Trabuco Canyon Water District

2020 Water Shortage Contingency Plan

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2020 Water Shortage Contingency Plan

[Report Subtitle]

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Acronyms and Abbreviations

20x2020	20% water use reduction in GPCD by year 2020
Act	Urban Water Management Planning Act
ACWRF	Aliso Creek Water Reclamation Facility
ADU	Accessory Dwelling Unit
AF	Acre-Feet
AFY	Acre-Feet per Year
AOP	Advanced Oxidation Processes
AWTP	Advanced Water Treatment Plant
AWWA	American Water Works Association
Base	Marine Corps Base, Camp Pendleton
BDCP	Bay-Delta Conservation Plan
BEA	Basin Equity Assessment
Biops	Biological Opinions
BMO	Best Management Objective
BMP	Best Management Practice
BPP	Basin Production Percentage
BPOU	Baldwin Park Operable Unit
CalWARN	California Water and Wastewater Agency Response Network
CCC	California Coastal Commission
CDR	Center for Demographic Research
CDWC	California Domestic Water Company
cfs	cubic feet per second
CII	Commercial/Industrial/Institutional
TCWD	Trabuco Canyon Water District
CRA	Colorado River Aqueduct
CSANS	California Sprinkler Adjustment Notification System
CTP	Coastal Treatment Plant
CUP	Conjunctive Use Program
CUWCC	California Urban Water Conservation Council
CVP	Central Valley Project
CVWD	Cucamonga Valley Water District
CVWD	Coachella Valley Water District
CWRP	Chiquita Water Reclamation Plant
DATS	Deep Aquifer Treatment System
DDW	Division of Drinking Water
Delta	Sacramento-San Joaquin River Delta
DMM	Demand Management Measure
DOF	Department of Finance
DRP	Direct Potable Reuse

DVL	Diamond Valley Lake
DWR	California Department of Water Resources
EBSD	Emerald Bay Services District
EOCWD	East Orange County Water District
EIR	Environmental Impact Report
EOC	Emergency Operation Center
ET	Evapotranspiration
ETWD	El Toro Water District
Festival	Children's Water Education Festival
FTE	Full Time Equivalent
FVCSP	Trabuco Canyon Water District Crossings Specific Plan
FY	Fiscal Year
GAC	Granular Activated Carbon Filter
GAP	Green Acres Project
GCM	General Circulation Model
GPCD	Gallons per Capita per Day
GPD	Gallons per Day
GRF	Groundwater Recovery Facility
GSP	Groundwater Sustainability Plan
GSWC	Golden State Water Company
GWRP	Groundwater Recovery Plant
GWRS	Groundwater Replenishment System
HECW	High Efficiency Clothes Washers
HEN	High Efficiency Sprinkler Nozzle
HET	High Efficiency Toilet
IID	Imperial Irrigation District
IPR	Indirect Potable Reuse
IRP	Integrated Water Resource Plan
IRWD	Irvine Ranch Water District
IWA	International Water Association
JADU	Junior Accessory Dwelling Unit
LAWRP	Los Alisos Water Recycling Plant
LBCWD	Laguna Beach County Water District
LRP	Local Resources Program
LTFP	Long-Term Facilities Plan
MARS	Member Agency Response System
MAWA	Maximum Allowed Water Allowance
M&I	Municipal and industrial
MAF	Million Acre-Feet
MCL	Maximum Contaminant Level
Mesa Water	Mesa Water District

MET	Metropolitan Water District of Southern California
Metropolitan Act	Metropolitan Water District Act
MF	Microfiltration
MGD	Million Gallons per Day
MHI	Median Household Income
MNWD	Moulton Niguel Water District
MOU	Memorandum of Understanding Regarding Urban Water Conservation in California
MTBE	Methyl Tert-Butyl Ether
MWDOC	Municipal Water District of Orange County
MWRF	Mesa Water Reliability Facility
MWRP	Michelson Water Recycling Plant
NDMA	N-nitrosodimethylamine
NRCS	Natural Resource Conservation Service
OC	Orange County
OCSD	Orange County Sanitation District
OCWD	Orange County Water District
OCWRP	Oso Creek Water Reclamation Plant
Plan	Urban Water Management Plan
Poseidon	Poseidon Resources LLC
PPCP	Pharmaceuticals and Personal Care Product
PPB	Parts per Billion
PPR	Percent Perfected Right
PVID	Palo Verde Irrigation District
QSA	Quantification Settlement Agreement
RA	Replenishment Assessment
RHNA	Regional Housing Needs Allocation
RO	Reverse Osmosis
RRWTP	Robinson Ranch Wastewater Treatment Plant
RTP	Regional Treatment Plant
RWQCB	Regional Water Quality Control Board
SAR	Santa Ana River
SARCCUP	Santa Ana River Conservation and Conjunctive Use Program
SBx7-7	Senate Bill 7 as part of the Seventh Extraordinary Session
SCAB	South Coast Air Basin
SCWD	South Coast Water District
SDCWA	San Diego County Water Authority
SDP	Seawater Desalination Program
SEMS	Standardized Emergency Management System
Serrano	Serrano Water District
SJBA	San Juan Basin Authority
SMWD	Santa Margarita Water District

SNWA	Southern Nevada Water Authority
SOC	South Orange County
SOCWA	South Orange County Wastewater Authority
sf	Square Foot
Study	Colorado River Basin Water Supply and Demand Study
SWP	State Water Project
SWRCB	California State Water Resources Control Board
SWSD	Semitropic Water Storage District
TAZ	Traffic Analysis Zone
TCWD	Trabuco Canyon Water District
TDS	Total Dissolved Solids
TVMWD	Three Valleys Municipal Water District
USBR	United States Bureau of Reclamation
USGVMWD	Upper San Gabriel Valley Municipal Water District
UV	Ultraviolet
UWMP	Urban Water Management Plan
Urban Water Supplier	Supplier
WACO	Water Advisory Committee of Orange County
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
WSDM	Water Surplus and Drought Management Plan
WUE	Water Use Efficiency
YLWD	Yorba Linda Water District

1 INTRODUCTION AND WSCP OVERVIEW

The Water Shortage Contingency Plan is a strategic planning document designed to prepare for and respond to water shortages. This Water Shortage Contingency Plan (WSCP) complies with California Water Code (CWC) Section 10632, which requires that every urban water 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 the Trabuco Canyon Water 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 population and land use growth, climate change, drought, and catastrophic events. This Plan provides a structured guide for the Trabuco Canyon Water 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 Trabuco Canyon Water 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.

The WSCP also describes the Trabuco Canyon Water District's procedures for conducting an Annual Water Supply and Demand Assessment (Annual Assessment) that is required by CWC 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, whichever is later. Trabuco Canyon Water District's 2020 WSCP is included as an appendix to its 2020 (UWMP) which will be submitted to DWR by July 1, 2021. However, this WSCP is created separately from Trabuco Canyon Water District's 2020 UWMP and can be amended, as needed, without amending the UWMP. Furthermore, the California Water Code does not prohibit an urban water 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. 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 percent to greater than 50 percent; 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 water supply and demand assessment; monitoring and reporting requirements to determine customer compliance; reevaluation and improvement procedures for evaluating the WSCP.

This WSCP is organized into three main sections with Section 3 aligned with the California 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 Trabuco Canyon Water District's water service area.

Section 3 Water Shortage Contingency Plan

Section 3.1 Water Supply Reliability Analysis provides a summary of the water supply analysis and water reliability findings from the 2020 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 percent 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 Trabuco Canyon Water 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.

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

1.2 Integration with Other Planning Efforts

As a retail water supplier in Orange County (OC), the Trabuco Canyon Water District considered other key entities in the development of this WSCP, including MWDOC (regional wholesale supplier), MET (regional wholesaler for Southern California and the direct supplier of imported water to MWDOC), and

OCWD (OC Groundwater Basin manager and provider of recycled water in north OC). As a MWDOC member agency, the Trabuco Canyon Water District also developed this WSCP with input from several coordination efforts led by MWDOC.

Some of the key planning and reporting documents that were used to develop this WSCP are:

- **MWDOC's 2020 UWMP** provides the basis for the projections of the imported supply availability over the next 25 years for the Trabuco Canyon Water District's service area.
- **MWDOC's Orange County Reliability Study** provides the basis for water demand projections for MWDOC's member agencies as well as Anaheim, Fullerton, and Santa Ana.
- **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 2020 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.
- **OCWD's 2021 Water Reliability Plan** provides the latest information on groundwater management and supply projection for the OC Groundwater Basin, the primary source of groundwater for a significant number of water suppliers in OC.
- **OCWD's 2018-19 Engineer's Report** provides information on the groundwater conditions and basin utilization of the OC Groundwater Basin.
- **OCWD's 2017 Basin 8-1 Alternative Plan i**s an alternative to the Groundwater Sustainability Plan (GSP) for the OC Groundwater Basin and provides significant information related to sustainable management of the basin in the past and hydrogeology of the basin, including groundwater quality and basin characteristics.
- **2020 Local Hazard Mitigation Plan** provides the basis for the seismic risk analysis 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 Trabuco Canyon Water District provide information on water infrastructure planning projects and plans to address any required water system improvements.
- **Groundwater Management Plans** provide the groundwater sustainability goals for the basins in the MWDOC's service area and the programs, actions, and strategies activities that support those goals.

2 BACKGROUND INFORMATION

[AGENCY BACKGROUND INFORMATION from UWMP]

2.1 Trabuco Canyon Water District Service Area

[SUMMARY OF AGENCY SERVICE AREA from UWMP]

[add figure of AGENCY service area]

Figure 2-1: Trabuco Canyon Water District Service Area

2.2 Relationship to Wholesalers

Metropolitan: Metropolitan is the largest water wholesaler for domestic and municipal uses in California, serving approximately 19 million customers. Metropolitan 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 percent of the population from the aforementioned counties reside within Metropolitan's boundaries.

Metropolitan is governed by a Board of Directors comprised of 38 appointed individuals with a minimum of one representative from each of Metropolitan'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 Metropolitan for their service.

Metropolitan is responsible for importing water into the region through its operation of the CRA and its contract with the State of California for SWP supplies. Major imported water aqueducts bringing water to southern California are shown in Figure 3-3. Member agencies receive water from Metropolitan 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 Metropolitan annually in April regarding the amount of water they anticipate they will need to meet their demands for the next five years. Metropolitan's Water Shortage Allocation Plan is presented in Appendix .

MWDOC: In Orange County, MWDOC and the cities of Anaheim, Fullerton, and Santa Ana are Metropolitan member agencies that purchase imported water directly from Metropolitan.

Furthermore, MWDOC purchases both treated potable and untreated water from Metropolitan to supplement its retail agencies' local supplies.

The Trabuco Canyon Water District is one of MWDOC's 28 member agencies receiving imported water from MWDOC. The Trabuco Canyon Water District's location within MWDOC's service is shown on Figure 2-1. MWDOC's Water Shortage Allocation Plan is presented in Appendix .

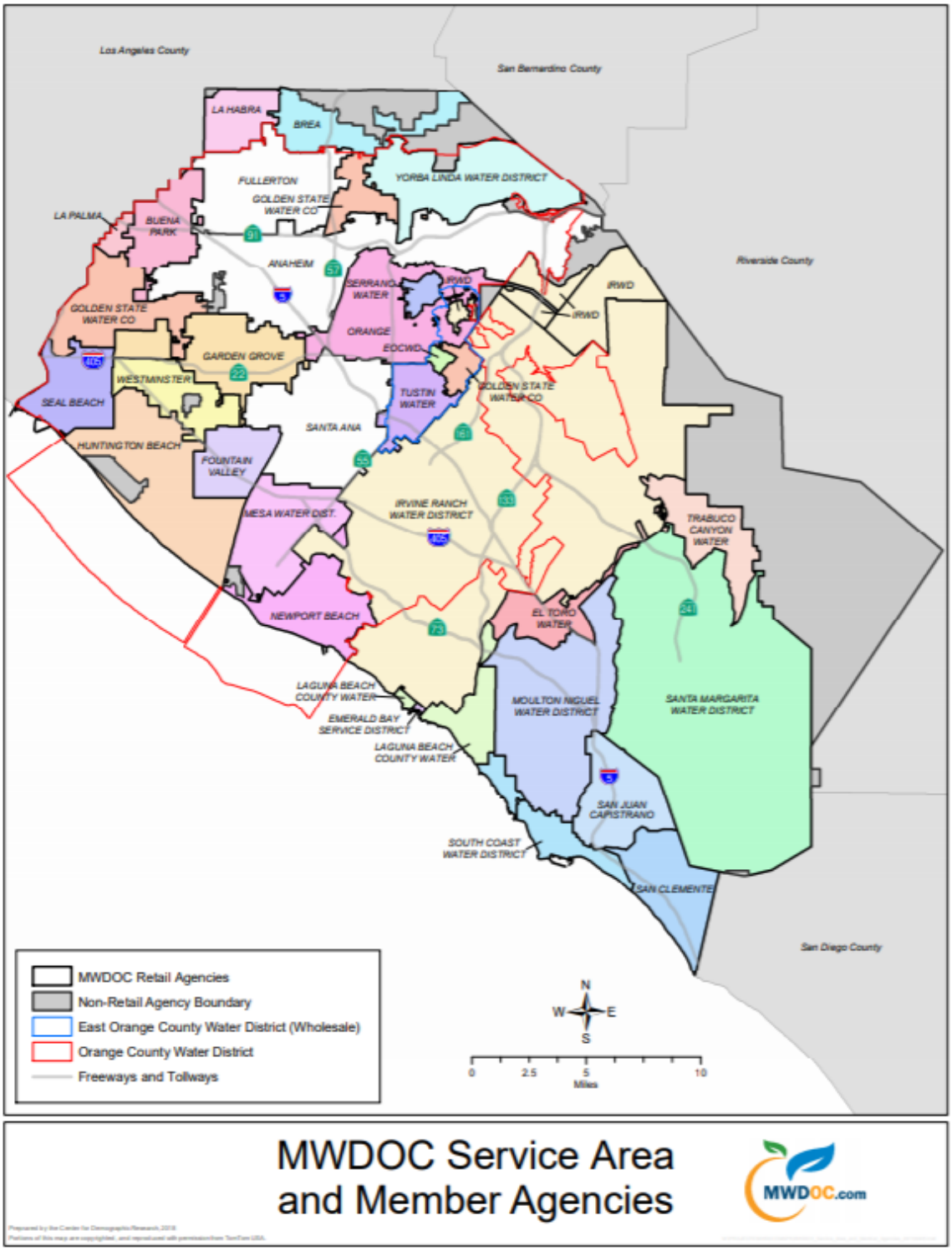

Figure 2-2: Regional Location of Trabuco Canyon Water District and Other MWDOC Member Agencies

2.3 Relationship with Wholesaler Water Shortage Planning

The WSCP is designed to be consistent with Metropolitan'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 Metropolitan 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 Metropolitan Water Surplus and Drought Management Plan

Metropolitan 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 Water Surplus and Drought Management (WSDM) Plan reflects anticipated responses towards Metropolitan'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 provides a framework for actions to take for surplus supplies. Deliveries in 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 is listed below.

- Shortage: Metropolitan can meet full-service demands and partially meet or fully meet interruptible demands using stored water or water transfers as necessary.
- Severe Shortage: Metropolitan can meet full-service demands only by using stored water, transfers, and possibly calling for extraordinary conservation.
- Extreme Shortage: Metropolitan must allocate available supply to full-service customers.

There are six shortage management stages to guide resource management activities. These stages are defined by shortfalls in imported supply and water balances in Metropolitan's storage programs. When Metropolitan must make net withdrawals from storage to meet demands, it is considered to be in a shortage condition. Figure 5-1 gives a summary of actions under each surplus and shortage stages when an allocation plan is necessary to enforce mandatory cutbacks. The goal of the WSDM plan is to avoid Stage 6, an extreme shortage.

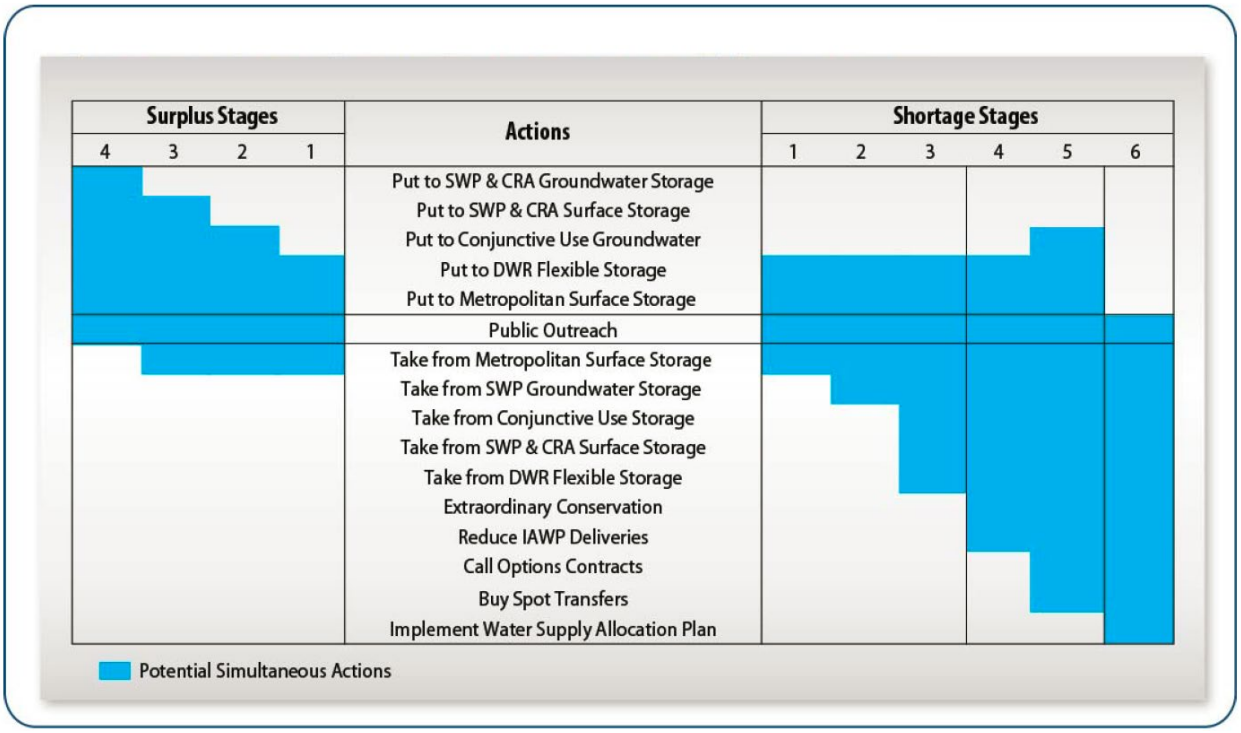

Figure 3-3: Resource Stages, Anticipated Actions, and Supply Declarations

Metropolitan'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 Metropolitan's Water Supply Allocation Plan

As noted in Condition 3, should supplies become limited to the point where imported water demands cannot be met, Metropolitan will allocate water through the WSAP (Metropolitan, 2015 UWMP, May 2016).

2.3.2 Metropolitan Water Supply Allocation Plan

Metropolitan's imported supplies have been impacted by a number of water supply challenges as noted earlier. In case of extreme water shortage within the Metropolitan service area is the implementation of its WSAP.

Metropolitan's Board of Directors adopted the WSAP in February 2008 to fairly distribute a limited amount of water supply and applies it through a detailed methodology to reflect a range of local conditions and needs of the region's retail water consumers.

The WSAP includes the specific formula for calculating member agency supply allocations and the key implementation elements needed for administering an allocation. Metropolitan's WSAP is the foundation for the urban water shortage contingency analysis required under Water Code Section 10632 and is part of Metropolitan's 2015 UWMP.

Metropolitan's WSAP was developed in consideration of the principles and guidelines in Metropolitan's 1999 WSDM Plan with the core objective of creating an equitable "needs-based allocation". The WSAP's formula seeks to balance the impacts of a shortage at the retail level while maintaining equity on the wholesale level for shortages of Metropolitan supplies of up to 50 percent. The formula takes into account a number of factors, such as the impact on retail customers, growth in population, changes in supply conditions, investments in local resources, demand hardening aspects of water conservation savings, recycled water, extraordinary storage and transfer actions, and groundwater imported water needs.

The formula is calculated in three steps: 1) based period calculations, 2) allocation year calculations, and 3) supply allocation calculations. The first two steps involve standard computations, while the third step contains specific methodology developed for the WSAP.

Step 1: Base Period Calculations – The first step in calculating a member agency's water supply allocation is to estimate their water supply and demand using a historical based period with established water supply and delivery data. The base period for each of the different categories of supply and demand is calculated using data from the two most recent non-shortage years..

Step 2: Allocation Year Calculations – The next step in calculating the member agency's water supply allocation is estimating water needs in the allocation year. This is done by adjusting the base period estimates of retail demand for population growth and changes in local supplies.

Step 3: Supply Allocation Calculations – The final step is calculating the water supply allocation for each member agency based on the allocation year water needs identified in Step 2.

In order to implement the WSAP, Metropolitan's Board of Directors makes a determination on the level of the regional shortage, based on specific criteria, typically in April. The criteria used by Metropolitan includes, current levels of storage, estimated water supplies conditions, and projected imported water demands. The allocations, if deemed necessary, go into effect in July of the same year and remain in effect for a 12-month period. The schedule is made at the discretion of the Board of Directors.

Although Metropolitan's 2015 UWMP forecasts that Metropolitan will be able to meet projected imported demands throughout the projected period from 2020 to 2040, uncertainty in supply conditions can result in Metropolitan needing to implement its WSAP to preserve dry-year storage and curtail demands (Metropolitan, 2015 UWMP, May 2016).

2.3.3 MWDOC Water Supply Allocation Plan

To prepare for the potential allocation of imported water supplies from Metropolitan, MWDOC worked collaboratively with its 28 retail agencies to develop its own WSAP that was adopted in January 2009 and amended in 2015. The MWDOC WSAP outlines how MWDOC will determine and implement each of its retail agency's allocation during a time of shortage.

The MWDOC WSAP uses a similar method and approach, when reasonable, as that of the Metropolitan's WSAP. However, MWDOC's plan remains flexible to use an alternative approach when Metropolitan's method produces a significant unintended result for the member agencies. The MWDOC WSAP model follows five basic steps to determine a retail agency's imported supply allocation.

Step 1: Determine Baseline Information – The first step in calculating a water supply allocation is to estimate water supply and demand using a historical based period with established water supply and delivery data. The base period for each of the different categories of demand and supply is calculated using data from the last two non-shortage years.

Step 2: Establish Allocation Year Information – In this step, the model adjusts for each retail agency's water need in the allocation year. This is done by adjusting the base period estimates for increased retail water demand based on population growth and changes in local supplies.

Step 3: Calculate Initial Minimum Allocation Based on Metropolitan's Declared Shortage Level – This step sets the initial water supply allocation for each retail agency. After a regional shortage level is established, MWDOC will calculate the initial allocation as a percentage of adjusted Base Period Imported water needs within the model for each retail agency.

Step 4: Apply Allocation Adjustments and Credits in the Areas of Retail Impacts and Conservation– In this step, the model assigns additional water to address disparate impacts at the retail level caused by an across-the-board cut of imported supplies. It also applies a conservation credit given to those agencies that have achieved additional water savings at the retail level as a result of successful implementation of water conservation devices, programs and rate structures.

Step 5: Sum Total Allocations and Determine Retail Reliability – This is the final step in calculating a retail agency's total allocation for imported supplies. The model sums an agency's total imported allocation with all of the adjustments and credits and then calculates each agency's retail reliability compared to its Allocation Year Retail Demand.

The MWDOC WSAP includes additional measures for plan implementation, including the following:

- Appeal Process – An appeals process to provide retail agencies the opportunity to request a change to their allocation based on new or corrected information. MWDOC anticipates that under most circumstances, a retail agency's appeal will be the basis for an appeal to Metropolitan by MWDOC.
- Melded Allocation Surcharge Structure – At the end of the allocation year, MWDOC would only charge an allocation surcharge to each retail agency that exceeded their allocation if MWDOC exceeds its total allocation and is required to pay a surcharge to Metropolitan. Metropolitan enforces allocations to retail agencies through an allocation surcharge to a retail agency that exceeds its total annual allocation at the end of the 12-month allocation period. MWDOC's surcharge would be assessed according to the retail agency's prorated share (AF over usage) of MWDOC amount with

Metropolitan. Surcharge funds collected by Metropolitan will be invested in its Water Management Fund, which is used to in part to fund expenditures in dry-year conservation and local resource development.

- Tracking and Reporting Water Usage – MWDOC will provide each retail agency with water use monthly reports that will compare each retail agency's current cumulative retail usage to their allocation baseline. MWDOC will also provide quarterly reports on its cumulative retail usage versus its allocation baseline.
- Timeline and Option to Revisit the Plan – The allocation period will cover 12 consecutive months and the Regional Shortage Level will be set for the entire allocation period. MWDOC only anticipates calling for allocation when Metropolitan declares a shortage; and no later than 30 days from Metropolitan's declaration will MWDOC announce allocation to its retail agencies.

3 WATER SHORTAGE CONTINGENCY PLANNING

The Trabuco Canyon Water District Water Shortage Contingency Plan (WSCP) is a detailed guide of how the Trabuco Canyon Water 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 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 Trabuco Canyon Water 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 2020 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 Drought Risk Assessment (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 2021 through 2045 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. 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 2020 UWMP Sections 6 and 7.

3.2 Annual Water Supply and Demand Assessment Procedures

Per Water Code Section 10632.1, the District will conduct an Annual Assessment pursuant to subdivision (a) of Section 10632 and by July 1st of each year, beginning in 2022, submit an annual water shortage assessment with information for anticipated shortage, triggered shortage response actions, compliance and enforcement actions, and communication actions consistent with the Supplier's WSCP.

The District must include in its WSCP the procedures used for conducting an Annual Assessment. The Annual Assessment is a determination of the near-term outlook for supplies and demands and how a perceived shortage may relate to WSCP shortage stage response actions in the current calendar year. This determination is based on information available to the District at the time of the analysis. Starting in 2022, the Annual Assessment will be due by July 1 of every year.

This section documents the decision-making process required for formal approval of the District's Annual Assessment determination of water supply reliability each year and the key data inputs and the methodologies used to evaluate the water system reliability for the coming year, while considering that the year to follow would be considered dry.

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. Although District does get a portion of their supplies from San Juan Basin, the primary supply comes from the purchase of imported water from MWDOC. The San Juan Basin is governed by the SJBA, a Joint Power Agency comprised of representatives from four local jurisdictions, South Coast Water District (SCWD), MNWD, the City of San Juan Capistrano, and SMWD. The SJBA has recently adopted the concept of "adaptive management" of the Basin to vary pumping from year to year based on actual basin conditions derived from monitoring efforts, with the implication that during dry periods groundwater pumping will be lower than in wet periods (SJBA, 2016a). A supply reduction that may result from a reduced pumping projection in the San Juan Basin will be included in the Annual Assessment.

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 the District to incorporate into the annual supply and demand assessment.

The District will then seek Board approval and Annual Assessment adoption in June and formally submit to DWR prior to the July 1 deadline.

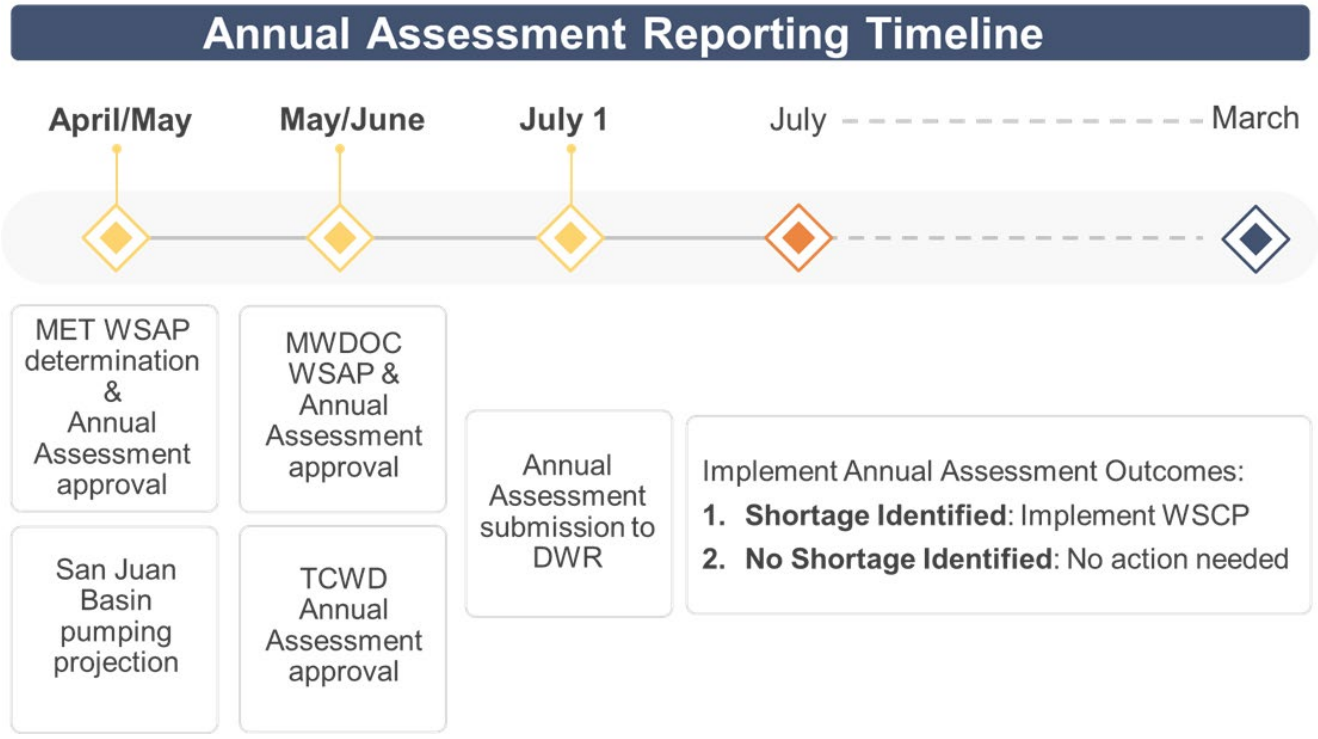

Figure 3-1: ***Sample Annual Assessment Reporting Timeline***

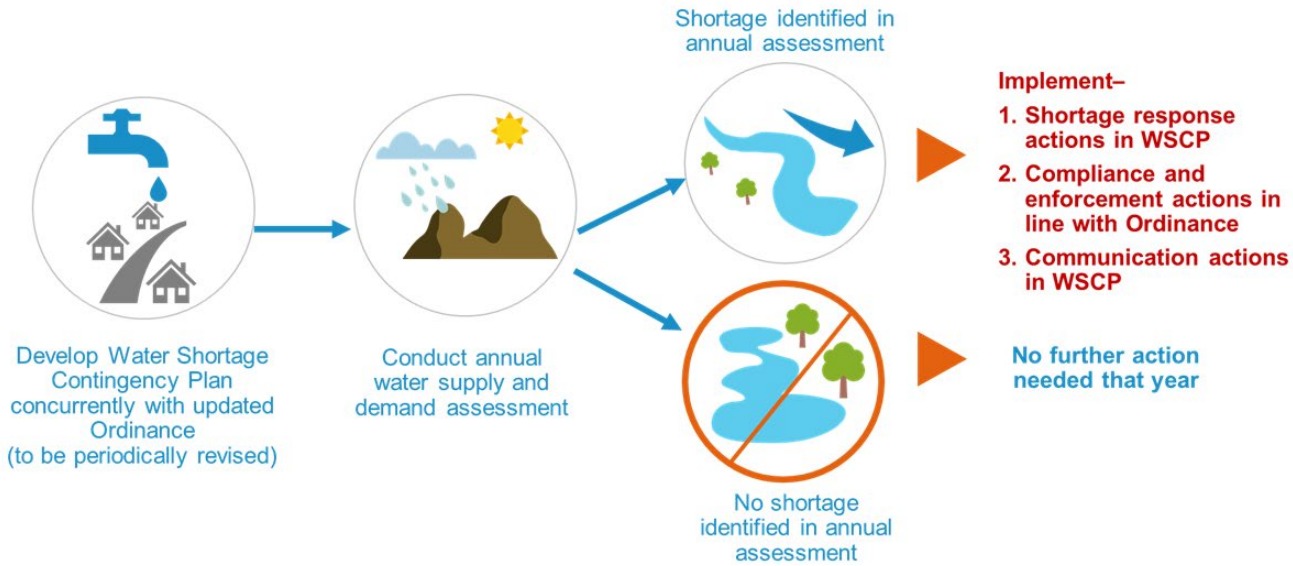

Figure 3-2: Water Shortage Contingency Plan Actions

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, as defined below:

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 very robust. The SJBA has recently adopted the concept of "adaptive management" of the Basin to vary pumping from year to year based on actual basin conditions derived from monitoring efforts, with the implication that during dry periods groundwater pumping will be lower than in wet periods (SJBA, 2016a).

The City 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 City's Annual Assessment was based on the City'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 City. 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.

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 has 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 (MET, 2021b).

Water Supply:

[Information from UWMP Chapter 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.

The City's DRA reveals that its supply capabilities are expected to balance anticipated total water use and supply, assuming a five-year consecutive drought with a six percent increase in water demand above a normal year from FY 2020-21 through FY 2024-25.

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 Trabuco Canyon Water District's annual water supply and unconstrained demand using: 1) current year conditions, and 2) assumed dry year conditions.

The "single dry year" is characterized to resemble conditions as a year in which conditions reflect the lowest water supply available to the Trabuco Canyon Water District.

[Information from UWMP and Demand Study]

A single-dry year is defined as a single year of no to minimal rainfall within a period that average precipitation is expected to occur. The water demand forecasting model developed for the OC Reliability Study (described in Section 2.4.1) isolated the impacts that weather and future climate can have on water demand through the use of a statistical model. The impacts of hot/dry weather condition are reflected as a percentage increase in water demands from the average condition (1990-2014). For a single dry year condition (FY2013-14), the model projects a six percent increase in demand for the Trabuco Canyon Water District area where the District's service area is located (CDM Smith, Final Technical Memorandum #1 of Orange County Reliability Study, April 2016). Detailed information of the model is included in the UWMP.

The District has documented that it is 100 percent reliable for single dry year demands from 2020 through 2040 with a demand increase of six percent from normal demand with significant reserves held by Metropolitan, local groundwater supplies, and conservation.]

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. The District's infrastructure capabilities are constantly monitored by operations and engineering staff and communicated if adjustments in water supplies are required throughout the year.

Within the next five years, the District will initiate several projects that will enhance supply reliability and resiliency, including the addition of approximately 1,300,000 gallons of system storage for operational and emergency purposes. In fiscal year ending 2022, the District will be updating its water and sewer system Master Plan in conjunction with a condition assessment of its critical facilities, which will guide capital improvement investments to increase system and supply reliability. The District will also implement Advanced Metering Infrastructure (AMI) technology by 2023 to improve meter reading frequency and timely consumption information to end-users – a proven approach to increasing water use efficiency and reducing water waste.

Other Factors

The following are locally applicable factors that can influence or disrupt supplies, along with other unique considerations that are included as part of the Annual Assessment:

- Construction projects
- Planned and unplanned outages on any of the major imported water systems
- Demand fluctuations with weather changes
- Natural disasters, such as fires, earthquakes, or pandemics
- Electrical outages, including Public Safety Power Shutoffs (PSPS) called by Southern California Edison
- Water quality; local or imported sources of water
- Equipment failures
- Water Treatment Plant or Water Reclamation Plant disruptions
- Legal or regulatory issues that disrupt water reliability

3.3 Six Standard Water Shortage Levels

Per Water Code Section 10632 (a)(3)(A), the District must include the six standard water shortage levels that represent shortages from the normal reliability as determined in the Annual Assessment. The shortage levels have been standardized to provide a consistent regional and statewide approach to conveying the relative severity of water supply shortage conditions. This is an outgrowth of the severe statewide drought of 2012-2016, and the widely recognized public communication and state policy uncertainty associated with the many different local definitions of water shortage Levels.

The six standard water shortage levels correspond to progressively increasing estimated shortage conditions (up to 10-, 20-, 30-, 40-, 50-percent, and greater than 50-percent shortage compared to the normal reliability condition) and align with the response actions the Supplier would implement to meet the severity of the impending shortages.

Table 3-1: Retail: Water Shortage Contingency Plan Levels

Table 8-1 Retail Water Shortage Contingency Plan Levels		
Shortage Levels	Complete Both	
	Percent Shortage Range[1]	Water Shortage Condition (*Narrative description)*
Add additional rows as needed		
0	0% (Normal)	**Normal Conditions** (No shortage exists) – 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 Response Ordinance.
1	Up to 10%	**Level 1 Water Shortage** – Condition exists when the Trabuco Canyon Water District notifies its water users 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%	**Level 2 Water Shortage** – Condition exists when the Trabuco Canyon Water District notifies its water users 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

Table 8-1 Retail Water Shortage Contingency Plan Levels		
Shortage Levels	Complete Both	
	Percent Shortage Range[1]	Water Shortage Condition (*Narrative description)*
Add additional rows as needed		
		shall implement the mandatory Level 2 conservation measures identified in this ordinance.
3	21% to 30%	**Level 3 Supply Shortage** – Condition exists when the District 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%	**Level 4 Water Shortage** - Condition exists when the Trabuco Canyon Water District 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%	**Level 5 Water Shortage** - Condition exists when the Trabuco Canyon Water District 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%	**Level 6 Water Shortage** – Condition exists when the Trabuco Canyon Water District 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.
[1] One level in the Water Shortage Contingency Plan must address a water shortage of 50%.		

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 Trabuco Canyon Water District has defined specific shortage response actions that align with the defined shortage levels in Tables 3-4 and Table 3-5. 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.

3.4.4 Permanent Water Conservation Measures

The District's Ordinance 2021-XX establishes Permanent Water Conservation Measures that are in effect at all times in the District's service area. These measures are intended to promote water conservation as a permanent way of life, even during years of normal or above normal precipitation and water supplies. The following is an abbreviated list of permanent measures; the entire list is provided in Water Conservation Ordinance 2021-XX, found in Appendix A.

- Limit on watering or irrigating of landscapes with potable, or drinking water, to between 6 p.m. and 8 a.m.
    - Exceptions exist for watering with a bucket; a hose with a shutoff nozzle; with drip irrigation; manually watering to establish new landscape; or for short periods of time to adjust or repair an irrigation system.
- No irrigation during or after measurable rainfall for 48 hours.
- Limit on incidental runoff from outdoor irrigation.
- Prohibition on irrigating turf with drinking water on public medians.
- No washing down hard or paved surfaces. Exception made be made for safety or sanitary hazards washing, but only with use of hand-held bucket or a low-volume, high-pressure cleaning machine or broom.
- Obligation to fix leaks or breaks in plumbing systems within seven days.
- Decorative water features must be equipped with water re-circulating device.
- No installation of single-pass cooling systems.
- No installation of non-recirculating water systems in commercial car wash and laundry systems.
- Washing of vehicles permissible with use of hand-held bucket or hand-held hose equipped with a shut-off nozzle.
- Commercial lodging establishments must provide guests option to decline daily linen service.
- Restaurants required to use water conserving dish wash spray valves.

In addition, the District has embedded water conservation into various policies, programs, and business practices which are not included in the State's regulations and which all contribute to ongoing structural water savings, including:

- Customer billing – The District meters 100% of its retail connections, reads each meter monthly and bills monthly.

- Meter Reading Technology – The District is planning a large scale implementation of Automated Meter Readling/Advanced Metering Infrastructure (AMR/AMI) technology in Fiscal Year Ending (FYE) 2022 and FYE 2023. The District's AMI system will allow end users to access near real-time consumption information and receive high use and leakage alerts.
- Customer assistance and site surveys – Water use site surveys are offered to customers to assist in high usage investigations, leak detection, and overall efficiency assessments.
- Indoor and outdoor rebates and incentives (with MWDOC and MET) – Through MET and MWDOC, the District offers customers rebates on various high efficiency plumbing devices
- Reducing system water loss – The District conducts water systems audits on its distribution system annually using the American Water Works Association (AWWA) Water Audit Software.

3.4.5 Required Shortage Response Actions

California Water Code Section 10632(a)(4) requires the WSCP to specify shortage response actions that align with the defined shortage levels, and include, at a minimum, all the following:

- Locally appropriate supply augmentation actions;
- Locally appropriate demand reduction actions to adequately respond to shortages;
- Locally appropriate operational changes;
- Additional, mandatory prohibitions against specific water use practices that are in addition to state-mandated prohibitions and appropriate to the local conditions; and
- An estimate of the extent to which the gap between supplies and demand will be reduced by implementation of each action.

Shortage response actions included in this WSCP are a mix of prohibitions on end use, demand reduction methods, supply augmentation, and operational change measures. The California Department of Water Resources (DWR) defines prohibitions on end uses as measures to address areas that are the responsibility of end users, such as a broken sprinkler or leaking faucet. Consumption reduction methods are actions invoked by a water agency to reduce consumption, such as expanding public information campaigns and offering water use surveys. Supply augmentation is defined as any action designed to increase the existing supply availability such as the use of emergency storage or acquiring additional transfer water. Operational changes are defined as actions taken by the District to change the way in which existing supplies are used within its service area. Examples of operational change include reducing hydrant flushing or adjusting operations for sewer line cleaning.

The first two water shortage stages focus on response actions that seek to limit impacts on customer quality of life while addressing the water shortage condition. Water Shortage Stage 1 looks to emphasize the District's Permanent Water Conservation BMPs with an accompanying public awareness campaign. Water Shortage Stage 2 expands on the BMPs with additional mandatory prohibitions along with targeted outreach to high and/or over-budget water users. An increase in mandatory prohibitions and the use of emergency storage withdrawals in Stages 5 and 6 reflect the urgency responding to worsening water shortage conditions.

Shortage response actions from previous stages are assumed to remain in effect as the water shortage stages increase. The mix of shortage response actions in any given stage is designed to produce an additional 10%

demand reduction above the previous stage's reduction. The following subsections list the combinations of shortage response actions associated with each of the six WSCP Water Shortage Stages. Per the requirements in CWC Section 10632(a)(4), the categories of "LOW", "MEDIUM", or "HIGH" are assigned to each shortage response action based on the estimated extent to which it can reduce the supply gap and correspond to percentage reduction ranges of 1-4%, 5-9%, and 10% or greater, respectively.

A user-friendly matrix of the shortage response actions for each Water Shortage Stage is presented in subsection 4.X.X.

3.4.5.1 Water Shortage Stage 1

The District shall declare a Water Shortage Stage 1 when it determines there is a water shortage, or threatened shortage, condition of up to 10%. Shortage response actions listed under this stage look to emphasize the Permanent Water Conservation Measures listed in Section X.X and detailed in the District's Ordinance 2021-XX. In addition, the following shortage response actions have been included in Stage 1 to elicit a voluntary customer demand reduction of up to 10%:

1. **Increase Public Awareness.** The District will increase public awareness of the water supply situation through messaging and will call for voluntary conservation. (Demand Reduction)
2. **Encourage Voluntary Outdoor Water Use Efficiency.** In combination with increased public awareness, customers will be encouraged to use water efficiently, particularly outdoors with efficient irrigation practices. (Demand Reduction)
3. **Promote Rebates for Indoor and Outdoor Water Use Efficiency**. In combination with increased messaging, the District will promote existing rebates and incentives from MWDOC and MET, and augment rebates where feasible.
4. **Require Water Users to Fix Leaks.** All leaks, breaks, or other malfunctions in the water user's plumbing or distribution system must be repaired within seventy-two (72) hours of notification by the District unless other arrangements are made with the District. (Mandatory Prohibition)
5. **Reinforce Permanent Water Conservation Measures**. Reinforce and promote the Permanent Water Conservation Measures. (Mandatory Prohibition)

3.4.5.2 Water Shortage Stage 2

The District shall declare a Water Shortage Stage 2 when it determines there is a water shortage, or threatened shortage, condition of up to 20%. To reduce demand during a Moderate Water Shortage condition and all higher levels of conditions, the District will increase its public education and outreach efforts to build awareness for conservation practices and all Permanent Water Conservation BMPs. The shortage response actions the District may implement under a Stage 2 appear below:

1. **Expanded Public Awareness.** The District will expand public awareness of the water shortage situation while leveraging regional outreach and marketing efforts by MWDOC and MWD. (Demand Reduction).
2. **Targeted Outreach to Irrigation Customers Using Drinking Water**. The District will target communication and outreach to dedicated irrigation customers using drinking water. (Demand Reduction)

3. **Voluntary Watering Day Limits.** Customers are encouraged to voluntarily limit watering or irrigating of lawn or landscaped area with potable water to 3 days per week April through October and 1 day per week November through March. Exceptions to the water days limit include:
    a. Drip emitters or in-line drip systems;
    b. Irrigating by use of a handheld bucket or similar container;
    c. Irrigating with a hand-held hose equipped with a positive self-closing water shut off nozzle; or
    d. Irrigating for short periods of time for the express purpose of adjusting or repairing an irrigation system. (Demand Reduction)
4. **Requirement for Water Users to Fix Leaks**. All leaks, breaks, or other malfunctions in the water user's plumbing or distribution system must be repaired within forty-eight (48) hours of notification by the District unless other arrangements are made with the District. (Mandatory Prohibition)
5. **Water Savings Plan for Commercial Agriculture and Nurseries.** Commercial agriculture and nurseries using drinking water shall provide to the District a water savings plan that documents conservation measures to be taken to achieve water savings. (Demand Reductions).
6. **Encouraging Recreational Water Features Best Practices.** All pool owners and operators and their agents or contractors shall, to the extent feasible, adhere to the District's Best Management Practices (Appendix X) for the construction and operation of water use efficient recreational water features, such as pools or spas. (Demand Reduction)
7. **Voluntary Drinking Water Served Upon Request.** Eating or drinking establishments, including but not limited to a restaurant, hotel, cafe, cafeteria, bar, or other public place where food or drinks are sold, served, or offered for sale, are encouraged to refrain from providing drinking water to any person unless expressly requested. (Demand Reduction)

3.4.5.3 Water Shortage Stage 3

The District shall declare a Water Shortage Stage 3 when it determines there is a water shortage, or threatened shortage, condition of up to 30%. During a Stage 3 condition, the District will strategically customize its public outreach campaign to specific user groups and communities and implement additional mandatory prohibitions and shortage response actions to those implemented in Stage 1 and Stage 2. The shortage response actions the District may implement under a Stage 3 appear below:

1. **Targeted Outreach and Assistance to High Water Users.** The District will target outreach and assistance to high use customers to achieve further water savings through expanded onsite water use surveys. (Demand Reduction)
2. **Enhanced Conservation Program Activity.** The District may enhance water conservation program activities or incentive levels to further increase customer participation in activities that lead to long-term structural water savings. (Demand Reduction)
3. **Watering Day Limits.** Watering or irrigating of lawn or landscaped area with drinking water is limited to 3 days per week April through October and 1 day per week November through March. Exceptions to the water days limit include:
    a. Drip emitters or in-line drip systems;

b. Irrigating by use of a handheld bucket or similar container;

c. Irrigating with a hand-held hose equipped with a positive self-closing water shut off nozzle;

d. Irrigating for short periods of time for the express purpose of adjusting or repairing an irrigation system; or

e. Customers who submit a written request to the General Manager for approval of an alternative watering plan. The General Manager, or their designee, may approve such plan upon determining that the alternate plan, in conjunction with other conservation measures, achieves an equivalent level of water conservation. If approved, the customer shall have the burden of showing that the alternate plan continues to achieve an equivalent level of water conservation, or the General Manager's approval will be revoked, and the customer will be subject to the "water days" regulations described in this subsection. (Mandatory Prohibition)

4. **Irrigation Limits on Commercial Agriculture and Nurseries.** Commercial agriculture and nursery use of drinking water is reduced by 30% of five-year average use monthly. (Demand Reduction)
5. **Requirement for Water Users to Fix Leaks.** All leaks, breaks, or other malfunctions in the water user's plumbing or distribution system must be repaired within twenty-four (24) hours of notification by the District unless other arrangements are made with the District. (Mandatory Prohibition)
6. **Prohibition on Filling Decorative Water Features.** Filling, refilling, or adding water to decorative water features that use potable water is prohibited. (Mandatory Prohibition)
7. **Limits on Use of Potable Water for Construction.** The use of recycled or non-potable water, when available, is required for construction purposes. Potable or drinking water for construction purposes shall only be permitted by, and in accordance with the provisions of, a construction water use permit obtained from the District Chief Engineer or their designee, otherwise, recycled water is to be used. (Operational Change)
8. **Limits on Street Sweeping with Drinking Water**. The use of recycled or non-potable water, when available, is required for street sweeping purposes. (Operational Change)
9. **Reduce Frequency of Line Cleaning and Flushing**. The District, to the extent feasible, will minimize the use of or flushing of drinking water when performing operational duties including, but not limited to, sewer line cleaning, fire hydrant flushing, valve exercising, and angle stop repairs. (Operational Change)

3.4.5.4 Water Shortage Stage 4

The District shall declare a Water Shortage Stage 4 when it determines there is a water shortage, or threatened shortage, condition of up to 40%. During a Stage 4 condition, the District will implement additional mandatory prohibitions and shortage response actions to those implemented in Stages 1, 2, and 3. The shortage response actions the District may implement under a Stage 4 appear below:

1. **Watering Day Limits.** Watering or irrigating of lawn or landscaped area with drinking water is limited to 2 days per week April through October and 1 day per week November through March. Exceptions to the water days limit include:

a. Drip emitters or in-line drip systems;

b. Irrigating by use of a handheld bucket or similar container;

c. Irrigating with a hand-held hose equipped with a positive self-closing water shut off nozzle;

d. Irrigating for short periods of time for the express purpose of adjusting or repairing an irrigation system; or

e. Customers who submit a written request to the General Manager for approval of an alternative watering plan. The General Manager, or their designee, may approve such plan upon determining that the alternate plan, in conjunction with other conservation measures, achieves an equivalent level of water conservation. If approved, the customer shall have the burden of showing that the alternate plan continues to achieve an equivalent level of water conservation, or the General Manager's approval will be revoked, and the customer will be subject to the "water days" regulations described in this subsection.

2. **Limits on Commercial Agriculture and Nurseries.** Commercial agriculture and nursery irrigation with drinking water is limited to 60% of monthly five-year average use. (Demand Reduction)

3. **Prohibition on Vehicle Washing.** Washing of autos, trucks, trailers, boats, airplanes or other types of mobile equipment is prohibited. Washing is permitted at commercial car wash facilities. The use of water by all types of commercial car washes shall be reduced in volume by 50%. (Mandatory Prohibition)

4. **Prohibition on Filling Recreational Water Features.** Filling, refilling, or adding water to residential recreational water features, such as swimming pools or spas, is prohibited. Exempted from this prohibition are municipally or commercially operated recreational water features. (Mandatory Prohibition)

5. **No New Potable Water Service.** Upon declaration of a Stage 4 condition, no new potable water service will be provided, no new temporary meters or permanent meters will be provided, and no will-serve letters will be issued, except under the following circumstances:

    a. District approved plans and specifications have been issued; or

    b. A valid permit has been issued for the project; or

    c. The project is necessary to protect the public health, safety, and welfare; or

    d. 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. (Operational Change)

3.4.5.5 Water Shortage Stage 5

The District shall declare a Water Shortage Stage 5 when it determines there is a water shortage, or threatened shortage, condition of up to 50%. During a Stage 5 condition, the District will implement additional mandatory prohibitions and shortage response actions to those implemented in Stages 1 through 4. The shortage response actions the District may implement under a Stage 5 appear below:

1. **Expand Enforcement and Outreach to High Users.** The District will expand its efforts to target and assist over-budget accounts, including escalating enforcement of any and all mandatory restrictions the

account may not be in compliance with, pursuant to any declared water shortage stage. (Demand Reduction)

2. **Flow Restrictors to Non-Compliant Accounts.** The District may require a flow restrictor to be installed on services where the account holder is non-responsive to outreach and other mandatory restrictions, pursuant to any declared water shortage stage. (Demand Reduction)
3. **Prohibition on Watering Turf with Drinking Water.** Watering or irrigating of lawn or turf with potable water is prohibited. Exemptions to this prohibition may be made for municipal parks with active recreational fields, such as parks with athletic fields, however, the applied water must be limited to the amount which will just keep the turfgrass alive to minimize affects to public health and safety. Customers who irrigate turf with drinking water during a Water Shortage Stage 5 condition shall only be permitted by, and in accordance with the provisions of, a turf watering permit obtained from the District's General Manager, or their designee. (Mandatory Prohibition)
4. **Watering Day Limits.** Watering or irrigating of trees, woody shrubs, or food-producing crops for residential use with drinking water is limited to 1 day per week in all months. Exceptions to the water days limit include:
    a. Customers who submit a written request to the General Manager for approval of an alternative watering plan. The General Manager, or their designee, may approve such plan upon determining that the alternate plan, in conjunction with other conservation measures, achieves an equivalent level of water conservation. If approved, the customer shall have the burden of showing that the alternate plan continues to achieve an equivalent level of water conservation, or the General Manager's approval will be revoked, and the customer will be subject to the "water days" regulations described in this subsection. (Mandatory Prohibition)
5. **Limits on Commercial Agriculture and Nurseries.** Commercial agriculture and nursery irrigation with drinking water is limited to 50% of monthly five-year average use. (Demand Reduction)
6. **Prohibition on Filling All Recreational Water Features.** Filling, re-filling, or adding of potable water to residential swimming pools, spas, ponds or lakes is prohibited. (Mandatory Prohibition)

3.4.5.6 Water Shortage Stage 6

The District shall declare a Water Shortage Stage 6 when it determines there is a water shortage, or threatened shortage, of over 50%. During a Stage 6 condition, the District will implement additional mandatory prohibitions and shortage response actions to those implemented in Stages 1 through 5. The shortage response actions the District may implement under a Stage 6 appear below:

1. **Conduct Emergency Public Outreach**. The District would conduct emergency public outreach, as part of the District's overall emergency response programs. Messaging to focus on limiting water to essential uses only.
2. **Water Supply Allocation, as Necessary**. As deemed necessary, an allocation of water supply under a Water Shortage Stage 6 condition, beyond the District's shortage response actions under the Water Shortage Stages outlined in this Section, may be implemented.
3. **Prohibition on Watering with Drinking Water.** All outdoor irrigation with potable water is prohibited.

4. **Prohibition on Commercial Nurseries Using Drinking Water.** Commercial agriculture and nursery irrigation with potable water is prohibited.
5. **Prohibition of Vehicle Washing.** Washing of autos, trucks, trailers, boats, airplanes or other types of mobile equipment is prohibited. Washing is also prohibited at a commercial car wash.
6. **Other Water Response Shortage Action, as Needed.** The District reserves the right to implement other shortage response actions to appropriately respond to a water shortage emergency.

3.4.1 Demand Reduction

The demand reduction measures that would be implemented to address shortage levels are described in Table 3-4. This table indicates which actions align with specific defined shortage levels and estimates the extent to which that action will reduce the gap between supplies and demands to demonstrate to the that choose suite of shortage response actions can be expected to deliver the expected outcomes necessary to meet the requirements of a given shortage level. This table also identifies the enforcement action, if any, associated with each demand reduction measure.

3.4.1.1 Supply Augmentation

The supply augmentation actions are described in DWR Table 8-3 (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 City 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.

3.4.2 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 temporarily altering maintenance cycles, deferring planned system outages, and adjusting the flow and routing of water through its system to more effectively distribute available supply across the service area. In addition, the District can...

3.4.3 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 additional mandatory restrictions in the Water Shortage Response Ordinance (Appendix B).

3.4.4 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 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.

3.4.4.1 Metropolitan

Metropolitan has comprehensive plans for stages of actions it would undertake to address a catastrophic interruption in water supplies through its WSDM and WSAP. Metropolitan 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, Metropolitan 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 Delta that would cause levee failure and disruption of SWP deliveries.

3.4.4.2 Water Emergency Response of Orange County

In 1983, the Orange County water community identified a need to develop a plan on how agencies would respond effectively to disasters impacting the regional water distribution system. The collective efforts of these agencies resulted in the formation of the Water Emergency Response Organization of Orange County (WEROC) to coordinate emergency response on behalf of all Orange County water and wastewater agencies, develop an emergency plan to respond to disasters, and conduct disaster training exercises for the Orange County water community. WEROC was established with the creation of an indemnification agreement between its member agencies to protect each other against civil liabilities and to facilitate the exchange of resources. WEROC is unique in its ability to provide a single point of contact for representation of all water and wastewater utilities in Orange County during a disaster. This representation is to the county, state, and federal disaster coordination agencies. Within the Orange County Operational Area, WEROC is the recognized contact for emergency response for the water community, including the Trabuco Canyon Water District.

3.4.4.3 Trabuco Canyon 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.

3.4.5 Seismic Risk Assessment and Mitigation Plan

Per the Water Code Section 10632.5, Suppliers are required to assess seismic risk to water supplies as part of their WSCP. The plan also must include the mitigation plan for the seismic risk(s). Given the great distances that imported supplies travel to reach Orange County, the region is vulnerable to interruptions along hundreds of miles aqueducts, pipelines and other facilities associated with delivering the supplies to the region. Additionally, the infrastructure in place to deliver supplies are susceptible to damage from earthquakes and other disasters.

In lieu of conducting their own seismic risk assessment, the District has included the local hazard mitigation plan or multihazard mitigation plan that is required under the federal Disaster Mitigation Act of 2000 (Public Law 106-390). The District's HMP evaluates hazards applicable to all jurisdictions in its entire planning area, prioritized based on probability, location, maximum probable extent, and secondary impacts. The identification of hazards is highly dependent on the location of facilities within the District's jurisdiction and takes into consideration the history of the hazard and associated damage, information provided by agencies specializing in a specific hazard, and relies upon the District's expertise and knowledge.

Earthquake fault rupture and seismic hazards, including ground shaking and liquefaction, are among the highest ranked hazards to the region as a whole because of its long history of earthquakes, with some resulting in considerable damage. A significant earthquake along one of the major faults could cause substantial casualties, extensive damage to infrastructure, fires, damages and outages of water and wastewater facilities, and other threats to life and property.

Nearly all of Orange County is at risk of moderate to extreme ground shaking, with liquefaction possible throughout much of Orange County but the most extensive liquefaction zones occurring in coastal areas. Based on the amount of seismic activity that occurs within the region, there is no doubt that communities within Orange County will continue to experience future earthquake events, and it is a reasonable assumption that a major event will occur within a 30-year timeframe.

It was determined that the overarching mitigation goals were the same for all of MWDOC's member agencies, and thus, one set of goals were identified for MWDOC's HMP, which include:

Goal 1: Minimize vulnerabilities of critical infrastructure to minimize damages and 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 in order to increase community resilience.

Goal 5: Eliminate or minimize wastewater spills and overflows.

Goal 6: Protect water quality and supply, critical aquatic resources, and habitat to ensure a safe water supply.

Goal 7: Strengthen Emergency Response Services to ensure preparedness, response, and recovery during any major or multi-hazard event.

The capabilities assessment is designed to identify existing local agencies, personnel, planning tools, public policies and programs, technology, and funds that have the capability to support hazard mitigation activities and strategies.

The mitigation actions identify the hazard, proposed mitigation action, location/facility, local planning mechanism, risk, cost, timeframe, possible funding sources, status, and status rationale, as applicable. For the District, District-specific mitigation actions for seismic risks include:

3.4.6 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 Table 3-4. To the extent feasible,

Trabuco Canyon Water 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 emergency water shortage situation, such as may result from an earthquake, or a longer-term, non-emergency, shortage condition, such as may result from a drought. In an emergency, the District will activate the communication protocol detailed in the Emergency Response Plan. In a non-emergency water shortage situation, the District will implement follow the communication protocols described below.

Per the Water Code Section 10632 (a)(5), the City 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 water supply and demand assessment described pursuant to Section 10632.1; and any other relevant communications.

Non-emergency 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 City's supply and demand response status.

The type and degree of communication varies with each shortage level, thus predefined and actionable communication protocols improve the City's ability to message necessary events. 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.

The District has outlined a water shortage response approach. Example information and materials to support public outreach are included in Appendix X.

Table 3-2: Communication Procedures

Shortage level	Communication Objectives	Communication Tools
1	Compliance with response actions, 10% reduction in water use	

2	Compliance with response actions, 20% reduction in water use	
3	Compliance with response actions, 30% reduction in water use	
4	Compliance with response actions, 40% reduction in water use	
5	Compliance with response actions, 50% reduction in water use	
6	Compliance with response actions, >50% reduction in water use	

3.6 Compliance and Enforcement

Per the Water Code Section 10632 (a)(6), the City has defined customer compliance, enforcement, appeal, and exemption procedures for triggered shortage response actions. Procedures to ensure customer compliance are described in Section 3.5 and customer enforcement, appeal, and exemption procedures are defined in the Water Shortage Response Ordinance (Appendix B).

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 Trabuco Canyon Water District to implement and enforce its shortage response in Water Shortage Response Ordinance (Appendix B).

*Per Water Code Section 10632 (a)(7) (B), t*he 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), th*e District shall coordinate with any City 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 3-8 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 3-2: Agency Contacts and Coordination Protocols

Contact	Agency	Coordination Protocols
Director	County of Orange Public Works	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 may also decrease as less water is pumped through the system, resulting in lower power costs. 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.

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.

3.9 Monitoring and Reporting

Per Water Code Section 10632(a)(9), the Trabuco Canyon Water 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 production figures are recorded 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 Metropolitan 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 Metropolitan calls for extraordinary conservation, Metropolitan'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 both MWDOC to monitor and discuss monthly water allocation charts. This will enable the District to be aware of import and groundwater use on a timely basis as a result of specific actions taken responding to the District's Water Shortage Contingency Plan.

3.10 WSCP Refinement Procedures

Per Water Code Section 10632 (a)(10), the Trabuco Canyon Water 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 revised and updated during the UWMP update cycle to incorporate updated and new information. For example, new supply augmentation actions will 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 will routinely consider the functionality the

overall WSCP and will prepare recommendations for District Board of Directors if changes are found to be needed.

3.11 Special Water Feature Distinction

Per Water Code Section 10632 (b), the Trabuco Canyon Water District has defined water features in 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 Response Ordinance (Appendix B).

3.12 Plan Adoption, Submittal, and Availability

Per Water Code Section 10632 (a)(c), Trabuco Canyon Water District provided notice of the availability of the draft 2020 UWMP and draft 2020 WSCP and notice of the public hearing to consider adoption of the WSCP. The public review drafts of the 2020 UWMP and the 2020 WSCP were posted prominently on Trabuco Canyon Water District website, [WEBSITE.COM], on [DATE], more than 60 days in advance of the public hearing on [DATE]. Copies of the draft WSCP were also made available for public inspection at the Trabuco Canyon Water District Clerk's and Utilities Department offices and public hearing notifications were published in local newspapers. A copy of the published Notice of Public Hearing is included in Appendix ?.

[AGNECY] held the public hearing for the draft 2020 UWMP and draft WSCP on [DATE], at the [City Council/Board] meeting. The Trabuco Canyon Water District [Council/Board] reviewed and approved the 2020 UWMP and the WSCP at its May 4, 2021 meeting after the public hearing. See Appendix ? for the resolution approving the WSCP.

By July 1, 2021, the Trabuco Canyon Water District's adopted 2020 UWMP and WSCP was filed with DWR, California State Library, and the County of Orange. The Trabuco Canyon Water District will make the WSCP available for public review on its website no later than 30 days after filing with DWR.

Based on DWR's review of the WSCP, the Trabuco Canyon Water District will make any amendments in its adopted WSCP, as required and directed by DWR.

If the Trabuco Canyon Water 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.

Tables

Figures

Appendix A

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Annual Supply and Demand Procedures

Appendix B

Communication Procedures

Appendix C

Appendix D

AGENCY WATER SHORTAGE CONTIGENCY RESPONSE ORDINANCE (DATE)

Appendix E

Appendix F

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