACs), reflecting localized socioeconomic variation.

- Racial and Ethnic Composition: The service area cities are approximately 47–56% non-Hispanic White, 19–26% Hispanic/Latino, 16–19% Asian, and 1–2% African American, based on 2020 Census data.

Educational attainment is relatively high throughout ETWD's service area. Current ACS data indicate that the share of adults age 25 and over with a high school diploma or higher ranges from approximately 94.7% to 96.6% across the five cities, while the share with a bachelor's degree or higher ranges from approximately 51.0% in Laguna Woods to 57.6% in Aliso Viejo. City-level bachelor's degree-or-higher rates are approximately 57.6% in Aliso Viejo, 54.7% in Laguna Hills, 51.0% in Laguna Woods, 53.8% in Lake Forest, and 55.8% in Mission Viejo.

3.4.3 Demographic Projection Methodology

ETWD's service-area population projections were developed using the Center for Demographic Research's Orange County Projections 2022 as the principal regional demographic source. Orange County Projections 2022 provides county population, housing, and employment projections in five-year intervals through 2050 and was approved by the Orange County Council of Governments. 2025 base-year population was estimated using the California Department of Finance E-5 January 1, 2025 city population estimates. For each city partially or fully served by the District, the citywide population estimate was multiplied by the estimated percentage of that city located within ETWD's service area, and the apportioned city totals were then summed to estimate the District's 2025 service-area population. Future service-area population projections were developed by applying Orange County five-year growth factors from Orange County Projections 2022 to the ETWD 2025 service-area baseline. This approach provides projected service-area population estimates in five-year increments through 2050 and maintains consistency with the broader regional demographic framework used in Orange County water planning.

The regional demographic framework underlying these projections reflects current countywide planning assumptions regarding future housing and population growth. Orange County Projections 2022 incorporates jurisdictional housing assumptions, including draft RHNA rezone sites and a parcel-level inventory of additional housing capacity expected to be developed through 2050 under the assumptions and trends in place at the time of the forecast. Supplier-level demographic work used in Orange County water planning is then refined through GIS-based allocation methods and review of localized growth patterns. ETWD's projection methodology remains consistent with that regional planning framework while applying it specifically to the District's retail service area.

This methodology assumes that ETWD's service-area boundaries and the percentage of each city served by the District remain constant over the planning horizon. The resulting projection series reflects the District's substantially urbanized and largely built-out service area, where future growth is expected to occur primarily through redevelopment, infill, accessory dwelling units, and implementation of local housing programs rather than outward expansion of the District's service area.

3.5 Land Uses

3.5.1 Current Land Uses

The District's service area is substantially urbanized and may be characterized as a predominantly residential community in south Orange County. ETWD serves approximately 5,430 acres, including all of Laguna Woods and portions of Laguna Hills, Mission Viejo, Lake Forest, and Aliso Viejo. Current land uses within the District include single-family residential, multi-family residential, commercial, industrial, institutional and governmental uses, open space and parks, transportation-related uses, and other urban land uses typical of a mature, built-out service area.

Table 3-2 summarizes the approximate land use composition of the service area.

Table 3-2. Approximate Land Use Composition

Land Use Category	Approx. % Service Area	Primary Locations	Trend
Low-Density Residential	~45%	Lake Forest, Laguna Hills, Mission Viejo	Stable / Infill
High-Density Residential	~8%	Aliso Viejo, Lake Forest; Village at Laguna Hills (pending); Mill Creek Drive corridor, Laguna Hills (pending)	Increasing (ADUs + redevelopment of mall and office sites)
Senior / Retirement Community	~14%	Laguna Woods Village	Stable; slowly declining population
Commercial / Retail	~10%	El Toro Rd corridor, Laguna Hills, Mission Viejo Town Center	Stable / Redevelopment
Mixed-Use (Emerging)	~4%	Village at Laguna Hills (pending); Mill Creek Drive corridor, Laguna Hills (pending)	Emerging
Office / Light Industrial	~7%	Lake Forest, El Toro Rd area; Mill Creek Drive corridor, Laguna Hills (parcels being redeveloped to residential)	Stable; conversion of office parcels along Mill Creek Drive to residential use
Open Space / Parks / Institutional	~12%	Distributed throughout service area	Stable

Residential uses remain the dominant land use within the District. Overall, the service area reflects an established urban development pattern with limited opportunity for outward expansion. Accordingly, future land use change is expected to occur primarily through redevelopment, infill development, accessory dwelling units, and implementation of local housing programs within the existing urban footprint of the District.

3.5.2 Projected Land Uses

Projected land use change within the ETWD service area is expected to occur primarily through redevelopment, infill development, accessory dwelling units, and implementation of local housing programs within the District’s existing urban footprint. Because the service area is substantially built out, future land use change is not expected to occur through outward expansion of the District’s boundaries, but rather through intensification and reuse of already developed properties.

Major planned redevelopment within the ETWD service area remains centered on the Village at Laguna Hills project at the former Laguna Hills Mall site. For purposes of the 2025 UWMP, ETWD has relied on the currently approved project entitlements, which provide for redevelopment of the former mall property with a mixed-use village including residential and supporting commercial, hotel, office, open-space, and public infrastructure components. The City of Laguna Hills states that the project entitlements were approved in 2022, and that a separate application for major project modifications was initiated in 2025 and remains under review.

In addition to the Village at Laguna Hills project, the City of Laguna Hills is processing two adjacent office-to-residential redevelopments along the Mill Creek Drive corridor within the District's service area: the Terravita project, which would convert seven existing office buildings and surface parking at the northeast corner of Mill Creek Drive and Ridge Route Drive into approximately 480 attached single-family and multi-family dwelling units; and a separate project at 23161 Mill Creek Drive, which would convert an existing three-story office building into 36 attached single-family condominium units. Both projects are being processed under streamlined CEQA pathways and include Density Bonus Law components, with a portion of units restricted for very low-income households.

Together, the Mill Creek Drive corridor projects represent the conversion of approximately seven acres of previously developed office land to higher-density residential land use, adding on the order of 516 dwelling units on parcels already served by the District. Because the projects are infill redevelopments consistent with the District's planning assumption that future growth will occur primarily through redevelopment and infill, the associated water demand is reflected within the residential demand component of Chapter 4 through the demographic, housing, and land use assumptions used in this UWMP.

Furthermore, the cities within the District’s service area will continue implementing Regional Housing Needs Assessment programs, which may result in additional incremental housing growth through accessory dwelling units, infill residential development, and other smaller housing projects over the planning horizon. As reflected in the demographic projections presented in this chapter, ETWD expects future land-use change to occur primarily through redevelopment and incremental housing growth within the existing urban footprint of the District.

CHAPTER 4: WATER USE CHARACTERIZATION

Water use within the District's service area has remained relatively stable over the past decade, with variation driven primarily by weather, outdoor irrigation demand, recycled water availability and use, and ongoing conservation effects. This chapter describes historical potable and recycled water use trends, current water use by sector, projected water use by sector, inclusion of future water savings and lower-income residential demand in projections, and distribution system water loss reporting. Furthermore, it is intended to provide a clear description of the District's retail demand profile and the basis for projected water use over the planning horizon.

4.1 Historical and Current Water Use

4.1.1 Historical Water Use

Historical water use within the District's service area has varied over time in response to weather conditions, irrigation demand, recycled water availability, and continuing conservation efforts. Over the most recent fiscal years, potable water use has generally remained below earlier levels in the record, while recycled water use has become an established component of the District's overall demand profile.

As shown in Table 4-A, ETWD's historical potable and recycled water use from Fiscal Year 2014-2015 through Fiscal Year 2024-2025 reflects the District's phased recycled water expansion program and the increasing role of recycled water in meeting non-potable irrigation demands. The program included upgrades to the Water Recycling Plant to expand tertiary treatment capacity, construction of recycled water distribution pipelines in portions of Laguna Woods and Laguna Hills, and subsequent distribution system improvements and customer conversions. These improvements increased the District's ability to deliver recycled water for landscape irrigation and helped shift a portion of irrigation demand from potable to recycled water.

Table 4-A: Historical Potable and Recycled Water Use

Fiscal Year	Potable Water (AF)	Recycled Water (AF)
2014-2015	8,424	390
2015-2016	6,751	862
2016-2017	6,809	1,249
2017-2018	7,344	1,416
2018-2019	6,738	1,154
2019-2020	6,728	1,172
2020-2021	7,215	1,543
2021-2022	6,786	1,632
2022-2023	5,791	1,066
2023-2024	5,736	1,109
2024-2025	6,378	1,408

Following implementation of the phased system expansion, recycled water deliveries increased from 390 AF in Fiscal Year 2014-2015 to 862 AF in Fiscal Year 2015-2016 and exceeded 1,200 AF in Fiscal Year 2016-2017. Recycled water use has fluctuated from year to year based on weather, irrigation demand, and customer use patterns, but it has remained a significant component of the District's supply portfolio. In Fiscal Year 2024-2025, recycled water deliveries totaled 1,408 AF, continuing to reduce reliance on potable water for non-potable landscape irrigation and supporting long-term supply reliability.

4.1.2 Current Water Use

Current retail water use for 2025 is summarized in Table 4-1. The table presents actual use by sector for potable and non-potable water. ETWD's 2025 actual water use totals 8,097 AF, consisting of 6,689 AF of potable water and 1,408 AF of non-potable water.

The largest potable sectors are multifamily residential, single-family residential, and potable landscape irrigation. Non-potable use consists of recycled water delivered for landscape irrigation. Distribution system water loss is reported separately, and a small amount of additional potable demand is reported under other uses for flooding meters and private fire systems.

Table 4-1: Retail: Total Uses for Potable and Non-Potable Water — Actual

Submittal Table 4-1 Retail: Total Uses for Potable and Non-Potable Water — Actual 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		**Potable or Non-Potable** (OPTIONAL) Drop down list	Volume
Single Family		Potable	1,831
Multi-Family		Potable	2,573
Commercial		Potable	786
Institutional/Governmental		Potable	64
Landscape	Represents large landscape (with irrigation meters) served by potable water and not recycled water	Potable	1,117
Landscape	Landscape Irrigation served by recycled water.	Non-Potable	1,408
Distribution System Water Loss		Potable	311
Other (optional)	Flooding Meters and Private Fire Systems	Potable	7
		Subtotal Potable	6,689
		Subtotal Non-Potable	1,408
		Total	8,097
NOTES: Volume reported in AF. ETWD reports water loss on a calendar year basis. Water loss data is from the most recently submitted water audit for CY 2024.			

4.2 Projected Water Use

Projected water use is summarized in Table 4-2 in five-year increments through 2050. ETWD's projected use remains generally stable over the planning horizon, reflecting a substantially built-out service area, modest demographic change, continued long-term conservation effects, and the continuing role of recycled water for non-potable landscape irrigation.

Total projected water use ranges from 7,773 AF in 2030 to 7,817 AF in 2050. Potable use remains relatively stable overall, with a modest decline in single-family demand, a modest increase in multifamily demand, and little change in landscape, commercial, institutional/governmental, and other uses. Recycled water use for landscape irrigation remains stable throughout the projection period.

Table 4-2: Retail: Total Uses for Potable, and Non-Potable Water — Projected

Submittal Table 4-2 Retail: Total 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		**Potable or Non-Potable** (OPTIONAL) Drop down list	**2030**	**2035**	**2040**	**2045**	**2050**
Single Family		Potable	1,711	1,704	1,703	1,693	1,682
Multi-Family		Potable	2,602	2,648	2,680	2,662	2,639
Commercial		Potable	531	549	566	566	566
Institutional/Governmental		Potable	60	60	60	60	60
Landscape	Potable DIM	Potable	1,136	1,138	1,140	1,138	1,138
Landscape	RW	Non-Potable	1,431	1,431	1,432	1,431	1,431
Distribution System Water Loss		Potable	227	229	230	229	228
Other (optional)	Flooding Meters and Private Fire Systems	Potable	7	7	7	7	7
Subtotal Potable			6,274	6,335	6,386	6,355	6,320
Subtotal Non-Potable			1,431	1,431	1,432	1,431	1,431
Total			7,705	7,766	7,818	7,786	7,751
NOTES: Volume reported in AF.							

4.2.1 Water Use Projection Methodology

Projected water use for the 2025 UWMP was developed using current demand conditions, historical potable and recycled water use trends, projected service-area population, projected housing and land use assumptions, and the District's expected future demand profile by sector. In developing these projections, ETWD also relied on the regional demand forecasting framework prepared for Orange County water agencies through MWDOC's countywide demand projection study. ETWD participated in that regional planning effort as a MWDOC member agency.

The regional demand study used an econometric forecasting approach supported by historical demand data and explanatory variables relevant to long-range urban water use. These variables included demographic and housing conditions, weather and climate influences, economic factors, conservation effects, and future planning assumptions. ETWD's projected demands were developed to remain consistent with that broader Orange County regional demand forecasting framework while reflecting the District's specific service-area conditions, current sector-based demand profile, and local planning assumptions.

Residential projections reflect the demographic and land use assumptions presented in Chapter 3, including modest long-term population growth, limited outward growth, and continued redevelopment and infill within a substantially built-out service area. Projected potable landscape use and recycled water use were informed by current service characteristics and the expected continuation of the District's recycled water landscape program. Commercial and institutional/governmental demands were projected based on current use levels and the mature character of the District's service area, and distribution system water loss was projected separately using current reporting information and anticipated continuation of water loss control practices.

4.2.2 Inclusion of Future Water Savings and Lower-Income Residential Demand

ETWD's projected water use includes future water savings to the extent those savings are reflected in the District's planning assumptions and projected demand profile. These savings are embedded within the sector-based projections presented in Table 4-2 rather than shown as a separate line-item adjustment. For ETWD, this reflects the expectation that future demand will continue to be influenced by adopted codes, standards, ordinances, redevelopment patterns, and long-term conservation measures affecting residential, commercial, institutional, and landscape water use.

Because the District's service area is substantially built out, future growth is expected to occur primarily through redevelopment, infill development, accessory dwelling units, and implementation of local housing programs within the existing urban footprint. Accordingly, projected demand reflects the expectation that future development and redevelopment will be subject to more efficient fixtures, irrigation systems, appliances, and building standards than portions of the existing development base. Projected demand also reflects the continuing effects of the District's conservation and demand management programs, including measures affecting indoor water use, outdoor irrigation efficiency, customer awareness, and water loss control.

ETWD's projected water use also includes lower-income residential demand within the projected single-family and multifamily residential sectors. Lower-income residential demand is not forecast as a separate demand category; instead, it is incorporated within the overall residential demand forecast through the population, housing, and land use assumptions used in this UWMP. These assumptions include housing growth associated with local housing element implementation, Regional Housing Needs Assessment planning, infill housing, accessory dwelling units, and approved redevelopment projects within the service area.

As a result, projected residential demand reflects the full range of anticipated future housing types within the District, including housing affordable to lower-income households. The most significant approved redevelopment project affecting future housing assumptions remains the Village at Laguna Hills project, with the Mill Creek Drive corridor redevelopment projects (Terravita and 23161 Mill Creek Drive) representing additional approved or pending redevelopments in the City of Laguna Hills that contribute to the multifamily, mixed-use, and lower-income residential housing assumptions used in this UWMP. The jurisdictions within the District's service area are also expected to continue implementing housing programs that may contribute to additional multifamily, mixed-use, affordable, and other infill residential development over the planning horizon. Because those housing assumptions are incorporated into the demand forecast, the associated lower-income residential demand is also included in projected residential water use.

Table 4-3 summarizes ETWD's responses regarding inclusion of future water savings and lower-income residential demand in projected water use.

Table 4-3: Retail: Inclusion in Water Use Projections

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? **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.	Section 8 and Section 9
Are Lower Income Residential Demands Included In Projections? **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.	
NOTES:	

NOTES: Future water savings are reflected in ETWD's projected demand through the planning assumptions used to develop sector-based demand projections. Lower-income residential demand is included within the projected single-family and multifamily sectors through the population, housing, and land use assumptions used in this UWMP.

4.3 Distribution System Water Loss

Distribution system water loss is an important component of ETWD's water use characterization and long-range demand management planning. Under SB 555, urban retail water suppliers are required to prepare and submit annual validated water loss audits to the State. For the 2025 UWMP, retail suppliers are also required to report their progress toward the State Water Board's 2028 water loss performance standards.

ETWD’s retail public water system is identified as CA3010079. As shown in Table 4-4, the District submitted annual water loss audits for each reporting year from 2020 through 2024. ETWD reports water loss on a calendar year basis, and the most recent water loss information used in this UWMP is from the CY 2024 audit.

Table 4-4: Retail: Water Loss Audit Reporting

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)
CA3010079	**2020**	Yes
	2021	Yes
	2022	Yes
	2023	Yes
	2024	Yes

NOTES: ETWD's submitted water loss audit reports can be accessed at WUEdata - Water Audit Report Data.
https://wuedata.water.ca.gov/awwa_plans

As shown in Table 4-5, the State Water Board calculated a 2028 real water loss standard of 24.3 gallons per service connection per day and a 2028 apparent water loss standard of 7.1 gallons per service connection per day for ETWD. Based on the most recently submitted audit, ETWD’s actual real water loss is 22.4 gallons per service connection per day and its actual apparent water loss is 5.4 gallons per service connection per day, both below the applicable standards.

Table 4-5: Retail: Progress Towards 2028 Water Loss Standard

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

		Real Water Loss				
		State Water Board Standard		Most Recent AWWA Water Loss Audit		
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.	2028 Real Water Loss Standard per Unit per day	Units for Real Water Loss Drop down list	Number of Units (Connections or Miles corresponding with units selected)	Volume of Total Real Loss (from AWWA Water Loss Audit) (AF)	Real Water Loss Per Unit per Day
CA3010079	Yes	24.3	Gallons per Service Connection per Day (GPSCD)	9971	250.116	22.4

Water Board's Calculated Water Loss Standards

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

Apparent Water Loss				
State Water Board Standard		Most Recent AWWA Water Loss Audit		
2028 Apparent Water Loss Standard per Unit per Day	Units for Apparent Water Loss	Number of Connections	Volume of Total Apparent Loss (from AWWA Water Loss Audit) (AF)	Apparent Water Loss Per Unit per Day
7.1	Gallons per Service Connection per Day (GPSCD)	9971	60.649	5.4

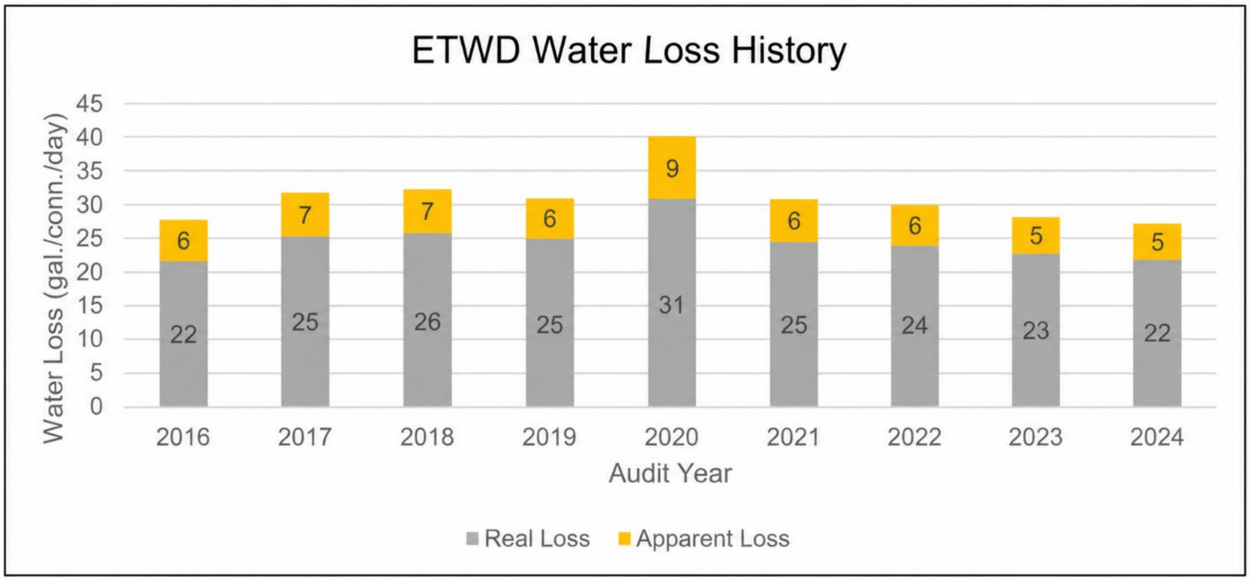
Water Board's Calculated Water Loss Standards

NOTES: ETWD reports water loss on a calendar year basis. Water loss data is from the most recently submitted water audit for CY 2024.

As a MWDOC member agency, ETWD participates in regional water loss control support efforts, including technical assistance and workgroup coordination. MWDOC’s current water loss control program includes regional support for audit reporting, leak detection, and related loss-control practices among Orange County retail agencies. ETWD complements these regional efforts through implementation of a proactive acoustic leak detection program, with a target of evaluating approximately 2,000 meter connections per year. Together, these practices support the District’s ongoing efforts to identify, evaluate, and reduce real and apparent water losses.

Historical real and apparent water loss values are shown in Figure 4-1.

Figure 4-1: Water Loss History



Notes: Real and apparent water loss values are shown in gallons per service connection per day based on ETWD's annual validated water loss audits. The most recent values correspond to the CY 2024 audit used for the 2025 UWMP.

CHAPTER 5: SB X7-7 2020 TARGET COMPLIANCE AND CURRENT UWUO REPORTING

This chapter summarizes ETWD's continuing reporting related to the Water Conservation Act of 2009 (SB X7-7) and describes the District's current water use efficiency context under the State Water Resources Control Board's Urban Water Use Objective (UWUO) framework. ETWD is a retail urban water supplier that was subject to SB X7-7 during the 2020 reporting cycle and continues to report its 2020 target compliance status in this UWMP.

5.1 SB X7-7 Reporting Framework

SB X7-7 required urban retail water suppliers to establish a 2020 urban water use target and report progress toward that target. ETWD's prior UWMP documented the District's selected compliance method, target, and actual 2020 performance. With support from MWDOC, ETWD complied using Option 1, the simple 20 percent reduction approach, and established a 2020 target of 163 gallons per capita per day (GPCD). The District reported an actual 2020 use of 134 GPCD, which was below the target. ETWD remains subject to continuing reporting of its 2020 target compliance status as part of the current UWMP cycle.

5.2 Orange County 20x2020 Regional Alliance

ETWD participated in the Orange County 20x2020 Regional Alliance, a countywide collaborative effort formed to support retail water suppliers in achieving compliance with SB X7-7. The Alliance was established through coordination among MWDOC, its retail member agencies, and the Cities of Anaheim, Fullerton, and Santa Ana, and provided a consistent regional framework for water use efficiency planning, target calculation, and compliance support.

Orange County, as a region, established a 2020 target water use of 159 GPCD and achieved that target prior to 2020. MWDOC reports that the Alliance met the SB X7-7 target both collectively as a region and individually through participating retail agencies, and that all Orange County water retailers participating through the regional framework achieved compliance before the 2020 deadline.

For ETWD, participation in the Orange County 20x2020 Regional Alliance provided an important part of the technical and programmatic basis for SB X7-7 compliance. ETWD's compliance results reflect both District-specific conservation actions and the broader countywide framework developed through the Alliance. Regional coordination through MWDOC also established a foundation for continued collaboration on water use efficiency planning, technical support, and compliance assistance beyond the original SB X7-7 cycle.

5.3 ETWD 2020 Target Compliance

ETWD met its SB X7-7 2020 target. The District was not part of a merger or consolidation since 2020, the District's compliance basis was an individual target, the confirmed 2020 target was 163 GPCD, and the District's actual 2020 GPCD was 134. Based on those values, ETWD achieved the targeted reduction for 2020.

Table 5-1: Retail: SB X7-7 2020 Target Progress

Submittal Table 5-1 Retail: SB X7-7 2020 Target Progress Water Code Section 10608.40				
☐	**Check the box if the Supplier was not an Urban Water Supplier during or before the 2020 UWMP reporting cycle. Proceed to the next table.**			
Was Supplier part of a merger or consolidation since 2020?	Regional Alliance Target or Individual Target? Drop down list	2020 Target	Actual 2020 GPCD	Did Supplier Achieve Targeted Reduction for 2020?
No	Individual Target	163	134	Yes
NOTES:				

5.4 Urban Water Use Objective Context

The State Water Board adopted the Making Conservation a California Way of Life regulation on July 3, 2024, establishing annual urban water use objectives for urban retail water suppliers beginning in Fiscal Year 2023-2024. The Urban Water Use Objective (UWUO) framework is separate from SB X7-7 compliance and is administered through the State Water Board's annual reporting program.

ETWD submits its required Annual Water Use Report to the State Water Board and meets its applicable UWUO standard. UWUO considerations have also been incorporated into the District's demand forecasting methodology where appropriate. Although formal UWUO reporting is not required as part of the 2025 UWMP, the District recognizes that the UWUO framework is now an important part of ongoing urban water use efficiency planning and compliance.

5.5 Relationship to Demand Forecasting and Demand Management

Although SB X7-7 and the UWUO program are separate regulatory frameworks, both are relevant to ETWD's current long-range planning context. The District's projected demands reflect the continuing influence of water use efficiency, conservation, and passive savings assumptions described elsewhere in this UWMP. ETWD's projected water use methodology is described in Chapter 4, and the District's demand management measures are described in Chapter 9.

CHAPTER 6: WATER SUPPLY CHARACTERIZATION

This chapter characterizes the water supplies available to the District to meet current and projected demands through 2050. The District's supply portfolio includes imported water purchased through the Municipal Water District of Orange County (MWDOC), potable supplies treated through the Baker Water Treatment Plant, local surface water available through the Baker system, and recycled water produced at ETWD's Water Recycling Plant (WRP). This chapter also addresses groundwater, stormwater, wastewater collection and treatment, recycled water beneficial use, desalination opportunities, water exchanges and transfers, future supply projects, and energy intensity reporting.

For the 2025 UWMP update, the District has updated the supply discussion and DWR submittal tables to reflect 2025 conditions and the planning horizon through 2050. In particular, the discussion of imported State Water Project (SWP) reliability has been updated to rely on the California Department of Water Resources' SWP delivery capability and reliability information as the primary basis for SWP supply reliability projections. MET’s 2025 UWMP, Water Shortage Contingency Plan, Climate Adaptation Master Plan for Water (CAMP4W), and related regional planning materials remain important regional context for how imported supplies are managed and made available to MWDOC and ETWD.

6.1 Water Supply Overview

The District meets its demands through a diversified local and imported portfolio. Imported water purchased from MWDOC, a MET member agency, remains the District's primary source of potable supply. Imported water may be delivered as treated potable water from MET's regional treatment and conveyance system, or as untreated imported water that is treated through the Baker Water Treatment Plant. ETWD also receives supply benefit from Irvine Lake through the Baker system and produces recycled water at its WRP for non-potable irrigation uses.

In 2025, ETWD's actual supply portfolio totaled 8,108 acre-feet (AF), consisting of 6,563 AF of purchased/imported treated water, 1,408 AF of recycled water, and 137 AF associated with Irvine Lake via the Baker Water Treatment Plant. Projected supplies in five-year increments through 2050 are aligned with projected demands in Chapter 4. The District's projected supply portfolio is expected to remain generally stable, with potable imported supplies ranging from approximately 6,274 AF to 6,386 AF and recycled water supplies of approximately 1,431 AF per year through the planning horizon.

The supply projections presented in this UWMP are planning-level estimates prepared for long-term reliability analysis. ETWD's actual annual supply mix will vary with demands, hydrologic conditions, recycled water availability, imported supply availability, Baker Water Treatment Plant operations, system maintenance, water quality considerations, and regional allocation or shortage conditions.

Table 6-1: Retail: Water Supplies – Actual (DWR Table 6-8)

Submittal Table 6-8 Retail: Water Supplies — 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)	**Potable or Non-Potable** (after treatment if treated) (OPTIONAL) Drop Down list	Actual Volume (AF)
Purchased or Imported Water	Purchased from MWDOC	Potable	6,563
Recycled Water	Treated at ETWD's WRP	Non-Potable	1,408
Surface water (not desalinated)	Irvine Lake via Baker WTP	Non-Potable	137
		Subtotal Potable	6,563
		Subtotal Non-Potable	1,545
		Total	8,108

Table 6-2: Retail: Water Supplies – Projected (DWR Table 6-9)

Submittal Table 6-9 Retail: Water Supplies — Projected Water Code Section 10631 (b)							
Water Supply	Additional Detail on Water Supply	**Potable or Non-Potable** (after treatment if treated) (OPTIONAL) Drop Down list	**Projected Water Supply (Report to the Extent Practicable)**				
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			**2030**	**2035**	**2040**	**2045**	**2050 (opt)**
			Reasonably Available Volume (AF)	Reasonably Available Volume (AF)	Reasonably Available Volume (AF)	Reasonably Available Volume (AF)	Reasonably Available Volume (AF)
Purchased or Imported Water		Potable	6,274	6,335	6,386	6,355	6,320
Recycled Water		Non-Potable	1,431	1,431	1,432	1,431	1,431
		Subtotal Potable	6,274	6,335	6,386	6,355	6,320
		Subtotal Non-Potable	1,431	1,431	1,432	1,431	1,431
		Total	7,705	7,766	7,818	7,786	7,751

6.2 Imported Water

The District supplements its local water supply with imported water purchased from MET through MWDOC. In FY 2024-25, the District received approximately 6,563 AF of imported water through MWDOC, accounting for approximately 81% of the District's water supply portfolio. An additional volume of Irvine Lake water was treated at the Baker Water Treatment Plant and delivered to ETWD. The Baker Water Treatment Plant offsets and reduces the volume of treated MET water that would otherwise be purchased through MWDOC.

MET's two principal sources of imported water are the Colorado River, conveyed through the Colorado River Aqueduct (CRA), and the Lake Oroville watershed in Northern California, conveyed through the State Water Project (SWP). For Orange County, water from these sources is treated at the Robert B. Diemer Filtration Plant in Yorba Linda. The Diemer Filtration Plant typically receives a blend of Colorado River water from Lake Mathews via the MET Lower Feeder and SWP water via the Yorba Linda Feeder.

The main supply pipeline serving the District is the Allen-McColloch Pipeline (AMP), in which the District owns rights to 26.3 cubic feet per second (cfs) of capacity. The District has three major turnouts off the AMP - OC-76, OC-77, and OC-80 - each capable of providing a flow of 20 cfs. Turnout OC-80 supplies water directly into the District's R-6 Reservoir, and the other two turnouts provide water to the R-6 pressure zone, the upstream side of the Main Pressure Reducing Station, the suction side of the Cherry Booster Station, and the R-6 Reservoir, which provides the majority of the District's water storage.

The District also owns 2 cfs of capacity in the Joint Regional Water Supply System (JRWSS), a take-off from MET's East Orange County Feeder No. 2 (EOCF #2) that is managed, operated, and maintained by South Coast Water District (SCWD). The Aufdenkamp Connection Transmission Main (ACTM), owned and operated by Santa Margarita Water District (SMWD), provides an additional emergency supply source. The District does not own capacity in the ACTM but has historically taken water from the pipeline in emergency situations. ETWD cannot rely on this connection for instantaneous supply because a rented pump would be required to take water from the ACTM.

6.2.1 Colorado River Supplies

Background

The Colorado River was MET’s original source of water after MET’s establishment in 1928.
The CRA, which is owned and operated by MET, transports water from the Colorado River to its terminus at Lake Mathews, in Riverside County. The actual amount of water per year that may be conveyed through the CRA to MET’s member agencies is subject to the availability of Colorado River water. Approximately 40 million people rely on the Colorado River and its tributaries for water with 5.5 million acres of land using Colorado River water for irrigation. The CRA includes supplies from the implementation of the Quantification Settlement Agreement and its related agreements to transfer water from agricultural agencies to urban uses. The 2003 Quantification Settlement Agreement enabled California to implement major Colorado River water conservation and transfer programs, in order to stabilize water supplies and reduce the state’s demand on the river to its 4.4 million acre-feet (MAF) entitlement. Colorado River transactions are potentially available to supply additional water up to the CRA capacity of 1.25 MAF on an as-needed basis. Water from the Colorado River or its tributaries is available to users in California, Arizona, Colorado, Nevada, New Mexico, Utah, Wyoming, and Mexico. California is apportioned the use of 4.4 MAF of water from the Colorado River each year plus one-half of any surplus that may be available for use collectively in Arizona, California, and Nevada. In addition,

California has historically been allowed to use Colorado River water apportioned to, but not used by, Arizona or Nevada. MET has a basic entitlement of 550,000 AFY of Colorado River water, plus surplus water up to an additional 662,000 AFY when the following conditions exists (MET, 2025):

- Water is unused by the California holders of priorities 1 through 3
- Water is saved by the Palo Verde land management, crop rotation, and water supply program
- When the U.S. Secretary of the Interior makes available either one or both of the following:
    - Surplus water
    - Colorado River water that is apportioned to but unused by Arizona and/or Nevada.

The Colorado River Basin has experienced a long-term, climate-driven drying trend that began in 2000 and continues through the present. As of November 2025, Lake Mead storage was at approximately 31% of capacity and Lake Powell storage was at approximately 28% of capacity, providing limited buffer against future periods of low precipitation. The U.S. Bureau of Reclamation, the seven Colorado River Basin states, and the federal government are negotiating post-2026 operating guidelines for Lake Mead and Lake Powell to replace the 2007 Interim Guidelines, which expire at the end of 2026. The long-term imbalance between Colorado River Basin supply and demand is projected to continue, and continued investment in supply augmentation, conservation, and demand management programs will be required.

Over the years, MET has helped fund and implement various programs to improve Colorado River supply reliability and help resolve the imbalance between supply and demand. Implementation of such programs have contributed to achievements like achieving a record low diversion of the Colorado River in 2019, a level not seen since the 1950s. Colorado River water management programs include:

- **Imperial Irrigation District / MET Conservation Program** – Under agreements executed in 1988 and 1989, this program allows MET to fund water efficiency improvements within Imperial Irrigation District’s service area in return for the right to divert the water conserved by those investments. An average of 105,000 AFY of water has been conserved since the program’s implementation.
- **Palo Verde Land Management, Crop Rotation, and Water Supply Program** – Authorized in 2004, this 35-year program allows MET to pay participating farmers to reduce their water use, and for MET to receive the saved water. Over the life of the program, an average of 84,500 AFY has been saved and made available to MET.
- **Bard Seasonal Fallowing Program** – Authorized in 2019, and subsequently expanded, this program allows MET to pay participating farmers in Bard to reduce their water use between the late spring and summer months of selected year. Under expanded program authorizations through 2026 (Quechan Seasonal Fallowing Program), this program can provide up to approximately 12,000 AFY in certain years.
- **Management of MET-Owned Land in Palo Verde** – Since 2001, MET has acquired approximately 21,000 acres of irrigable farmland that are leased to growers, with incentives to grow low water-using crops and experiment with low water-consumption practices. MET continues to evaluate opportunities to formally account for verified long-term water savings associated with these lands as part of its Colorado River supply reliability strategy.

- **Southern Nevada Water Authority (SNWA) and MET Storage and Interstate Release Agreement** – Entered in 2004, this agreement allows SNWA to store its unused, conserved water with MET, in exchange for MET to receive additional Colorado River water supply. MET has relied on the additional water during dry years, especially during the 2011-2016 California drought, and SNWA is not expected to call upon MET to return water until after 2026.
- **Lower Colorado Water Supply Projects** – Authorized in the 1980s, this project provides up to 10,000 AFY of water to certain entities that do not have or have insufficient rights to use Colorado River water. A contract executed in 2007 allowed MET to receive project water left unused by the project contractors along the River – nearly 10,000 AF were received in recent years when unused supplies were available.
- **Exchange Programs** – MET is involved in separate exchange programs with the United States Bureau of Reclamation, which takes place at the Colorado River Intake and with San Diego County Water Authority (SDCWA), which exchanges conserved Colorado River water.
- **Lake Mead Storage Program** – Executed in 2006 and subsequently integrated with Lower Basin Drought Contingency Plan (DCP) operations, MET may intentionally leave conserved water in Lake Mead for exclusive future use. MET has significantly expanded its use of ICS storage in recent years, including record storage creation (450,000 AF) in 2023 under DCP-related conservation programs.
- **Quagga Mussel Control Program** – Developed in 2007, this program introduced surveillance activities and control measures to combat quagga mussels, an invasive species that impact the Colorado River's water quality.
- **Lower Basin Drought Contingency Plan** – Signed in 2019, this agreement incentivizes storage in Lake Mead through 2026 and overall, it increases MET's flexibility to fill the CRA as needed (MET, 2025).
- **Lower Basin Conservation and System Efficiency Programs** – In recent years, MET has participated in new, multi-agency conservation and system efficiency programs implemented between 2023 and 2026. These programs incentivize agricultural conservation, system efficiency improvements, urban conservation, and groundwater storage in the Lower Colorado River Basin, with the goal of reducing system demands and increasing storage in Lake Mead during critically dry conditions. This includes programs such as the Quechan Diversion Forbearance program.

The Colorado River faces long-term challenges of water demands exceeding available supply with additional uncertainties due to climate change. Climate change impacts expected in the Colorado River Basin include the following:

- More frequent, more intense, and longer lasting droughts, which will result in water deficits
- Continued dryness in the Colorado River Basin, which will increase the likelihood of triggering a first-ever shortage in the Lower Basin
- Increased temperatures, which will affect the percentage of precipitation that falls as rain or snow, as well as the amount and timing of mountain snowpack (MET, 2025)

Given these uncertainties, MET plans to continue implementing and expanding Colorado River conservation, storage, exchange, and transfer programs, while also supporting increased water recycling and system efficiency improvements within the Colorado River Basin. MET continues to evaluate additional transfer and conservation opportunities to further enhance regional supply reliability through the 2025 UWMP planning horizon.

6.2.2 State Water Project Supplies

Background

The SWP, operated by DWR, is the largest state-built, multi-purpose, user-financed water project in the United States. The SWP consists of pump stations, reservoirs, aqueducts, tunnels, and power plants that store water during wet periods in Northern and Central California and distribute it to areas of need. Water from the SWP originates at Lake Oroville on the Feather River and is conveyed through the Sacramento-San Joaquin Delta (Delta) to 29 SWP contractors. Approximately two-thirds of California residents receive at least part of their water from the SWP.

MET is the largest SWP contractor, with a maximum Table A amount of 1,911,500 AFY (the contractual maximum amount of water MET can request annually from DWR). However, actual SWP deliveries fluctuate substantially from year to year based on hydrology, regulatory restrictions, and operational constraints. Recent allocations illustrate this variability: SWP allocations were 5% in 2021 and 5% in 2022 (drought years), 100% in 2023 (a record-wet year), 40% in 2024, and 50% (final) in 2025. The 2026 SWP allocation, as announced in DWR's Notice to Contractors 26-01, was initially set at 30% of Table A.

State Water Project Reliability — DWR's 2025 Delivery Capability Report

For this 2025 UWMP, the District has updated its evaluation of SWP supply reliability to rely on DWR's 2025 State Water Project Delivery Capability Report (DCR), which is the authoritative reference for SWP reliability planning. The 2025 DCR replaces reliance on MET's 2020 IRP Regional Needs Assessment alone for SWP-specific reliability projections. The 2025 DCR is widely used within and beyond the SWP to support water supply planning and is fundamental to the drought-planning efforts of public water agencies that receive SWP supplies. Its outputs serve as a key input to Sustainable Groundwater Management Plans, Urban Water Management Plans, Agricultural Water Management Plans, and Integrated Regional Water Management Plans.

The 2025 DCR builds on prior DCRs by incorporating two important methodological enhancements: (1) climate-adjusted historical hydrology, which adjusts the historical record to reflect observed climate trends, and (2) risk-informed future climate scenarios developed using CalSim 3 and a probabilistic ensemble of downscaled climate projections. These updates allow the DCR to more accurately characterize the effects of climate change on Delta inflows, sea-level rise, and salinity intrusion.

The 2025 DCR estimates that, under existing conditions and current regulatory restrictions, the long-term average annual Table A delivery capability of the SWP is approximately 2.2 million AF, with substantial variability across hydrologic conditions. Under hot-dry climate change scenarios with no adaptation actions taken (the central planning scenario for the 2050 horizon), estimated SWP Table A deliveries are projected to be approximately 11-23% lower than under existing conditions. A separate DCR addendum analyzing the combined effects of subsidence and climate change indicates that, without action, the long-term average delivery capability could be reduced by 18-87% relative to the DCR baseline by 2043, depending on the severity of subsidence and climate scenarios assumed. These findings underscore the importance of continued investment in adaptation and infrastructure modernization, including the Delta Conveyance Project.

MET's 2025 UWMP incorporates the 2025 DCR results into its assessment of SWP supply availability for use in its regional reliability analysis (Chapter 7) and CAMP4W planning. MWDOC's 2025 UWMP, in turn, relies on MET's analysis to evaluate imported water supply availability for its retail member agencies, including ETWD. The District relies on MWDOC's analysis of imported water supply availability for the planning horizon of this UWMP.

Constraints on State Water Project Delivery Capability

Several factors continue to challenge SWP delivery reliability. The Delta is critical to the SWP's ability to deliver water, but it faces long-term sustainability challenges including climate change, sea-level rise (which complicates salinity management and water quality protection), continued subsidence of Delta islands, and the threat of catastrophic levee failure due to seismic events. Beyond Delta-specific challenges, the SWP faces the following ongoing constraints:

- **Water availability at the source**: SWP supply availability is highly variable and depends on the timing and magnitude of rain and snow in any given year. Multiple-dry-year sequences can deplete reservoir storage to critically low levels.
- **Water rights with priority over the SWP**: Water users with senior water rights are assigned higher priority in DWR's modeling of SWP delivery reliability, ahead of SWP Table A water.
- **Climate change:** Mean temperatures are projected to increase, leading to less snowfall at lower elevations, reduced Sierra snowpack, earlier snowmelt, increased rain-on-snow events, and reduced summer pumping availability. DWR projects that by 2050, the Sierra snowpack will be reduced by approximately 25-40% relative to its historical average, and SWP delivery reliability could decline by as much as 23% over the next two decades.
- **Regulatory restrictions on Delta exports:** Biological Opinions (BiOps) and the Incidental Take Permit issued under the California Endangered Species Act protect listed species (including delta smelt, longfin smelt, and spring- and winter-run Chinook salmon) and impose substantial constraints on Delta export pumping through requirements for Delta inflow, outflow, and pumping limits. The State Water Resources Control Board's Bay-Delta Plan update, which is in development as of 2026, may further modify Delta flow requirements.
- **Delta levee failure:** Delta levees were largely constructed from soils dredged from nearby channels and were not engineered to modern standards. A breach could allow brackish water to inundate one or more islands, which could affect Delta water quality and require DWR to substantially reduce or temporarily suspend SWP exports.

Future Programs and Plans — Delta Conveyance Project

MET supports the Delta Conveyance Project (DCP), a single-tunnel modernization of the SWP's Delta conveyance system, as a critical climate-adaptation investment. The DCP would provide additional operational flexibility to capture water during high-flow events, reduce reliance on Delta export pumps located in the southern Delta (which are most vulnerable to seismic events and sea-level rise), and protect the SWP's ability to deliver water under future regulatory and climatic conditions.

The DCP has progressed through several recent milestones. In May 2024, DWR completed the Final Environmental Impact Report. In February 2025, the California Department of Fish and Wildlife issued the Incidental Take Permit for the project under the California Endangered Species Act. In September 2025, DWR filed a Notice of Preparation for a related water rights time extension. The DCP continues to advance through additional permitting and pre-construction work. According to DWR's most recent DCR, a changing climate could reduce SWP reliability by as much as 23% over the next two decades, and the DCP is one of California's most important climate-adaptation investments to mitigate that decline.

MET is also evaluating other adaptation investments through the CAMP4W framework, including expanded conservation, the Sites Reservoir off-stream storage project, additional SWP storage, and the Pure Water Southern California recycled water program.

6.2.3 Untreated Imported Water – Baker Treatment Plant

The Baker Treatment Plant is a 28.1 million gallons per day (MGD) drinking water treatment plant at the site of the former Baker Filtration Plant in Lake Forest. The facility is operated by Irvine Ranch Water District (IRWD) and is a joint regional project by five South Orange County water districts: ETWD, IRWD, Moulton Niguel Water District (MNWD), SMWD, and Trabuco Canyon Water District (TCWD), who have capacity rights of 3.2 MGD, 6.8 MGD, 8.4 MGD, 8.4 MGD, and 1.3 MGD, respectively.

The plant has multiple water supply sources that increase water supply reliability, including imported untreated water from MET through the Santiago Lateral and local surface water from Irvine Lake. It provides a reliable local drinking water supply for daily use and for during emergencies or extended facility shutdowns on the MET delivery system and increases operational flexibility by creating redundancy within the water conveyance system. The facility has supplied South Orange County with high quality water since it was placed into operation in January 2017. A location map of the Baker Treatment Plant and surrounding agencies is provided on Figure 6-1.

Figure 6-1: Baker Treatment Plant Location Map

6.2.4 Storage

Storage is a major component of MET’s dry year resource management strategy. MET’s likelihood of having adequate supply capability to meet projected demands, without implementing its Water Supply Allocation Plan (WSAP), is dependent on its storage resources. MET stores water in both DWR and MET surface water reservoirs. MET’s surface water reservoirs are Lake Mathews, Lake Skinner, and Diamond

Valley Lake (DVL), which have a combined storage capacity of over 1 MAF. Approximately 650,000 AF are stored for seasonal, regulatory, and drought use, while approximately 370,000 AF are stored for emergency use.

MET also has contractual rights to DWR surface reservoir storage, including 65,000 AF of flexible storage at Lake Perris (East Branch terminal) and 154,000 AF of flexible storage at Castaic Lake (West Branch terminal). This flexible storage provides MET with additional options for managing SWP deliveries, with the potential to provide up to approximately 44,000 AF of additional supply over multiple dry years, or up to 219,000 AF in a single dry year.

MET maintains a portfolio of out-of-region groundwater storage and exchange programs that increase MET's flexibility to manage SWP and Colorado River supplies. These programs include:

- **Lake Mead Storage Program:** Executed in 2006, this program allows MET to leave excessively conserved water in Lake Mead, for exclusive use by MET in later years. MET has significantly expanded its use of ICS storage in recent years, including record storage creation (450,000 AF) in 2023 under DCP-related conservation programs.
- **Semitropic Storage Program:** a groundwater banking program with up to 350,000 AF of storage capacity available to MET, with annual yields ranging from approximately 34,700 AF to 236,200 AF depending on hydrologic conditions and other participants' demands.
- **Arvin-Edison Storage Program:** The storage program is estimated to deliver 75 TAF, and the specific amount of water MET can expect to store in and subsequently receive from the program depends on hydrologic conditions and any regulatory requirements restricting MET’s ability to export water for storage. During wet years, MET has the discretion to use to program to store portions of its SWP supplies which are in excess, and during dry years, the Arvin-Edison Water Storage District returns MET’s previously stored water to MET by direct groundwater pump-in or by exchange of surface water supplies.
- **Antelope Valley-East Kern (AVEK) Water Agency Exchange and Storage Program:** Under the exchange program, for every two AF MET receives, MET returns 1 AF back to AVEK, and MET will also be able to store up to 30 TAF in the AVEK’s groundwater basin, with a dry-year return capability of 10 TAF.
- **High Desert Water Bank Program:** Developed in partnership with AVEK, this regional groundwater banking program allows MET to store up to 280,000 AF of SWP Table A or other available supplies in the Antelope Valley groundwater basin. The program provides a put-and-take capability of up to approximately 70,000 AFY, with infrastructure including monitoring and production wells, California Aqueduct turnouts, pipelines, recharge basins, and pump facilities. Phase 1 became operational in 2023, with full build-out expected by approximately 2030.
- **Kern-Delta Water District Storage Program:** This groundwater storage program has 250 TAF of storage capacity, and water for storage can either be directly recharged into the groundwater basin or delivered to Kern-Delta Water District farmers in lieu of pumping groundwater. During dry years, the Kern-Delta Water District returns MET’s previously stored water to MET by direct groundwater pump-in return or by exchange of surface water supplies.

- **Mojave Storage Program:** MET entered into a groundwater banking and exchange transfer agreement with Mojave Water Agency that allows for the cumulative storage of up to 390 TAF. The agreement allows for MET to store water in an exchange account for later return.
- **Diamond Valley Lake to Rialto Pipeline**: Planned for completion in 2028, this project creates new conveyance that improves the ability to move non-SWP supplies (120 cubic feet per second (cfs), including CRA and banked water) into areas historically dependent on SWP deliveries, increasing drought and seismic resilience.
- **Richvale & Western Canal Water Transfers**: These multi-year transfer options will provide supplemental dry-year supplies when available, with volumes up to approximately 54,000 AF (2025-2027).
- **San Bernardino Valley MWD Surplus SWP Program:** Programmatic access to surplus SWP supplies (approximately 13 TAF) will be available from SBVMWD under certain hydrologic and operational conditions.
- **Sepulveda Feeder Pump Stations (Stage 1):** This program includes pumping improvements that expand westward movement of CRA/SWP/banked supplies across service areas to address localized system constraints. Pumping capacity is expected to be 30 cfs upon completion of Stage 1 in 2027.
- **Yuba Accord Extension:** This project is a continuation of an established dry-year transfer program from the Yuba watershed that can be accessed subject to hydrologic and regulatory conditions. As of 2025, the extension is under negotiation for approximately 250,000 AFY in supply.

6.2.5 Potential Future Water Projects

In February 2023, the MET's Board directed its staff to integrate water resources planning, climate resilience planning, and financial planning into a Climate Adaptation Master Plan for Water (CAMP4W). Then a Joint Task Force of Board Members and Member Agency Managers was convened to facilitate the development of CAMP4W in a timely and transparent process. The main elements of CAMP4W include:

- Identify climate and growth scenarios, building from analyses conducted for MET's Integrated Resources Plan (IRP).
- Develop time-bound targets for new regional water supplies and system improvements.
- Establish a framework for decision-making and annual reporting.
- Form policies, initiatives, and partnerships.
- Evaluate business models and funding strategies.

Because investments required for regional supply reliability and system resilience are significant, it is important that decisions are made through an adaptive management process to avoid the risks associated with over-investment or under-performance. Tracking signposts and progress towards time-bound targets is therefore critical for CAMP4's annual reporting. Currently, regional projects being explored by MET include Pure Water Southern California, new reservoir storage in Southern California of up to 155,000 AFY, regional seawater desalination, and participation in California's Delta Conveyance

Project. These projects will be scored against the following CAMP4W criteria: 1) reliability; 2) resilience; 3) financial; 4) adaptability/flexibility; 5) equity; and 6) environmental co-benefits.

Pure Water Southern California – The potential Pure Water Southern California program, a partnership with the Sanitation Districts of Los Angeles County, would purify wastewater treatment effluent that currently flows to the ocean to produce high quality recycled water. The purified water would be delivered to Metropolitan's member agencies to meet their groundwater replenishment and storage requirements. It should be noted that the 2025 MET UWMP does not include Pure Water yield in projected supplies (MET, 2025).

Sites Reservoir – This potential project includes a water storage reservoir of 1.5 million AF and would require the construction of two large dams up to 310 feet high and nine smaller saddle dams. The water stored in the reservoir, located north of Sacramento, would be diverted from the Sacramento River during high flow events and returned to the Sacramento River during dry and critical years, thereby providing additional dry-year water for environmental flows and project partners including SWP agencies south of the Delta. The current operations model estimates the annual water yield of the Sites Reservoir Project at approximately 270,000 AFY by 2032, when the Sites Reservoir Project is scheduled to be operational (MET, 2025). It should be noted that the 2025 MET UWMP does not include Sites Reservoir in projected supplies (MET, 2025).

Delta Conveyance Project – Following DWR's withdrawal and subsequent termination of the California WaterFix project, the State advanced a new single-tunnel Delta Conveyance Project to address seismic risk, sea level rise, extreme weather, and regulatory uncertainty while improving long-term SWP delivery reliability. The environmental review was completed in 2023 and DWR has approved the project. Potential yield used in planning analyses is on the order of approximately 400,000 AFY. It should be noted that the 2025 MET UWMP does not include Delta Conveyance Project yield in projected supplies pending future milestones and contracting decisions (MET, 2025).

6.3 Groundwater

ETWD's water supply portfolio does not include groundwater. The District is not located over a designated groundwater basin and does not pump groundwater as part of its regular water supply. The District has no plans to develop groundwater supplies during the planning horizon of this UWMP.

Table 6-3: Groundwater Volume Pumped (DWR Table 6-1)

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.
NOTES: ETWD does not pump groundwater as part of regular water supply.	

6.4 Surface Water

In FY 2024-25, approximately 137 AF, about 2% of the District's water supply, was attributed to local surface water from Irvine Lake, conveyed through the Baker Water Treatment Plant. Volumes vary substantially from year to year based on lake levels and the operational mix at Baker.

6.4.1 Existing Sources

Santiago Reservoir, also known as Irvine Lake, is the largest surface water reservoir in Orange County. Originally constructed in 1931, the reservoir captures runoff from the upper Santiago Creek Watershed and also stores imported water. Irvine Lake is now owned by Irvine Ranch Water District (IRWD), following the 2025 transfer of Serrano Water District’s ownership interest in the lake and Santiago Dam to IRWD. The 700-acre reservoir holds more than 9 billion gallons of water and is contained by the 810-foot-tall Santiago Dam. Irvine Lake serves non-potable irrigation uses and provides source water for treatment facilities serving portions of central Orange County, including the Baker Treatment Plant. During dry years, IRWD may supplement storage in the lake with imported water from Metropolitan Water District of Southern California.

6.4.2 Planned Future Sources

As of the adoption date of this UWMP, there are no additional surface water sources planned in the District's service area beyond continued participation in the Baker Water Treatment Plant project.

6.5 Stormwater

6.5.1 Existing Sources

There are currently no direct stormwater uses in the District's service area. Stormwater within the service area is conveyed via the regional storm drain system and ultimately to the Pacific Ocean.

6.5.2 Planned Future Sources

As of the adoption date of this UWMP, there are no planned direct stormwater uses in the District's service area.

6.6 Wastewater and Recycled Water

The District is directly involved in wastewater services through its ownership and operation of the wastewater treatment facilities and collection system in its service area. The sewer system service area encompasses 5,430 acres and includes approximately 158 miles of sewer main. The wastewater system serves about 53,415 residents.

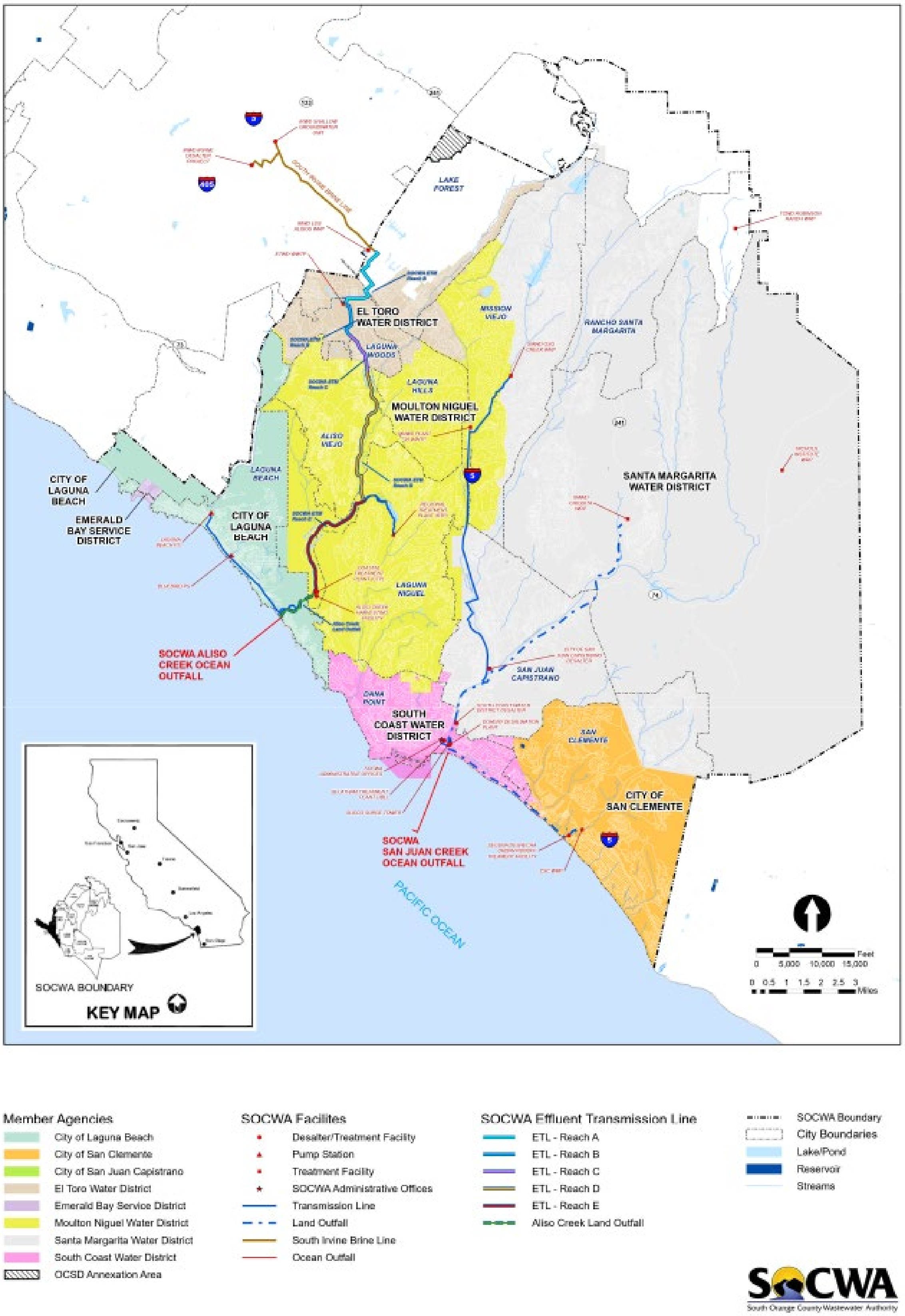
Recycled water is wastewater that is treated through primary, secondary, and tertiary processes and is acceptable for most non-potable water purposes such as irrigation, and commercial and industrial process water per Title 22 requirements. Recycled water opportunities have continued to grow in Southern California as public acceptance and the need to expand local water resources continues to be a priority. Recycled water also provides a degree of flexibility and added reliability during drought conditions when imported water supplies are restricted. The following sections describe the existing agency coordination involved in wastewater and recycled water, current and projected recycled water uses, and potential future recycled water programs.

6.6.1 Agency Coordination

Several water agencies in South Orange County provide both potable water service and wastewater collection and treatment to recycled water standards. These agencies have been at the forefront of recycled water development to diversify their water supplies because (1) they depend on imported water for the majority of their potable water supply and (2) groundwater supplies are limited within South Orange County due to local geology. Each of these agencies provides recycled water where feasible.

ETWD operates its own wastewater treatment facilities at the Water Recycling Plant (WRP) and is a member of the South Orange County Wastewater Authority (SOCWA), a regional wastewater agency that provides regional treatment and ocean-disposal services to its member agencies, as shown in Figure 6-2 and described further below. ETWD coordinates with other South Orange County agencies – including MNWD, SMWD, TCWD, IRWD, SCWD, and Laguna Beach County Water District (LBCWD) – to share information, optimize regional facilities, and pursue collaborative recycled water and emergency interconnection opportunities.

Figure 6-2: Neighboring Water Systems



6.6.2 Wastewater Description and Disposal

ETWD delivers approximately 6 MGD of potable water to its customers, who in turn generate approximately 3.8 MGD of wastewater. The District's wastewater collection system includes approximately 158 miles of sewer pipelines ranging from 4 to 24 inches in diameter and 11 sewer lift stations. Wastewater within the service area generally flows north to south and east to west.

Almost all wastewater generated within the District's service area is conveyed to the WRP, where it is treated and either used for irrigation or discharged through SOCWA's Effluent Transmission Main and the Aliso Creek Ocean Outfall. The WRP is located in Laguna Woods adjacent to the Laguna Woods Village Golf Course and serves portions of the Cities of Laguna Hills, Mission Viejo, Aliso Viejo, and Lake Forest, and all of Laguna Woods. A small portion of flow on the southeast side of the District is conveyed directly to MNWD's collection system.

The WRP was originally constructed in 1963 to treat approximately 1.5 MGD. The plant has undergone several upgrades and was largely reconstructed in 1998. The peak wet weather permitted capacity is 13.8 MGD, and the Effluent Transmission Main capacity is 7.5 MGD. Effluent from the WRP is treated to secondary or tertiary levels depending on the disposal method (ocean outfall or beneficial reuse). Recycled water is treated to Title 22 standards, with the 2014 expansion bringing total tertiary capacity to 3.7 MGD. Treated effluent that is not recycled is discharged through the Aliso Creek Ocean Outfall.

Table 6-4 summarizes the wastewater collected by the District in FY 2024-25, and Table 6-5 summarizes the wastewater treated and disposed within the District's service area.

Table 6-4: Wastewater Collected Within Service Area (DWR Table 6-2)

Submittal Table 6-2 Retail: Wastewater Collected Within Service Area
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**
El Toro Water District	Estimated	4,280	El Toro Water Dist WWRF, Place ID 271777	Yes
Total Wastewater Received from UWMP Service Area in 2025:		4,280		

NOTES: From influent flow data FY 2024-25

Table 6-5: Wastewater Treatment and Outcomes Within UWMP Service Area (DWR Table 6-3)

Submittal Table 6-3 Retail: Wastewater Treatment and Outcomes Within UWMP Service Area
Water Code Section 10633(b)

☐ **Check the box if no wastewater is treated or disposed of within the UWMP service area.**
Proceed to the next table.

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)	**2025 Outcomes of Treated Wastewater**										
				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
El Toro Water Dist WWRF, Place ID	No	4,280	4,280	Tertiary	1,408		0		0		0		0	
	Total	4,280	4,280		1,408		0		0		0		0	
NOTES:														

6.6.3 Current Recycled Water Uses

ETWD operates over 130,000 linear feet of recycled water distribution pipelines and a 3.7 MGD tertiary treatment facility at the WRP that meets Title 22 requirements for landscape irrigation. The plant was designed with the ability to expand capacity up to the expected maximum amount of raw wastewater entering the plant. The District serves recycled water to over 275 sites. In the tertiary treatment process, secondary-treated effluent flows through cloth-media disc filters that trap solids and debris; the filtered water then flows into a basin where chlorine is injected for disinfection. Chlorine disinfection further polishes the water and removes viruses and pathogens. The chlorine-treated water travels through a series of baffled channels to ensure compliance with chlorine contact time requirements, after which the tertiary-treated water is pumped into the recycled water distribution system. The District's recycled water distribution system consists of nearly 25 miles of pipelines ranging from 4 to 20 inches in diameter.

In FY 2024-25, the District put approximately 33% of its WRP wastewater (1,408 AF of recycled water out of 4,280 AF treated) to direct beneficial use. Recycled water is primarily used for landscape irrigation — including HOA common areas, the Laguna Woods Village Golf Course, irrigation on WRP grounds, and process water at the WRP. The District continues to investigate options for expanding the distribution of recycled water to its customers and to other agencies in the region.

In FY 2024-25, an average of approximately 2.5 MGD of secondary-treated effluent was disposed via the SOCWA Effluent Transmission Main to the Aliso Creek Ocean Outfall, and approximately 1.3 MGD of secondary-treated effluent was treated to tertiary standards to produce the total recycled water (including recycled water sent to the recycled water distribution system, water provided to the Laguna Woods Village Golf Course, and water used at the WRP). A small volume of potable water (4.99 AF in FY 2024-25) was added as supplemental water, as reported in Table 6-6.

6.6.4 Projected Recycled Water Uses

Current and projected recycled water uses through 2050 are shown in Table 6-6. With the exception of modest growth associated with completion of dedicated landscape connections, the District's recycled water deliveries are expected to remain near current levels at approximately 1,431 AFY through 2050. Use is limited to landscape irrigation (including HOAs and dedicated landscape sites) and golf course irrigation at the Laguna Woods Village Golf Course.

Table 6-7 compares the District's 2020 UWMP projection for 2025 recycled water use to actual 2025 use. The District's 2020 UWMP projected 2025 recycled water use of 1,485 AF, while the FY 2024-25 actual recycled water use was 1,408 AF — approximately 5% lower than projected. This minor variance reflects normal year-to-year variability in irrigation demand driven by weather, conservation, and turf-conversion programs

Table 6-6: Recycled Water Direct Beneficial Use Within Service Area (DWR Table 6-4)

Submittal Table 6-4 Retail: Recycled Water Direct Beneficial Uses Within Service Area Water Code Section 10633 (c),(d),(e)										
☐	Check box if 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) :			El Toro Water District							
Name of Supplier Operating the Recycled Water Distribution System (OPTIONAL) :			El Toro Water District							
Volume of Supplemental Water Added in 2025 (OPTIONAL) :			4.99 AF							
Source of 2025 Supplemental Water (OPTIONAL) :			Potable Water							
Use Type **Drop down list**	**Potable or Non-Potable** (after treatment if treated) (OPTIONAL) Drop down list	Additional Information (as needed)	2025 (AF)	2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)	**Potential Recycled Water Use**	
									Volume	Narrative page number (OPTIONAL)
Landscape irrigation (exc golf courses)	Non-Potable	Landscape	1108	1127	1127	1127	1127	1127	100-500	
Golf course irrigation	Non-Potable	Golf Course	300	304	304	304	304	304	0	
		Subtotal Potable	0	0	0	0	0	0	0	
		Subtotal Non-Potable	1,408	1,431	1,431	1,431	1,431	1,431	100-500	
		Total	1408	1431	1431	1431	1431	1431	100-500	
NOTES:										

Table 6-7: 2020 UWMP Recycled Water Use Projection Compared to 2025 Actual (DWR Table 6-5)

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 (AF)	2025 Actual Use (AF)
Landscape irrigation (exc golf courses)	1,181	1,108
Golf course irrigation	304	300
Total	1,485	1,408
NOTES:		

6.6.5 Potential Recycled Water Uses

The District continues to support, encourage, and contribute to the continued development of recycled water and potential uses throughout the region. The District is considering Recycled Water Expansion Phase III, as described in further detail in Chapter 6.9. This expected increase in recycled water use is shown in Table 6-8.

Table 6-8: Retail: Methods to Encourage Future Recycled Water Use (DWR Table 6-6)

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.		
Chapter 6.9	Provide page location of narrative in the UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use (AF)
Distribution System Expansion	Phase III	2050	100-500
		Total (AF)	100-500
		Unit Conversion to AF	100-500
NOTES:			

6.6.6 Optimization Plan

In Orange County, most recycled water is used for irrigating golf courses, parks, schools, businesses, and communal landscaping. Future recycled water use can be increased by requiring dual piping in new developments, retrofitting existing landscaped areas, and constructing recycled water pump stations and transmission pipelines to reach areas that are further from treatment plants. Gains in implementing some of these projects have been made throughout the county. However, additional costs, large energy requirements, and capital costs for facilities all contribute to the high costs of such projects.

To determine if additional projects including Direct Potable Reuse (DPR) are feasible, studies must be performed to determine if the project should be pursued. Feasibility studies should include evaluation of alternatives with a present worth analysis consisting of capital costs (design, environmental reviews, construction, etc.) and operations and maintenance costs (electrical costs for pumps and equipment and maintenance required for the system).

The District will continue to conduct feasibility studies for recycled water and seek out creative solutions such as funding, regulatory requirements, institutional arrangements, and public acceptance for recycled water use with MWDOC, MET, and other cooperative agencies.

6.7 Desalination Opportunities

Developing local supplies within MET's service area is a long-standing element of MET's resource planning, supported through the IRP process and now through CAMP4W. Local supply development reduces pressure on imported supplies from the SWP and Colorado River. On May 6, 2015, the State Water Resources Control Board approved an amendment to the California Ocean Plan (the Desalination Amendment) to address the construction and operation of seawater desalination facilities, formally recognizing seawater desalination as a beneficial use of the Pacific Ocean and providing a uniform, statewide permitting framework. Brackish groundwater desalination is also a potential local supply, although there are no brackish groundwater opportunities within the District's service area

6.7.1 Ocean Water Desalination

Doheny Ocean Desalination Project – SCWD is developing the Doheny Ocean Desalination Project, an ocean-water desalination facility planned for Dana Point at Doheny State Beach. The Phase 1 facility will produce up to 5 MGD of drinking water using subsurface slant well intakes – the environmentally preferred technology – and will discharge brine through an existing wastewater ocean outfall (San Juan Creek Outfall) co-mingled with treated wastewater. The project includes a commitment to 100% carbon neutrality through emissions offsets, project mitigation, and renewable energy. SCWD is currently in the planning and design stage and has obtained the major permits required to advance the project. In April 2024, SCWD, MWDOC, and MET reached an agreement under MET's Local Resources Program (LRP) for incentive funding of up to 5,600 AFY of locally produced desalinated water from the project. In August 2024, LBCWD joined SCWD and Eastern Municipal Water District as project partners. As of 2026, the project remains in the planning and design phase, with operation scheduled to begin between 2028 and 2029. ETWD is monitoring the project for potential regional supply benefits but has not committed to capacity in Phase 1.

Huntington Beach Seawater Desalination Project – The proposed 50 MGD (56,000 AFY) Huntington Beach Seawater Desalination Project, formerly developed by Poseidon Resources LLC, was denied a Coastal Development Permit by the California Coastal Commission in May 2022 by a unanimous vote, ending the 20-year development effort. The project is no longer planned, and its supplies are not included in MET's, MWDOC's, or ETWD's water supply projections.

6.7.2 Groundwater Desalination

Brackish groundwater is groundwater with salinity higher than freshwater but lower than seawater, and typically requires treatment using brackish-water desalters. There are currently no brackish groundwater opportunities within the District's service area, and the District has no plans to develop groundwater desalination during the planning horizon of this UWMP.

6.8 Water Exchanges and Transfers

Interconnections with other agencies result in the ability to share water supplies during short-term emergency situations or planned shutdowns of major imported water systems. However, beyond short-term outages, transfers can also be involved with longer term water exchanges to deal with droughts or water allocation situations. The following subsections describe the District’s existing and planned exchanges and transfers.

6.8.1 Existing Exchanges and Transfers

Interconnections with other agencies result in the ability to share water supplies during short term emergency situations or planned shutdowns of major imported water systems. The District maintains interconnections with other agencies as follows:

- TCWD at Cranbridge Dr. and Bridgemont Rd.
- IRWD at El Toro Rd. and Aliso Park Dr.
- IRWD at Ridge Route Dr. and Muirlands Blvd.
- IRWD at El Toro Rd. And Cornelius Dr.
- MNWD at Los Alisos Blvd, NE of Jeronimo Rd.
- SMWD at Trabuco Rd. and SMWD boundary
- SMWD/Aufdenkamp Connection Transmission Main at Ridge Route Dr. and Peralta Dr.
- MNWD at Beckenham St. and Wilkes Pl.
- MNWD at Los Alisos Blvd and Via Pimiento
- MNWD at Muirlands Blvd. and La Paz Rd.
- LBCWD at Avenida Sosiega West and Luz Del Sol

6.8.2 Planned and Potential Exchanges and Transfers

The District does not currently have plans to introduce new exchanges and transfers. However, MWDOC continues to help its retail agencies develop transfer and exchange opportunities that promote reliability within their systems. Therefore, MWDOC will look to help its retail agencies navigate the operational and administrative issues of transfers within the MET distribution system.

On a regional scale, the Santa Ana River Conservation and Conjunctive Use Project (SARCCUP) is a joint project established by five regional water agencies within the Santa Ana River Watershed (Eastern Municipal Water District, Inland Empire Utilities Agency, Western Municipal Water District, OCWD, and San Bernardino Valley Municipal Water District).

In September 2021, the participating agencies, in coordination with MET, executed a regional agreement framework establishing SARCCUP as a watershed-scale groundwater banking program to improve drought reliability across Orange, Riverside, and San Bernardino counties.

In 2016, SARCCUP was successful in receiving $55 million in grant funds from Proposition 84 through DWR. The overall SARCCUP program awarded by Proposition 84, consists of three main program elements:

- Watershed-Scale Cooperative Water Banking Program
- Water Use Efficiency: Landscape Design and Irrigation Improvements and Water Budget Assistance for Agencies
- Habitat Creation and *Arundo Donax* Removal from the Santa Ana River

The Watershed-Scale Cooperative Water Banking Program is the largest component of SARCCUP and since 2016, Valley, MET, and the four SARCCUP-MWD Member Agencies, with MWDOC representing OCWD, have been discussing terms and conditions for the ability to purchase surplus water from Valley to be stored in the Santa Ana River watershed. With the Valley and MET surplus water purchase agreement due for renewal, it was the desire of Valley to establish a new agreement with MET that allows a portion of its surplus water to be stored within the Santa Ana River watershed.

The Watershed-Scale Cooperative Water Banking Program is the largest component of SARCCUP. Under MET's arrangement with San Bernardino Valley Municipal Water District (Valley), when Valley declares surplus SWP water and offers it to MET, MET offers at least 50 percent of an equivalent amount to SARCCUP member agencies for storage, which can be later used in the Santa Ana River watershed, consistent with MET policy. This structure formalizes the purchase and storage pathway that aligns with MET's extraordinary supply policy during drought allocations.

Program capacity planning identifies up to approximately 137,000 AF of storage across six basins, including up to 36,000 AF in the Orange County Groundwater Basin for use in dry years. Stored SARCCUP supplies may be designated as "extraordinary supplies" during a MET's drought allocation if managed consistently with MET's Water Supply Allocation Plan, thereby enhancing participating agencies' drought reliability.

Although ETWD does not currently produce or receive groundwater from the OC Basin, MWDOC and OCWD coordination on SARCCUP can indirectly benefit the South Orange County region by improving regional supply reliability.

6.9 Summary of Future Water Projects

The District continually reviews practices that will provide its customers with adequate and reliable supplies. Trained staff continue to ensure the water quality is safe and the water supply will meet present and future needs in an environmentally and economically responsible manner.

Although the District has various capital projects planned to maintain and improve the water and wastewater systems, there are currently no District-specific planned projects with both a firm timeline and a quantifiable increase in potable water supply, as reported in Table 6-9 below. The Recycled Water Phase III Expansion is a recycled water program and is reported in Table 6-8 (Section 6.6.5).

Table 6-9: Expected Future Water Supply Projects or Program (DWR Table 6-7)

<table>
<tr><th colspan="8">Submittal Table 6-7 Retail: Expected Future Water Supply Projects or Programs
Water Code Section 10631(f)</th></tr>
<tr><td>☑</td><td colspan="7">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.
Proceed to the next table.</td></tr>
<tr><td>☐</td><td colspan="7">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.</td></tr>
<tr><td></td><td colspan="7">Provide page location of narrative in the UWMP</td></tr>
<tr><td rowspan="2">Name of Future Projects or Programs</td><td colspan="2">Joint Project with other suppliers?</td><td rowspan="2">Additional Description (as needed)</td><td rowspan="2">Potable or Non-Potable (after treatment if treated) (OPTIONAL) Drop Down list</td><td rowspan="2">Planned Implementation Year</td><td rowspan="2">Planned for Use in Year Type Drop Down List</td><td rowspan="2">Expected Increase in Water Supply to Supplier (This may be a range) (AF)</td></tr>
<tr><td>Drop Down List (yes/no)</td><td>If Yes, Supplier Name</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td colspan="8">NOTES:</td></tr>
</table>

6.9.1 District Initiatives

The District anticipates water demand in the District to remain relatively constant over the next 25 years. Any new water supply sources would be developed primarily to better manage local sources and to upgrade existing facilities, rather than to support population growth and new development. The projects that have been identified by the District to improve the District's water supply reliability and enhance the operations of the district include the expansion of their recycled water.

Recycled Water Expansion Phase III – The District is in the process of completing a conceptual level study that would potentially convert anywhere from 100 to 500 AFY of dedicated irrigation demand from potable water to recycled water, which would increase the District's recycled water supply and local water supply reliability.

6.9.2 Regional Initiatives

Beyond District-led projects, ETWD coordinates long-term water shortage planning and supply development with MWDOC and other South Orange County agencies. MWDOC's 2025 UWMP and the 2023 Orange County Water Reliability Study identify regional projects that may indirectly benefit ETWD by increasing local supplies and reducing reliance on imported water. The most relevant regional projects to ETWD include:

Pure Water Southern California (formerly Regional Recycled Water Program) — MET, in partnership with the Los Angeles County Sanitation Districts, is developing Pure Water Southern California, a large-scale advanced water purification program located in Carson. At full capacity, the program would produce up to 150 MGD of purified water for use as groundwater replenishment, industrial supply, and supply to two of MET's water treatment plants (the Weymouth and Diemer plants). MET's Board certified the Final Environmental Impact Report in February 2026, and the project is being evaluated through the CAMP4W process. Initial deliveries could begin in the early 2030s. Pure Water Southern California is expected to provide regional supply reliability benefits to MET's full service area, including ETWD via MWDOC.

Doheny Ocean Desalination Project — SCWD's Doheny Ocean Desalination Project (Section 6.7.1) is the most relevant near-term local supply project for South Orange County. The Phase 1 facility would produce up to 5 MGD with operation scheduled for 2028-2029, and is supported by funding through MET's LRP. While ETWD is not a Phase 1 partner, the project provides system reliability benefits to South Orange County by adding a drought-proof, locally controlled supply.

San Juan Watershed Project — SMWD and other project partners have proposed a multi-phased project within the San Juan Creek Watershed to capture local stormwater and develop, convey, and recharge recycled water into the San Juan Groundwater Basin. The first phase includes installation of three rubber dams within San Juan Creek to promote in-stream recharge of the basin. The second phase would expand surface water and groundwater management. The third phase would introduce recycled water directly into San Juan Creek through live-stream recharge.

South Orange County Emergency Interconnection Expansion — MWDOC has been working with South Orange County agencies on system reliability improvements primarily in response to the risk of earthquakes affecting the MET imported water system, as well as the potential for extended grid outages. The existing regional interconnection agreements between IRWD and South Orange County agencies support emergency deliveries through the IRWD system. MWDOC and IRWD continue to study expansion of the program, including the potential use of EOCF #2 and an expanded and scalable emergency groundwater program.

SARCCUP — described in Section 6.8.2

Moulton Niguel Water District (MNWD) / OCWD Pilot Storage Program — OCWD has entered into an agreement with MNWD to develop a pilot program to explore the opportunity to store water in the OC Basin for South Orange County benefit. The purpose of such a storage account is to provide MNWD water during emergencies. As part of the agreement, OCWD has hired consultants to evaluate where and how to extract groundwater from the OC Basin, with several options to convey water to MNWD via EOCF #2, as well as a review of existing banking and exchange programs in California to determine appropriate compensation methodologies for a storage and banking program.

6.10 Energy Use and Energy Intensity Reporting

Water Code Section 10631.2 requires urban water suppliers to include energy-related information that the supplier can readily obtain, including estimates of energy used to extract or divert, convey, treat, distribute, place into storage, or withdraw water supplies, and to compare energy used for treated and non-treated water supplies where such information is readily available. DWR’s 2025 UWMP Guidebook further indicates that suppliers should report available energy-use information for water supply management processes and may use DWR’s optional energy reporting tables where feasible. DWR also clarifies that calculation of energy intensity is not required by the Water Code, although optional DWR tables may calculate energy intensity when complete information is provided.

Because complete current energy-consumption data were not readily obtainable in time for preparation of this draft UWMP, ETWD has not completed the optional DWR energy-intensity tables for the 2025 reporting cycle. This approach is consistent with DWR’s 2025 UWMP Guidebook, which allows suppliers to provide the most readily obtainable information where full information cannot be obtained and notes that energy-intensity calculations are not required by the Water Code.

ETWD will continue compiling the data necessary to support future energy-use reporting, including electricity consumption by facility, water and wastewater process volumes, recycled water delivery volumes, and documentation of any allocation assumptions for shared facilities. Once complete data are available, ETWD may calculate energy intensity for its water distribution, wastewater, and recycled water systems using DWR Submittal Table O methodology and may include those values in future planning documents, appendices, or internal sustainability and operational benchmarking efforts.

CHAPTER 7: WATER SERVICE RELIABILITY AND DROUGHT RISK ASSESSMENT

Building upon the water demand projections developed in Chapter 4 and the supply portfolio described in Chapter 6, this chapter evaluates the District's projected water supply reliability through FY 2049-50. Water service reliability reflects the District's ability to meet the water needs of its customers under varying hydrologic, regulatory, and operational conditions. Pursuant to California Water Code (Water Code) Sections 10631, 10635(a), and 10635(b), the District's reliability is evaluated through two complementary assessments: (1) the long-term Water Service Reliability Assessment (WSRA), which compares projected supply to projected demand in five-year increments from 2030 through 2050 under three hydrologic conditions: a normal year, a single dry year, and a drought period lasting five consecutive years; and (2) the near-term Drought Risk Assessment (DRA), which compares projected supply and demand annually for the five-year period FY 2025-26 through FY 2029-30 assuming the District experiences a multi-year drought. Factors affecting reliability including climate change, regulatory and legal constraints, water quality, and locally applicable conditions are accounted for in both assessments.

As in prior planning cycles, this assessment is performed in coordination with, and informed by, the planning work of the Municipal Water District of Orange County (MWDOC), which is the District's wholesale imported water supplier, and the Metropolitan Water District of Southern California (MET), which is MWDOC's regional wholesaler. The District's reliability conclusions are consistent with the regional findings of MWDOC's 2025 UWMP and MET's 2025 UWMP, as well as the recently adopted MET Climate Adaptation Master Plan for Water (CAMP4W) Implementation Strategy (November 2025) and the 2025 Update to MET's Integrated Resources Plan (IRP) Needs Assessment.

7.1 Water Service Reliability Overview

Every urban water supplier is required to assess the reliability of its water service to its customers under normal, single-dry, and multiple-dry water year conditions. The District depends on a diversified combination of imported and local supplies to meet its water demands and has taken numerous steps to ensure adequate supplies are available to its customers throughout the planning horizon. The continued development and integration of local supplies, particularly recycled water from the District's Water Recycling Plant (WRP) and locally-managed surface water from Irvine Lake when available, augments the reliability of the District's overall water system. Various factors may affect reliability, including legal, regulatory, environmental, water quality, climatic, and locally-applicable considerations, each of which is discussed in Section 7.2.

Both MET's and MWDOC's 2025 UWMPs conclude that available water supplies are projected to meet full-service demands of their member agencies from 2026 through 2050 under normal year, single dry year, and five-consecutive dry year conditions. As a retail member of MWDOC, the District is therefore projected to meet its full-service demands through 2050 under each of these scenarios. MET's reliability conclusion is based on the assumptions and analytical framework developed for MET's 2020 IRP Needs Assessment (adopted April 2022) and refined through the 2025 IRP Needs Assessment Update, supported by the regional investments outlined in MET's November 2025 CAMP4W Implementation Strategy. CAMP4W establishes a target of identifying up to 300,000 acre-feet (AF) of additional regional water supplies by 2035 and provides the framework MET will use to evaluate, prioritize, and time investments in major projects including Pure Water Southern California, the Sites Reservoir Project, the Delta Conveyance Project, and expanded conservation programs based on reliability, affordability, and environmental co-benefits criteria.

MET’s long-term resource strategy continues to rely on a diversified portfolio that combines imported supplies (Colorado River and State Water Project), in-region surface and groundwater storage, conjunctive use programs, transfers, conservation, and continued investment in local resource development through MET’s Local Resources Program (LRP). This portfolio is the foundation upon which MWDOC and the District’s 2025 reliability conclusions rest, and is described in greater detail in Sections 6.1 and 6.2 of this UWMP.

Table 7-1 presents the basis of water year data used to characterize hydrologic conditions and to predict drought-period supply and demand availability. The reference (average / normal) hydrologic condition for the MWDOC service area is represented by FY 2024-25, the most recent normal water year following the wet year of 2023 that closed out the historic 2020-2022 drought. The single-dry year is represented by FY 2020-21, the driest single year within the most recent drought sequence. The five consecutive years of FY 2017-18 through FY 2021-22 represent the recent driest five-consecutive year sequence for the MWDOC service area, encompassing California’s historic 2020-2022 drought, which has been characterized as the driest three-year period on the statewide precipitation record. Per-capita demand multipliers under each hydrologic condition were derived from the regional econometric model documented in the 2025 Orange County Water Demand Projection Model Technical Memorandum (Demand Forecast TM).

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

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 (AF)	**% of Average Supply**
Average Year	2024-2025		100%
Single-Dry Year	2020-2021		106%
Consecutive Dry Years 1st Year	2017-2018		106%
Consecutive Dry Years 2nd Year	2018-2019		112%
Consecutive Dry Years 3rd Year	2019-2020		113%
Consecutive Dry Years 4th Year	2020-2021		115%
Consecutive Dry Years 5th Year	2021-2022		117%

NOTES: The 5-year drought sequence corresponds to the recent driest five-consecutive-year period in MWDOC's service area. Because the District balances total supply to total demand using imported water from MWDOC/MET to close any local supply gap, the percent of average supply equals the percent of average demand under each hydrologic condition.

The following sections provide a detailed discussion of the District's water source reliability. Additionally, the following sections compare the District's projected supply and demand under various hydrological conditions, to determine the District's supply reliability for the 25-year planning horizon.

7.2 Factors Affecting Reliability

To prepare a realistic water supply reliability assessment, the District has considered the principal categories of factors that may affect reliability over the planning horizon. These include climate change and environmental requirements, regulatory and legal constraints, water quality impacts, and locally applicable criteria. The discussion below summarizes the most significant of these factors as they pertain to the District's supply portfolio. A more detailed treatment of regional reliability factors is presented in MET's 2025 UWMP and MWDOC's 2025 UWMP.

7.2.1 Climate Change and the Environment

Climate change is expected to continue shifting precipitation patterns, increasing temperatures, and altering runoff timing and intensity throughout California, the Colorado River Basin, and the Sacramento-San Joaquin River Delta (Delta). MET's 2025 UWMP and CAMP4W process incorporate these expected changes through climate-informed supply modeling using Representative Concentration Pathway (RCP) 8.5, the planning assumption adopted by the MET Board for long-range planning purposes. Although the timing and magnitude of climate impacts vary across hydrologic regions, planners have identified several areas of concern affecting California water supplies:

- Reductions in Sierra Nevada and Cascade snowpack and earlier seasonal runoff, reducing the natural storage function of the snowpack and shifting peak runoff away from the highest-demand months.
- Increased frequency and intensity of extreme weather events, including atmospheric rivers, prolonged dry periods, and rapid swings between wet and dry years (sometimes characterized as "precipitation whiplash").
- Persistent multi-year drought conditions in the Colorado River Basin and across California, including the historic 2020-2022 drought, which has informed updates to the SWP and Colorado River supply modeling now used in MET's 2025 UWMP.
- Water quality degradation associated with increased wildfire activity, including post-fire turbidity events, ash and sediment loading, and impacts to source water reservoirs and conveyance facilities.
- Sea-level rise, which can intensify seawater intrusion into coastal groundwater basins, increase salinity in the Delta, and elevate the risk of damage from storm and high-tide events to levees and conveyance facilities.
- Higher evapotranspiration and warmer cool-season temperatures, which generally increase outdoor water demand and reduce the effective yield of precipitation.

In the Colorado River Basin, runoff has trended below historical averages in two of every three years since approximately 2000, even when basin precipitation has been near normal. Climate models project a continuation of this hotter-and-drier pattern, sometimes characterized as "aridification." Reservoir storage at Lakes Powell and Mead remains below historic averages, and the U.S. Bureau of Reclamation continues to coordinate with the Colorado River Basin States on post-2026 operational guidelines that will succeed the 2007 Interim Guidelines and the 2019 Drought Contingency Plan. MET's exposure to potential Colorado River shortages is mitigated by its participation in the Quantification Settlement Agreement, the Intentionally Created Surplus program, and storage and exchange agreements with regional partners.

In the SWP system, hydrologic variability has produced dramatic year-to-year swings in deliveries over the past decade. Continued ecosystem decline in the Delta and operational constraints associated with biological opinions and incidental take permits have reduced average SWP allocations relative to historic norms. As discussed in Section 7.2.2, the State of California is engaged in long-running policy and regulatory efforts, including the Bay-Delta Plan amendments, the Healthy Rivers and Landscapes (Voluntary Agreements) program, and ongoing biological-opinion litigation, that will continue to shape SWP reliability over the planning horizon.

MET's CAMP4W Implementation Strategy explicitly recognizes climate change as the central driver of long-term water resource planning in Southern California and provides the framework MET will use to make adaptive investment decisions over time. Progress under CAMP4W will be reported annually to MET's Board so that policies, tools, and timelines can be adjusted as new climate, hydrologic, regulatory, or demand information becomes available.

7.2.2 Regulatory and Legal

Ongoing regulatory and legal constraints continue to challenge the long-term reliability of imported water supplies. Endangered Species Act biological opinions governing SWP and federal Central Valley Project (CVP) operations impose pumping restrictions tied to Delta inflow and outflow requirements. These restrictions affect not only direct exports, but also voluntary transfers, Central Valley storage and transfer programs, and in-region groundwater and surface water storage that depends on imported deliveries for replenishment.

The State Water Resources Control Board (SWRCB) is implementing successive updates to the Bay-Delta Water Quality Control Plan. Phase 1 amendments, focused on flow objectives for the Lower San Joaquin River and southern Delta salinity, are being implemented through both adjudicatory (water rights) and regulatory (water quality) processes. Phase 2 amendments, addressing the Sacramento River and Delta tributaries, remain under development. The State has also advanced the Healthy Rivers and Landscapes (formerly Voluntary Agreements) framework as an alternative implementation pathway, intended to combine flow contributions and habitat improvements from water users with State investments in monitoring and adaptive management. Either pathway will reduce the volume of water available for human consumptive use from the SWP and CVP relative to historic conditions, and the precise magnitude depends on the implementation pathway ultimately adopted.

Regulatory and permitting timelines also affect the schedule for new or expanded local supplies that contribute to regional reliability. Recycled water projects, particularly indirect potable reuse (IPR) and direct potable reuse (DPR) projects, continue to advance under the SWRCB Division of Drinking Water's 2023 DPR regulations and ongoing IPR criteria. Seawater desalination projects must comply with the SWRCB Ocean Plan Amendment governing intakes and brine discharges, the Marine Life Protection Act, and Once-Through Cooling regulations. Permitting timelines for these projects can extend a decade or more, which affects the rate at which new local supplies can be brought online.

In addition, the federal Sustainable Groundwater Management Act (SGMA) framework, while not directly governing the District's supplies, affects the broader Southern California groundwater landscape on which MET relies. Continued implementation of Groundwater Sustainability Plans by Groundwater Sustainability Agencies throughout MET's service area will shape the availability and use of groundwater storage and conjunctive use opportunities over the planning horizon.

7.2.3 Water Quality

The following discussion addresses water quality issues experienced in the District's primary supply sources and the measures being implemented to maintain water quality.

7.2.3.1 Imported Water

MET is responsible for delivering high-quality treated water throughout its service area. MET conducts more than 300,000 water quality tests per year on its supplies to verify compliance with State and federal drinking water regulations and to monitor contaminants of emerging concern. MET's primary imported sources are the Colorado River Aqueduct (CRA) and the SWP. A blend of these sources, proportional to each year's availability, is delivered throughout the service area.

Each imported source presents distinct water quality considerations. CRA water has elevated total dissolved solids (TDS) due to the salinity of the Colorado River. SWP water has higher concentrations of natural organic matter, which can react with disinfectants to form regulated disinfection byproducts. To address these considerations, MET blends CRA and SWP supplies at appropriate ratios and has upgraded its treatment plants to include ozone treatment. MET continues to invest in source-water protection efforts targeting uranium, perchlorate, hexavalent chromium (chromium VI), N-nitrosodimethylamine (NDMA), 1,4-dioxane, pharmaceuticals and personal care products (PPCP), microplastics, and per- and polyfluoroalkyl substances (PFAS). Federal drinking water Maximum Contaminant Levels (MCLs) for six PFAS compounds were finalized by the U.S. Environmental Protection Agency in April 2024, with compliance deadlines through 2029. MET, MWDOC, and the District continue to coordinate on PFAS monitoring, treatment, and reporting requirements as compliance schedules are implemented.

Quagga mussel infestation in the Colorado River system continues to require active management. MET has implemented a successful control program along the CRA and within in-region facilities, and continues to exclude quagga-impacted CRA water from Diamond Valley Lake (DVL) to maintain DVL as an emergency in-region storage asset. Continued investment in monitoring and control is anticipated through the planning horizon.

7.2.3.2 Recycled Water

Recycled water produced at the District's WRP is treated to meet Title 22 requirements for non-potable reuse and is used for landscape irrigation and approved commercial uses within the District's service area. The District actively monitors recycled water quality and adjusts treatment as needed to comply with applicable permit conditions issued by the SWRCB. Constituents of emerging concern are monitored consistent with regulatory requirements and the operating permit for the WRP.

7.2.4 Locally Applicable Criteria

Within Orange County, there are no significant locally-applicable regulatory criteria that directly limit the District's supply reliability. Over the past several decades, water agencies in Orange County, coordinated by MWDOC and supported by the Water Emergency Response Organization of Orange County (WEROC), have invested in system integration, redundancy, and emergency interconnections that provide substantial operational flexibility. Emergency intertie agreements ensure that all parts of the County have access to alternative supply pathways during planned and unplanned outages. For South Orange County agencies including the District, demand is met largely with imported water, and system capacity for delivery is robust.

A major seismic event on the San Andreas Fault remains the most significant locally-relevant catastrophic risk to imported water reliability, with the potential to disrupt all three regional aqueducts (CRA, SWP California Aqueduct, and Colorado River Aqueduct connections) for up to six months. In response, MET maintains substantial in-region storage (including DVL, which can store a 6-12 month supply of emergency water for the region), participates with member agencies in regional emergency response planning, and supports continued investment in seismic resilience of regional conveyance facilities. The District also maintains emergency interconnections with neighboring retail agencies including Trabuco Canyon Water District (TCWD), Irvine Ranch Water District (IRWD), Moulton Niguel Water District (MNWD), Santa Margarita Water District (SMWD), and Laguna Beach County Water District (LBCWD), as discussed in Section 6.1, providing additional operational flexibility under emergency conditions.

In addition, the Orange County Water and Wastewater Multi-Jurisdictional Hazard Mitigation Plan (2024) provides the regional foundation for seismic and other natural-hazard risk analysis for water system facilities. The District's seismic risk assessment and mitigation activities are summarized in Chapter 8 (Water Shortage Contingency Plan) consistent with Water Code Section 10632.5.

7.3 Water Service Reliability Assessment

This section assesses the District's reliability to provide water service to its customers under each of the three required hydrologic conditions, normal year, single dry year, and a drought period lasting five consecutive years, by comparing projected long-term water demand (Chapter 4) to projected water supply availability (Chapter 6) in five-year increments through 2050. The methodology applied here is consistent with the regional approach used in MWDOC's 2025 UWMP and is anchored to the demand multipliers from the 2025 Demand Forecast TM presented in Table 7-1.

7.3.1 Normal Year Reliability

The water demand forecasting model developed for the 2025 Demand Forecast TM (described in Section 4.3) was used to project 25-year demand for Orange County water agencies and to isolate the influence of weather and climate on demand using a regression-based statistical model. Explanatory variables include population, temperature, precipitation, economic indicators, drought-period restrictions, and conservation measures. The impacts of hot/dry weather conditions are reflected as a percentage increase in water demand relative to the average (normal) condition. The normal-year demand baseline used for this UWMP cycle is anchored to FY 2024-25 hydrologic conditions.

The District is 100 percent reliable for normal-year demands from 2030 through 2050 (Table 7-2) due to its diversified supply portfolio and the continued ability of MWDOC to deliver imported water through its connections to the MET regional distribution system. For simplicity, Table 7-2 presents supply equal to demand in each five-year increment. As reflected in MWDOC's 2025 UWMP, the District has entitlements to receive imported water from MET through MWDOC, and additional imported water can be purchased from MWDOC if needed to meet demand. The supply totals in Table 7-2 also include local recycled water supply produced at the District's WRP.

Table 7-2: Retail: Normal Year Supply and Use Comparison

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 (AF)**
Supply totals (autofill from Submittal Table 6-9 R)	7,705	7,766	7,818	7,786	7,751
Use totals (autofill from Submittal Table 4-2 R)	7,705	7,766	7,818	7,786	7,751
Surplus/(shortfall)	0	0	0	0	0
NOTES: Imported water is available to close any local water supply gap.					

7.3.2 Single Dry Year Reliability

A single dry year is defined as a single year of minimal precipitation occurring within a multi-year period of average precipitation. Per the 2025 Demand Forecast TM, a single dry year condition (referenced to FY 2020-21 in the MWDOC service area) is associated with an approximately six-percent increase in water demand relative to the normal-year baseline for the South County region encompassing the District's service area. The methodology underlying the demand forecasting model is documented in Appendix H of MWDOC's 2025 UWMP, which is incorporated into this UWMP by reference.

The District is 100 percent reliable for single-dry-year demands from 2030 through 2050 (Table 7-3), based on the diversified supply portfolio described above and MWDOC's and MET's 2025 UWMP findings. For simplicity, Table 7-3 presents supply equal to demand. As under the normal-year scenario, the District can purchase additional MET water through MWDOC if needed.

Table 7-3: Retail: Single Dry Year Supply and Use Comparison

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 (AF)
Supply totals	8,189	8,252	8,309	8,273	8,235
Use totals	8,189	8,252	8,309	8,273	8,235
Surplus/(shortfall)	0	0	0	0	0
NOTES: Imported water is available to close any local water supply gap.					

7.3.3 Multiple Dry Year Reliability

Multiple dry years are defined as five or more consecutive years of minimal precipitation occurring within an extended period of below-average precipitation. Per the 2025 Demand Forecast TM, the South County region's demand is projected to escalate progressively in each successive year of a multi-year drought as a function of cumulative climatic stress, conservation fatigue, and adjustments to outdoor demand patterns. The progressive demand multipliers used in this assessment are: 106 percent (Year 1), 112 percent (Year 2), 113 percent (Year 3), 115 percent (Year 4), and 117 percent (Year 5), as shown in Table 7-1. These updated multipliers replace the flat nine-percent multiplier used in the District's 2020 UWMP and reflect the lessons learned from the 2020-2022 drought sequence.

Even with this conservative progression of demand multipliers over five consecutive dry years, the District is capable of meeting all customer demand from 2030 through 2050 (Table 7-4). The reliability of the District's supplies under multi-year drought conditions is supported by the substantial in-region storage held by MET (including DVL, which has a capacity of approximately 810,000 AF and is dedicated in part to dry-year supply), continued conservation-driven reductions in baseline demand, and MWDOC's regional supply augmentation programs. For simplicity, Table 7-4 presents supply equal to demand in each year of the five-year drought sequence. As under the prior scenarios, the District can purchase additional MET water through MWDOC if needed.

Table 7-4: Retail: Multiple Dry Years Supply and Use Comparison

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 (AF)
First year	Supply totals	8,189	8,252	8,309	8,273	8,235
	Use totals	8,189	8,252	8,309	8,273	8,235
	Surplus/(shortfall)	0	0	0	0	0
Second year	Supply totals	8,626	8,693	8,752	8,716	8,676
	Use totals	8,626	8,693	8,752	8,716	8,676
	Surplus/(shortfall)	0	0	0	0	0
Third year	Supply totals	8,680	8,747	8,807	8,770	8,730
	Use totals	8,680	8,747	8,807	8,770	8,730
	Surplus/(shortfall)	0	0	0	0	0
Fourth year	Supply totals	8,844	8,913	8,973	8,936	8,896
	Use totals	8,844	8,913	8,973	8,936	8,896
	Surplus/(shortfall)	0	0	0	0	0
Fifth year	Supply totals	8,994	9,064	9,126	9,088	9,047
	Use totals	8,994	9,064	9,126	9,088	9,047
	Surplus/(shortfall)	0	0	0	0	0
NOTES: Modeled based on projections from customer demand. Imported water is available to close any local water supply gap.						

7.4 Management Tools and Options

Existing and planned water management tools and options for the District and the MWDOC service area focus on maximizing local resources and minimizing reliance on imported water. Although the District does not directly produce groundwater from the Orange County Groundwater Basin (OC Basin), regional collaboration between MWDOC, the Orange County Water District (OCWD), and MET provides important reliability benefits to the District. These regional management tools, in combination with the District's own local supplies and demand management measures, are summarized below.

- **Reduced Reliance on the Delta.** Consistent with Delta Plan Policy WR P1 (California Code of Regulations, Title 23, Section 5003), MET demonstrates progress toward reducing reliance on Delta supplies through investments in water use efficiency, water recycling, stormwater capture, advanced water technologies, conjunctive use programs, and local and regional storage. MET's 2025 UWMP reports continued progress toward measurable reductions in supplies imported from the Delta. The District contributes to the regional Reduced Delta Reliance demonstration through its continued use and expansion of recycled water at the WRP. Detailed reporting on regional

Delta reliance is provided in MWDOC’s 2025 UWMP Appendix C, which is incorporated by reference.

- **Continued and Planned Use of Groundwater**. Although the District does not pump groundwater, the OC Basin and the smaller groundwater basins within MWDOC’s service area provide substantial regional reliability through their use as conjunctive-use storage reservoirs. OCWD’s 2025 Groundwater Resilience Plan (adopted February 2025) outlines strategic projects to secure long-term sustainability of the OC Basin and to enhance dry-year yield. MWDOC’s in-lieu and replenishment programs further support the role of groundwater in regional reliability.
- **Groundwater Storage and Transfer Programs**. MET maintains an extensive portfolio of groundwater storage and transfer programs that increase regional supply reliability, including the Antelope Valley–East Kern (AVEK) Water Agency Exchange and Storage Program, the High Desert Water Bank Program, and the Cyclic Storage Agreements within the Main San Gabriel Basin. The Santa Ana River Conservation and Conjunctive Use Program (SARCCUP), in which MWDOC and OCWD participate, provides approximately 137,000 AF of regional groundwater bank storage. The IRWD Strand Ranch Water Banking Program provides approximately 23,000 AF of storage that, by agreement with MET, qualifies as an Extraordinary Supply under MET’s Water Supply Allocation Plan (WSAP). Collectively, these storage programs enhance the District’s indirect drought resilience.
- **Pure Water Southern California (Pure Water SoCal).** MET, in partnership with the Sanitation Districts of Los Angeles County, is advancing Pure Water Southern California, one of the largest planned water reuse projects in the United States. At full build-out, Pure Water SoCal is expected to produce up to approximately 150 million gallons per day (MGD) of advanced-treated, purified water suitable for groundwater recharge and direct potable reuse, supporting MET’s long-term reliability objectives under the CAMP4W framework. The project is being assessed under CAMP4W’s standardized methodology, which evaluates climate-adaptation projects against six criteria including reliability, affordability, and environmental co-benefits.
- **Sites Reservoir Project.** MET is participating in planning and evaluation of the Sites Reservoir Project, a proposed off-stream surface storage project in the Sacramento Valley with up to 1.5 million AF of storage capacity. Sites Reservoir is intended to capture surplus winter and spring flows from the Sacramento River system for delivery during drier periods, potentially providing additional dry-year yield to participating agencies. MET’s continued investment and implementation decisions are being evaluated through CAMP4W.
- **Delta Conveyance Project**. MET is participating in continued planning and pre-construction activities for the proposed Delta Conveyance Project, an SWP infrastructure project intended to improve the reliability and operational flexibility of SWP deliveries by reducing dependence on south-Delta export facilities and improving system resilience to sea-level rise, seismic vulnerabilities, and changing hydrologic conditions. MET has approved funding for remaining planning and pre-construction activities, but full construction participation remains subject to CAMP4W evaluation and future environmental, regulatory, and Board approval processes.
- **Regional Water Loss Programs.** The MWDOC water-loss audit program, which the District participates in through the AWWA M36-based audit framework and SWRCB performance reporting, reduces system losses across the MWDOC service area, contributing to overall

imported-water demand reduction. Progress toward the 2028 SWRCB Water Loss Performance Standards is reported in Chapter 4 and Submittal Table 4-6.

- **Increased Use of Recycled Water.** The District operates the WRP, producing recycled water for non-potable reuse within its service area. MWDOC partners with OCWD and other regional agencies on recycled water initiatives, including the Groundwater Replenishment System (GWRS) operated by OCWD and Orange County Sanitation District (OC San), which currently operates at its expanded full-scale capacity of approximately 130 MGD following the GWRS Final Expansion. Although the District does not directly receive GWRS water, the regional contribution of recycled water to OC Basin replenishment reduces overall imported-water demand from MET, indirectly benefiting all member agencies of MWDOC including the District.
- **Implementation of Demand Management Measures (DMMs).** MWDOC and the District jointly implement a comprehensive set of DMMs designed to reduce water demand and lower reliance on imported supplies. MWDOC leads coordination of the Orange County Regional Alliance, which assists retail agencies including the District in meeting their Urban Water Use Objectives (UWUO) under the SWRCB's "Making Conservation a California Way of Life" framework, including the residential, commercial/industrial/institutional (CII), and outdoor water use components. The District's specific DMM implementation is described in Chapter 9.

7.5 Drought Risk Assessment

Water Code Section 10635(b) requires every urban water supplier to include a Drought Risk Assessment (DRA) as part of its UWMP, as a near-term planning evaluation that assumes the District is experiencing a drought over the next five years. The DRA addresses the District's water supply reliability under the presumed drought conditions and informs the development of the District's Demand Management Measures (DMMs) and water supply projects and programs. Together, the WSRA (Sections 7.1 through 7.4), the DRA (Section 7.5), and the Water Shortage Contingency Plan (Chapter 8 and Appendix G) provide a comprehensive picture of the District's short-term and long-term water service reliability and identify the tools available to address potential or actual shortage conditions.

Water Code Section 10612 requires the DRA to be based on the driest five-year historic sequence of the District's water supply. Water Code Section 10635(b)(3) further requires that the analysis consider plausible changes in projected supplies and demands due to climate change, anticipated regulatory changes, and other locally applicable criteria.

7.5.1 DRA Methodology

The District's DRA is structured consistent with MWDOC's 2025 UWMP DRA, reflecting the District's reliance on MWDOC and MET for imported water that is used to balance total supply against total demand. The water demand forecasting model documented in the 2025 Demand Forecast TM was used to characterize demand under a multi-year drought condition, and projections were linearly interpolated to produce annual demand estimates for FY 2025-26 through FY 2029-30.

The five consecutive years of FY 2017-18 through FY 2021-22 represent the recent driest five-consecutive-year sequence for MWDOC's service area and for the District's indirect supply through MET. This period encompasses California's historic 2020-2022 drought, which resulted in the driest three-year statewide precipitation sequence on record and which produced significantly reduced SWP allocations and Colorado River Basin reservoir storage. Locally, the prolonged dry conditions across this five-year period, combined with elevated temperatures, materially affected the projected demand multipliers reflected in the 2025 Demand Forecast TM.

As described in Chapter 6, the District relies on three primary water source categories: (1) local surface water from Irvine Lake when available, (2) local recycled water produced at the District's WRP, and (3) imported water from MWDOC/MET. The District maximizes the use of its local supplies before purchasing imported water. The difference between total forecasted potable demand and the District's available local potable supply represents the District's demand on MWDOC's imported water supplies, which originate with MET. The District's DRA therefore focuses on the assessment of imported water from MWDOC/MET, which is used to close any local water supply gap. This assessment aligns with the DRA presented in MWDOC's 2025 UWMP.

Water Demand Characterization

All of MWDOC's water supplies are purchased from MET, regardless of hydrologic condition. As described in Section 6.2, MET's supplies originate from the Colorado River, the SWP, and a robust portfolio of in-region storage and transfer programs. MET's 2025 UWMP DRA concluded that, even without activating WSCP actions, MET can reliably provide water to all of its member agencies, including MWDOC and, by extension, the District, assuming a five-year drought beginning FY 2025-26. Beyond meeting baseline demand, MET's DRA indicates a surplus of supplies that would be available to its member agencies should the need arise. Therefore, any incremental demand experienced within MWDOC's service area, which includes the District, can be met with MET's imported supplies.

The District's annual demand projections for the DRA period were developed using the Demand Forecast TM econometric framework. MWDOC estimated total retail demand for its service area based on historical water-use trends, planned and adopted water use efficiency measures, projected land-use development, and population projections from the Center for Demographic Research at California State University, Fullerton. MWDOC then estimated projected local supplies based on member-agency local supply programs. The difference between total forecast demand (net of conservation savings and local supplies) is the residual demand on MWDOC's imported water, which, under the DRA, is presumed to be served by MET. The District's annual demand projections used in this DRA are presented in Chapter 4 and summarized in Table 7-5.

Water Supply Characterization

MWDOC's supply assumptions for its 2025 UWMP DRA were developed using historical supply availability under dry-year conditions, refined using the supply-modeling assumptions in MET's 2025 UWMP and the 2025 IRP Needs Assessment Update. MET's Colorado River and SWP supply categories are individually tabulated in MET's 2025 UWMP appendices, with consideration for plausible changes in projected supply under climate change, anticipated regulatory changes, and other factors. MWDOC's imported water supplies are used to meet consumptive use and, within the broader MWDOC service area, surface water and groundwater recharge needs that are in excess of locally available supplies. MWDOC also has access to supply augmentation through MET, which MET may exercise based on regional need and in accordance with MET's 2025 WSCP. These augmentation actions may include the use of supplies and storage programs within the Colorado River, the SWP, and in-region storage portfolios.

7.5.2 Total Water Supply and Use Comparison

The District's DRA reveals that the District's supply capabilities are expected to balance anticipated total water use and supply, assuming a five-year consecutive drought from FY 2025-26 through FY 2029-30 (Table 7-5). For simplicity and clarity in reporting, the table presents supply equal to the modeled demand in each year. As reflected in the WSRA scenarios in Section 7.3, the District retains the ability to purchase additional MET water through MWDOC if regional or local conditions create the need to do so. No WSCP-driven supply augmentation or use reduction action is required to balance the DRA, although the District retains a full set of WSCP actions for use if real-time conditions warrant (see Chapter 8).

Table 7-5: Five-Year Drought Risk Assessment

Submittal Table 7-5 Retail: Five-Year Drought Risk Assessment Water Code Section 10635(b)(3)	
2026	**Total**
Total Water Use (AF)	7,751
Total Supplies (AF)	7,751
Surplus/Shortfall w/o WSCP Action	0
2027	**Total**
Total Water Use (AF)	7,737
Total Supplies (AF)	7,737
Surplus/Shortfall w/o WSCP Action	0
2028	**Total**
Total Water Use (AF)	7,736
Total Supplies (AF)	7,736
Surplus/Shortfall w/o WSCP Action	0
2029	**Total**
Total Water Use (AF)	7,708
Total Supplies (AF)	7,708
Surplus/Shortfall w/o WSCP Action	0
2030	**Total**
Total Water Use (AF)	7,705
Total Supplies (AF)	7,705
Surplus/Shortfall w/o WSCP Action	0
NOTES: Modeled based on projections from customer demand. Imported water is available to close any local water supply gap.	

7.5.3 Water Source Reliability

Locally, the District's ability to continue producing recycled water at the WRP and to use it directly for non-potable applications improves the District's overall water supply reliability, and reduces the volume of imported water needed to meet total demand. In addition, although they are not part of the District's normal water supply portfolio, the emergency interconnections the District maintains with TCWD, IRWD, MNWD, SMWD, and LBCWD provide important operational flexibility that could be deployed to mitigate isolated or short-duration supply disruptions. These interconnections are described in Chapter 6.

The District’s DRA concludes that available water supplies are sufficient to meet projected total water demand under a five-year consecutive drought beginning FY 2025-26. As discussed in Chapter 8, the District has in place a robust WSCP, comprehensive shortage response procedures, and an Annual Water Supply and Demand Assessment (AWSDA) process that allow it to respond to any actual shortage conditions that may emerge. Because the District’s DRA shows a balance between water supply and demand throughout the assessment period, no water service reliability concern is anticipated and no WSCP-driven shortfall mitigation measures are expected to be required over the next five years. The District and MWDOC will periodically revisit the supply and demand assumptions used in the DRA, including at each AWSDA cycle, and will update the DRA if new information warrants.

The analysis presented in this chapter, conducted in coordination with MWDOC and consistent with MET’s 2025 UWMP, MET’s 2020 IRP Needs Assessment as updated in 2025, and the November 2025 CAMP4W Implementation Strategy, demonstrate that the District is projected to meet its full-service water demands under normal, single-dry, and multiple-dry-year conditions through 2050, and that the District’s near-term DRA also balances. These conclusions support the District’s overall determination that its water supply portfolio is reliable and that the District’s customers will continue to receive reliable water service over the 25-year planning horizon.

CHAPTER 8: WATER SHORTAGE CONTINGENCY PLANNING

8.1 Layperson Description

Water shortage contingency planning is a strategic planning process that the District engages to prepare for and respond to water shortages. A water shortage, when water supply available is insufficient to meet the normally expected customer water use at a given point in time, may occur due to a number of reasons, such as water supply quality changes, climate change, drought, and catastrophic events (e.g., earthquake). The District's WSCP provides real-time water supply availability assessment and structured steps designed to respond to actual conditions. This level of detailed planning and preparation will help maintain reliable supplies and reduce the impacts of supply interruptions.

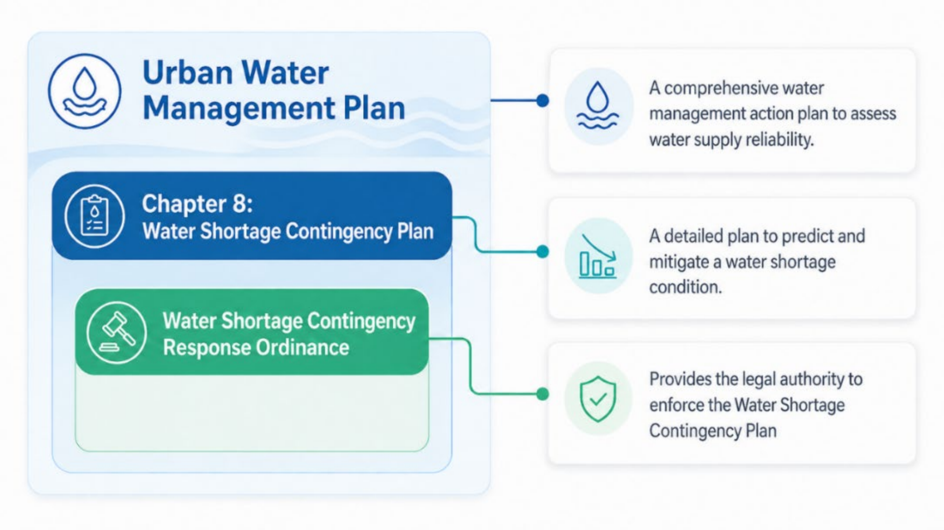
The Water Code Section 10632 requires that every urban water supplier that serves more than 3,000 AFY or has more than 3,000 connections prepare and adopt a standalone WSCP as part of its UWMP. The WSCP is required to plan for a greater than 50% supply shortage. This WSCP is due to be updated based on new requirements every five years and will be adopted as a current update for submission to DWR by July 1, 2026.

8.2 Overview of the WSCP

The WSCP serves as the operating manual that the District will use to prevent catastrophic service disruptions through proactive, rather than reactive, mitigation of water shortages. The WSCP contains processes and procedures documented in the WSCP, which are given legal authority through the WSCP Response Ordinance. This way, when shortage conditions arise, the District's governing body, its staff, and the public can easily identify and efficiently implement pre-determined steps to mitigate a water shortage to the level appropriate to the degree of water shortfall anticipated.

Figure 8-1 illustrates the interdependent relationship between the three procedural documents related to planning for and responding to water shortages.

Figure 8-1: UWMP Overview



Urban Water Management Plan

A comprehensive water management action plan to assess water supply reliability.

Chapter 8: Water Shortage Contingency Plan

A detailed plan to predict and mitigate a water shortage condition.

Water Shortage Contingency Response Ordinance

Provides the legal authority to enforce the Water Shortage Contingency Plan

A copy of the District's WSCP is provided in Appendix G and includes the steps to assess if a water shortage is occurring, and what level of shortage drought actions to trigger the best response as appropriate to the water shortage conditions. The WSCP has prescriptive elements, including an analysis of water supply reliability; the drought shortage actions for each of the six standard water shortage levels, that correspond to water shortage percentages ranging from 10% to greater than 50%; an estimate of the potential to close the supply gap for each measure; protocols and procedures to communicate identified actions for any current or predicted water shortage conditions; procedures for an annual water supply and demand assessment; monitoring and reporting requirements to determine customer compliance; and reevaluation and improvement procedures for evaluating the WSCP.

8.3 Summary of Water Shortage Response Strategy and Required DWR Tables

This WSCP is organized into three main sections, with Section 3 aligned with Water Code Section 16032 requirements.

Section 1 Introduction and WSCP Overview gives an overview of the WSCP fundamentals.

Section 2 Background provides a background on the District's water service area.

Section 3.1 Water Supply Reliability Analysis provides a summary of the water supply analysis and water reliability findings from the 2025 UWMP.

Section 3.2 Annual Water Supply and Demand Assessment Procedures provide a description of procedures to conduct and approve the Annual Assessment.

Section 3.3 Six Standard Water Shortage Stages explains the WSCP's six standard water shortage levels corresponding to progressive ranges of up to 10, 20, 30, 40, 50, and more than 50% shortages.

Section 3.4 Shortage Response Actions describes the WSCP's shortage response actions that align with the defined shortage levels.

Section 3.5 Communication Protocols addresses communication protocols and procedures to inform customers, the public, interested parties, and local, regional, and state governments, regarding any current or predicted shortages and any resulting shortage response actions.

Section 3.6 Compliance and Enforcement describes customer compliance, enforcement, appeal, and exemption procedures for triggered shortage response actions.

Section 3.7 Legal Authorities is a description of the legal authorities that enable the District to implement and enforce its shortage response actions.

Section 3.8 Financial Consequences of the WSCP provides a description of the financial consequences of and responses for drought conditions.

Section 3.9 Monitoring and Reporting describes monitoring and reporting requirements and procedures that ensure appropriate data is collected, tracked, and analyzed for purposes of monitoring customer compliance and to meet state reporting requirements**.**

Section 3.10 WSCP Refinement Procedures addresses reevaluation and improvement procedures for monitoring and evaluating the functionality of the WSCP.

Section 3.11 Special Water Feature Distinction is a required definition for inclusion in a WSCP per the Water Code.

Section 3.12 Plan Adoption, Submittal, and Implementation provides a record of the process the District followed to adopt and implement its WSCP.

The WSCP is based on demand reduction and supply augmentation measures that are structured to correspond with varying degrees of water shortage. This approach helps ensure that relevant stakeholders understand what to expect during a water shortage condition. Water Code Section 10632(a)(3)(A) provides urban water suppliers the option to align with the State’s six standard water shortage levels, and ETWD’s WSCP uses these same six standard levels. As shown in Table 8-1 and Table 8-1A, the District’s shortage levels are consistent with the levels established in Water Code Section 10632(a)(3)(B). Because the District follows the State’s standard water shortage levels, no separate crosswalk to local shortage stages is required.

The supply augmentation actions that align with each shortage level are described in DWR Table 8-2. These augmentations represent short-term management objectives triggered by the WSCP and do not overlap with the long-term new water supply development or supply reliability enhancement projects.

The demand reduction measures associated with each shortage level are provided in Appendix B, DWR Table 8-3, which includes the applicable DWR shortage response action table. Table 8-3 identifies the shortage response actions available to the District, the shortage levels at which those actions may be implemented, and the estimated demand reduction associated with each action. These measures demonstrate how the District would reduce the gap between available supplies and projected demands during a shortage condition. Measures may be implemented individually or in combination, depending on the severity, duration, and cause of the shortage, as well as actual supply conditions, customer response, and Board direction.

Table 8-1: Cross-reference for Standard vs Supplier Shortage Levels

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:			

Table 8-1A: Water Shortage Contingency Plan Levels

Table 8-1A Water Shortage Contingency Plan Levels		
Shortage Level	**Percent Shortage Range**	**Shortage Response Actions**
	0% (Normal)	A Level 0 Water Supply Shortage – Condition exists when no current supply reductions are anticipated. The District proceeds with planned water efficiency best practices to support consumer demand reduction in line with state mandated requirements and local District goals for water supply reliability. Permanent water waste prohibitions are in place as stipulated in the District's Water Shortage Contingency Response Ordinance 2026-1

Table 8-1A

Water Shortage Contingency Plan Levels

Shortage Level	Percent Shortage Range	Shortage Response Actions
1	Up to 10%	A Level 1 Water Supply Shortage – Condition exists when the District Board of Directors holds a Public Hearing, during which, at its sole discretion, determines and declares that due to drought or other supply reductions, a consumer demand reduction of up to 10% is necessary to make more efficient use of water and respond to existing water conditions. Upon the declaration of a Water Aware condition, the District shall implement the mandatory Level 1 conservation measures identified in this ordinance. The type of event that may prompt the District to declare a Level 1 Water Supply Shortage may include, among other factors, a finding that its wholesale water provider calls for extraordinary water conservation.
2	11% to 20%	A Level 2 Water Supply Shortage – Condition exists when the District Board of Directors holds a Public Hearing, during which, at its sole discretion, determines and declares that due to drought or other supply reductions, a consumer demand reduction of up to 20% is necessary to make more efficient use of water and respond to existing water conditions. Upon declaration of a Level 2 Water Supply Shortage condition, the District shall implement the mandatory Level 2 conservation measures identified in the District's Water Shortage Contingency Response Ordinance 2026-1.
3	21% to 30%	A Level 3 Water Supply Shortage – Condition exists when the District Board of Directors holds a Public Hearing, during which, at its sole discretion, determines and declares a water shortage emergency condition pursuant to California Water Code Section 350 and notifies its residents and businesses that up to 30% consumer demand reduction is required to ensure sufficient supplies for human consumption, sanitation and fire protection. The District must declare a Water Supply Shortage Emergency in the manner and on the grounds provided in California Water Code Section 350.
4	31% to 40%	A Level 4 Water Supply Shortage - Condition exists when the District Board of Directors holds a Public Hearing, during which, at its sole discretion, determines and declares a water shortage emergency condition pursuant to California Water Code Section 350 and notifies its residents and businesses that up to 40% consumer demand reduction is required to ensure sufficient supplies for human consumption, sanitation and fire protection. The District must declare a Water Supply Shortage Emergency in the manner and on the grounds provided in California Water Code Section 350.
5	41% to 50%	A Level 5 Water Supply Shortage - Condition exists when the District Board of Directors holds a Public Hearing, during which, at its sole discretion, determines and declares a water shortage emergency condition pursuant to California Water Code Section 350 and notifies its residents and businesses that up to 50% or more consumer demand reduction is required to ensure sufficient supplies for human consumption, sanitation and fire protection. The District must declare a Water Supply Shortage Emergency in the manner and on the grounds provided in California Water Code Section 350.

Table 8-1A Water Shortage Contingency Plan Levels		
Shortage Level	**Percent Shortage Range**	**Shortage Response Actions**
6	>50%	A Level 6 Water Supply Shortage – Condition exists when the District Board of Directors holds a Public Hearing, during which, at its sole discretion, determines and declares a water shortage emergency condition pursuant to California Water Code Section 350 and notifies its residents and businesses that greater than 50% or more consumer demand reduction is required to ensure sufficient supplies for human consumption, sanitation and fire protection. The District must declare a Water Supply Shortage Emergency in the manner and on the grounds provided in California Water Code Section 350.
NOTES: The District's Water Shortage Contingency Plan and Table 8-1A only apply to the District's potable water supply.		

Table 8-2: Supply Augmentation and Other Actions

Submittal Table 8-2 Retail: Supply Augmentation and Other Actions Water Code Section 10632(a)(4)(A),(C) and (E)				
Yes	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)	
1	Other Purchases	Volume	0 - 335	Additional imported water purchases through MWDOC
2	Other Purchases	Volume	0 - 670	Additional imported water purchases through MWDOC
3	Other Purchases	Volume	0 - 1000	Additional imported water purchases through MWDOC
4	Other Purchases	Volume	0 - 1340	Additional imported water purchases through MWDOC

Submittal Table 8-2 Retail: Supply Augmentation and Other Actions **Water Code Section 10632(a)(4)(A),(C) and (E)**				
Yes	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)
5	Other Purchases	Volume	0 - 2000	Additional imported water purchases through MWDOC and emergency supply via South Orange County interconnections
6	Other Purchases	Volume	0 - 2000	Additional imported water purchases through MWDOC and emergency supply via South Orange County interconnections
NOTES: Shortage gap reduction values are estimated as percentages of 2025 potable demand.				

8.4 Seismic Risk Assessment and Mitigation Plan

California Water Code Section 10632.5 requires that the Water Shortage Contingency Plan (WSCP) include a seismic risk assessment and mitigation plan that evaluates the vulnerability of water system facilities and identifies measures to mitigate those vulnerabilities. Section 10632.5(c) allows a supplier to comply by relying on a current local or multi-jurisdictional hazard mitigation plan adopted under the federal Disaster Mitigation Act of 2000, provided that plan addresses seismic risk. The District satisfies this requirement through the Orange County Water and Wastewater 2024 Multi-Jurisdictional Hazard Mitigation Plan (MJHMP), as supplemented by the District's American Water Infrastructure Act (AWIA) Risk and Resilience Assessment (RRA) and Emergency Response Plan (ERP), the Water Emergency Response Organization of Orange County (WEROC) Emergency Operations Plan, and the District's ongoing Capital Improvement Program (CIP). Additional implementation detail is provided in Section 3.4.6 of the District's 2026 WSCP (Appendix A).

8.4.1 Seismic Risk Assessment

The District's service area lies within a seismically active region influenced by the Newport-Inglewood, Whittier-Elsinore, San Joaquin Hills, and other regional faults, with the more distant San Andreas system posing the principal long-distance threat to imported supplies. The 2024 MJHMP identifies seismic ground shaking as a high-priority hazard for the regional water and wastewater community and provides the detailed hazard profile, exposure analysis, and risk ranking that support this assessment.

Two categories of vulnerability are relevant to the District. First, because the District is substantially dependent on imported water delivered through the Colorado River Aqueduct, the State Water Project, and the Sacramento–San Joaquin Delta, a major event on the San Andreas Fault or a Delta levee failure could disrupt regional deliveries for up to six months and could trigger Metropolitan Water District of Southern California (Metropolitan) Water Supply Allocation Plan (WSAP) reductions on the order of 10 to 25 percent or greater. Second, the District's local system is exposed to ground shaking, liquefaction, ground deformation, and loss of commercial power. Pipelines and storage reservoirs typically dominate seismic loss exposure in distribution systems of this type. Facility-specific vulnerability findings from the District's AWIA RRA are maintained separately from this UWMP to protect sensitive security information consistent with America's Water Infrastructure Act of 2018.

8.4.2 Mitigation Plan

The District has adopted the seven hazard mitigation goals of the 2024 MJHMP, which prioritize reducing critical-facility vulnerability, minimizing service interruption, protecting water quality, strengthening emergency response, and improving public preparedness. Consistent with those goals, the District implements a layered mitigation strategy summarized in Table 8-4.

Table 8-4: Seismic Risk Mitigation Measures

Mitigation Category	Representative Measures
Planning and Regulatory	Participation in the 2024 MJHMP; maintenance of the AWIA RRA and ERP; integration of seismic considerations into the Water Master Plan, Sewer Master Plan, and CIP.
Infrastructure and Engineering	Inspection and condition assessment of reservoirs, pump stations, and pipelines; pipeline replacement and rehabilitation through the CIP; seismic evaluation or retrofit of critical facilities as warranted; design of new facilities to current California Building Code and AWWA seismic standards.
Operational Redundancy	Multiple pressure zones and interconnections allowing flow rerouting; emergency interconnections with adjacent retail agencies; backup power and fuel storage at critical facilities; isolation protocols for damaged segments.
Emergency Preparedness and Response	Implementation of the District's ERP; compliant training and exercises; WEROC membership and participation in regional drills; mutual aid through WEROC and CalWARN.
Supply Diversification and Regional Storage	Local recycled water from the District's Water Recycling Plant offsetting potable demand; reliance on Metropolitan's Emergency Storage Requirement and Diamond Valley Lake (6-12 month regional emergency supply); continued participation in MWDOC and Metropolitan reliability programs.

Mitigation Category	Representative Measures
Communications	Backup communications capabilities; coordination with WEROC for regional emergency communications; customer notification protocols described in Section 3.5 of the 2026 WSCP.

Regional resilience is anchored by Metropolitan's Emergency Storage Requirement and Diamond Valley Lake, together with other in-region storage, which provide a six- to twelve-month emergency supply for the Southern California region. Metropolitan and the State of California are also pursuing long-term improvements to address seismic risk to State Water Project supplies originating in the Delta, as described in Metropolitan's 2025 UWMP and 2025 WSCP.

8.4.3 Implementation and Update Cycle

Pursuant to Water Code Section 10632.5(b), the District will update this seismic risk assessment and mitigation plan in conjunction with each five-year UWMP update and will incorporate findings from subsequent updates of the MJHMP, the WEROC Emergency Operations Plan, and the District's AWIA RRA and ERP. Should a seismic event result in an actual or anticipated water shortage or service interruption, the District will implement the applicable shortage level and response actions described in Section 8.5 and in the 2026 WSCP, scaled to the severity, duration, and operational impacts of the event.

CHAPTER 9: DEMAND MANAGEMENT MEASURES

The District remains firmly committed to the efficient and thoughtful use of its existing water supplies. ETWD has consistently recognized that water use efficiency represents both a prudent priority and an essential part of responsibly managing the region's water resources. This commitment has only grown in importance with the State Water Resources Control Board's (SWRCB) adoption of the Making Conservation a California Way of Life regulation in July 2024, which established a permanent framework for long-term urban water use efficiency in California.

The District works closely with the Municipal Water District of Orange County (MWDOC), its wholesale water provider, to promote regional water use efficiency. ETWD participates in MWDOC's regional water savings programs, leverages MWDOC's local program assistance and shared services, and uses the findings of MWDOC's research and evaluation efforts to inform District-level conservation strategy. This chapter describes the District's demand management measures (DMMs), summarizes program implementation over the past five years, and outlines how the District, together with MWDOC, supports compliance with the Making Conservation a California Way of Life requirements that went into effect in this UWMP cycle. The chapter also reflects the District's newly adopted Water Shortage Contingency Response Ordinance 2026-1, which supersedes Ordinance No. 2022-1 and is provided as Appendix B to the District's 2026 Water Shortage Contingency Plan (WSCP).

9.1 Demand Management Measures for Retail Suppliers

Pursuant to California Water Code Section 10631(e), this section provides a comprehensive description of the water conservation programs that ETWD has implemented, is currently implementing, and plans to implement to support its retail customers in using water efficiently and to support compliance with the Making Conservation a California Way of Life regulation. As streamlined by Assembly Bill (AB) 2067 in 2014, the Water Code requires retail urban water suppliers to address the following DMM categories:

- Water waste prevention ordinances
- Metering
- Conservation pricing
- Public education and outreach
- Programs to assess and manage distribution system real loss
- Water conservation program coordination and staffing support
- Other DMMs that have a significant impact on water use as measured in GPCD, including innovative measures, if implemented

In addition, this chapter describes the District's programs and the regional support provided by MWDOC to assist with compliance under the Making Conservation a California Way of Life regulation. ETWD calculates and reports its Urban Water Use Objective (UWUO) annually and, in its most recent report, demonstrated that it met its UWUO. This chapter also describes the District's implementation of Commercial, Industrial, and Institutional (CII) Performance Measures and its progress toward achieving distribution system water loss performance standards.

9.1.1 Water Waste Prevention Ordinances

Water Shortage Contingency Response Ordinance 2026-1 has been prepared for adoption as part of the District's 2025 Urban Water Management Plan (UWMP). Upon adoption, Ordinance 2026-1 will supersede Ordinance No. 2022-1 that was adopted on March 24, 2022. Ordinance 2026-1 establishes a Water Conservation and Water Supply Shortage Program designed to support effective potable water supply planning, ensure reasonable and beneficial use of potable water, prevent waste, and maximize efficient water use within the District's service area. The Ordinance is included as Appendix B to the District's Water Shortage Contingency Plan (WSCP), which is provided as Appendix G of this UWMP.

Ordinance 2026-1 is intended to align the District's water shortage response framework with the six standard state water shortage levels established by the 2018 amendments to the Urban Water Management Planning Act, including Water Code Section 10632. The Ordinance also incorporates updated statewide water use prohibitions, including the prohibition on the use of potable water to irrigate non-functional turf established by California Water Code Sections 10608.12 and 10608.14 through Assembly Bill 1572. Upon adoption, the Ordinance, in conjunction with the District's Water Budget–Based Tiered Conservation Rate Structure, will establish:

- Permanent Water Conservation Requirements designed to alter behaviors related to potable water use efficiency during non-shortage conditions; and
- Six levels of potential response to escalating water supply shortages that the Board may implement during a declared water shortage or water emergency, comprising progressively more restrictive water use prohibitions, demand reduction actions, and the possible imposition of a "drought factor" (defined in Section 9.1.3) that reduces customer indoor and outdoor water budgets, together with administrative penalties for designated customer categories that exceed their revised budgets.

Permanent Water Conservation Requirements

Section VI of Ordinance 2026-1 establishes the following permanent mandatory water conservation requirements applicable to all persons and entities using potable water provided by the District. These measures are in effect at all times, including during normal water supply conditions, and a violation of any of these provisions constitutes waste and an unreasonable use of water:

- Limits on outdoor watering hours - watering or irrigating with potable water is prohibited any day of the week between 9:00 a.m. and 6:00 p.m., with limited exceptions for hand-watering with a bucket, hand-watering with a hose equipped with a positive self-closing shut-off nozzle, drip irrigation, short-duration system adjustment or repair, and watering to establish new landscaping within 30 days of installation;
- Prohibition on excessive water flow or runoff onto adjoining sidewalks, driveways, streets, alleys, gutters, ditches, parking lots, structures, non-irrigated areas, or off the property;
- Prohibition on the use of potable water to irrigate non-functional turf on the property types and as of the applicable effective dates set forth in California Water Code Section 10608.14, with "non-functional turf" having the meaning set forth in Water Code Section 10608.12 and subject to the exceptions provided in Section 10608.14;

- Prohibition on outdoor irrigation during and within 48 hours following at least one-quarter inch (1/4 inch) of rainfall in a 24-hour period;
- Obligation to repair leaks, breaks, and malfunctions in lines, fixtures, or facilities - corrective action required no later than five (5) days after District notification;
- Prohibition on hosing or washing down hard or paved surfaces (including sidewalks, walkways, driveways, parking areas, tennis courts, patios, and alleys), except where necessary to alleviate a safety or sanitary hazard using a hand-held bucket, a hand-held hose equipped with a positive self-closing shut-off nozzle, or a low-volume high-pressure cleaning machine equipped to recycle used water;
- Restrictions on hosing or washing down vehicles, except using a hand-held bucket, a hand-held hose equipped with a positive self-closing shut-off nozzle, or commercial car-washing facilities using recycled or recirculating water;
- Recirculating-water requirements for decorative water fountains and decorative water features;
- Encouragement to cover swimming pools and spas to reduce evaporative loss;
- Commercial food-service requirements: drinking water served only upon request at restaurants, hotels, cafés, bars, and similar establishments;
- Commercial lodging requirements: hotels, motels, and other commercial lodging establishments must provide guests the option not to have used towels and linens laundered, with prominent notice in each room and bathroom;
- Commercial kitchen requirements: prohibition on use of non–water-efficient pre-rinse commercial dishwashing kitchen spray valves;
- Commercial water recirculation requirements: all new commercial car-wash systems must install recirculating water systems, and new or remodeled buildings are prohibited from installing single-pass cooling systems;
- Recycled water construction site requirements: recycled or non-potable water must be used when available; potable water shall not be used for soil compaction or dust control where a reasonably available recycled or non-potable source approved by the California Department of Public Health is available; and water hoses must be equipped with automatic shut-off nozzles;
- Automated irrigation control system requirements: new commercial, multi-family, and community development or redevelopment projects that include landscaped open space, park, and recreation areas are required to install a sensor-based or weather-based irrigation controller; and
- General prohibition on the waste or unreasonable use, or unreasonable method of use, of potable water by any person at all times.

These permanent measures remain in effect during all water shortage levels and are supplemented by additional, progressively more restrictive shortage response actions during declared shortages.

Six Standard Water Shortage Levels

Section VII of Ordinance 2026-1 establishes six water shortage levels aligned with the standard state water shortage levels, in compliance with Water Code Section 10632(a)(3). The six levels correspond to potable supply shortages of up to 10, 20, 30, 40, 50, and greater than 50 percent from normal reliability, as determined through the District's Annual Water Supply and Demand Assessment conducted under Water Code Section 10632.1. Each elevated shortage level incorporates the demand reduction actions, supply augmentation actions, operational changes, and additional mandatory restrictions of the previous shortage level(s), together with the permanent mandatory water conservation measures described above. Detailed shortage response actions and estimated demand reductions for each level are presented in DWR Submittal Tables 8-1A, 8-1, 8-2, and 8-3 of the District's 2026 WSCP.

Customer Water Conservation Plans

Under Section VIII of Ordinance 2026-1, during Levels 1 through 6, the Board of Directors may, at its sole discretion and by written request, require residential, irrigation, commercial, and/or public customers using ten thousand (10,000) or more billing units (CCF) per year to submit a Water Conservation Plan and quarterly progress reports to the District. Plans must include recommendations for increased water savings through on-site demand reduction, including increased use of recycled water or other alternative supplies where feasible.

Compliance and Administrative Penalties

Sections XI and XII of Ordinance 2026-1 establish a graduated compliance and administrative penalty framework, authorized by Government Code Section 53069.4 and California Water Code Section 377. Compliance actions include written Notices of Non-Compliance with an opportunity to correct, escalating non-compliance charges on the customer's water bill (with a third instance within twelve calendar months not exceeding $500), water flow restrictor installation following written notice, and, as a last resort, termination of service pursuant to Water Code Section 356. Customers may appeal a Notice of Non-Compliance or an administrative penalty in accordance with the appeal procedures defined in the Ordinance. Penalty funds collected are applied toward conservation efforts and supplemental water supply acquisition.

9.1.2 Metering

All water service connections supplied by the District are fully metered and customers are billed by volume of water used. The District requires individual metering for all new connections.

ETWD maintains a meter replacement program that targets older customer meters to support continued metering accuracy. The District also maintains a production meter calibration program to verify accuracy of source-of-supply meters used for water purchase accounting and water loss analysis.

The District is actively evaluating advanced metering infrastructure (AMI) and automatic meter reading (AMR) technologies as part of its long-term capital planning. AMI deployment offers the potential to provide near-real-time consumption data to customers, accelerate leak detection, support customer engagement through online portals, and improve the accuracy of the District's annual water loss audits. ETWD continues to monitor available state and federal funding opportunities and to evaluate the cost-benefit of phased AMI deployment as part of the District's broader water use efficiency and customer service strategy.

9.1.3 Water Budget-Based Tiered Rate

The District uses a water budget-based tiered rate structure consisting of fixed monthly service charges and a variable commodity charge. Fixed charges are based on meter size and include a Water Operations and Maintenance (O&M) Charge and a Capital Replacement and Refurbishment (R&R) Charge. Where applicable, customer bills also include Sewer Operations and Maintenance (O&M) and Sewer Capital Replacement and Refurbishment (R&R) charges. The variable water usage charge increases with usage across four tiers, with each metered customer receiving an individualized water budget calculated to reflect efficient indoor and outdoor water use for that property. Commercial, industrial, and institutional (CII) customers are charged under a flat rate due to the greater variability in customer types and water demands within this customer class.

Tier I (Indoor) is sized to reflect efficient indoor water use based on household size; Tier II (Outdoor) is sized to reflect efficient landscape water use based on the irrigable area at the property and local evapotranspiration; Tier III (Inefficient) and Tier IV (Excessive) apply progressively higher prices to use that exceeds the customer's combined indoor and outdoor budget. This structure provides a strong, persistent price signal that encourages customers to remain within their efficient water budget while allowing flexibility to address legitimate variations in household needs through the District's variance program.

Table 9-1 shows the District's water usage rates effective July 1, 2025.

Table 9-1: Water Usage Rates

Water Use Charges	Price/CCF
Tier I – Indoor	$3.59
Tier II – Outdoor	$3.98
Tier III – Inefficient	$7.26
Tier IV - Excessive	$9.14
Commercial, Industrial, Institutional (CII)	$4.09
Recycled Water	$3.59

The Board of Directors reviews the District's rates annually and conducts comprehensive cost-of-service studies on a regular basis to ensure that rates fully recover the cost of providing service while continuing to send a strong conservation price signal.

Ordinance 2026-1 also formally defines a Drought Factor that operates within the District's Water Budget-Based Tiered Conservation Rate Structure. The Drought Factor is normally set at 100 percent; during declared water shortage emergencies, the Board may reduce the Drought Factor to proportionately reduce customer indoor and outdoor water budgets, thereby moving usage that previously fell within Tier I and Tier II into the higher-priced Tier III and Tier IV. This mechanism delivers an immediate and customer-specific conservation price signal during shortages, while preserving the underlying budget-based structure used during normal supply conditions. Customers exceeding revised water budgets during shortage events may also be subject to administrative penalties as authorized under Section XII of the Ordinance.

9.1.4 Public Education and Outreach

The District recognizes the importance of water conservation and the protection of California's water resources, and seeks to maximize the beneficial use of available water supplies. It is District policy to discourage and prevent water waste through year-round mandatory conservation measures and to encourage water use efficiency through public education and outreach.

ETWD's Public Education and Outreach Programs

The District's public education programs are designed to complement those implemented by MET and MWDOC. ETWD uses the following programs and channels to increase customer awareness of local and regional water supply, the cost of water, District projects, water use efficiency, and landscape water management. These programs are also promoted through the District's website (etwd.com), customer bill messaging, and social media.

Print and Electronic Materials – The District publishes a customer newsletter (Water Views) and bill inserts throughout the year, distributed to each customer as part of the billing cycle and to homeowners' associations within the service area. The District also produces an annual Consumer Confidence Report (water quality brochure) describing the source of the District's water and providing information on water quality, regulated contaminants, and monitoring programs.

Community Advisory Group Meetings (CAG) – The District holds quarterly CAG meetings for the District customers. These meetings engage interactive discussions on new and ongoing water supply challenges, costs of water, ETWD projects and water conservation.

Speaker Program – The District's speaker's program offers to convey the water conservation message to local organizations including homeowner associations, service clubs and business organizations.

Laguna Woods Television – ETWD's board members and/or staff present monthly on Laguna Woods Village Television "This Day" segments. Directors discuss current water issues ranging from water supply, water quality, environmental topics, local and regional projects to water conservation.

Water Recycling Plant Field Trips – In addition to hosting and providing tours for the MWDOC Boy Scout Soil and Water Conservation Merit Badge and Girl Scout Water Resources and Conservation Patch programs, the District offers on-site field trips to small groups within the District's service area. The educational field trip consists of touring the Water Recycling Plant, explanation of the District and the Water Recycling Plant, laboratory experience and why it is important to conserve water.

Community Events – Each year, ETWD participates in an array of community events throughout its service area. Staff provides opportunities to interact with customers and the public in a relaxed environment engaging them in important discussions about the value of water and indoor and outdoor water-use efficiency.

Landscape Workshops – The District offers various workshops for customers through the MET BeWaterWise® program. Water landscape professionals educate customers on California Friendly® and Native Landscape Training, Turf Removal and Garden Transformation, and Garden Design. Workshops details are promoted through its outreach programs and offered through the District's website (etwd.com).

9.1.5 MWDOC's Public Education and Outreach Programs

In addition to ETWD's direct outreach, the District participates in the public education and outreach programs implemented by MWDOC. MWDOC develops, coordinates, and delivers a wide range of programs that assist Orange County retail agencies in promoting water use efficiency, communicating current water issues, supporting sound public policy, and explaining regional water reliability investments. These regionally coordinated efforts strengthen ETWD's local outreach and ensure consistent messaging across all demographics within the District's service area.

Print and Electronic Materials

MWDOC produces and distributes print and electronic materials covering the sources of Orange County's water supply, ongoing water industry challenges, water use efficiency, and emerging policy issues. Through MWDOC's social media presence, website, eCurrents newsletter, media tool kits, public service announcements, and other materials, stakeholders are equipped with the information they need to make informed choices that affect the quality and quantity of the region's water supply.

Public Events

Each year, MWDOC hosts various public events intended to engage a diverse range of water users in targeted discussions and actions that homes in on their specific interests or needs. Some of these public events include:

- **MWDOC Water Policy Forums and Orange County Water Summit** - interactive symposiums that bring together hundreds of business professionals, elected officials, water industry stakeholders, and community leaders to discuss water supply challenges, policy issues, and the impacts of water on the regional economy and public health.
- **Inspection Trips -** annual tours of statewide water supply systems sponsored by MWDOC and MET, providing Orange County elected officials, residents, business owners, and community leaders with first-hand knowledge of Southern California's water sources and infrastructure.
- **Community Events and Events Featuring MWDOC Mascot Ricky the Rambunctious Raindrop** - engaging Orange County water users in approachable conversations about the value of water and how everyday decisions affect water supply reliability.

Education Programs

MWDOC continues to expand its water education programs and partnerships with leading education groups and teachers throughout Orange County. Key programs available to ETWD customers include:

- **MWDOC Choice School Programs**, which have provided Orange County K–12 students with water-focused, standards-aligned learning experiences for nearly five decades. Programs are funded by participating MWDOC member agencies, with interactive lessons that connect students with their local watersheds and water systems through Science, Technology, Engineering, Arts, and Mathematics (STEAM) learning.
- **Water Energy Education Alliance (WEEA)**, a coalition of education and water/energy industry professionals led by MWDOC that supports Career Technical Education (CTE) pathways for Southern California high school students in the energy, environment, and utility sectors.
- **MWDOC Water Awareness Poster Contest,** an annual K–12 art and science activity that draws hundreds of student entries from across Orange County and culminates in an awards ceremony.
- **Boy Scouts Soil and Water Conservation Merit Badge and Girl Scouts Water Resources and Conservation Patch Programs,** hosted by MWDOC with interactive learning stations, hands-on activities, and guided tours of Orange County water sources, treatment facilities, or ecological reserves. ETWD has historically hosted scout tours at its Water Recycling Plant in support of these programs**.**

9.1.6 Programs to Assess and Manage Distribution System Real Loss

Senate Bill (SB) 1420 (2014) requires urban water suppliers that submit UWMPs to calculate annual system water losses using the validated water audit methodology developed by the American Water Works Association (AWWA). Audits must be submitted to DWR annually and are reported every five years as part of the UWMP. SB 555 (2015) and the SWRCB's subsequent water loss regulations established standards-based water loss performance requirements for distribution system real losses, with compliance with the 2028 standards required by July 1, 2028.

ETWD prepares an annual AWWA Water Audit using the most current AWWA Free Water Audit Software to quantify water losses in its distribution system. The District's validated water audit for the most current reporting year is provided in Appendix F of this UWMP and has also been submitted to DWR as required. The District participates in MWDOC's Water Loss Control Technical Assistance Program (TAP) and Water Loss Control Shared Services Program, which provide one-on-one technical assistance through validation of water balances, component analysis of real and apparent losses, source/production meter accuracy testing, billing data chain assessment, customer meter accuracy testing, distribution system pressure surveys, distribution system leak detection surveys, and suspected leak investigations.

Since the start of MWDOC's shared services leak detection program, more than 7,000 miles of distribution main have been surveyed across participating Orange County agencies, resulting in identification and repair of thousands of hidden leaks and recovery of more than 1,000 acre-feet of water annually. ETWD uses these services to support its own leak detection and repair program. Expressing water loss audit results in terms of real losses per service connection per day allows for standardized comparison across MWDOC retail agencies and is consistent with the SWRCB's economic-model approach to water loss performance standards.

The District's leak repair program responds promptly to identified leaks. Going forward, ETWD will continue to invest in proactive leak detection, meter accuracy testing, pressure management, and, through ongoing AMI evaluation, improved distribution system data, in order to demonstrate compliance with the 2028 water loss performance standards.

9.1.7 Water Conservation Program Coordination and Staffing Support

Since the adoption of the District's 2020 UWMP, ETWD has elevated water use efficiency to a dedicated, full-time position. The District's water use efficiency program is now managed by a dedicated Water Resources Supervisor, a new position established by the District to serve as the District's conservation coordinator and to lead implementation of the District's long-term water resources, water use efficiency, and regulatory compliance activities. The addition of a dedicated staff reflects the increased scope and complexity of urban water use efficiency obligations introduced by the Making Conservation a California Way of Life regulation, including annual Urban Water Use Objective calculation and reporting, CII Performance Measure implementation, water loss performance standard compliance, and coordination of customer-facing rebate and education programs.

The Water Resources Supervisor is responsible for day-to-day coordination of the District's conservation programs and serves as the District's point of contact with MWDOC, the Metropolitan Water District of Southern California (MET), the California Water Efficiency Partnership (CalWEP, formerly the California Urban Water Conservation Council), and other regional and state partners. The Water Resources Supervisor also coordinates with District customers, supports the Annual Water Supply and Demand Assessment process described in the 2026 WSCP, prepares annual UWUO and water use reporting submittals to the SWRCB, and coordinates the District's participation in MWDOC's Water Use Efficiency Workgroup and Water Loss Control Workgroup.

Additional District staff support water use efficiency activities, including customer assistance with water budgets and variances, leak detection follow-up, rebate program intake and verification, and public outreach.

9.1.8 Other Demand Management Measures

MWDOC, on behalf of ETWD and other Orange County retail water agencies, administers a comprehensive suite of regional rebate, retrofit, and education programs that target the largest end uses of water within the District's service area. These programs are organized into three categories: residential, CII, and landscape. The list below describes the programs available to ETWD customers as of the date of this UWMP. Rebate amounts and program eligibility are updated periodically; current information is available at ocwatersmart.com and mwdoc.com.

9.1.8.1 Residential Program

MWDOC assists the District with the implementation of residential DMMs by making available the following programs aimed at increasing landscape and indoor water use efficiency for residential customers.

High Efficiency Clothes Washer Rebate Program

The High Efficiency Clothes Washer (HECW) Rebate Program provides residential customers with rebates for the purchase and installation of qualifying high-efficiency clothes washers. Clothes washing can account for a significant portion of residential indoor water use, and HECWs use approximately 35 to 50 percent less water than standard washer models, saving up to approximately 10,500 gallons per year per device. Eligible devices must meet or exceed the Consortium for Energy Efficiency (CEE) Tier 1 standard, and qualified product information is available through socalwatersmart.com. A maximum of one rebate is available per home.

Premium High Efficiency Toilet Rebate Program

The largest amount of water used inside a home, 30%, goes toward flushing the toilet. The Premium High Efficiency Toilet (HET) Rebate Program offers incentives to residential customers for replacing their toilets using 1.6 gallons per flush (gpf) or more. Premium HETs use just 1.1 gpf or less, which is 20% less water than WaterSense standard toilets. In addition, Premium HETS save an average of 9 gallons of water per day while maintaining high performance standards.

9.1.8.2 CII Programs

MWDOC offers a comprehensive set of financial incentives to help businesses, restaurants, institutions, hotels, hospitals, industrial facilities, and public-sector sites within the District's service area achieve their water use efficiency goals. Customers may choose from a standardized list of water-efficient devices or pursue customized projects under a pay-for-performance structure.

Water Savings Incentive Program

The Water Savings Incentive Program (WSIP) is designed for non-residential customers to improve their water efficiency through upgraded equipment or services that do not qualify for standard rebates. WSIP is unique because it provides an incentive based on the amount of water customers actually save. This "pay-for-performance" design lets customers implement custom projects for their sites.

Projects must save at least 10 MG of water to qualify for the Program and are offered from $195 to $390 per acre foot of water saved. Examples of successfully projects include but are not limited to changing industrial process system water, capturing condensation, and using it to supplement cooling tower supply, and replacing water-using equipment with more efficient products.

On-site Retrofit Program

The On-site Retrofit Program (ORP) provides another pay-for-performance financial incentive to commercial, industrial and institutional property owners, including Homeowner Associations (HOAs), who convert potable water irrigation or industrial water systems to recycled water use.

Projects commonly include the conversion of mixed or dedicated irrigation meters using potable water to irrigate with reclaimed water, or convert industrial processes use to recycled water, such as a cooling towers. Financial incentives of up to $1,300 per AF of potable water saved are available for customer-side on the meter retrofits. Funding is provided by MET, USBR, and DWR.

SoCal Water$mart Device Rebates

Rebates for water-efficient devices commonly installed in CII facilities, including premium HETs, high-efficiency urinals, plumbing flow control valves, connectionless food steamers, air-cooled ice machines, cooling tower conductivity controllers, cooling tower pH controllers, dry vacuum pumps, and laminar flow restrictors. Core funding is provided by MET, supplemented by MWDOC grant funds and member agency contributions.

9.1.8.3 Landscape Programs

Outdoor water use accounts for the majority of single-family residential water use and a substantial share of CII demand within Orange County. MWDOC and ETWD focus a significant portion of their water use efficiency investment on outdoor measures that reduce irrigation demand while improving landscape resilience and water quality.

Turf Removal Program

Offers incentives to remove turf grass from residential, commercial, and public properties throughout Orange County. The program is a partnership between MWDOC, MET, and local retail water agencies. Participants replace turf with drought-tolerant, California Friendly, or native landscaping; retrofit irrigation systems with high-efficiency equipment such as drip; install a stormwater capture feature (such as a rain garden or dry stream bed); and meet a minimum plant density. Projects deliver water savings, reduce dry- and wet-weather runoff, sequester carbon, and increase biodiversity.

Landscape Design and Maintenance Plan Assistance Programs

Free landscape designs are provided to residential turf removal participants at the start of their projects, and free landscape maintenance plans are provided after project completion to maximize and sustain water savings. Designs include hydrozoning, climate-appropriate plant selection, high-efficiency irrigation, and a stormwater capture feature.

Smart Timer Rebate Program

Provides rebates for weather-based irrigation controllers (WBICs) and soil-moisture-based irrigation controllers, which automatically adjust to local weather and site-specific landscape needs. When properly programmed, smart timers deliver substantial water savings, particularly during the shoulder seasons when overwatering is most common.

Rotating Nozzles Rebate Program

Provides rebates for replacing high-precipitation-rate spray nozzles with low-precipitation-rate multi-stream, multi-trajectory rotating nozzles, reducing runoff and overspray.

Spray-to-Drip Rebate Program

Provides rebates for converting traditional spray-irrigated areas to drip irrigation, which delivers water at or near plant root zones, minimizing wind drift, evaporation, overspray, and irrigation runoff.

Socal Water$mart Rebate Program for Landscape Devices

Provides rebates for central computer irrigation controllers, large rotary nozzles, in-stem flow regulators, and other water-efficient landscape devices.

Landscape Training Classes

California Friendly and Native Landscape Training and the Turf Removal and Garden Transformation Workshop educate residents, property managers, and professional landscapers on stormwater capture features, healthy soils, climate-appropriate plant selection, irrigation control, and runoff reduction.

Qualified Water Efficient Landscape Certification (Commercial)

MWDOC, in partnership with ETWD, offers free QWEL certification—an EPA WaterSense–recognized 20-hour certification covering local water supply, sustainable landscaping, soils, irrigation systems, and irrigation scheduling. A hybrid version offered jointly with the California Landscape Contractors Association's Water Management Certification Program enables landscape professionals to obtain two nationally recognized WaterSense certifications with one course.

OC Water Smart Gardens Resource Page

An online portal at ocwatersmartgardens.com providing plant databases, garden tours, photo galleries, watering calculators calibrated for local evapotranspiration, and fact sheets on sustainable landscape fundamentals, soils, composting, and runoff prevention.

9.2 Implementation over the Past Five Years

Over the past five fiscal years (FY 2020-21 through FY 2024-25), the District, working in coordination with MWDOC, has continued to implement water use efficiency programs serving its residential, CII, and landscape customers. Implementation data demonstrating customer participation in these programs is summarized in Table 9-2 and is also reported through MWDOC's 2025 UWMP included in Appendix G.

Program participation reflects the maturing nature of Orange County's water use efficiency portfolio. After more than three decades of sustained investment, many of the highest-impact, lowest-cost retrofits, particularly first-generation HET and HECW replacements, have been substantially completed across the service area. Recent participation patterns reflect a shift toward outdoor water use efficiency (turf removal, spray-to-drip conversion, and smart irrigation), CII pay-for-performance projects, and recycled water conversion projects, which together represent the largest remaining sources of cost-effective demand reduction. The District will continue to implement and promote all applicable programs over the next five years and will adapt program emphasis as the SWRCB's Making Conservation a California Way of Life regulation transitions from reporting to enforcement in 2027.

Table 9-2: El Toro Water District Water Conservation Efficiency Program Participation

Measure	Unit	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25
Turf Removal – Commercial	Square Feet (sf)	3,667	2,379	7,739	31,396	43,948
Turf Removal – Residential	Square Feet (sf)	6,320	3,153	18,364	8,780	1,170

Measure	Unit	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25
Spray to Drip – Commercial	Square Feet (sf)	4,000	-	7,939	1,761	8,735
Spray to Drip – Residential	Square Feet (sf)	-	1,175	11,911	4,185	-
HECWs	washers	41	29	30	34	23
HETs	toilets	2	2	1	-	-
Rain Barrels	barrels	4	3	-	2	1
Premium HETs	toilets	19	52	16	-	-
Rotating Nozzles	nozzles	-	-	-	1,919	-
CII WBICs	timer	1	1	77	175	178
Residential WBICs	timer	28	23	21	18	10
Commercial Plumbing Fixtures	urinals	-	-	136	-	-
Landscape Design Assistance		9	11	12	5	-
Recycled Water On-Site Retrofit	controllers	11	4	-	-	-

9.3 Making Conservation a California Way of Life Compliance Framework

On July 3, 2024, the SWRCB adopted the Making Conservation a California Way of Life regulation, implementing the long-term water use efficiency framework established by SB 606 and AB 1668 (2018). The regulation became effective on January 1, 2025, and establishes a permanent, supplier-specific water use efficiency framework for urban retail water suppliers in California. Compliance with the annual UWUO is required beginning January 1, 2027, with potential SWRCB enforcement (including civil penalties of up to $1,000 per day, or $10,000 per day during declared drought conditions) for violations occurring on or after that date.

The regulation has three principal components for urban retail water suppliers such as ETWD:

- An Urban Water Use Objective (UWUO) - a customized annual water budget composed of efficiency standards for residential indoor water use, residential outdoor water use, CII outdoor irrigation with dedicated irrigation meters (or equivalent technology), water loss, and approved variances, plus an optional bonus incentive for potable reuse.

- CII Performance Measures - qualitative and quantitative measures designed to improve water use efficiency for CII customers, including classification of CII accounts and meters, identification of mixed-use meters, and implementation of best management practices (BMPs).
- Annual Reporting - by January 1 of each year, urban retail water suppliers must submit a machine-readable report to the SWRCB containing the supplier's UWUO, prior-year actual water use across each category, and an implementation status for the CII Performance Measures.

ETWD has reported its annual UWUO and water use to the SWRCB beginning with the FY 2023-24 reporting cycle (initially using DWR's interim reporting template, and subsequently using the final regulatory format). The District will continue to submit annual reports under the regulation and will work with MWDOC to refine its UWUO calculation as DWR-supplied data layers (in particular, residential outdoor irrigable area measurements) are updated.

9.3.1 Urban Water Use Objective

An urban retail water supplier's UWUO is calculated as the sum of the following components, in accordance with Title 23, California Code of Regulations, Sections 980 et seq.:

- Aggregate efficient indoor residential water use, calculated using the regulation's indoor residential standard (47 gallons per capita per day [GPCD] from January 1, 2025 through December 31, 2029, declining to 42 GPCD beginning January 1, 2030);
- Aggregate efficient outdoor residential water use, calculated by applying the residential Landscape Efficiency Factor (LEF) and reference evapotranspiration to the supplier's residential irrigable landscape area, with the LEF stepping down through 2040;
- Aggregate efficient outdoor CII irrigation with dedicated irrigation meters or equivalent technology, calculated by applying the CII LEF to dedicated CII landscape area;
- Aggregate efficient water losses, consistent with the SWRCB's 2028 water loss performance standards adopted under SB 555;
- Variances approved by the SWRCB (e.g., for cooling centers, wastewater impacts, or other unique uses); and
- An optional potable reuse bonus incentive (subject to caps in the regulation).

9.3.2 CII Performance Measures

In addition to the UWUO, the regulation requires urban retail water suppliers to implement a defined set of CII Performance Measures and to report annually on implementation status. These measures include classification of all CII accounts by NAICS code; identification of mixed-use meters and conversion to dedicated irrigation metering or other equivalent approach where feasible; implementation of BMPs for high-water-using CII customers; and customer engagement targeted to specific CII subsectors.

9.3.3 Water Loss Performance Standards

The water loss component of the UWUO is calculated consistently with the SWRCB's water loss performance standards adopted under SB 555. The 2028 water loss standards apply economic-modeling principles to derive a supplier-specific volumetric threshold for distribution system real losses. As described in Section 9.1.6, ETWD prepares and validates an annual AWWA water audit, participates in MWDOC's Water Loss Control TAP and Shared Services Program, and continues to invest in leak detection, meter accuracy testing, and pressure management to demonstrate compliance with the 2028 standards.

9.3.4 Annual Reporting and Coordination with MWDOC

ETWD submits its annual UWUO and water use report to the SWRCB through the WUEdata online portal by January 1 of each year, in the machine-readable format required by the regulation. In parallel, the District prepares an Annual Water Supply and Demand Assessment under Water Code Section 10632.1 and submits the corresponding Annual Water Shortage Assessment Report to DWR by July 1 of each year, consistent with the District's 2026 WSCP and Ordinance 2026-1. The Annual Assessment evaluates the near-term outlook for supplies and demands and identifies whether any of the six standard water shortage levels in the WSCP should be triggered. Together, the annual UWUO/water use report and the Annual Water Supply and Demand Assessment provide a complete picture of the District's short-term operational outlook and long-term water use efficiency performance.

MWDOC supports the District by providing technical assistance, regional data services, and coordination meetings throughout the year. MWDOC and Orange County retail agencies meet regularly through the MWDOC Water Use Efficiency Workgroup and the MWDOC Water Loss Control Workgroup to share data, calibrate UWUO calculation methodologies, and coordinate program implementation. The District will continue to leverage these regional resources, together with its own customer-facing programs, to remain in compliance with the Making Conservation a California Way of Life regulation through the 2027 enforcement transition and beyond.

Through the combination of the District's Water Shortage Contingency Response Ordinance 2026-1, full metering and conservation pricing (including the Drought Factor mechanism), robust public education, distribution system water loss control, and the comprehensive suite of MWDOC-administered residential, CII, and landscape programs, ETWD will continue to support efficient water use across its service area. These DMMs, together with the Making Conservation a California Way of Life compliance framework described in Section 9.3 and the Annual Water Supply and Demand Assessment process described in the District's 2026 WSCP, position the District to meet its retail customers' water use efficiency needs and the State's long-term water use efficiency objectives over the 25-year planning horizon of this UWMP.

CHAPTER 10: PLAN ADOPTION, SUBMITTAL, AND IMPLEMENTATION

The Water Code requires the UWMP to be adopted by the Supplier's governing body. Before adoption of the UWMP, the Supplier must notify the public and the cities and counties within its service area in accordance with the Water Code and hold a public hearing to receive input from the public on the UWMP. Following adoption, the Supplier must submit the UWMP to DWR and other required agencies and make the adopted Plan available for public review.

This chapter describes the process the District is following to coordinate with relevant public agencies, engage the public, and adopt, submit, and implement its 2025 UWMP. Coordination and outreach activities completed at the time this draft was circulated for public review are described in past tense. Activities scheduled to occur after circulation of this draft are described with anticipated dates. The final adopted 2025 UWMP will be updated, as needed, to reflect the actual dates of the public hearing, Board adoption, submittal, and public availability.

10.1 Overview

Recognizing that close coordination with relevant public agencies is important to the success of its UWMP, the District has coordinated with regional and local agencies in preparing this planning document. The District is also encouraging public involvement through circulation of this draft 2025 UWMP for public review and through a public hearing, which will provide residents, interested agencies, stakeholders, and other members of the public an opportunity to learn about and comment on the District's water supply planning, reliability, conservation, and shortage response planning.

Table 10-1 summarizes external coordination and outreach activities carried out by the District and their corresponding dates. The UWMP checklist to confirm compliance with the Water Code is provided in Appendix A.

Table 10-1A: External Coordination and Outreach

External Coordination and Outreach	Date	Reference
Notified the cities and counties within the Supplier's service area that Supplier is preparing an updated UWMP (at least 60 days prior to public hearing)	3/24/2026	Appendix I
Public Hearing Notice	5/14/2026 & 5/21/2026	Appendix I
Held Public Hearing	5/28/2026	Appendix I
Adopted UWMP	5/28/2026	Appendix J
Submitted UWMP to DWR (no later than 30 days after adoption)	Pending	-

External Coordination and Outreach	Date	Reference
Submitted UWMP to the California State Library (no later than 30 days after adoption)	Pending	-
Submitted UWMP to the cities and counties within the Supplier's service area (no later than 30 days after adoption)	Pending	-
Made UWMP available for public review (no later than 30 days after filing with DWR)	Pending	-

The public hearing and Board consideration of the 2025 UWMP is scheduled for the regularly scheduled Board meeting on May 28, 2026. If adopted, a copy of the adopted resolution will be provided in Appendix J of the final 2025 UWMP.

10.2 Agency Coordination

The Water Code requires Suppliers preparing UWMPs to notify any city or county within their service area at least 60 days prior to the public hearing. As shown in Table 10-1, the District sent a Letter of Notification to the cities within its service area and the County of Orange on March 24, 2026, stating that it was in the process of preparing an updated UWMP. The notification letters are provided in Appendix I.

The District's water supply planning relates to the policies, rules, and regulations of its regional and local water providers. The District has coordinated with relevant agencies in preparing this 2025 UWMP, and the planning documents used to support development of this UWMP are listed in Section 2.2.1.

Table 10-1: Retail: Notification to Cities and Counties

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)**
Aliso Viejo	Yes	Yes
Laguna Hills	Yes	Yes
Laguna Woods	Yes	Yes
Lake Forest	Yes	Yes
Mission Viejo	Yes	Yes
County Name **Drop Down List**	60 Day Notice **Drop Down (yes/no)**	Notice of Public Hearing **Drop Down (yes/no)**
Orange County	Yes	Yes
NOTES:		

10.3 Public Participation

The District is encouraging community and public-interest involvement in this 2025 UWMP update through circulation of this draft for public review and through a public hearing scheduled for May 28, 2026. As part of the 2025 UWMP update process, the District is providing interested agencies, stakeholders, and members of the public an opportunity to review and comment on the draft 2025 UWMP, including the District's water supply planning, water service reliability and drought risk assessments, demand management measures, water use efficiency and Making Conservation a California Way of Life compliance context, and Water Shortage Contingency Plan.

Copies of the draft 2025 UWMP are being made available for public inspection at the District's office during the public review period. An electronic copy is also being posted on the District's website at etwd.com.

Public hearing notifications were published in local newspapers. A copy of the published Notice of Public Hearing is included in Appendix I.

The public hearing is scheduled to be held during a regularly scheduled meeting of the Board of Directors on May 28, 2026, at the District's office. At the hearing, the Board will receive public comment on the draft 2025 UWMP and the draft 2026 Water Shortage Contingency Plan prior to considering their adoption.

10.4 UWMP Submittal

Following the close of the public review period and consideration of public comments received, the Board of Directors is scheduled to consider the 2025 UWMP for adoption at its regularly scheduled meeting on May 28, 2026, immediately after the public hearing. If adopted, the resolution adopting the Plan will be included in Appendix J of the final 2025 UWMP.

Pursuant to California Water Code Sections 10621, 10635, and 10644, no later than 30 days after Board adoption, the District will submit the adopted 2025 UWMP and 2026 WSCP to DWR, the California State Library, the cities within the District's service area, and the County of Orange. These submittals are anticipated to occur by June 15, 2026. The submittal to DWR will be made electronically through DWR's online submittal tool, the WUEdata Portal. The District will make the adopted Plan available for public review on its website no later than 30 days after filing with DWR.

10.5 Amending the Adopted UWMP or WSCP

If DWR review or other circumstances require amendments to the adopted UWMP, the District will make any necessary amendments and will follow applicable requirements for notification, public hearing, adoption, and submittal of the amended UWMP.

If the District revises its WSCP after UWMP is approved by DWR, then an electronic copy of the revised WSCP will be submitted to DWR within 30 days of its adoption.

CHAPTER 11: REFERENCES

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UWMP

APPENDIX A

DWR 2025 UWMP Checklist

2025 UWMP Checklist

Retail (x = required)	Order	2025 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	Relevant Submittal Table	2025 UWMP Location
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	Ch. 1, Sections 1.1–1.3, pp. 5–6; Chs. 4, 6, 7, 9; Executive Summary, pp. 1–4
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	Executive Summary, pp. 1–4; Ch. 1, Sections 1.1–1.3, pp. 5–6
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	Ch. 2, Section 2.1, p. 7
x	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	Ch. 2, Section 2.1 and Table 2-1, p. 7
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	Ch. 2, Section 2.1 and Table 2-2, pp. 7–8
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	Ch. 2, Section 2.1 and Table 2-3, p. 8
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	Ch. 2, Section 2.2.3, p. 11; Ch. 10, Sections 10.2–10.3, pp. 96–97; App. I
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	Ch. 2, Sections 2.2.1–2.2.2, pp. 9–10; Ch. 10, Section 10.2, p. 96
x	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	Ch. 2, Section 2.2.2 and Table 2-4, p. 10
n/a	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	N/A – wholesale supplier requirement; ETWD is a retail supplier
x	3	Chapter 3.0	10631(a)	Describe the Supplier service area.	System description	n/a	Ch. 3, Sections 3.1–3.2, pp. 12–15; Figs. 3-1 and 3-2
x	3.3	Section 3.3	10631(a)	Describe the climate of the Supplier's service area.	System description	n/a	Ch. 3, Section 3.3, p. 15
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	Ch. 3, Section 3.4.1 and Table 3-1, p. 16
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	Ch. 3, Section 3.4.2, pp. 16–17
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	Ch. 3, Sections 3.5.1–3.5.2 and Table 3-2, pp. 17–19
x	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	Ch. 4, Sections 4.1–4.2 and Tables 4-A, 4-1, 4-2, pp. 20–22
x	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	Ch. 4, Section 4.3 and Table 4-4, pp. 24–25
x	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	Ch. 4, Section 4.3 and Table 4-5, pp. 24–26
x	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	Ch. 4, Section 4.2.2 and Table 4-3, pp. 23–24
x	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	Ch. 4, Section 4.2.2 and Table 4-3, pp. 23–24; Ch. 9, pp. 80–94
x	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	Ch. 4, Sections 4.2.1–4.2.2, pp. 22–24; Ch. 11 References, p. 98
x	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	Ch. 4, Section 4.2.2 and Table 4-3, pp. 23–24
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	Ch. 7, Sections 7.2.1 and 7.5, pp. 59–69; Table 7-5, p. 69
n/a	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	N/A – wholesale supplier requirement; ETWD is a retail supplier
x	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	Ch. 5, Sections 5.1–5.3 and Table 5-1, pp. 28–29; App. D
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	Ch. 6, Section 6.1 and Tables 6-1, 6-2, pp. 30–31
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	Ch. 6, Sections 6.1–6.2 and Ch. 7, Sections 7.1–7.3, pp. 30–40, 57–64
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	Ch. 6, Section 6.3 and Table 6-3, p. 41
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	Ch. 6, Section 6.3, p. 41
x	6.2	Section 6.2.2	10631(b)(4)(B)	Describe the groundwater basin.	System supplies	n/a	Ch. 6, Section 6.3, p. 41
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	Ch. 6, Section 6.3, p. 41
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	Ch. 6, Section 6.3, p. 41
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	Ch. 6, Section 6.3, p. 41

2025 UWMP Checklist

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	Ch. 6, Section 6.3 and Table 6-3, p. 41
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	Ch. 6, Section 6.3; Table 6-2/6-3, pp. 31, 41
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	Ch. 6, Section 6.1 and Tables 6-1 and 6-2, pp. 30–31
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	Ch. 6, Section 6.8, pp. 52–54
x	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	Ch. 6, Section 6.6.2 and Table 6-4, pp. 45–46
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	Ch. 6, Section 6.6.2 and Table 6-5, pp. 45–47
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	Ch. 6, Section 6.6.3 and Table 6-6, pp. 48–49
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	Ch. 6, Sections 6.6.4–6.6.5 and Table 6-6, pp. 48–50
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	Ch. 6, Section 6.6.4 and Tables 6-6, 6-7, pp. 48–50
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	Ch. 6, Section 6.6.5 and Table 6-8, pp. 50–51
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	Ch. 6, Section 6.6.6, p. 51
x	6.2	Section 6.2.6	10631(g)	Describe desalinated water project opportunities for long-term supply.	System supplies	6-7	Ch. 6, Section 6.7, p. 52
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	Ch. 6, Section 6.9 and Table 6-9, pp. 54–55
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	Ch. 6, Section 6.10, p. 55
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	Ch. 7, Section 7.2.3, pp. 61–62
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	Ch. 7, Sections 7.1 and 7.3; Tables 7-1 through 7-4, pp. 57–65
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	Ch. 7, Section 7.4, pp. 65–67
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	Ch. 7, Section 7.5, pp. 67–69
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	Ch. 7, Section 7.5.1, p. 67
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	Ch. 7, Section 7.5.3, p. 69
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	Ch. 7, Section 7.5.2 and Table 7-5, p. 69
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	Ch. 7, Sections 7.2.1–7.2.4 and 7.5.1, pp. 59–67
x	8	Chapter 8	10632(a)	Provide a water shortage contingency plan (WSCP) with specified elements below.	Water shortage contingency planning	n/a	Ch. 8, Sections 8.1–8.4, pp. 71–79; App. G (WSCP)
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	Ch. 8, Sections 8.1–8.3, pp. 71–76; App. G (WSCP)
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	Ch. 8, Sections 8.2–8.3, pp. 71–76; App. G (WSCP)
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	Ch. 8, Section 8.3, pp. 72–76; App. G (WSCP)
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	Ch. 8, Section 8.3 and Tables 8-1A and 8-1, pp. 72–74; App. G (WSCP)
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	Ch. 8, Section 8.3 and Table 8-1, p. 74; App. G (WSCP)
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	Ch. 8, Section 8.3 and Table 8-2, pp. 72–76; App. G (WSCP)
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	Ch. 8, Section 8.3, pp. 72–76; Table 8-3, App. B; App. G (WSCP)
x	8.4	Section 8.4	10632(a)(4)(C)	Specify locally appropriate operational changes.	Water shortage contingency planning	8-2	Ch. 8, Section 8.3, pp. 72–76; Tables 8-2 and 8-3, pp. 76 and App. B; App. G (WSCP)
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	Ch. 8, Section 8.3, pp. 72–76; Tables 8-2 and 8-3, pp. 76 and App. B; App. G (WSCP)
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	Ch. 8, Section 8.4, pp. 77–79; Table 8-4, p. 78; App. G (WSCP)
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	Ch. 8, Section 8.4, pp. 77–79; Table 8-4, p. 78; App. G (WSCP)
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	Ch. 8, Section 8.3, pp. 72–76; App. G (WSCP)
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	Ch. 8, Section 8.3, pp. 72–76; App. G (WSCP)
x	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	Ch. 8, Section 8.3, pp. 72–76; App. G (WSCP)
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	Ch. 8, Section 8.3, pp. 72–76; App. G (WSCP)
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	Ch. 8, Section 8.3, pp. 72–76; App. G (WSCP)

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	Ch. 8, Section 8.3, pp. 72–76; App. G (WSCP)
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	Ch. 8, Section 8.3, pp. 72–76; App. G (WSCP)
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	Ch. 8, Section 8.3, pp. 72–76; App. G (WSCP)
x	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	Ch. 8, Section 8.3, pp. 72–76; App. G (WSCP)
x	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	Ch. 8, Section 8.3, pp. 72–76; App. G (WSCP)
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	Ch. 8, Section 8.3, pp. 72–76; App. G (WSCP)
x	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	Ch. 8, Section 8.3, pp. 72–76; App. G (WSCP)
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	Ch. 8, Section 8.3, pp. 72–76; App. G (WSCP)
x	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	Ch. 9, Sections 9.1–9.2, pp. 80–91; App. H
n/a	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	N/A – wholesale supplier requirement; ETWD is a retail supplier
x	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	Ch. 10, Sections 10.1–10.3, pp. 95–97; Apps. I–J
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	Ch. 10, Section 10.2 and Table 10-1, p. 96
x	10.4	Section 10.4	10621(f)	Each urban water Supplier shall update and submit its 2025 plan to DWR by July 1, 202 6.	Plan adoption, submittal, and implementation	n/a	Ch. 10, Section 10.4, p. 97
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	Ch. 10, Sections 10.2–10.3, pp. 96–97; Apps. I–J
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	Ch. 10, Section 10.2 and Table 10-1, p. 96
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	Ch. 10, Section 10.3, p. 97; Apps. I–J
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	Ch. 10, Section 10.4, p. 97
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	Ch. 10, Section 10.4, p. 97
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	Ch. 10, Section 10.4, p. 97
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	Ch. 10, Section 10.5, p. 97
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	Ch. 10, Section 10.4, p. 97
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	Ch. 10, Section 10.4, p. 97
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	N/A – ETWD is not regulated by the CPUC; no Section 10.6 in draft

UWMP

APPENDIX B

DWR Submittal Tables

Submittal Table 2-1 Retail: Public Water Systems

Public Water System Number	Public Water System Name	Number of Municipal Connections 2025	Volume of Water Supplied 2025 (AF)
CA3010079	El Toro Water District	9,971	6,378
	Total	9,971	6,378

NOTES: Water supply volume shown in the table represents potable water connections only and is reported in acre-feet (AF) for FY 2024–25. Recycled water deliveries for FY 2024–25 totaled 1,408 AF across 277 connections**.**

Submittal Table 2-2: Plan Identification

Select One	Type of Plan	Name of Regional Alliance or RUWMP (Drop Down List)
☑	**Individual UWMP**	
	If Water Supplier is also a member of a SB X7-7 Regional Alliance, select name from the drop-down.	Orange County 20x2020 Regional Alliance
☐	**Regional Urban Water Management Plan (RUWMP)**	
	If Supplier selected RUWMP, select name from the drop-down.	

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
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.

Wholesale Water Supplier Name
Municipal Water District of Orange County
NOTES:

Submittal Table 3-1 Retail: Population - Current and Projected
Water Code Section 10631(a)

Population Served	2025	2030	2035	2040	2045	2050(opt)
	53,415	53,791	54,441	54,744	54,712	54,440

NOTES: Source - California Department of Finance E-5 January 1, 2025 city population estimates as the current-year baseline. Future projections were developed by applying Orange County population growth factors from the Center for Demographic Research's (CDR) Orange County Projections 2022 to the 2025 ETWD service-area baseline.

Submittal Table 4-1 Retail: Total Uses for Potable and Non-Potable Water — Actual
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		**Potable or Non-Potable** (OPTIONAL) Drop down list	Volume
Single Family		Potable	1,831
Multi-Family		Potable	2,573
Commercial		Potable	786
Institutional/Governmental		Potable	64
Landscape	Represents large landscape (with irrigation meters) served by potable water and not recycled water	Potable	1,117
Landscape	Landscape Irrigation served by recycled water.	Non-Potable	1,408
Distribution System Water Loss		Potable	311
Other (optional)	Flooding Meters and Private Fire Systems	Potable	7
		Subtotal Potable	6,689
		Subtotal Non-Potable	1,408
		Total	8,097

NOTES: Volume reported in AF. ETWD reports water loss on a calendar year basis. Water loss data is from the most recently submitted water audit for CY 2024.

Submittal Table 4-2 Retail: Total 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		**Potable or Non-Potable** (OPTIONAL) Drop down list	**2030**	**2035**	**2040**	**2045**	**2050**
Single Family		Potable	1,711	1,704	1,703	1,693	1,682
Multi-Family		Potable	2,602	2,648	2,680	2,662	2,639
Commercial		Potable	531	549	566	566	566
Institutional/Governmental		Potable	60	60	60	60	60
Landscape	Potable DIM	Potable	1,136	1,138	1,140	1,138	1,138
Landscape	RW	Non-Potable	1,431	1,431	1,432	1,431	1,431
Distribution System Water Loss		Potable	227	229	230	229	228
Other (optional)	Flooding Meters and Private Fire Systems	Potable	7	7	7	7	7
		Subtotal Potable	6,274	6,335	6,386	6,355	6,320
		Subtotal Non-Potable	1,431	1,431	1,432	1,431	1,431
		Total	7,705	7,766	7,818	7,786	7,751

NOTES: Volume reported in AF.

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? **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.	Section 8 and Section 9
Are Lower Income Residential Demands Included In Projections? **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.	
NOTES:	

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)
CA3010079	**2020**	Yes
	2021	Yes
	2022	Yes
	2023	Yes
	2024	Yes

NOTES: ETWD's submitted water loss audit reports can be accessed at WUEdata - Water Audit Report Data. https://wuedata.water.ca.gov/awwa_plans

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

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				
		State Water Board Standard		Most Recent AWWA Water Loss Audit		Real Water Loss Per Unit per Day	State Water Board Standard		Most Recent AWWA Water Loss Audit		Apparent Water Loss Per Unit per Day
		2028 Real Water Loss Standard per Unit per day	Units for Real Water Loss Drop down list	Number of Units (Connections or Miles corresponding with units selected)	Volume of Total Real Loss (from AWWA Water Loss Audit) (AF)		2028 Apparent Water Loss Standard per Unit per Day	Units for Apparent Water Loss	Number of Connections	Volume of Total Apparent Loss (from AWWA Water Loss Audit) (AF)	
CA3010079	Yes	24.3	Gallons per Service Connection per Day (GPSCD)	9971	250.116	22.4	7.1	Gallons per Service Connection per Day (GPSCD)	9971	60.649	5.4
Water Board's Calculated Water Loss Standards							Water Board's Calculated Water Loss Standards				

NOTES: ETWD reports water loss on a calendar year basis. Water loss data is from the most recently submitted water audit for CY 2024

Submittal Table 5-1 Retail: SB X7-7 2020 Target Progress
Water Code Section 10608.40

☐ **Check the box if the Supplier was not an Urban Water Supplier during or before the 2020 UWMP reporting cycle. Proceed to the next table.**

Was Supplier part of a merger or consolidation since 2020?	Regional Alliance Target or Individual Target? Drop down list	2020 Target	Actual 2020 GPCD	Did Supplier Achieve Targeted Reduction for 2020?
No	Individual Target	163	134	Yes

NOTES:

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.
NOTES: ETWD does not pump groundwater as part of regular water supply.	

Submittal Table 6-2 Retail: Wastewater Collected Within Service Area
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**
El Toro Water District	Estimated	4,280	El Toro Water Dist WWRF, Place ID 271777	Yes
Total Wastewater Received from UWMP Service Area in 2025:		4,280		

NOTES: From influent flow data FY 2024-25

Submittal Table 6-3 Retail: Wastewater Treatment and Outcomes Within UWMP Service Area
Water Code Section 10633(b)

☐ **Check the box if no wastewater is treated or disposed of within the UWMP service area.**
Proceed to the next table.

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)	**2025 Outcomes of Treated Wastewater**										
				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
El Toro Water Dist WWRF, Place ID 271777	No	4,280	4,280	Tertiary	1,408		0		0		0		0	
Total		4,280	4,280		1,408		0		0		0		0	

NOTES:

Submittal Table 6-4 Retail: Recycled Water Direct Beneficial Uses Within Service Area
Water Code Section 10633 (c),(d),(e)

☐ Check box if 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) :	El Toro Water District
Name of Supplier Operating the Recycled Water Distribution System (OPTIONAL) :	El Toro Water District
Volume of Supplemental Water Added in 2025 (OPTIONAL) :	4.99 AF
Source of 2025 Supplemental Water (OPTIONAL) :	Potable Water

Use Type **Drop down list**	**Potable or Non-Potable** (after treatment if treated) (OPTIONAL) Drop down list	Additional Information (as needed)	2025 (AF)	2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)	**Potential Recycled Water Use**	
									Volume	Narrative page number (OPTIONAL)
Landscape irrigation (exc golf courses)	Non-Potable	Landscape	1108	1127	1127	1127	1127	1127	100-500	
Golf course irrigation	Non-Potable	Golf Course	300	304	304	304	304	304	0	
		Subtotal Potable	0	0	0	0	0	0	0	
		Subtotal Non-Potable	1,408	1,431	1,431	1,431	1,431	1,431	100-500	
		Total	1408	1431	1431	1431	1431	1431	100-500	

NOTES:

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 (AF)	2025 Actual Use (AF)
Landscape irrigation (exc golf courses)	1,181	1,108
Golf course irrigation	304	300
Total	1,485	1,408

NOTES:

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.		
Chapter 6.9	Provide page location of narrative in the UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use (AF)
Distribution System Expansion	Phase III	2050	100-500
		Total (AF)	100-500
		Unit Conversion to AF	100-500

NOTES:

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. Proceed 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)	**Potable or Non-Potable** (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					
NOTES:							

Submittal Table 6-8 Retail: Water Supplies — Actual
Water Code Section 10631(b)

Water Supply	Additional Description (as needed)	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		**Potable or Non-Potable** (after treatment if treated) (OPTIONAL) Drop Down list	Actual Volume (AF)
Purchased or Imported Water	Purchased from MWDOC	Potable	6,563
Recycled Water	Treated at ETWD's WRP	Non-Potable	1,408
Surface water (not desalinated)	Irvine Lake via Baker WTP	Non-Potable	137
		Subtotal Potable	6,563
		Subtotal Non-Potable	1,545
		Total	8,108

NOTES:

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

Water Supply	Additional Detail on Water Supply	Potable or Non-Potable (after treatment if treated) (OPTIONAL) Drop Down list	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			Reasonably Available Volume (AF)	Reasonably Available Volume (AF)	Reasonably Available Volume (AF)	Reasonably Available Volume (AF)	Reasonably Available Volume (AF)
Purchased or Imported Water		Potable	6,274	6,335	6,386	6,355	6,320
Recycled Water		Non-Potable	1,431	1,431	1,432	1,431	1,431
		Subtotal Potable	6,274	6,335	6,386	6,355	6,320
		Subtotal Non-Potable	1,431	1,431	1,432	1,431	1,431
		Total	7,705	7,766	7,818	7,786	7,751

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 (AF)	**% of Average Supply**
Average Year	2024-2025		100%
Single-Dry Year	2020-2021		106%
Consecutive Dry Years 1st Year	2017-2018		106%
Consecutive Dry Years 2nd Year	2018-2019		112%
Consecutive Dry Years 3rd Year	2019-2020		113%
Consecutive Dry Years 4th Year	2020-2021		115%
Consecutive Dry Years 5th Year	2021-2022		117%

NOTES: The 5-year drought sequence corresponds to the recent driest five-consecutive-year period in MWDOC's service area. Because the District balances total supply to total demand using imported water from MWDOC/MET to close any local supply gap, the percent of average supply equals the percent of average demand under each hydrologic condition.

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 (AF)
Supply totals (autofill from Submittal Table 6-9 R)	7,705	7,766	7,818	7,786	7,751
Use totals (autofill from Submittal Table 4-2 R)	7,705	7,766	7,818	7,786	7,751
Surplus/(shortfall)	0	0	0	0	0

NOTES: Imported water is available to close any local water supply gap.

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 (AF)
Supply totals	8,189	8,252	8,309	8,273	8,235
Use totals	8,189	8,252	8,309	8,273	8,235
Surplus/(shortfall)	0	0	0	0	0

NOTES: Imported water is available to close any local water supply gap.

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 (AF)
First year	Supply totals	8,189	8,252	8,309	8,273	8,235
	Use totals	8,189	8,252	8,309	8,273	8,235
	Surplus/(shortfall)	0	0	0	0	0
Second year	Supply totals	8,626	8,693	8,752	8,716	8,676
	Use totals	8,626	8,693	8,752	8,716	8,676
	Surplus/(shortfall)	0	0	0	0	0
Third year	Supply totals	8,680	8,747	8,807	8,770	8,730
	Use totals	8,680	8,747	8,807	8,770	8,730
	Surplus/(shortfall)	0	0	0	0	0
Fourth year	Supply totals	8,844	8,913	8,973	8,936	8,896
	Use totals	8,844	8,913	8,973	8,936	8,896
	Surplus/(shortfall)	0	0	0	0	0
Fifth year	Supply totals	8,994	9,064	9,126	9,088	9,047
	Use totals	8,994	9,064	9,126	9,088	9,047
	Surplus/(shortfall)	0	0	0	0	0

NOTES: Modeled based on projections from customer demand. Imported water is available to close any local water supply gap.

Submittal Table 7-5 Retail: Five-Year Drought Risk Assessment Water Code Section 10635(b)(3)

2026	Total
Total Water Use (AF)	7,751
Total Supplies (AF)	7,751
Surplus/Shortfall w/o WSCP Action	0
2027	**Total**
Total Water Use (AF)	7,737
Total Supplies (AF)	7,737
Surplus/Shortfall w/o WSCP Action	0
2028	**Total**
Total Water Use (AF)	7,736
Total Supplies (AF)	7,736
Surplus/Shortfall w/o WSCP Action	0
2029	**Total**
Total Water Use (AF)	7,708
Total Supplies (AF)	7,708
Surplus/Shortfall w/o WSCP Action	0
2030	**Total**
Total Water Use (AF)	7,705
Total Supplies (AF)	7,705
Surplus/Shortfall w/o WSCP Action	0

NOTES: Modeled based on projections from customer demand. Imported water is available to close any local water supply gap.

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)

Yes	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)	
1	Other Purchases	Volume	0 - 335	Additional imported water purchases through MWDOC
2	Other Purchases	Volume	0 - 670	Additional imported water purchases through MWDOC
3	Other Purchases	Volume	0 - 1000	Additional imported water purchases through MWDOC
4	Other Purchases	Volume	0 - 1340	Additional imported water purchases through MWDOC
5	Other Purchases	Volume	0 - 2000	Additional imported water purchases through MWDOC and emergency supply via South Orange County interconnections
6	Other Purchases	Volume	0 - 2000	Additional imported water purchases through MWDOC and emergency supply via South Orange County interconnections

NOTES: Shortage gap reduction values are estimated as percentages of 2025 potable demand.

Submittal Table 8-3 Retail: Demand Reduction Actions
Water Code Section 10632(a)(4)(B),(D), and €

Yes	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)		
1	Expand Public Information Campaign	Volume	0 - 200	Community Outreach and Messaging. Expand Public Information Campaign to include Level 1 demand reduction actions, increase messaging frequency, increase public outreach.	No
2	Expand Public Information Campaign	Volume	0 - 200	Community Outreach and Messaging. Expand Public Information Campaign to include Level 2 demand reduction actions, increase messaging frequency, increase public outreach. Direct communication and educational outreach with customers not in compliance with the Permanent Water Conservation Requirements.	No
2	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Volume	0 - 135	Leaks, breaks, and other malfunctions must be corrected in no more than four (4) days of District notification.	No
3	Landscape - Limit landscape irrigation to specific days	Volume	0 - 335	Watering or irrigating of lawns, landscaping, and other vegetated areas may only take place no more than three (3) days per week from May to September and no more than two (2) days per week from October to April. This does not apply to watering with a hand-held bucket or similar container, watering with a hand-held hose equipped with a positive self-closing shut off hose nozzle, or irrigation systems that exclusively use very-low flow drip type systems.	Yes
3	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Volume	0 - 135	Leaks, breaks, and other malfunctions must be corrected in no more than four (3) days of District notification.	Yes
3	Water Features - Restrict water use for decorative water features, such as fountains	Volume	0 - 70	Filling or refilling of ornamental lakes and ponds is prohibited except for those that sustain aquatic life provided that such life is of significant value and was actively managed in the water feature prior to declaring the shortage.	Yes

3	Other water feature or swimming pool restriction	Volume	0 - 135	Filling residential swimming pools or outdoor spas is prohibited; refilling more than one (1) foot of water is prohibited. This does not apply to individuals who, due to health reasons or medical conditions, find it necessary to fill or refill their pools or spas or individuals who have not filled their pool in the last 24 months and who adhere to Best Practices for the construction and operation of pools and spas.	Yes
3	Implement or Modify Drought Factor per the Water Budget Based Tiered Conservation Rate Structure	Volume	0 - 335	Impose 'drought factor' on existing tiered rate structure per Board approval. See Appendix E.	Yes
3	Implement or Modify Water Shortage Rate Surcharge	Volume	0 - 650	Implement or modify Water Shortage Rate Surcharge per Board approval. See Appendix B.	Yes
3	Expand Public Information Campaign	Volume	0 - 200	Community Outreach and Messaging. Expand Public Information Campaign to include Level 3 demand reduction actions, increase messaging frequency, increase public outreach.	Yes
3	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	Volume	0 - 70		Yes
3	Other	Volume	0 - 70	The District may reduce non-potable water allocations in all categories to meet the available water supply.	Yes
4	Landscape - Limit landscape irrigation to specific days	Volume	0 - 335	Watering or irrigating of lawns, landscaping, and other vegetated areas may only take place no more than two (2) days per week from May to September and no more than two (1) day per week from October to April. This does not apply to watering with a hand-held bucket or similar container, watering with a hand-held hose equipped with a positive self-closing shut off hose nozzle, or irrigation systems that exclusively use very-low flow drip type systems.	Yes
4	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Volume	0 - 135	Leaks, breaks, and other malfunctions must be corrected in no more than three (2) days of District notification.	Yes
4	Implement or Modify Drought Factor per the Water Budget Based Tiered Conservation Rate Structure	Volume	0 - 335	Impose 'drought factor' on existing tiered rate structure per Board approval. See Appendix E.	Yes
4	Implement or Modify Water Shortage Rate Surcharge	Volume	0 - 650	Implement or modify Water Shortage Rate Surcharge per Board approval. See Appendix B.	Yes
4	Expand Public Information Campaign	Volume	0 - 200	Community Outreach and Messaging. Expand Public Information Campaign to include Level 4 demand reduction actions, increase messaging frequency, increase public outreach.	Yes

4	Other	Volume	0 - 335	The District may reduce non-potable water allocations in all categories to meet the available water supply.	Yes
5	Landscape - Prohibit all landscape irrigation	Volume	0 - 335	Watering or irrigating of lawns, landscaping, and other vegetated areas may only take place no more than one (1) day per week from May to September and no more than one (1) day per week from October to April. This does not apply to watering with a hand-held bucket or similar container, watering with a hand-held hose equipped with a positive self-closing shut off hose nozzle, or irrigation systems that exclusively use very-low flow drip type systems.	Yes
5	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Volume	0 - 135	Leaks, breaks, and other malfunctions must be corrected in no more than two (1) days of District notification.	Yes
5	Other water feature or swimming pool restriction	Volume	0 - 70	Filling residential swimming pools or outdoor spas is prohibited; refilling more than one (1) foot of water is prohibited. This does not apply to individuals who, due to health reasons or medical conditions, find it necessary to fill or refill their pools or spas.	Yes
5	Landscape - Other landscape restriction or prohibition	Volume	0 - 135	No new potable water service, new temporary meters, and statement of immediate ability to serve or provide water service will be issued except under the following circumstances: 1) a valid, unexpired building permit has been issued for the project, 2) the project is necessary to protect the public health, safety, and welfare, or the applicant provides substantial evidence of an enforceable commitment that water demands for the project will be offset prior to the provision of a new water meter(s) to the satisfaction of the District.	Yes
5	Other	Volume	0 - 335	Customers using over 10,000 units per year are required to submit a Water Conservation Plan and report quarterly progress.	Yes
5	Expand Public Information Campaign	Volume	0 - 200	Community Outreach and Messaging. Expand Public Information Campaign to include Level 5 demand reduction actions, increase messaging frequency, increase public outreach.	Yes
5	Implement or Modify Drought Factor per the Water Budget Based Tiered Conservation Rate Structure	Volume	0 - 335	Impose 'drought factor' on existing tiered rate structure per Board approval. See Appendix E.	Yes
5	Implement or Modify Water Shortage Rate Surcharge	Volume	0 - 650	Implement or modify Water Shortage Rate Surcharge per Board approval. See Appendix B.	Yes

6	Landscape - Prohibit all landscape irrigation	Volume	0 - 650	This does not apply towards the following circumstances: 1) maintenance of vegetation that are watered using a hand-held bucket or similar container or a hand-held hose equipped with a positive self-closing water shut-off nozzle or device, 2) maintenance of existing landscape necessary for fire protection, 3) maintenance of existing landscape for soil erosion, and 4) public works projects and actively-irrigated environmental mitigation projects. Agency may shut off all non-essential water service.	Yes
6	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Volume	0 - 135	Leaks, breaks, and other malfunctions must be corrected in no more than one (1) days of District notification.	Yes
6	Expand Public Information Campaign	Volume	0 - 200	Community Outreach and Messaging. Expand Public Information Campaign to include Level 6 demand reduction actions, increase messaging frequency, increase public outreach.	Yes
6	Implement or Modify Drought Factor per the Water Budget Based Tiered Conservation Rate Structure	Volume	0 - 335	Impose 'drought factor' on existing tiered rate structure per Board approval. See Appendix E.	Yes
6	Implement or Modify Water Shortage Rate Surcharge	Volume	0 - 650	Implement or modify Water Shortage Rate Surcharge per Board approval. See Appendix B.	Yes
6	Other	Volume	0 - 2000	Water use for public health and safety purposes only. Customer rationing may be implemented.	Yes
NOTES: Shortage gap reduction values are estimated as percentages of 2025 potable demand.					

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)**
Aliso Viejo	Yes	Yes
Laguna Hills	Yes	Yes
Laguna Woods	Yes	Yes
Lake Forest	Yes	Yes
Mission Viejo	Yes	Yes
County Name **Drop Down List**	60 Day Notice **Drop Down (yes/no)**	Notice of Public Hearing **Drop Down (yes/no)**
Orange County	Yes	Yes
NOTES:		

UWMP

APPENDIX C

Reduced Delta Reliance

EL TORO WATER DISTRICT

REDUCED DELTA RELIANCE REPORTING

C.1 Background

The Delta Plan is a comprehensive, long-term resource management plan for the Sacramento-San Joaquin Bay Delta that was developed as part of the Delta Reform Act of 2009 (Water Code Section 85000 et seq.) and includes both regulatory policies and recommendations aimed at promoting a healthy Delta ecosystem. Under the Delta Reform Act of 2009, state and local public agencies proposing a covered action (e.g., a project) in the Delta, prior to initiating the implementation of that action, must prepare a written certification of consistency with detailed findings as to whether the covered action is consistent with applicable Delta Plan policies and submit that certification to the Delta Stewardship Council. Anyone may appeal a certification of consistency, and if the Delta Stewardship Council grants the appeal, the covered action may not be implemented until the agency proposing the covered action submits a revised certification of consistency, and either no appeal is filed, or the Delta Stewardship Council denies the subsequent appeal.

Because El Toro Water District (ETWD or District) is a member agency of the Municipal Water District of Orange County (MWDOC) and a recipient of Metropolitan Water District of Southern California (Metropolitan or MET) supplies, the District may receive water under a future "covered action" through MET's participation in the proposed Delta Conveyance Project.

An urban water supplier that anticipates participating in or receiving water from a proposed covered action, such as the Delta Conveyance Project, should provide information in their 2015, 2020, and 2025 Urban Water Management Plans (UWMPs) that can then be used in the covered action process to demonstrate consistency with Delta Plan Policy WR P1, Reduce Reliance on the Delta Through Improved Regional Water Self-Reliance (WR P1). Delta Plan Policy WR P1 (California Code of Regulations, Title 23, Section 5003) is one of fourteen regulatory policies in the Delta Plan. WR P1 identifies UWMPs as the tool to demonstrate consistency with state policy to reduce reliance on the Delta for any supplier that is participating in, conducting a proposed covered action, or receiving Delta water from a proposed covered action. Within the supplier's UWMP, information should be provided that can be used to demonstrate consistency with this policy.

WR P1 details what is needed for a covered action to demonstrate consistency with reduced reliance on the Delta and improved regional self-reliance. WR P1 subsection (a) states that:

> *(a) Water shall not be exported from, transferred through, or used in the Delta if all of the following apply:*
>
> > *(1) One or more water suppliers that would receive water as a result of the export, transfer, or use have failed to adequately contribute to reduced reliance on the Delta and improved regional self-reliance consistent with all of the requirements listed in paragraph (1) of subsection (c);*
> >
> > *(2) That failure has significantly caused the need for the export, transfer, or use; and*
> >
> > *(3) The export, transfer, or use would have a significant adverse environmental impact in the Delta.*

WR P1 subsection (c)(1) further defines what adequately contributing to reduced reliance on the Delta means in terms of (a)(1) above.

> *(c)(1) Water suppliers that have done all the following are contributing to reduced reliance on the Delta and improved regional self-reliance and are therefore consistent with this policy:*
>
> > *(A) Completed a current Urban or Agricultural Water Management Plan (Plan) which has been reviewed by the California Department of Water Resources for compliance with the applicable requirements of Water Code Division 6, Parts 2.55, 2.6, and 2.8;*

> *(B) Identified, evaluated, and commenced implementation, consistent with the implementation schedule set forth in the Plan, of all programs and projects included in the Plan that are locally cost effective and technically feasible which reduce reliance on the Delta; and*
>
> *(C) Included in the Plan, commencing in 2015, the expected outcome for measurable reduction in Delta reliance and improvement in regional self-reliance. The expected outcome for measurable reduction in Delta reliance and improvement in regional self-reliance shall be reported in the Plan as the reduction in the amount of water used, or in the percentage of water used, from the Delta watershed. For the purposes of reporting, water efficiency is considered a new source of water supply, consistent with Water Code Section 1011(a).*

The analysis and documentation provided below include the elements described in WR P1(c)(1) that need to be included in the District's UWMP to support a certification of consistency for a future covered action.

C.2 Summary of Expected Outcomes for Reduced Reliance on the Delta

As stated in WR P1 (c)(1)(C), the policy requires that, commencing in 2015, UWMPs include expected outcomes for measurable reduction in Delta reliance and improved regional self-reliance. WR P1 further states that those outcomes shall be reported in the UWMP as the reduction in the amount of water used, or in the percentage of water used, from the Delta.

The expected outcomes for the District's regional self-reliance were developed using the approach and guidance described in Appendix C of DWR's Urban Water Management Plan Guidebook 2025 – Final Draft (Guidebook Appendix C) issued in February 2026. The data used in this analysis represent the total regional efforts of MET, MWDOC, and its member agencies, including the District, and were developed in conjunction with MET as part of the UWMP coordination process.

The following provides a summary of the near-term (2030) and long-term (2050) expected outcomes for the District's Delta reliance and regional self-reliance. The results show that as a region, MWDOC, MET, and its member agencies, including the District, are measurably reducing reliance on the Delta and improving regional self-reliance, both as an amount of water used and as a percentage of water used.

Expected Outcomes for Regional Self-Reliance for the District

- Near-term (2030) – Normal water year regional self-reliance is expected to increase by approximately 7,850 AF from the 2010 baseline; this represents an increase of about 59.1 percent of 2030 normal water year retail demands (Table C-3).
- Long-term (2050) – Normal water year regional self-reliance is expected to increase by nearly 7,945 AF from the 2010 baseline; this represents an increase of about 59.1 percent of 2050 normal water year retail demands (Table C-3).

C.3 Demonstration of Reduced Reliance on the Delta

The methodology used to determine the District's reduced Delta reliance and improved regional self-reliance is consistent with the approach detailed in DWR's UWMP Guidebook Appendix C, including the use of narrative justifications for the accounting of supplies and the documentation of specific data sources. Some of the key assumptions underlying the District's demonstration of reduced reliance include:

- All data were obtained from the current 2025 UWMP or previously adopted UWMPs and represent average or normal water year conditions.
- All analyses were conducted at the service area level, and all data reflect the total contributions of the District and MWDOC, in conjunction with information provided by MET.

- No projects or programs that are described in the UWMPs as “Projects Under Development” were included in the accounting of supplies.

Baseline and Expected Outcomes

In order to calculate the expected outcomes for measurable reduction in Delta reliance and improved regional self-reliance, a baseline is needed to compare against. This analysis uses a normal water year representation of 2010 as the baseline, which is consistent with the approach described in the Guidebook Appendix C. Data for the 2010 baseline were taken from the District's 2005 UWMP as the UWMPs generally do not provide normal water year data for the year that they are adopted (i.e., 2005 UWMP forecasts begin in 2010, 2010 UWMP forecasts begin in 2015, and so on).

Consistent with the 2010 baseline data approach, the expected outcomes for reduced Delta reliance and improved regional self-reliance for 2015 and 2020 were taken from the District's 2010 and 2015 UWMPs, respectively. Expected outcomes for 2025 were taken from the District's 2020 UWMP. Expected outcomes for 2030 through 2050 are from the current 2025 UWMP. Documentation of the specific data sources and assumptions are included in the discussions below.

Service Area Demands without Water Use Efficiency

In alignment with the Guidebook Appendix C, this analysis uses normal water year demands, rather than normal water year supplies, to calculate expected outcomes in terms of the percentage of water used. Using normal water year demands serves as a proxy for the amount of supplies that would be used in a normal water year, which helps alleviate issues associated with how supply capability is presented to fulfill requirements of the UWMP Act versus how supplies might be accounted for to demonstrate consistency with WR P1.

Because WR P1 considers water use efficiency savings a source of water supply, water suppliers such as the District need to explicitly calculate, and report water use efficiency savings separate from service area demands to accurately reflect normal water year demands in the calculation of reduced reliance. As explained in the Guidebook Appendix C, water use efficiency savings must be added back to the normal year demands to represent demands without water use efficiency savings accounted for; otherwise, the effect of water use efficiency savings on regional self-reliance would be overestimated. Tables C-1 and C-2 show the results of this adjustment for the District. Supporting narratives and documentation for the data shown in Tables C-1 and C-2 are provided below.

Table C-1: Calculation of Water Use Efficiency

Service Area Water Use Efficiency Demands (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045	2050 (Optional)
Service Area Water Demands with Water Use Efficiency Accounted For	10,984	10,075	8,321	7,252	6,274	6,335	6,386	6,355	6,320
Non-Potable Water Demands	575	1,200	1,660	1,485	1,431	1,431	1,432	1,431	1,431
Potable Service Area Demands with Water Use Efficiency Accounted For	10,409	8,875	6,661	5,767	4,843	4,904	4,954	4,924	4,889

Total Service Area Population	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045	2050 (Optional)
Service Area Population	47,807	48,579	47,911	53,415	53,791	54,441	54,744	54,712	54,440

Water Use Efficiency Since Baseline (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045	2050 (Optional)
Per Capita Water Use (GPCD)	194	163	124	96	80	80	81	80	80
Change in Per Capita Water Use from Baseline (GPCD)		(31)	(70)	(98)	(114)	(114)	(114)	(114)	(114)
Estimated Water Use Efficiency Since Baseline		1,702	3,771	5,863	6,869	6,949	6,965	6,988	6,964

Table C-2: Calculation of Service Area Water Demands Without Water Use Efficiency

Total Service Area Water Demands (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045	2050 (Optional)
Service Area Water Demands with Water Use Efficiency Accounted For	10,984	10,075	8,321	7,252	6,274	6,335	6,386	6,355	6,320
Reported Water Use Efficiency or Estimated Water Use Efficiency Since Baseline		1,702	3,771	5,863	6,869	6,949	6,965	6,988	6,964
Service Area Water Demands without Water Use Efficiency Accounted For	10,984	11,777	12,092	13,115	13,143	13,284	13,351	13,343	13,284

Service Area Demands with Water Use Efficiency

The service area demands shown in Table C-1 represent the total retail water demands for the District's service area and may include municipal and industrial demands, agricultural demands, recycled water demands, and storage replenishment demands. These demand types and the modeling methodologies used to calculate them are described in Section 4.3 of the District's 2025 UWMP.

Non-Potable Water Demands

The non-potable water demands shown in Table C-1 represent demands for non-potable recycled water served within the District's service area. Non-potable supplies have a demand hardening effect due to the inability to shift non-potable supplies to meet potable water demands. When water use efficiency or conservation measures are implemented, they fall solely on the potable water users. This is consistent with the approach for water conservation reporting used by the State Water Resources Control Board.

Total Service Area Population

The District's total service area population as shown in Table C-1 comes from the Center for Demographic Research, with actuals and projections further described in Section 3.4 of the District's 2025 UWMP.

Water Use Efficiency Since Baseline

The water use efficiency numbers shown in Tables C-1 and C-2 represent the formulation that the District utilized, consistent with Appendix C of the UWMP Guidebook approach.

Service area demands, excluding non-potable demands, are divided by the service area population to obtain per capita water use in the service area in gallons per capita per day (GPCD) for each five-year period. The change in per capita water use from the baseline is the comparative GPCD from that five-year period compared to the 2010 baseline. Changes in per capita water use over time are then applied back to the District's service area population to calculate the estimated WUE Supply. This estimated WUE Supply is considered an additional supply that may be used to show reduced reliance on Delta water supplies.

The demand and water use efficiency data shown in Tables C-1 and C-2 were collected from the following sources:

- Baseline (2010) values – District's 2005 UWMP
- 2015 values – District's 2010 UWMP
- 2020 values – District's 2015 UWMP
- 2025 values – District's 2020 UWMP
- 2030–2050 values – District's 2025 UWMP

It should be noted that the results of this calculation differ from what the District calculated under Section 5.2 pertaining to the Water Conservation Act of 2009 (SB X7-7) and the Urban Water Use Objective framework due to differing formulas.

C.4 Supplies Contributing to Regional Self-Reliance

For a covered action to demonstrate consistency with the Delta Plan, WR P1 subsection (c)(1)(C) states that water suppliers must report the expected outcomes for measurable improvement in regional self-reliance. Table C-3 shows expected outcomes for supplies contributing to regional self-reliance both in amount and as a percentage. The numbers shown in Table C-3 represent efforts to improve regional self-reliance for the District's entire service area and include the total contributions of the District. Supporting narratives and documentation for the data shown in Table C-3 are provided below.

The results shown in Table C-3 demonstrate that the District's service area is measurably improving its regional self-reliance. In the near-term (2030), the expected outcome for normal water year regional self-reliance increases by 7,850 AF from the 2010 baseline; this represents an increase of about 59.1 percent of 2030 normal water year retail demands. In the long-term (2050), normal water year regional self-reliance is expected to increase by 7,945 AF from the 2010 baseline; this represents an increase of about 59.1 percent of 2050 normal water year retail demands.

Table C-3: Calculation of Supplies Contributing to Regional Self-Reliance

Water Supplies Contributing to Regional Self-Reliance (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045	2050 (Optional)
Water Use Efficiency	-	1,702	3,771	5,863	6,869	6,949	6,965	6,988	6,964
Water Recycling	450	496	1,270	1,408	1,431	1,431	1,432	1,431	1,431
Stormwater Capture and Use									
Advanced Water Technologies									
Conjunctive Use Projects									
Local and Regional Water Supply and Storage Projects									
Other Programs and Projects the Contribute to Regional Self-Reliance									
Water Supplies Contributing to Regional Self-Reliance	450	2,198	5,041	7,271	8,300	8,380	8,397	8,419	8,395

Service Area Water Demands without Water Use Efficiency (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045	2050 (Optional)
Service Area Water Demands without Water Use Efficiency Accounted For	10,984	11,777	12,092	13,115	13,143	13,284	13,351	13,343	13,284

Change in Regional Self Reliance (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045	2050 (Optional)
Water Supplies Contributing to Regional Self-Reliance	450	2,198	5,041	7,271	8,300	8,380	8,397	8,419	8,395
Change in Water Supplies Contributing to Regional Self-Reliance		1,748	4,591	6,821	7,850	7,930	7,947	7,969	7,945

Percent Change in Regional Self Reliance (As Percent of Demand w/out WUE)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045	2050 (Optional)
Percent of Water Supplies Contributing to Regional Self-Reliance	4.1%	18.7%	41.7%	55.4%	63.2%	63.1%	62.9%	63.1%	63.2%
Change in Percent of Water Supplies Contributing to Regional Self-Reliance		14.6%	37.6%	51.3%	59.1%	59.0%	58.8%	59.0%	59.1%

Water Use Efficiency

The water use efficiency information shown in Table C-3 is taken directly from Tables C-1 and C-2 above.

Water Recycling

The water recycling values shown in Table C-3 reflect the total recycled water production within the District's service area, as described in Section 6.6 of the District's 2025 UWMP. The District operates the Water Recycling Plant (WRP), which delivers recycled water for non-potable irrigation and other beneficial uses across the service area, and continues to evaluate opportunities to expand recycled water deliveries through partnerships with neighboring agencies.

C.5 Reliance on Water Supplies from the Delta Watershed

Metropolitan's service area as a whole reduces reliance on the Delta through investments in non-Delta water supplies, local water supplies, and demand management measures. Quantifying the District's investments in self-reliance, locally, regionally, and throughout Southern California is infeasible for the reasons noted in Section C.6. Due to the regional nature of these investments, the District is relying on Metropolitan's regional accounting of measurable reductions in supplies from the Delta Watershed.

The results shown in Table C-4 demonstrate that Metropolitan's service area, including MWDOC and the District, is measurably reducing its Delta reliance. In the near-term (2030), the expected outcome for normal water year reliance on supplies from the Delta watershed decreased by 466 TAF from the 2010 baseline; this represents a decrease of 6.5 percent of 2030 normal water year retail demands. In the long-term (2050), normal water year reliance on supplies from the Delta watershed is expected to decrease by 537 TAF from the 2010 baseline; this represents a decrease of just over 9.4 percent of 2050 normal water year retail demands.

Table C-4: Metropolitan's Reliance on Water Supplies from the Delta Watershed

Water Supplies from the Delta Watershed (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045	2050 (Optional)
CVP/SWP Contract Supplies	1,472,000	1,029,000	984,000	1,133,000	949,000	924,000	901,000	877,000	877,000
Delta/Delta Tributary Diversions	-	-	-	-	-	-	-	-	-
Transfers and Exchanges of Supplies from the Delta Watershed	20,000	44,000	91,000	58,000	77,000	77,000	78,000	78,000	78,000
Other Water Supplies from the Delta Watershed	-	-	-	-	-	-	-	-	-
Total Water Supplies from the Delta Watershed	**1,492,000**	**1,073,000**	**1,075,000**	**1,191,000**	**1,026,000**	**1,001,000**	**979,000**	**955,000**	**955,000**

Service Area Demands without Water Use Efficiency (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045	2050 (Optional)
Service Area Demands without Water Use Efficiency Accounted For	5,493,000	5,499,000	5,219,000	4,925,000	4,969,000	5,102,000	5,209,000	5,302,000	5,391,000

Change in Supplies from the Delta Watershed (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045	2050 (Optional)
Water Supplies from the Delta Watershed	1,492,000	1,073,000	1,075,000	1,191,000	1,026,000	1,001,000	979,000	955,000	955,000
Change in Supplies from the Delta Watershed	**NA**	**(419,000)**	**(417,000)**	**(301,000)**	**(466,000)**	**(491,000)**	**(513,000)**	**(537,000)**	**(537,000)**
Percent Change in Supplies from the Delta Watershed (As a Percent of Demand w/out WUE)	**Baseline (2010)**	**2015**	**2020**	**2025**	**2030**	**2035**	**2040**	**2045**	**2050 (Optional)**
Percent of Supplies from the Delta Watershed	27.2%	19.5%	20.6%	24.2%	20.6%	19.6%	18.8%	18.0%	17.7%
Change in Percent of Supplies from the Delta Watershed	**NA**	**-7.6%**	**-6.6%**	**-3.0%**	**-6.5%**	**-7.5%**	**-8.4%**	**-9.1%**	**-9.4%**

C.6 Infeasibility of Accounting Supplies from the Delta Watershed for Metropolitan's Member Agencies and their Customers

Metropolitan's service area, as a whole, reduces reliance on the Delta through investments in non-Delta water supplies, local water supplies, and regional and local demand management measures. Metropolitan's member agencies coordinate reliance on the Delta through their membership in Metropolitan, a regional cooperative providing wholesale water service to its 26 member agencies. Accordingly, regional reliance on the Delta can only be measured regionally—not by individual Metropolitan member agencies and not by the customers of those member agencies.

Metropolitan's member agencies, and those agencies' customers, indirectly reduce reliance on the Delta through their collective efforts as a cooperative. Metropolitan's member agencies do not control the amount of Delta water they receive from Metropolitan. Metropolitan manages a statewide integrated conveyance system consisting of its participation in the State Water Project (SWP), its Colorado River Aqueduct (CRA) including Colorado River water resources, programs and water exchanges, and its regional storage portfolio. Along with the SWP, CRA, storage programs, and Metropolitan's conveyance and distribution facilities, demand management programs increase the future reliability of water resources for the region. In addition, demand management programs provide system-wide benefits by decreasing the demand for imported water, which helps to decrease the burden on the District's infrastructure and reduce system costs, and free up conveyance capacity to the benefit of all member agencies.

Metropolitan's costs are funded almost entirely from its service area, with the exception of grants and other assistance from government programs. Most of Metropolitan's revenues are collected directly from its member agencies. Properties within Metropolitan's service area pay a property tax that currently provides approximately 25 percent of the fiscal year 2026 annual budgeted revenues. The rest of Metropolitan's costs are funded through rates and charges paid by Metropolitan's member agencies for the wholesale services it provides to them. Thus, Metropolitan's member agencies fund nearly all operations Metropolitan undertakes to reduce reliance on the Delta, including Colorado River Programs, storage facilities, Local Resources Programs, and Conservation Programs within Metropolitan's service area.

Because of the integrated nature of Metropolitan's systems and operations, and the collective nature of Metropolitan's regional efforts, it is infeasible to quantify each of Metropolitan member agencies' individual reliance on the Delta. It is infeasible to attempt to segregate an entity and a system that were designed to work as an integrated regional cooperative.

In addition to the member agencies funding Metropolitan's regional efforts, they also invest in their own local programs to reduce their reliance on imported water. Moreover, the customers of those member agencies may also invest in their own local programs to reduce water demand. However, to the extent those efforts result in reduction of demands on Metropolitan, that reduction does not equate to a like reduction of reliance on the Delta. Demands on Metropolitan are not commensurate with demands on the Delta because most Metropolitan member agencies receive blended resources from Metropolitan as determined by Metropolitan – not the individual member agency – and for most member agencies, the blend varies from month-to-month and year-to-year due to hydrology, operational constraints, use of storage, and other factors.

Colorado River Programs

As a regional cooperative of member agencies, Metropolitan invests in programs to ensure the continued reliability and sustainability of Colorado River supplies. Metropolitan was established to obtain an allotment of Colorado River water, and its first mission was to construct and operate the CRA. The CRA consists of five pumping plants, 450 miles of high voltage power lines, one electric substation, four regulating reservoirs, and 242 miles of aqueducts, siphons, canals, conduits, and pipelines terminating at Lake Mathews in Riverside County. Metropolitan owns, operates, and manages the CRA. Metropolitan is responsible for operating, maintaining, rehabilitating, and repairing the CRA, and is responsible for obtaining and scheduling energy resources adequate to power pumps at the CRA's five pumping stations.

Colorado River supplies include Metropolitan's basic Colorado River apportionment, along with supplies that result from existing and committed programs, including supplies from the Imperial Irrigation District (IID)–Metropolitan Conservation Program, the implementation of the Quantification Settlement Agreement (QSA) and related agreements, and the exchange agreement with San Diego County Water Authority (SDCWA). The QSA established the baseline water use for each of the agreement parties and facilitates the transfer of water from agricultural agencies to urban uses. Since the QSA, additional programs have been implemented to increase Metropolitan's CRA supplies. These include the PVID Land Management, Crop Rotation, and Water Supply Program, as well as the Lower Colorado River Water Supply Project. The 2007 Interim Guidelines provided for the coordinated operation of Lake Powell and Lake Mead, as well as the Intentionally Created Surplus (ICS) program that allows Metropolitan to store water in Lake Mead.

Storage Investments and Facilities

Surface and groundwater storage are critical elements of Southern California's water resources strategy and help Metropolitan reduce its reliance on the Delta. Because California experiences dramatic swings in weather and hydrology, storage is important to regulate those swings and mitigate possible supply shortages. Surface and groundwater storage provide a means of storing water during normal and wet years for later use during dry years, when imported supplies are limited. The Metropolitan system, for purposes of meeting demands during times of shortage, regulating system flows, and ensuring system reliability in the event of a system outage, provides over 1,000,000 acre-feet of system storage capacity. Diamond Valley Lake provides 810,000 acre-feet of that storage capacity, effectively doubling Southern California's previous surface water storage capacity. Other existing imported water storage available to the region consists of Metropolitan's raw water reservoirs, a share of the SWP's raw water reservoirs in and near the service area, and the portion of the groundwater basins used for conjunctive-use storage.

Conjunctive use of the aquifers offers another important source of dry-year supplies. Unused storage in Southern California groundwater basins can be used to optimize imported water supplies, and the development of groundwater storage projects allows effective management and regulation of the region's major imported supplies from the Colorado River and SWP. Over the years, Metropolitan has implemented conjunctive use through various programs in the service area, including the Orange County Groundwater Conjunctive Use Program developed in coordination with MWDOC and the Orange County Water District.

Metropolitan Demand Management Programs

Demand management costs are Metropolitan's expenditures for funding local water resource development programs and water conservation programs. These Demand Management Programs incentivize the development of local water supplies and the conservation of water to reduce the need to import water to deliver to Metropolitan's member agencies. These programs are implemented below the delivery points between Metropolitan's and its member agencies' distribution systems and, as such, do not add any water to Metropolitan's supplies. Rather, the effect of these downstream programs is to produce a local supply of water for the local agencies and to reduce demands by member agencies for water imported through Metropolitan's system. The history of demand management by Metropolitan's member agencies and the local agencies that purchase water from Metropolitan's members has spanned more than four decades. The significant history of the programs is another reason it would be difficult to attempt to assign a portion of such funding to any one individual member agency.

Local Resources Programs

In 1982, Metropolitan began providing financial incentives to its member agencies to develop new local supplies to assist in meeting the region's water needs. Because of Metropolitan's regional distribution system, these programs benefit all member agencies regardless of project location because they help to increase regional water supply reliability, reduce demands for imported water supplies, decrease the burden on Metropolitan's infrastructure, reduce system costs, and free up conveyance capacity to the benefit of all the agencies that rely on water from Metropolitan.

For example, the Groundwater Replenishment System (GWRS) operated by the Orange County Water District is the world's largest water purification system for indirect potable reuse. It was funded, in part, by Metropolitan's Local Resources Program. With the latest expansion, the GWRS is capable of producing approximately 130,000 acre-feet of reliable, locally controlled, drought-proof supply of high-quality water to recharge the Orange County Groundwater Basin and protect it from seawater intrusion. The GWRS is a premier example of a regional project that significantly reduced the need to utilize imported water for groundwater replenishment in Metropolitan's service area, increasing regional and local supply reliability and reducing the region's reliance on imported supplies, including supplies from the State Water Project.

Metropolitan's local resource incentive programs have evolved since 1982 to encourage member agencies to develop local supplies—including recycled water, groundwater recovery, seawater desalination, and stormwater capture—to reduce reliance on imported water. Today, nearly one-half of the total recycled water and groundwater recovery production in the region has been developed with an LRP incentive from Metropolitan. Key current program elements include:

- Local Resources Program (LRP): Sliding scale or fixed incentives for recycled water, recovered groundwater, and seawater desalination projects.
- On-Site Retrofit Program (ORP): Funding for small-scale infrastructure upgrades to connect end-users to existing recycled water systems.
- Stormwater Pilot Programs: Financial incentives to study and develop stormwater capture projects for direct use or groundwater recharge.

Water Use Efficiency Programs

Metropolitan's Water Use Efficiency programs reflect a longstanding recognition that managing demands is as important as securing supply. By reducing retail water consumption across the service area, these programs help decrease reliance on imported water, lower infrastructure costs, and free up conveyance capacity – benefits that extend to all member agencies regardless of where savings occur.

Metropolitan's incentive-based conservation efforts operate through several complementary programs, including the Conservation Credits Program, the Member Agency Administered Program, and the Water Savings Incentive Program. Beyond rebates, Metropolitan also pursues non-incentive conservation efforts, including landscape training, large-scale water audits, technology research, public outreach and education, and advocacy for water-efficient building codes and legislation.

Since 1990, Metropolitan has invested $954 million in conservation rebates that have resulted in a cumulative savings of 4.32 million acre-feet of water. These investments include over 200 million square feet of lawn turf removed from both commercial and residential properties. During fiscal year 2025, approximately 208 thousand acre-feet of water is estimated to have been conserved. This annual total includes Metropolitan's Conservation Credits Program; code-based conservation achieved through Metropolitan-sponsored legislation; building plumbing codes and ordinances; reduced consumption resulting from changes in water pricing; and pre-1990 device retrofits. Chapter 9 of the District's 2025 UWMP provides details on the array of water use efficiency programs the District has implemented in its service area, which have contributed to the region's overall success in reducing reliance on imported water.

Infeasibility of Accounting Regional Investments in Reduced Reliance Below the Regional Level

The accounting of regional investments that contribute to reduced reliance on supplies from the Delta watershed is straightforward to calculate and report at the regional aggregate level. However, any similar accounting is infeasible for the individual member agencies or their customers. As described above, the region (through Metropolitan) makes significant investments in projects, programs, and other resources that reduce reliance on the Delta. In fact, all of Metropolitan's investments in Colorado River supplies, groundwater and surface storage, local resources development, and demand management measures that reduce reliance on the Delta are collectively funded by revenues generated from the member agencies through rates and charges.

Metropolitan's revenues cannot be matched to the demands or supply production history of an individual agency, or consistently across the agencies within the service area. Each project or program funded by the region has a different online date, useful life, incentive rate and structure, and production schedule. It is infeasible to account for all these things over the life of each project or program and provide a nexus to each member agency's contributions to Metropolitan's revenue stream over time. Accounting at the regional level allows for the incorporation of the local supplies and water use efficiency programs done by member agencies and their customers through both the regional programs and through their own specific local programs. As shown above, despite the infeasibility of accounting reduced Delta reliance below the regional level, Metropolitan's member agencies and their customers, including ETWD, have together made substantial contributions to the region's reduced reliance.

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UWMP

APPENDIX D

SBx7-7: 2025 Reporting Documentation

El TORO WATER DISTRICT

Submittal Table 2-2: Plan Identification

Select One	Type of Plan	Name of Regional Alliance or RUWMP (Drop Down List)
☑	**Individual UWMP**	
	If Water Supplier is also a member of a SB X7-7 Regional Alliance, select name from the drop-down.	Orange County 20x2020 Regional Alliance
☐	**Regional Urban Water Management Plan (RUWMP)**	
	If Supplier selected RUWMP, select name from the drop-down.	

NOTES:

Submittal Table 5-1 Retail: SB X7-7 2020 Target Progress Water Code Section 10608.40				
☐	Check the box if the Supplier was not an Urban Water Supplier during or before the 2020 UWMP reporting cycle. Proceed to the next table.			
Was Supplier part of a merger or consolidation since 2020?	Regional Alliance Target or Individual Target? Drop down list	2020 Target	Actual 2020 GPCD	Did Supplier Achieve Targeted Reduction for 2020?
No	Individual Target	163	134	Yes
NOTES:				

UWMP

APPENDIX E

2025 Orange County Water Demand Model Technical Memorandum

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2025 Orange County Water Demand Projection Model Technical Memorandum

December 30, 2025

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List of Modeling Terms

Term	Working Definition
Billing Class	Group of customers defined in rate schedule for revenue collection
Billing Accounts	Group of accounts defined in rate schedule for revenue collection
Sector	One or more billing classes combined for modeling
Driver Unit (Driver)	Indicator of scale or growth for a given sector (counts)
Rate of Use	Measure of water use per driver unit
Econometric Model	Multiple regression model specifying economic variables
Explanatory Variable (i.e. water price and maximum monthly temperature)	A variable specified in a regression model to explain variability in water use
Coefficient	Elasticity (multiplier) that measures the response of water use to changes in explanatory variables
Model Fitting	Process of estimating parameters that measure the response of water use to changes in explanatory variables
Model Prediction	Calculation of water use for assumed values of explanatory variables
Nominal Income	The amount of money a person or an entity earns, without accounting for inflation or changes in purchasing power
Nominal Price	The stated price of an item without any adjustments for inflation representing its value in currency at the time of a transaction
Relative Sectoral Employment	Employment in each Commercial, Industrial, or Institutional sector

List of Acronyms

Term	Working Definition
CalAdapt	California Climate Adaptation Platform
CCF	Hundred Cubic Feet
CII	Commercial, Industrial & Institutional
CMIP6	Coupled Model Intercomparison Project (Phase 6)
DOF	California Department of Finance
GDP	Gross Domestic Product
GIS	Geographic Information System
LEHD/LODES	Longitudinal Employer Household Dynamics / Origin Destination Employment Statistics
MF	Multifamily (Residential)
MGD / MG / AFY	Million Gallons per Day / Million Gallons / Acre Feet per Year
NRW	Non-Revenue Water
PPH	Persons per Household
SF	Single-family (Residential)
UWMP	Urban Water Management Plan
UWUO	Urban Water Use Objective

Executive Summary

The Municipal Water District of Orange County (MWDOC) supplies water to 26 retail agencies, and the Orange County Water District (OCWD). The Orange County demand forecasts include the MWDOC service area as well as 3 cities who are direct customers of the Metropolitan Water District of Southern California (MWD): Anaheim, Fullerton, and Santa Ana. Water demand forecasts are a foundational element of water supply and infrastructure planning, and MWDOC and OCWD selected Hazen and Sawyer (Hazen) to update the demand forecasts for Orange County's retail agencies for the 2025 Urban Water Management Plan. The update is necessary both because current demands are lower than previously projected, and new demographic and climate projections were made available in 2025.

Hazen created four demand models for each Orange County retail agency. The four models represent demand sectors in which agency billing sector uses are similar in magnitude, and in which changes in billing sector water use can be attributed to the same variables. The four sectors are:

1) Single-family Residential
2) Multifamily Residential
3) Commercial, Industrial, and Institutional (CII)
4) Dedicated Irrigation (potable, recycled & raw water)

The demand across all four models, plus other uses for each agency, is summed to a total forecast for each agency, the MWDOC service area, the OCWD service area, and total Orange County.

Econometric Approach and Data Acquisition

A regression, or econometric, approach to demand forecasting statistically links retail level water use to weather, economic, and socioeconomic factors (explanatory variables). Orange County agencies provided comprehensive datasets of historical water use, and Hazen worked with MWDOC to obtain explanatory variables from reputable sources, including weather databases and Census-based reports. The explanatory variables used in the regression are based on Hazen’s experience regarding what factors affect water use nationwide and in Southern California.

By statistically linking water use to explanatory variables, econometric models provide a robust foundation for understanding variability and projecting future consumption patterns. Modeled water use is the product of the driver count, and the rate of water use per driver (**Equation ES-1**).

$$Water\ use = Driver\ Count * Rate\ of\ Use\ per\ Driver \qquad \textbf{Equation ES-1}$$

Driver units change into the future based on housing, employment, and population projections. The rate of water use per driver is based on the historical response of the use rate to explanatory variables (measured by coefficients) and the future values of those same explanatory variables. **Equation ES-2** shows an example use per account, where water price and temperature are examples of explanatory variables, and $C_{Intercept}$, C_R, and C_T are example coefficients.

$$Historical\ Use\ per\ Account = C_{Intercept} + C_R \times Historical\ Water\ Price + C_T \times Historical\ Temperatures + \cdots$$

Equation ES-2

The coefficients explain how (both in terms of magnitude and sign) water use responds to changes to explanatory variables.

Hazen identified driver units based on data provided by agencies and the Center for Demographic Research at Cal State Fullerton (CDR) that can be easily projected into the future. The rate of water use per driver is based on agency provided billing sector uses from 2010 through 2024. **Table ES-1** shows the driver units and rate of use for each of the four models.

Table ES-1: Summary of Demand Sectors

Sector	Driver Units	Rate of Use Definition
Single-family Residential	Accounts	Gallons / account / day
Multifamily Residential		Gallons / account / day
Commercial, Institutional, Industrial (CII)	Jobs	Gallons / job / day
Dedicated Irrigation (potable, recycled & raw water)	Accounts	Gallons / account / day

The rates of water use for each sector model are based on the historical responses to explanatory variables, and the future values of those explanatory variables. Addressing multiple influences on demand improves the accuracy and precision of all estimated parameters, and the Hazen team identified a large range of explanatory variables based on our experience with demand modeling and available data. **Table ES-2** displays the explanatory variables.

Table ES-2: Summary of Historical Data Collected for Model Development

Dataset	Data Source(s)
Observed weather (monthly precipitation, monthly maximum temperature)	Parameter-elevation Regressions on Independent Slopes Model (PRISM)
Water Price	Retail agency provided (2010 – 2024)
Drought Restrictions	State Water Resources Control Board
Gross Domestic Product (GDP)	Federal Reserve Bank of St. Louis Real Gross Domestic Product: All Industries in Orange County, CA
Median income	US Census American Community Survey (ACS)
Housing density	US Census American Community Survey (ACS), California State University Fullerton Center for Demographics Research (CDR), Southern California Association of Governments (SCAG) land use data
Persons Per Household	
Relative sectoral economic activity	US Census LODES, CDR
Passive Efficiency Estimates	Analysis of trend indicators and MWDOC/FLUME insight
COVID Binary Indicator	Assumed active from March 2020 – May 2023

The MWDOC Water Use Efficiency Group provided annual savings achieved by various active conservation measures. To avoid additional calculations and potential errors in the classification of historical conservation data, total historical conservation was captured in each sectoral model using a linear trend term. While historical conservation is captured in a linear trend, projected passive conservation is based on the 2021 Orange County Residential Water Efficiency Potential and Opportunities Study (2021 Study) and assumes a 1.9% decrease in annual residential demand from 2025 to 2030, at which point passive conservation will remain constant going forward. Active conservation is not accounted for in the models.

The process of identifying the explanatory variables to include in the regression equation and developing coefficients that accurately measure the response of water use to changes in these variables is the most time-intensive part of the demand forecasting process.

Econometric Model Development

Orange County water use varies by time with changes to the price of water, drought restrictions, and weather, as well as by geography. For example, different agency income levels and household densities result in different water use rates. Hazen fit the four sectoral econometric models using a panel regression approach to account for explanatory variables that vary primarily over geography as well as those that vary over time. The panel approach fits consumption data from all retail agencies simultaneously, improving model accuracy with a larger sample size.

Hazen evaluated model fits using R^2 values as well as visual confirmation that the modeled historical water use captured long-term trends, drought restrictions, and COVID pandemic work from home orders. The models demonstrated strong performance in replicating historical consumption patterns over the past decade. Most regressions achieved R^2 values of 0.80 or higher, indicating a high degree of explanatory power. Model results show:

- Single-family consumption is highly seasonal, and the econometric model correlates well to seasonality and temperature.
- Multifamily use is generally less responsive to weather than single-family demands as some outdoor use has been shifted into the irrigation sector. Seasonal price elasticity varies the least between months for the multifamily sector.
- CII use per job is positively correlated to each job proportion as well as gross domestic product throughout Orange County.
- Irrigation is much more responsive to temperature and precipitation than the other sectors. Seasonal price elasticity varies the most between months for the irrigation sector.

The Hazen team worked with each retail agency to calibrate sectoral model equations and quantify other uses (those not included in the single-family, multifamily, irrigation, or CII demand sectors).

Baseline Forecast

Forecasted demand is a function of both the change in driver units into the future as well as the change in explanatory variables. **Table ES-3** summarizes the future drivers and variables.

Table ES-3: Future Model Parameters

Data Category	Variable	Source	Assumptions
Driver Units	Single-family and multifamily accounts	CDR	Historical households per account; averages are multiplied by households projected by CDR
	Irrigation accounts	Agency Billing Data	Accounts are assumed to be constant into the future
	Sectoral employment	CDR	Proportion of jobs within CII sectors projected by CDR
Explanatory Variables	Monthly Maximum Temperature and Total Precipitation	PRISM	30-year historical normal weather
	Water Price	Retail Agencies	Prices increase by 3% per year above inflation for 2025-2030 and keeps pace with inflation thereafter (zero difference from inflation trend)

Data Category	Variable	Source	Assumptions
	Water Use Restrictions	State & Local Restrictions	None
	Seasonality		Sine/cosine functions to capture monthly pattern
	Median income	US Census	Constant income at 2022 value (real dollars)
	Housing density	CDR	Derived from CDR housing unit projections, assuming residential area remains at 2024 levels
	Persons Per Household	CDR	CDR projected demographics
	Gross Domestic Product	Federal Reserve	Long-term GDP trend
	Relative Sectoral Employment	CDR	Calculated based on CDR projections
	Passive Efficiency Estimates	Flume Insight	Assumes a 2% decrease in residential demand due to conservation by 2030 (linearly extrapolated), then no change
	COVID Binary Indicator		None (occurred between March 2020 and May 2023)

The baseline scenario assumes no active conservation measures.

Residential use (single-family and multifamily) accounts for approximately 60% of total Orange County demand and is expected to drive changes to the total demand forecast, despite CII use increasing as jobs increase. **Figure ES-1** indicates that multifamily growth is expected to outpace single-family growth out to 2050.

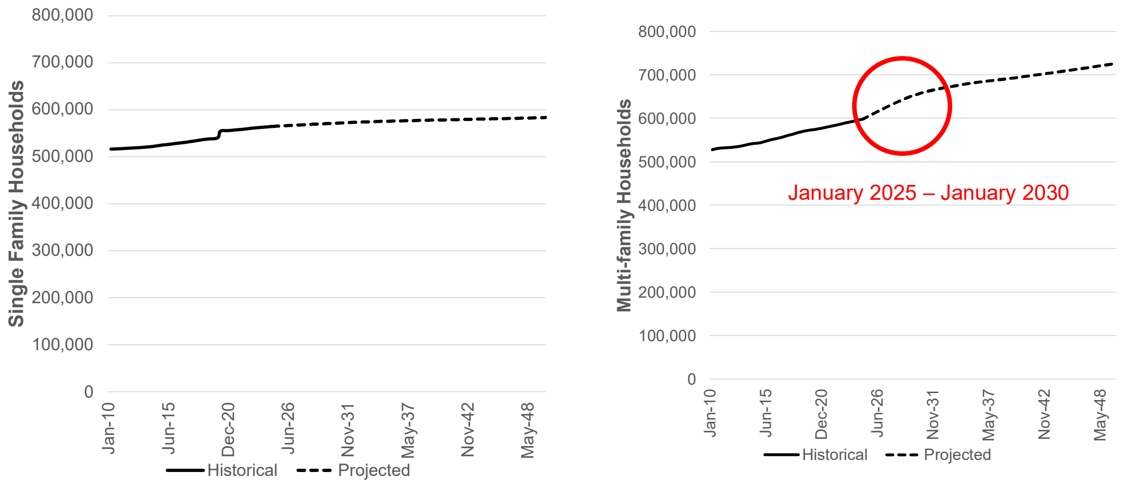


Figure ES-1: Single-family and Multifamily Growth

Additionally, **Figure ES-2** shows that average persons per household is expected to decrease for both residential sectors while household density increases.

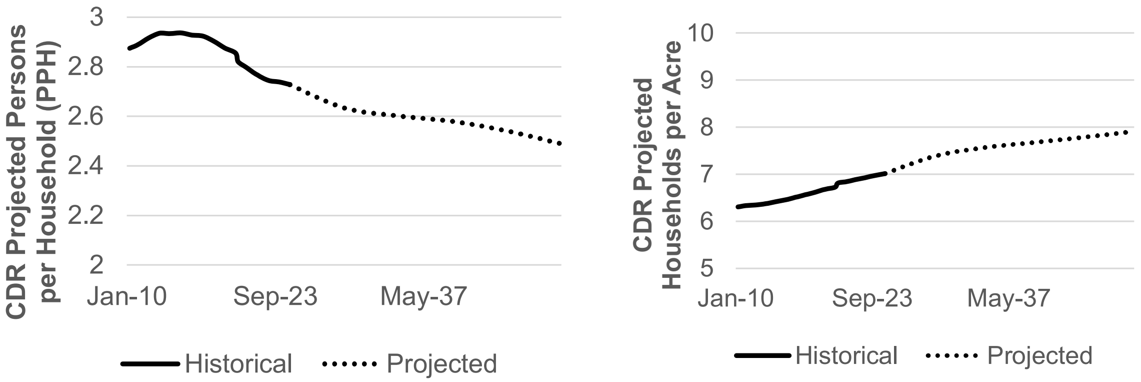


Figure ES-2: Demographic Parameters

While increasing density, decreasing persons per household, and increasing prices are expected to moderate demand, they do not fully offset growth in multifamily driver units. **Table ES-4** shows the slow growth trend out to 2050 for all of Orange County.

Table ES-4: Orange County Forecast

Forecast Year	2025	2030	2035	2040	2045	2050
Single-family Demand (AFY)	196,682	189,600	189,594	190,010	189,146	188,368
Multifamily Demand (AFY)	91,462	93,631	95,823	97,339	97,976	98,583
Irrigation Demand (AFY)	88,837	86,849	86,849	86,966	86,849	86,849
CII Demand (AFY)	82,873	87,224	89,565	91,928	93,866	95,492
Other Demands (AFY)	28,194	28,007	28,314	28,613	28,735	28,831
Total Demand (AFY)	488,049	485,312	490,145	494,856	496,572	498,124

Single-family demand remains relatively flat due to limited growth in single-family housing units, and multifamily demands are forecasted to increase steadily, driven by rising multifamily housing development. Irrigation demand is expected to remain flat, and other uses (e.g., fire flows, construction) are projected as a fixed percentage of total use. Under expected future conditions, total Orange County demand is projected to remain relatively stable through 2050.

Alternative Forecasts and UWMP Scenarios

As part of this model, alternative demand forecasts were developed to evaluate the impacts of climate change and long-term water rate increases on future water use in Orange County. Using CMIP6 climate models and downscaled LOCA2 data from CalAdapt, the model applied temperature and precipitation deltas to historical weather patterns across four Flume-defined microclimate quadrants. These projections were used to simulate two climate scenarios, dry/warm and wet/cool. The dry/warm scenario showed increased water demand due to higher temperatures, while the wet/cool scenario, when paired with a 3% annual price increase above inflation, demonstrated demand suppression.

The 2025 Urban Water Management Plan (UWMP) requires agencies to project long-term water demand under three hydrologic conditions, normal year, single dry year, and five consecutive dry years, over a 20-year horizon in 5-year increments. In this model, the single dry year scenario used a hot-dry index (HDI) to identify the year with the most weather-sensitive demand, with 2014 selected for most agencies. The multiple dry year was developed to describe the potential impact of consecutive dry years. **Figure ES-3** summarizes all forecasts.

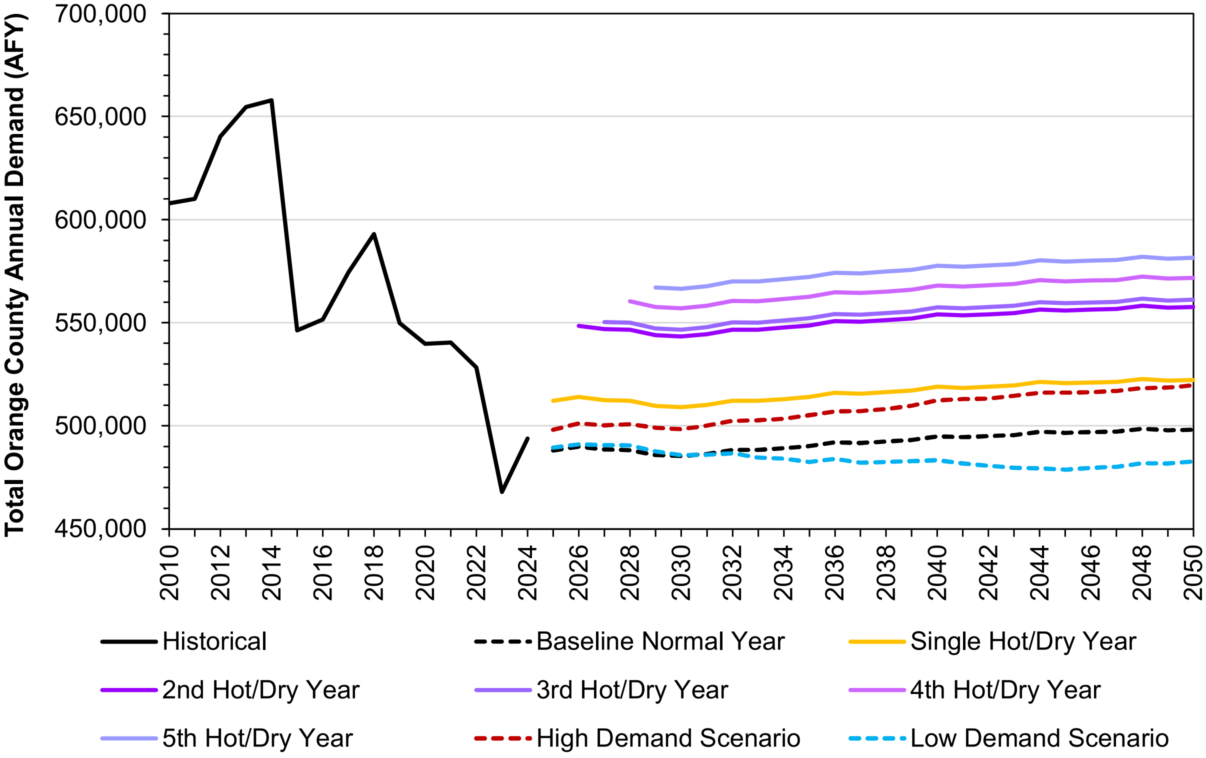


Figure ES-3: Baseline, Alternative, and UWMP Forecasts

Although Orange County demands are forecast to be relatively flat into the future, Figure ES-3 shows that annual variations in weather could cause high fluctuations.

1. Introduction

The Municipal Water District of Orange County (MWDOC) supplies water to 26 retail agencies and the Orange County Water District (OCWD). The 3 cities: Anaheim, Fullerton, and Santa Ana, who are direct customers of the Metropolitan Water District of Southern California (MWD) are also analyzed to provide a complete picture of the county. Water demand forecasts are a foundational element of water supply and infrastructure planning. MWDOC, OCWD, and representatives of the retail agencies selected an econometric model approach for the update. Hazen and Sawyer (Hazen) developed the demand model was developed by regressing historical water consumption against several explanatory variables known to influence water demand (including weather, water price, regional economic conditions, and housing density).

This technical memorandum (TM) describes the econometric demand model developed to produce regionally consistent forecasts across all Orange County agencies. Model development was funded by both MWDOC as the imported water wholesale provider and OCWD the OC Groundwater Basin manager.

Table 1-1 highlights a range of available approaches to long-term demand forecasting. Among these, an econometric approach incorporates high-resolution data at the agency scale and integrates many explanatory variables to properly identify the individual influence of each variable on historical and future demand.

Table 1-1: Pros and Cons of Several Demand Models

Model	Pro's	Con's
Time Series	• Simple and easily estimated in a Spreadsheet	• Trends are simply extended into the future • Model provides no indication of what causes trends in water use
Gross per Capita	• Ability to decouple the rate of water use from growth	• GPCD is often held constant at the historical rate • No indication of what causes trends in GPCD
End Use Accounting	• Estimates the amount of use associated with individual purposes • Addresses technological change and water use efficiency	• Consists of many assumptions for each time period • Difficult to explain observed variability in water use due to weather, price, or demographic influences
Regression (Econometric)	• Links water use statistically to explanatory variables • Provides estimates of how variability in explanatory factors affect water use • Allows for scenario design around inputs	• Difficult to address the historical impacts of technology • Statistical parameters contain a degree of potential error • Uncertainty in future values of inputs

MWDOC, OCWD, and Hazen chose the econometric approach as it provides estimates of how variability in explanatory variables affect water use. An econometric model also facilitates future scenario planning because the future values of explanatory variables are easy to change to present different scenarios.

The model relies on a comprehensive dataset of historical water-use data collected from Orange County retail agencies. Water use is provided from 2010 to 2025 (where available) for almost 40 different billing sectors; the 15-year history enables Hazen to fit the models to a range of historical droughts, price variations, and socioeconomic patterns. Hazen fit the approximately 40 different billing sectors into 4 demand sectors to limit the total project effort while providing a reliable forecast.

Prior to developing the forecasts, model calibration and fine tuning for each of the four demand sectors occurred at the individual retail agency level. The forecasts for individual agencies were then summed to the regional level.

This TM first discusses data collection and the model fitting process and ends with the demand forecasts as presented in **Figure 1-1**.

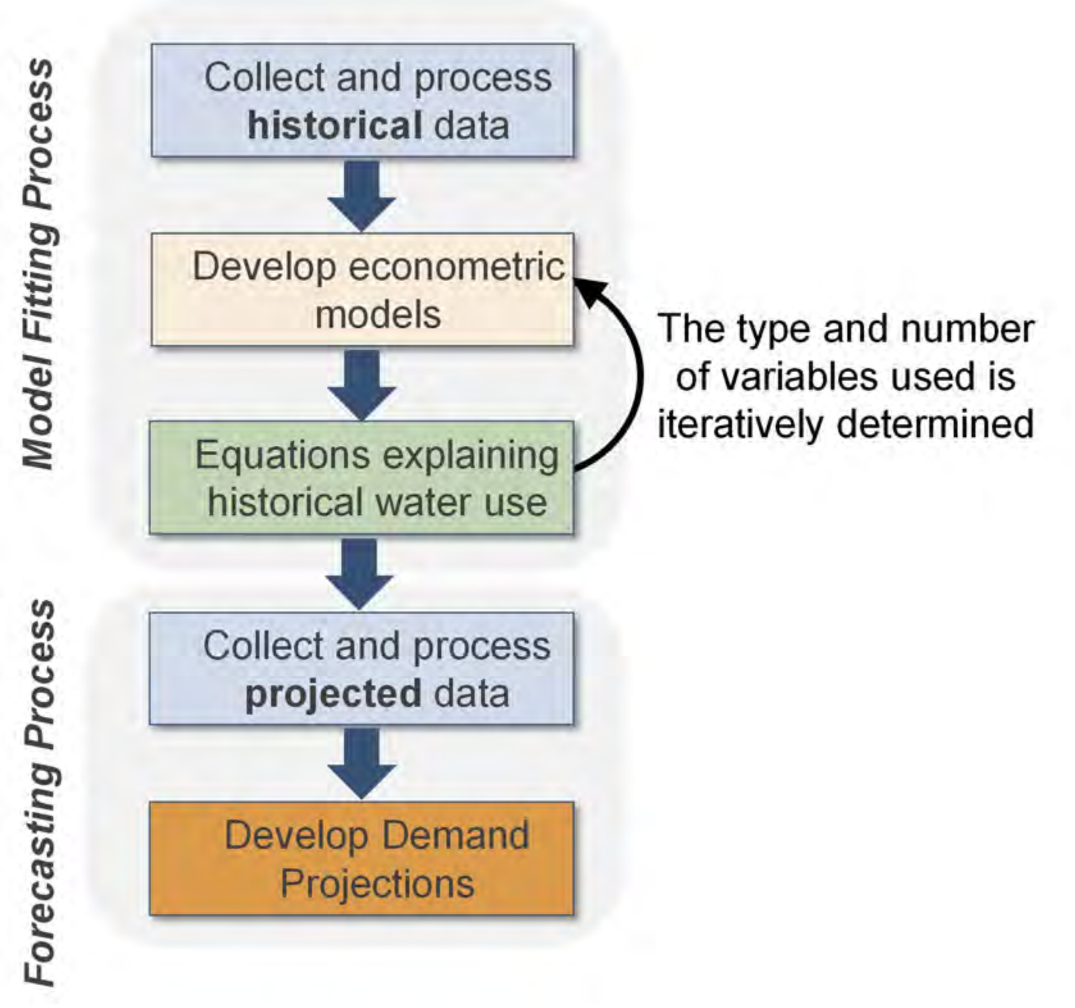


Figure 1-1: Econometric Demand Forecast Development Process

The process of identifying the explanatory variables to include in the regression equation and developing coefficients that accurately measure the response of water use to changes in these variables is called model fitting. Fitting the model is the most time-intensive part of the demand forecasting process, because a model must be fitted for each demand sector, and the type and number of variables used are iteratively determined. Once the model is fitted, the coefficients derived for historical water use are applied to the assumed future values of the associated explanatory variables to generate a forecast.

2. Historical Data Collection and Review

Demand model development requires a robust historical data set comprised of water consumption, driver units (billing accounts), and explanatory variables to explain historical changes in water use. The explanatory variables used in the models reflect both data availability and Hazen's nationwide demand modeling experience, which has focused heavily on variables that affect long term demand in California. **Table 2-1** provides a summary of the data used to develop the econometric models.

Table 2-1: Summary of Historical Data Collected for Model Development

Data Category	Dataset	Data Source(s)
Water Use	Historical billed consumption and accounts	Retailer billing records (2010 – 2024)
Driver Units	For SF, MF, and Irr uses: Single-family, and multifamily, commercial, and irrigation accounts, Dedicated Irrigation (potable, recycled & raw water)	Retailer billing records (2010 – 2024)
	For CII uses: CII Sectoral employment	US Census
Explanatory Variables	Observed weather (monthly precipitation, monthly maximum temperature)	Parameter-elevation Regressions on Independent Slopes Model (PRISM)
	Water Price	Retail agency provided (2010 – 2024)
	Drought Restrictions	State Water Resources Control Board
	Gross Domestic Product (GDP)	Federal Reserve Bank of St. Louis Real Gross Domestic Product: All Industries in Orange County, CA
	Median income	US Census American Community Survey (ACS)
	Housing density	US Census American Community Survey (ACS), California State University Fullerton Center for Demographics Research (CDR), Southern California Association of Governments (SCAG) land use data
	Persons Per Household	
	Relative sectoral economic activity	US Census LODES, Center for Demographics Research (CDR)
	Passive Efficiency Estimates	Analysis of trend indicators and MWDOC/FLUME insight
	COVID Binary Indicator	Assumed active from March 2020 – May 2023

The following sections provide a detailed description of each dataset summarized in Table 2-1. Data sources documented in this section are limited to historical datasets; a review of datasets describing projected future conditions and assumptions are documented in **Section 4**.

2.1 Data Collected from Retail Agencies

Orange County retail agencies responded to a questionnaire spreadsheet that asked for their historical billed water consumption volumes and account data by customer class for the 2010 to 2024 period, as well as water rate schedules covering the same period, and, where possible, a summary of water shortage management activities implemented over the last decade. **Figure 2-1** summarizes the historical duration of data provided by each agency as well as an identification of the billing cycle (monthly or bimonthly) that defines the general frequency of water bills.

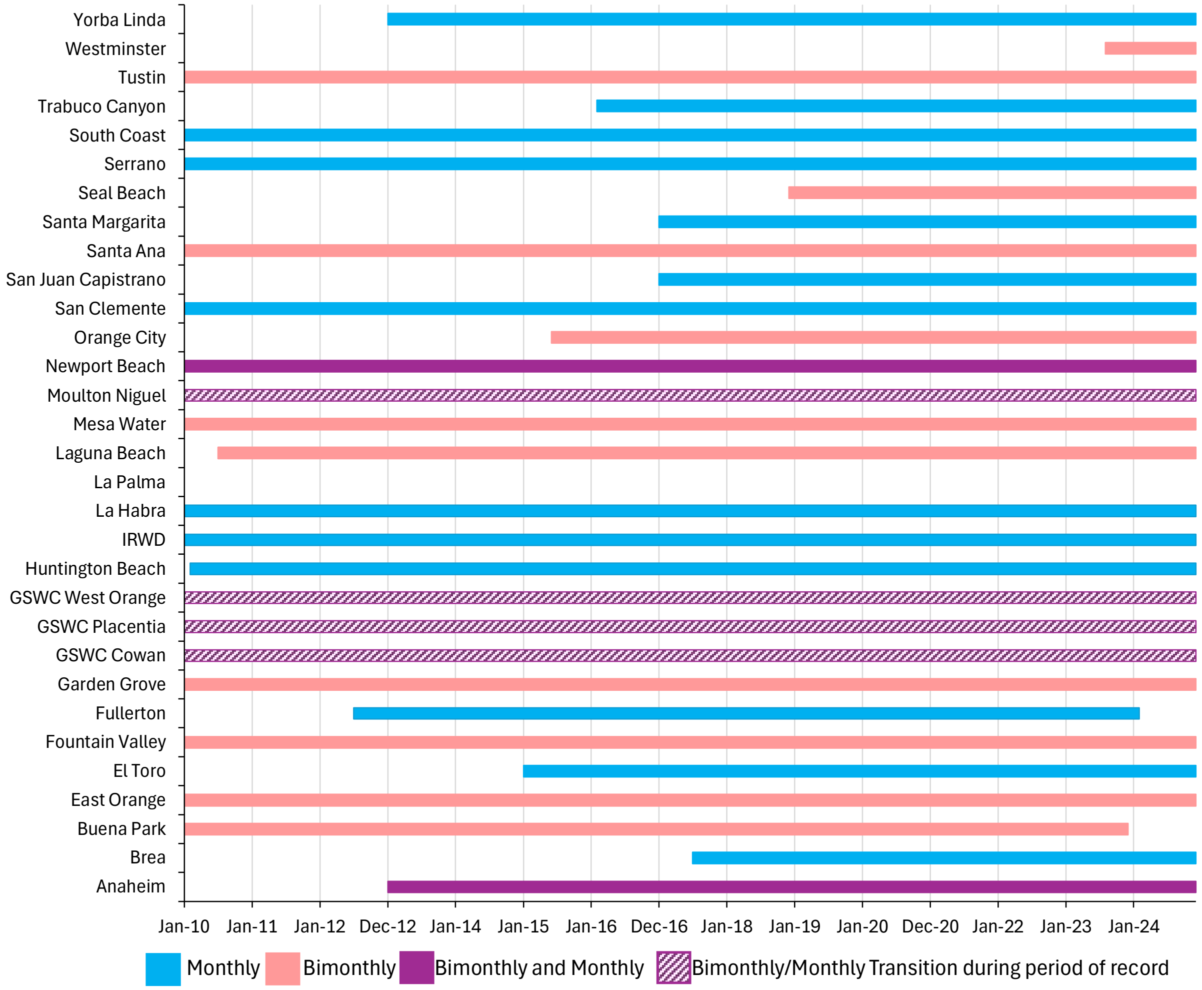


Figure 2-1: Summary of Time Range of Available Billing Data Provided by Retail Agencies

The water use and account data provided by the agencies varied. Billing sectors and their definitions can be agency-specific (almost 40 billing classifications were collected from 29 retail agencies), and water use data was not always consistently available back to 2010 for all retailers. Billing cycles differ between agencies: monthly, bimonthly, or a combination of the two.

After the water use and account data were obtained, the data needed to be standardized into consistently defined demand sectors and to a monthly basis. The following sections discuss how billing-sector data were standardized into four demand sectors, and how water use per account was standardized to yield monthly use per account accounting for differences in billing cycles.

2.1.1 Standardized Agency Billing Sectors

Retail agencies provided billing and account data organized by each agency's own internal billing classifications. Billing classifications were relatively consistent across retail agencies for defining residential water use, as most retail agencies characterized separate classifications for single-family and multifamily sectors. Water use of mobile home and other housing customer classes not associated with single-family detached structures was generally found to be similar to water use rates within the multifamily sector.

Billing classifications were less consistent in describing non-residential uses. Most agencies defined a commercial billing classification; however, the distinction and definition of industrial, institutional, and irrigation classes were inconsistent across retail agencies. For example, certain retail agencies include industrial or institutional uses within their commercial billing classification. Similarly, landscape use is not necessarily limited to a single end use, and not all retailers reported irrigation use as a class. Water billed within a landscape or irrigation category could represent use at commercial, industrial, institutional, and residential properties. Uncertainty and inconsistency in retail agency definitions of commercial, industrial, and institutional water use can affect the accuracy and performance of statistical demand models. To address this, the commercial, industrial, and institutional sectors were combined into an aggregate Commercial, Industrial, Institutional (CII) sector for modeling.

Table 2-2 provides the general breakdown of sector classifications across MWDOC agencies.

Table 2-2: Summary of Standardized Water Use Sectors

Standardized Water Use Sector (Modeled Sector)	Description
Single-family	Water use associated with single-family residential homes.
Multifamily	Water use associated with multifamily residential properties. Multifamily use shows less seasonal variation than single-family use due to shared irrigable area per dwelling unit and some multifamily irrigation is likely to be attributed to the irrigation class. Multifamily use generally includes all residential accounts not defined as single-family
CII (Commercial, Industrial, Institutional)	Water use associated with commercial developments, industrial applications, and institutional activity. CII use includes non-irrigation recycled uses.
Irrigation	Water use associated with outdoor (typically non-residential) and agricultural irrigation. This irrigation use includes recycled water for irrigation.
Other	Other water use includes classifications not well represented by the water use sectors above (including fire flows, temporary meters, construction, power uses, water loss, and other small miscellaneous uses).

Agency staff provided additional information (via email and phone conversations) to support parsing landscape and recycled water use into modeled sectors. **Figure 2-2** shows the agency billing classes separated into the four modeled sectors and the Other category.

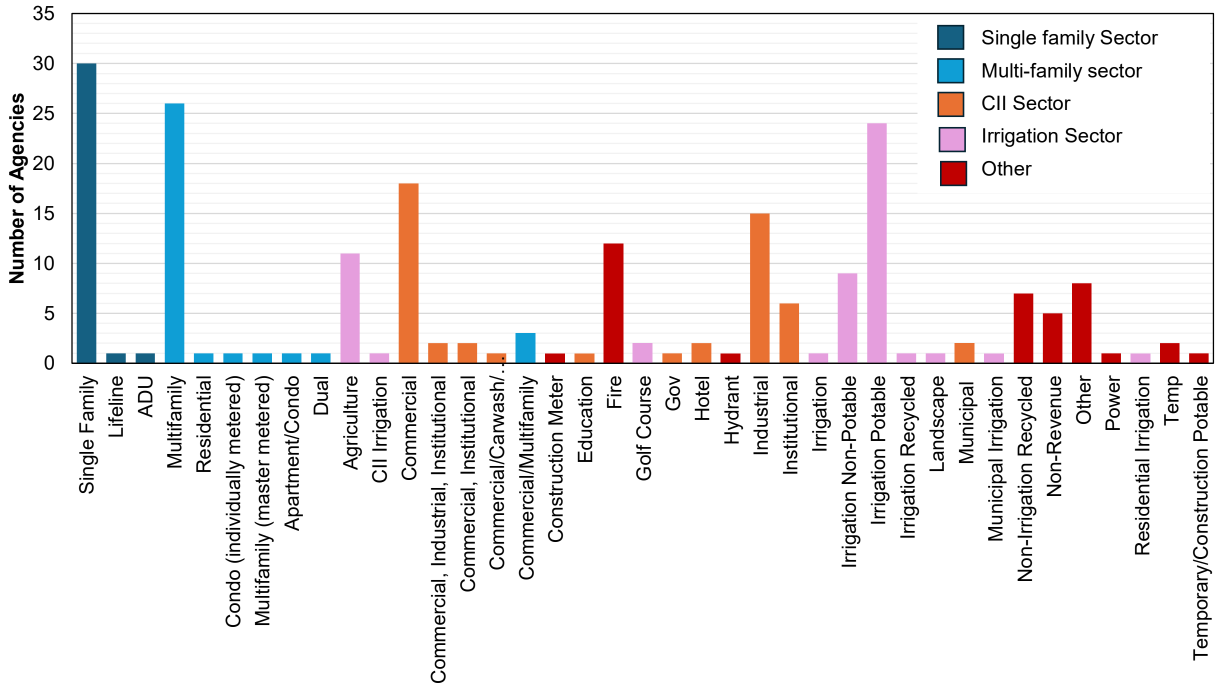


Figure 2-2: Billing Sectors by standardized demand sector

Figure 2-2 indicates that across all agencies, single-family and multifamily use were the most consistently classified.

2.1.2 Standardized Agency Rate of Use

Retail agencies have different billing and meter reading frequencies. Additionally, within each agency, meter reading cycles can vary by customer. Many agencies universally adopt either monthly or bimonthly billing; however, some utilize a combination of the two billing cycles depending on customer class and date. Water use rates for the different agency billing cycles were standardized to a calendar-month to better reflect the actual seasonal timing of water use for each of the four modeled sectors (other uses are applied as a percentage of total use across the single-family, multifamily, CII, and irrigation sectors).

Water use billed at monthly intervals can generally overlap with two consecutive calendar months. A smoothing equation extracts a single calendar-month use from the two monthly billing periods. For example, April water use is equal to the fraction of the April consumption billed in April plus the fraction of the April consumption billed in May (**Equation 2-1**).

$$April\ Use = \left(Billed\ April\ Consumption \times \frac{April\ Accounts}{April\ Accounts+May\ Accounts}\right) + \left(Billed\ May\ Consumption \times \frac{May\ Accounts}{April\ Accounts+\qquad Accounts}\right)$$

Equation 2-1

Customers billed at bimonthly intervals are divided into two groups, and each group is billed every second month. Bimonthly meter readings contain water use that occurs over a span of three calendar months. For example, April use equals the fraction of April consumption billed in April and June (billing group 1) plus the fraction of April consumption billed in May (billing group 2), per **Equation 2-2**.

$$April\ Use = \left(\left(\frac{1}{4} Billed\ April\ Consumption + \frac{1}{4}\ Billed\ June\ Consumption\right) \times \frac{\frac{1}{2}April\ Accounts + \frac{1}{2}June\ Accounts}{\frac{1}{2}April\ Accounts + May\ Accounts\ \ \frac{1}{2}June\ Accounts}\right) + \left(\frac{1}{2} Billed\ May\ Consumption \times \frac{May\ Accounts}{\frac{1}{2}April\ Accounts + May\ Accounts + \frac{1}{2}June\ Accounts}\right)$$

Equation 2-2

Figure 2-3 depicts smoothed water use for an agency whose billing structure changes from bimonthly to monthly in late 2022.

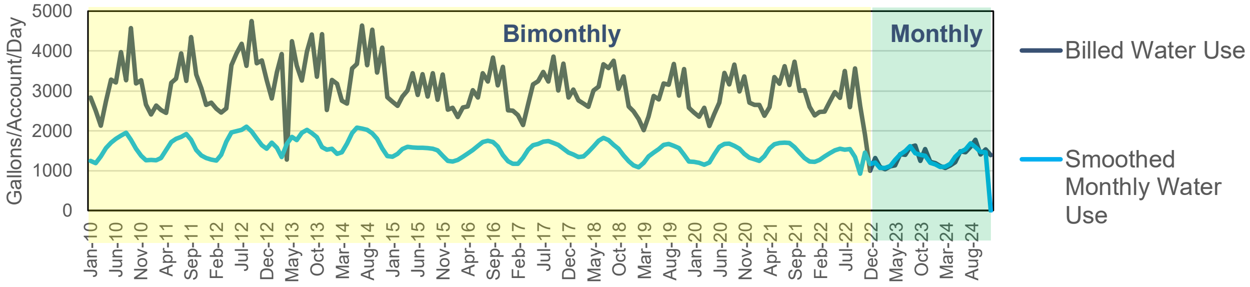


Figure 2-3: Example smoothing of consumption for an Agency with a Billing Structure that Changes Over Time

If an agency employs both monthly and bimonthly billing cycles for billing sectors that fall into a single model demand sector, a weighting of smoothed monthly (m) and bimonthly (b) water use (q) is employed to average use ($q_{M,avg}$) over the two cycles (**Equation 2-3**).

$$q_{M,avg} = w_m \times q_m + w_b \times q_b$$

Equation 2-3

The weighting factors are defined in **Equations 2-4** and **2-5**.

$$w_m = \frac{A_{M,m}+A_{M+1,m}}{(A_M+2A_{M+1,b}+A_{M+2,b})+(A_{M,m}+A_{M+1,m})}$$

Equation 2-4

$$w_b = \frac{A_{M,b}+2A_{M+1,b}+A_{M+2,b}}{(A_M+2A_{M+1,b}+A_{M+2,b})+(A_{M,m}+A_{M+1,m})}$$

Equation 2-5

2.1.3 Development of Retail Agency Driver Units

Driver units reflect the scale of a water use sector indicative of the number of water users. Total water consumption (Q) is derived by multiplying the number of driver units (N) by the rate of water use per driver unit (q), as shown in **Equation 2-6**.

$$Q = N \cdot q \rightarrow q = \frac{Q}{N}$$ **Equation 2-6**

To be useful for model development and forecasting, driver units must have a consistent historical record coincident with consumption and have a corresponding future dataset representing projected driver unit counts. Driver units were selected for each model sector, as shown in **Table 2-3**. The following sections detail the data sources and data processing used to develop estimates of drivers for each retail agency and model sector.

Table 2-3: Driver Units and Rates of Use for each Demand Sector

Sector	Driver Units	Rate of Use Definition
Single-family Residential	Accounts	Gallons / account / day
Multifamily Residential		Gallons / account / day
Commercial, Institutional, Industrial (CII)	Jobs	Gallons / job / day
Dedicated Irrigation (potable, recycled & raw water)	Accounts	Gallons / account / day

Other water uses that are small and do not neatly fit above classifications are projected using a long-term average of historical consumption.

2.1.4 Residential Housing Units

Driver units for both single-family and multifamily residential water use were set to the number of accounts provided by retail agencies. Distinct housing unit data was available through the Center for Demographic Research at California State University, Fullerton (CDR) by retailer service area boundaries.

The number of single-family accounts recorded by retail agencies may be slightly greater than the number of single-family housing units reported by CDR due to auxiliary dwelling units (ADUs), other property-specific meter additions, and subtle differences in how the single-family class is defined (e.g., some agencies may include individually metered townhomes). Multifamily dwellings are generally billed collectively on a single meter, and the number of units per account is higher than for single-family accounts.

The total number of accounts are used as a driver for the residential sectors, and units per account is used as an explanatory variable providing a means of using CDR projections of residential households as a driver for residential sector forecasts. Both values are reported in **Table 2-4**.

Table 2-4: 2024 Estimated Residential Driver Units by Retailer

	Total SF Units	Total SF Accounts	SF Units/Account	Total MF	Total MF Accounts	MF Units/Account
Anaheim	46,323	52,743	0.88	69,041	4,311	16.02
Brea	9,979	11,091	0.90	8,855	210	42.18
Buena Park	14,885	16,865	0.88	11,142	696	16.01
East Orange CWD	1,141	1,174	0.97	96	26	3.69
El Toro WD	6,725	5,670	1.19	18,193	2,619	6.95
Fountain Valley	13,266	16,090	0.82	7,061	190	37.20
Fullerton	25,248	26,687	0.95	25,334	1,933	13.11
Garden Grove	28,148	30,114	0.93	22,611	1,795	12.60
GSWC Cowan	2,376	2,443	0.97	85	48	1.77
GSWC Placentia	9,497	11,886	0.80	7,023	1,222	5.75
GSWC West Orange	19,397	24,710	0.79	18,209	3,511	5.19
Huntington Beach	39,828	44,950	0.89	43,299	4,329	10.00
Irvine Ranch WD	72,377	71,228	1.02	105,949	40,636	2.61
La Habra	10,728	11,094	0.97	9,920	877	11.31
La Palma	Not Provided					
Laguna Beach CWD	7,076	7,093	1.00	3,583	1,125	3.19
Mesa WD	15,943	14,350	1.11	26,671	6,302	4.23
Moulton Niguel	33,583	47,418	0.71	35,269	2,017	17.48
Newport Beach	14,994	19,706	0.76	20,291	4,077	4.98
Orange City	26,112	23,452	1.11	22,480	6,091	3.69
San Clemente	12,664	12,478	1.01	9,419	3,706	2.54
San Juan Capistrano	6,684	6,802	0.98	6,079	3,148	1.93
Santa Ana	35,197	35,334	1.00	47,658	3,732	12.77
Santa Margarita WD	38,217	38,260	1.00	22,574	15,137	1.49
Seal Beach	4,666	4,438	1.05	10,011	569	17.58
Serrano WD	2,214	2,229	0.99	24	Not Provided	
South Coast WD	9,997	10,994	0.91	8,483	1,591	5.33
Trabuco Canyon WD	3,620	3,907	0.93	497	31	16.03
Tustin	10,252	12,035	0.85	12,329	849	14.52
Westminster	16,273	19,724	0.83	13,139	1,103	11.92
Yorba Linda WD	20,674	23,510	0.88	5,919	264	22.43

2.1.5 CII Jobs

Total employees, or jobs, within the CII sector are estimated from the U.S. Census Bureau Longitudinal Employer Household Dynamics (LEHD) Origin-Destination Employment Statistics (LODES) dataset (U.S. Census Bureau, 2020). The most recent LODES data set provides total employment data from 2002 to 2022 at a census tract level based on job location. LODES also categorizes jobs by North American Industry Classification System (NAICS) sector, which is the standard used by federal statistical agencies.

Jobs were appropriately calculated for each agency's service area in two steps:

1) Geoprocessing jobs to water service area boundaries: Census tract-level jobs by industry are geo-processed to align with Orange County retail agency service area boundaries. During

geoprocessing, a scaling ratio is developed for each agency, for each census tract. The number of jobs within a census tract multiplied by an agency-specific scaling ratio equals the number of jobs for a given retail agency in that tract.

2) Verifying job numbers with CDR data: CDR provided employment data for city boundaries in Orange County from 2019 to 2025. The CDR jurisdictional forecasts are spatially aligned with Orange County water agency boundaries using the same technique applied to the LODES data, and the 2019 job numbers were compared with the LODES 2019 job numbers.

Comparison of the LODES data to the CDR data helped with the assignment of appropriate GIS census tracts and agency boundaries. The differences are shown in **Table 2-5**.

Table 2-5: 2019 LODES and CDR Jobs Comparison

Agency	Total 2019 Jobs (LODES)	Total 2019 Jobs (CDR)	CDR Projection Difference from LODES (CDR-LODES)/LODES
Anaheim	196,461	209,100	6.43%
Brea	43,818	45,716	4.33%
Buena Park	36,214	37,474	3.48%
East Orange CWD	493	354	-28.19%
El Toro WD	21,280	18,290	-14.05%
Fountain Valley	32,804	31,917	-2.70%
Fullerton	66,899	66,622	-0.41%
Garden Grove	53,476	60,948	13.97%
GSWC Cowan (assumes City of Orange service)	986	1,383	40.21%
GSWC Placentia	15,885	18,238	14.81%
GSWC West Orange	53,365	51,862	-2.82%
Huntington Beach	71,084	84,726	19.19%
Irvine Ranch WD	364,318	422,026	15.84%
La Habra	17,795	18,643	4.77%
La Palma	5,230	5,589	6.86%
Laguna Beach (includes Emerald Bay)	7,317	10,343	41.36%
Mesa Water	107,313	98,526	-8.19%
Moulton Niguel WD	60,584	70,203	15.87%
Newport Beach	51,627	48,769	-5.54%
Orange City	112,543	109,218	-2.95%
San Clemente	17,994	20,669	14.87%
San Juan Capistrano	15,058	16,990	12.83%
Santa Ana	161,955	164,884	1.81%
Santa Margarita WD	39,661	43,717	10.22%
Seal Beach	10,484	13,059	24.56%

Agency	Total 2019 Jobs (LODES)	Total 2019 Jobs (CDR)	CDR Projection Difference from LODES (CDR-LODES)/LODES
Serrano WD	1,521	2,288	50.43%
South Coast WD	13,305	14,936	12.26%
Trabuco Canyon WD	1,312	2,605	98.52%
Tustin	37,530	22,765	-39.34%
Westminster	30,892	28,153	-8.87%
Yorba Linda WD	24,139	25,866	7.15%

The differences in actual job numbers across the two data sources vary by agency. The actual jobs implemented in the forecast were based on conversations with each agency. For most retail agencies, the job growth rate predicted by CDR, rather than actual job numbers, is used. However, in cases where agencies indicated that CII demands differed from observed Fiscal Year 2024-2025 values, Hazen substituted the job source (CDR or LODES) that provided a forecast closer to observations.

2.2 Collection and Processing of Explanatory Variables

Explanatory variables are variables specified in a regression model to explain variability in water use, such as water rates, maximum monthly temperature, housing density, and other socioeconomic parameters. Explanatory variables used in the econometric demand model are identified based on adherence to three key characteristics:

1) Logical or understood connection to explaining changes in water consumption;
2) Historical records available for the historical modeling period; and
3) Availability of future projections consistent with the desired forecast horizon (2025-2050) or a reasonable means for assuming or deriving projected values.

Table 2-6 provides an overview of the collected explanatory variables for Orange County water agencies' demand models and their relevance to explaining changes in water consumption.

Table 2-6: Summary of Explanatory Variables

Explanatory Variable	Relevance to Water Consumption
Temperature	Higher than normal temperatures are associated with higher demands.
Precipitation	Higher than normal rainfall is associated with lower demands.
Price	Economic theory suggests a negative correlation with demand.
Economic Index	Water demand is positively correlated with real GDP, which is modeled as departure from the long-term trend.
Median Income	Economic theory suggests a positive correlation between income and demand; generally, areas with higher median incomes tend to use more water.

Explanatory Variable	Relevance to Water Consumption
Mix of industries	The representation of industries within a geographical area is related to the amount of water used within the CII sector.
Housing density	Housing density is negatively correlated with demand; on average, residences with more units per acre (or smaller parcel sizes relative to dwellings) tend to use less water for outdoor uses.
Persons per Household	Positively correlated with demand; generally, residences with more people tend to use larger amounts of water on average.
Households per account	Higher units per account are associated with higher average demands per account.
Conservation	Decreases the amount of water customers consume.
Drought Restrictions	The presence of drought restrictions on water use tends to decrease the amount of water consumed by customers.
COVID Pandemic	The presence of COVID restrictions tends to increase the amount of water consumed by residential customers and decrease the amount used in the CII sector.

The following sections document the raw data sources and the processing involved to derive each explanatory variable.

2.1.6 Historical Weather Data

Based on Hazen's modeling experience, total monthly precipitation and maximum monthly temperature will have the greatest impact on demand. These weather characteristics best define demand when calculated for each retail service area boundary, which accounts for microclimates driven by elevation gradients and proximity to large water bodies. The Northwest Alliance for Computational Science and Engineering at Oregon State University produces the PRISM (PRISM Climate Group 2004) weather dataset from a wide monitoring network, including the California Data Exchange Center (CDEC) and the California Irrigation Management Information System (CIMIS) gages. PRISM provides gridded weather data at a 4-kilometer resolution, and Python scripts were then used to process the total monthly precipitation (inches per month) and monthly average maximum daily temperature (degrees Fahrenheit) for each member agency's service area based on the coordinates of agency centroids.

Weather data are normalized to average conditions to disconnect weather variations from systematic seasonal cycles. Historical normal weather values were calculated for each member agency as the average monthly values over the period 1991 to 2024. Departures from the historical normal were then calculated as the actual monthly value minus the monthly historical norm in the natural log-scale, as shown in **Equation 2-6**.

$$Departure = \ln X_{i,m,t} - \overline{\ln X_{\iota,m}}$$

Equation 2-6

Where $X_{i,m,t}$ is an observed weather value for agency i in month m for year t and $X_{i,m}$ is the historical normal value for agency i in month m. A positive departure indicates above-normal conditions, and a negative value indicates below-normal conditions.

2.1.7 Water Price

Agencies provided historical water prices (in dollars per volumetric unit), which Hazen used to measure the effects of pricing on water usage. Three types of price structures were present across the agencies:

- Uniform volumetric prices which are constant across demand sectors or equivalent for all demand sectors, which do not vary by amount of water purchased;
- Volumetric tier prices, which vary by amount of water purchased by demand sector or are equivalent for all demand sectors; or
- Water-balance based (also called budget-based) prices in which prices for single and multifamily demand sectors are based on specific indoor use thresholds and outdoor irrigation characteristics.

Several agencies changed price structures over time; however, volumetric prices used in modeling reflect the marginal (or incremental) portion of the water rate that can be avoided by reducing consumption, consistent with economic theory. Any changes to price structure are incorporated in the marginal rate. The marginal price of water used in the demand model is defined as the cost of the 10th hundred cubic foot (CCF) for the single-family residential sector, and the cost of the 20th CCF for the multifamily residential, irrigation, and CII sectors.

Prior to modeling, all marginal prices were converted into real, inflation-adjusted, 2022 dollars using the Bureau of Labor Statistics, Consumer Price Index – All Urban Consumers for the Urban West (Series ID: CUUR0400SA0, CUUS0400SA0).-

2.1.8 Economic Indices

Water demand is positively correlated with economic fluctuations of the business cycle. Periods of economic growth generally see increased water use. Annual Real Gross Domestic Product (GDP) is used to reflect general economic trends. GDP for all industries in Orange County, CA, was downloaded from the Federal Reserve Bank of St. Louis Economic Research Division (FRED Economic Data). The trend in the time series of the GDP index was removed during model development to better identify short-term fluctuations in economic activity. Departure from the trend **(Figure 2-4**) was calculated by running a regression on the natural log of GDP on a linear time counter (each subsequent year means the time counter is increased by 1) and the residual is used as the explanatory variable. This is standard econometric practice for addressing common statistical problems with trending variables and allows for a more flexible interpretation of forecast scenarios.

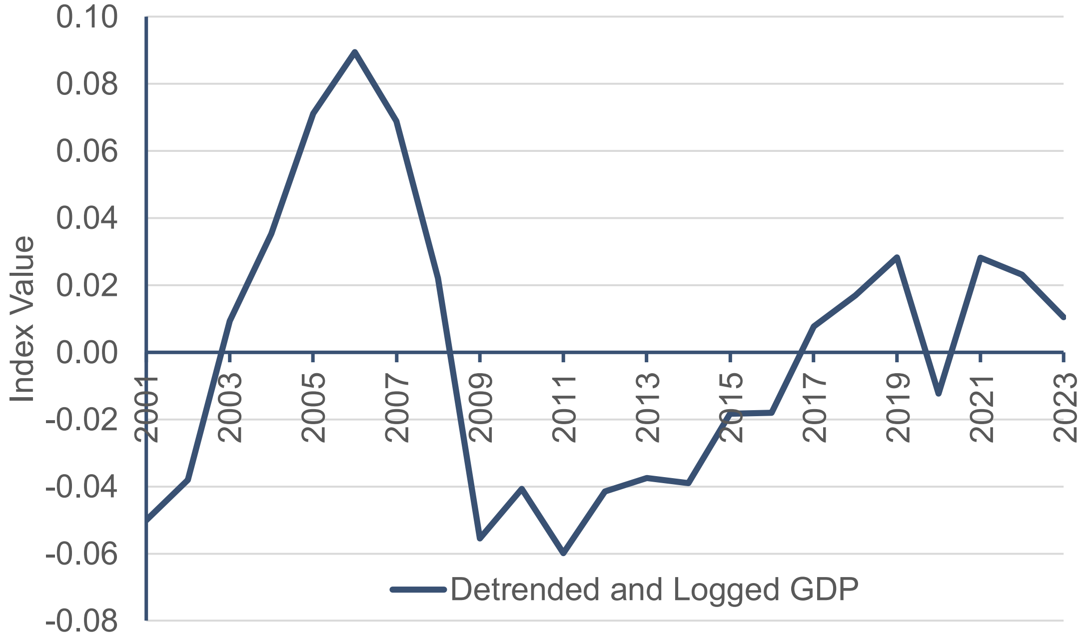


Figure 2-4: GDP Departure from Trend

The detrended GDP series shows the timing and magnitude of economic expansion prior to the effects of the Great Recession (after 2008) and COVID (in 2020) on macroeconomic output, while highlighting periods of positive and negative economic growth relative to the long-term trend.

2.1.9 Median Household Income

Median household income was identified as a potential explanatory variable for the residential sectors. Economic theory suggests a positive correlation between income and demand; generally, areas with higher median incomes tend to use more water. Median income was estimated from the US Census American Community Survey (ACS) data as the median value of all census tracts within each retailer's service area boundary. Median income was adjusted for inflation by normalizing to 2022-dollar values and held constant over time for each retailer (**Table 2-7**) because future changes in income are unknown and will likely change slowly.

Table 2-7: 2024 Median Income by Retailer (2022 $)

Agency	Income
Anaheim	$102,629
Brea	$119,135
Buena Park	$106,284
East Orange CWD	$192,611
El Toro WD	$118,718
Fountain Valley	$113,579
Fullerton	$104,061
Garden Grove	$91,554
GSWC Cowan	$191,042
GSWC Placentia	$191,042
GSWC West Orange	$191,042
Huntington Beach	$124,294
Irvine Ranch WD	$142,613
La Habra	$105,816
La Palma	$116,923
Laguna Beach CWD	$145,655
Mesa WD	$120,134
Moulton Niguel	$137,457
Newport Beach	$169,322
Orange City	$130,669
San Clemente	$131,079
San Juan Capistrano	$144,210
Santa Ana	$92,739
Santa Margarita WD	$153,652
Seal Beach	$127,699
Serrano WD	$164,156
South Coast WD	$134,980
Trabuco Canyon WD	$175,218
Tustin	$122,041
Westminster	$92,741
Yorba Linda WD	$144,687

2.1.10 Mix of Industries

Additional explanatory variables were developed to reflect the mix of CII activity within each member agency's service area. The presentation of the model drivers covers the LODES employment data and the geoprocessing used to generate the number and category of jobs for each retail agency. Historical employment data supplied by LODES was categorized by the North American Industry Classification System (NAICS) of the US Census Bureau. The LODES NAICS sectors were aggregated into four employment categories previously defined by CDR in other employment-related datasets: Retail, Public School K-12, Service, and Other **(Table 2-8)**.

Table 2-8: NAICS Sector Jobs by Model Sector

CDR Sector	LODES NAICS sector
Retail	- Retail Trade
K-12 Public School	- No exact LODES NAICS match for this CDR sector. The NAICS sector *Educational Services* was incorporated both into services and included as a separate explanatory variable to determine its relative importance to CII demand.
Service	- Information - Real Estate and Rental and Leasing - Professional, Scientific and Technical Services - Management of Companies and Enterprises - Administrative and Support and Waste Management and Remediation Services - Health Care and Social Assistance - Arts, Entertainment, and Recreation - Accommodation and Food Services - Educational Services
Other	- Agriculture, Forestry, Fishing and Hunting - Mining - Utilities - Construction - Manufacturing - Wholesale Trade - Transportation and Warehousing - Public Administration

The log of the percentage of each of these four sectors relative to total jobs was used as an explanatory variable to linearize the data and improve its suitability for modeling. For example, for the Retail sector in **Equation 2-7**.

$$Retail = log\left(1 + \left(100 \times \frac{Jobs\ in\ the\ CDR\ Service\ Classification}{Total\ Jobs}\right)\right) \qquad \textbf{Equation 2-7}$$

The CDR grouping Other was not included as an explanatory variable representing a reference point captured within the CII model intercept terms.

2.1.11 Housing Density

Housing density is negatively correlated with demand; on average, residences with more units per acre (or smaller parcel sizes) tend to use less water for outdoor uses. Housing density is calculated as the CDR provided housing units for each retail agency divided by the total single-family and multifamily parcel area, respectively. The total parcel area for each agency was determined based on processed GIS records from the Southern California Association of Governments (SCAG) and verified with ESRI's Regrid Nationwide Parcel Boundaries for the United States. **Table 2-9** shows the total parcel area for each agency.

Table 2-9: 2024 Total Residential Acreage

Agency	Single-family Residential Acreage	Multifamily Residential Acreage
Anaheim	9,977.09	4,912.70
Brea	1,811.03	482.29
Buena Park	2,466.53	476.03
East Orange	473.04	17.42
El Toro	1,088.96	1,753.94
Fountain Valley	2,337.74	205.75
Fullerton	6,162.68	1,148.85
Garden Grove	5,099.65	965.29
Gold Cowan	1,528.76	7.22
Gold Placentia	1,843.66	346.31
Gold West Orange	3,148.31	826.74
Huntington Beach	6,451.57	1,823.83
IRWD	19,932.92	6,120.52
La Habra	2,053.92	526.46
La Palma	454.42	42.67
Laguna Beach	1,448.16	384.09
Mesa Water	2,436.95	1,338.02
Moulton Niguel	9,375.38	2,232.31
Newport Beach	2,962.92	814.65
Orange City	5,841.42	1,165.48
San Clemente	4,091.96	722.78
San Juan Capistrano	4,087.79	545.10
Santa Ana	5,336.01	2,189.99
Santa Margarita	14,333.86	1,608.48
Seal Beach	542.81	513.34
Serrano	1,050.94	0.46
South Coast	2,088.12	584.61
Trabuco Canyon	1,754.56	30.76
Tustin	2,547.23	690.39
Westminster	2,541.25	680.32
Yorba Linda	6,556.85	508.99

Figure 2-5 shows the household density (households per acre) for each agency. (Serrano WD has no multifamily housing and the households per acre is abnormally high and is not shown.)

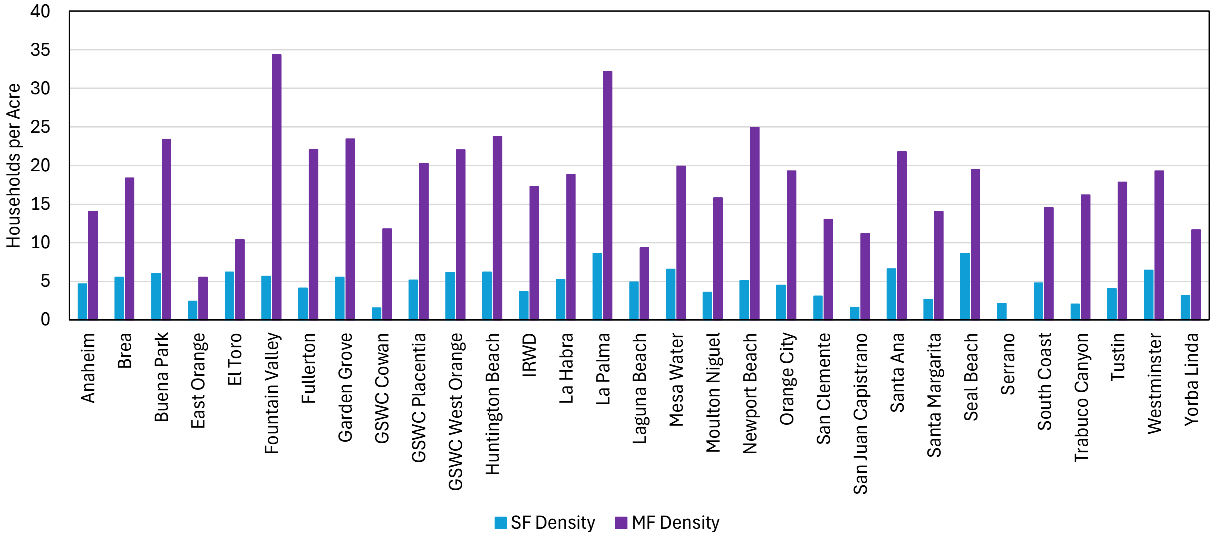


Figure 2-5: 2024 Household Density (average households per acre)

Multifamily density can be as much as an order of magnitude (i.e., ten times) higher than single-family density.

2.1.12 Persons per Household

Generally, households with more people tend to use larger amounts of water i.e. “persons per household” is an explanatory variable that is positively correlated with demand. The American Community Survey (ACS) is census-based data that provides information on housing units, total household population, and a breakdown of single-family and multifamily populations. ACS datasets are available at the census tract level. To derive ACS data specific to Orange County water agency boundaries, a geoprocessing approach was implemented to match census tract boundaries with MWDOC’s service area boundaries, as was done for employment data. Using the single-family and multifamily population split, an estimate of persons per household (PPH) for both single-family and multifamily housing was developed based on water agency boundaries

Hazen used ACS data because it calculates population in each single-family and multifamily household categories. CDR provides total population. To ensure consistency with the CDR provided housing unit and population data, the ACS-derived single-family and multifamily PPH estimates were calibrated to align with the CDR’s single-family and multifamily housing unit data.

The persons per household ratio was calculated separately for single-family and multifamily residences as shown in **Figure 2-6**.

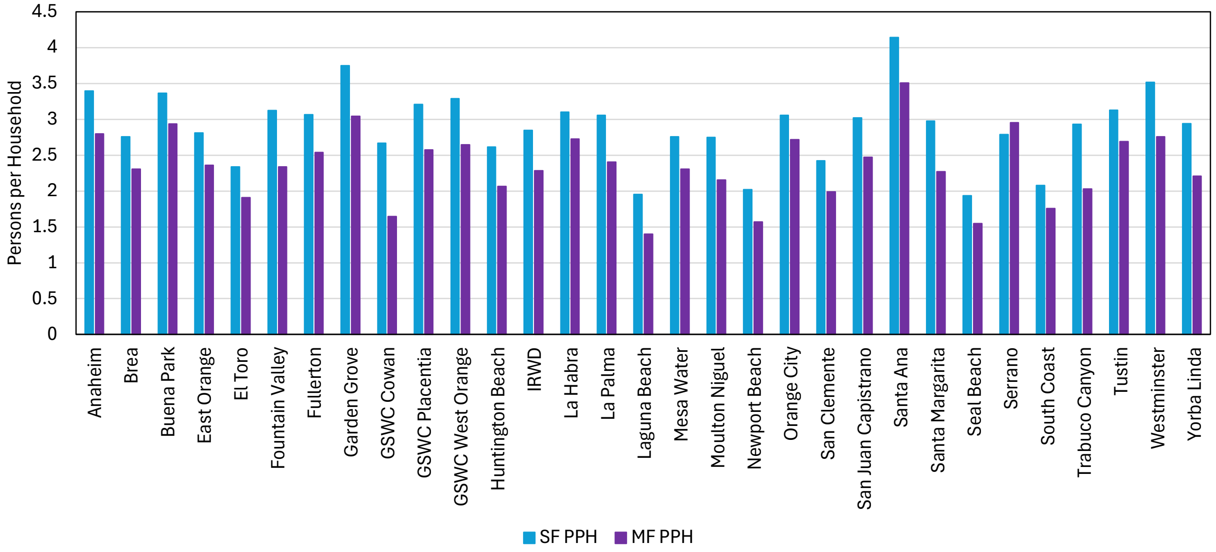


Figure 2-6: 2024 Estimated Persons per Household

In general, single-family homes have more residents per household.

2.1.13 Households Per Account

The number of households is not always equal to the number of accounts. Higher units per account is associated with higher demands. Average annual units per account for each residential class was used to (a) account for differences in the number of units per account in the historical modeling and (b) to permit the translation of CDR projections of households to be translated into accounts for forecasting purposes.

2.1.14 Conservation

The MWDOC Water Use Efficiency Group (WUE) provided annual savings achieved by various active conservation measures (represented by rebate program participation from the start of that specific program to present) for each MWDOC member agency and the adjacent cities of Anaheim, Fullerton, and Santa Ana. The sum of residential and commercial programs yields the total active annual conservation for each retail agency. Many of these programs were not specified as residential versus CII and were difficult to label as either passive conservation (water savings that occur without incentives) or active conservation practices.

To avoid additional calculations and potential errors in the classification of historical conservation data, total historical conservation was depicted in each sectoral model as a linear increasing trend. The coefficient derived for this trend in the regression explains whether agency water use that could not be explained by the other explanatory variables tended to increase or decrease with time; decreases over time were attributed to conservation, independent of the effects of price.

2.1.15 Drought Restrictions

The presence of drought restrictions tends to decrease the amount of water consumed by customers. Water use restrictions were represented by the presence of Statewide drought declarations or mandatory restrictions (both assigned a binary value of 0 or 1, meaning either the restriction is in place or it is not), and the state-required cutback (as a decimal from 0 to 1 corresponding to the restriction percentage) if a restriction was in place. The time series of historical water restrictions is shown in **Figure 2-7**.

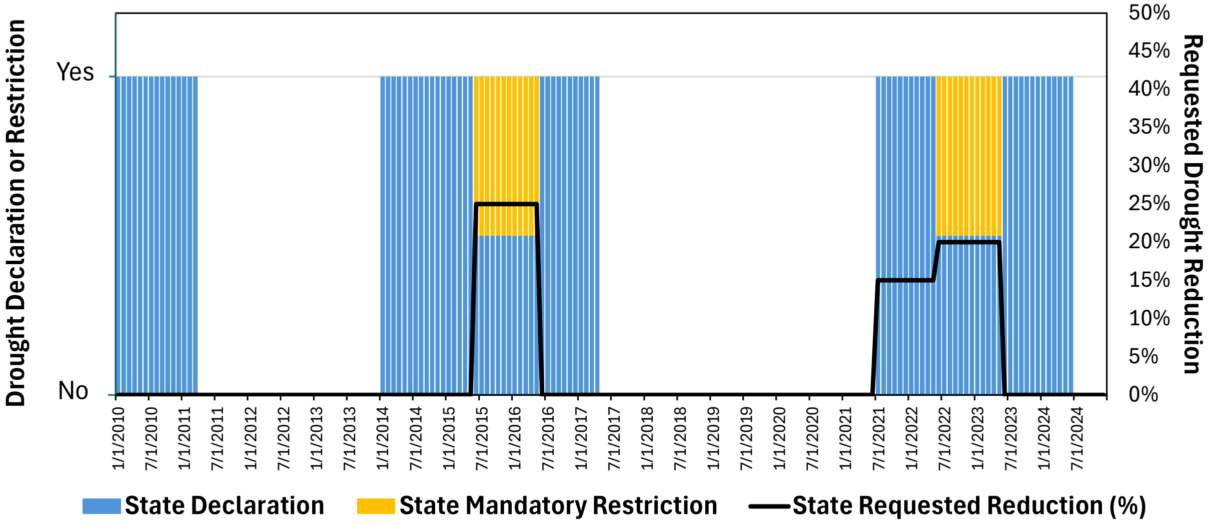


Figure 2-7: Time Series of Historical Water Restrictions Imposed by the State

Retail agencies also provided their agency-specific drought stages, which were categorized as level 1, level 2, or level 3 and greater. During the model fitting process, Hazen determined that while the State Declarations resolved water use for the single-family, multifamily, and CII sectors, the agency-specific drought stages (which did not always coincide with the State binary or percentage requests) yielded a better fit across the irrigation sector models.

2.1.16 COVID

COVID is introduced as a binary variable for March 2020 through May 2023, the period in which the World Health Organization designated COVID-19 a pandemic. The presence of COVID restrictions tended to increase the amount of water consumed by residential customers and decreased the amount used in the CII sector.

3. Model Approach and Development

The development of historical econometric models provides a significant analytical benefit for forecasting demand, as Historical models enable the capture of cause-and-effect relationships among weather, prices, socioeconomic factors, and other factors that drive water demand variability. Quantifying these causal relationships enables forensically sound analysis of "what-if" scenarios that are uncertain but important for planning considerations (for example, climate change, development patterns, and drought recovery).

3.1 Modeling Approach

The econometric demand model relies on the comprehensive set of historical water use data discussed in **Section 2** to develop a set of equations that equates total water use to the rate of water use per driver multiplied by the specific sectoral driver (**Equation 3-1**). Each of the four demand sectors modeled (single-family, multifamily, CII, and irrigation) has a separate equation.

$$\underset{Q}{Water\ use} = \underset{N}{Driver\ Count} \times \underset{q}{Rate\ of\ Use\ per\ Driver}$$

Equation 3-1

Driver units for a particular demand sector (e.g., household water accounts or employment) will change in the future. The rate of water use per driver (e.g. gallon/account/day) is based on the historical response of the water use rate to the explanatory variables (independent variables in the econometric equations) and on the future values of those explanatory variables.

Linear regression produces the coefficients for each explanatory variable to closely reproduce the historical rate of use per driver unit. **Equation 3-2** shows an example linear regression for single-family water use, where water rates and temperatures are examples, and represent only a subset of possible explanatory variables. C_R and C_T represent the water rate coefficient and temperature coefficient, respectively.

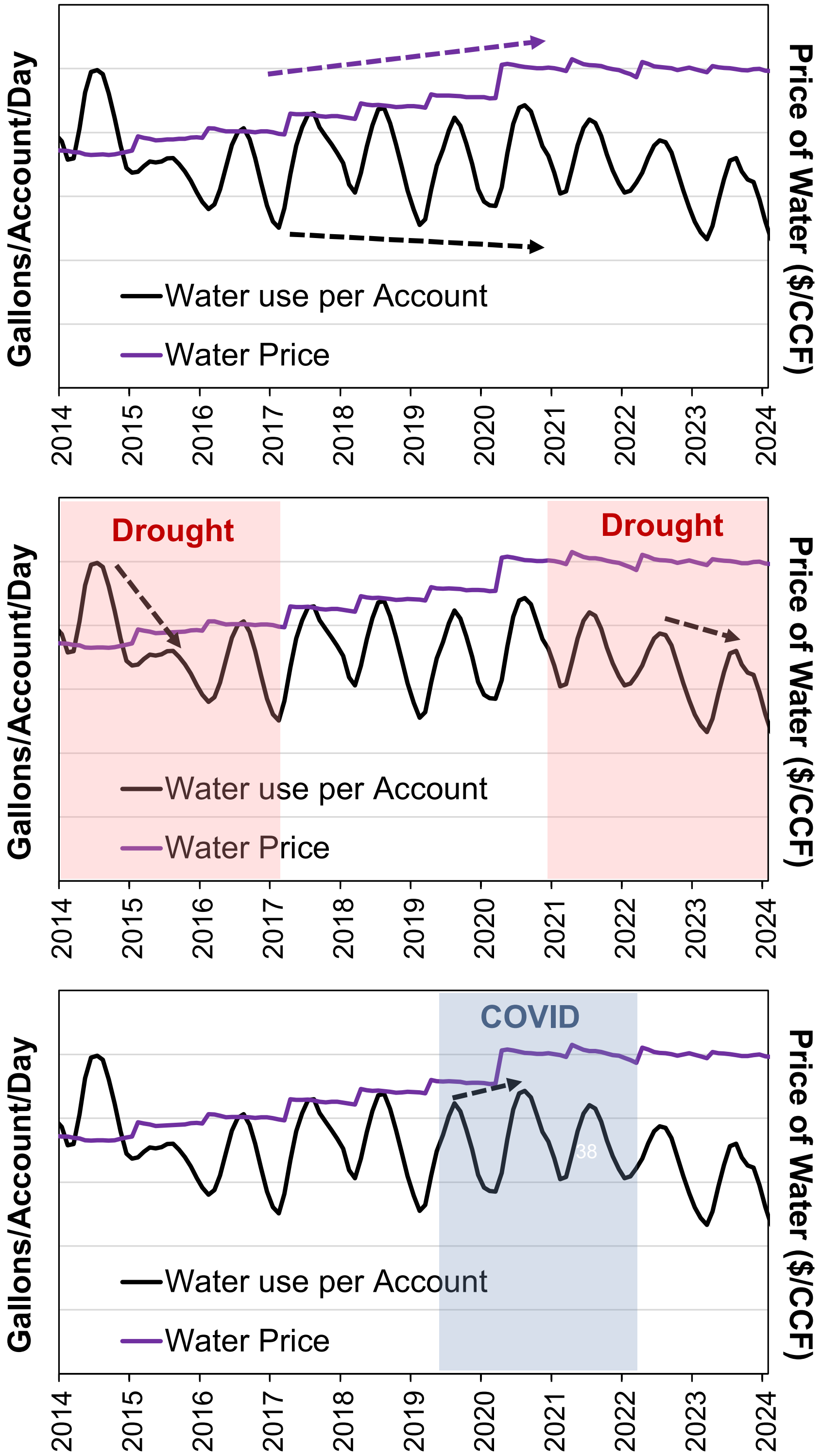
$$Rate\ of\ Use\ per\ Driver = \frac{Historical\ Single\ Family\ Use}{Single\ Family\ Account} = C_{Intercept} + C_R \times$$
$$Historical\ Water\ Rates + C_T \times Historical\ Temperatures + \ \dots$$

Equation 3-2

Panel fixed effects ordinary least squares (OLS) regression is used to estimate the coefficients that relate multiple independent explanatory variables (such as weather and water price) to the dependent variable (water user per account) by minimizing the sum of the squares in the difference between observed and predicted values of the water use rate. OLS regression can be coded to incorporate:

- A systematic and predictable relationship between the explanatory variable and use per account;
- Agency-specific coefficients (the effect of seasonal trends might differ between agencies); and
- Potential interdependence, or interactions, between fixed effects (for example, the dependence of water use on price may differ depending on the season).

The derivation of appropriate coefficient values (both sign and magnitude) through regression requires sound judgment of demand behavior and the inclusion of numerous explanatory variables to address multiple influences on demand. **Figure 3-1** illustrates that excluding key explanatory variables from the regression, which account for reasons not associated with responses to price (such as mandatory state restrictions or local conservation), could incorrectly attribute changes in demand to the volumetric price of water (i.e., incorrectly magnifying the effect price has on demand).



Long term decrease in water use and increase in water price: we expect water use to be negatively correlated to price

Assigning a coefficient to water price without accounting for drought restrictions would generate a price coefficient that is too negative

Assigning a coefficient to water price without accounting for COVID could bias the price coefficient

Figure 3-1: Improving Coefficient Accuracy by Addressing Multiple Demand Factors

There are additional expectations for model coefficients affiliated with the explanatory variables that helped in model development. Estimated coefficients needed to be rational (both in signs and magnitudes), aligning with Hazen's experience and yielding as high of an explanatory power as practically possible. Orange County water use varies widely by geography (agency) and time. A panel regression modeling approach is best suited to explicitly account for variables that have historically varied highly across geography but not time (for example, median income, persons per household, and housing density). The panel approach enhances forecast accuracy for each agency by simultaneously fitting consumption data from all member agencies. The larger sample size enables more robust fits for agencies with data gaps. All agencies still receive their own unique statistical equations and outputs, although some coefficients may apply to all (or be the same across) agencies. Because consumption data was not consistently available back to 2010 for all member agencies, the dataset represents what is called an "unbalanced panel" (not all retail agencies have the same number of observations for the same time periods), requiring these special techniques to account for missing information and potential cross-sectional biases.

3.2 Model Development

The development of econometric models is an iterative process as outlined in **Section 3.2.1.** Model fitting results in a set of explanatory variables used to forecast water use. In **Section 3.3**, model fits and performance are organized by water-use sector.

3.2.1 Model Fitting

Table 3-1 outlines the model fitting process.

Table 3-1: Iterative Process for Developing Econometric Models

Model Fitting Procedure	Description
Pre-process model input data	Conduct necessary pre-processing calculations prior to model fitting: • Geographical processing of driver units. • Calculate per-unit use. • Calculate natural logarithms of per-unit use and appropriate explanatory variables. • Calculate departures from normal conditions for appropriate explanatory variables (i.e., economic trend and weather). • Calculate any index, "dummy", or interacted parameters (e.g., seasonal cycle, geography, drought severity). • Smooth monthly and bimonthly data to adjust for irregular billing cycles.
Fit regression models for each sector	Use statistical estimation software (e.g., R, SAS, EViews) to fit linear regression equations to per unit use with the initially selected explanatory variables.
Examine coefficient estimates and measure of fit	Check measures of fit (such as R^2) and coefficient values for reasonable magnitude, direction/sign, and significance.

Model Fitting Procedure	Description
Refine the model to improve measures of fit and coefficient estimates	If the model fit is poor or if coefficient estimates are illogical or insignificant, several actions can be taken, including but not limited to: • Identifying and removing outlier data points that have significant leverage on coefficient estimates. • Remove explanatory variables with insignificant or illogical coefficient estimates from the regression equation. • Testing alternate specifications of explanatory variables.
Check models for cross-sector consistency	Model fits and explanatory variables are compared across sectors to judge estimates relative to prior expectations, for example, testing if the relative effects of price and socioeconomic variables vary by sector in a logical way based on past experience.

The models are fit to historical data using a combination of data management and statistical analysis software (R, SAS, or EViews). The model estimation results were checked to ensure strong measures of fit (e.g., R^2) and that coefficients were significant and reasonable. Goodness of fit is a holistic exercise requiring judgement based on two classifications of indicators:

1) Overall summary statistics used to evaluate relative model performance: these may include R^2, Measures of average error (mean absolute error, standardized error metrics such as SAME and RMSE), and measures of bias; and

2) Visual inspection applied to plots of historical data provides an indication of the model's ability to represent long-term trends, perform as expected during periods of interest (for example, COVID and State water use restrictions), allows the modeler to evaluate the presence of systematic biases and assess the variance in the underlying data.

Section 3.3 summarizes the statistical model fits and their performance in comparison to historical observations of water consumption.

3.2.2 Summary of Explanatory Variables

The initial selection of explanatory variables is discussed in detail in Section 2. However, during the model fitting process, derivatives of initially selected variables were also developed and included in model equations. For example, an agency's monthly water use may also be influenced by the precipitation, or temperature, in the prior month. In some cases, time lags of 1 to 3 months in weather variables improved the estimation of weather impacts on demand.

Table 3-2 details the explanatory variables used to develop the demand models and identifies the expected sign and magnitude of the coefficient estimates resulting from the linear regression. The coefficient sign represents whether an explanatory variable will have a negative or positive impact on demand, for example, water use will decrease as price increases and the price coefficient should be negative. The coefficient magnitude illustrates the importance of the explanatory variable relative to all others. For example, a persons per household coefficient of 0.3 indicates that persons per household has a lesser influence on demand than a coefficient of -0.5 assigned to density.

Table 3-2: Description of Demand Model Explanatory Variables

Explanatory Variable	Log Transformed?	Expectations about Coefficient Estimates	Description
Departure from normal monthly maximum temperature (lagged values of temperature were also evaluated and included as explanatory variables as the influence of weather on water demand can persist for several months.)	Yes	Positive Sign	Represents the difference from long-term temperature. Higher than normal temperatures are associated with increased demands.
Departure from normal monthly precipitation (lagged values precipitation were also evaluated and included as explanatory variables as the influence of weather on water demand can persist for several months.)	Yes	Negative sign	Represents the difference from long-term precipitation. Higher than normal rainfall is associated with lower demands.
Seasonal index	No	Larger magnitudes for agencies with greater seasonal peaking	Reflects the cyclical pattern in water use, where demands are generally higher in the summer and lower in the winter. Represented in the model as a sine / cosine pair of variables. (Most sectors have a single sine/cosine pair representing the seasonal cycle).
Price	Yes	Negative sign with absolute value between 0 and 1	Economic theory suggests negative correlation with demand.
GDP	Yes	Positive Sign	Water demand is positively correlated with economic fluctuations of the business cycle. The index is modeled as departures from long-term trends.
Mix of jobs across industries	Yes	N/A	The representation of jobs in many industries within a geographical area is related to the amount of water used within the CII sector. There is generally no expectations on the range of coefficient estimates.
Housing density	Yes	Negative sign (commonly between 0 and -1)	Housing density is negatively correlated with demand; on average, residences with more units per acre (or smaller parcel sizes) tend to use less water on outdoor uses.

Explanatory Variable	Log Transformed?	Expectations about Coefficient Estimates	Description
Median income	Yes	Positive sign (commonly between 0 and 1)	Economic theory suggests positive correlation of income with demand; generally geographical areas with higher median incomes tend to use more water.
Persons per household	Yes	Positive sign (commonly between 0 and 1)	Positively correlated with demand; generally, residences with more people tend to use larger amounts of water
Water Use Restrictions	No	Negative sign	Reflects the effect of drought restrictions

Most explanatory variables are log-transformed because some variables are orders of magnitude larger than others (for example, income is in the tens of thousands of dollars while monthly precipitation may be smaller than 1 inch). Log transformation compresses the large values and spreads out smaller ones, balancing the data and facilitating the regression's ability to interpret how each variable affects demand.

3.3 Single-family Regression Development

This section reviews the development of the statistical regression for the single-family residential sector.

3.3.1 Explanatory Variables and Fitted Coefficients

The fit for the final single-family regression is presented in **Table 3-3**. While all coefficients are generated with the panel regression approach, Hazen relied on experience and the model fitting process to allows some coefficients to vary by agency (shown as a range of values) and restricted some to be constant across all agencies (and a single value is shown in Table 3-3). Coefficient estimates are within the expected range for all explanatory variables).

Table 3-3: Single-family Regression Variables and Coefficients

Explanatory Variable	General Directional Influence	Model Coefficient Range
Persons per Household	+	0.32
Single-family Units per Account	+	0.52
Housing Density	-	-0.52
Average Agency Income	+	0.09
Marginal Price (per 10 CCF)	-	-0.12
Departure from normal monthly maximum temperature	+	0 to 0.93
Departure from normal monthly maximum temperature (lagged 1 month)	+	0 to 0.95
Departure from normal monthly precipitation	-	0 to -0.031
Departure from normal monthly precipitation (lagged 1 month)	-	0 to -0.05
Departure from normal monthly precipitation (lagged 2 months)	-	0 to -0.023
Departure from normal monthly precipitation (lagged 3 months)	-	0 to -0.0139
Residual Trend	-	-0.0027 to 0.0003
COVID Indicator	+	0.02 to 0.15
State Requested Percent Restriction	-	0 to -0.81
State Drought Declaration	-	-0.08 to 0.01

Variables with an increasing effect on water demands included temperature, economic index, median income, and persons per household. Variables with a negative effect on water demands included precipitation, price, housing density, and water-use restrictions. Consumption is highly seasonal in the Orange County region, and the econometric model correlates well to seasonality and temperature. The single-family sector model produced the best fit among the four demand sectors.

3.3.2 Historical Model Performance

Visual inspection of the time series plots and review of the model fit parameters showed good performance across all agencies. **Figure 3-2** shows an example model fit for a single retail agency in the single-family sector in gallons per account per day. The model accounts for all dips in demand.

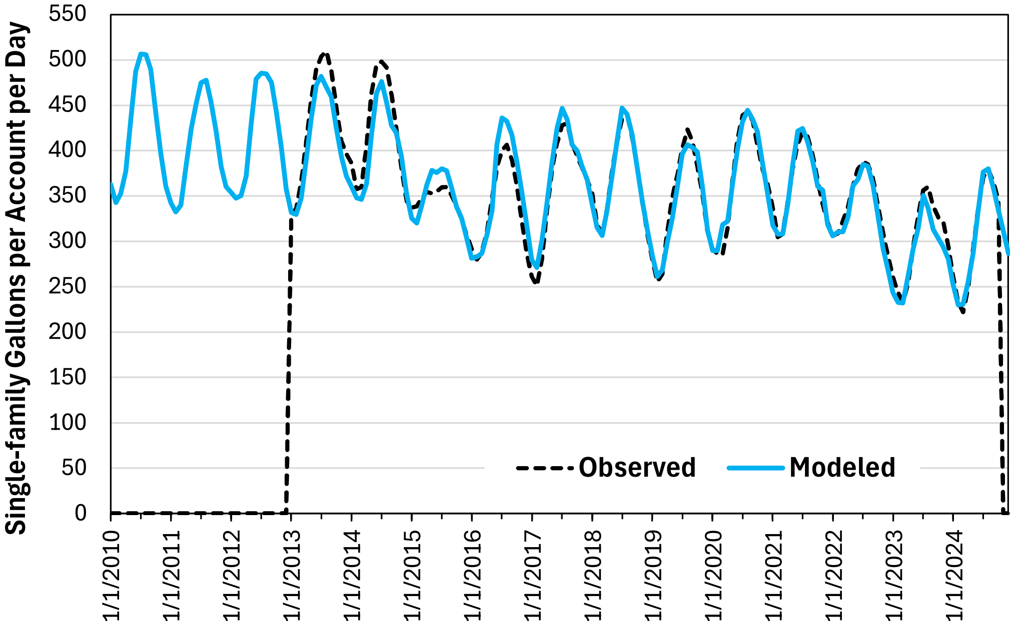


Figure 3-2: Modeled vs Historical Water Use per Account for Single-Family for One Agency

The R^2 values for all retail agencies are all above 80%, which indicates that the explanatory variables used in the model as well as their multipliers (model coefficients) explain 80% or more of the historical variability in the single-family use per account measurements.

3.4 Multifamily Regression Development

This section reviews the development of the statistical regression model for the multifamily residential sector.

3.4.1 Explanatory Variables and Fitted Coefficients

Most explanatory variables for the multifamily sector are the same as for the single-family sector. Median income and a 2-month lagged departure from precipitation were dropped. These modifications to the model design resulted in stronger measures of fit and more reasonable coefficient estimates. Final coefficient estimates presented in **Table 3-4** are within the expected range for all explanatory variables

Table 3-4: Multifamily Regression Variables and Coefficients

Explanatory Variable	General Directional Influence	Model Coefficient Range
PPH	+	0.5 (restricted)*
Housing Density	-	-0.33
MF Units per Account	+	0.79
Marginal Price (per 20 CCF)	-	-0.035
Departure from normal monthly maximum temperature	+	0 to 1.07
Departure from normal monthly maximum temperature (lagged 1 month)	+	0 to 1.46
Departure from normal monthly precipitation	-	0 to -0.04
Departure from normal monthly precipitation (lagged 1 month)	-	0 to -0.06
Residual Trend	-	-0.007 to 0.0017
COVID Indicator	+	-0.05 to 0.14
State Requested Percent Restriction	-	-0.8 to 0.32
State Drought Declaration	-	-0.16 to -0.04

*The persons per household coefficient was set to 0.5, which was lower than the initial econometric estimate (which was >1). This change avoided instabilities, with little effect on the other coefficient estimates.

The multifamily use per account is less influenced by water price than single-family (lower coefficient).

3.4.2 Historical Model Performance

Visual inspection of the time series plots and review of the model fit parameters showed good model performance, with most fits exceeding an R^2 of 80%. **Figure 3-3 s**hows the performance of the multifamily regression for an example agency.

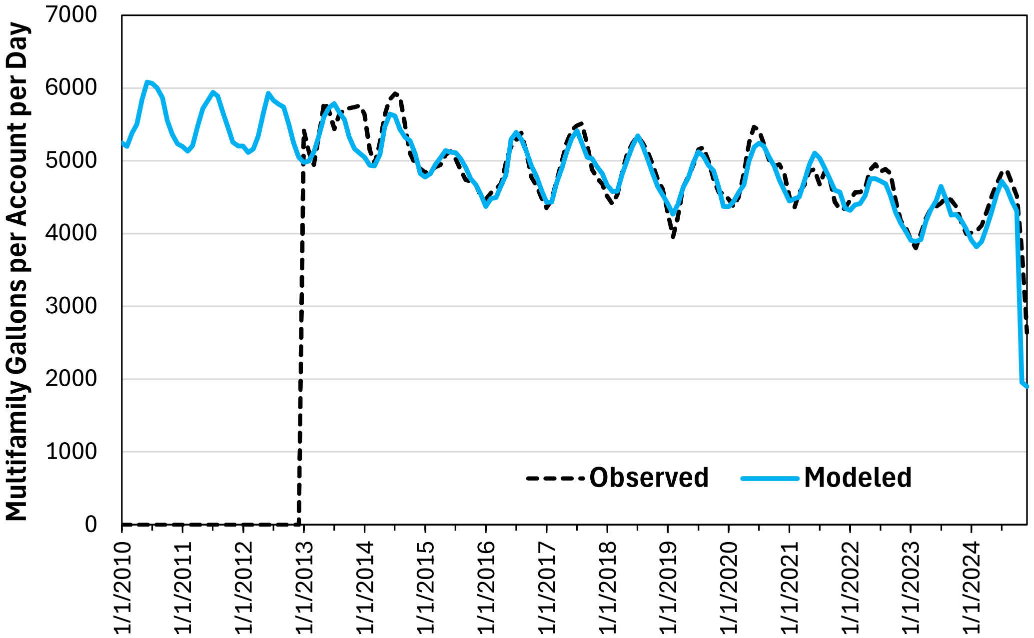


Figure 3-3: Modeled vs Historical Water Use per Account for Multifamily for an Agency

Multifamily use is generally less responsive to weather than the single-family demands; some of the outdoor use has been shifted over into the irrigation sector, and the reported multifamily use is primarily indoor.

3.5 CII Regression Development

Different billing classification schemes among retail agencies introduced definitional uncertainty in sectoral water use and driver units. For example, certain agencies lacked a distinct industrial billing classification while others combined commercial and institutional categories. Additional verification of water use at the account level was not possible, given the data constraints for this project. In response to these constraints and uncertainties, total use within the commercial, industrial, and institutional sectors was consolidated into a single composite CII regression. The benefit of combining these classifications is a more “parsimonious representation” (i.e., a simpler, clearer approach) with one sector, while providing a means to use the mix of industries to explain CII water-use variability across retail agencies.

3.5.1 Explanatory Variables and Fitted Coefficients

Explanatory variables for the final CII regression equation, along with their coefficients, are reported in **Table 3-5**.

Table 3-5: CII Regression Variables and Coefficients

Explanatory Variable	General Directional Influence	Model Coefficient Range
Proportion of Total Jobs in Retail	+	0.42
Proportion of Total Jobs in Education	+	0.287
Proportion of Total Jobs in Services	+	0.294
GDP	+	0.81
Marginal price (per 20 CCF)	-	-0.114
Departure from normal monthly maximum temperature	+	0 to 1.63
Departure from normal monthly maximum temperature (lagged 1 month)	+	0 to 0.7
Departure from normal monthly precipitation	-	0 to -0.50
Departure from normal monthly precipitation (lagged 1 month)	-	0 to -0.06
Departure from normal monthly precipitation (lagged 2 month)	-	0 to -0.034
Residual Trend	-	-0.01 to 0.01
State Requested Percent Restriction	-	-0.24 to 0.17

The coefficients for CII indicate the job proportion used: total services portion, total education portion, and total retail portion. CII use per job is positively correlated with each job proportion as well as gross domestic product throughout Orange County.

3.5.2 Historical Model Performance

Visual inspection and performance metrics showed good model performance, including the same seasonal cycle and quantities. Like other classes, most fits exceed an R^2 of 80%. **Figure 3-4** shows the model performance for an example agency.

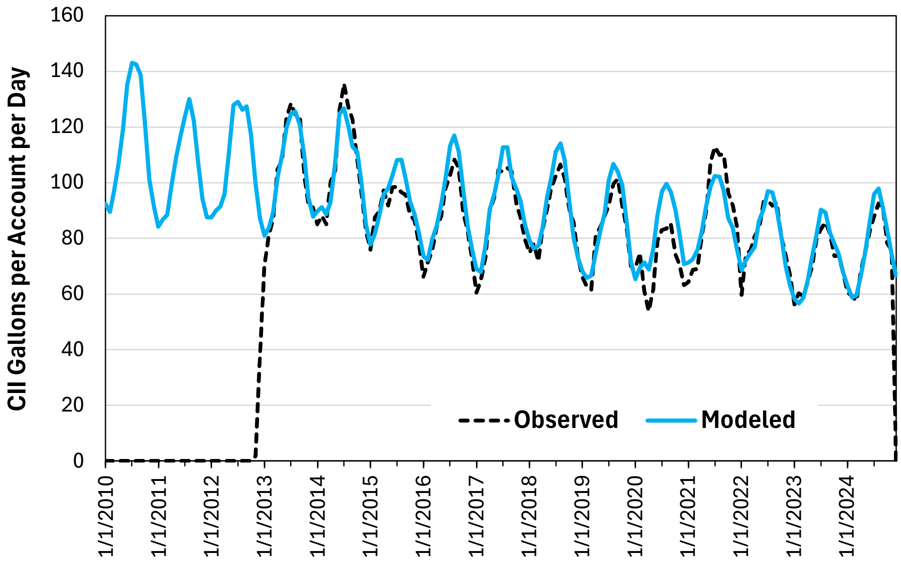


Figure 3-4: Modeled vs Historical Water Use per Account for CII Use for an Agency

3.6 Irrigation Regression Development

This section reviews the development of the statistical regression model for the irrigation sector. Both potable and recycled irrigation water demands were included in the analysis.

3.6.1 Explanatory Variables and Fitted Coefficients

Explanatory variables for the final Irrigation regression equation, along with their coefficients, are reported in **Table 3-6**.

Table 3-6: Irrigation Regression Variables and Coefficients

Explanatory Variable	General Directional Influence	Model Coefficient Range
Marginal Price (per 20 CCF)	-	-0.14
Normal monthly maximum temperature	+	0 to 2.58
Normal monthly maximum temperature (lagged 1 month)	+	0 to 2.34
Normal monthly precipitation	-	0 to -0.13
Normal monthly precipitation (lagged 1 month)	-	0 to -0.11
Normal monthly precipitation (lagged 2 month)	-	0 to -0.068
Agency Stage 1	-	-0.46
Agency Stage 2	-	-0.13
Agency Stage 3	-	-0.37
COVID		-0.18 to 0.26

During the model fitting process, historical precipitation values were found to generate a better fit than departures from normal weather precipitation. Additionally, irrigation use is better defined by agency-declared stages than by State declarations. Irrigation is much more responsive to temperature and precipitation than the other sectors, as expected.

3.6.2 Historical Model Performance

Visual inspection and performance metrics showed good model performance, matching the seasonal cycles and quantities with high overall accuracy. **Figure 3-5** shows the model performance for an example agency.

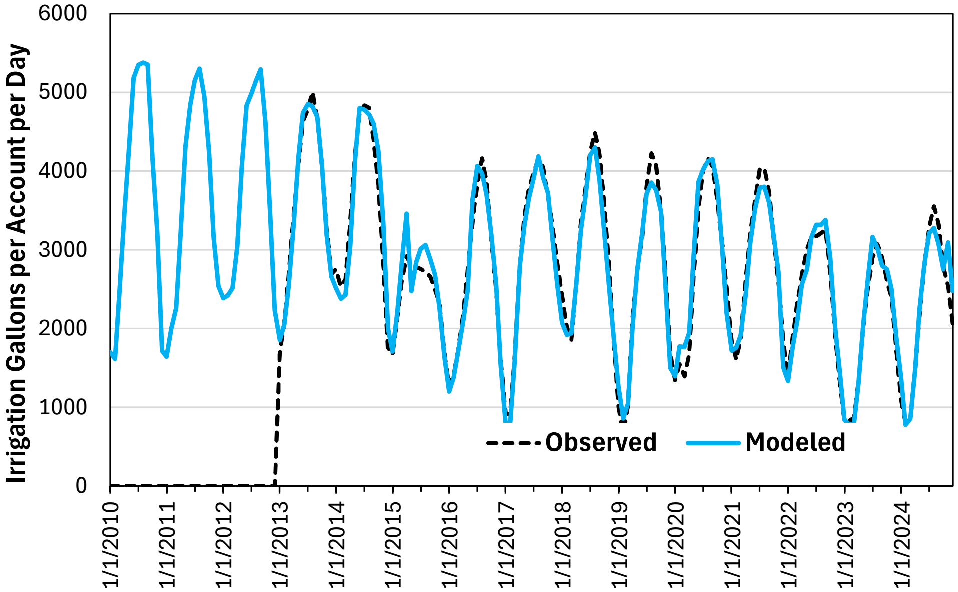


Figure 3-5: Modeled vs Historical Water Use per Account for Irrigation for an Agency

3.7 Price Elasticity

The sensitivity of the quantity of water demand to a change in its price is known as the price elasticity. The sector-specific results showed average price elasticities across the year, but the demand models allow the elasticity to vary by time of year. As water use becomes more discretionary in the summer, the estimated price elasticity (the response to price changes) tends to increase. Comparison of the four elasticity values in **Figure 3-6** reveals that multifamily demand is the least price-responsive (i.e., the least elastic of the demand sectors). The other sectors show a blend in terms of when the price signal starts mattering more. For single-family use, price changes have a large impact in late spring and early summer. Prices for CII and irrigation have the biggest impact in the summer (irrigation price elasticity approaches a coefficient of -0.25, which means that a 1% increase in the volumetric price of water leads to a 0.25% decrease in water use per account). The average regional response to price varies for a given sector over the calendar year.

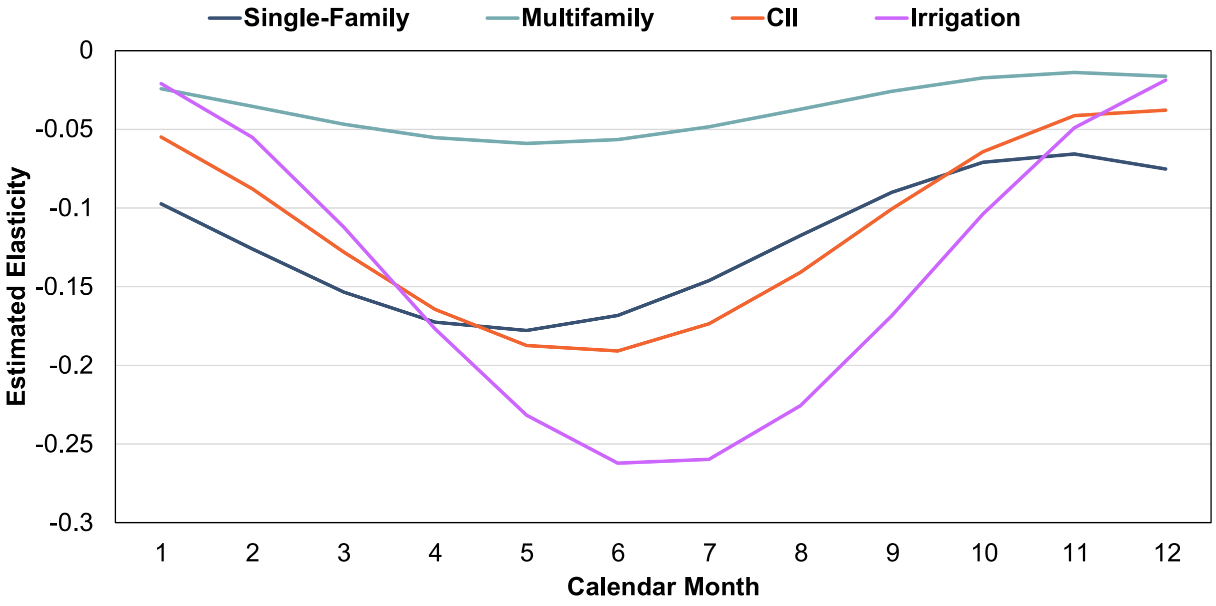


Figure 3-6: Estimated Seasonal Price Elasticities by Demand Sector for Orange County Water Agencies

Even though the model coefficient for price is equal for each agency across all four sectors, the actual water rate data each agency provided is in the panel dataset, so the data by which this price coefficient is multiplied differs. Additionally, agencies adopt different block structures (different prices for the 10th or the 20th CCF) over time. Both the spatial and temporal variability in water rates allows us to estimate these elasticities, even though the coefficients are applied at the regional level.

3.8 Model Development Summary

The econometric regressions show strong performance in explaining historical patterns of consumption over the 15 years from 2010 to 2024, including two major droughts and the COVID pandemic. Most of the regressions had R-squared values of 0.80 or greater. None of the regressions demonstrated a large, consistent bias. Based on this analysis, the estimated regression equations reflect a suitable basis for forecasting.

The overall model approach allows for demand forecast scenario analysis based on varying assumptions of future conditions. Several forecast scenarios may be explored, including climate change-adjusted weather, alternate assumptions around the timing and magnitude of drought recovery, alternate assumptions around urban development, and/or different assumptions around future economic conditions. For any of these future scenarios, the model coefficients presented in this section should be maintained as they reflect the best-fitted estimates of the causal relationships between external socioeconomic conditions and historical water demand, given the available modeling data.

Model scenarios can also be developed to address uncertainties in future explanatory variables, such as housing/job growth and density. Future inputs in these scenarios could be conducted as a sensitivity analysis or be driven by alternate growth projections. On a regular basis, overall model performance should be evaluated. Annually, forecasted consumption and input assumptions (driver unit counts, economic conditions, water rates, etc.) can be compared with observed conditions as data becomes available to monitor predictive performance. Less frequent (approximately every 5 years), model explanatory variables should be re-evaluated. Major events, such as another drought or a severe economic recession, may necessitate reexamination and/or refitting model coefficients and may cause changes in longer-term expectations over the forecast period.

4. Future Demand Analysis

The four sector-specific econometric models are used to establish baseline demand projections from 2025 to 2050 at a monthly timestep for each retail agency[1]. Prior to forecasting, the models are calibrated to a specific observation year, and other uses are quantified (other uses are miscellaneous uses not included in the original four demand sectors).

Hazen worked with each agency separately to change the calibration factors or household and job variables to yield a forecast start year value (Fiscal Year 2024-2025) that was reasonably close to agency observations. Calibration refers to adjustments for residual biases in the output of fitted econometric models to establish a historical point in time to anchor projections of the future to a recent, representative historical period for each agency and sector. The calibration approach implemented a simple scalar calibration at the per-account (rate-of-use) level for each agency and sector. The use of simple scalar (i.e., a constant multiplicative factor) preserves the econometric relationships (e.g., weather and price elasticities) while removing differences/errors in the statistical model predictions for the selected calibration period.

For each member agency and model sector a calibration factor was calculated as the ratio needed to make the model's average predicted per-unit use equal the observed per-unit use over the selected calibration period. Calculated factors were then applied multiplicatively to all forward-looking monthly rate-of-use predictions. Model output for each sector (water use per unit) was multiplied by calibration factors to account for biases in the historical model fits. Calibration factors were derived from the ratio of predicted to observed water demand for historical normal weather years for each retail agency, or historical water demand based on agency-requested time periods (**Equation 4-1**).

$$Calibration\ Factor = \frac{Historical\ (observed)\ water\ use}{Modeled\ (predicted)\ water\ use} \qquad \textbf{Equation 4-1}$$

Calibration factors were unique to each retail agency and sector and are summarized in **Table 4-1**.

Table 4-1: Calibration Factors

Agency	SF Calibration Factor	MF Calibration Factor	CII Calibration Factor	Irr Calibration Factor
Anaheim	0.99	0.99*	1.09*	0.78
Brea	1.00	1.00	0.98	1.08
Buena Park	0.99	0.99	1.04	0.97
East Orange CWD	1.06	0.99	0.99	0.99
El Toro WD	1.00	1.00	1.02	0.69
Fountain Valley	1.03	1.01	1.04	0.33
Fullerton	1.01	1.00	0.98	0.99
Garden Grove	1.02	1.01	1.32	0.99

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[1] Due to the timing of the project, water use data were collected up to December 2024. The model projections begin in January 2025.

Agency	SF Calibration Factor	MF Calibration Factor	CII Calibration Factor	Irr Calibration Factor
GSWC Cowan	0.97	1.00*	0.00	0.91
GSWC Placentia	1.00	1.43*	0.00	0.93
GSWC Orange	0.98	1.33*	0.55	0.97
Huntington Beach	1.00	0.93	0.98	0.80
Irvine Ranch WD	1.01	0.99*	0.85*	0.66
La Habra	1.01	0.99	1.02	1.01
La Palma	1.00	1.00	1.00	1.00
Laguna Beach CWD	0.97	1.00	1.10	0.84
Mesa WD	1.00	1.00	1.01	1.00
Moulton Niguel	1.02	1.01	0.26	1.08
Newport Beach	1.03	1.01	1.08	0.77
Orange City	1.00	1.00*	0.94*	1.11
San Clemente	1.01	1.00	0.99	0.64
San Juan Capistrano	1.00	0.93	1.00	0.96
Santa Ana	1.03	1.01	1.00	1.39
Santa Margarita WD	1.00	0.99	0.61	0.83
Seal Beach	0.95	0.97	1.01*	1.01
Serrano WD	1.07*	0.00	0.00	1.05
South Coast	1.03	0.99	1.14	0.66
Trabuco Canyon WD	0.96	0.93	1.00	0.68
Tustin	1.02	1.00	1.04	0.99
Westminster	1.00	1.17	0.99	1.05
Yorba Linda WD	1.07	1.08	1.03	1.02
*Agencies have several billing sectors within this demand sector and have several different calibration factors in their specific spreadsheet model				

Total water use was summed for each sector to derive annual total use for each agency (**Equation 4-2**).

$$Forecast\ Water\ Use = \sum_{Four\ Demand\ Sectors} Driver\ Count \times Use\ per\ Driver \times Calibration$$ **Equation 4-2**

Other uses are predominantly low flows and include fire flows, temporary meters, construction and power uses, and losses. **Equation 4-3** shows these computed as a fraction of the annual total use after calibration.

$$Other\ Use\ \% = \frac{(Delivered - Bill\quad)}{Billed}$$ **Equation 4-3**

Table 4-2 quantifies the other uses for each agency.

Table 4-2: Other Uses by Agency

Agency	Other Use (Percent of Volume Billed)
Anaheim	3%
Brea	7%

Agency	Other Use (Percent of Volume Billed)
Buena Park	8%
East Orange CWD	12%
El Toro WD	3%
Fountain Valley	6%
Fullerton	4%
Garden Grove	8%
GSWC Cowan	6%
GSWC Placentia	6%
GSWC Orange	6%
Huntington Beach	11%
Irvina Ranch WD	5%
La Habra	4%
La Palma	4%
Laguna Beach	8%
Mesa Water	13%
Moulton Niguel	5%
Newport Beach	8%
Orange City	6%
San Clemente	4%
San Juan Capistrano	6%
Santa Ana	6%
Santa Margarita WD	4%
Seal Beach	4%
Serrano WD	5%
South Coast WD	2%
Trabuco Canyon WD	16%
Tustin	12%
Westminster	8%
Yorba Linda WD	10%

Calibrated models with other uses are used to forecast future total water use[2].

4.1 Baseline Scenario Assumptions

Future growth in driver units (housing and jobs) was tied to CDR projections through 2050. Future conditions for all other explanatory variables were selected to represent expected changes or to remain constant. **Table 4-3** summarizes the baseline demand scenario assumptions for driver units and explanatory variables.

---

[2] Values of calibration factors (Table 4-1) and other uses % (Table 4-2) may change from these initial values as agencies refine their individual model.

Table 4-3: Future Model Parameters and Assumptions for Baseline Demand Forecast

Data Category	Variable	Source	Assumptions
Driver Units	Single-family and multifamily accounts	CDR	Historical households per account; averages are multiplied by households projected by CDR
	Irrigation accounts	Agency Billing Data	Accounts are assumed to be constant into the future
	Sectoral employment	CDR	Proportion of jobs within CII sectors projected by CDR
Explanatory Variables	Monthly Maximum Temperature and Total Precipitation	PRISM	30-year historical normal weather
	Water Price	Retail Agencies	Prices increase by 3% per year above inflation for 2025-2030 and keeps pace with inflation thereafter (zero difference from inflation trend)
	Water Use Restrictions	State & Local Restrictions	None
	Seasonality		Sine/cosine functions to capture monthly pattern
	Median income	US Census	Constant income at 2022 value (real dollars)
	Housing density	CDR	Derived from CDR housing unit projections, assuming residential area remains at 2024 levels
	Persons Per Household	CDR	CDR projected demographics
	Gross Domestic Product	Federal Reserve	Long-term GDP trend
	Relative Sectoral Employment	CDR	Calculated based on CDR projections
	Passive Efficiency Estimates	Flume Insight	Assumes a 2% decrease in residential demand due to conservation by 2030 (linearly extrapolated), then no change
	COVID Binary Indicator		None (occurred between March 2020 and May 2023)

Future assumptions were defined for every element of the water demand models, including sectoral driver units and explanatory variables.

4.2 Development of Forecast Inputs

Data sources documented in this section are limited to projected future datasets.

4.2.1 Retailer Driver Units

Driver units reflect the size or scale of a water use sector and allow for differentiation of the rate of use from total consumption. CDR provided the Orange County Projections 2022 (OCP-2022) as an update of the 2018 Orange County Projections. OCP-2022 estimates single-family residential housing units, multifamily residential housing units, jobs by sector, and total population at five-year intervals from 2025 through 2050.

CDR job projections were available at census tract level geographies, which required geoprocessing to retail service area boundaries. Geoprocessing was performed using GIS overlays of census tract boundaries and retail agency service area boundaries to aggregate CDR projections by retail agency as described in Section 2. CDR projections at the retailer level did not always align in magnitude with the historical driver units. To ensure consistency between historical and future datasets, the future time series for driver units were developed by calculating the rate of change in the CDR projections and applying the corresponding CDR rate of change to the last historical value of the driver units.

The econometric forecast models were developed using individual retail agencies' socioeconomic data. The averaged Orange County trends were examined for their potential impacts on future demands. **Figure 4-1** shows that average persons per household decreases and average household density increases. These trends are expected to provide decreased residential demand. Residential coefficients are positive for PPH, indicating demand will decrease as PPH decreases. Residential coefficients are negative for household density, indicating demand will decrease as housing density increases.

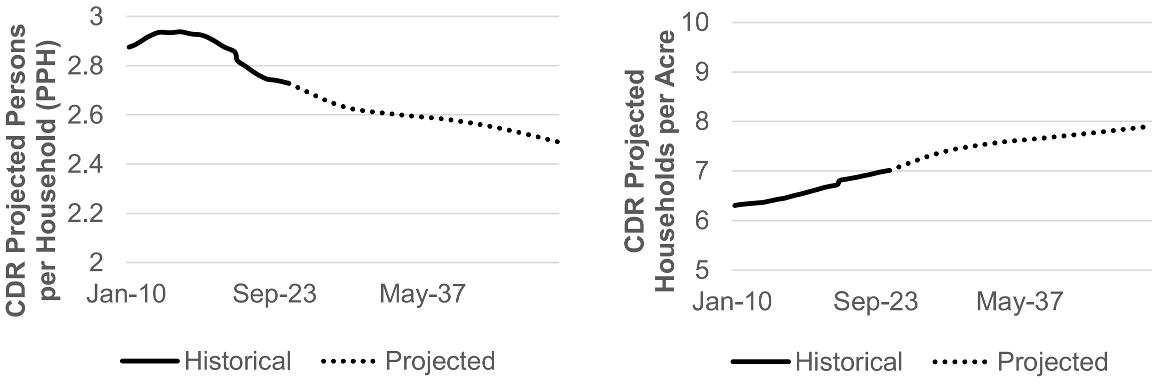

Figure 4-1: Historical and Projected Demographic Values for Orange County (2010 – 2050)

The decrease in demand inferred from the future explanatory variable values may be counteracted by the forecasted increase in driver units. Within the residential sector, average multifamily household growth exceeds average single-family household growth. **Figure 4-2** demonstrates that between 2025 and 2030, projected multifamily households increase substantially while single-family households show very little growth.

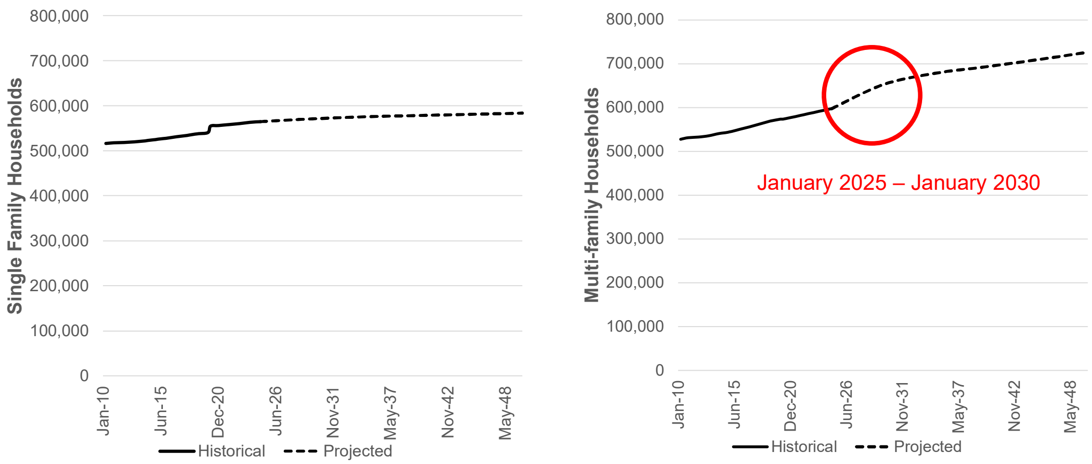

Figure 4-2: Historical and Projected Household Growth for Orange County (2010 – 2050)

CII demand is expected to increase corresponding to a projected average increase in jobs throughout Orange County (**Figure 4-3**).

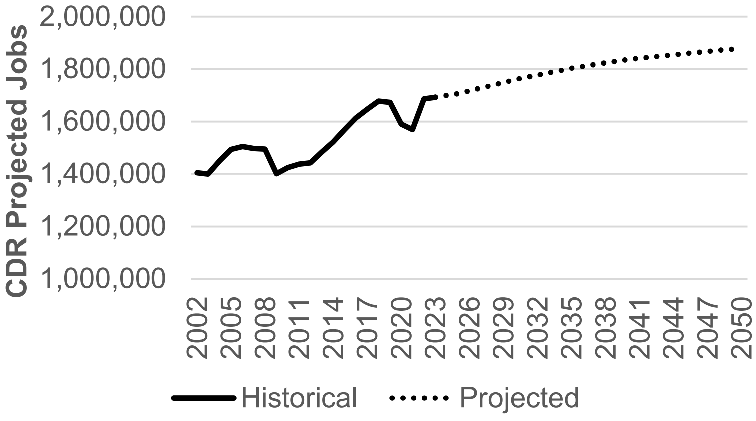

Figure 4-3: Historical and Projected Job Numbers for Orange County (2002 – 2050)

Although the counteracting explanatory variable values and driver units indicate that demands may remain flat into the future, variations in demand by sector exist at the retail agency level and underscore the importance of the econometric models for each agency.

4.2.2 Weather and Climate

For the model baseline scenario, future precipitation and temperature values were assumed to be equal to historical normal values. Historical normal values were calculated as the average monthly values based on all values from 1991 to 2024. The demand model uses departures from historical normal precipitation and temperature for the residential and CII forecasts and unadjusted historical normal precipitation and temperature for the irrigation forecasts. Given this, future weather inputs in the residential and CII forecasts are reflected by projected departure values of 0 for the precipitation and temperature variables. Future weather inputs for the irrigation sector consist of monthly normal precipitation values.

Alternative demand scenarios (**Section 5**) consider the potential effects of climate change on precipitation and temperature using CMIP6 data from CalAdapt. CMIP6 represents the sixth phase of the World Climate Research Program (WCRP) Coupled Model Intercomparison Project (CMIP) and includes 134 models from 53 modelling centers. CMIP6 relies on Shared Socio-economic Pathways (SSPs) that describe plausible futures of societal development and impacts on greenhouse gas emissions. A 2021 report explains why the CalAdapt models best represent the California climate.[3]

4.2.3 Water Price

Projections of future water rates were included as an explanatory variable in the water demand model. The future values for water prices assumes 5 years of a 3% (above inflation) increase in price per year, after which prices are held at nominal prices adjusted for inflation. Additional water pricing scenarios can be generated as agencies formulate and become more certain about future price paths.

4.2.4 Detrended Economic Factor

The future economy was assumed to run at its long-run trend rate of growth; thus real GDP is assumed to increase at the long-term rate. The detrended GDP value used to project future demands is 0, indicating no difference from the long-term GDP growth.

4.2.5 Median Income

Median income was included as an explanatory variable in the water demand model. Median income by retailer was held constant at the historical 2024 level, denominated in inflation-adjusted 2022-dollar values.

4.2.6 Housing Density

Housing density was included as an explanatory variable in the single-family and multifamily residential model sectors. Separate variables were created for single-family housing density and multifamily housing density. The baseline density projection assumed a “build up” scenario where housing units could vary within a constant land area, thereby affecting average density. Future values for the density variables are derived from the projected number of single-family or multifamily housing units (**Section 2**) divided by the land area classified as residential land use within the retail service area boundary (which is assumed to stay constant throughout the forecast).

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[3] Interim Deliverable for EPC-20-006, Prepared by: Will Krantz, David Pierce, Naomi Goldenson, Danile Cayaan; November 29, 2021

4.2.7 Persons Per Household

The ACS-derived single-family and multifamily PPH estimates were calibrated to align with the CDR's single-family and multifamily projected housing unit data.

4.2.8 Relative Sectoral Employment

Ratios of sectoral employment were included as explanatory variables in the CII model sector. These sectoral employment ratios represent the estimated mix of CII activity within each retail service area. The projected number of jobs by sector was obtained from the 2025 CDR projections of four aggregated NAICS sectors.

4.2.9 Seasonality

Seasonal indices were included as explanatory variables in the water demand model. These seasonal indices are represented in the model as a sine/cosine pair of variables to capture the cyclical monthly pattern in water use, where demands are generally higher in the summer and lower in the winter. Most sectors had a single sine/cosine pair representing the seasonal cycle; some have two sine/cosine pairs to more effectively capture seasonal effects associated with the academic calendar. These factors are maintained for the forecast horizon.

4.2.10 Conservation

The 2021 Orange County Residential Water Efficiency Potential and Opportunities Study (2021 Study) assumes that total County-wide passive conservation in the residential sectors will increase by 695 acre-feet per year through 2030, after which it will remain constant. The conservation increase to 2030 represents a 1.9% decrease in annual demand, as shown in **Table 4-4**.

Table 4-4: Projected County-wide Passive Conservation[4]

Year	Residential Demand (AFY)	Passive Conservation Volume (AFY)	Percent Demand Reduction
2025	222,572	695	0.31%
2026	222,572	1390	0.62%
2027	222,572	2085	0.94%
2028	222,572	2780	1.25%
2029	222,572	3475	1.56%
2030	222,572	4170	1.87%
2035	2021 Study does not report post-2030 demand and conservation; percent demand reduction is assumed to stay constant		1.87%
2040-2050			1.87%

---

[4] Data shown on Table 4-4 were obtained from the 2021 Orange County Residential Water Efficiency Potential and Opportunities Study.

The model output does not include projected active water conservation.

4.3 Baseline Sectoral Forecasts

This section provides a summary of the baseline demand forecasts by each model sector. The model output does not include projected active water conservation. This section provides a summary of the baseline demand forecasts by each model sector. The baseline scenario results represent a projection of future water demand for Orange County, assuming **no additional active conservation**.

4.3.1 Forecast Expectations

Figure 4-4 summarizes the Orange County averaged annual demand projections as well as the historical values.

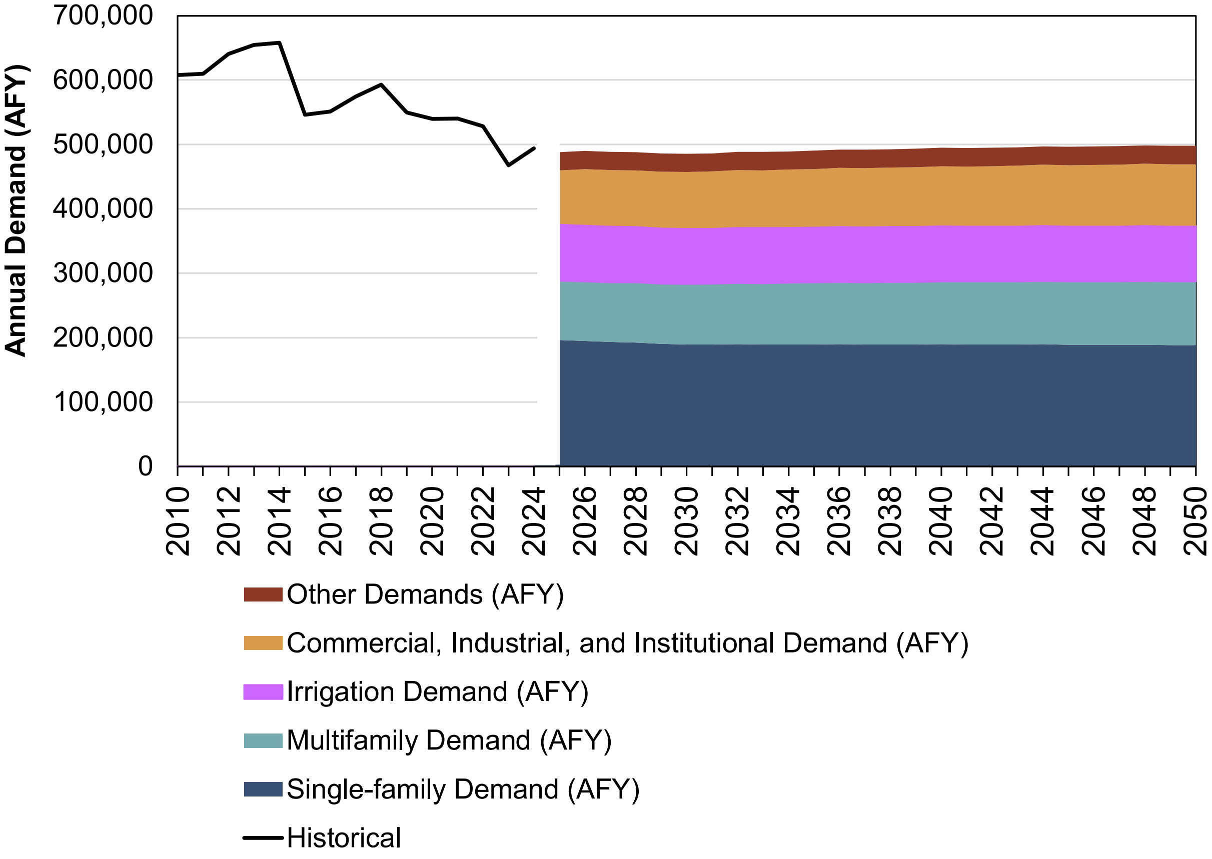

Figure 4-4: Total Orange County Demands

Annual county-wide single-family residential projected water demand values are projected to decrease from 2025 to 2030, then remain relatively constant through 2050. Multifamily residential projected water demand values are projected to steadily increase from 2025 through 2050. This increase is largely driven by rising multifamily housing units over time. CII demands are projected to steadily increase from 2025 through 2050. This increase is largely driven by an increase in the driver units of total non-agricultural jobs. Irrigation demand decreases due to higher water prices from 2025 to 2030, then remains constant thereafter.

4.3.2 Forecast Summary

The baseline scenario results represent a projection of future water demand for Orange County, assuming **no additional active conservation**. The scenario assumptions outlined in Section 4 reflect a reasonable estimate of the future conditions of parameters known to influence water demand derived from multiple available sources. The forecast uses ACS and CDR data to depict local and regional trends in demographics and development in the demand model. Consistent with regional trends, demands in the single-family sector are forecasted to remain relatively flat over the next 25 years as there is not expected to be substantial growth in single-family housing units.

Growth in residential demand is largely forecast to occur in the multifamily sector, consistent with anticipated increases in multifamily housing. Demands in the CII sector are also expected to increase, which is consistent with CDR forecasts of total jobs in the county. Increasing water rates and housing density are expected to have some modulating effect on demand (as housing density and water rates increase, water demand decreases); however, under the baseline scenario, projected changes in the values of these variables do not completely counteract the effects of growth in overall driver units.

5. Alternative Forecasts

Alternative forecasts were established using new climate data and possible additional water rate increases. Alternative demand scenarios consider the potential effects of climate change on precipitation and temperature using CMIP6 data from CalAdapt. A 2021 report explains why the CalAdapt models best represent the California climate.[5]

5.1.1 Future Climate Change

CMIP6 is the sixth phase of the World Climate Research Program (WCRP) Coupled Model Intercomparison Project (CMIP) and includes 134 models from 53 modelling centers. CMIP6 relies on Shared Socio-economic Pathways (SSPs) that describe plausible futures of societal development and impacts on greenhouse gas emissions. Downscaling originally included only dynamic downscaling, in which high-resolution physics-based simulations are used to help models reproduce the location and frequency of events that drive regional weather and climate. The State has introduced statistical downscaling, in which dynamically downscaled simulations train a new version of Localized Construction Analogs (LOCA) to downscale a broader set of GCMs than would be computationally feasible with dynamical downscaling.

Alternative forecasts were established using new climate data with the same quadrants Flume developed (**Figure 5-1**) to evaluate varying microclimates and the age of housing stock across Orange County (North and South Coastal, and North and South Inland).

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[5] Interim Deliverable for EPC-20-006, Prepared by: Will Krantz, David Pierce, Naomi Goldenson, Danile Cayaan; November 29, 2021

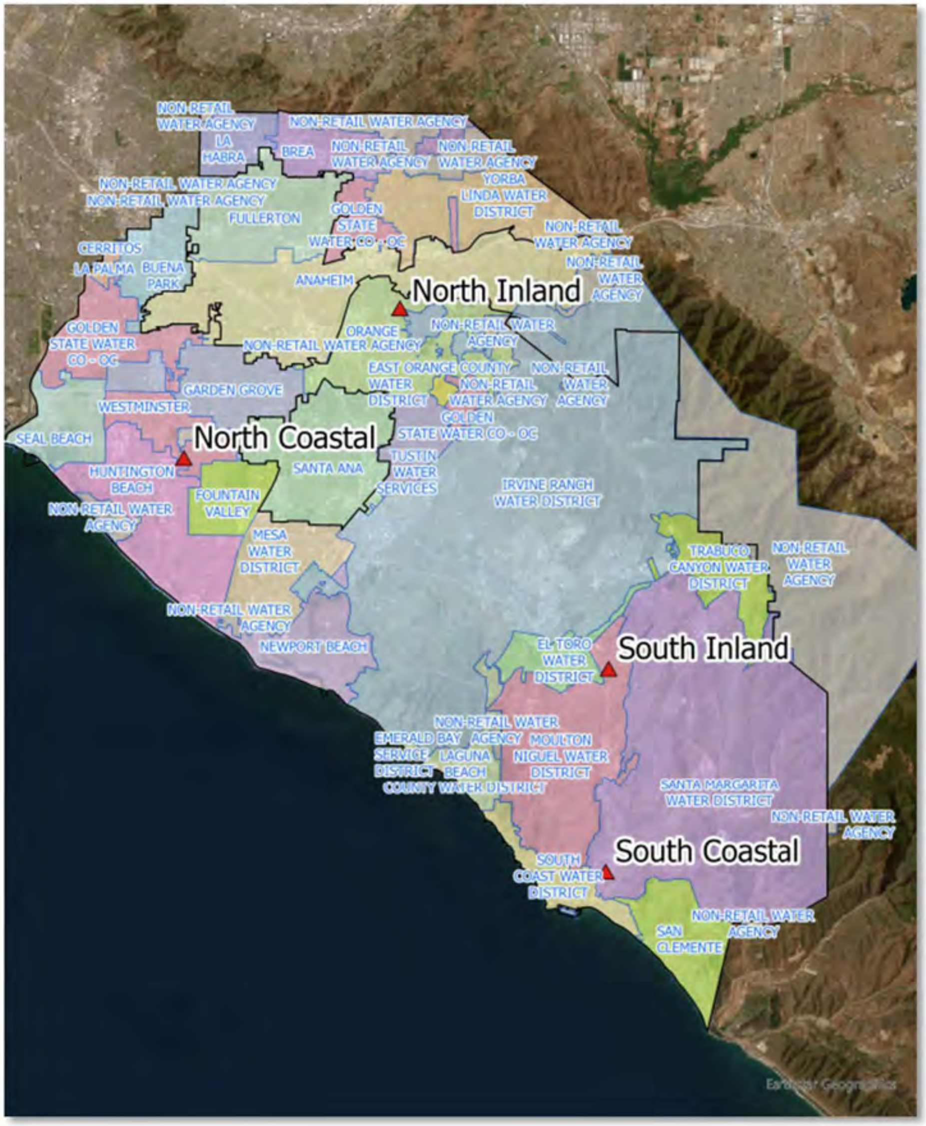


Figure 5-1: Flume Quadrants

Each retail agency was matched to the Flume-specific quadrant. **Figure 5-22** plots the CMIP6 model runs for the South Coastal Flume quadrant and plots the model results on a temperature-precipitation climate graph with quadrants of dry/warm, wet/warm, dry/cool, and wet/cool.

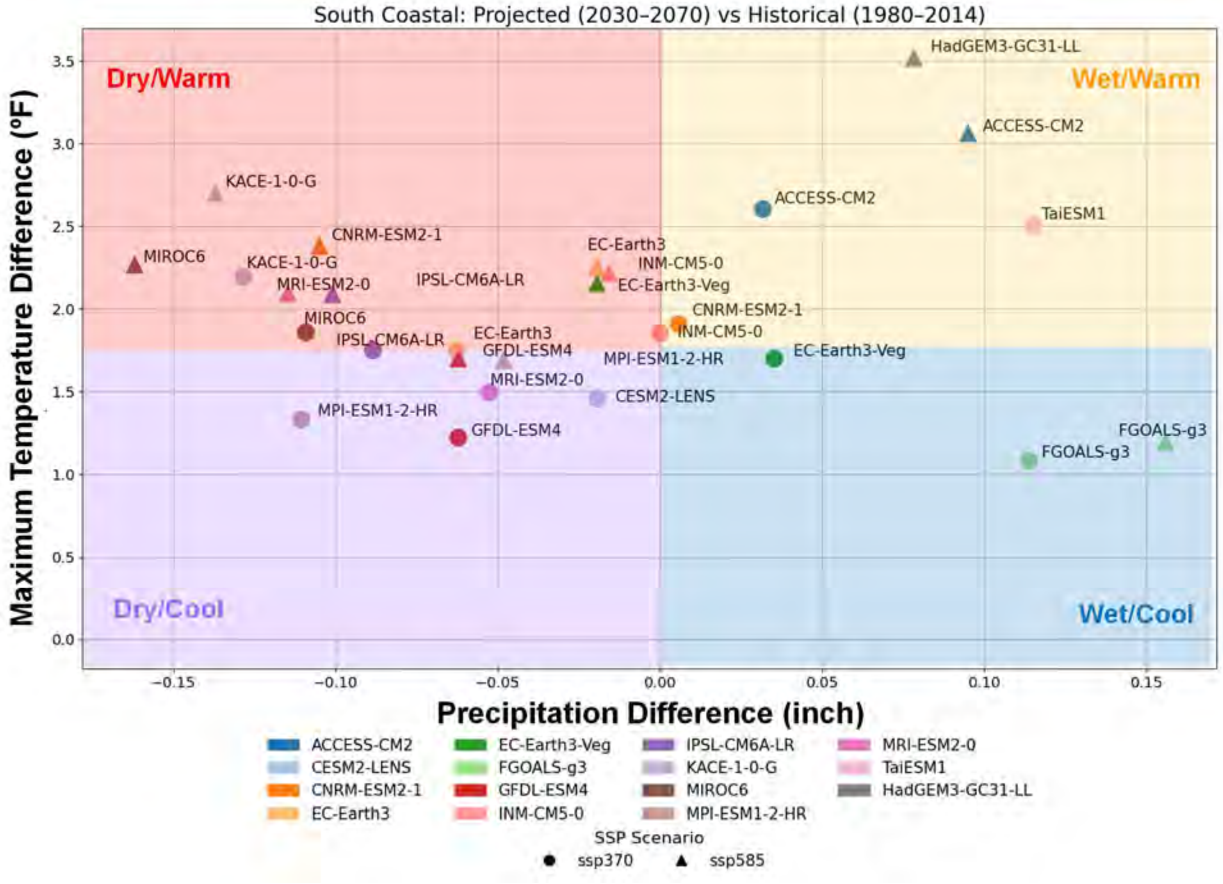


Figure 5-2: Climate Forecasts

Climate data is applied to the baseline weather patterns in a two-step process:

1) Download the CMIP6 datasets for each of the four Flume quadrants using Python scripts, then calculate the difference in the modeled future and modeled historical (delta, Δ) for temperature and precipitation (**Equations 5-1** and **5-2**):

$$\Delta Temp = Modeled\ Future\ Temp - Modeled\ Historical\ Temp$$ **Equation 5-1**

$$\Delta Precip = \frac{Modeled\ Future\ Precip}{Modeled\ Historical\ Precip}$$ **Equation 5-2**

The historical records produced for each model span 1950 to 2014, and the modeled historical data in the equations consist of the average weather parameter for each month over that period. Modeled futures extend from 2015 to 2100.

2) Apply the changes, or deltas, to the historical normal weather values. The historical normal has the same value each month, but applying a different delta value each month allows the climate change impacts to differ in the future. Each agency was matched to the Flume-specific quadrant and the appropriate regional delta values.

Future climate projections based on many CMIP6 models indicate a general increase in water demands over the forecast period (**Figure 5-3**). Note that the models shown are applied to a total baseline demand scenario prior to member agency review and final numbers were published.

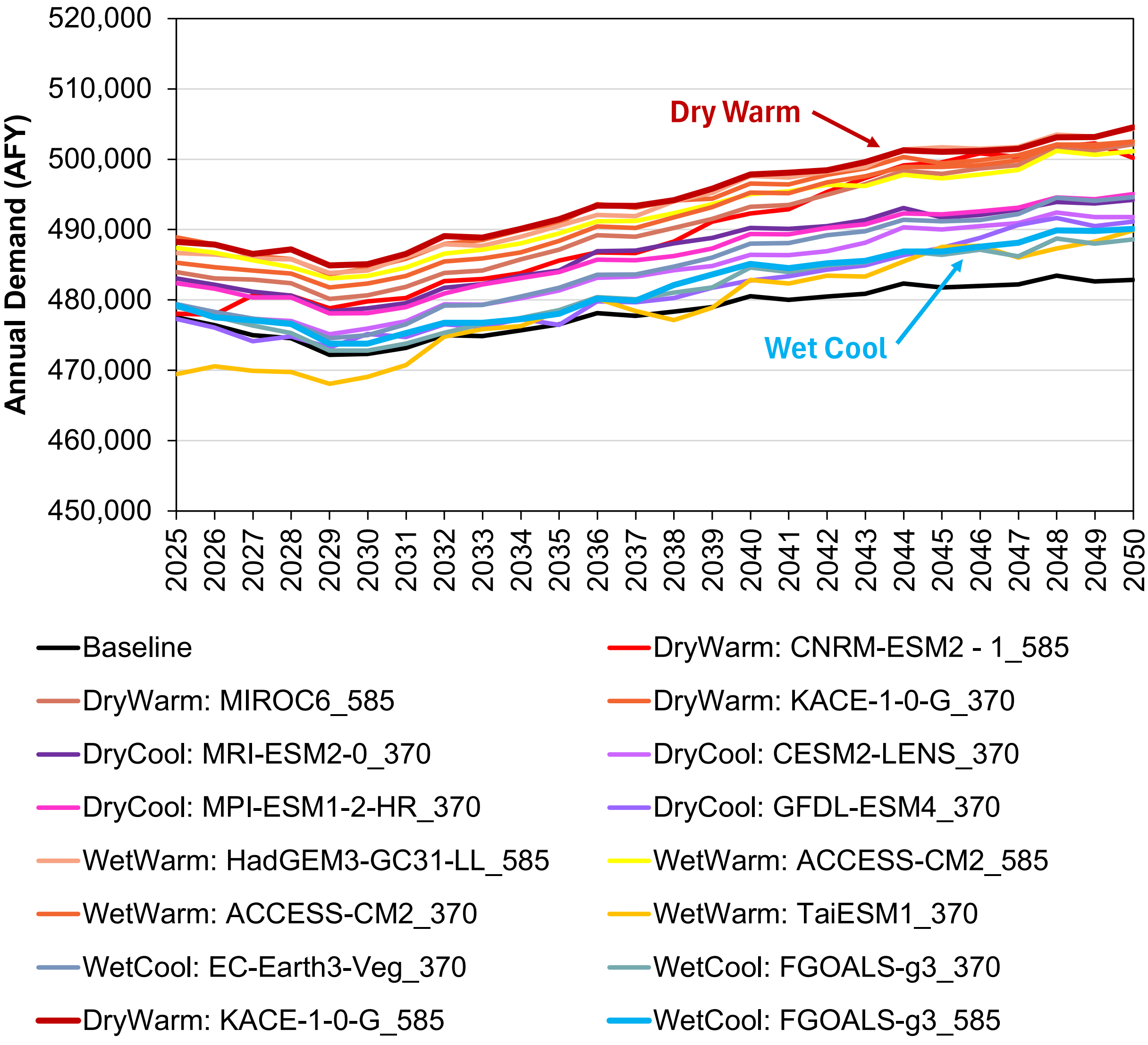


Figure 5-3: CMIP6 Climate Change Futures

CMIP6 data from the 15 model runs that were determined to be a good fit for California were substituted for baseline weather conditions in the demand model, and the resulting total Orange County demand was used to define a dry warm (high demand) scenario and a wet cool (lower demand) scenario to provide a range of possible climate impacted outcomes. Both scenarios predict increasing temperatures, and as a result, water demands that are higher than baseline demands.

5.1.2 Alternative Forecasts

The dry warm, and wet cool CMIP6 scenarios are depicted relative to historical Orange County demands in **Figure 5-4**.

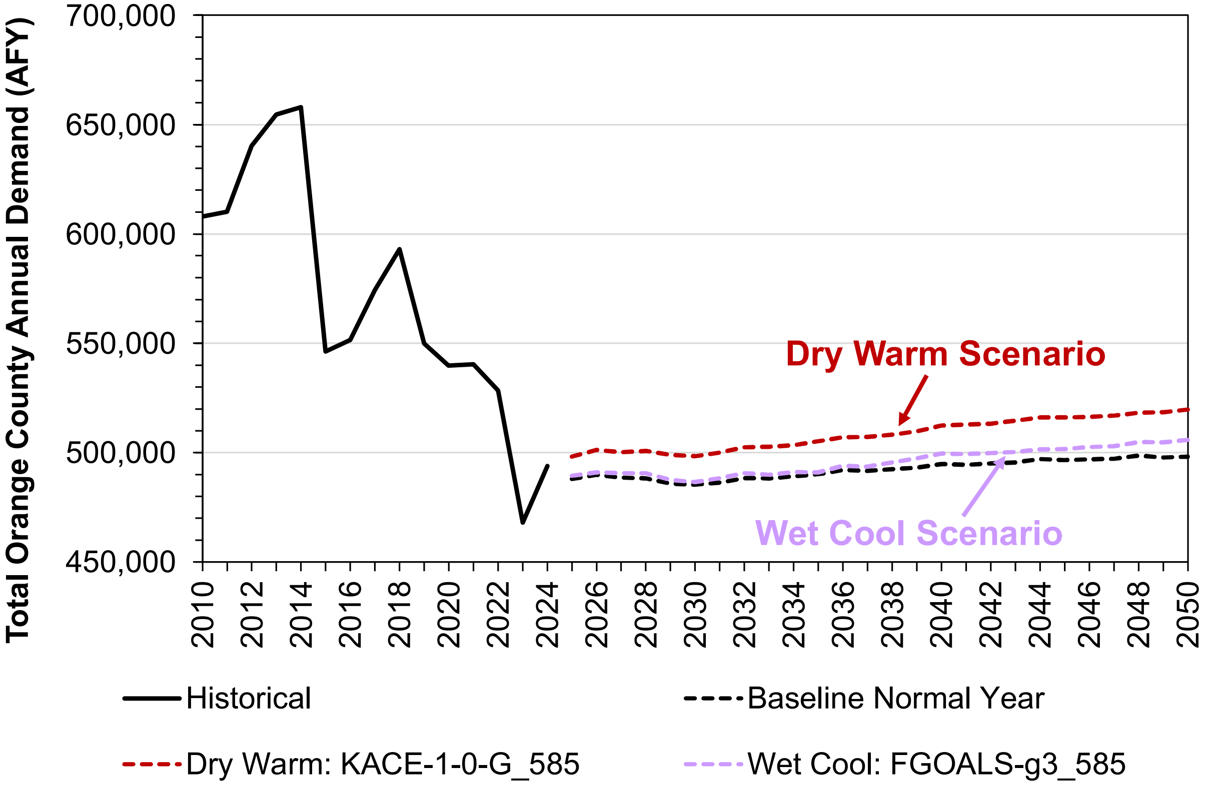


Figure 5-4: Future CMIP6 Scenarios

To create a possible envelope of demands with only two additional (non-baseline) forecasts, a long-term price increase (in addition to inflation) was imposed on the wet-cool simulation to illustrate additional price pressure (i.e., further decrease in demands). The price increase was assumed to be 3% per year for the entire forecast period. **Figure 5-5** shows that the general increases in demand are suppressed when price increases are included in the forecast.

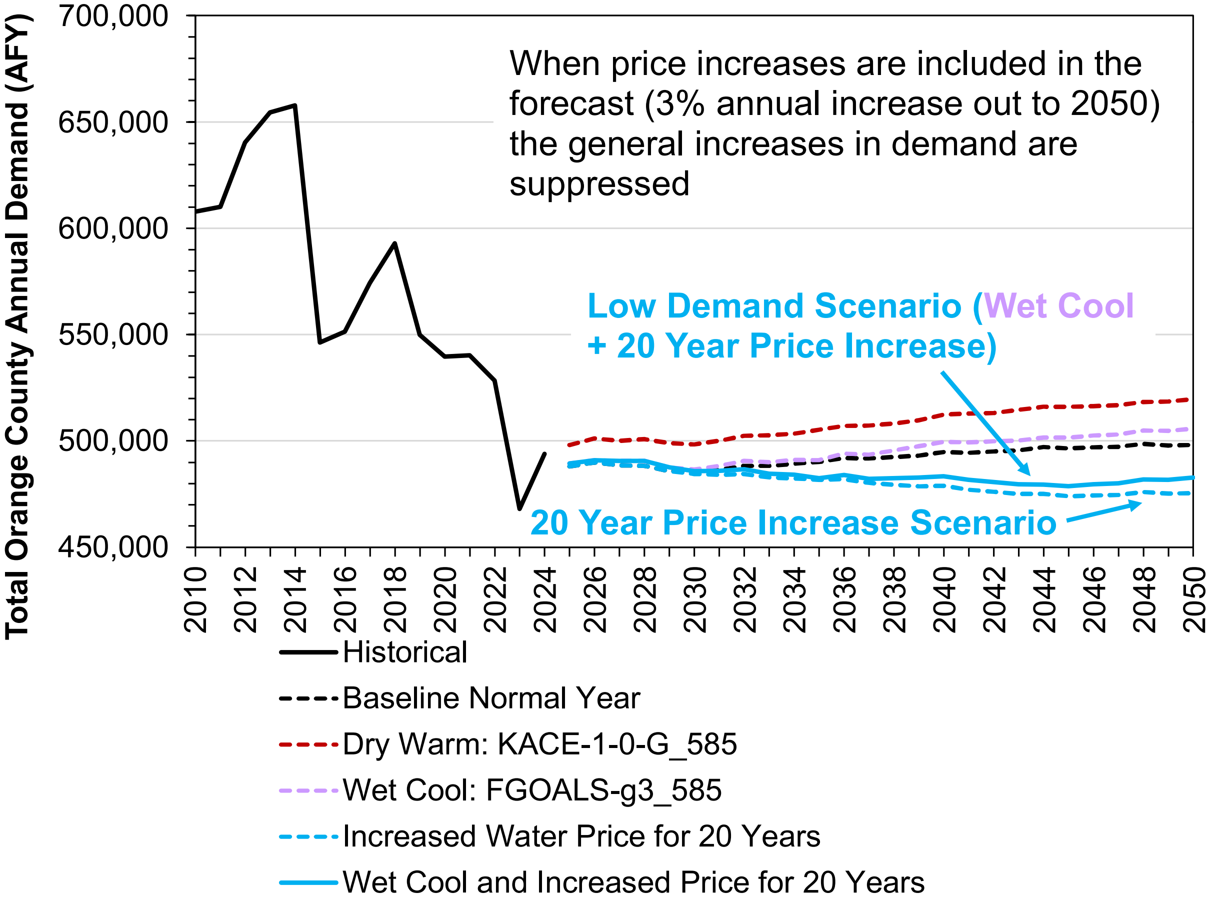


Figure 5-5: Alternative Demand Scenarios

The dry warm scenario with baseline water prices and the wet cool scenario with additional price increases constitute the two alternative forecasts.

6. UWMP Scenarios

The 2025 Urban Water Management Plan requires tabulation of the long-term projected water use over the next 20 years, in 5-year increments, for three types of hydrology:

- Normal Year: The demand a Supplier believes will occur during normal conditions. It could be a single year or an average range of years that most closely represent the average water demand. This is provided by the Baseline Forecast in Section 5.
- Single Dry Year: A year that represents higher water demand on the Supplier. Provided by finding the historical year most sensitive to all weather parameters (2010 – present)
- Five Consecutive Year Drought: The demand during the driest five-year historical sequence for the Supplier. Provided through a separate regression on total Orange County demand and historical weather (2004 – present)

6.1.1 Single Dry Year Scenario

The single dry year is the historical year in which weather factors have the largest combined impact as measured by a hot-dry index (HDI). The HDI was developed in four steps:

1) Calculate the HDI for each month in the historical weather series. This monthly hot-dry index (MHDI) is calculated for each member agency (a) and monthly observation (m) as the sum of the estimated weather effects for each sector model (j). The weather effects for each sectoral model are derived from the historical weather values (W) and weather model parameters (β) assigned to the weather variables in each model (i), which vary by member agency (**Equation 6-1**).

$$MHDI_{a,m,j} = exp\left(\sum_i \beta_{a,i,j} W_{a,i,m,j}\right) \qquad \textbf{Equation 6-1}$$

2) Calculate the HDI for each calendar year in the historical weather series. The monthly index values are summed across the month of any given annual period to derive a set of annual index values (AHDI) for each member agency and sector (**Equation 6-2**).

$$AHDI_{a,j} = \sum_{m=1}^{12} MHDI_{a,m,j} \qquad \textbf{Equation 6-2}$$

3) Weight the annual sector indices by the proportion of total annual water sales attributed to each sector (w) to define the final hot-dry index (HDI) values used to evaluate and select the hot-dry periods for scenario development (**Equation 6-3**). The weights are based on the estimated proportion of sales by sector for as many full annual records were available for each agency from 2010 to 2024.

$$HDI_a = \sum_{j=1}^{4} w_j \times AHDI_{a,j} \qquad \textbf{Equation 6-3}$$

4) Determine the maximum value of HDI for each member agency across all years in the historical weather series. Retain weather data for the selected calendar year for each member agency.

Table 6-1 lists the calendar years containing the maximum of HDI by member agency. As shown, calendar year 2014 was selected more often than any other year in the historical weather series as the hot-dry year, and the weather data for 2014 were selected for all agencies to represent the hot-dry scenario.

Table 6-1: Selected Calendar Years for Hot/Dry Weather Scenario

Agency	Single Year Hot/Dry Periods	
	Calendar Year	HDI Value
Anaheim	2014	12.40
Brea	2018	12.26
Buena Park	2014	12.16
East Orange CWD	2014	13.14
El Toro WD	2014	12.72
Fountain Valley	2014	12.26
Fullerton	2014	12.65
Garden Grove	2014	12.28
GSWC Cowan	2014	13.27
GSWC Placentia	2014	12.61
GSWC West Orange	2014	12.42
Huntington Beach	2014	12.62
Irvine Ranch WD	2014	12.46
La Habra	2014	12.84
La Palma	No data available	
Laguna Beach WD	2014	12.62
Mesa WD	2014	12.61
Moulton Niguel	2014	13.35
Newport Beach	2014	12.52
Orange City	2014	12.70
San Clemente	2014	12.54
San Juan Capistrano	2014	12.38
Santa Ana	2014	12.32
Santa Margarita WD	2014	12.76
Seal Beach	2022	12.08
Serrano WD	2014	13.85
South Coast WD	2014	12.56
Trabuco Canyon WD	2017	11.82
Tustin	2014	12.53
Westminster	2014	12.43
Yorba Linda WD	2014	12.89

6.1.2 Multiple Dry Year Scenario

Trends in historical regional water use (supplied from all sources) were correlated with trends in observed weather conditions to develop a set of factors to describe the potential impact of consecutive dry years. The weather coefficients of the sectoral water demand equations can be used to generate weather scenarios for any given set of monthly weather data, for example, for a given hot/dry year. However, conceptually, the persistence of drier-than-normal weather could intensify water use rates in the absence of interventions, such as water-use restrictions. Because the sectoral forecasting equations, by construction, treat time periods independently, other statistical methods were derived to evaluate potential or “latent”, or unconstrained, demands that could develop with the persistence of dry weather conditions.

Trends in historical total regional water use (supplied from all sources) were correlated with trends in observed Orange County weather conditions to develop a set of factors to describe the potential impact of consecutive dry years. Specifically, the running 12-month average of regional water use (USE12) was modeled as a function of the following variables:

- 12-month running average of the ratio of observed to normal average maximum daily temperature (MAXT12)
- 24-month running average of the ratio of observed to normal precipitation (PRCP24)
- 36-month running average of the ratio of observed to normal precipitation (PCRP36)
- 48-month running average of the ratio of observed to normal precipitation (PCRP48)
- 60-month running average of the ratio of observed to normal precipitation (PCRP60)
- Departure from long-term GDP trend
- Linear time trend counter (TREND)

Except for the linear time counter, all variables were transformed into natural log form prior to estimating the model using ordinary least squares regression. A binary water restriction variable was added to the regression to eliminate supply constraints (allow the regression to assume no curtailments instated during the hot dry spell). The estimated weather parameters (**Table 6-2**) are used to estimate the potential change in water use that would occur during the driest 24-month, 36-month, 48-month, and 60-month period over the historical record, assuming the warmest 12-month period estimated over the historical record.

Table 6-2: Regression Coefficients and Variable Values

	Coefficient	Historical Value
MAXT12	0.6279	1.0522
PRCP24	-0.0832	0.3783
PRCP36	-0.0076	0.4408
PRCP48	-0.0269	0.4977
PRCP60	-0.0296	0.5656

Consecutive dry-year scaling factors are derived using the historical minimums of the precipitation and historical maximum of the temperature variable from the historical weather data set.

Equation 6-4 shows the 2nd consecutive dry year scaling factor.

$$Factor = MAXT12^{0.6279} \times PRCP24^{-0.0832} = 1.1195 \tag*{Equation 6-4}$$

Equation 6-5 shows the 3rd consecutive dry year scaling factor.

$$Factor = MAXT12^{0.6279} \times PRCP24^{-0.0832} \times PRCP36^{-0.0076} = 1.1265 \tag*{Equation 6-5}$$

Equation 6-6 shows the 4th consecutive dry year scaling factor.

$$Factor = MAXT12^{0.6279} \times PRCP24^{-0.0832} \times PRCP36^{-0.0076} \times PRCP48^{-0.0269} = 1.1478 \tag*{Equation 6-6}$$

Equation 6-7 shows the 5th consecutive dry year scaling factor.

$$Factor = MAXT12^{0.6279} \times PRCP24^{-0.0832} \times PRCP36^{-0.0076} \times PRCP48^{-0.0269} \times PRCP60^{-0.0296} = 1.1673 \tag*{Equation 6-7}$$

These scaling factors are used to supplement the results of the single hot/dry year scenario. There is a 5-year sequence for any year in the forecast: single hot/dry year, followed by the second dry year, followed by the third consecutive dry year, and so on. Under these assumptions, the second consecutive dry year would result in water use that is about 12 percent higher than under normal precipitation conditions. The estimate of water use for the third consecutive dry year would be incrementally higher, or about 13 percent greater than normal. By the end of the fifth consecutive dry year, the estimated potential would grow to about 17 percent higher than the normal year baseline. The consecutive dry year scenarios are calculated based on the total baseline forecast and thus implicitly account for differences in growth occurring among Orange County's water use sectors and agencies. As indicated by the magnitudes of the scaling factors described above, this implies increasingly higher demands as conditions become drier. It is possible that demands would be restricted through demand management actions prior to reaching these levels if such conditions were to occur.

6.1.3 All UWMP Scenarios

All UWMP scenarios are shown in **Figure 6-1**, along with the baseline, high demand, and low demand scenarios discussed in the previous sections.

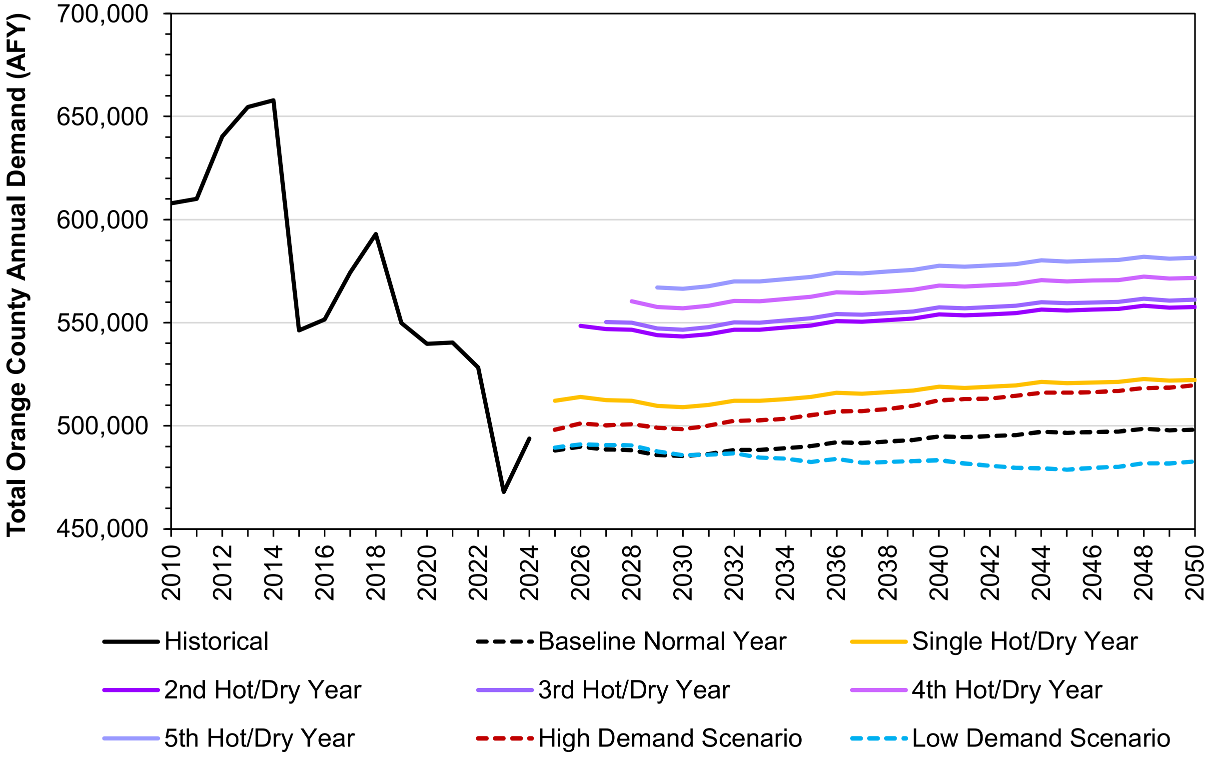


Figure 6-1: Total Orange County Historical Water Use vs Projected Water Demands for All UWMP Scenarios

The UWMP scenarios are tabulated for each agency in the Spreadsheet model.

Although Orange County demands are forecast to be relatively flat into the future, annual variations in weather could cause high fluctuations.

7. Urban Water Use Objectives (UWUO) Metrics

The Urban Water Use Objective (UWUO) requires residential indoor consumption to decrease from 47 GPCD in 2025 to 42 GPCD in 2030 and remain at 42 GPCD through 2050. Although **future active conservation is not included in the baseline forecast,** the UWUO target residential demand is calculated for each agency in this section, and active conservation may be assumed from these target values and subtracted from the baseline forecast.

While the indoor conservation target specified by the UWUO is fixed, the outdoor target depends on precipitation, evapotranspiration, landscape area, and a landscape efficiency factor (**Equation 7-1**).

$$Outdoor\ Budget\ \left(\frac{gal}{year}\right) = (ETo - Peff) \times Landcape\ Area\ \times LEF\ \times 0.62 \qquad \textbf{Equation 7-1}$$

ETo is local reference evapotranspiration, Peff is effective rainfall, and 0.62 represents a conversion factor from inches to square feet. The landscape efficiency factor (LEF) provides a way to reduce irrigation targets; water use increases as the LEF increases. The California State Water Board requires a LEF of 80% through September 2030, at which point the required LEF decreases to 63%. In October 2035, the LEF decreases to 55% for residential irrigation and 45% for CII irrigation. **When/If an agency can comply with the State UWUO outdoor conservation targets is a retail agency determination based on each agency's unique circumstances.**

Although the forecasts provided by Hazen do not include active conservation, each retail agency may compare the forecasted gallons per capita per day (GPCD) with their UWUO target to build or forecast an active conservation program.

8. Summary and Conclusions

The water demand forecasts presented in this technical memorandum provide a foundation for long-term planning across Orange County retail water agencies and aligns with needs for the 2025 Urban Water Management Plan. The model approach, which combined rigorous data collection and assessment and econometric model development, ensures that projections are grounded in historical trends and agency-approved demographic inputs.

Work with individual agencies to calibrate the forecasts revealed that the demand forecasts are highly sensitive to demographic projections. Future water use is driven primarily by changes in population, housing units, and jobs, all of which are subject to uncertainty and local planning decisions. The baseline scenario reflects CDR-OCP2022 growth rates and member agency feedback, and alternative demographic trajectories may be considered by individual agencies. Agencies may also use their calculated UWUO targets to incorporate active conservation plans, which are not included in the forecasts.

UWMP

APPENDIX F

AWWA Water Loss Audit

AWWA Free Water Audit Software v6.0

This spreadsheet-based water audit tool is designed to help quantify and track water losses associated with water distribution systems and identify areas for improved efficiency and cost recovery. It provides a "top-down" summary water audit format and is not meant to take the place of a full-scale, comprehensive water audit format. Auditors are strongly encouraged to refer to the most current edition of AWWA M36 Manual for Water Audits for detailed guidance on the water auditing process and targeting loss reduction levels. This tool contains several separate worksheets. Sheets can be accessed using the tabs at the bottom of the screen, or by clicking the TOC links below.

Table of Contents (TOC)

Start Page	The current sheet. Enter contact information and basic audit details.
Worksheet	Enter the required data on this worksheet to calculate the water balance and data grading.
Interactive Data Grading	Answer questions about operational practices for each audit input, and the data validity grades will automatically populate.
Dashboard	Review NRW components, performance indicators and graphical outputs to evaluate the results of the audit.
Notes	Enter notes to explain how values were calculated, document data sources, and related information about data management practices.
Blank Sheet	By popular demand! A blank sheet. The world is your canvas.
Water Balance	The values entered in the Worksheet automatically populate the Water Balance.
Loss Control Planning	Use this sheet to interpret the results of the audit validity score and performance indicators.
Definitions	Use this sheet to understand the terms used in the audit process.
Service Connection Diagram	Diagrams depicting possible customer service connection line configurations.
Acknowledgements	Acknowledgements for development of the AWWA Free Water Audit Software v6.0.

AWWA Web Resources for Water Loss Control
https://www.awwa.org/Resources-Tools/Resource-Topics/Water-Loss-Control
Items referenced in the Free Water Audit Software v6.0 on the web:
- Data Grading Matrix v6.0
- Example Water Audit v6.0
- Water Audit Compiler v6.0
- AWWA Reports on Performance Indicators
- M36 Manual

Enter Basic Information

Name of Utility:	El Toro Water District	
Name of Contact Person:	Vu Chu	
Email:	vchu@etwd.com	
Telephone | Ext.:	949-837-7050	253
City/Town/Municipality:	Lake Forest	
State / Province:	California (CA)	
Country:	USA	
Audit Preparation Date:	Oct 21 2025	
Audit Year:	2024	
Audit Year Label:	Calendar	(Fiscal, Calendar, etc)
Audit Period Start Date:	Jan 01 2024	
Audit Period End Date:	Dec 31 2024	
Volume Reporting Units:	Acre-feet	
Water System Structure:	Retail	
Water Type:	Potable Water	
System ID Number:	CA3010079	
Validator Name/ID:	Rachel Davis	
Validator Email:	rdavis@mwdoc.com	
Estimated Total Population Served by Water Utility:	51,800	

Key of Input Acronyms

In order of appearance in the Worksheet

VOS	Volume from Own Sources
VOSEA	VOS Error Adjustment
WI	Water Imported
WIEA	WI Error Adjustment
WE	Water Exported
WEEA	WE Error Adjustment
BMAC	Billed Metered Authorized Consumption
BUAC	Billed Unmetered Authorized Consumption
UMAC	Unbilled Metered Authorized Consumption
UUAC	Unbilled Unmetered Authorized Consumption
SDHE	Systematic Data Handling Errors
CMI	Customer Metering Inaccuracies
UC	Unauthorized Consumption
Lm	Length of mains
Nc	Number of service connections
Lp	Average length of (private) customer service line
AOP	Average Operating Pressure
CRUC	Customer Retail Unit Charge
VPC	Variable Production Cost

Color Key

User input 🟦 Calculated 🟧 Optional default ⬚

Guidance for the Worksheet

Choosing to enter unit of **percent** or **volume**
(applies to VOSEA, WIEA, WEEA, CMI)
choose entry option:

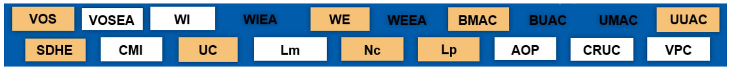
1.00%	percent	*or*
	volume	25.000

Choosing to enter **default** or **custom input**
(applies to UUAC, SDHE, UC)
choose entry option:

0.25%	default	*or*
	custom	75.000

Guidance for the Interactive Data Grading

Use acronym buttons in IDG header to navigate among inputs. Acronym Key above.
White = needs answers, orange = complete, clear = not required. Example below.



After clicking an acronym button, answer all visible questions in the order they're presented, choosing best-fit answer 🟦

Grade will populate when all visible questions are complete for an input 🟧 7

The limiting criteria will be labeled along the right. If only 1 limiting criterion is shown, improving on that criterion will achieve a higher data grade. If multiple limiting criteria are shown, improving on *each* limiting criterion is necessary to achieve a higher data grade. A complete inventory of data grading criteria is available in the Data Grading Matrix v6.0 (see web resources) Limiting

If you have questions or comments regarding this software please contact us at: wlc@awwa.org

AWWA Free Water Audit Software: Worksheet

FWAS v6.0

Water Audit Report for: El Toro Water District
Audit Year: 2024 | Jan 01 2024 - Dec 31 2024 | Calendar

Click 'n' to add notes
Click 'g' to determine data validity grade
To edit water system info: go to start page
To access definitions, click the input name
All volumes to be entered as: ACRE-FEET PER YEAR

WATER SUPPLIED

Water Supplied Error Adjustments
choose entry option:

VOS	Volume from Own Sources:	n g			Acre-ft/Yr						VOSEA
WI	Water Imported:	n g	6	6,651.020	Acre-ft/Yr	n g 4	volume	264.610	acre-ft/yr	over-registration	WIEA
WE	Water Exported:	n g	n/a	0.000	Acre-ft/Yr						WEEA

WATER SUPPLIED: 6,386.410 Acre-ft/Yr

AUTHORIZED CONSUMPTION

BMAC	Billed Metered:	n g	8	6,029.420	Acre-ft/Yr			
BUAC	Billed Unmetered:	n g			Acre-ft/Yr			
UMAC	Unbilled Metered:	n g	4	40.480	Acre-ft/Yr	choose entry option:		
UUAC	Unbilled Unmetered:	n g	6	5.745	Acre-ft/Yr	custom	5.745	acre-ft/yr

AUTHORIZED CONSUMPTION: 6,075.645 Acre-ft/Yr

WATER LOSSES 310.765 Acre-ft/Yr

Apparent Losses

Default option selected for Systematic Data Handling Errors, with automatic data grading of 3

choose entry option:

SDHE	Systematic Data Handling Errors:	n g	3	15.074	Acre-ft/Yr	0.25%	default	
CMI	Customer Metering Inaccuracies:	n g	2	30.502	Acre-ft/Yr	0.50%	percent	under-registration
UC	Unauthorized Consumption:	n g	3	15.074	Acre-ft/Yr	0.25%	default	

Default option selected for Unauthorized Consumption, with automatic data grading of 3

Apparent Losses: 60.649 Acre-ft/Yr

Real Losses

Real Losses: 250.116 Acre-ft/Yr

WATER LOSSES: 310.765 Acre-ft/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 356.990 Acre-ft/Yr

SYSTEM DATA

Lm	Length of mains:	n g	10	180.0	miles	(including fire hydrant lead lengths)
Nc	Number of service connections:	n g	10	9,971		(active *and* inactive)
	Service connection density:			55	conn./mile main	

Are customer meters typically located at the curbstop/property line? Yes

Lp		n g	10		

Average length of customer service line has been set to zero and a data grading of 10 has been applied

AOP	Average Operating Pressure:	n g	8	86.8	psi

COST DATA

CRUC	Customer Retail Unit Charge:	n g	10	$3.42	$/100 cubic feet (ccf)	Total Annual Operating Cost
VPC	Variable Production Cost:	n g	10	$1,412.58	$/acre-ft	$31,109,839 $/yr (optional input)

WATER AUDIT DATA VALIDITY TIER:

***** The Water Audit Data Validity Score is in Tier III (51-70). See Dashboard tab for additional outputs. ***** go to dashboard

A weighted scale for the components of supply, consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION TO IMPROVE DATA VALIDITY:

Based on the information provided, audit reliability can be most improved by addressing the following components:

1. Water Imported (WI)
2. Customer Metering Inaccuracies (CMI)
3. Billed Metered (BMAC)

KEY PERFORMANCE INDICATOR TARGETS:

OPTIONAL: If targets exist for the operational performance indicators, they can be input below:

Unit Total Losses:	31.4	gal/conn/day
Unit Apparent Losses:	7.1	gal/conn/day
Unit Real Losses^A:	24.3	gal/conn/day
Unit Real Losses^B:		gal/mile/day

If entered above by user, targets will display on KPI gauges (see Dashboard)

American Water Works Association.
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FWAS v6.0

AWWA Free Water Audit Software: Dashboard

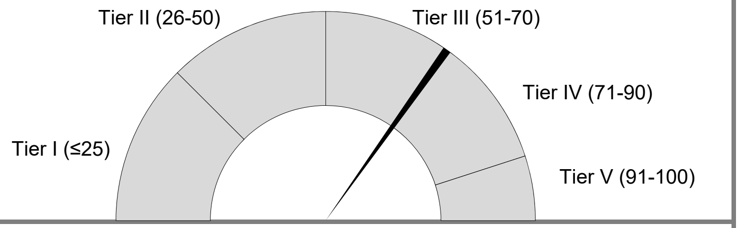
go to worksheet | go to grading | go to references

Water Audit Report for: El Toro Water District **Audit Year: 2024 Calendar Jan 01 2024 - Dec 31 2024**

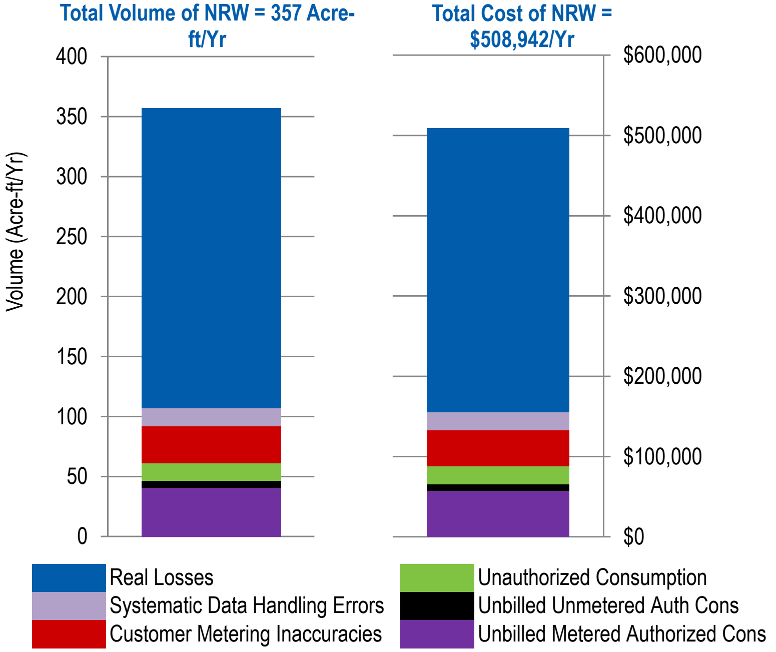
Data Validity

Data Validity Score: 69 **Data Validity Tier:** Tier III (51-70)

See Loss Control Planning for Tier Details



NRW Components Summary

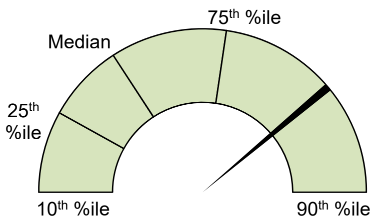


	Volume Acre-ft/Yr	Value $/Yr	Basis of Valuation
Apparent Losses	60.6	$90,336	CRUC
Real Losses	250.1	$353,309	VPC
Unbilled Authorized Cons	46.2	$65,297	VPC
Non-Revenue Water	357.0	$508,942	Blended

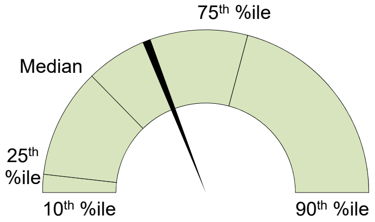
Key Performance Indicators

Actual KPI result Target (see Worksheet)

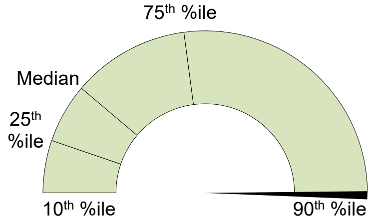
gauge %iles per validated industry ranges[2]



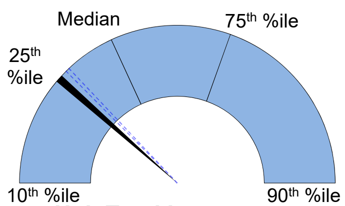
Total Loss Cost Rate
44.49 $/conn/year



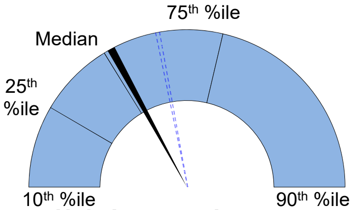
Apparent Loss Cost Rate
9.06 $/conn/year



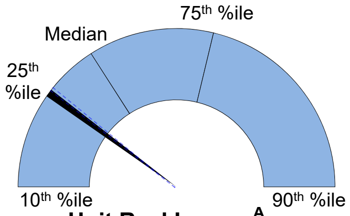
Real Loss Cost Rate
35.43 $/conn/year



Unit Total Losses
27.8 gal/conn/day

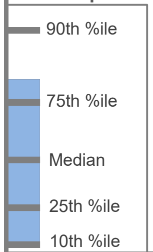


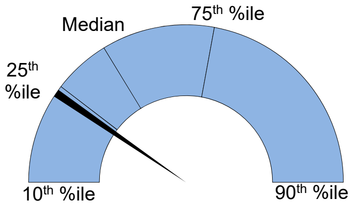
Unit Apparent Losses
5.4 gal/conn/day



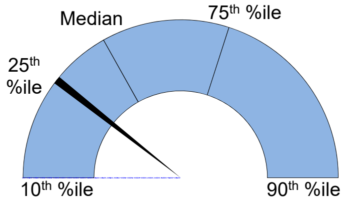
Unit Real Losses[A]
22.4 gal/conn/day

Average Operating Pressure
86.8 psi





Infrastructure Leakage Index (ILI)
1.0 dimensionless



Unit Real Losses[B]
1,240 gal/mile/day

See UARL definition for additional guidance on the ILI

(UARL) Unavoidable Annual Real Losses	240.1	Acre-ft/Yr	21.5	gal/conn/day

Guidance Information for Key Performance Indicators

- The eight indicators shown are the recommended suite per the AWWA Water Loss Control Committee 2020 Position on KPIs[1].
- A suite of KPIs is necessary, as no single KPI can holistically communicate water loss performance for a given water system.
- See Table 1 below for Uses and Limitations for each KPI, excerpted from the AWWA Water Loss Control Committee Report (2020)[1], with naming conventions updated.
- Percentiles (%iles) shown on KPI gauges come from Level 1 validated data in the AWWA WLCC Reference Water Audit Dataset (2020)[2].
- KPI %iles shown above are not segregated by cohorts. Limited KPI data by cohorts may be found in WRF 4695 Guidance Manual, Appendix B (2019)[5].
- Actual KPI results that fall below 10th %ile or above 90th %ile do not necessarily imply error, but should be viewed with scrutiny.
- Percentiles not intended to imply targets. Targets may be input by user for operational KPIs, if desired, on Worksheet.
- See UARL and ILI in Definitions tab for discussion of size and pressure limitations.
- Systems that fall on the extreme ends of size or connection density should use caution when interpreting Unit Losses KPIs.

Table 1

Source: AWWA Water Loss Control Committee Report (2020)[1], with naming conventions updated

2020 AWWA Water Audit Method – Water Audit Outputs and Key Performance Indicators: Uses and Limitations

Type	Indicator	Description	Suitable Purposes					Uses and Limitations	Principal Users
			Assessment	Bench-Marking	Target-Setting	Planning	Tracking		
Attribute	Apparent Loss Volume	Calculated by Free Water Audit Software	✓				✓	Assess loss level	Utility, Regulators
	Apparent Loss Cost	Calculated by Free Water Audit Software	✓				✓	Assess cost loss level	Utility, Regulators
	Real Loss Volume	Calculated by Free Water Audit Software	✓				✓	Assess loss level	Utility, Regulators
	Real Loss Cost	Calculated by Free Water Audit Software	✓				✓	Assess loss cost level	Utility, Regulators
	Unavoidable Annual Real Loss (UARL)	Calculated by Free Water Audit Software	✓				✓	Reveal theoretical technical low level of leakage	Utility, Regulators
Volume	Unit Apparent Losses (vol/conn/day)	Strong and understandable indicator for multiple users.	✓	✓	✓	✓	✓	Used for performance tracking and target-setting	Utility, Regulators
	Unit Real Losses[A] (vol/conn/day)	Strong and understandable indicator for multiple users.	✓	✓	✓	✓	✓	Used for performance tracking and target-setting	Utility, Regulators, Policy Makers
	Unit Real Losses[B] (vol/pipeline length/ day)	Strong and understandable indicator for use by utilities with low connection density.	✓	✓	✓	✓	✓	Data collection and assessment of systems with "low" connection density	Utility, Regulators, Policy Makers
	Unit Total Losses (vol/conn/day) **New KPI**	Strong and understandable indicator, suitable for high-level performance measurement.	✓				✓	High level indicator for trending analysis. Not appropriate for target-setting or benchmarking	Utilities, Customers
	Infrastructure Leakage Index (ILI)	Robust, specialized ratio KPI; can be influenced by pressure and connection density.	✓	✓			✓	Benchmarking after pressure management is implemented	Utilities
Value	Apparent Loss Cost Rate (value/conn/year) **New KPI**	Indicators with sufficient technical rigor. Provide the unit financial value of each type of loss, which is useful for planning and assessment of cost efficiency of water loss reduction and control interventions and programs.	✓			✓	✓	Data collection and assessment on AWWA indicators or contextual parameters to use in conjunction with Loss Cost Rates	Utilities, Regulators, Customers
	Real Loss Cost Rate (value/conn/year) **New KPI**		✓			✓	✓		Utilities, Regulators, Customers
Validity	Data Validity Tier (DVT)	Strong indicator of water loss audit data quality, if data has been validated. Tier provides guidance on priority areas of activity.	✓	✓		✓	✓	Assess caliber of data inputs of the water audit	Regulators, Utilities

AWWA Free Water Audit Software
Water Balance

FWAS v6.0

Water Audit Report for: El Toro Water District
Audit Year: 2024 | Jan 01 2024 - Dec 31 2024
Data Validity Tier: Tier III (51-70)

Volume from Own Sources (VOS) (corrected for known errors) *0.000*	**System Input Volume** *6,386.410*	**Water Exported (WE)** (corrected for known errors) *0.000*	**Billed Water Exported**			**Revenue Water** (Exported) **0.000**
		Water Supplied *6,386.410*	**Authorized Consumption** *6,075.645*	**Billed Authorized Consumption** *6,029.420*	**Billed Metered Consumption (BMAC)** (water exported is removed) *6,029.420*	**Revenue Water** **6,029.420**
					Billed Unmetered Consumption (BUAC) *0.000*	
				Unbilled Authorized Consumption *46.225*	**Unbilled Metered Consumption (UMAC)** *40.480*	**Non-Revenue Water (NRW)** **356.990**
					Unbilled Unmetered Consumption (UUAC) *5.745*	
			Water Losses *310.765*	**Apparent Losses** *60.649*	**Systematic Data Handling Errors (SDHE)** *15.074*	
					Customer Metering Inaccuracies (CMI) *30.502*	
					Unauthorized Consumption (UC) *15.074*	
Water Imported (WI) (corrected for known errors) *6,386.410*				**Real Losses** *250.116*	**Leakage on Transmission and/or Distribution Mains** *Not broken down*	
					Leakage and Overflows at Utility's Storage Tanks *Not broken down*	
					Leakage on Service Connections *Not broken down*	

AWWA Free Water Audit Software:
Determining Water Loss Standing

FWAS v6.0

Water Audit Report for: El Toro Water District
Audit Year: 2024 Jan 01 2024 - Dec 31 2024
Data Validity Tier: Tier III (51-70)

Water Loss Control Planning Guide

	Water Audit Data Validity Tier (Score Range)				
Functional Focus Area	**Tier I (1-25)**	**Tier II (26-50)**	**Tier III (51-70)**	**Tier IV (71-90)**	**Tier V (91-100)**
Audit Data Collection	Launch auditing and loss control team; address supply metering deficiencies	Analyze business process for customer metering and billing functions and water supply operations; Identify data gaps; improve supply metering	Establish/revise policies and procedures for data collection	Refine data collection practices and establish as routine business process	Annual water audit is a reliable gauge of year-to-year water efficiency standing
Short-term loss control	Research information on leak detection programs; Begin flowcharting analysis of customer billing system	Conduct loss assessment investigations on a sample portion of the system: customer meter testing, leak survey, unauthorized consumption, etc	Establish ongoing mechanisms for customer meter accuracy testing, active leakage control and infrastructure monitoring	Refine, enhance or expand ongoing programs based upon economic justification	Stay abreast of improvements in metering, meter reading, billing, leakage management and infrastructure rehabilitation
Long-term loss control		Begin to assess long-term needs requiring large expenditure: customer meter replacement, water main replacement program, new customer billing system or AMR/AMI system	Begin to assemble economic business case for long-term needs based upon improved data becoming available through the water audit process	Conduct detailed planning, budgeting and launch of comprehensive improvements for metering, billing or infrastructure management	Continue incremental improvements in short-term and long-term loss control interventions
Target-setting			Establish long-term apparent and real loss reduction goals (+10 year horizon)	Establish mid-range (5 year horizon) apparent and real loss reduction goals	Evaluate and refine loss control goals on a yearly basis
Benchmarking			Preliminary Comparisons - can begin to rely upon with PIs for performance comparisons for real losses	Performance Benchmarking with PIs is meaningful in comparing real loss standing	Identify Best Practices/ Best in class; PIs are very reliable as real loss performance indicators for best in class service

For validity scores of 50 or below, the shaded blocks should not be focus areas until better data validity is achieved.

UWMP

APPENDIX G

Water Shortage Contingency Plan

2026

Water Shortage Contingency Plan

EL TORO WATER DISTRICT

Final Draft | May 2026

EL TORO WATER DISTRICT

2026 WATER SHORTAGE CONTINGENCY PLAN

FINAL DRAFT

May 2026

Prepared By:
El Toro Water District
24251 Aliso Boulevard
Lake Forest
California 92630
Phone: 949 837 0660
https://etwd.com

CONTENTS

TABLES

FIGURES

APPENDICES

ACRONYMS AND ABBREVIATIONS

%	Percent
AF	Acre-Feet
Annual Assessment	Annual Water Supply and Demand Assessment
CRA	Colorado River Aqueduct
District	El Toro Water District
DRA	Drought Risk Assessment
DVL	Diamond Valley Lake
DWR	California Department of Water Resources
EAP	Emergency Operations Center Actions Plan
EOC	Emergency Operation Center
EOP	Emergency Operations Plan
ERP	Emergency Response Plan
FY	Fiscal Year
HMP	Hazard Mitigation Plan
HOA	Homeowners Association
LAFCO	Local Agency Formation Commission
IRP	Integrated Water Resource Plan
M&I	Municipal and Industrial
MCL	Maximum Contaminant Level
MET	Metropolitan Water District of Southern California
Metropolitan Act	Metropolitan Water District Act
MJHMP	Multi-Jurisdictional Hazard Mitigation Plan
MWDOC	Municipal Water District of Orange County
NIMS	National Incident Management System
OCWD	Orange County Water District
SEMS	California Standardized Emergency Management System
Supplier	Urban Water Supplier
SOCWA	South Orange County Wastewater Authority
SWP	State Water Project
UWMP	Urban Water Management Plan
Water Code	California Water Code
WEROC	Water Emergency Response Organization of Orange County
WSAP	Water Supply Allocation Plan
WSCP	Water Shortage Contingency Plan
WSDM	Water Surplus and Drought Management Plan

1 INTRODUCTION AND WSCP OVERVIEW

The Water Shortage Contingency Plan (WSCP) is a strategic planning document designed to prepare for and respond to water shortages. This WSCP complies with California Water Code (Water Code) Section 10632, which requires that every urban water supplier (Supplier) shall prepare and adopt a WSCP as part of its Urban Water Management Plan (UWMP). This level of detailed planning and preparation is intended to help maintain reliable supplies and reduce the impacts of supply interruptions.

The WSCP is El Toro Water District (District)'s operating manual that is used to prevent catastrophic service disruptions through proactive, rather than reactive, management. A water shortage, when water supply available is insufficient to meet the normally expected customer water use at a given point in time, may occur due to a number of reasons, such as drought, climate change, and catastrophic events. This WSCP provides a structured guide for the District to deal with water shortages, incorporating prescriptive information and standardized action levels, along with implementation actions in the event of a catastrophic supply interruption. This way, if and when shortage conditions arise, the District's governing body, its staff, and the public can easily identify and efficiently implement pre-determined steps to manage a water shortage. A well-structured WSCP allows real-time water supply availability assessment and structured steps designed to respond to actual conditions, to allow for efficient management of any shortage with predictability and accountability.

In addition to shortage response actions that may be implemented during declared water shortage conditions, this WSCP recognizes the District's permanent mandatory water conservation measures that apply to potable water use at all times, including during normal water supply conditions. These baseline measures are implemented through the District's Water Shortage Contingency Response Ordinance 2026-1 and are intended to prevent waste and unreasonable use of potable water, promote efficient water use, and reduce the potential need for more restrictive shortage response actions. The permanent measures include water waste prohibitions and the prohibition on the use of potable water to irrigate nonfunctional turf on the property types and as of the applicable effective dates set forth in California Water Code Sections 10608.12 and 10608.14, as further described in this WSCP and Ordinance 2026-1.

The WSCP also describes the District's procedures for conducting an Annual Water Supply and Demand Assessment (Annual Assessment) that is required by Water Code Section 10632.1 and is to be submitted to the California Department of Water Resources (DWR) on or before July 1 of each year, or within 14 days of receiving final allocations from the State Water Project (SWP), whichever is later. The District's 2026 WSCP is included as an appendix to its 2025 UWMP which will be submitted to DWR by July 1, 2026. However, this WSCP is created separately from the District's 2025 UWMP and can be amended, as needed, without amending the UWMP. Furthermore, the Water Code does not prohibit a Supplier from taking actions not specified in its WSCP, if needed, without having to formally amend its UWMP or WSCP.

1.1 Water Shortage Contingency Plan Requirements and Organization

The WSCP provides the steps and water shortage response actions to be taken in times of water shortage conditions. The WSCP has prescriptive elements, such as an analysis of water supply reliability; the water shortage response actions for each of the six standard water shortage levels that correspond to water shortage percentages ranging from 10% to greater than 50%; an estimate of potential to close supply gap for each measure; protocols and procedures to communicate identified actions for any current or predicted water shortage conditions; procedures for an Annual Assessment; monitoring and reporting requirements to determine customer compliance; and reevaluation and improvement procedures for evaluating the WSCP.

This WSCP is organized into three main sections, with Section 3 aligned with Water Code Section 16032 requirements.

Section 1 Introduction and WSCP Overview gives an overview of the WSCP fundamentals.

Section 2 Background provides a background on the District's water service area.

Section 3 Water Shortage Contingency Preparedness and Response Planning

Section 3.1 Water Supply Reliability Analysis provides a summary of the water supply analysis and water reliability findings from the 2025 UWMP.

Section 3.2 Annual Water Supply and Demand Assessment Procedures provide a description of procedures to conduct and approve the Annual Assessment.

Section 3.3 Six Standard Water Shortage Stages explains the WSCP's six standard water shortage levels corresponding to progressive ranges of up to 10, 20, 30, 40, 50, and more than 50% shortages.

Section 3.4 Shortage Response Actions describes the WSCP's shortage response actions that align with the defined shortage levels.

Section 3.5 Communication Protocols addresses communication protocols and procedures to inform customers, the public, interested parties, and local, regional, and state governments, regarding any current or predicted shortages and any resulting shortage response actions.

Section 3.6 Compliance and Enforcement describes customer compliance, enforcement, appeal, and exemption procedures for triggered shortage response actions.

Section 3.7 Legal Authorities is a description of the legal authorities that enable the District to implement and enforce its shortage response actions.

Section 3.8 Financial Consequences of the WSCP provides a description of the financial consequences of and responses for drought conditions.

Section 3.9 Monitoring and Reporting describes monitoring and reporting requirements and procedures that ensure appropriate data is collected, tracked, and analyzed for purposes of monitoring customer compliance and to meet state reporting requirements.

Section 3.10 WSCP Refinement Procedures addresses reevaluation and improvement procedures for monitoring and evaluating the functionality of the WSCP.

Section 3.11 Special Water Feature Distinction is a required definition for inclusion in a WSCP per the Water Code.

Section 3.12 Plan Adoption, Submittal, and Implementation provides a record of the process the District followed to adopt and implement its WSCP.

1.2 Integration with Other Planning Efforts

As a retail water supplier in Orange County, the District considered and coordinated with key regional entities in the development of this WSCP, including the Municipal Water District of Orange County (MWDOC), the District's regional wholesale supplier; the Metropolitan Water District of Southern California (MET), the regional wholesaler for Southern California and supplier of imported water to MWDOC; and the Baker Water Treatment Plant. As a MWDOC member agency, the District also considered relevant information and input from regional coordination efforts involving MWDOC and its member agencies.

Some of the key planning and reporting documents that were used to develop this WSCP are:

- **MWDOC's 2025 UWMP** provides the basis for the projections of the imported supply availability over the next 25 years for the District's service area.
- **MWDOC's 2025 WSCP** provides a water supply availability assessment and structured steps designed to respond to actual conditions that will help maintain reliable supplies and reduce the impacts of supply interruptions.
- **2025 OC Water Demand Forecast for MWDOC and OCWD Technical Memorandum (Demand Forecast TM)**, which is a collaborative effort amongst MWDOC, OCWD, and all retail water suppliers in Orange County that developed water demand projections to produce regionally consistent forecasts across all Orange County water agencies.
- **MET's 2020 Integrated Water Resources Plan (IRP)** is a long-term planning document to ensure water supply availability in Southern California and provides a basis for water supply reliability in Orange County.
- **MET's 2025 UWMP** was developed as a part of the 2020 IRP planning process and was used by MWDOC as another basis for the projections of supply capability of the imported water received from MET.
- **MET's 2025 WSCP** provides a water supply assessment and guide for MET's intended actions during water shortage conditions.
- **Orange County Water & Wastewater Multi-Jurisdictional Hazard Mitigation Plan (2024**), which provides the basis for the seismic and other natural and natural disaster risk analyses of the water system facilities.
- **Orange County Local Agency Formation Commission's 2020 Municipal Service Review for MWDOC Report** provides a comprehensive service review of the municipal services provided by MWDOC.
- **Water Master Plan and Sewer Master Plan** of the District provide information on water infrastructure planning projects and plans to address any required water system improvements.

2 BACKGROUND INFORMATION

Currently governed by a five-member Board of Directors, the District was formed in 1960 under provisions of California Water District Law, Division 13 of the Water Code of the State of California, commencing with Section 34000 for the purpose of providing water supply for the service area.

2.1 District Service Area

The District encompasses approximately 5,430 acres and is almost entirely developed and encompasses all of the City of Laguna Woods and portions of four other cities: Lake Forest, Aliso Viejo, Laguna Hills, and Mission Viejo.

The District service area ranges in elevation between 230 feet above sea level at its lowest point to 904 feet at its highest. In general, elevations increase from west to east. Interstate 5 bisects the District from north to south, with the higher elevations located on the east side. The District is bordered by the Irvine Ranch Water District to the north, the Laguna Beach County Water District to the west, the Moulton Niguel Water District to the west and south, and the Santa Margarita Water District to the south and east. The District also shares a small border with the Trabuco Canyon Water District in the north.

The District operates and maintains a system that has approximately 10,000 service connections, 12 different pressure zones, 6 reservoirs, 9 pump stations, 19 pressure reducing stations and approximately 180 miles of transmission and distribution pipelines of varying diameters between four inches and 24 inches.

A map of the District's water service area is shown in Figure 2-1.

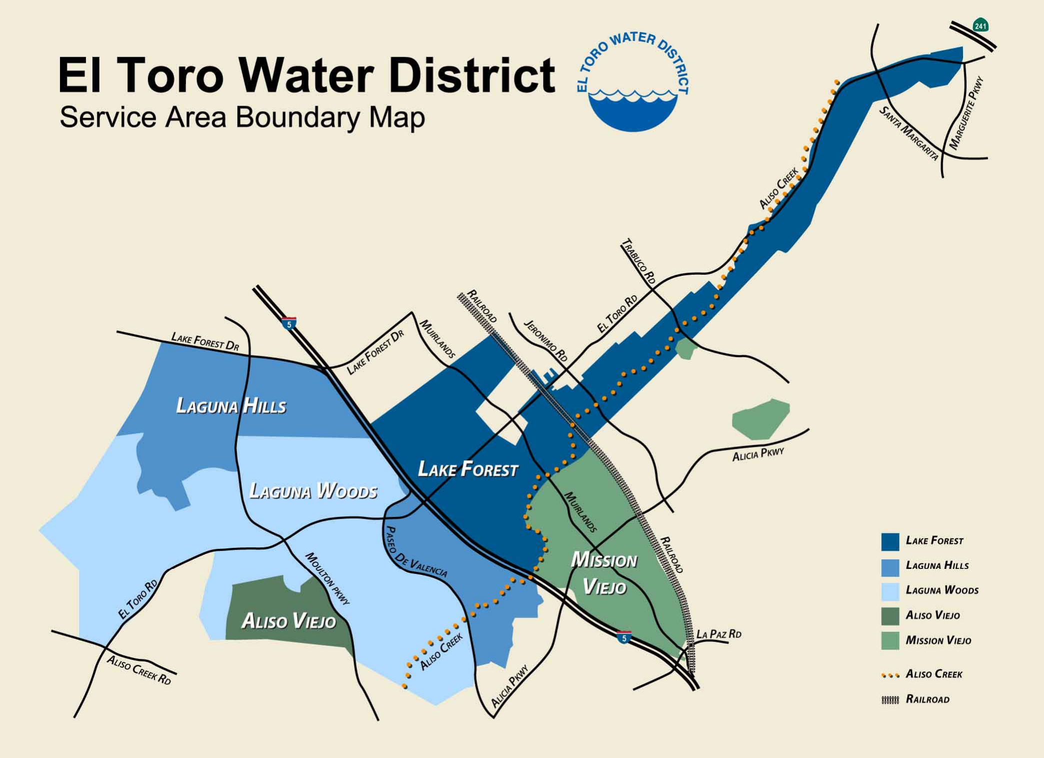


Figure 2-1: District Service Area

Although the District supplements it water supply portfolio with recycled water, the WSCP only applies to its potable water supply. The District is directly involved in wastewater services through its ownership and operation of the wastewater treatment facilities and collection system in its service area. The District operates wastewater treatment facilities and is part of the regional South Orange County Wastewater Authority (SOCWA). Almost all of the wastewater generated within the District's service area is conveyed to its Water Recycling Plant, where it is treated and either used for irrigation or disposed of through SOCWA's Effluent Transmission Main and Aliso Creek Ocean Outfall. The District will determine the recycled water demand reduction actions for recycled water based on the availability of supply and to meet necessary wastewater discharge permit requirements.

2.2 Relationship to Wholesalers

MET: MET is the largest water wholesaler for domestic and municipal uses in California, serving approximately 19 million customers. MET wholesales imported water supplies to 26 member cities and water districts in six Southern California counties. Its service area covers the Southern California coastal plain, extending approximately 200 miles along the Pacific Ocean from the City of Oxnard in the north to the international boundary with Mexico in the south. This encompasses 5,200 square miles and includes portions of Los Angeles, Orange, Riverside, San Bernardino, San Diego, and Ventura counties. Approximately 85% of the population from the aforementioned counties reside within MET's boundaries.

MET is governed by a Board of Directors comprised of 38 appointed individuals with a minimum of one representative from each of MET's 26 member agencies. The allocation of directors and voting rights are determined by each agency's assessed valuation. Each member of the Board shall be entitled to cast one vote for each ten million dollars ($10,000,000) of assessed valuation of property taxable for district purposes, in accordance with Section 55 of the Metropolitan Water District Act (Metropolitan Act). Directors can be appointed through the chief executive officer of the member agency or by a majority vote of the governing board of the agency. Directors are not compensated by MET for their service.

MET is responsible for importing water into the region through its operation of the Colorado River Aqueduct (CRA) and its contract with the State of California for SWP supplies. Member agencies receive water from MET through various delivery points and pay for service through a rate structure made up of volumetric rates, capacity charges and readiness to serve charges. Member agencies provide estimates of imported water demand to MET annually in April regarding the amount of water they anticipate they will need to meet their demands for the next five years.

MWDOC: In Orange County, MWDOC and the cities of Anaheim, Fullerton, and Santa Ana are MET member agencies that purchase imported water directly from MET. Furthermore, MWDOC purchases both treated potable and untreated water from MET to supplement its retail agencies' local supplies.

The District is one of MWDOC's 28 member agencies receiving imported water from MWDOC. The District's location within MWDOC's service area is shown on Figure 2-2.

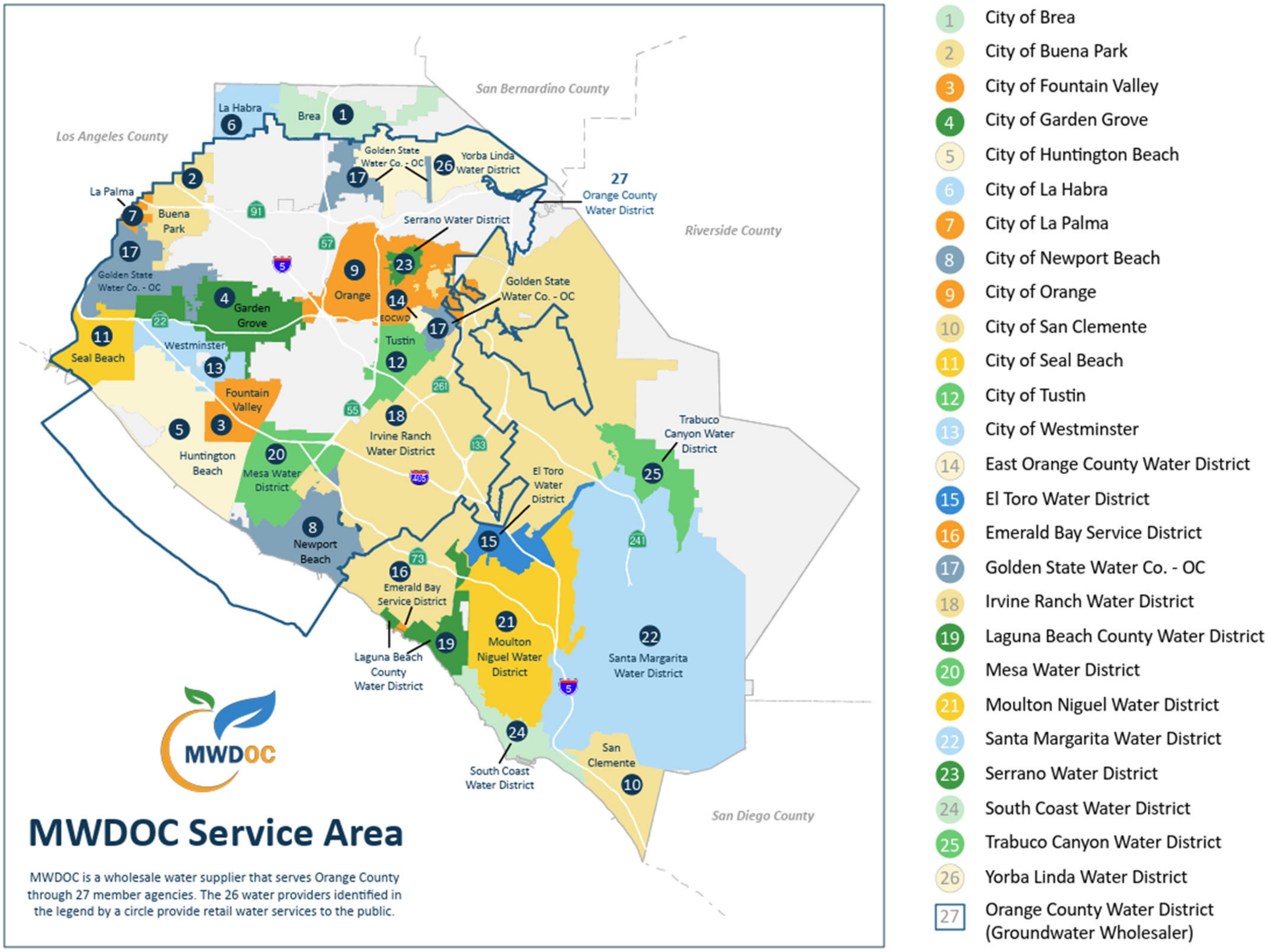


Figure 2-2: Regional Location of the District and Other MWDOC Member Agencies

2.3 Relationship with Wholesaler Water Shortage Planning

The WSCP is designed to be consistent with MET’s Water Shortage and Demand Management (WSDM) Plan, MWDOC’s Water Supply Allocation Plan (WSAP), and other emergency planning efforts as described below. MWDOC’s WSAP is integral to the WSCP’s shortage response strategy in the event that MET or MWDOC determines that supply augmentation (including storage) and lesser demand reduction measures would not be sufficient to meet a projected shortage levels needed to meet demands.

2.3.1 MET Water Surplus and Drought Management Plan

MET evaluates the level of supplies available and existing levels of water in storage to determine the appropriate management stage annually. Each stage is associated with specific resource management actions to avoid extreme shortages to the extent possible and minimize adverse impacts to retail customers should an extreme shortage occur. The sequencing outlined in the WSDM Plan reflects anticipated responses towards MET’s existing and expected resource mix.

Surplus stages occur when net annual deliveries can be made to water storage programs. Under the WSDM Plan, there are four surplus management stages that provide a framework for actions to take for surplus supplies. Deliveries in Diamond Valley Lake (DVL) and in SWP terminal reservoirs continue through each surplus stage provided there is available storage capacity. Withdrawals from DVL for regulatory purposes or to meet seasonal demands may occur in any stage.

The WSDM Plan distinguishes between shortages, severe shortages, and extreme shortages. The differences between each term are listed below.

- Shortage: MET can meet full-service demands and partially meet or fully meet interruptible demands using stored water or water transfers as necessary.
- Severe Shortage: MET can meet full-service demands only by using stored water, transfers, and possibly calling for extraordinary conservation.
- Extreme Shortage: MET must allocate available supply to full-service customers.

Metropolitan's 2025 Water Shortage Contingency Plan identifies shortage response actions aligned with the six standard water shortage levels required by California Water Code Section 10632. As seen in Figure 2-3, these actions include the use of storage, flexible supplies, voluntary demand reduction measures, supply allocations, and, under the most severe conditions, emergency storage, as applicable to the particular shortage conditions.

Figure 2-3: MET's Shortage Stages and Response Actions

Shortage Stage	Shortage Percentage	Shortage Response	
1	Up to 10%	Take from Storage Execute Flexible Supplies Implement Voluntary Demand Reduction Implement Supply Allocations	• 0 to 100% met by Storage • 0 to 100% met by Flexible Supplies • 0 to 20% of total retail water use met by implementing Communication Plan • 0 to 50% of total base demand met by supply allocation
2	10% to 20%	Take from Storage Execute Flexible Supplies Implement Voluntary Demand Reduction Implement Supply Allocations	• 0 to 100% met by Storage • 0 to 100% met by Flexible Supplies • 0 to 20% of total retail water use met by implementing Communication Plan • 0 to 50% of total base demand met by supply allocation
3	20% to 30%	Take from Storage Execute Flexible Supplies Implement Voluntary Demand Reduction Implement Supply Allocations	• 0 to 100% met by Storage • 0 to 100% met by Flexible Supplies • 0 to 20% of total retail water use met by implementing Communication Plan • 0 to 50% of total base demand met by supply allocation
4	30% to 40%	Take from Storage Execute Flexible Supplies Implement Voluntary Demand Reduction Implement Supply Allocations	• 0 to 100% met by Storage • 0 to 100% met by Flexible Supplies • 0 to 20% of total retail water use met by implementing Communication Plan • 0 to 50% of total base demand met by supply allocation
5	40% to 50%	Take from Storage Execute Flexible Supplies Implement Voluntary Demand Reduction Implement Supply Allocations	• 0 to 100% met by Storage • 0 to 100% met by Flexible Supplies • 0 to 20% of total retail water use met by implementing Communication Plan • 0 to 50% of total base demand met by supply allocation

Shortage Stage	Shortage Percentage	Shortage Response	
6	More than 50%	Take from Storage Execute Flexible Supplies Implement Voluntary Demand Reduction Implement Supply Allocations Take from Emergency Storage, if needed	• 0 to 100% met by Storage • 0 to 100% met by Flexible Supplies • 0 to 20% of total retail water use met by implementing Communication Plan • 0 to 50% of total base demand met by supply allocation • Take from emergency storage during a catastrophic event

MET's Board of Directors adopted a Water Supply Condition Framework in June 2008 in order to communicate the urgency of the region's water supply situation and the need for further water conservation practices. The framework has four conditions, each calling increasing levels of conservation. Descriptions for each of the four conditions are listed below:

- Baseline Water Use Efficiency: Ongoing conservation, outreach, and recycling programs to achieve permanent reductions in water use and build storage reserves.
- Condition 1 Water Supply Watch: Local agency voluntary dry-year conservation measures and use of regional storage reserves.
- Condition 2 Water Supply Alert: Regional call for cities, counties, member agencies, and retail water agencies to implement extraordinary conservation through drought ordinances and other measures to mitigate use of storage reserves.
- Condition 3 Water Supply Allocation: Implement MET's WSAP.

As noted in Condition 3, should supplies become limited to the point where imported water demands cannot be met, MET will allocate water through the WSAP.

2.3.2 MET Water Supply Allocation Plan

Metropolitan's Water Supply Allocation Plan (WSAP) provides the framework for allocating limited Metropolitan supplies to its member agencies during severe shortage conditions. Under most conditions, Metropolitan can meet the wholesale water demands of its service area through available supplies, storage, transfers, conservation, and other resource management actions. However, if public outreach, enhanced conservation, supply augmentation, and other demand management measures are insufficient to achieve needed reductions, Metropolitan may implement its WSAP to temporarily limit and allocate supplies among its member agencies.

Metropolitan's WSAP was originally adopted by the Metropolitan Board of Directors in February 2008 and is included as an attachment to Metropolitan's 2025 WSCP. The WSAP is intended to provide an equitable, needs-based method for distributing limited water supplies while recognizing differences in member agency conditions, including retail demand, population growth, local supplies, conservation savings, recycled water, storage and transfer actions, and dependence on Metropolitan supplies. The WSAP allocation process generally includes base period calculations, allocation year calculations, and supply allocation calculations.

If implementation of the WSAP is necessary, the Metropolitan Board of Directors determines the applicable regional shortage level based on then-current supply conditions, storage levels, and projected demands. WSAP implementation is typically considered in April, with allocations beginning the following July and remaining in effect for a 12-month allocation period, unless otherwise determined by the Metropolitan Board of Directors. Because a WSAP allocation can impose significant impacts on member agencies and retail customers, Metropolitan generally considers allocation a fallback response action when other supply and demand management measures are insufficient to meet regional shortage objectives.

2.3.3 MWDOC Water Supply Allocation Plan

MWDOC's Water Supply Allocation Plan establishes the process by which MWDOC would determine and implement imported water allocations among its retail agencies, including the District, if Metropolitan allocates supplies to MWDOC. MWDOC developed its WSAP in coordination with its retail agencies, adopted the plan in January 2009, and amended it in 2020. The MWDOC WSAP generally follows Metropolitan's allocation methodology where reasonable, while preserving flexibility to address unintended or disproportionate impacts among MWDOC retail agencies.

The MWDOC WSAP uses a multi-step process to determine each retail agency's imported supply allocation. The process includes establishing baseline supply and demand information using the most recent non-shortage years; adjusting allocation year demands to reflect population growth and changes in local supplies; calculating an initial allocation based on Metropolitan's declared shortage level; applying adjustments and credits to address retail impacts and conservation; and determining each retail agency's total imported supply allocation and retail reliability.

The MWDOC WSAP also includes implementation procedures for appeals, allocation surcharges, usage tracking and reporting, and allocation timing. Retail agencies may request allocation adjustments based on new or corrected information, and MWDOC may use such information, as appropriate, in any related appeal to MET. If MWDOC exceeds its total MET allocation and is assessed a surcharge by MET, MWDOC may assess a corresponding surcharge to retail agencies that exceed their individual allocations, generally based on each agency's proportional exceedance. MWDOC also provides retail agencies with periodic water use reports comparing cumulative usage to allocation baselines. If MET declares a shortage and implements its WSAP, MWDOC anticipates announcing retail agency allocations within 30 days, with the allocation period generally covering 12 consecutive months.

3 WATER SHORTAGE CONTINGENCY PREPAREDNESS AND RESPONSE PLANNING

The District's WSCP is a detailed guide of how the District intends to act in the case of an actual water shortage condition. The WSCP anticipates a water supply shortage and provides pre-planned guidance for managing and mitigating a shortage. Regardless of the reason for the shortage, the WSCP is based on adequate details of demand reduction and supply augmentation measures that are structured to match varying degrees of shortage will ensure the relevant stakeholders understand what to expect during a water shortage situation.

3.1 Water Supply Reliability Analysis

Per Water Code Section 10632 (a)(1), the WSCP shall provide an analysis of water supply reliability conducted pursuant to Water Code Section 10635, and the key issues that may create a shortage condition when looking at the District's water asset portfolio.

Understanding water supply reliability, factors that could contribute to water supply constraints, availability of alternative supplies, and what effect these have on meeting customer demands provides the District with a solid basis on which to develop appropriate and feasible response actions in the event of a water shortage. In the 2025 UWMP, the District conducted a Water Reliability Assessment to compare the total water supply sources available to the water supplier with long-term projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and a drought lasting five consecutive water years.

The District also conducted a DRA to evaluate a drought period that lasts five consecutive water years starting from the year following when the assessment is conducted. An analysis of both assessments determined that the District is capable of meeting all customers' demands from 2025 through 2050 for a normal year, a single dry year, and a drought lasting five consecutive years with significant imported water supplemental drought supplies from MWDOC/MET and ongoing conservation program efforts. The District receives the majority of its water supply from imported water from MWDOC, as well as supplemental supplies from local recycled water from the District's Water Recycling Plant that add reliability for non-potable demand.

As a result, there is no projected shortage condition due to drought that will trigger customer demand reduction actions until MWDOC notifies the District of insufficient imported supplies. More information is available in the District's 2025 UWMP Sections 6 and 7.

3.2 Annual Water Supply and Demand Assessment Procedures

In accordance with California Water Code Sections 10632 and 10632.1, the District will conduct an Annual Water Supply and Demand Assessment and submit an Annual Water Shortage Assessment Report to the California Department of Water Resources by July 1 of each year. The report will identify any anticipated water shortage conditions, shortage response actions triggered or anticipated to be triggered, compliance and enforcement actions, and communication actions consistent with this WSCP.

The Annual Assessment provides a near-term evaluation of the District's water supply reliability using information available at the time of the assessment. The evaluation considers projected supplies and demands for the current year and the following dry year and determines whether anticipated conditions warrant implementation of one or more WSCP shortage levels or response actions.

The following procedures document the District's process for preparing and approving the Annual Assessment, including the key data inputs, evaluation criteria, and methodology used to assess water system reliability.

3.2.1 Decision-Making Process

The following decision-making process describes the functional steps that the District will take to formally approve the Annual Assessment determination of water supply reliability each year.

3.2.1.1 District Steps to Approve the Annual Assessment Determination

The Annual Assessment will be predicated on the MWDOC Annual Assessment outcomes.

MWDOC surveys its member agencies annually for anticipated water demands and supplies for the upcoming year. MWDOC utilizes this information to plan for the anticipated imported water supplies for the MWDOC service area. This information is then shared and coordinated with MET and is incorporated into their analysis of their service area's annual imported water needs. Based on the year's supply conditions and WSDM actions, MET will present a completed Annual Assessment for its member agencies' review from which they will then seek Board approval in April of each year. Additionally, MET expects that any triggers or specific shortage response actions that result from the Annual Assessment would be approved by their Board at that time. Based upon MET's Assessment and taking into consideration information provided to MWDOC through the annual survey, MWDOC will provide an anticipated estimate of imported supplies for ETWD to incorporate into the annual supply and demand assessment.

The Annual Assessment findings will determine the approval process. If a shortage is identified, the Annual Assessment will be taken to the ETWD Board of Directors for approval and formally submitted to DWR prior to the July 1 deadline. If no shortage is identified, the Annual Assessment will be approved by the General Manager, or designee, and submitted to DWR prior to the July 1 deadline.

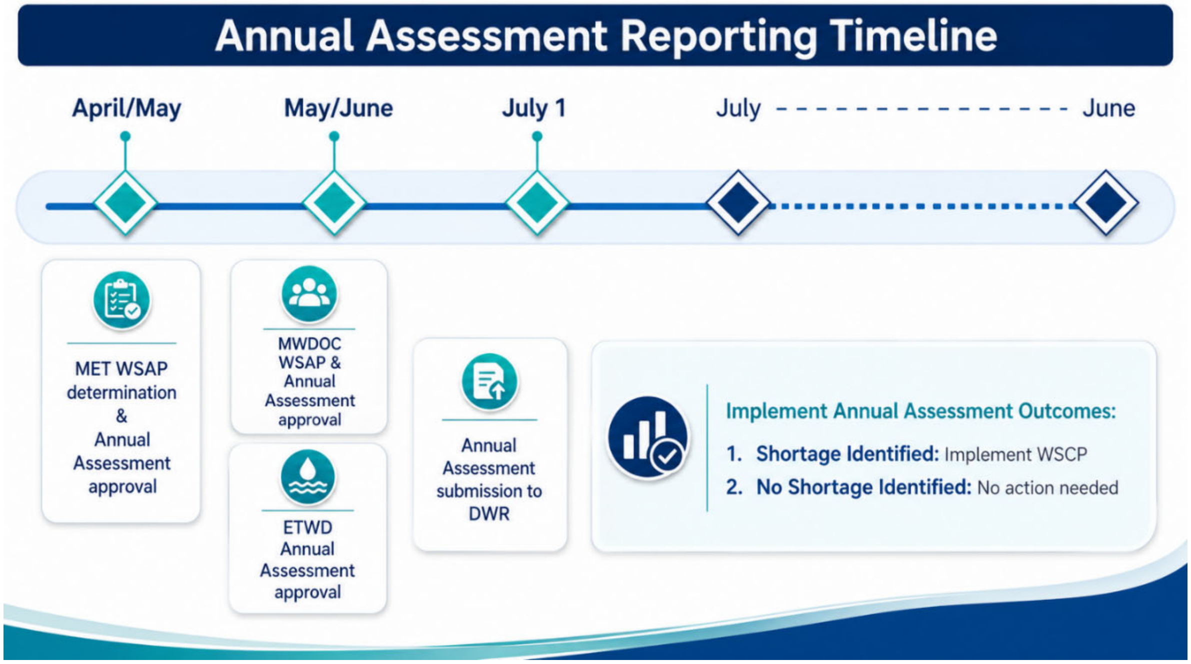


Figure 3-1: Annual Assessment Reporting Timeline

3.2.2 Data and Methodologies

The following paragraphs document the key data inputs and methodologies that are used to evaluate the water system reliability for the coming year, while considering that the year to follow would be considered dry.

3.2.2.1 Assessment Methodology

The District will evaluate water supply reliability for the current year and one dry year for the purpose of the Annual Assessment. The Annual Assessment determination will be based on considerations of unconstrained water demand, local water supplies, MWDOC/MET imported water supplies, planned water use, and infrastructure considerations. The balance between projected local supplies coupled with MET imported supplies and anticipated unconstrained demand will be used to determine what, if any, shortage stage is expected under the WSCP framework as presented in Figure 3-2. The WSCP's standard shortage stages are defined in terms of shortage percentages. Shortage percentages will be calculated by dividing the difference between water supplies and unconstrained demand by total unconstrained demand. This calculation will be performed separately for anticipated current year conditions and for assumed dry year conditions.

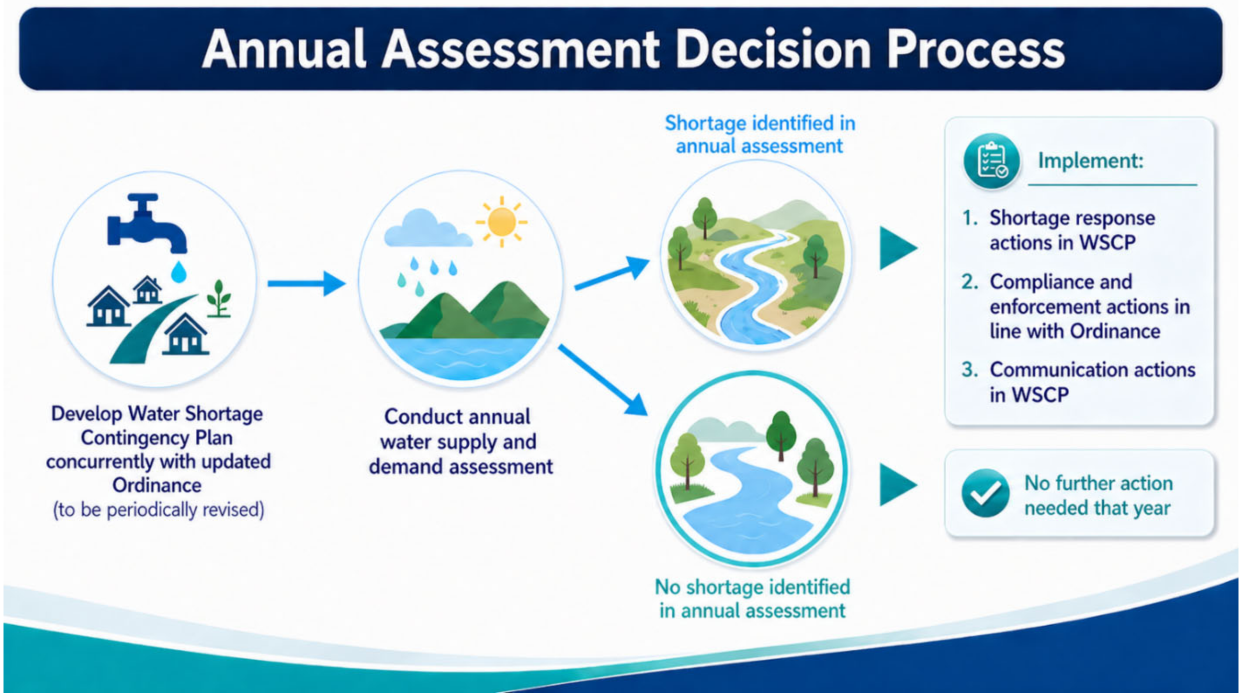


Figure 3-2: Water Shortage Contingency Plan Annual Assessment Framework

3.2.2.2 Locally Applicable Evaluation Criteria

Within Orange County, there are no significant local applicable criteria that directly affect reliability. Through the years, the water agencies in Orange County have made tremendous efforts to integrate their systems to provide flexibility to interchange with different sources of supplies. There are emergency agreements in place to ensure all parts of the County have an adequate supply of water. For the agencies in southern Orange County, most of their demands are met with imported water where their limitation is based on the capacity of their system, which is considered sufficient to meet anticipated demands.

The District will also continue to monitor emerging supply and demand conditions related to supplemental imported water from MWDOC/MET and take appropriate actions consistent with the flexibility and adaptiveness inherent to the WSCP. The District's Annual Assessment was based on the District's service area, water sources, water supply reliability, and water use as described in Water Code Section 10631, including available data from state, regional, or local agency population, land use development, and climate change projections within the service area of the

District. Some conditions that affect MWDOC's wholesale supply and demand, such as groundwater replenishment, surface water and local supply production, can differ significantly from earlier projections throughout the year.

However, if a major earthquake on the San Andreas Fault occurs, it will damage all three key regional water aqueducts and disrupt imported supplies for up to six months. The region would likely impose a water use reduction ranging from 10-25% until the system is repaired. However, MET and MWDOC have taken proactive steps to handle such disruption, such as constructing DVL, which mitigates potential impacts. DVL, along with other local reservoirs, can store a six to twelve-month supply of emergency water.

3.2.2.3 Water Supply

As detailed in the Districts 2025 UWMP, the District meets all of its customers' demands with a combination of treated and untreated imported water from MWDOC/MET, local recycled water, and local surface water from Irvine Lake. The District's main source of water supply is imported water, with recycled water and surface water making up the rest of the District's water supply portfolio.

3.2.2.4 Unconstrained Customer Demand

The WSCP and Annual Assessment define unconstrained demand as expected water use prior to any projected shortage response actions that may be taken under the WSCP. Unconstrained demand is distinguished from observed demand, which may be constrained by preceding, ongoing, or future actions, such as emergency supply allocations during a multi-year drought. WSCP shortage response actions to constrain demand are inherently extraordinary; routine activities such as ongoing conservation programs and regular operational adjustments are not considered as constraints on demands.

3.2.2.5 Planned Water Use for Current Year Considering Dry Subsequent Year

Water Code Section 10632(a)(2)(B)(ii) requires the Annual Assessment to determine "current year available supply, considering hydrological and regulatory conditions in the current year and one dry year."

The Annual Assessment will include two separate estimates of the District's annual water supply and unconstrained demand using: 1) current year conditions, and 2) assumed dry year conditions. Accordingly, the Annual Assessment's shortage analysis will present separate sets of findings for the current year and dry year scenarios. The Water Code does not specify the characteristics of a dry year, allowing discretion to the Supplier. The District will use its discretion to refine and update its assumptions for a dry year scenarios in each Annual Assessment as information becomes available and in accordance with best management practices.

3.2.2.6 Infrastructure Considerations

The Annual Assessment will include consideration of any infrastructure issues that may pertain to near-term water supply reliability, including repairs, construction, and environmental mitigation measures that may temporarily constrain capabilities, as well as any new projects that may add to system capacity. MWDOC closely coordinates with MET and its member agencies, including the District, on any planned infrastructure work that may impact water supply availability. Throughout each year, MET regularly carries out preventive and corrective maintenance of its facilities within the MWDOC service area that may require shutdowns to inspect and repair pipelines and facilities and support capital improvement projects. These shutdowns involve a high level of planning and coordination between MWDOC, MWDOC's member agencies, and MET to ensure that major portions of the distribution system are not out of service at the same time. Operational flexibility within MET's system and the cooperation of member agencies allow shutdowns to be successfully completed while continuing to meet all system demands.

Specifically for the District, the Capital Improvement Program is updated annually to maintain existing infrastructure rather than expand to new water supply sources.

3.2.2.7 Other Factors

For the Annual Assessment, any known issues related to water quality would be considered for their potential effects on water supply reliability.

3.3 Six Standard Water Shortage Levels

Per Water Code Section 10632 (a)(3)(A), the District must define the water shortage levels that represent shortages from the normal reliability as determined in the Annual Assessment. The Water Code provides an option for suppliers to align with six standard water shortage levels; however, the District has selected to retain its existing water shortage levels as defined in District Code (Table 8-1A).

Table 8-1A: Water Shortage Contingency Plan Levels

Table 8-1A

Water Shortage Contingency Plan Levels

Shortage Level	Percent Shortage Range	Shortage Response Actions
	0% (Normal)	A Level 0 Water Supply Shortage – Condition exists when no current supply reductions are anticipated. The District proceeds with planned water efficiency best practices to support consumer demand reduction in line with state mandated requirements and local District goals for water supply reliability. Permanent water waste prohibitions are in place as stipulated in the District's Water Shortage Contingency Response Ordinance 2026-1
1	Up to 10%	A Level 1 Water Supply Shortage – Condition exists when the District Board of Directors holds a Public Hearing, during which, at its sole discretion, determines and declares that due to drought or other supply reductions, a consumer demand reduction of up to 10% is necessary to make more efficient use of water and respond to existing water conditions. Upon the declaration of a Water Aware condition, the District shall implement the mandatory Level 1 conservation measures identified in this ordinance. The type of event that may prompt the District to declare a Level 1 Water Supply Shortage may include, among other factors, a finding that its wholesale water provider calls for extraordinary water conservation.
2	11% to 20%	A Level 2 Water Supply Shortage – Condition exists when the District Board of Directors holds a Public Hearing, during which, at its sole discretion, determines and declares that due to drought or other supply reductions, a consumer demand reduction of up to 20% is necessary to make more efficient use of water and respond to existing water conditions. Upon declaration of a Level 2 Water Supply Shortage condition, the District shall implement the mandatory Level 2 conservation measures identified in the District's Water Shortage Contingency Response Ordinance 2026-1.

Table 8-1A

Water Shortage Contingency Plan Levels

Shortage Level	Percent Shortage Range	Shortage Response Actions
3	21% to 30%	A Level 3 Water Supply Shortage – Condition exists when the District Board of Directors holds a Public Hearing, during which, at its sole discretion, determines and declares a water shortage emergency condition pursuant to California Water Code Section 350 and notifies its residents and businesses that up to 30% consumer demand reduction is required to ensure sufficient supplies for human consumption, sanitation and fire protection. The District must declare a Water Supply Shortage Emergency in the manner and on the grounds provided in California Water Code Section 350.
4	31% to 40%	A Level 4 Water Supply Shortage - Condition exists when the District Board of Directors holds a Public Hearing, during which, at its sole discretion, determines and declares a water shortage emergency condition pursuant to California Water Code Section 350 and notifies its residents and businesses that up to 40% consumer demand reduction is required to ensure sufficient supplies for human consumption, sanitation and fire protection. The District must declare a Water Supply Shortage Emergency in the manner and on the grounds provided in California Water Code Section 350.
5	41% to 50%	A Level 5 Water Supply Shortage - Condition exists when the District Board of Directors holds a Public Hearing, during which, at its sole discretion, determines and declares a water shortage emergency condition pursuant to California Water Code Section 350 and notifies its residents and businesses that up to 50% or more consumer demand reduction is required to ensure sufficient supplies for human consumption, sanitation and fire protection. The District must declare a Water Supply Shortage Emergency in the manner and on the grounds provided in California Water Code Section 350.
6	>50%	A Level 6 Water Supply Shortage – Condition exists when the District Board of Directors holds a Public Hearing, during which, at its sole discretion, determines and declares a water shortage emergency condition pursuant to California Water Code Section 350 and notifies its residents and businesses that greater than 50% or more consumer demand reduction is required to ensure sufficient supplies for human consumption, sanitation and fire protection. The District must declare a Water Supply Shortage Emergency in the manner and on the grounds provided in California Water Code Section 350.

NOTES: The District's Water Shortage Contingency Plan and Table 8-1A only apply to the District's potable water supply.

3.4 Shortage Response Actions

Water Code Section 10632 (a)(4) requires the WSCP to specify shortage response actions that align with the defined shortage levels. The District has defined specific shortage response actions that align with the defined shortage levels in DWR Tables 8-2 and 8-3 (Appendix A). These shortage response actions were developed with consideration to the system infrastructure and operations changes, supply augmentation responses, customer-class or water use-specific demand reduction initiatives, and increasingly stringent water use prohibitions.

3.4.1 Demand Reduction

The demand reduction measures that would be implemented to address shortage levels are described in DWR Table 8-3 (Appendix A). This table identifies the shortage response actions associated with each defined shortage level and estimates the extent to which each action is expected to reduce the gap between projected supplies and demands. DWR Table 8-3 also demonstrates that the selected suite of shortage response actions is expected to achieve the water savings necessary to meet the requirements of each applicable shortage level, such as an additional 10 percent reduction in demand. The table also identifies the enforcement actions, if any, associated with each demand reduction measure.

3.4.2 Supply Augmentation

The supply augmentation actions are described in DWR Table 8-2 (Appendix A). These augmentations represent short-term management objectives triggered by the MET's WSDM Plan and do not overlap with the long-term new water supply development or supply reliability enhancement projects. Supply Augmentation is made available to the District through MWDOC and MET. The District relies on MET's reliability portfolio of water supply programs including existing water transfers, storage and exchange agreements to supplement gaps in the District's supply/demand balance. MET has developed significant storage capacity (over 5 million AF) in reservoirs and groundwater banking programs both within and outside of the Southern California region. Additionally, MET can pursue additional water transfer and exchange programs with other water agencies to help mitigate supply/demand imbalances and provide additional dry-year supply sources.

MWDOC, and in turn its retail agencies, including the District, has access to supply augmentation actions through MET. MET may exercise these actions based on regional need, and in accordance with their WSCP, and may include the use of supplies and storage programs within the Colorado River, SWP, and in-region storage. The District has the ability to augment its supply to reduce the shortage gap by up to 100% by purchasing additional imported water through MWDOC; however, this is subject to rate penalties from MWDOC.

3.4.3 Operational Changes

During shortage conditions, operations may be affected by supply augmentation or demand reduction responses. The District will consider their operational procedures when it completes its Annual Assessment or as needed to identify changes that can be implemented to address water shortage on a short-term basis, such as suspending normal system flushing procedures or other minor changes to increase efficiency and to more effectively distribute available supply across the service area.

3.4.4 Additional Mandatory Restrictions

California Water Code Section 10632(a)(4)(D) calls for "additional, mandatory prohibitions against specific water use practices that are in addition to state-mandated prohibitions and appropriate to the local conditions" to be included among the WSCP's shortage response actions. The District has identified permanent mandatory water conservation measures and additional mandatory restrictions in its Water Shortage Contingency Response Ordinance 2026-1.

The District's permanent mandatory water conservation measures apply to potable water use at all times, including during normal water supply conditions and during any declared Water Shortage Level. These requirements establish the District's baseline conservation measures and are intended to prevent waste and unreasonable use of potable water, support efficient water use, and reduce the potential need for more restrictive shortage response actions.

The permanent mandatory water conservation measures include, but are not limited to, limits on outside watering hours; prohibitions on excessive water flow or runoff; prohibitions on irrigation during and within forty-eight hours after qualifying rainfall; requirements to repair leaks, breaks, or malfunctions; prohibitions on hosing or washing down hard or paved surfaces except as allowed by the Ordinance; vehicle washing restrictions; requirements for recirculating water in decorative fountains and water features; commercial food-serving and lodging requirements; commercial kitchen and water recirculation requirements; recycled water construction-site requirements; automated irrigation control requirements for applicable development and redevelopment projects; and a general prohibition on water waste and unreasonable water use.

No Irrigation of Nonfunctional Turf. As a permanent mandatory water conservation measure, the use of potable water to irrigate nonfunctional turf is prohibited on the property types and as of the applicable effective dates set forth in California Water Code Section 10608.14. For purposes of this prohibition, “nonfunctional turf” has the meaning set forth in California Water Code Section 10608.12. This prohibition is subject to the exceptions provided in California Water Code Section 10608.14 and as implemented through the District’s Water Shortage Contingency Response Ordinance 2026-1.

Permanent mandatory water conservation measures remain in effect during all Water Shortage Levels. During declared shortage conditions, the District may implement additional demand reduction actions, operational changes, enforcement measures, water budget adjustments, drought factors, water shortage rate surcharges, or other measures authorized by this WSCP and Ordinance 2026-1.

3.4.5 Emergency Response Plan (Hazard Mitigation Plan)

A catastrophic water shortage would be addressed according to the appropriate water shortage level and response actions. It is likely that a catastrophic shortage would immediately trigger Shortage Level 3 (equivalent to mandated Level 6) and response actions have been put in place to mitigate a catastrophic shortage. In addition, there are several plans that address catastrophic failures and align with the WSCP, including MET’s WSDM and WSAP and the Water Emergency Response Organization of Orange County (WEROC)’s Emergency Operations Plan (EOP).

3.4.5.1 MET’s WSDM and WSAP

MET has comprehensive plans for stages of actions it would undertake to address a catastrophic interruption in water supplies through its WSDM and WSAP. MET also developed an Emergency Storage Requirement to mitigate against potential interruption in water supplies resulting from catastrophic occurrences within the Southern California region, including seismic events along the San Andreas Fault. In addition, MET is working with the state to implement a comprehensive improvement plan to address catastrophic occurrences outside of the Southern California region, such as a maximum probable seismic event in the Sacramento-San Joaquin River Delta that would cause levee failure and disruption of SWP deliveries.

3.4.5.2 Water Emergency Response Organization of Orange County Emergency Operations Plan

In 1983, the Orange County water community identified the need for a coordinated emergency response framework for disasters affecting the regional water distribution and wastewater systems. These efforts resulted in the formation of the Water Emergency Response Organization of Orange County (WEROC), which is administered by the Municipal Water District of Orange County (MWDOC). WEROC coordinates emergency response on behalf of Orange County water and wastewater agencies, supports emergency planning and training exercises, and provides a single point of contact for representation of the Orange County water and wastewater community to county, state, and federal disaster coordination agencies. Within the Orange County Operational Area, WEROC is the recognized emergency response contact for the water community, including the District.

As a WEROC member agency, the District will coordinate with WEROC during emergency events that may affect water supply, water distribution, wastewater collection, or other critical utility operations. Such coordination may include damage assessment, emergency communications, situational reporting, mutual aid coordination, resource requests, and response and recovery support when District resources are insufficient to meet the needs of the event.

The WEROC Emergency Operations Plan (EOP) defines the actions to be taken by WEROC Emergency Operations Center (EOC) staff to reduce impacts to water and wastewater infrastructure, respond effectively to disasters, and coordinate recovery operations following emergencies involving Orange County water and wastewater utilities. The EOP includes activation and notification protocols used to inform partner agencies of the situation, EOC activation status, known damages or impacts, and resource needs. The EOP is a standalone document that is reviewed annually and approved by the MWDOC Board every three years.

WEROC and its member agencies operate within established emergency management frameworks, including the California Standardized Emergency Management System (SEMS) and the National Incident Management System (NIMS), to support coordinated information flow, resource coordination, and emergency response. The WEROC EOC is responsible for assessing the overall condition and status of Orange County regional water distribution and wastewater collection systems, including Metropolitan facilities serving Orange County. The WEROC EOC may be activated for emergencies resulting from natural or human-caused events through automatic, manual, or standby activation procedures.

WEROC recognizes four primary phases of emergency management: preparedness, response, recovery, and mitigation/prevention. Preparedness includes planning, training, and exercises conducted prior to an emergency. Response includes alert and notification, EOC activation, direction and control, mutual aid, and other immediate actions to reduce impacts to water infrastructure and support recovery. Recovery includes short-term and long-term actions to restore systems and return vital services to minimum operating standards. Mitigation/prevention includes actions intended to reduce vulnerability and minimize the adverse impacts of future emergencies.

In the event of an emergency that results in an actual or anticipated catastrophic water shortage, the District may implement the applicable shortage level and response actions under this WSCP based on the severity, duration, geographic extent, and operational impacts of the event. Consistent with MWDOC’s 2025 WSCP, coordination with WEROC is anticipated to begin at Shortage Level 4 or greater, or earlier if warranted by the nature of the emergency.

3.4.5.3 El Toro Water District Emergency Response Plan

The District will also refer to its current American Water Infrastructure Act Risk and Resilience Assessment and Emergency Response Plan in the event of a catastrophic supply interruption.

3.4.6 Seismic Risk Assessment and Mitigation Plan

Per California Water Code Section 10632.5, urban water suppliers are required to assess seismic risk to water supplies as part of their WSCP and include a mitigation plan for identified seismic risks. Given the distances that imported water supplies travel to reach Orange County, the region is vulnerable to interruptions along aqueducts, pipelines, treatment facilities, and other infrastructure associated with delivering supplies to the region. In addition, local water distribution, storage, pumping, communications, power, and related facilities may be susceptible to damage from earthquakes and other disasters.

The Orange County Water and Wastewater 2024 Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) provides the basis for the seismic and other hazard risk analysis of water and wastewater system facilities in Orange County. The MJHMP identifies hazards, evaluates vulnerabilities, and establishes mitigation goals and actions intended to reduce risks to water and wastewater utilities in Orange County. The MJHMP also provides a regional planning framework for participating agencies to assess natural and human-caused hazards and identify mitigation actions to reduce impacts on critical facilities and services.

The District addresses seismic risk through its emergency planning, hazard mitigation planning, risk and resilience assessment, emergency response procedures, capital improvement planning, facility condition assessments, and coordination with regional emergency management partners. The District may rely on applicable local or regional hazard mitigation plans, including the Orange County Water and Wastewater 2024 Multi-Jurisdictional Hazard Mitigation Plan, to satisfy the requirements of California Water Code Section 10632.5, provided such plans address seismic risk to the District’s water system.

The MJHMP identifies the following overarching hazard mitigation goals applicable to MWDOC, participating agencies, and the regional water and wastewater community:

- **Goal 1**: Minimize vulnerabilities of critical facilities and infrastructure to minimize damages, loss of life, and injury to human life caused by hazards.
- **Goal 2**: Minimize security risks to water and wastewater infrastructure.
- **Goal 3**: Minimize interruption to water and wastewater utilities.
- **Goal 4**: Improve public outreach, awareness, education, and preparedness for hazards to increase community resilience.
- **Goal 5**: Eliminate or minimize wastewater/recycled water spills and overflows, as applicable.
- **Goal 6**: Protect water quality and supply, critical aquatic resources, and habitat to ensure a safe water supply.
- **Goal 7**: Strengthen emergency response services, workforce training, and education to ensure preparedness, response, and recovery during major or multi-hazard events.

Seismic risk mitigation measures may include, but are not limited to, emergency preparedness and response planning, WEROC and mutual aid coordination, backup power and communications capabilities, infrastructure inspection and condition assessment, seismic evaluation or retrofit of critical facilities, pipeline replacement or rehabilitation, storage and pumping system improvements, operational redundancy, emergency supply planning, staff training, exercises, and capital improvement projects intended to improve system reliability and resilience.

Detailed facility-specific vulnerability information may be maintained separately from this WSCP where appropriate to protect sensitive security, infrastructure, and emergency response information. In the event that a seismic event results in an actual or anticipated water shortage, service interruption, or loss of system capacity, the District may implement the applicable shortage level and response actions under this WSCP based on the severity, duration, geographic extent, and operational impacts of the event.

3.4.7 Shortage Response Action Effectiveness

For each specific Shortage Response Action identified in the plan, the WSCP also estimates the extent to which that action will reduce the gap between supplies and demands identified in DWR Table 8-2 (Appendix A). To the extent feasible, the District has estimated percentage savings for the chosen suite of shortage response actions, which can be anticipated to deliver the expected outcomes necessary to meet the requirements of a given shortage level.

3.5 Communication Protocols

Timely and effective communication is a key element of the WSCP implementation. In the context of water shortage response, the purpose may be an immediate emergency water shortage situation, such as may result from an earthquake, or a longer-term shortage condition, such as may result from a drought. In an immediate emergency, the District will activate the communication protocol detailed in the Emergency Response Plan. In a longer-term water shortage situation, the District will implement follow the communication protocols described below.

Per the Water Code Section 10632 (a)(5), the District has established communication protocols and procedures to inform customers, the public, interested parties, and local, regional, and state governments regarding any current or predicted shortages as determined by the Annual Assessment described pursuant to Section 10632.1; any shortage response actions triggered or anticipated to be triggered by the Annual Assessment described pursuant to Section 10632.1; and any other relevant communications.

Longer-term water shortage communication protocols are focused on communicating the water shortage contingency planning actions that can be derived from the results of the Annual Assessment, and it would likely trigger based upon the decision-making process in Section 3.2. Prior to water shortage level declaration, the District will pursue outreach to inform customers of water shortage levels and definitions, targeted water savings for each drought stage, guidelines that customers are to follow during each stage, and sources of current information on the District's supply and demand response status.

The type and degree of communication will vary with each shortage level in order to inform stakeholders of the current water shortage level status and associated shortage response actions, as defined in Section 3.4.1. Predefined communication objectives and tools will ensure the District's ability to message necessary events and information to ensure compliance with shortage response actions. These communication objectives and tools are summarized in Table 3-2.

The District's Public Relations department will lead public information and outreach efforts in close coordination with other MWDOC and MET. The District will share information and provide guidance to its customers as well as monitor the customer response and attitude toward both voluntary and mandatory customer response guidelines. The District's customer outreach is required to successfully achieve targeted water savings during each drought stage.

Table 3-2: Communication Procedures

Level	Communication Protocols	Customer Demand Reduction Action Examples	Communication Tools
1	• Initiate public information campaign; produce and distribute fact-based informational materials • Announce water supply conditions and emphasize ways to conserve immediately	• Voluntary water conservation requested of all customers • Adhere to Permanent Water Conservation Requirements • Promote water efficiency programs	• District Website • Direct Mail (Water Bill Message/inserts) • Bill Pay Portal • Social Media

Level	Communication Protocols	Customer Demand Reduction Action Examples	Communication Tools
	• Include increased conservation messages on website and in standard outreach efforts • Enhance promotion of ongoing water efficiency programs		• ETWD Community Advisory Group Meetings • Regional School Program • Community Events • Laguna Woods Village (Television Interviews/Direct Email) • Communication with HOAs
2	• Intensify public information campaign conveying mandatory water-use restrictions, supply conditions and ways to save water • Provide regular supply condition updates to customers • Continue promotion of ongoing water efficiency programs/tools	• Encourage customers to stay within their water budget • Require leaks to be fixed in 4 days • Intensify promotion of water efficiency programs	• Continue use of all tools in prior level • Direct communication with customers not in compliance with the Permanent Water Conservation Requirements (Educational door hangers/verbal)
3	• Expand campaign and messages to raise awareness for more severe water-saving actions/behaviors by customers • Conduct specialized outreach to reduce discretionary outdoor water use • Conduct outreach to high volume customers • Establish targeted and focused social media advertising strategies	• Promote water savings programs to help customers identify water savings opportunities • Possible implementation or modification of the Drought Factor and/or Water Shortage Rate Surcharge • Prohibit car washing except using permitted commercial carwashes • Limit outdoor watering to 3 days a week per Table 8.2/Appendix C • Require leaks be fixed within 3 days • Promote pool and spa requirements	• Continue use of all tools in prior levels • Direct communication with residential and commercial high-water users • Direct mail to customers (postcards/letters) • Paid media coverage (print and electronic) • Public Service Announcements
4	• Conduct issue briefings with elected officials and other key civic and business leaders • Scale up campaign and frequency of messages to reflect water shortage condition • Increase outreach efforts for high volume customers	• Limit outdoor watering to 2 days a week per Table 8.2/Appendix C • Require leaks be fixed within 2 days • Implement or further reduce Drought Factor and/or Water Shortage Rate Surcharge	• Continue use of all tools in prior levels • Water waste patrols
5	• Partner with other agencies to expand public information campaign, as available • Suspend promotion of long-term water use efficiency programs/tools to focus on imminent needs • Emphasize work being done by ETWD to alleviate the impacts of such a severe shortage	• Limit outdoor watering to 1 day a week per Table 8.2/Appendix C • Require leaks be fixed within 1 day • Further reduce Drought Factor and/or increase Water Shortage Rate Surcharge • Discourage various water use deemed non-essential	• Continue use of all tools in prior levels • Neighborhood canvasing • Partnerships/ Regional incentives
6	• Update campaign and messages to reflect likely need to focus water use on health/safety needs	• Continue all measures initiated in prior stages as appropriate • Further reduce Drought Factor and/or increase Water Shortage Rate Surcharge • Prohibit outdoor irrigation per Table 8.2/Appendix C • Water use for public health and safety purposes only • District may shut off all non-essential water services • Customer rationing may be implemented	• Continue use of all tools in prior levels

3.6 Compliance and Enforcement

Per the Water Code Section 10632 (a)(6), the District has defined customer compliance, enforcement, appeal, and exemption procedures for triggered shortage response actions. Communication procedures to ensure customer compliance are described in Section 3.5 and customer enforcement, appeal, and exemption procedures are defined in the District's existing Water Shortage Contingency Response Ordinance 2026-1 (Appendix B). The District intends to update any enforcement procedures in a subsequently adopted ordinance which will supersede the existing ordinance.

3.7 Legal Authorities

Per Water Code Section 10632 (a)(7)(A), the District has provided a description of the legal authorities that empower the District to implement and enforce its shortage response in its Water Shortage Contingency Response Ordinance 2026-1 (Appendix B).

Per Water Code Section 10632 (a)(7) (B), the District shall declare a water shortage emergency condition to prevail within the area served by such wholesaler whenever it finds and determines that the ordinary demands and requirements of water consumers cannot be satisfied without depleting the water supply of the distributor to the extent that there would be insufficient water for human consumption, sanitation, and fire protection.

Per Water Code Section 10632 (a)(7)(C), the District shall coordinate with any agency or county within which it provides water supply services for the possible proclamation of a local emergency under California Government Code, California Emergency Services Act (Article 2, Section 8558). Table 3-3 identifies the contacts for all cities or counties for which the Supplier provides service in the WSCP, along with developed coordination protocols, can facilitate compliance with this section of the Water Code in the event of a local emergency as defined in subpart (c) of Government Code Section 8558.

Table 3-3: Agency Contacts and Coordination Protocols

Contact	Agency	Coordination Protocols
Elaine Lister	City of Mission Viejo	call/email
Chris Macon	City of Laguna Woods	call/email
Debra Rose	City of Lake Forest	call/email
Bob Wingenroth	City of Laguna Hills	call/email
Ann Eifert	City of Aliso Viejo	call/email

3.8 Financial Consequences of WSCP

Per Water Code Section 10632(a)(8), Suppliers must include a description of the overall anticipated financial consequences to the Supplier of implementing the WSCP. This description must include potential reductions in revenue and increased expenses associated with implementation of the shortage response actions. This should be coupled with an identification of the anticipated mitigation actions needed to address these financial impacts.

During a catastrophic interruption of water supplies, prolonged drought, or water shortage of any kind, the District will experience a reduction in revenue due to reduced water sales. Throughout this period of time, expenditures may increase or decrease with varying circumstances. Expenditures may increase in the event of significant damage to the water system, resulting in emergency repairs. Expenditures will decrease as less water is purchased to meet lower demand. Water shortage mitigation actions will also impact revenues and require additional costs for drought response activities such as increased staff costs for tracking, reporting, and communications.

The District receives water revenue from a service charge and a commodity charge based on consumption. The service charge recovers costs associated with providing water to the serviced property. The service charge does not vary with consumption and the commodity charge is based on water usage. Rates have been designed to recover the full cost of water service in the charges. Therefore, the total cost of purchasing water would decrease as the usage or sale of water decreases. In the event of a drought emergency, the District may reduce the drought factor and impose excessive water use penalties on its customers, which may include an additional administrative penalty or additional costs associated with reduced water revenue, staff time taken for penalty enforcement, and advertising the excessive use penalties. The excessive water use penalties are further described in the District's Water Shortage Contingency Response Ordinance 2026-1 (Appendix B).

However, there are significant fixed costs associated with maintaining a minimal level of service. The District will monitor projected revenues and expenditures should an extreme shortage and a large reduction in water sales occur for an extended period of time. To overcome these potential revenue losses and/or expenditure impacts, the District may use reserves. If necessary, the District may reduce expenditures by delaying implementation of its Capital Improvement Program and equipment purchases to reallocate funds to cover the cost of operations and critical maintenance, adjust the work force, implement a drought surcharge, and/or make adjustments to its water rate structure with an appropriate public notice as required by the California Constitution.

Based on current water rates, a volumetric cutback of 50% and above of water sales may lead to a range of reduction in revenues. The impacts to revenues will depend on a proportionate reduction in variable costs related to supply, pumping, and treatment for the specific shortage event. The District could mitigate these impacts by increasing water rate revenues and/or increasing fixed charges with an appropriate public notice as required by the California Constitution.

3.9 Monitoring and Reporting

Per Water Code Section 10632(a)(9), the District is required to provide a description of the monitoring and reporting requirements and procedures that have been implemented to ensure appropriate data is collected, tracked, and analyzed for purposes of monitoring customer compliance and to meet state reporting requirements.

Monitoring and reporting key water use metrics is fundamental to water supply planning and management. Monitoring is also essential in times of water shortage to ensure that the response actions are achieving their intended water use reduction purposes, or if improvements or new actions need to be considered (see Section 3.10). Monitoring for customer compliance tracking is also useful in enforcement actions.

Under normal water supply conditions, potable water import data is reviewed daily. Weekly and monthly reports are prepared and monitored. This data will be used to measure the effectiveness of any water shortage contingency level that may be implemented. As levels of water shortage are declared by MET and MWDOC, the District will follow implementation of those levels as appropriate based on the District's risk profile provided in UWMP Chapter 6 and continue to monitor water demand levels. When MET calls for extraordinary conservation, MET's Drought Program Officer will coordinate public information activities with MWDOC and monitor the effectiveness of ongoing conservation programs.

The District will participate in monthly member agency manager meetings with MWDOC to monitor and discuss monthly water allocation charts. This will enable the District to be aware of import use on a timely basis as a result of specific actions taken responding to the District's WSCP.

3.10 WSCP Refinement Procedures

Per Water Code Section 10632 (a)(10), the District must provide reevaluation and improvement procedures for systematically monitoring and evaluating the functionality of the water shortage contingency plan in order to ensure shortage risk tolerance is adequate and appropriate water shortage mitigation strategies are implemented as needed.

The District's WSCP is prepared and implemented as an adaptive management plan. The District will use the monitoring and reporting process defined in Section 3.9 to refine the WSCP. In addition, if certain procedural refinements or new actions are identified by District staff, or suggested by customers or other interested parties, the District will evaluate their effectiveness, incorporate them into the WSCP, and implement them quickly at the appropriate water shortage level.

It is envisioned that the WSCP will be periodically re-evaluated to ensure that its shortage risk tolerance is adequate and the shortage response actions are effective and up to date based on lessons learned from implementing the WSCP. The WSCP will be reviewed during the UWMP update cycle to incorporate any updated and potential new information. For example, new supply augmentation actions may be added, and actions that are no longer applicable for reasons such as program expiration will be removed. However, if revisions to the WSCP are warranted before the UWMP is updated, the WSCP will be updated outside of the UWMP update cycle. In the course of preparing the Annual Assessment each year, District staff may consider the functionality of the overall WSCP and may prepare recommendations for the District General Manager, or designee, if changes are found to be needed.

3.11 Special Water Feature Distinction

Per Water Code Section 10632 (b), the District has defined water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas, as defined in subdivision (a) of Section 115921 of the Health and Safety Code, in the Water Shortage Contingency Response Ordinance 2026-1 (Appendix B).

3.12 Plan Adoption, Submittal, and Availability

Per Water Code Section 10632(a)(c), the District will provide notice of the availability of the draft 2025 UWMP and draft 2026 WSCP, as well as notice of the public hearing to consider adoption of the WSCP. The draft 2025 UWMP and 2026 WSCP will be posted on the District's website, etwd.com, in advance of the public hearing scheduled for May 28, 2026. Copies of the draft WSCP will also be available for public inspection at the District's office, and public hearing notifications will be published in local newspapers. A copy of the published Notice of Public Hearing is included in Appendix C.

The District is scheduled to hold the public hearing for the draft 2025 UWMP and draft 2026 WSCP on May 28, 2026, at the District Board meeting. Following the public hearing, the District Board will consider adoption of both documents. Upon adoption, the resolution approving the WSCP will be included in Appendix D.

By July 1, 2026, following adoption, the District's adopted 2025 UWMP and 2026 WSCP will be filed with DWR, the California State Library, and the County of Orange. The District will make the adopted WSCP available on its website no later than 30 days after filing with DWR.

Based on DWR's review, the District will make any required amendments to the adopted WSCP. If the District revises its WSCP after UWMP approval by DWR, an electronic copy of the revised WSCP will be submitted to DWR within 30 days of adoption.

4 REFERENCES

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WSCP

APPENDIX A

DWR Submittal Tables

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)

Yes | 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)	
1	Other Purchases	Volume	0 - 335	Additional imported water purchases through MWDOC
2	Other Purchases	Volume	0 - 670	Additional imported water purchases through MWDOC
3	Other Purchases	Volume	0 - 1000	Additional imported water purchases through MWDOC
4	Other Purchases	Volume	0 - 1340	Additional imported water purchases through MWDOC
5	Other Purchases	Volume	0 - 2000	Additional imported water purchases through MWDOC and emergency supply via South Orange County interconnections
6	Other Purchases	Volume	0 - 2000	Additional imported water purchases through MWDOC and emergency supply via South Orange County interconnections

NOTES: Shortage gap reduction values are estimated as percentages of 2025 potable demand.

Submittal Table 8-3 Retail: Demand Reduction Actions
Water Code Section 10632(a)(4)(B),(D), and €

Yes	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)		
1	Expand Public Information Campaign	Volume	0 - 200	Community Outreach and Messaging. Expand Public Information Campaign to include Level 1 demand reduction actions, increase messaging frequency, increase public outreach.	No
2	Expand Public Information Campaign	Volume	0 - 200	Community Outreach and Messaging. Expand Public Information Campaign to include Level 2 demand reduction actions, increase messaging frequency, increase public outreach. Direct communication and educational outreach with customers not in compliance with the Permanent Water Conservation Requirements.	No
2	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Volume	0 - 135	Leaks, breaks, and other malfunctions must be corrected in no more than four (4) days of District notification.	No
3	Landscape - Limit landscape irrigation to specific days	Volume	0 - 335	Watering or irrigating of lawns, landscaping, and other vegetated areas may only take place no more than three (3) days per week from May to September and no more than two (2) days per week from October to April. This does not apply to watering with a hand-held bucket or similar container, watering with a hand-held hose equipped with a positive self-closing shut off hose nozzle, or irrigation systems that exclusively use very-low flow drip type systems.	Yes
3	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Volume	0 - 135	Leaks, breaks, and other malfunctions must be corrected in no more than four (3) days of District notification.	Yes
3	Water Features - Restrict water use for decorative water features, such as fountains	Volume	0 - 70	Filling or refilling of ornamental lakes and ponds is prohibited except for those that sustain aquatic life provided that such life is of significant value and was actively managed in the water feature prior to declaring the shortage.	Yes

3	Other water feature or swimming pool restriction	Volume	0 - 135	Filling residential swimming pools or outdoor spas is prohibited; refilling more than one (1) foot of water is prohibited. This does not apply to individuals who, due to health reasons or medical conditions, find it necessary to fill or refill their pools or spas or individuals who have not filled their pool in the last 24 months and who adhere to Best Practices for the construction and operation of pools and spas.	Yes
3	Implement or Modify Drought Factor per the Water Budget Based Tiered Conservation Rate Structure	Volume	0 - 335	Impose 'drought factor' on existing tiered rate structure per Board approval. See Appendix E.	Yes
3	Implement or Modify Water Shortage Rate Surcharge	Volume	0 - 650	Implement or modify Water Shortage Rate Surcharge per Board approval. See Appendix B.	Yes
3	Expand Public Information Campaign	Volume	0 - 200	Community Outreach and Messaging. Expand Public Information Campaign to include Level 3 demand reduction actions, increase messaging frequency, increase public outreach.	Yes
3	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	Volume	0 - 70		Yes
3	Other	Volume	0 - 70	The District may reduce non-potable water allocations in all categories to meet the available water supply.	Yes
4	Landscape - Limit landscape irrigation to specific days	Volume	0 - 335	Watering or irrigating of lawns, landscaping, and other vegetated areas may only take place no more than two (2) days per week from May to September and no more than two (1) day per week from October to April. This does not apply to watering with a hand-held bucket or similar container, watering with a hand-held hose equipped with a positive self-closing shut off hose nozzle, or irrigation systems that exclusively use very-low flow drip type systems.	Yes
4	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Volume	0 - 135	Leaks, breaks, and other malfunctions must be corrected in no more than three (2) days of District notification.	Yes
4	Implement or Modify Drought Factor per the Water Budget Based Tiered Conservation Rate Structure	Volume	0 - 335	Impose 'drought factor' on existing tiered rate structure per Board approval. See Appendix E.	Yes
4	Implement or Modify Water Shortage Rate Surcharge	Volume	0 - 650	Implement or modify Water Shortage Rate Surcharge per Board approval. See Appendix B.	Yes
4	Expand Public Information Campaign	Volume	0 - 200	Community Outreach and Messaging. Expand Public Information Campaign to include Level 4 demand reduction actions, increase messaging frequency, increase public outreach.	Yes

4	Other	Volume	0 - 335	The District may reduce non-potable water allocations in all categories to meet the available water supply.	Yes
5	Landscape - Prohibit all landscape irrigation	Volume	0 - 335	Watering or irrigating of lawns, landscaping, and other vegetated areas may only take place no more than one (1) day per week from May to September and no more than one (1) day per week from October to April. This does not apply to watering with a hand-held bucket or similar container, watering with a hand-held hose equipped with a positive self-closing shut off hose nozzle, or irrigation systems that exclusively use very-low flow drip type systems.	Yes
5	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Volume	0 - 135	Leaks, breaks, and other malfunctions must be corrected in no more than two (1) days of District notification.	Yes
5	Other water feature or swimming pool restriction	Volume	0 - 70	Filling residential swimming pools or outdoor spas is prohibited; refilling more than one (1) foot of water is prohibited. This does not apply to individuals who, due to health reasons or medical conditions, find it necessary to fill or refill their pools or spas.	Yes
5	Landscape - Other landscape restriction or prohibition	Volume	0 - 135	No new potable water service, new temporary meters, and statement of immediate ability to serve or provide water service will be issued except under the following circumstances: 1) a valid, unexpired building permit has been issued for the project, 2) the project is necessary to protect the public health, safety, and welfare, or the applicant provides substantial evidence of an enforceable commitment that water demands for the project will be offset prior to the provision of a new water meter(s) to the satisfaction of the District.	Yes
5	Other	Volume	0 - 335	Customers using over 10,000 units per year are required to submit a Water Conservation Plan and report quarterly progress.	Yes
5	Expand Public Information Campaign	Volume	0 - 200	Community Outreach and Messaging. Expand Public Information Campaign to include Level 5 demand reduction actions, increase messaging frequency, increase public outreach.	Yes
5	Implement or Modify Drought Factor per the Water Budget Based Tiered Conservation Rate Structure	Volume	0 - 335	Impose 'drought factor' on existing tiered rate structure per Board approval. See Appendix E.	Yes
5	Implement or Modify Water Shortage Rate Surcharge	Volume	0 - 650	Implement or modify Water Shortage Rate Surcharge per Board approval. See Appendix B.	Yes

6	Landscape - Prohibit all landscape irrigation	Volume	0 - 650	This does not apply towards the following circumstances: 1) maintenance of vegetation that are watered using a hand-held bucket or similar container or a hand-held hose equipped with a positive self-closing water shut-off nozzle or device, 2) maintenance of existing landscape necessary for fire protection, 3) maintenance of existing landscape for soil erosion, and 4) public works projects and actively-irrigated environmental mitigation projects. Agency may shut off all non-essential water service.	Yes
6	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Volume	0 - 135	Leaks, breaks, and other malfunctions must be corrected in no more than one (1) days of District notification.	Yes
6	Expand Public Information Campaign	Volume	0 - 200	Community Outreach and Messaging. Expand Public Information Campaign to include Level 6 demand reduction actions, increase messaging frequency, increase public outreach.	Yes
6	Implement or Modify Drought Factor per the Water Budget Based Tiered Conservation Rate Structure	Volume	0 - 335	Impose 'drought factor' on existing tiered rate structure per Board approval. See Appendix E.	Yes
6	Implement or Modify Water Shortage Rate Surcharge	Volume	0 - 650	Implement or modify Water Shortage Rate Surcharge per Board approval. See Appendix B.	Yes
6	Other	Volume	0 - 2000	Water use for public health and safety purposes only. Customer rationing may be implemented.	Yes
NOTES: Shortage gap reduction values are estimated as percentages of 2025 potable demand.					

WSCP

APPENDIX B

Water Shortage Contingency Response Ordinance 2026-1

EL TORO WATER DISTRICT

WATER SHORTAGE
CONTINGENCY
RESPONSE
ORDINANCE 2026 – 1

(effective May 28, 2026)

Table of Contents

ORDINANCE NO. 2026-1

AN ORDINANCE OF THE BOARD OF DIRECTORS OF EL TORO WATER DISTRICT ESTABLISHING A WATER SHORTAGE CONTINGENCY RESPONSE ORDINANCE

Section I. Title

El Toro Water District Water Shortage Contingency Response Ordinance ("Ordinance No. 2026-1")

Section II. Findings, Determinations and Authority

1. **Resolution No. 26-5-1 -** The recitals, finding and determinations set forth in Resolution No. 26-5-1 are fully incorporated herein as though set forth in full.

2. **A reliable minimum supply of potable water is essential** to the public health, safety and welfare of the people and economy of Southern California.

3. **Southern California is a semi-arid region, largely dependent on imported water supplies** from Northern California through the State Water Project and from the Colorado River, along with limited local water supplies. Recurring drought, long-term weather variability, environmental and regulatory constraints, infrastructure limitations, population and economic demands, and other factors affecting imported and local supplies make Southern California highly susceptible to water supply reliability issues. These conditions require local water agencies, including the District, to maintain permanent water conservation requirements and water shortage response measures to protect public health, safety and welfare.

4. **Careful water management requires active permanent water conservation requirements** not only in times of drought but at all times. It is essential to ensure a reliable minimum supply of water to meet current and future water supply needs.

5. **California Constitution Article X, section 2, and California Water Code section 100** declare that, because of conditions prevailing in the State of California, the general welfare requires that the water resources of the State be put to beneficial use to the fullest extent of which they are capable; that the waste or unreasonable use, or unreasonable method of use, of water be prevented; and that the conservation of such water be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare.

6. **California Water Code Section 10632** had significant updates related to water shortage contingency planning following the modification of the Urban Water Management Planning Act in 2018 that mandate new elements to Urban Water Management Plans and Water Shortage Contingency Plans. These elements include an annual drought risk assessment, State Water Shortage Levels, and statewide water use prohibitions.

7. **California Water Code Sections 10632 and 10635 require urban water suppliers to prepare and adopt Water Shortage Contingency Plans as part of their Urban Water Management Plans,** including water supply reliability analysis, drought risk assessment, and shortage response actions. MWDOC has adopted an Urban Water Management Plan and Water Shortage Contingency Plan that include water conservation and additional demand reduction actions in times of shortage as a necessary and effective component of MWDOC's programs to provide a reliable supply of water to meet the needs of MWDOC's member agencies, including the District, with which this Ordinance is consistent.

8. **The imported water supplies in the District and MWDOC are subject to the Water Shortage Allocations** determined by the Metropolitan Water District of Southern California, and subsequently MWDOC will be required to curtail deliveries of imported water based on the Metropolitan Water District of Southern California's Water Shortage Allocation Plan, which will be triggered in a state of shortage.

9. **California Water Code Section 10632.1 requires MWDOC and the District, as applicable urban water suppliers, to conduct an Annual Water Supply and Demand Assessment** and submit an Annual Water Shortage Assessment Report to the California Department of Water Resources by July 1 of each year, consistent with their adopted Water Shortage Contingency Plans.

10. **California Water Code Sections 350, et. seq.,** sets forth the determination and notification procedures for water suppliers seeking to declare a water shortage or a water emergency.

11. **California Water Code Section 353** specifies that a governing body must adopt regulations or restrictions on the delivery and consumption of water within its service area when it declares the existence of an emergency condition.

12. **California Water Code Section 356** allows for the adoption of regulations and restrictions that include discontinuance of service as an enforcement option where a water shortage emergency condition has been declared.

13. **California Water Code Section 370, et. seq.,** authorizes water suppliers to adopt water allocation programs for water users and allocation-based water conservation pricing.

14. **California Water Code Section 375** authorizes water suppliers to adopt and enforce a comprehensive water conservation program to reduce water consumption and conserve supplies.

15. **California Water Code Section 375 et seq.,** authorizes public water suppliers to establish by Ordinance, the maximum levels of water to be used by customers under emergency supply conditions (which give rise to the utilization of the Drought Factor), and declaring that the customer's excess usage, to be a violation of this Ordinance.

16. **California Water Code Sections 13550 and 13551** declare a statewide policy that the use of potable domestic water for irrigation purposes when reclaimed (recycled) water is available constitutes a waste or unreasonable use of water within the meaning of the State Constitution.

17. **The District's Rules and Regulations** require that future developments utilize reclaimed (recycled) water wherever economically and technically feasible within the boundaries of the District in order to conserve potable water for the purposes of human consumption and fire protection.

18. **The adoption and enforcement of a Water Shortage Contingency Response Ordinance is necessary to manage the District's potable water supply** short- and long-term and to minimize and/or avoid the effects of drought and water shortage within the District. Such a program is essential to ensure a reliable and sustainable minimum supply of water for public health, safety and welfare.

19. **California Government Code Section 53069.4** authorizes a local public agency to make a violation of an Ordinance, subject to an "administrative fine or penalty". "Penalty", as used throughout this Ordinance is an "Administrative Penalty", authorized pursuant to this section.

Section III. Declaration of Purpose and Intent

1. To minimize or avoid the effect and hardship of potential shortages of **potable water** to the greatest extent possible, this Ordinance establishes means to implement the District's Water Shortage Contingency Plan designed to:

    a. Reduce water consumption (demand) in the long-term through permanent conservation measures and short-term through demand reduction actions in times of drought.

    b. Enable effective potable water supply planning.

    c. Assure reasonable and beneficial use of potable water.

    d. Prevent waste of potable water and maximize efficient use in the District.

2. This Ordinance, in conjunction with the District's Water Budget Based Tiered Conservation Rate Structure (which is subject to the provisions of Proposition 218 and is incorporated into the Cost of Service Rate Study), establishes:

    a. **Permanent Water Conservation Requirements** are designed to alter behaviors related to potable water-use efficiency during non-shortage conditions

    b. **Six levels of potential response to escalating water supply shortages** which the El Toro Water District Board (Board) may implement during times of declared water shortage or water emergency. The six levels of response consist of increasing water use restrictions, demand reduction actions, and the possible imposition of water supply shortage allocations through the use of a "drought factor" in conjunction with the District's Water Budget Based Tiered Conservation Rate Structure. This is a component of the water budget calculation that is an integral part of the District's Water Budget Based Tiered Conservation Rate Structure, which modifies (reduces) the indoor and/or outdoor budget to further encourage conservation in times of water supply shortage emergencies and Administrative Penalties imposed on designated customer categories who exceed their revised water budget.

Section IV. Definitions

1. General

a. **"The District'** means El Toro Water District.

b. **"The Board"** means the El Toro Water District Board of Directors.

c. **"Person"** means any person or persons, corporation, public or private entity, governmental agency or institution, or any other user of water provided by the District.

d. **"Potable Water"** means water that is suitable for drinking.

e. **"Recycled Water"** means the reclamation and reuse of non-potable water and/or wastewater for beneficial use, such as irrigation. Also known as "Reclaimed Water."

f. **"Water Waste"** refers to uses of water that are limited or prohibited under the Ordinance because they exceed necessary or intended use and could reasonably be prevented, such as runoff from outdoor watering.

g. **"Billing Unit"** is equal to 100 cubic feet (1 CCF) of water, which is 748 gallons. Water use is measured in units of 100-cubic-feet and multiplied by applicable water usage rates for billing. Also known as a "Unit of Water."

h. **"Undue Hardship"** is a unique circumstance in which a requirement of the Ordinance would result in a disproportionate impact on a water user or property upon which water is used compared to the impact on water users generally or similar properties or classes of water use.

i. **"Safety and Sanitary Hazard"** is one which presents an immediate and imminent threat to human health (injury).

j. **"Water Budget Based Tiered Conservation Rate Structure"** ("Tiered Conservation Rate Structure") is a rate structure which provides "water budgets" to each customer based on efficient indoor and outdoor need. Water used in excess of the combined indoor and outdoor budget is billed at a progressively higher rate which is designed to recover the increased cost associated with providing such water and provides a clear indicator regarding inefficient use of potable water. The increased rates and potential Administrative Penalties for utilization of water in excess of budgeted amounts provide financial incentive to stay within assigned budgets and to comply with Permanent Mandatory Water Conservation Measures.

k. **"Water Supply Shortage Emergency"** means a condition existing within the State, Region and/or the District in which the ordinary water demands and requirements of persons within the District cannot be satisfied without depleting the water supply of the District to the extent that there would be insufficient water for human consumption, sanitation, and fire protection. A water shortage emergency includes both an immediate emergency, in which the District is unable to meet current water needs of persons within the District, as well as a threatened water shortage, in which the District determines that its future supply of water may not meet an anticipated future demand.

l. **"Administrative Penalty"** means a financial penalty as authorized by Government Code Section 53069.4 as a result of any person or entity violating the provisions of this Ordinance.

m. **“MWDOC”** means the Municipal Water District of Orange County.

n. **“DWR”** means the California Department of Water Resources.

o. **“UWMP”** means Urban Water Management Plan as required by DWR to satisfy the UWMP Act and subsequent California Water Code Sections 10610 through 10656.

p. **“WSCP”** means Water Shortage Contingency Plan as required by California Water Code Section 10632.

q. **“Demand Reduction Actions”** refers to education, incentive or regulatory actions taken by the District to reduce water demand in its service area during times of shortage. Demand reduction actions are pre-planned to prepare for a water shortage were presented in Table 8-3 of the District’s WSCP.

r. **“Annual Water Supply and Demand Assessment”** refers to a determination of the near-term outlook for supplies and demands and how a perceived shortage may relate to the Shortage Level response actions as defined in the WSCP in the current calendar year.

s. **“Drought Factor”** refers to a variable used in the calculation of both the indoor and outdoor District potable water budget allocations. Normally set at 100%, during emergencies/water supply shortage conditions, the District may use the Drought Factor to reduce water budgets and further encourage conservation.

2. **Irrigation**

   a. **"Irrigation Controller"** is the part of an automated irrigation system that instructs the valves to open and close to start or stop the flow of water.

      1. **"Sensor-based irrigation controller"** operates based on input from a combination of sensors (rain, solar, soil moisture) installed in or around the landscaped area.

      2. **"Weather-based irrigation controller"** operates automatically based on evapotranspiration rates and historic or real-time weather data.

   b. **"Irrigation System"** refers to a manual or automated watering system consisting of pipes, hoses, spray heads and/or sprinkler devices or valves. Also known as a "Landscape Irrigation System."

   c. **"Positive Self-Closing Shut-Off Hose Nozzle"** refers to a water-efficient hose nozzle for residential or commercial hoses that users must press or release to start or stop the flow of water. Also known as an "Automatic Shut-Off Nozzle."

   d. **"Valves"** refer to the part of an irrigation system that opens and closes manually or electronically to start or stop the flow of water.

3. **Other**

   a. **"Pre-Rinse Kitchen Spray Valves"** refer to highly water-efficient sprayers that commercial kitchens use to rinse dishes in the sink before washing and for other preliminary cleaning purposes.

   b. **"Single-Pass Cooling System"** refers to an air conditioning, refrigeration or other cooling system that removes heat by transferring it to a supply of clean water and dumping the water down the drain after a single use. This type of cooling system is prohibited given it is extremely water-inefficient compared to systems that recirculate the water.

Section V. Application of Ordinance

1. **The provisions of this Ordinance apply to any person or entity using potable water provided by the District.** This includes individuals, persons, corporations, public or private entities, governmental agencies or institutions, or any other users of District water.

2. **In addition, the provisions of this Ordinance do not apply to the following:**

   a. **Water use which is immediately necessary to protect public health and safety** or for essential government services, such as police, fire and similar services.

   b. **Recycled water use for irrigation**. Use of recycled water requires a permit that has specific use restrictions, many of which focus on water efficiency. Given such permits and the interest in promoting the use of recycled water as a means to preserve potable, recycled water is exempt from all requirements of this Ordinance.

   c. **Water used by nurseries and growers** to sustain plants, trees, shrubs, crops, compost or other landscape vegetation material intended for distribution or commercial sale.

3. **This Ordinance is intended solely to further the beneficial use and conservation of potable water.** It is not intended to implement any provision of federal, state or local statutes, ordinances or regulations relating to protection of water quality or control of drainage or runoff. Refer to the local jurisdiction or Regional Water Quality Control Board for information on storm water ordinances or management plans.

Section VI. Permanent Water Conservation Requirements

The District has adopted a Water Shortage Contingency Plan (WSCP) which details demand reduction actions that the District may take to restrict or shall prohibit its customers' consumption of water, including baseline conservation measures to be taken in times of normal water supply. The following Permanent Water Conservation Requirements for potable water, in support of demand reduction actions as called for in the Water Code and WSCP, are permanent and in effect at all times. Violations of this Section constitute waste and an unreasonable use of water.

1. **General Restrictions — Residential, Irrigation, Commercial and Public Customers**

   a. **Limits on Outside Watering Hours**

      1. **Watering or irrigating is prohibited any day of the week between 9:00 a.m. and 6:00 p.m.**

      2. The week includes weekdays and weekends, seven (7) days.

      3. This applies to lawns, landscaping and all other vegetated areas.

      4. The following are **exempt** from this restriction:

         a. Watering with a hand-held bucket or similar container.

         b. Watering with a hand-held hose equipped with a positive self-closing shut off hose nozzle.

         c. Adjusting or repairing an irrigation system for very short periods of time.

         d. Watering with a drip irrigation system.

         e. Watering to establish new landscaping within 30 days of completion of installation.

b. **No Excessive Water Flow or Runoff:** It is prohibited to water lawns, landscaping and vegetated areas in a manner that causes or allows excessive water flow or runoff onto an adjoining sidewalk, driveway, street, alley, gutter or ditch, parking lots, structures, non-irrigated areas, or off the property.

c. **No Irrigation of Nonfunctional Turf:** The use of potable water to irrigate nonfunctional turf is prohibited on the property types and as of the applicable effective dates set forth in California Water Code Section 10608.14. For purposes of this subsection, “nonfunctional turf” shall have the meaning set forth in California Water Code Section 10608.12. This prohibition is subject to the exceptions provided in California Water Code Section 10608.14.

d. **No Irrigation During or After Rainfall:** Watering or irrigating any outdoor landscapes with potable water during and within forty-eight (48) hours following at least one quarter inch (1/4”) of rainfall within a twenty-four (24) hour period is prohibited.

e. **Obligation to Fix Leaks, Breaks or Malfunctions in lines, fixtures or facilities**

  1. Excessive use, loss or escape of water through breaks, leaks or malfunctions in the water user's plumbing or distribution system:

    a. Is prohibited for any period of time after such water waste should have reasonably been discovered and corrected.

    b. Must be corrected in **no more than five (5) days of District notification.**

f. **No Hosing or Washing Down Hard or Paved Surfaces**

  1. Washing or hosing down hard or paved surfaces with potable water, including but not limited to sidewalks, walkways, driveways, parking areas, tennis courts, patios or alleys is prohibited.

  2. When it is necessary to hose or wash down hard or paved surfaces to alleviate safety or sanitary hazards, the following may be used:

    a. Hand-held bucket or similar container.

    b. Hand-held hose equipped with a positive self-closing shut off hose nozzle.

    c. Low-volume high-pressure cleaning machine equipped to recycle used water.

g. **No Hosing or Washing Down Vehicles**

  1. Using potable water to hose or wash down a motorized or non- motorized vehicle, including but not limited to automobiles, trucks, vans, buses, motorcycles, boats or trailers is prohibited.

  2. The following are exempt from this restriction:

    a. Use of a hand-held bucket or similar container.

    b. Use of a hand-held hose equipped with a positive self-closing shut off hose nozzle.

        - **c.** Commercial car washing at facilities using recycled or recirculating water.

    - **h. Re-Circulating Water Required for Decorative Water Fountains and Decorative Water Features** Operating a decorative water fountain or other decorative water feature that does not use re-circulated water is prohibited.

    - **i. Swimming Pools and Spa Covers**: Property owners who have a swimming pool or spa are encouraged to cover the facilities to minimize water loss due to evaporation.

2. **Commercial Food-Serving & Lodging Requirements**

    - **a. Drinking Water Served Only Upon Request.** Eating or drinking establishments, including but not limited to restaurants, hotels, cafes, bars or other public places where food or drinks are sold, or served or offered for sale, are prohibited from providing drinking water to any person unless requested.

    - **b. Commercial Lodging Establishments Must Provide Option Not Launder Towels/Linens Daily.** Hotels, motels and other commercial lodging establishments must provide guests the option of not having their used towels and linens laundered. Lodging establishments must prominently display notice of this option in each room and/or bathroom, using clear and easily understood language.

3. **Commercial Kitchen Requirements**

    - **a. Water-Efficient Pre-Rinse Kitchen Spray Valves.** Food preparation establishments, such as restaurants, cafes and hotels, are prohibited from using non-water efficient prerinse commercial dishwashing kitchen spray valves.

4. **Commercial Water Recirculation Requirements**

    - **a. Car Wash System Requirements:** All **new** commercial car-wash systems must install re-circulating water systems.

    - **b. No Single-Pass Cooling Systems:** Buildings requesting **new** water service or being **remodeled** are prohibited from installing single-pass systems.

5. **Recycled Water Construction Site Requirements**

    - **a. Recycled or non-potable water** must be used, when available.

    - **b. No potable water may be used for soil compaction or dust control** where there is a reasonably-available source of recycled or non-potable water approved by the Department of Public Health and appropriate for such use.

    - **c. Water hoses shall be equipped with automatic shut-off nozzles,** given such devices are available for the size and type of hoses in use.

6. **Automated Irrigation Control System Requirements for Commercial, Multi-Family and Community Development/Redevelopment Projects**

    New Commercial, Multi-Family and Community development and/or redevelopment projects that include landscaped open space, park and recreation areas will be required to install a sensor-based or weather-based irrigation controller.

7. **Water Waste and Unreasonable Water Use Prohibited.** The waste or unreasonable use or unreasonable method of use of water by any person shall be prohibited at all times.

8. **Public Health and Safety.** These regulations shall not be construed to limit water use which is immediately necessary to protect public health and safety for essential government services, such as police, fire and similar services.

Section VII. Standard Water Shortage Levels

The District's Water Shortage Levels are aligned with the six standard State Water Shortage Levels and as defined in MWDOC's and the District's Water Shortage Contingency Plans to comply with California Water Code Section 10632 (a)(3). The shortage levels represent shortages from normal reliability as determined in the Annual Water Supply and Demand Assessment, corresponding to progressive ranges of up to 10, 20, 30, 40,50, and greater than 50 percent shortages. Table 8-1A from the District's Water Shortage Contingency Plan defines the conditions that trigger each Shortage Level and the shortage response actions the District can take. WSCP has more specific demand reduction actions defined by Shortage Level.

Table 8-1A
Water Shortage Contingency Plan Levels

Shortage Level	Percent Shortage Range	Shortage Response Actions
	0% (Normal)	A Level 0 Water Supply Shortage – Condition exists when no current supply reductions are anticipated. The District proceeds with planned water efficiency best practices to support consumer demand reduction in line with state mandated requirements and local District goals for water supply reliability. Permanent water waste prohibitions are in place as stipulated in the District's Water Shortage Contingency Response Ordinance 2026-1.
1	**Up to 10%**	A Level 1 Water Supply Shortage – Condition exists when the District Board of Directors holds a Public Hearing, during which, at its sole discretion, determines and declares that due to drought or other supply reductions, a consumer demand reduction of up to 10% is necessary to make more efficient use of water and respond to existing water conditions. Upon the declaration of a Water Aware condition, the District shall implement the mandatory Level 1 conservation measures identified in this ordinance. The type of event that may prompt the District to declare a Level 1 Water Supply Shortage may include, among other factors, a finding that its wholesale water provider calls for extraordinary water conservation.

2	**11% to 20%**	A Level 2 Water Supply Shortage – Condition exists when the Board, at its sole discretion, determines and declares that due to drought or other supply reductions, a consumer demand reduction of up to 20% is necessary to make more efficient use of water and respond to existing water conditions. Upon declaration of a Level 2 Water Supply Shortage condition, the District shall implement the mandatory Level 2 conservation measures identified in this Ordinance.
3	**21% to 30%**	A Level 3 Water Supply Shortage – Condition exists when the Board holds a Public Hearing, during which, at its sole discretion, determines and declares a water shortage emergency condition pursuant to California Water Code Section 350 and notifies its residents and businesses that up to 30% consumer demand reduction is required to ensure sufficient supplies for human consumption, sanitation and fire protection. The District must declare a Water Supply Shortage Emergency in the manner and on the grounds provided in California Water Code Section 350.
4	**31% to 40%**	A Level 4 Water Supply Shortage - Condition exists when the Board holds a Public Hearing, during which, at its sole discretion, determines and declares a water shortage emergency condition pursuant to California Water Code Section 350 and notifies its residents and businesses that up to 40% consumer demand reduction is required to ensure sufficient supplies for human consumption, sanitation and fire protection. The District must declare a Water Supply Shortage Emergency in the manner and on the grounds provided in California Water Code Section 350.
5	**41% to 50%**	A Level 5 Water Supply Shortage – Condition exists when the Board holds a Public Hearing, during which, at its sole discretion, determines and declares a water shortage emergency condition pursuant to California Water Code Section 350 and notifies its residents and businesses that up to 50% or more consumer demand reduction is required to ensure sufficient supplies for human consumption, sanitation and fire protection. The District must declare a Water Supply Shortage Emergency in the manner and on the grounds provided in California Water Code Section 350.
6	**>50%**	A Level 6 Water Supply Shortage – Condition exists when the Board holds a Public Hearing, during which, at its sole discretion, determines and declares a water shortage emergency condition pursuant to California Water Code Section 350 and notifies its residents and businesses that greater than 50% or more consumer demand reduction is required to ensure sufficient supplies for human consumption, sanitation and fire protection. The District must declare a Water Supply Shortage Emergency in the manner and on the grounds provided in California Water Code Section 350.
NOTES: The District's Water Shortage Contingency Plan and Table 8-1A only apply to the District's potable water supply.		

The District's Water Shortage Contingency Plan defines the shortage response actions that align with each Level of Water Supply Shortage, along with an estimate of the extent to which the gap between supplies and demand will be reduced.

- **a.** Locally appropriate supply augmentation actions.
- **b.** Locally appropriate demand reduction actions to respond to shortages.
- **c.** Locally appropriate operational changes.
- **d.** Additional mandatory prohibitions against specific water use practices, in addition to state-mandated prohibitions, as deemed necessary by the District.

Each elevated shortage level will include the elements of the previous shortage level(s) and permanent mandatory water conservation measures as defined in this Ordinance and the District's Water Shortage Contingency Plan. When conditions dictate necessary, an allocation of water supply under a water supply emergency condition that requires actions beyond those defined in the District's Water Shortage Contingency Plan may be required to be implemented.

Section VIII. Other Provisions

1. **Customer Water Conservation Plans:**

   Customers with high annual water usage. During Level 3 through Level 6 Water Shortages or Emergencies, the District Board of Directors, at its sole discretion and by written request, may require residential, irrigation, commercial and/or public customers using **ten thousand (10,000) or more billing units per year** to submit a Water Conservation Plan to the District and to submit quarterly progress reports on such plan. The conservation plan must make recommendations for increased water savings through on-site demand reduction actions, including increased use of recycled water or other sources of supply based on feasibility. Quarterly progress reports must include status on implementation of recommendations.

2. **Recycled Water To Replace Potable Water**

   - **a. Future Developments.** When available, the District requires the use of recycled water in future developments.
   - **b. New Water Service:** Prior to the connection of any new water service, the District will determine whether recycled water is appropriate and available to meet the requirements of the new service request. Recycled water must be utilized to the extent feasible, as determined by the District.
   - **c. Transition from Potable Water:** The District may prohibit the use of potable water in certain instances if the District determines that a specified use for potable water could be achieved with recycled water as a cost-effective alternative and the customer is given a reasonable time to make the conversion, as determined by the District's General Manager.

Section IX. Declaration & Notification of Water Supply Shortages or Emergencies

1. **Declaration of a Level 1 through Level 6 Water Supply Shortage or Emergency:** The District Board of Directors may declare a Level 1 through Level 6 Water Supply Shortage

Level or Emergency in accordance with the procedures specified in Water Code Sections 351 and 352 (Public Hearing, Notice and Publication). Thereafter, penalties and violations under Section XI apply.

2. Notification of Declared Water Supply Shortages Emergency

The District must publish a copy of the water shortage/emergency resolution in a newspaper used for the publication of official notices within the jurisdiction of the District within fifteen (15) days of the date that a Water Supply Shortage or Emergency is declared.

3. Authorization of Adjusting the Drought Factor

During a Level 3, 4, 5 or 6 Water Shortage Emergency, the Board may authorize the adjustment of an indoor and/or outdoor drought factor that will reduce the indoor and/or outdoor water budget. This adjustment may impact the customer where water use is above the water budget allocation, which leads to entering into higher tiers on an accelerated basis. The additional amount paid in higher tiers, as a result of a reduction in indoor and/or outdoor budgets, is deemed an Administrative Penalty, authorized pursuant to California Government Code Section 53069.4

4. Authorization of a Water Shortage Rate Surcharge

During a Level 3, 4, 5 or 6 Water Shortage Emergency, any water customer subject to water budgets pursuant to the District's Tiered Conservation Rate Structure who willfully use water in excess of their combined Tier 1 and Tier II water budgets shall be in violation of this Ordinance and, upon Board authorization and approval will be subject to a Water Shortage Rate Surcharge in the range of $2.00 to $10.00 as determined by the Board by minute order (motion) or Resolution at an open and public meeting, for each ccf of water used in excess of their combined Tier I and Tier II budget.

Section X. Hardship Waiver

1. **Undue and Disproportionate Hardship:** If, due to unique circumstances, a specific requirement of the Ordinance would result in undue hardship to a person using water or to property upon which water is used, that is disproportionate to the impacts to water users generally or to similar property or classes of water users, then the person may apply for a waiver to the requirements as provided in this section.

2. **Written Finding:** The waiver may be granted or conditionally granted only upon a written finding of the existence of facts demonstrating an undue hardship.

    a. **Application for a Waiver:** Application for a waiver must be on a form prescribed by the District.

    b. **Supporting Documentation:** The application must be accompanied by photographs, maps, drawings, and other information, including a written statement of the applicant.

    c. **Required Findings for Waiver:** Based on the information and supporting documents provided in the application, additional information provided as requested, and water use information for the property as shown by the records of the District, the District **General Manager** in making the waiver determination will take into consideration the following:

        1. That the waiver does not constitute a grant of special privilege inconsistent with the limitations upon other residents and businesses;

2. That because of special circumstances applicable to the property or its use, the strict application of this Ordinance would have a disproportionate impact on the property or use that exceeds the impacts to residents and businesses generally;

3. That the authorizing of such waiver will not be of substantial detriment to adjacent properties, and will not materially affect the ability of the District to effectuate the purpose of this Ordinance and will not be detrimental to the public interest; and

4. That the condition or situation of the subject property or the intended use of the property for which the waiver is sought is not common, recurrent or general in nature.

d. Approval Authority

1. The District General Manager or his designee(s) must act upon any completed **Application for a Waiver** no later than ten (10) days after receipt by the District.

2. The General **Manager or his designee(s) may approve, conditionally approve, or deny the waiver** and the decision will be final.

3. The applicant requesting the waiver must be promptly notified in writing of any action taken. Unless specified otherwise, at the time a waiver is approved, it will apply to the subject property for the duration of the water supply shortage or emergency.

Section XI. Non-Compliance

In order to ensure compliance with State reporting requirements and customer compliance, the District will collect, track, and analyze relevant data per the procedures defined in the District's Water Shortage Contingency Plan.

1. **Non-Compliance with Level 0 Permanent Water Conservation Requirements and Level 1 Water Shortage Demand Reduction Actions**: The District will issue a written warning and provide information regarding the necessity to comply with all Permanent Water Conservation Requirements.

2. **Non-Compliance with Level 2, Level 3, Level 4, Level 5, and Level 6 Permanent Water Conservation Requirements and Demand Reduction Actions.**

   a. Non-Compliance Charges: The following will apply to persons or entities failing to comply with any provision of the Ordinance for Level 2, Level 3, Level 4, Level 5, and Level 6 permanent water conservation requirements and demand reduction actions:

   1. **First Instance of Non-Compliance:** The District will issue a **written warning** and send it along with an explanation of the violation.

   2. **Second Instance of Non-Compliance:** A second instance of noncompliance with the Ordinance within the preceding twelve (12) calendar months is punishable by a non-compliance charge on the water bill not to exceed **two hundred and fifty dollars ($250).**

        3. **Third and each subsequent Instance of Non-Compliance:** A third instance of non-compliance with the Ordinance within the preceding twelve (12) calendar months is punishable by a non-compliance charge on the water bill not to exceed **five hundred dollars ($500) per instance.**

    b. **Water Flow Restrictor and/or Termination of Service**

        1. **Water Flow Restrictor Device.** In addition to any non-compliance charges, the District may install a water flow restrictor device. If the District determines to install a water flow restrictor, installation of the flow restrictor would follow written notice of intent to the customer and would be in place for a minimum of forty-eight (48) hours.

        2. **Termination of Service:** In addition to any non-compliance charges and the installation of a water flow restrictor, the District may disconnect and/or terminate a customer's water service, pursuant to Water Code Section 356.

        3. **Costs for Water Flow Restrictors and Service Disconnection**

            a. A person or entity in non-compliance with this Ordinance is responsible for payment of the District's charges for installing and/or removing any flow restricting device and for disconnecting and/or reconnecting service per the District's schedule of charges then in effect.

            b. The charge for installing and/or removing any flow restricting device must be paid to the District before the device is removed.

            c. Nonpayment will be subject to the same remedies as nonpayment of basic water rate.

    c. **Misdemeanor:** Pursuant to Water Code Section 377, any instance of noncompliance with the Ordinance may be prosecuted as a misdemeanor punishable by imprisonment in the county jail for not more than thirty (30) days or by a fine not exceeding one thousand dollars ($1,000) or by both.

3. **Separate Offenses:** Each day that a person or entity is non-compliant with the Ordinance is a separate offense.

4. **Notice of Non-Compliance/ Appeal and Hearing Process**

    a. The District will issue a **Notice of Non-Compliance** by mail or personal delivery before taking enforcement action as defined in the WSCP. The notice will describe the violation and, if applicable, the date by which corrective action must be taken.

    b. **A customer may appeal the Notice of Non-Compliance** by filing a written Notice of Appeal with the District no later than the close of business on the 10th day following receipt of the enforcement action. A customer appeal shall state the grounds for the appeal.

        1. **Any Notice of Non-Compliance not timely appealed will be final.**

        2. Upon receipt of a timely appeal, **the District will schedule a hearing on the appeal** and mail written notice of the hearing date to the customer at least ten (10) days before the hearing.

    3. The District General Manager or his designee(s) will hear the appeal and issue a written **Notification of Decision** within ten (10) days of the hearing.

c. Pending receipt of a written appeal or pending a hearing pursuant to an appeal, the District **may take appropriate steps to prevent the unauthorized use of water** given the nature and extent of the violations and the current declared water shortage level condition, including restricting the level of water use until the appeal is heard.

d. Except for violations of this Ordinance subject to excessive water use penalties, if any person fails or refuses to comply with this Ordinance, the District shall provide that person with written notice of the Non-Compliance and opportunity to correct the noncompliance. The written notice shall:

1. Be posted or presented at the site of the Non-Compliance;
2. State the time, date, and place of the Non-Compliance;
3. State a general description of the Non-Compliance;
4. State the means to correct the Non-Compliance;
5. State a date by which the correction is required; and
6. State the possible consequences of failing to correct the Non-Compliance.

Section XII. Administrative Penalty Provisions

1. **Administrative Penalty.** Pursuant to the authority provided for in Government Code Section 53069.4, the District finds, adopts and determines that all penalties provided for in this Ordinance No. 2026-1, as a result of any person or entity violating various provisions set forth herein shall constitute an Administrative Penalty.

2. **Notice and Due Process.** Upon the declaration of a Water Supply Shortage or Emergency and publication of the notice required herein, proper notice shall be deemed to have been given to each and every person and/or entity supplied water within the District, and the applicable water shortage.

3. **Collection of Penalties.** Any penalty imposed pursuant to this Ordinance may be collected on a customer's water bill. Any penalty shall be applicable to water used in violation of this Ordinance during the first complete billing cycle after the declaration of the applicable water shortage level.

4. **Notice of Violation.** The receipt of a water bill with any applicable penalties shall serve as notice of violation of this Ordinance.

5. **Appeal Procedures.** Any customer who wishes to appeal the imposition of an Administrative Penalty imposed by the District shall comply with the following procedures:

6. **Appeal Request.** An Appeal Request form shall be submitted to the District's Customer Service Department.

    (a) Appeal Request forms may be obtained at the District's Main Office or downloaded from the District's website at www.etwd.com.

    (b) An Appeal Request form shall be received by the District no later than thirty (30) calendar days from the date that the Appellant's water bill for the four-week period in which the penalty or penalties were imposed is due.

(c) Additional Documentation. Additional documentation may be requested at the discretion of the District. Such documentation may include, but is not limited to, school records, driver's licenses, business licenses, lease agreements.

(d) Site Survey. After an Appeal Request form has been received, a site survey may be required by District staff to verify the irrigated square footage of the property where the water was delivered. The site survey will be at no charge to the person and will require the person who submitted the Appeal Request form to be present.

(e) District Response. A response to an Appeal Request shall be provided by the District within thirty calendar days from receipt of the Appeal Request form.

(f) Review of Denial of Appeal Request. If an Appeal Request is denied, the Appeal Request form may be resubmitted by the customer for review by the District's General Manager. The Decision by the District's General Manager shall be final.

7. **Use of Penalty Funds Collected.** The Board of Directors hereby declares its intent to use penalty funds collected to pay any penalties/charges that may be imposed by the State and/or wholesale water provider of the District for exceeding its baseline water budget allocation and in furtherance of conservation efforts and/or acquisition of supplemental water supplies.

Section XIII. Severability: If any section, subsection, sentence, clause or phrase in this Ordinance is for any reason held invalid, the validity of the remainder of the Ordinance will not be affected. The District Board of Directors hereby declares it would have passed this Ordinance and each section, subsection, sentence, clause or phrase thereof, irrespective of the fact that one or more sections, subsections, sentences, clauses, or phrases thereof is declared invalid.

Section XIV. Effective Date of Ordinance: This Ordinance shall be effective immediately upon adoption.

WSCP

APPENDIX C

Notice of Public Hearing (Pending)

WSCP

APPENDIX D

Adopted WSCP Resolution (Pending)

UWMP

APPENDIX H

Water Use Efficiency Implementation Report

Orange County

Water Use Efficiency Programs Savings and Implementation Report

Retrofits and Acre-Feet Water Savings for Program Activity

Program	Program Start Date	Retrofits Installed in	Month Indicated		Current Fiscal Year		Overall Program		
			Interventions	Water Savings	Interventions	Water Savings	Interventions	Annual Water Savings[4]	Cumulative Water Savings[4]
High Efficiency Clothes Washer Program	2002	October-25	82	0.22	350	2.28	131,459	4,312	64,060
High Efficiency Toilet (HET) Program	2005	October-25	17	0.06	65	2.76	62,010	2,292	32,257
Flow Monitoring Devices (FMD) Program	2021	October-25	10	0.04	39	0.37	1,045	52.25	158.24
Commercial Plumbing Fixture Rebate Program	2002	October-25	3	0.05	164	1.07	119,829	5,295	89,451
Water Savings Incentive Program (WSIP)	2006	October-25	0	0.00	1	16.47	51	1,286	11,460
Turf Replacement Program[3]	2010	October-25	5,929	0.07	424,613	15.01	29,979,610	4,049	51,438
Landscape Design Rebate Program (formerly LDAP)	2019	October-25	4	-	15	-	1,181	-	-
Tree Rebate Program	2024	October-25	38	-	200	-	461	-	-
Spray-to-Drip Program[3]	2014	October-25	9,687	0.11	410,712	11.50	5,740,148	779	2,295
Smart Timer Program - Irrigation Timers	2004	October-25	63	0.88	426	16.60	36,100	9,152	96,656
Rotating Nozzles Rebate Program	2007	October-25	103	0.41	297	1.12	586,364	2,891	28,030
Rain Barrels Rebate Program	2013	October-25	2	0.00	8	0.00	9,077	17	162
Recycled Water Retrofit (ORP)	2015	October-25	0	0.00	0	0.00	194	3,901	32,806
Water Smart Landscape Program [1]	1997						12,677	10,621	72,668
Home Water Certification Program	2013						312	7.339	15.266
Synthetic Turf Rebate Program	2007						685,438	96	469
Ultra-Low-Flush-Toilet Programs [2]	1992						363,926	13,452	162,561
Home Water Surveys [2]	1995						11,867	160	1,708
Showerhead Replacements [2]	1991						270,604	1,667	19,083
Total Water Savings All Programs				**2**	**836,890**	**67**	**38,012,352**	**60,029**	**665,276**

(1) Water Smart Landscape Program participation is based on the number of water meters receiving monthly Irrigation Performance Reports.

(2) Cumulative Water Savings Program To Date totals are from a previous Water Use Efficiency Program Effort.

(3) Turf Replacement and Spray-to-Drip Interventions are listed as square feet.

[4] Cumulative & annual water savings represents both active program savings and passive savings that continues to be realized due to plumbing code changes over time.

Prepared by Municipal Water District of Orange County

HIGH EFFICIENCY CLOTHES WASHERS INSTALLED BY AGENCY[1]

through MWDOC and Local Agency Conservation Programs

Agency	FY21/22	FY22/23	FY23/24	FY24/25	FY25/26	Total	Current FY Water Savings Ac/Ft (Cumulative)	Cumulative Water Savings across all Fiscal Years	15 yr. Lifecycle Savings Ac/Ft
Brea	33	29	25	17	9	2,174	1.54	1,068.10	1,125
Buena Park	36	39	17	11	3	1,803	1.08	828.16	933
East Orange	4	3	4	-	-	214	0.22	111.44	111
El Toro	29	30	34	23	7	1,804	2.11	846.36	933
Fountain Valley	22	26	35	26	5	2,671	2.10	1,375.79	1,382
Garden Grove	69	56	43	33	8	4,092	2.67	1,989.00	2,117
Golden State	97	93	88	43	15	5,834	5.43	2,784.80	3,019
Huntington Beach	83	69	89	59	21	9,075	5.61	4,808.55	4,696
Irvine Ranch	473	373	308	265	75	29,229	18.97	13,273.38	15,124
La Habra	35	31	27	20	6	1,652	1.70	736.32	855
La Palma	10	3	11	6	2	530	0.66	241.21	274
Laguna Beach	17	9	11	13	4	1,065	0.72	557.57	551
Mesa Water	31	30	32	40	10	2,891	1.94	1,462.13	1,496
Moulton Niguel	255	205	191	177	59	12,404	12.01	5,662.74	6,418
Newport Beach	22	27	27	18	2	2,873	1.78	1,557.19	1,487
Orange	49	45	42	26	5	4,342	2.55	2,263.71	2,247
San Clemente	43	34	53	28	12	3,069	3.35	1,519.74	1,588
Santa Margarita	220	212	196	186	38	11,406	11.98	5,311.29	5,902
Seal Beach	7	10	9	3	-	691	0.61	345.43	358
Serrano	3	3	3	4	-	391	0.18	212.22	202
South Coast	24	24	22	11	7	1,795	1.31	922.50	929
Trabuco Canyon	15	19	10	18	2	922	0.66	456.76	477
Tustin	31	33	27	14	2	1,894	1.69	943.74	980
Westminster	40	34	27	30	7	2,948	1.67	1,476.05	1,525
Yorba Linda	52	52	42	26	8	4,176	2.62	2,175.21	2,161
MWDOC Totals	1,705	1,489	1,373	1,097	307	111,525	85.17	53,750.16	21,546
Anaheim	135	147	121	79	23	11,818	7.59	6,491.59	6,115
Fullerton	66	70	51	39	12	4,324	3.34	2,127.38	2,237
Santa Ana	167	104	40	47	8	3,792	2.59	1,690.71	1,962
Non-MWDOC Totals	368	321	212	165	43	19,934	13.51	10,309.68	3,851
Orange County Totals	2,073	1,810	1,585	1,262	350	131,459	98.68	64,059.84	25,397

[1]Totals include hidden rows for agencies that no longer exist

Prepared by the Municipal Water District of Orange County

HIGH EFFICIENCY TOILETS (HETs) INSTALLED BY AGENCY[1]

through MWDOC and Local Agency Conservation Programs

Agency	FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY 25-26	Total	Cumulative Water Savings across all Fiscal Years
Brea	0	2	6	2	0	**470**	**214.63**
Buena Park	5	0	114	3	0	**813**	**367.71**
East Orange	0	2	0	0	0	**91**	**43.15**
El Toro	2	1	0	0	0	**2,063**	**1,050.49**
Fountain Valley	1	3	6	1	0	**848**	**457.34**
Garden Grove	1	4	17	4	0	**1,524**	**794.96**
Golden State	3	18	27	12	0	**2,882**	**1,480.89**
Huntington Beach	3	0	3	0	0	**2,928**	**1,443.94**
Irvine Ranch	30	22	21	11	5	**17,508**	**9,741.86**
Laguna Beach	0	0	3	2	0	**403**	**202.75**
La Habra	0	6	1	0	1	**602**	**342.64**
La Palma	0	0	3	1	0	**235**	**115.46**
Mesa Water	0	0	0	2	0	**1,645**	**999.67**
Moulton Niguel	10	7	2	6	3	**5,814**	**2,577.25**
Newport Beach	3	0	1	0	1	**739**	**364.73**
Orange	2	1	24	3	0	**2,234**	**1,079.13**
San Clemente	4	6	2	1	0	**907**	**447.42**
Santa Margarita	18	9	10	4	0	**3,437**	**1,519.23**
Seal Beach	1	0	0	0	0	**858**	**604.21**
Serrano	0	0	0	0	0	**124**	**55.20**
South Coast	4	3	0	5	0	**1,042**	**486.41**
Trabuco Canyon	5	1	4	0	0	**366**	**153.94**
Tustin	0	2	0	3	0	**1,530**	**914.42**
Westminster	0	11	9	3	0	**1,362**	**746.57**
Yorba Linda	0	5	0	0	0	**1,272**	**658.81**
MWDOC Totals	95	103	253	63	10	**52,235**	**27,117.06**
Anaheim	3	33	331	74	52	**6,404**	**3,465.63**
Fullerton	5	11	35	5	3	**1,142**	**547.48**
Santa Ana	5	3	117	66	0	**2,229**	**1,127.05**
Non-MWDOC Totals	13	47	483	145	55	**9,775**	**5,140.16**
Orange County Totals	**108**	**150**	**736**	**208**	**65**	**62,010**	**32,257.22**

[1]Totals include hidden rows for agencies that no longer exist

Prepared by Municipal Water District of Orange County

FLOW MONITORING DEVICES INSTALLED BY AGENCY

through MWDOC and Local Agency Conservation Programs

Agency	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	Total Program	Cumulative Water Savings across all Fiscal Years
Brea	2	3	1	3	1	10	1.00
Buena Park	0	0	0	0	1	1	0.02
East Orange	0	0	0	0	0	0	-
El Toro	0	0	0	0	0	0	-
Fountain Valley	1	0	0	2	0	3	0.30
Garden Grove	0	0	0	0	0	0	-
Golden State	375	1	1	0	0	377	78.33
Huntington Beach	0	0	0	6	0	6	0.42
Irvine Ranch	4	3	3	23	5	38	2.83
La Habra	0	0	0	1	0	1	0.07
La Palma	0	0	0	0	0	0	-
Laguna Beach	0	0	0	4	0	4	0.32
Mesa Water	0	1	1	5	0	7	0.26
Moulton Niguel	0	0	0	0	0	0	-
Newport Beach	0	0	1	1	1	3	0.17
Orange	3	7	5	9	0	24	2.40
San Clemente	0	0	0	3	2	5	0.13
Santa Margarita	122	38	129	78	16	383	44.67
Seal Beach	0	3	1	1	0	5	0.46
Serrano	0	1	1	1	0	3	0.24
South Coast	103	2	0	0	3	108	21.75
Trabuco Canyon	0	0	0	0	0	0	-
Tustin	0	0	0	2	1	3	0.08
Westminster	0	0	0	0	0	0	-
Yorba Linda	0	0	1	4	0	5	0.22
MWDOC Totals	**610**	**59**	**144**	**143**	**30**	**986**	**153.65**
Anaheim	0	3	2	6	6	17	1.03
Fullerton	3	12	8	16	3	42	3.56
Santa Ana	0	0	0	0	0	0	-
Non-MWDOC Totals	**3**	**15**	**10**	**22**	**9**	**59**	**4.58**
Orange County Totals	**613**	**74**	**154**	**165**	**39**	**1,045**	**158.24**

COMMERCIAL PLUMBING FIXTURES INSTALLED BY AGENCY[1][2]

through MWDOC and Local Agency Conservation Programs

Agency	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	Totals	Cumulative Water Savings across all Fiscal Years
Brea	0	0	138	0	0	**1,973**	**1,214**
Buena Park	0	0	48	0	164	**2,844**	**2,403**
East Orange CWD RZ	0	0	0	0	0	**0**	**0**
El Toro WD	0	136	0	0	0	**2,652**	**1,397**
Fountain Valley	0	0	0	0	0	**2,165**	**1,424**
Garden Grove	574	0	209	0	0	**3,976**	**3,214**
Golden State WC	0	0	0	0	0	**3,124**	**3,664**
Huntington Beach	235	0	280	0	0	**3,957**	**3,441**
Irvine Ranch WD	2	644	0	0	0	**31,128**	**18,724**
La Habra	0	0	0	0	0	**984**	**1,093**
La Palma	0	0	0	113	0	**788**	**361**
Laguna Beach CWD	0	0	0	0	0	**446**	**589**
Mesa Water	0	251	18	161	0	**4,815**	**4,307**
Moulton Niguel WD	0	414	241	0	0	**7,594**	**3,430**
Newport Beach	0	0	0	3	0	**3,449**	**2,974**
Orange	0	359	151	0	0	**6,915**	**4,174**
San Clemente	0	0	0	0	0	**753**	**747**
Santa Margarita WD	0	212	0	112	0	**2,571**	**949**
Seal Beach	0	0	0	0	0	**816**	**841**
Serrano WD	0	0	0	0	0	**0**	**0**
South Coast WD	0	154	0	0	0	**1,474**	**1,147**
Trabuco Canyon WD	0	0	0	0	0	**11**	**27**
Tustin	0	41	88	0	0	**2,195**	**1,846**
Westminster	0	190	59	0	0	**1,850**	**1,986**
Yorba Linda	1	0	0	0	0	**1,017**	**1,144**
MWDOC Totals	**812**	**2,401**	**1,232**	**389**	**164**	**87,757**	**61,763**

Anaheim	0	648	175	1,194	0	**19,067**	**14,636**
Fullerton	0	331	839	3	0	**4,965**	**3,707**
Santa Ana	72	30	26	600	0	**8,040**	**9,344**
Non-MWDOC Totals	**72**	**1,009**	**1,040**	**1,797**	**0**	**32,072**	**27,688**

Orange County Totals	**884**	**3,410**	**2,272**	**2,186**	**164**	**119,829**	**89,451**

[1] Retrofit devices include ULF Toilets and Urinals, High Efficiency Toilets and Urinals, Multi-Family and Multi-Family 4-Liter HETs, Zero Water Urinals, High Efficiency Clothes Washers, Cooling Tower Conductivity Controllers, Ph Cooling Tower Conductivity Controllers, Flush Valve Retrofit Kits, Pre-rinse Spray heads, Hospital X-Ray Processor Recirculating Systems, Steam Sterilizers, Food Steamers, Water Pressurized Brooms, Laminar Flow Restrictors, and Ice Making Machines.

[2]Totals include hidden rows for agencies that no longer exist

WATER SAVINGS INCENTIVE PROJECTS BY AGENCY

through MWDOC and Local Agency Conservation Programs

Agency	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	Totals	Cumulative Water Savings
Brea	0	0	0	0	0	0	0
Buena Park	0	0	0	0	0	2	911
East Orange	0	0	0	0	0	0	0
El Toro	0	0	0	0	0	1	62
Fountain Valley	0	0	0	0	0	1	197
Garden Grove	0	0	0	0	0	2	26
Golden State	0	0	0	0	0	2	379
Huntington Beach	0	0	0	0	0	6	1,893
Irvine Ranch	0	1	10	0	1	24	1,724
La Habra	0	0	0	0	0	1	3
La Palma	0	0	0	0	0	0	0
Laguna Beach	0	0	0	0	0	0	0
Mesa Water	0	0	0	0	0	0	0
Moulton Niguel	0	0	0	0	0	0	0
Newport Beach	0	0	0	1	0	2	229
Orange	0	0	0	0	0	5	1,223
San Clemente	0	0	0	0	0	0	0
Santa Margarita	0	0	0	0	0	0	0
Seal Beach	0	0	0	0	0	0	0
Serrano	0	0	0	0	0	0	0
South Coast	0	0	0	0	0	2	1,148
Trabuco Canyon	0	0	0	0	0	0	0
Tustin	0	0	0	0	0	0	0
Westminster	0	0	0	0	0	1	715
Yorba Linda	0	0	0	0	0	0	0
MWDOC Totals	**0**	**1**	**10**	**1**	**1**	**49**	**8,509**

Anaheim	0	0	0	0	0	0	0
Fullerton	0	0	0	0	0	1	1,587
Santa Ana	0	0	0	0	0	1	1,363
Non-MWDOC Totals	**0**	**0**	**0**	**0**	**0**	**2**	**2,951**

Orange County Totals	**0**	**1**	**10**	**1**	**1**	**51**	**11,460**

[1] Acre feet of savings determined during a one year monitoring period.

If monitoring data is not available, the savings estimated in agreement is used.

TURF REPLACEMENT BY AGENCY[1][2]

through MWDOC and Local Agency Conservation Programs

Agency	FY 21/22		FY 22/23		FY 23/24		FY 24/25		FY 25/26		Total Program		Cumulative Water Savings across all Fiscal Years
	Res.	Comm.	Res.	Comm.	Res.	Comm.	Res.	Comm.	Res.	Comm.	Res	Comm.	
Brea	6,066	0	13,979	6,598	8,997	40,459	930	32,570	1,230	0	**267,328**	**601,425**	**1,704**
Buena Park	3,094	0	14,435	0	9,798	54,144	2,085	71,385	1,112	0	**138,788**	**143,645**	**285**
East Orange	5,000	0	12,116	7,914	2,589	0	0	0	0	0	**67,825**	**7,914**	**126**
El Toro	3,153	2,379	18,364	7,739	8,780	31,396	1,270	43,948	435	0	**180,991**	**667,721**	**1,572**
Fountain Valley	14,031	0	11,871	3,260	11,427	1,394	7,329	7,739	1,343	0	**185,953**	**74,817**	**399**
Garden Grove	1,228	0	16,756	0	17,356	0	3,967	0	0	32,614	**327,228**	**150,017**	**786**
Golden State	0	0	2,614	0	3,716	603	9,977	1,044	3,027	0	**601,236**	**396,514**	**2,092**
Huntington Beach	32,411	19,914	44,842	89,264	29,038	64,199	20,037	72,389	4,407	0	**723,943**	**721,928**	**2,373**
Irvine Ranch	20,397	54,418	72,550	399,559	32,342	332,433	28,573	288,486	6,975	44,002	**1,651,243**	**4,606,441**	**10,864**
La Habra	4,183	3,263	15,254	6,654	13,062	65,496	5,980	0	0	0	**119,162**	**165,432**	**298**
La Palma	0	0	0	0	0	0	0	0	0	0	**15,141**	**59,760**	**207**
Laguna Beach	2,905	0	5,702	0	1,161	0	723	0	0	0	**87,378**	**48,788**	**307**
Mesa Water	29,375	0	34,191	55,661	21,321	97,512	11,922	86,176	1,035	8,804	**549,482**	**592,182**	**1,505**
Moulton Niguel	37,648	115,313	59,372	394,839	29,606	311,146	23,335	128,512	11,919	118,880	**1,928,474**	**4,125,941**	**10,503**
Newport Beach	823	99,613	6,247	24,470	7,118	37,101	3,461	13,099	0	0	**147,127**	**722,282**	**1,458**
Orange	22,783	2,816	50,016	102,170	41,474	8,807	12,794	66,221	8,260	0	**640,919**	**580,790**	**2,184**
San Clemente	6,466	67,354	15,942	156,022	11,950	17,008	1,380	107,624	748	3,652	**458,425**	**889,650**	**2,290**
Santa Margarita	8,694	41,534	44,083	132,194	23,349	65,782	15,718	175,702	2,334	87,539	**1,009,793**	**1,805,341**	**4,979**
Seal Beach	4,226	0	2,901	0	627	13,614	0	4,427	0	0	**47,654**	**38,418**	**123**
Serrano	0	0	7,183	0	0	0	0	0	0	0	**190,123**	**4,403**	**449**
South Coast	1,409	76,798	7,575	85,956	3,937	67,910	3,325	69,866	0	55,315	**352,560**	**949,239**	**2,201**
Trabuco Canyon	6,817	50,000	5,379	106,068	3,459	50,000	2,244	0	1,864	0	**100,720**	**366,313**	**547**
Tustin	21,688	5,698	36,476	0	28,841	16,386	12,632	0	4,958	1,226	**488,951**	**84,639**	**969**
Westminster	4,614	0	8,042	0	10,392	4,932	9,036	14,932	0	0	**148,122**	**78,397**	**374**
Yorba Linda	6,529	10,068	25,784	50,488	15,576	36,482	4,691	57,084	1,646	21,288	**581,139**	**320,813**	**1,566**
MWDOC Totals	**243,540**	**549,168**	**531,674**	**1,628,856**	**335,916**	**1,316,804**	**181,409**	**1,241,204**	**51,293**	**373,320**	**11,375,120**	**18,595,276**	**51,423**
Anaheim	0	0	0	0	0	0	0	0	0	0	**0**	**0**	**-**
Fullerton	0	0	0	0	0	0	0	0	0	0	**0**	**9,214**	**15**
Santa Ana	0	0	0	0	0	0	0	0	0	0	**0**	**0**	**-**
Non-MWDOC Totals	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**9,214**	**15**
Orange County Totals	**243,540**	**549,168**	**531,674**	**1,628,856**	**335,916**	**1,316,804**	**181,409**	**1,241,204**	**51,293**	**373,320**	**11,375,120**	**18,604,490**	**51,438**

[1]Installed device numbers are listed as square feet

[2]Totals include hidden rows for agencies that no longer exist

LANDSCAPE DESIGN REBATE PROGRAM BY AGENCY

through MWDOC and Local Agency Conservation Programs

Agency	FY21/22		FY22/23		FY23/24		FY24/25		FY25/26		Total Program	
	LDAP	LMAP	LDAP	LMAP	LDAP	LMAP	LDAP	LMAP	LDAP	LMAP	LDAP	LMAP
Brea	3	2	10	2	1	1	0	0	0	0	**20**	**8**
Buena Park	5	1	5	2	1	1	1	0	0	0	**17**	**6**
East Orange	1	1	2	0	0	0	0	0	0	0	**4**	**1**
El Toro	11	0	6	6	4	1	0	0	1	0	**35**	**9**
Fountain Valley	8	4	13	3	5	4	0	0	0	0	**43**	**12**
Garden Grove	6	0	11	2	2	1	1	0	0	0	**20**	**3**
Golden State	0	0	2	1	3	1	1	0	0	0	**6**	**2**
Huntington Beach	38	18	34	19	9	5	3	0	0	0	**130**	**59**
Irvine Ranch	40	8	16	16	4	15	8	0	2	0	**92**	**53**
La Habra	7	0	8	3	0	0	1	0	0	0	**27**	**4**
La Palma	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Laguna Beach	1	0	2	0	0	0	0	0	0	0	**3**	**0**
Mesa Water	14	6	18	11	4	6	0	0	0	0	**63**	**32**
Moulton Niguel	25	5	11	14	1	6	10	0	7	0	**71**	**41**
Newport Beach	3	0	6	2	0	2	1	0	0	0	**13**	**5**
Orange	22	3	22	6	10	6	0	0	2	0	**76**	**20**
San Clemente	4	1	4	1	0	4	0	0	0	0	**13**	**11**
Santa Margarita	11	4	19	12	4	6	5	0	1	0	**71**	**33**
Seal Beach	1	1	3	3	0	1	0	0	0	0	**7**	**9**
Serrano	0	0	0	0	0	0	0	0	0	0	**1**	**0**
South Coast	4	0	2	1	1	2	1	0	0	0	**13**	**5**
Trabuco Canyon	4	0	4	3	0	0	1	0	0	0	**13**	**7**
Tustin	10	3	12	5	2	4	1	0	2	0	**54**	**16**
Westminster	6	1	4	2	1	0	0	0	0	0	**17**	**4**
Yorba Linda	8	1	6	6	0	3	0	0	0	0	**21**	**11**
MWDOC Totals	**232**	**59**	**220**	**120**	**52**	**69**	**34**	**0**	**15**	**0**	**830**	**351**

Anaheim	0	0	0	0	0	0	0	0	**0**	**0**	**0**	**0**
Fullerton	0	0	0	0	0	0	0	0	**0**	**0**	**0**	**0**
Santa Ana	0	0	0	0	0	0	0	0	**0**	**0**	**0**	**0**
Non-MWDOC Totals	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Orange County Totals	**232**	**59**	**220**	**120**	**52**	**69**	**34**	**-**	**15**	**-**	**830**	**351**

Prepared by the Municipal Water District of Orange County

TREE REBATE PROGRAM BY MONTH
through MWDOC and Local Agency Conservation Programs

Month	FY23/24	FY24/25	FY25/26	Total Program
	Trees	Trees	Trees	Trees
July	0	9	36	**45**
August	0	15	60	**75**
September	0	18	44	**62**
October	0	9	22	**31**
November	0	17	38	**55**
December	0	28	0	**28**
January	0	23	0	**23**
February	0	24	0	**24**
March	0	18	0	**18**
April	0	24	0	**24**
May	0	33	0	**33**
June	3	40	0	**43**
Orange County Totals	**3**	**258**	**200**	**461**

SPRAY-TO-DRIP BY AGENCY[1][2]

through MWDOC and Local Agency Conservation Programs

Agency	FY 21/22		FY 22/23		FY 23/24		FY 24/25		FY 25/26		Total Program		Cumulative Water Savings across all Fiscal Years
	Res.	**Comm.**	**Res.**	**Comm.**	**Res.**	**Comm.**	**Res.**	**Comm.**	**Res.**	**Comm.**	**Res**	**Comm.**	
Brea	949	0	9,294	7,830	9,289	29,866	1,097	0	1,361	0	26,114	68,529	**51.25**
Buena Park	354	3,365	2,921	0	4,103	18,548	1,296	12,504	0	0	10,263	38,231	**13.24**
East Orange	5,000	0	6,314	0	0	0	0	0	0	0	11,314	0	**5.17**
El Toro	1,175	0	11,911	7,939	4,185	1,761	0	8,735	3,499	13,831	25,354	101,149	**78.93**
Fountain Valley	10,271	0	2,275	0	7,357	2,506	4,472	6,093	492	0	30,066	29,455	**31.20**
Garden Grove	0	0	0	0	0	0	0	0	0	0	2,125	0	**3.08**
Golden State	0	0	2,905	0	6,812	0	10,057	0	867	0	21,641	0	**6.22**
Huntington Beach	17,600	0	22,073	58,877	16,370	42,300	7,505	98,964	674	0	82,246	214,933	**79.59**
Irvine Ranch	14,046	30,118	50,139	208,019	25,863	432,567	41,127	365,869	16,987	92,888	197,601	1,384,354	**492.74**
La Habra	3,343	1,447	8,236	5,779	11,730	46,659	10,643	0	0	0	36,973	53,885	**24.62**
La Palma	0	0	0	0	0	0	0	0	0	0	0	0	**0.00**
Laguna Beach	2,426	0	4,065	0	1,204	0	0	0	0	0	12,494	0	**8.97**
Mesa Water	13,073	7,972	22,386	49,775	15,877	32,313	5,050	17,021	0	20,132	81,353	139,657	**76.00**
Moulton Niguel	0	66,612	0	144,223	0	258,353	0	103,990	0	74,445	15,125	973,871	**478.88**
Newport Beach	457	49,456	6,573	5,845	6,890	21,725	3,247	0	0	0	20,563	129,270	**88.70**
Orange	6,426	72,290	27,414	28,224	42,171	0	9,702	43,373	5,938	50,000	101,247	207,039	**87.39**
San Clemente	3,135	45,000	7,612	15,368	11,314	45,172	0	12,231	0	0	31,775	126,276	**54.30**
Santa Margarita	655	72,052	32,804	138,469	15,638	18,306	15,903	192,177	628	64,065	131,878	726,424	**443.61**
Seal Beach	0	0	3,509	0	0	3,623	0	16,280	0	0	3,509	19,903	**4.06**
Serrano	0	0	2,183	0	0	0	0	0	0	0	5,487	0	**4.88**
South Coast	0	130,495	10,339	11,560	2,166	2,490	2,653	16,832	0	27,076	22,571	253,609	**129.29**
Trabuco Canyon	0	0	997	0	1,881	0	0	0	2,050	0	6,676	0	**1.91**
Tustin	19,787	5,305	24,575	0	15,977	0	15,884	1,397	1,786	1,977	97,646	14,140	**50.60**
Westminster	0	0	1,557	0	7,383	437	2,014	18,162	0	0	12,737	33,938	**22.84**
Yorba Linda	3,772	15,982	12,413	48,824	11,705	46,606	758	54,499	1,289	30,727	35,839	200,763	**54.35**
MWDOC Totals	**102,469**	**500,094**	**272,495**	**730,732**	**217,915**	**1,003,232**	**131,408**	**968,127**	**35,571**	**375,141**	**1,024,722**	**4,715,426**	**2,294.69**

Anaheim	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Fullerton	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Santa Ana	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Non-MWDOC Totals	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Orange County Totals	**102,469**	**500,094**	**272,495**	**730,732**	**217,915**	**1,003,232**	**131,408**	**968,127**	**35,571**	**375,141**	**1,024,722**	**4,715,426**	**2,294.69**

[1]Installed device numbers are listed as square feet

[2]Totals include hidden rows for agencies that no longer exist

ROTATING NOZZLES INSTALLED BY AGENCY[1]

through MWDOC and Local Agency Conservation Programs

Agency	FY 20/21	FY 21/22			FY 22/23			FY 23/24			FY 24/25			FY 25/26			Total Program			Cumulative Water Savings across all Fiscal Years
	Large	Small		Large	Small		Large	Small		Large	Small		Large	Small		Large	Small		Large	
	Comm.	Res	Comm.	Comm.	Res	Comm.	Comm.	Res	Comm.	Comm.	Res	Comm.	Comm.	Res	Comm.	Comm.	Res	Comm.	Comm.	
Brea	0	0	0	0	47	0	0	15	0	0	0	1,130	0	0	0	0	634	3,879	0	109.84
Buena Park	0	0	0	0	0	0	0	0	0	0	15	0	0	0	0	0	573	173	2,535	1,090.25
East Orange	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	781	0	0	29.82
El Toro	0	0	0	0	0	0	0	0	1,919	0	0	0	0	0	0	0	3,435	48,141	890	2,049.60
Fountain Valley	0	36	0	0	0	0	0	0	0	0	75	0	0	0	0	0	1,030	283	0	38.09
Garden Grove	0	0	0	0	0	0	0	0	0	0	60	0	0	0	0	0	1,117	299	0	52.49
Golden State	0	0	0	0	15	0	0	0	0	0	109	0	0	15	0	0	3,896	11,080	0	476.69
Huntington Beach	0	0	0	0	79	0	0	72	0	0	98	0	0	0	0	0	4,154	12,526	2,681	1,843.84
Irvine Ranch	0	462	0	0	196	0	0	411	195	0	309	0	0	42	0	0	49,708	94,541	2,004	6,851.52
La Habra	0	0	0	0	15	0	0	15	0	0	0	0	0	0	0	0	542	1,236	900	485.01
La Palma	0	0	0	0	15	0	0	18	0	0	0	0	0	0	0	0	122	2,890	0	80.50
Laguna Beach	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12,139	2,896	0	518.51
Mesa Water	0	0	0	0	21	0	0	0	0	0	0	0	0	0	0	0	2,137	385	343	265.61
Moulton Niguel	0	300	0	0	131	421	1,270	463	0	0	99	0	0	0	0	0	15,515	20,974	4,215	2,567.99
Newport Beach	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	46,723	21,413	0	2,507.21
Orange	0	0	0	0	184	0	0	96	0	0	38	0	0	0	0	0	3,615	1,072	0	173.66
San Clemente	0	80	0	0	0	210	0	0	170	0	0	230	0	20	0	0	10,314	8,148	1,343	1,178.27
Santa Margarita	0	132	0	0	197	0	0	353	495	0	168	0	0	90	0	0	17,618	7,416	611	1,212.58
Seal Beach	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	155	10,298	0	325.45
Serrano	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3,405	0	0	139.43
South Coast	0	0	0	0	69	510	0	0	480	0	0	440	0	0	0	0	8,199	20,300	0	899.76
Trabuco Canyon	0	50	0	0	20	0	0	0	0	0	0	0	0	130	0	0	2,286	5,130	0	247.96
Tustin	0	0	0	0	0	0	0	42	0	0	75	0	0	0	0	0	3,650	1,058	0	182.14
Westminster	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	556	0	0	19.87
Yorba Linda	0	95	0	0	16	0	0	63	0	0	0	0	0	0	0	0	6,289	4,359	500	656.84
MWDOC Totals	0	1,155	0	0	1,005	1,141	1,270	1,548	3,259	0	1,046	1,800	0	297	0	0	204,008	288,986	16,022	24,665.22
Anaheim	0	147	0	0	33	0	0	0	0	0	54	0	0	0	0	0	4,327	49,799	105	2,073.59
Fullerton	0	131	0	0	152	0	0	66	0	0	0	0	0	0	53	0	3,534	11,362	1,484	1,065.03
Santa Ana	0	50	0	0	42	0	0	0	0	0	0	0	0	0	0	0	985	5,752	0	225.86
Non-MWDOC Totals	0	328	0	0	227	0	0	66	0	0	54	0	0	0	53	0	8,846	66,913	1,589	3,364.47
Orange County Totals	0	1,483	0	0	1,232	1,141	1,270	1,614	3,259	0	1,100	1,800	0	297	53	0	212,854	355,899	17,611	28,029.69

[1]Totals include hidden rows for agencies that no longer exist

SMART TIMERS INSTALLED BY AGENCY[1]

through MWDOC and Local Agency Conservation Programs

Agency	FY21/22		FY22/23		FY23/24		FY24/25		FY25/26		Total Program		Cumulative Water Savings across all Fiscal Years
	Res	Comm	Res	Comm	Res	Comm	Res	Comm	Res	Comm	Res	Comm.	
Brea	25	4	18	0	18	8	16	0	4	0	357	92	1,003.86
Buena Park	10	2	13	0	39	1	16	0	4	0	195	56	454.27
East Orange	4	0	0	0	10	0	4	0	0	0	56	1	86.37
El Toro	23	1	21	77	18	175	10	178	6	0	305	794	4,218.01
Fountain Valley	24	6	28	0	13	0	24	0	1	0	324	60	554.60
Garden Grove	15	5	28	6	23	1	15	0	6	0	305	55	483.89
Golden State	65	16	63	0	68	2	35	0	10	0	807	231	2,084.63
Huntington Beach	52	18	78	2	72	20	47	8	22	5	864	439	3,182.51
Irvine Ranch	320	104	257	223	319	4	240	87	67	38	5,359	3,175	25,547.63
La Habra	11	1	13	0	7	5	14	1	4	0	153	52	460.42
La Palma	6	0	5	0	8	0	3	0	1	0	65	2	36.29
Laguna Beach	5	2	9	0	10	0	5	1	4	0	575	23	575.95
Mesa Water	18	4	25	14	28	8	11	0	4	0	548	240	1,945.71
Moulton Niguel	381	104	156	38	121	91	72	71	30	15	3,185	1,340	9,404.64
Newport Beach	16	21	9	15	14	16	13	0	1	0	1,163	505	5,146.92
Orange	39	12	47	0	53	16	28	0	16	1	816	250	2,240.71
San Clemente	14	41	29	1	28	19	14	16	8	3	1,289	541	5,310.62
Santa Margarita	184	75	177	12	283	35	244	5	73	29	3,059	1,992	15,163.25
Seal Beach	5	0	3	0	8	0	6	0	1	0	57	87	609.11
Serrano	7	1	10	0	3	0	6	0	3	0	107	3	61.87
South Coast	5	1	11	8	9	1	9	13	6	5	358	252	2,307.32
Trabuco Canyon	17	2	18	0	21	0	11	0	1	0	297	159	1,751.55
Tustin	29	5	41	0	27	0	25	2	6	0	427	88	860.58
Westminster	11	0	17	0	18	0	7	0	2	0	203	44	471.20
Yorba Linda	85	16	64	1	45	7	61	0	16	0	996	235	2,150.89
MWDOC Totals	**1,380**	**446**	**1,140**	**397**	**1,263**	**409**	**936**	**382**	**296**	**96**	**22,185**	**10,861**	**87,530.56**
Anaheim	74	19	83	1	82	0	69	2	18	0	1,066	581	5,461.90
Fullerton	50	17	42	0	59	0	24	13	10	0	660	239	2,111.68
Santa Ana	18	2	15	0	24	6	13	0	6	0	251	257	1,552.14
Non-MWDOC Totals	**142**	**38**	**140**	**1**	**165**	**6**	**106**	**15**	**34**	**0**	**1977**	**1077**	**9,125.71**
Orange County Totals	**1,522**	**484**	**1,280**	**398**	**1,428**	**415**	**1,042**	**397**	**330**	**96**	**24,162**	**11,938**	**96,656**

[1]Totals include hidden rows for agencies that no longer exist

Prepared by the Municipal Water District of Orange County

RAIN BARRELS INSTALLED BY AGENCY[1]

through MWDOC and Local Agency Conservation Programs

Agency	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	Total Program	Cumulative Water Savings across all Fiscal Years
Brea	0	2	0	4	0	95	1.66
Buena Park	1	0	2	0	0	201	3.61
East Orange	1	3	0	2	0	50	0.84
El Toro	3	0	2	1	0	125	2.13
Fountain Valley	2	10	5	1	0	421	7.37
Garden Grove	7	8	10	3	0	393	6.79
Golden State	2	19	9	2	0	573	9.91
Huntington Beach	6	14	9	5	1	1,261	23.92
Irvine Ranch	14	18	25	15	2	1,135	19.57
La Habra	1	10	1	1	0	86	1.47
La Palma	2	0	2	0	0	12	0.17
Laguna Beach	5	4	0	0	0	459	9.07
Mesa Water	4	6	3	3	0	384	6.87
Moulton Niguel	10	15	12	2	0	468	8.05
Newport Beach	0	2	1	0	0	78	1.35
Orange	6	5	11	3	1	421	7.36
San Clemente	5	6	4	0	0	189	3.37
Santa Margarita	4	9	4	7	0	389	6.85
Santiago	0	0	0	0	0	0	-
Seal Beach	0	2	0	0	0	73	1.39
Serrano	2	0	0	0	0	42	0.77
South Coast	2	0	0	2	0	188	3.61
Trabuco Canyon	1	3	0	1	0	64	1.13
Tustin	2	8	4	0	0	268	4.70
Westminster	0	7	17	1	0	298	4.61
Yorba Linda	0	8	6	0	3	250	4.40
MWDOC Totals	**80**	**159**	**127**	**53**	**7**	**8,218**	**146.53**
Anaheim	3	8	5	4	0	340	5.90
Fullerton	0	6	4	4	0	244	4.29
Santa Ana	0	9	5	5	1	274	4.79
Non-MWDOC Totals	**3**	**23**	**14**	**13**	**1**	**858**	**14.98**
Orange County Totals	**83**	**182**	**141**	**66**	**8**	**9,076**	**161.51**

[1]Totals include hidden rows for agencies that no longer exist

RECYCLED WATER ON-SITE RETROFITS BY AGENCY

through MWDOC and Local Agency Conservation Programs

Agency	FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY 25-26	Total	Cumulative Water Savings across all Fiscal Years
Brea	0	0	0	0	0	**0**	**0**
Buena Park	0	0	0	0	0	**0**	**0**
East Orange CWD	0	0	0	0	0	**0**	**0**
El Toro WD	4	0	0	0	0	**47**	**10,651**
Fountain Valley	0	0	0	0	0	**0**	**0**
Garden Grove	0	0	0	0	0	**0**	**0**
Golden State WC	0	0	0	0	0	**0**	**0**
Huntington Beach	0	0	0	0	0	**0**	**0**
Irvine Ranch WD	0	1	1	1	0	**13**	**2,735**
La Habra	0	0	0	0	0	**0**	**0**
La Palma	0	0	0	0	0	**0**	**0**
Laguna Beach CWD	0	0	0	0	0	**0**	**0**
Mesa Water	0	0	0	0	0	**1**	**322**
Moulton Niguel WD	0	0	0	2	0	**44**	**1,131**
Newport Beach	0	0	0	0	0	**1**	**1,301**
Orange	0	0	0	0	0	**0**	**0**
San Clemente	0	0	0	0	0	**23**	**7,172**
Santa Margarita WD	0	1	1	0	0	**37**	**4,495**
Seal Beach	0	0	0	0	0	**0**	**0**
Serrano WD	0	0	0	0	0	**0**	**0**
South Coast WD	0	1	3	1	0	**19**	**1,909**
Trabuco Canyon WD	0	0	0	0	0	**1**	**2,297**
Tustin	0	0	0	0	0	**0**	**0**
Westminster	0	0	0	0	0	**0**	**0**
Yorba Linda WD	0	0	0	0	0	**0**	**0**
MWDOC Totals	4	3	5	4	0	**193**	**32,420**
Anaheim	0	0	0	0	0	**1**	**386**
Fullerton	0	0	0	0	0	**0**	**0**
Santa Ana	0	0	0	0	0	**0**	**0**
Non-MWDOC Totals	0	0	0	0	0	**1**	**386**
Orange County Totals	**4**	**3**	**5**	**4**	**0**	**194**	**32,806**

UWMP

APPENDIX I

Notice of Public Hearing (PENDING)

UWMP

APPENDIX J

Adopted UWMP Resolution (PENDING)