# Rainbow Municipal Water District

## 2025 Water Shortage Contingency Plan Public Draft

RAINBOW
MUNICIPAL WATER DISTRICT

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# 2025 Water Shortage Contingency Plan Public Draft

**Prepared by**

**Engineering Resources of Southern California**


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# Executive Summary

## Background

The Water Shortage Contingency Plan (WSCP) is an integral part of the Urban Water Management Plan (UWMP). These documents were prepared in accordance with the Urban Water Management Planning Act (Act) defined by the California Water Code (CWC), Division 6, Part 2.6, Sections 10610 through 10657.

The WSCP documents how Rainbow Municipal Water District (District) will respond in the event of a water shortage. A water shortage means that the available water supply cannot sufficiently meet the normally expected customer water use at a given point in time. The plan provides guidance for managing and mitigating a potential shortage of water supply in coordination with the District's emergency response plan.

## Analysis

In 2022, issuance of an annual Water Supply and Demand Assessment was enacted as a new reporting requirement. This WSCP provides detailed information about the assessment process based on recent guidelines provided by the California Department of Water Resources (DWR).

The District's wholesaler has a robust supply portfolio that includes the State Water Project, the Colorado River Aqueduct, and extensive regional surface storage. The management of these resources, and subsequently the impact of a supply shortage at the wholesale level, is reduced at the retail level.

There are six water shortage levels. When a water shortage is declared, the District will implement water reduction actions appropriate for the water shortage level identified. In the event of a Level 1 Shortage, administrative and operational adjustment will be sufficient to mitigate the deficit without imposing water reduction constraints on customers. As higher shortage levels are declared, the District will communicate to customers, implement and enforce progressively stricter water reduction actions until the shortage declaration has been lifted.

Responding to a water shortage may impose financial consequences in terms of reduced revenue and increase costs of monitoring, implementing, and enforcing water use reduction actions. The District has a financial mitigation plan in place to avoid impacts on customers.

# Recommendations

Implementation of the WSCP is recommended. In addition, the District should consider the following:

## Ordinance No. 16-10

The WSCP references Ordinance No. 16-10 (An Ordinance of Rainbow Municipal Water District Adopting a Drought Response Conservation Program) concerning authority to implement and enforce water demand reduction actions in the event of a declared water shortage. Since adoption of the ordinance, several relevant changes have occurred:

- The District has changed wholesale water suppliers from the San Diego County Water Authority to Eastern Municipal Water District. This means new wholesaler programs and policies are in place.
- Retailer impact of a wholesale supply shortage is now tied to the Water Supply Allocation Plan (WSAP) of the Metropolitan Water District of Southern California (MWD). The WSAP outlines operational changes in management of wholesale deliveries to reduce the impact on retailers. Specifically, MWD will make up for supply shortages on the State Water Project and Colorado River Aqueduct by drawing down surface storage.
- The District has experienced a nearly 50 percent reduction in average annual demand, primarily in the agricultural sector. This means that a supply shortage will have a smaller impact and variation in demand is less volatile, reducing the likelihood and severity of a shortage.

The District may consider reviewing the impact of these changes on the Ordinance and making appropriate amendments in due course.

## Seismic Mitigation

The plan identified seismic risk associated with the District's infrastructure and equipment. The District may consider reviewing and quantifying seismic risk and developing mitigation strategies for critical or vulnerable assets, as needed.

## Adoption

Following public review of the Draft WSCP and following consideration and incorporation of any public comments received during the public hearing, adoption by resolution is recommended.

# Chapter 1 – Introduction and Overview

> ***Water Code Section 10632.3***
>
> *It is the intent of the Legislature that, upon proclamation by the Governor of a state of emergency under the California Emergency Services Act (Chapter 7 (commencing with Section 8550) of Division 1 of Title 2 of the Government Code) based on drought conditions, the board defer to implementation of locally adopted water shortage contingency plans to the extent practicable.*

The Water Shortage Contingency Plan (WSCP) documents how Rainbow Municipal Water District (District) will respond in the event of a water shortage. A water shortage means that the available water supply cannot sufficiently meet the normally expected customer water use at a given point in time. This WSCP provides guidance for managing and mitigating a potential shortage of water supply. In the event of any water shortage emergencies, this WSCP should be followed in coordination with the District's emergency response plan.

The Eastern Municipal Water District (EMWD) is a wholesale water supplier that provides 100 percent of the supply to the District. EMWD has their own WSCP that guides their response to a water shortage in coordination with the Metropolitan Water District of Southern California (MWD).

The WSCP is an element of the District's Urban Water Management Plan (UWMP), both of which are updated every five years in accordance with the California Water Code (CWC) and submitted to the California Department of Water Resources (DWR). The WSCP must be able to be amended separately from the UWMP. As such there is the flexibility to be able to separate the WSCP from the UWMP for future needs.

## 1.1 – Report Organization

### 1.1.1 – Citation of Water Code

By convention, Water Code citations from the Guidebook are provided as shown below, italicized in a frame with a grey background.

> ***Water Code Section XXXXX***
>
> *(X) Direct excerpt from the Water Code as presented in the Guidebook.*

The intent of including relevant excerpts from the Water Code is to give the reader a perspective linking statute and regulations to the content of the plan.

## 1.1.2 – Description of Chapters

The WSCP is structured as recommended by DWR in the 2025 Urban Water Management Plan Guidebook. The WSCP consists of the following chapters:

**Chapter 1 – Introduction and Overview**

This chapter is used to provide a discussion on the fundamentals of the WSCP.

**Chapter 2 – Water Supply Reliability Analysis**

This chapter provides information on coordination between the UWMP and the WSCP.

**Chapter 3 – Annual Assessment Procedures**

This chapter describes the methods, tables, and submittal process for the preparation of an annual water supply and demand assessment.

**Chapter 4 – Six Standard Water Shortage Levels**

This chapter delineates the shortage levels and describes the impact of a wholesaler supply shortage on the retailers.

**Chapter 5 – Shortage Response Actions**

This chapter details the various methods to reduce demand in response to a shortage.

**Chapter 6 – Emergency Response Plan**

In this chapter, the District's emergency response plan is presented.

**Chapter 7 – Communication Protocols**

This chapter summarizes methods for communicating water supply shortage and responses with the public and other government bodies.

**Chapter 8 – Compliance and Enforcement**

This chapter delineates aspects of Ordinance No. 16-10 related to compliance and enforcement of water use reduction policy.

**Chapter 9 – Legal Authority**

This chapter cites aspects of Ordinance No. 16-10 that authorize the District to enforce and compel compliance with water use reduction policy.

**Chapter 10 – Financial Consequences**

This chapter observes potential financial consequences of WSCP implementation including loss of revenue and costs associated with monitoring, communication, conservation program execution, and enforcement.

**Chapter 11 – Monitoring and Reporting**

This chapter describes collecting, tracking, and analyzing appropriate data under the various shortage levels.

**Chapter 12 – WSCP Refinements and Procedures**

This chapter delineates the procedures required for submitting an amended WSCP.

**Appendices**

Additional information and documentation are provided to support and further clarify content included in the main chapters. Providing additional information strengthens the plan and offers a complete and well-supported planning document for use by the public and stakeholders.

## 1.2 – Urban Water Management Planning and the California Water Code

The WSCP is an integral component of the UWMP. The UWMP was prepared in accordance with the Urban Water Management Planning Act (Act) defined by CWC, Division 6, Part 2.6, and Sections 10610 through 10657. The Act became part of the CWC with the passage of Assembly Bill 797 during the 1983-1984 regular session of the California legislature. The Act requires every urban water supplier providing water for municipal purposes to more than 3,000 connections or supplying more than 3,000 acre-feet (AF) of water annually to adopt and submit an UWMP every five years to DWR.

## 1.3 – Updated Guidance for 2025 Urban Water Management Plans

The Urban Water Management Plan Guidebook was made available by DWR in January 2026. The Guidebook presents applicable legislation, legislative interpretation of minimum requirements, examples and methods for preparing contents, preferences for regulatory review, and supporting research.

## 1.4 – Annual Water Supply and Demand Assessment Guidance

The 2022 Annual Water Supply and Demand Assessment Guidance presents applicable legislation, minimum requirements, examples and methods for preparing annual assessments. See Chapter 3 for additional details.

## 1.5 – Submittal Tables

> ***Water Code Section 10644***
>
> *(a)(2) The plan, or amendments to the plan, submitted to the department … shall include any standardized forms, tables, or displays specified by the department.*

The Water Use Efficiency (WUE) Tables were uploaded via the portal. Copies of the WUE Tables specific to the WSCP are provided in Appendix A.

## 1.6 – Relation to Other Efforts

The District's 2025 WSCP integrates with related planning efforts of MWD, EMWD, the County of San Diego, and others. Key related planning efforts are listed below:

- RMWD Emergency Response Plan
- Eastern Municipal Water District 2025 WSCP
- Metropolitan Water District of Southern California WSCP
- Metropolitan Water District of Southern California Water Supply Allocation Plan (WSAP)
- San Diego County Multi-Jurisdictional Hazard Mitigation Plan

## 1.7 – Department of Water Resources Review Process

Upon submittal, DWR will review the WSCP to ensure that it addresses Water Code requirements. Following the review, the District will be notified of the results via a formal review letter.

## 1.8 – Grant or Loan Eligibility

The WSCP is an integral component of the UWMP submittal. By virtue of submitting a compliant UWMP, the District is eligible for State grants and low interest loans.

***Water Code Section 10608.56***

*(a) On and after July 1, 2016, an urban retail water supplier is not eligible for a water grant or loan awarded or administered by the state unless the supplier complies with this part.*

*(c) Notwithstanding subdivision (a), the department shall determine that an urban retail water supplier is eligible for a water grant or loan even though the supplier has not met the per capita reductions required pursuant to Section 10608.24, if the urban retail water supplier has submitted to the department for approval a schedule, financing plan, and budget, to be included in the grant or loan agreement, for achieving the per capita reductions. The supplier may request grant or loan funds to achieve the per capita reductions to the extent the request is consistent with the eligibility requirements applicable to the water funds.*

*(e) Notwithstanding subdivision (a), the department shall determine that an urban retail water supplier is eligible for a water grant or loan even though the supplier has not met the per capita reductions required pursuant to Section 10608.24, if the urban retail water supplier has submitted to the department for approval documentation demonstrating that its entire service area qualifies as a disadvantaged community.*

*(f) The department shall not deny eligibility to an urban retail water supplier or agricultural water supplier in compliance with the requirements of this part and Part 2.8 (commencing with Section 10800), that is participating in a multiagency water project, or an integrated regional water management plan, developed pursuant to Section 75026 of the Public Resources Code, solely on the basis that one or more of the agencies participating in the project or plan is not implementing all of the requirements of this part or Part 2.8 (commencing with Section 10800).*

***Water Code Section 10656***

*An urban water supplier is not eligible for a water grant or loan awarded or administered by the state unless the urban water supplier complies with this part.*

***23 CCR Section 596.1***

*(b)(2) "disadvantaged community" means a community with a median household income that is less than 80 percent of the statewide annual median household income.*

## 1.9 – Units of Measurement

The WSCP uses acre-feet for calculations in the WUE Tables.

## 1.10 – Acronyms and Abbreviations

Common acronyms and abbreviations are used throughout the plan. By convention, the first appearance is written out followed by the acronym or abbreviation in parentheses, and subsequent appearances use only the acronym or abbreviation.

| | |
|---|---|
| Act | Urban Water Management Planning Act |
| AD | Domestic Agriculture |
| ADD | average day demand |
| AF | acre-feet |
| AFY | acre-feet per year |
| AG | Agriculture |
| CIMIS | California Irrigation Management Information System |
| CM | Commercial Family |
| CN | Construction |
| CWC | California Water Code |
| District | Rainbow Municipal Water District |
| DWR | California Department of Water Resources |
| EMWD | Eastern Municipal Water District |
| EOC | Emergency Operations Center |
| ERP | Emergency Response Plan |
| MF | Multi-Family Residential |
| MG | million-gallon |
| MWD | Metropolitan Water District of Southern California |
| RMWD | Rainbow Municipal Water District |
| SCADA | supervisory control and data acquisition system |
| SDG&E | San Diego Gas & Electric |
| SF | Single Family Residential |
| UWMP | Urban Water Management Plan |
| WSAP | Water Supply Allocation Plan |
| WSCP | Water Shortage Contingency Plan |
| WUE | Water Use Efficiency |

## 1.11 – Acknowledgements

The District appreciates the participation of the following individuals in preparing, reviewing, and contributing to the UWMP:

**Rainbow Municipal Water District**

- Jake Wiley, P.E. – General Manager
- Chad Williams – Engineering & CIP Program Manager
- Konstantin Shilkov, CPA – Chief Financial Officer/Treasure
- Esther Lan – Management Analyst
- Terese Quintanar – District Secretary

**Engineering Resources of Southern California**

- Anthony Herda, P.E. – Senior Principal Engineer
- Trent Brudin, P.E. – Engineering Manager
- Braniah Washington – Engineering Aide

**Eastern Municipal Water District**

- Kylee Wideman – Water Resources Specialist Associate

# Chapter 2 – Water Supply Reliability Analysis

***Water Code Section 10632(a)(1)***

*The analysis of water supply reliability conducted pursuant to Section 10635.*

***Water Code Section 10632.5.(a)***

*In addition to the requirements of paragraph (3) of subdivision (a) of Section 10632, beginning January 1, 2020, the plan shall include a seismic risk assessment and mitigation plan to assess the vulnerability of each of the various facilities of a water system and mitigate those vulnerabilities.*

The water supply reliability analysis is documented in Chapter 7 of the UWMP. To comply with the Water Code, the analysis is summarized in this section. The reliability of supplies and the key issues that may create shortage conditions relative to the District's water supply portfolio are summarized below.

## 2.1 – Water System Reliability

The water system reliability analysis to meet demands in normal year, single dry year, and five consecutive dry years is described narratively and in tabulated format in Chapter 7 of the UWMP. Historically, EMWD supply has been very reliable with only occasional supply reductions during droughts impacting the State Water Project or the Colorado River Watershed. The District anticipates there will be no supply shortages under normal year, single dry year, or five consecutive dry years condition through 2050.

## 2.2 – Key Risks for a Potential Shortage Condition

Though the District's supply is highly reliable, there are scenarios that could result in the declaration of water shortage stage conditions. For example, water shortage stages may be declared if the California Governor enacts an Executive Order calling for water demand reductions. Below is a list of the key risks to the District's supply that could potentially result in a shortage condition.

- Statewide or regional drought circumstances that lead to water supply allocations or cutbacks
- Regulatory restrictions enacted upon imported supplies
- Earthquakes or other hazards that may cause catastrophic failure of conveyances for water supplies from the State Water Project or the Colorado River Aqueduct

# Chapter 3 – Annual Assessment Procedures

The annual water supply and demand assessment (Annual Assessment) is conducted and submitted to DWR on or before July 1 of each year. The following sections delineate reporting requirements from the DWR 2022 Annual Water Supply and Demand Assessment Guidance[1]. Referenced assessment tables are provided in Appendix B.

## 3.1 – Decision Making Process to Determine Water Supply Reliability

> ***Water Code Section 10632(a)(2)***
>
> *The procedures used in conducting an annual water supply and demand assessment that include, at a minimum, both of the following:*
>
> *(A) The written decision-making process that an urban water supplier will use each year to determine its water supply reliability.*

In the **Annual Assessment Information** table, the District provides the following:

- **Start and end month for the Annual Assessment planning cycle:** 12-month period prior to assessment development, typically May of the previous year through April of the current year.
- **Data reporting interval:** monthly, as preferred by DWR.
- **Volume Unit for Reported Supply and Demand:** acre-feet (AF), as used in the District's internal Patrol Reports and the Water Usage Reports.
- **Water Supplier's Contact Information:** information identifying the District.
- **Preparer's Contact Information:** contact information for the assessment preparer, whether internal or outsourced.
- **WSCP Title:** Rainbow Municipal Water District 2025 Water Shortage Contingency Plan.
- **WSCP Adoption Date:** to be updated following adoption.
- **Other Annual Assessment Related Activities:** any changes to assessment procedures.

[1] California Department of Water Resources. (April 2022). *Annual Water Supply and Demand Assessment Guidance.* https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Water-Use-And-Efficiency/Urban-Water-Use-Efficiency/Annual-Water-Supply-and-Demand-Assessment/AWSDA-Final-Guidance-4-2022.pdf

## 3.2 – Key Data Inputs to Evaluate Water Supply Reliability

***Water Code Section 10632(a)(2)***

*(B) The key data inputs and assessment methodology used to evaluate the urban water supplier's water supply reliability for the current year and one dry year, including all of the following:*

*(i) Current year unconstrained demand, considering weather, growth, and other influencing factors, such as policies to manage current supplies to meet demand objectives in future years, as applicable.*

*(ii) Current year available supply, considering hydrological and regulatory conditions in the current year and one dry year. The annual supply and demand assessment may consider more than one dry year solely at the discretion of the urban water supplier.*

*(iii) Existing infrastructure capabilities and plausible constraints.*

*(iv) A defined set of locally applicable evaluation criteria that are consistently relied upon for each annual water supply and demand assessment.*

*(v) A description and quantification of each source of water supply.*

The District will provide a description of the data used to evaluate water supply reliability, per the following subsections.

### 3.2.1 – Current Year Unconstrained Demand

***Water Code Section 10632(a)(2)***

*(B) The key data inputs and assessment methodology used to evaluate the urban water supplier's water supply reliability for the current year and one dry year, including all of the following:*

*(i) Current year unconstrained demand, considering weather, growth, and other influencing factors, such as policies to manage current supplies to meet demand objectives in future years, as applicable.*

In the **Key Data Inputs – Demands** table, the District will review unconstrained demand for the current year and provide an estimate of projected dry year demand for the next year. Projections have been calculated based on data information presented in the UWMP, analysis of historical billing data, and the influence of weather variation on irrigation requirements. (See Appendix C). The preparer may adjust the projections as needed based on interpretation of the current year's unconstrained demand.

## 3.2.2 – Current Year Available Supply

> ***Water Code Section 10632(a)(2)***
>
> *(B) The key data inputs and assessment methodology used to evaluate the urban water supplier's water supply reliability for the current year and one dry year, including all of the following:*
>
> *(ii) Current year available supply, considering hydrological and regulatory conditions in the current year and one dry year. The annual supply and demand assessment may consider more than one dry year solely at the discretion of the urban water supplier.*
>
> *(iii) Existing infrastructure capabilities and plausible constraints.*
>
> *(v) A description and quantification of each source of water supply.*

In the **Key Data Inputs – Supplies** table, the District will enter input provided by EMWD on projected supply availability. Unless a shortage has been declared by MWD, supply is anticipated to be available commensurate with projected demands.

## 3.2.3 – Existing Infrastructure Capabilities and Plausible Constraints

> ***Water Code Section 10632(a)(2)***
>
> *(B) The key data inputs and assessment methodology used to evaluate the urban water supplier's water supply reliability for the current year and one dry year, including all of the following:*
>
> *(iii) Existing infrastructure capabilities and plausible constraints.*

The District receives supply via two MWD transmission pipelines through multiple interties. District will enter input provided by EMWD on projected changes to MWD infrastructure that would constitute a constraint or reduction in capacity.

## 3.2.4 – Assessment Methodology: Locally Applicable Evaluation Criteria

> ***Water Code Section 10632(a)(2)***
>
> *(B) The key data inputs and assessment methodology used to evaluate the urban water supplier's water supply reliability for the current year and one dry year, including all of the following:*
>
> *(iv) A defined set of locally applicable evaluation criteria that are consistently relied upon for each annual water supply and demand assessment.*

The following assumptions are applied to unconstrained demand projections:

- Annual demands by sector are calculated by linear interpolation from 2025 demands in UWMP WUE Table 4-1 (Total Uses for Potable and Non-Potable Water - Actual) and 2030 demands in UWMP WUE Table 4-2 (Total Uses for Potable and Non-Potable Water - Projected), then scaled by a factor 1.3 to produce dry year characteristics. Note that the 2030 demands account for anticipated growth and impacts due to local economics.
- CN (Construction) and Calculated Losses are calculated as the annual demand divided by 12 months
- AD (Domestic Agriculture), (AG Agriculture), and CM (Commercial Family) are calculated as the annual demand divided by 12 months and scaled per variation of the Evapotranspiration Index presented in UWMP Table 3.1 (CIMIS Climate Data)
- IS (Institutional) are calculated as the annual demand divided by 12 months with outdoor water use estimated at 77.1% and scaled per variation of the Evapotranspiration Index
- MF (Multi-Family Residential) are calculated as the annual demand divided by 12 months with outdoor water use estimated at 41.4% and scaled per variation of the Evapotranspiration Index
- SF (Single Family Residential) are calculated as the annual demand divided by 12 months with outdoor water use estimated at 71.5% and scaled per variation of the Evapotranspiration Index

### 3.2.5 – Description and Quantification of Each Water Supply Source

***Water Code Section 10632(a)(2)***

*(B) The key data inputs and assessment methodology used to evaluate the urban water supplier's water supply reliability for the current year and one dry year, including all of the following:*

*(v) A description and quantification of each source of water supply.*

Supply is provided by MWD and delivered via EMWD. The vast majority of water supplied to the District comes from the Skinner Water Treatment Plant; however, MWD has a diverse supply portfolio augmented by regional storage. In the event a shortage has been declared by MWD, EMWD will provide the District with details on supply availability from associated MWD sources.

## 3.3 – Supply and Demand Analysis

***Water Code Section 10632.1***

*An urban water supplier shall conduct an annual water supply and demand assessment pursuant to subdivision (a) of Section 10632 and, on or before July 1 of each year, submit an annual water shortage assessment report to the department with information for anticipated shortage, triggered shortage response actions, compliance and enforcement actions, and communication actions consistent with the supplier's water shortage contingency plan. An urban water supplier that relies on imported water from the State Water Project or the Bureau of Reclamation shall submit its annual water supply and demand assessment within 14 days of receiving its final allocations, or by July 1 of each year, whichever is later.*

In the **Potable Water Shortage Assessment** table, the District enters the Anticipated Unconstrained Demand and Anticipated Total Water Supply. Under normal conditions, surpluses will be zero, since EMWD will deliver as much supply as necessary to meet demands. In the event MWD has declared a shortage, the corresponding shortfall will be calculated and used to implement appropriate Shortage Response Actions.

## 3.4 – Planned Shortage Response Actions

***Water Code Section 10632.1***

*An urban water supplier shall conduct an annual water supply and demand assessment pursuant to subdivision (a) of Section 10632 and, on or before July 1 of each year, submit an annual water shortage assessment report to the department with information for anticipated shortage, triggered shortage response actions, compliance and enforcement actions, and communication actions consistent with the supplier's water shortage contingency plan. An urban water supplier that relies on imported water from the State Water Project or the Bureau of Reclamation shall submit its annual water supply and demand assessment within 14 days of receiving its final allocations, or by July 1 of each year, whichever is later.*

In the **Planned Water Shortage Response Actions** table, the District will identify appropriate Demand Reduction Actions for Table 5.1 and estimate the associated volume saved.

## 3.5 – Compiling and Submitting Annual Water Shortage Assessment Report

***Water Code Section 10631.2***

*An urban water supplier shall conduct an annual water supply and demand assessment pursuant to subdivision (a) of Section 10632 and, on or before July 1 of each year, submit an annual water shortage assessment report to the department with information for anticipated shortage, triggered shortage response actions, compliance and enforcement actions, and communication actions consistent with the supplier's water shortage contingency plan. An urban water supplier that relies on imported water from the State Water Project or the Bureau of Reclamation shall submit its annual water supply and demand assessment within 14 days of receiving its final allocations, or by July 1 of each year, whichever is later.*

Under normal conditions, EMWD will deliver as much supply as necessary to meet demands. In this case, the District will submit the following tables electronically via the WUE Data Portal:

- Completed Table 1: Annual Assessment Information
- Completed Table 2: Water Demands
- Completed Table 3: Water Supplies
- Completed Table 4: Tables 4(P) – Potable Water Shortage Assessment
- Completed Table 5: Planned Water Shortage Response Actions

Under an MWD declared water shortage or other wholesaler conditions resulting and supply constraints, EMWD will reduce supply deliveries according to the MWD Water Shortage Allocation Plan. In this case, the District will also prepare and submit the following report electronically via the WUE Data Portal:

- Optional written report on the Annual Assessment and Annual Shortage Report

# Chapter 4 – Six Standard Water Shortage Levels

***Water Code Section 10632(a)(3)***

*(A) Six standard water shortage levels corresponding to progressive ranges of up to 10, 20, 30, 40, and 50 percent shortages and greater than 50 percent shortage. Urban water suppliers shall define these shortage levels based on the suppliers' water supply conditions, including percentage reductions in water supply, changes in groundwater levels, changes in surface elevation or level of subsidence, or other changes in hydrological or other local conditions indicative of the water supply available for use. Shortage levels shall also apply to catastrophic interruption of water supplies, including, but not limited to, a regional power outage, an earthquake, and other potential emergency events.*

*(B) An urban water supplier with an existing water shortage contingency plan that uses different water shortage levels may comply with the requirement in subparagraph (A) by developing and including a cross-reference relating its existing categories to the six standard water shortage levels.*

The District has developed a six-stage WSCP that defines the shortage levels based upon the percent of water supply shortage in comparison to unconstrained demand, as shown in Table 4.1.

**Table 4.1 – WSCP Levels**

| Standard Shortage Levels | Percent Shortage Range | Wholesaler Shortage Level | Retailer Shortage Condition |
|---|---|---|---|
| 1 | Up to 10% | Up to 90% of WSA | 96.7% to 100% of unconstrainted demand |
| 2 | Up to 20% | Up to 80% of WSA | 93.3% to 96.7% of unconstrained demand |
| 3 | Up to 30% | Up to 70% of WSA | 90% to 93.3% to of unconstrained demand |
| 4 | Up to 40% | Up to 60% of WSA | 86.7% to 90% of unconstrained demand |
| 5 | Up to 50% | Up to 50% of WSA | 83.3% to 86.7% of unconstrained demand |
| 6 | >50% | Less than 50% of WSA | Less than 83.3% of unconstrained demand |

The six standard water shortage levels correspond to progressively increasing estimated supply shortage conditions and align with the response action the District would implement to meet the severity of the impending supply shortages.

As described in §2.2 (Key Risks for a Potential Shortage Condition), MWD has studied potential impacts in detail and developed a water supply allocation calculation to quantify the availability of wholesaler supply to dependent retailers in the event of a shortage. A copy of relevant portions of the MWD 2014 Water Supply Allocation Plan[2] (WSAP) is provided in Appendix D.

[2] Metropolitan Water District of Southern California. (December 2014). *Water Supply Allocation Plan*. https://bda.mwdh2o.com/Member%20Agency%20Materials%20%20Secure/0_Reference/Water%20Supply%20Allocation%20Plan%20(2014).pdf

# Chapter 5 – Shortage Response Actions

***Water Code Section 10632 (a)(4)***

*Shortage response actions that align with the defined shortage levels and include, at a minimum, all of the following:*

*(A) Locally appropriate supply augmentation actions.*

*(B) Locally appropriate demand reduction actions to adequately respond to shortages.*

*(C) Locally appropriate operational changes.*

*(D) Additional, mandatory prohibitions against specific water use practices that are in addition to state-mandated prohibitions and appropriate to the local conditions.*

*(E) For each action, an estimate of the extent to which the gap between supplies and demand will be reduced by implementation of the action.*

***Water Code Section 10632.2***

*An urban water supplier shall follow, where feasible and appropriate, the prescribed procedures and implement determined shortage response actions in its water shortage contingency plan, as identified in subdivision (a) of Section 10632, or reasonable alternative actions, provided that descriptions of the alternative actions are submitted with the annual water shortage assessment report pursuant to Section 10632.1. Nothing in this section prohibits an urban water supplier from taking actions not specified in its water shortage contingency plan, if needed, without having to formally amend its urban water management plan or water shortage contingency plan.*

Shortage response actions are aligned with the defined shortage levels presented in Table 4.1. Shortage response actions include locally appropriate supply augmentation actions and locally appropriate demand reduction actions such as operational changes, mandatory prohibitions against specific water use practices, and state mandated prohibitions. Each shortage response action is intended to reduce a portion of the gap between supplies and demand. The percent of water demand reduction for each action is estimated in Section 5.1.

## 5.1 – Supply Augmentation

The District is wholly dependent on supply from MWD delivered via EMWD; therefore, supply augmentation options are limited.

The District maintains emergency interconnections with the City of Oceanside and Fallbrook Public Utilities District. In the event of a supply shortage, the District will contact its local partners about the opportunity for supply augmentation; however, access to emergency supply from these sources is subject to availability and is considered unavailable for a sustained supply shortage.

## 5.2 – Special Water Feature Distinction

> ***Water Code Section 10632 (b)***
>
> *For purposes of developing the water shortage contingency plan pursuant to subdivision (a), an urban water supplier shall analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas, as defined in subdivision (a) of Section 115921 of the Health and Safety Code.*

Water features that are not pools or spas are analyzed and defined separately from pools and spas in the WSCP. Non-pool or non-spa water features including ponds, lakes, waterfalls, and fountains that do not require the use of potable water for health and safety considerations, are defined as decorative water features and recreational water features and are included as such in the response actions and are enforced and monitored as part of the WSCP process.

Under all conditions and stages, the WSCP prohibits using potable water in an ornamental fountain or other decorative water feature, except where the water is part of a recirculating system.

## 5.3 – Demand Reduction

Prioritized use of available potable water during shortages is based on the difference between basic needs (i.e., drinking, toilet flushing) and discretionary uses (i.e., landscape irrigation), and legal requirements set forth in the California Water Code (CWC), Sections 350-358. Water reduction actions implemented during shortages will not affect the following water use types:

- Minimum health and safety allocations for interior residential needs (includes single family, multifamily, hospitals and convalescent facilities, retirement and mobile home communities, student housing, firefighting, and public safety)
- Commercial, industrial, institutional/governmental operations, where water is used for manufacturing, to meet minimum health and safety allocations for employees and visitors, or to maintain jobs and economic base of the community, but not for landscape uses
- Commercial growers or nurseries

Locally appropriate demand reduction actions to adequately respond to shortages are specified in Table 5.1

**Table 5.1 – Demand Reduction Actions**

| Shortage Level | Demand Reduction Action | Estimated Reduction (AFY) | Description (Calculation) |
|---|---|---|---|
| 1 through 5 | Offer Water Use Surveys | 124 | In coordination with EMWD, extend program to customers. (1% of ADD) |
| 1 through 5 | Provide Rebates on Plumbing Fixtures and Devices | 83 | In coordination with EMWD, offer rebates and devices to customers. (1% of non-AG) |
| 1 through 5 | Provide Rebates for Landscape Irrigation Efficiency | 83 | In coordination with EMWD, offer rebates and devices to customers. (1% of non-AG) |
| 1 through 5 | Provide Rebates for Turf Replacement | 167 | In coordination with EMWD, offer rebates. (2% of non-AG) |
| 1 through 5 | Reduce System Water Loss | 124 | Accelerate implementation of leak detection and repair program. (1% of ADD) |
| 2 through 5 | Landscape - Restrict or prohibit runoff from landscape irrigation | 42 | Enforce normal runoff prohibition. (0.5% of non-AG) |
| 2 through 5 | Customers repair leaks, breaks, and malfunctions | 62 | Repair all leaks within seventy-two (72) hours of notification by the District unless other arrangements are made with the General Manager. (0.5% of ADD) |
| 2 through 5 | Landscape - Prohibit certain types of landscape irrigation | 6 | Prohibit the irrigation with potable water of ornamental turf on public street medians. (10% of Institutional) |
| 2 through 5 | Landscape - Limit landscape irrigation to specific days | 457 | Limit residential and commercial landscape irrigation to no more than three (3) assigned days per week on a schedule established by the General Manager and posted by the District. (10% of Residential and Commercial) |

| Shortage Level | Demand Reduction Action | Estimated Reduction (AFY) | Description (Calculation) |
|---|---|---|---|
| 3 through 5 | Landscape - Prohibit certain types of landscape irrigation | 137 | Limit irrigation of landscaped areas, including trees and shrubs located on residential and commercial properties, and not irrigated by a landscape irrigation system using a bucket, hand-held hose with positive shut-off nozzle, or low-volume non-spray irrigation. (3% of Residential and Commercial) |
| 4 through 5 | Landscape - Limit landscape irrigation to specific times | 417 | Limit lawn watering and landscape irrigation using sprinklers to no more than ten (10) minutes per watering station per assigned day. This provision does not apply to landscape irrigation systems using water efficient devices, including but not limited to weather-based controllers, drip/micro-irrigation systems and stream rotor sprinklers. (5% of non-AG) |
| 5 | Water Features - Restrict water use for decorative water features, such as fountains | 17 | Prohibit the use of potable water in a fountain or other decorative water feature, except where the water is part of a recirculating system. (0.2% of non-AG) |
| 5 | CII - Restaurants may only serve water upon request | 4 | Prohibit the serving of drinking water other than upon request in eating or drinking establishments, including but not limited to restaurants, hotels, cafes, cafeterias, bars, or other public places where food or drink are served and/or purchased. (0.5% of Commercial Family) |
| 5 | Other - Prohibit vehicle washing except at facilities using recycled or recirculating water | 37 | Stop washing vehicles except at commercial carwashes that re-circulate water, or by high pressure/low volume wash systems. (0.3% of ADD) |
| 5 | Other - Prohibit use of potable water for washing hard surfaces | 83 | Prohibit the application of potable water to driveways and sidewalks. (1% of non-AG) |
| 5 | Moratorium or Net Zero Demand Increase on New Connections | 26 | No new potable water service shall be provided, no new temporary meters or permanent meters shall be provided, and no statements of immediate ability to serve or provide potable water service (such as, will serve letters, certificates, or letters of availability) shall be issued, unless (1) a valid, unexpired building permit has already been issued for the project; (2) In the opinion of the District Board of Directors the project is necessary to protect the public's health, safety, and welfare; or (3) The applicant provides substantial evidence of an enforceable binding 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. (40% of Construction) |
| 5 | Landscape - Limit landscape irrigation to specific days | 229 | Limit residential and commercial landscape irrigation to no more than two (2) assigned days per week on a schedule established by the General Manager and posted by the District. (5% of Residential and Commercial) |
| 6 | Other | 2,471 | The District may establish up to a 20% reduction in water allocation for any property served by the District. (20% of ADD) |

## 5.4 – Locally Appropriate Operational Changes

The following demand reduction actions listed in Table 5.1 are operational or administrative in nature and do not impose constraints on customers to reduce water usage:

**Wholesaler Coordination**

EMWD offers numerous educational and rebate programs aimed at water conservation. The District will work in coordination with EMWD on outreach and implementation to expand the coverage of those programs.

**Leak Detection and Repair**

The District plans to prepare a leak detection and repair pilot study for long-term water loss reduction. Once implemented, this program can be accelerated to increase loss reduction, as needed.

**Moratorium on New Connections**

The District may hold or curtail applications for new service until drought conditions have passed.

## 5.5 – Additional Mandatory Prohibitions

The following additional mandatory prohibitions are cited in Ordnance No. 16-10 with respect to a water use reduction goal of 40 percent.

- *Stop all landscape irrigation, except crops and landscape products of commercial growers and nurseries. This restriction shall not apply to the following categories of use unless the RMWD has determined that recycled water is available and may be lawfully applied to the use:*
    - *Maintenance of trees and shrubs by using a bucket, hand-held hose with a positive shut-off nozzle, or low-volume non-spray irrigation*
    - *Maintenance of existing landscaping necessary for fire protection as specified by the Fire Marshal of the local fire protection agency having jurisdiction over the property to be irrigated*
    - *Maintenance of existing landscaping for erosion control*
    - *Maintenance of plant materials identified to be rare or essential to the well being of rare animals*
    - *Maintenance of landscaping within active public facilities, including parks and playing fields, day care centers, school grounds, cemeteries, and golf course greens, provided that such irrigation does not exceed two (2) days per week*
    - *Watering of livestock*
    - *Public works projects and actively irrigated environmental mitigation projects*
- *Repair all water leaks within twenty-four (24) hours of notification by the RMWD*

*unless other arrangements are made with the General Manager.*

## 5.6 – Shortage Response Action Effectiveness

The purpose of implementing demand reduction and supply augmentation actions is to reduce water demand and increase other sources of supply to make up for the water shortage gaps. If implemented, the demand reduction outlined in Table 5.1 will allow the District to sufficiently meet the water shortage gaps at each shortage level. Table 5.2 presents the WSCP shortage gap reduction goals and compares them to the total shortage gap reduction possible if all demand reduction and supply augmentation actions are implemented for the associated shortage level.

**Table 5.2 – Shortage Gap Reduction**

| Standard Shortage Levels | Supply Shortage | Shortage Gap Reduction Goal | Shortage Reduction |
|---|---|---|---|
| 1 | 10% | 3.3% | 4.8% |
| 2 | 20% | 6.7% | 9.4% |
| 3 | 30% | 10.0% | 10.5% |
| 4 | 40% | 13.3% | 13.9% |
| 5 | 50% | 16.7% | 17.0% |
| 6 | >50% | 20.0% | 20.0% |

The Standard Shortage Levels and Supply Shortage are taken from Table 4.1.

The Shortage Gap Reduction Goal is the maximum retailer impact due to a wholesale shortage per the MWD Water Shortage Allocation Plan (WSAP). (See Appendix D)

The Shortage Reduction represents application of the of the Demand Reduction Actions from Table 5.1. Percentages are calculated as the cumulative estimate reduction estimate with respect to 2025 demands.

# Chapter 6 – Emergency Response Plan

A catastrophic water shortage could occur when a natural disaster such as an earthquake results in damage to water supply conveyances, other state water infrastructure, or District water facilities.

This could possibly result in deficient water supplies for the region and/or the District. In response to potential natural disasters and other emergencies, the District prepared an Emergency Response Plan (ERP) in 2018. The ERP includes standardized response and recovery procedures to minimize customer water service interruptions and to prevent, minimize, and mitigate human injury and infrastructure damage resulting from emergencies or disasters of human-made or natural origin. The information contained in the ERP is intended to prepare and guide staff and inform local emergency response agencies. The ERP includes plans, procedures, lists, and identification of equipment that may be useful during an emergency. The ERP includes the following sections:

- Section 1: Introduction
- Section 2: Emergency Planning Process
- Section 3: Mutual Aid System
- Section 4: Water System Information and Hazard Identification
- Section 5: Preparedness Phase Operations
- Section 6: Response Phase Overview
- Section 7: EOC Staff Assignments and Responsibility
- Section 8: Restoration and Recovery Phase
- Section 9: Mitigation Phase

Additionally, the ERP provides specific guidelines for the four items listed below. These guidelines give District emergency responders support when determining the necessary response actions to manage an incident in a timely manner.

- Establishing an Emergency Operations Center (EOC) including the location and resources required, as well as a secondary EOC if the primary EOC is compromised.
- Organization and responsibilities of the EOC personnel to evaluate and direct the overall response to the emergency.
- Strategies for emergency response, repair, and restoration of the water system.
- Responsibilities of District personnel during the emergency response.

## 6.1 – Seismic Risk Assessment and Mitigation Plan

***Water Code Section 10632.5.(a)***

*In addition to the requirements of paragraph (3) of subdivision (a) of Section 10632, beginning January 1, 2020, the plan shall include a seismic risk assessment and mitigation plan to assess the vulnerability of each of the various facilities of a water system and mitigate those vulnerabilities.*

*(b) An urban water supplier shall update the seismic risk assessment and mitigation plan when updating its urban water management plan as required by Section 10621.*

*(c) An urban water supplier may comply with this section by submitting, pursuant to Section 10644, a copy of the most recent adopted local hazard mitigation plan or multihazard mitigation plan under the federal Disaster Mitigation Act of 2000 (Public Law 106-390) if the local hazard mitigation plan or multihazard mitigation plan addresses seismic risk.*

A detailed seismic risk assessment of critical water infrastructure was conducted in 2021, and updates to that assessment are provided in the following sections. The original seismic assessment is included as an appendix in the RMWD 2020 WSCP available via the DWR WUE Data Portal[3].

### 6.1.1 – Supply

The District is fully reliant upon purchased imported potable water from Eastern Municipal Water District (EMWD), which relies upon two aqueducts to convey water to southern California. An earthquake may impact the source water supply if the aqueducts experience structural failure. Seismic assessment of the aqueducts and source water supply are covered under the EMWD and MWD seismic assessment components of their Water Shortage Contingency Plans.

The purchased water is delivered to the District through five interties and two emergency connections. An earthquake may cause structural failure at the interties and emergency connections, potentially causing water loss from pipe breakage or cracking.

[3] Rainbow Municipal Water District. (May 2020). *2020 Water Shortage Contingency Plan*. https://wuedata.water.ca.gov/public/uwmp_attachments/2768216788/Rainbow%202020%20WSCP%2Epdf

### 6.1.2 – Pipelines

The District's system includes 342 miles of distribution pipeline, ranging in diameter from 4-inch to 42-inches in diameter. Table 6.1 summarizes pipeline lengths by diameter. Ground shaking and liquefaction from earthquakes can cause pipes to crack at brittle joints and sink into the liquefied ground potentially causing significant sudden water loss, flood damage to nearby structures, and the inability to deliver water to some customers.

**Table 6.1 – Pipeline Summary**

| Diameter (inches) | Length (miles) |
|---|---|
| 4 | 4.8 |
| 6 | 66.0 |
| 8 | 125.6 |
| 10 | 18.5 |
| 12 | 48.7 |
| 14 | 20.6 |
| 16 | 24.8 |
| 18 | 13.9 |
| 20 | 10.7 |
| 22 | 0.6 |
| 24 | 5.8 |
| 27 | 0.3 |
| 30 | 0.8 |
| 36 | 0.4 |
| 42 | 0.5 |
| **Total** | **342** |

### 6.1.3 – Storage

The District has 4 reservoirs, three of which are operational, and 13 tanks, twelve of which are operational.

The three operational reservoirs are either concrete or asphalt lined. Reservoir failure from an earthquake can cause loss of control of water storage and downstream flooding of nearby structures.

There is one pre-stressed concrete tank, and the other 12 storage tanks are cylindrical above-ground steel tanks. Some common earthquakes effects on above ground tanks are structural stability failure, water sloshing inside the tank causing structural failure to the shell or roof, sliding off the foundation, cracking or shearing of walls for the concrete tank, and elephant foot buckling for steel tanks due to the overturning moment.

Table 6.2 lists the reservoirs and tanks by storage capacity. For security purposes, the designations and locations of storage infrastructure are considered sensitive and are therefore not disclosed in this plan.

**Table 6.2 – Storage Summary**

| Tank or Reservoir | Capacity (MG) |
|---|---|
| Tank 1 | 0.6 |
| Tank 2 | 1.5 |
| Tank 3 | 3.0 |
| Tank 4 | 3.5 |
| Tank 5 | 4.0 |
| Tank 6 | 4.0 |
| Tank 7 | 4.0 |
| Tank 8 | 4.0 |
| Tank 9 | 4.0 |
| Tank 10 | 4.0 |
| Tank 11 | 4.0 |
| Tank 12 | 6.0 |
| Reservoir 1 | 22.8 |
| Reservoir 2 | 151.5 |
| Reservoir 3 | 203.7 |
| **Total** | **420.6** |

### 6.1.4 – Pump Stations

There are 14 booster pump station facilities, each with between one and four pumps. The pump station buildings are susceptible to structural damage from earthquakes, and pump operations may be impacted by earthquake associated power outages. Liquefaction of the soil underlying the structures may occur, causing the entire facility and its assets to lose bearing strength and collapse.

### 6.1.5 – Pressure Reducing Stations

There are 48 pressure reducing stations, each with one or more hydraulically controlled valves. In the event of an earthquake, these valves could fail causing transmission failure and localized flooding.

### 6.1.6 – Telemetry

The District has a centralized Supervisory Control and Data Acquisition (SCADA) system to monitor and control the distribution system facilities. Earthquakes commonly cause power outages due to damage to power lines, transformers, and generators which could disrupt SCADA functionality.

### 6.1.7 – Power

The District receives its power supply from San Diego Gas & Electric (SDG&E). The District is subject to any associated earthquake impacts to SDG&E's facilities serving the District.

## 6.2 – Mitigation and Resilience Measures

### 6.2.1 – Mitigation and Resilience for Water System Assets

To mitigate the threat of earthquakes to District interties, reservoirs, storage tanks, distribution pipelines, booster pumps, emergency pumps, emergency connections, and other District buildings, the District may first consider conducting a complete structural assessment of the assets. This evaluation can identify the high-risk assets that should take priority for replacement or retrofits in the future. Assets associated with source water resilience, such as aqueducts, shall be addressed by EMWD and MWD independently.

### 6.2.2 – Operational Strategies to Improve Water System Resilience

Given the District's dependence on a wholesaler, improving reliability and redundancy may help strengthen preparedness and reduce response times in case of earthquake impacts to EMWD or MWD systems.

The District may consider identifying additional interconnectivity strategies between nearby systems, such as City of Oceanside, Carlsbad Municipal Water District, Vista Irrigation District, and Fallbrook Public Utilities District to maximize reliability and resiliency. Although EMWD supplies are considered reliable, improved interconnection with other systems could help address an earthquake event that may impact some or all of the District's facilities.

The District may consider identifying and updating lists of priority water customers (e.g., hospitals, dialysis clinics, schools) to develop a plan to restore water service to those customers first. Back-up supplies of water (bulk water delivery or bottled water supplies) should also be identified and documented in the ERP.

Because earthquakes may impact multiple utilities simultaneously, it is recommended that the District establish coordination with SDG&E to foster better communication and response times immediately after an earthquake. Sharing information with the power utility regarding critical asset locations could help facilitate faster power recovery to high-priority assets. Locations of back-up generators and fuel reserves should be updated regularly and included with the ERP.

### 6.2.3 – Emergency Response Planning

The District should review and update its ERP to ensure all earthquake procedures, equipment lists, and emergency contacts are current. The ERP specifically addresses earthquakes and procedures. To supplement this, the EPA's Earthquake Incident Action Checklist can serve as a helpful guide for emergency planning and response (see Appendix E).

Finally, it is recommended that all District staff review the ERP, understand where the emergency operations center (EOC) is located, how it will be activated, and what their role is during an earthquake emergency. Desktop training and exercises for seismic scenarios are suggested.

# Chapter 7 – Communication Protocols

***Water Code Section 10632***

*(a) Every urban water supplier shall prepare and adopt a water shortage contingency plan as part of its urban water management plan consists of each of the following elements:*

*(5) Communication protocols and procedures to inform customers, the public, interested parties, and local, regional, and state governments, regarding, at a minimum, all of the following:*

*(A) Any current or predicted shortages as determined by the annual water supply and demand assessment described pursuant to Section 10632.1.*

*(B) Any shortage response actions triggered or anticipated to be triggered by the annual water supply and demand assessment described pursuant to Section 10632.1.*

*(C) Any other relevant communications*

Timely and effective communication is a key element of water shortage contingency planning implementation. The District's communication protocols and procedures in the event of a water shortage are intended for activation only with District Board authorization. Under a water shortage condition, the District would assess the actual water supply and demand information and conditions to determine whether activating the WSCP is warranted. If activation is warranted, the General Manager will call for an emergency Board meeting to request District Board authorization, if needed. The District would recommend activation of the appropriate stage and request District Board authorization to initiate the measures necessary to achieve the appropriate demand reduction target. The public would be encouraged to understand and be involved in the decision-making process and provide feedback to the District Board on such an action.

The list below outlines the specific communication methods to inform customers, the public, interested parties, and local, regional, and state government of any current or anticipated water shortage stage and the associated water demand reduction actions:

- Customers, the public, and other interested parties:
    - Announcements on District website homepage
    - Press releases via the River Village News
    - Public information and awareness program with workshops, park signage, water bill inserts, and educational programs at schools
- Local, regional, and state government
    - Email officials at cities and counties impacted by the water shortage
    - Email or place phone call to designated officials at regional and state level (DWR)

# Chapter 8 – Compliance and Enforcement

> ***Water Code Section 10632 (a)(6)***
>
> *For an urban retail water supplier, customer compliance, enforcement, appeal, and exemption procedures for triggered shortage response actions as determined pursuant to Section 10632.2.*

The District adopted Ordinance No 16-10: *An Ordinance of Rainbow Municipal Water District Adopting a Drought Response Conservation Program* in June 2016 which provides a description of penalties and the District's authority to fine or terminate water service. The ordinance will be revised in accordance with the water shortage stages, demand reduction actions, and other measures outlined in this WSCP. The ordinance will go before the District's Board for approval after the WSCP has been revised and adopted.

## 8.1 – Ensuring Ordinance Compliance

When water shortage stages are enacted, the District will ensure compliance with the ordinance by launching education and communication programs with District customers. If violations are identified, the fines described in Section 8.2 may apply if the offender has already been issued a warning.

## 8.2 – Enforcement of Demand Reduction Actions

Any person who uses, causes to be used, or permits the use of water in violation of the ordinance is guilty of an offense punishable as outlined below. Each day that a violation of the ordinance occurs is a separate offense.

Similarly, the District will ensure compliance with and enforce provisions of the WSCP reduction actions taken at each shortage level as noted in Table 5.1 by the following means:

- Prior to issuing administrative fines for violations, the District will first conduct public outreach and issue a warning to customers not in compliance. The District will provide the customer with a fact sheet about water shortage demand reduction actions to explain why the measures are in place.
- Administrative fines may be levied for each subsequent violation, with increasing fees as follows:
    - $100 for a first violation.
    - $200 for a second violation within one year from occurrence of the first violation.
    - $500 for each additional violation within one year of the first violation.
- Installation of a flow-restricting device in the meter.
- Violations may be prosecuted as a misdemeanor punishable by imprisonment in the

county jail for not more than 30 days or by a fine not exceeding $1,000, or by both as provided in CWC section 377.

- Willful violations of the mandatory conservation measures and water use restrictions applicable during a Level 6 Drought Emergency condition may be enforced by discontinuing service to the property at which the violation occurs, as provided by CWC section 356.

All remedies provided for herein shall be cumulative and not exclusive.

## 8.3 – Exemptions and Appeals

If, due to unique circumstances, a specific requirement of this WSCP would result in undue hardship and disproportionate impact to a District customer, then an exemption may be granted or conditionally granted by following the procedures detailed below.

1. Request an Exemption or Appeal. The customer shall submit a letter to the District requesting an exemption or appeal.
2. Provide supporting documentation. The exemption application shall be accompanied by photographs, maps, drawings, and other information, including a written statement of the applicant.
3. Basis is found to support exemption. An exemption shall be granted only if the District finds, based on the information provided in the application, supporting documents, any additionally requested information, and the District's records of water use information for the property, all of the following:
    a. The exemption does not grant special privilege inconsistent with those available to all other District customers.
    b. Unique circumstances specific to the applicant are found to have a disproportionate impact on the property or use that exceeds the impacts to customers generally.
    c. The granted exemption will not cause harm to adjacent properties and will not impede the District's ability to fulfill the purpose of the WSCP.

The rationale and reason for the exemption request is not common, recurrent, or general in nature.

**Approval Authority.** The General Manager shall exercise approval authority and act upon any completed application no later than 30 days after submittal and may approve, conditionally approve, or deny the exemption. The applicant requesting the exemption shall be promptly notified in writing of any action taken. Unless specified otherwise at the time an exemption is approved, the variance applies to the subject property during the term of the mandatory shortage response.

**Appeals to the District Board of Directors.** An applicant may appeal a decision or condition of the General Manager on a variance application. The appeal must be in the form of a written request for a hearing and shall state the grounds for the appeal. At a public meeting, the District Board of Directors shall act as the approval authority and review the appeal. The decision of the District Board of Directors is final.

# Chapter 9 – Legal Authorities

***Water Code Section 10632 (a)(7)***

*(A) A description of the legal authorities that empower the urban water supplier to implement and enforce its shortage response actions specified in paragraph (4) that may include, but are not limited to, statutory authorities, ordinances, resolutions, and contract provisions.*

*(B) A statement that an urban water supplier shall declare a water shortage emergency in accordance with Chapter 3 (commencing with Section 350) of Division 1.*

*(C) A statement that an urban water supplier shall coordinate with any city or county within which it provides water supply services for the possible proclamation of a local emergency, as defined in Section 8558 of the Government Code.*

***Water Code Section Division 1, Section 350***

*Declaration of water shortage emergency condition. The governing body of a distributor of a public water supply, whether publicly or privately owned and including a mutual water company, shall declare a water shortage emergency condition to prevail within the area served by such distributor 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.*

The District's legal authority to enforce demand reduction measures during water shortages is codified by local ordinance, Rainbow Drought Ordinance 16-10: An Ordinance of Rainbow Municipal Water District Adopting a Drought Response Conservation Program.

The District shall declare a water shortage emergency condition in accordance with CWC Chapter 3 (commencing with Section 350) of Division 1 as stated below:

> *Declaration of water shortage emergency condition. The governing body of a distributor of a public water supply, whether publicly or privately owned and including a mutual water company, shall declare a water shortage emergency condition to prevail within the area served by such distributor 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.*

The 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.)

# Chapter 10 – Financial Consequences

***Water Code Section 10632(a)(8)***

*A description of the financial consequences of, and responses for, drought conditions, including, but not limited to, all of the following:*

*(A) A description of potential revenue reductions and expense increases associated with activated shortage response actions described in paragraph (4).*

*(B) A description of mitigation actions needed to address revenue reductions and expense increases associated with activated shortage response actions described in paragraph (4).*

*(C) A description of the cost of compliance with Chapter 3.3 (commencing with Section 365) of Division 1.*

## 10.1 – Financial Impacts

Upon implementation of a shortage stage and the associated reduction actions, the District anticipates that revenues generated from the quantity charge component of customers' bills would be reduced proportionately to the water shortage percentage. In addition to reduced revenues, the District may also experience increased expenses due to the need for staff to carry out monitoring and enforcement actions identified by each shortage stage.

## 10.2 – Mitigation Action

Throughout extended water shortage periods, the District would attempt to avoid rate adjustments. Potential mitigation actions include:

- Use of financial reserves - The District has financial reserves to address decreased water sales during a water shortage. See Appendix F for the District's Cash Reserves Policy.
- Postponement of capital improvements - The District could delay work on non-essential capital improvements until water sales become more sustainable.

## 10.3 – Reporting Cost of Compliance

***Water Code Section 10632(a)(8)***

*(C) A description of the cost of compliance with Chapter 3.3 (commencing with Section 365) of Division 1.*

***Water Code Section 366***

*(a) During periods described in subdivision (a) of Section 367, excessive water use is prohibited by a residential customer in a single-family residence or by a customer in a multiunit housing complex in which each unit is individually metered or submetered by the urban retail water supplier.*

*(b) Each urban retail water supplier shall establish a method to identify and discourage excessive water use, through one of the following options:*

*(1) Establishing a rate structure, subject to applicable constitutional and statutory limitations, that includes block tiers, water budgets, or rate surcharges over and above base rates for excessive water use by a residential water customer.*

*(2)(A) Establishing an excessive water use ordinance, rule, or tariff condition, or amending an existing ordinance, rule, or tariff condition, that includes a definition of or a procedure to identify and address excessive water use by metered single-family residential customers and customers in multiunit housing complexes in which each unit is individually metered or submetered and may include a process to issue written warnings to a customer and perform a site audit of customer water usage prior to deeming the customer in violation.*

*(2)(B) For the purposes of subparagraph (A), excessive water use shall be measured in terms of either gallons or hundreds of cubic feet of water used during the urban retail water supplier's regular billing cycle. In establishing the definition of excessive use, the urban retail water supplier may consider factors that include, but are not limited to, all of the following:*

*(i) Average daily use.*

*(ii) Full-time occupancy of households.*

*(iii) Amount of landscaped land on a property.*

*(iv) Rate of evapotranspiration.*

*(v) Seasonal weather changes.*

*(C)(i) A violation of an excessive use ordinance, rule, or tariff condition established pursuant to subparagraph (A) shall result in an infraction or administrative civil penalty. The penalty for a violation may be based on*

*conditions identified by the urban retail water supplier and may include, but is not limited to, a fine of up to five hundred dollars ($500) for each hundred cubic feet of water, or 748 gallons, used above the excessive water use threshold established by the urban retail water supplier in a billing cycle.*

*(C)(ii) Any fine imposed pursuant to this subparagraph shall be added to the customer's water bill and is due and payable with that water bill.*

*(C)(iii) Each urban retail water supplier shall have a process for nonpayment of the fine, which shall be consistent with due process and reasonably similar to the water supplier's existing process for nonpayment of a water bill.*

*(D)(i) Consistent with due process, an urban retail water supplier shall establish a process and conditions for the appeal of a fine imposed pursuant to subparagraph (C) whereby the customer may contest the imposition of the fine for excessive water use.*

*(D) (ii) As part of the appeal process, the customer shall be provided with an opportunity to provide evidence that there was no excessive water use or of a bona fide reason for the excessive water use, including evidence of a water leak, a medical reason, or any other reasonable justification for the water use, as determined by the urban retail water supplier.*

*(D) (iii) As part of the appeal process, the urban retail water supplier shall provide documentation demonstrating the excessive water use.*

*(c)(1) The provisions of subdivision (b) do not apply to an urban retail water supplier that is not fully metered in accordance with Section 527. An urban retail water supplier shall comply with the provisions of subdivision (b) when all of the water supplier's residential water service connections are being billed based on metered water usage.*

*(2) An urban retail water supplier that is not fully metered shall prohibit water use practices by an ordinance, resolution, rule, or tariff condition that imposes penalties for prohibited uses of water supplied by the water supplier. The urban retail water supplier may include a process to issue written warnings prior to imposing penalties as well as increased penalty amounts for successive violations.*

***Water Code Section 367***

*(1) During a period for which the Governor has issued a proclamation of a state of emergency under the California Emergency Services Act (Chapter 7 (commencing with Section 8550) of Division 1 of Title 2 of the Government Code) based on statewide drought conditions to an urban retail water supplier that has moved to a stage of action in response to a local water supply shortage condition under the*

*water supplier's contingency plan pursuant to paragraph (1) of subdivision (a) of Section 10632 that requires mandatory water use reductions.*

*(2) To an urban retail water supplier during a period in which the water supplier has moved to a stage of action in response to a local water supply shortage condition under the water supplier's contingency plan pursuant to paragraph (1) of subdivision (a) of Section 10632 that requires mandatory water use reductions.*

*(3) To an urban retail water supplier affected during a period for which the Governor has issued a proclamation of a state of emergency under the California Emergency Services Act (Chapter 7 (commencing with Section 8550) of Division 1 of Title 2 of the Government Code) based on local drought conditions.*

For the District to ensure its customers comply with the ordinance and CWC Chapter 3.3 (Excessive Residential Water Use During Drought) additional costs will be incurred. These costs are associated with the increased costs for monitoring and enforcement of water use reduction measures.

# Chapter 11 – Monitoring and Reporting

***Water Code Section 10632(a)(9)***

*For an urban retail water supplier, 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.*

The District will monitor and report implementation of the WSCP by collecting, tracking, and analyzing appropriate data for the purposes of monitoring reduction in customer water demands, customer compliance, and meeting state reporting requirements. Potable water use figures are recorded daily by District staff. The District operates its water system on a computerized supervisory control and data acquisition (SCADA) system, which allows instantaneous and continuous viewing of water system conditions and facility responses.

During a Shortage Level 1 or 2, District staff would compare the daily and monthly water distribution totals to the target distribution totals to verify that the appropriate reduction goal is being met. The District's Engineering and CIP Program Manager would then review the monthly distribution reports and determine if further action is required to meet demand reduction goals. Monthly distribution reports shall be sent to the District Board. If reduction goals are not met, the District's Engineering and CIP Program Manager would notify the District Board so that corrective action is considered and/or taken.

During a Shortage Level 3 and higher, the procedure described above would be followed, with the addition of issuing a weekly distribution report to the General Manager.

# Chapter 12 – WSCP Refinement Procedures

***Water Code Section 10632 (a)(10)***

*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.*

As part of the District's commitment to ensuring reliable supplies, the WSCP will be adopted by the District Board and made available to the public.

## 12.1 – Refinement Procedures

The WSCP is routinely updated to ensure water demand reduction actions and supply augmentation measures continue to accurately reflect the District's planned response to water shortage outages.

Experience with recent drought conditions and recommendations from EMWD for regional consistency in water shortage contingency planning also played a role in the revisions to this WSCP.

Review and update of the WSCP shall occur in parallel with the update of the UWMP, at a minimum of every five years. However, the WSCP may also be updated independently of the UWMP and with greater frequency, at the District's discretion.

## 12.2 – Adoption, Submittal, Availability, and Amendment Procedures

***Water Code Section 10632 (c)***

*The urban water supplier shall make available the water shortage contingency plan prepared pursuant to this article to its customers and any city or county within which it provides water supplies no later than 30 days after adoption of the water shortage contingency plan.*

***Water Code Section 10642.***

*…Prior to adopting either [UWMP and WSCP], the urban water supplier shall make both the plan [UWMP] and water shortage contingency plan available for public inspection and shall hold a public hearing or hearings thereon…After the hearing or hearings, the plan [UWMP] or water shortage contingency plan shall be adopted as prepared or as modified after the hearing or hearings.*

***Water Code Section 10640.***

*(b) …The supplier shall likewise periodically review the water shortage contingency plan as required by paragraph (10) of subdivision (a) of Section 10632 and any amendments or changes required as a result of that review shall be adopted pursuant to this article [Article 3 Sections 10640 -10645]*

***Water Code Section 10644(a)(2)(b)***

*If an urban water supplier revises its water shortage contingency plan the supplier shall submit to the department a copy of it water shortage contingency plan prepared pursuant to subdivision (a) of Section 10632 [required elements of a WSCP] no later than 30 days after adoption, in accordance with protocols for submission and using electronic reporting tools developed by the department.*

The updated WSCP shall be adopted, submitted, and made available as part of the same process for the 2025 UWMP per the CWC requirements. During each WSCP review and update process, the revised WSCP will go through internal review prior to adoption by the District's Board. The WSCP must be reviewed and adopted prior to or in conjunction with the UWMP review and adoption process. The WSCP may also be periodically amended independently of the UWMP, as needed. In either instance, the public review period and adoption process follows that which is defined in Government Code 6066. The associated notifications for the public hearing process and the Board adoption resolution for the WSCP are provided as appendices to the UWMP.

The updated WSCP shall be made available on the District's website no later than 30 days after it is adopted. The WSCP shall also be available as an appendix to the UWMP document, which will be posted to the District's website and DWR's public Water Use Efficiency data portal website. The UWMP and its WSCP appendix will also be submitted to the California State Library and be available for review in hardcopy format in the District's offices during normal working hours.

# Chapter 13 – Submittal Tables

Electronic data and information related to the content of this chapter are included in the following WUE Tables.

- Submittal Table 8-1: Cross-reference for Standard vs Supplier Shortage Levels Water Code Section 10632(a)(3)(B)
- Submittal Table 8-2 Retail: Supply Augmentation and Other Actions | Water Code Section 10632(a)(4)(A),(C) and (E)
- Submittal Table 8-3 Retail: Demand Reduction Actions | Water Code Section 10632(a)(4)(B) and (E)

Copies of these tables may be found in Appendix A.

# List of Appendices

## Appendix A – Water Use Efficiency (WUE) Tables

## Appendix B – Annual Assessment Tables

## Appendix C – Projected Dry Year Demands

## Appendix D – MWD 2014 Water Supply Allocation Plan (WSAP)

## Appendix E – EPA's Earthquake Incident Action Checklist

## Appendix F – Section 5.03.220 | Cash Reserves Policy

# Appendix A – Water Use Efficiency (WUE) Tables

Submittal Table 8-1: Cross-reference for Standard vs Supplier Shortage Levels, Water Code Section 10632(a)(3)(B)

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

| **Submittal Table 8-1: Cross-reference for Standard vs Supplier Shortage Levels**<br>**Water Code Section 10632(a)(3)(B)** | | | |
|---|---|---|---|
| ☐ | Check the box if the Supplier uses the Standard six levels of water shortage.<br>Proceed to the next table. | | |
| **Standard Shortage Levels** | **Percent Shortage Range** | **Suppliers Shortage Levels** | **Percent Shortage Range** |
| 1 | Up to 10% | Up to 90% of WSA | 96.7% to 100% of unconstrainted demand |
| 2 | Up to 20% | Up to 80% of WSA | 93.3% to 96.7% of unconstrained demand |
| 3 | Up to 30% | Up to 70% of WSA | 90% to 93.3% to of unconstrained demand |
| 4 | Up to 40% | Up to 60% of WSA | 86.7% to 90% of unconstrained demand |
| 5 | Up to 50% | Up to 50% of WSA | 83.3% to 86.7% of unconstrained demand |
| 6 | >50% | Less than 50% of WSA | Less than 83.3% of unconstrained demand |
| **NOTES:** Impact to RMWD is the maximum retail adjustment per Table 1 (Shortage Allocation Index) of the MWD 2014 Water Supply Allocation Plan (WSAP). | | | |

| **Submittal Table 8-3 Retail: Demand Reduction Actions**<br>**Water Code Section 10632(a)(4)(B),(D), and (E)** | | | | | |
|---|---|---|---|---|---|
| | Is the Supplier completing this table using the standard six levels? (yes/no) | | | | |
| Shortage Level | Demand Reduction Actions<br>**Drop down list**<br>These are the only categories that will be accepted by the WUEdata online submittal tool. Select those that apply. | How much is this going to reduce the shortage gap? | | Additional Explanation or Reference (OPTIONAL) | Penalty, Charge, or Other Enforcement?<br>**For Retail Suppliers Only**<br>Drop Down List |
| | | Volume or Percentage<br>Drop down | Shortage Gap Reduction Value (May be a range) (AF) | | |
| Add additional rows as needed | | | | | |
| 1 through 5 | Offer Water Use Surveys | Volume | 124 | In coordination with EMWD, extent program to customers. (1% of ADD) | No |
| 1 through 5 | Provide Rebates on Plumbing Fixtures and Devices | Volume | 83 | In coordination with EMWD, offer rebates and devices to customers. (1% of non-AG) | No |
| 1 through 5 | Provide Rebates for Landscape Irrigation Efficiency | Volume | 83 | In coordination with EMWD, offer rebates and devices to customers. (1% of non-AG) | No |
| 1 through 5 | Provide Rebates for Turf Replacement | Volume | 167 | In coordination with EMWD, offer rebates. (2% of non-AG) | No |
| 1 through 5 | Reduce System Water Loss | Volume | 124 | Accelerate implementation of leak detection and repair program. (1% of ADD) | No |
| 1 through 5 | Water Features - Restrict water use for decorative water features, such as fountains | Volume | 17 | Prohibit the use of potable water in a fountain or other decorative water feature, except where the water is part of a recirculating system. (0.2% of non-AG) | Yes |
| 2 through 5 | Landscape - Restrict or prohibit runoff from landscape irrigation | Volume | 42 | Enforce normal runoff prohibition. (0.5% of non-AG) | Yes |
| 2 through 5 | Other - Customers must repair leaks, breaks, and malfunctions in a timely manner | Volume | 62 | Repair all leaks within seventy-two (72) hours of notification by the District unless other arrangements are made with the General Manager. (0.5% of ADD) | Yes |
| 2 through 5 | Landscape - Prohibit certain types of landscape irrigation | Volume | 6 | Prohibit the irrigation with potable water of ornamental turf on public street medians. (10% of Institutional) | |
| 2 through 5 | Landscape - Limit landscape irrigation to specific days | Volume | 457 | Limit residential and commercial landscape irrigation to no more than three (3) assigned days per week on a schedule established by the General Manager and posted by the District. (10% of Residential and Commercial) | Yes |
| 3 through 5 | Landscape - Prohibit certain types of landscape irrigation | Volume | 137 | Water landscaped areas, including trees and shrubs located on residential and commercial properties, and not irrigated by a landscape irrigation system governed by section 5 (b) (1), on the same schedule set forth in section 5 (b) (1) by using a bucket, hand-heldhose with positive shut-off nozzle, or low-volume non-spray irrigation. (3% of Residential and Commercial) | Yes |
| 4 through 5 | Landscape - Limit landscape irrigation to specific times | Volume | 417 | Limit lawn watering and landscape irrigation using sprinklers to no more than ten (10) minutes per watering station per assigned day. This provision does not apply to landscape irrigation systems using water efficient devices, including but not limited to weather-based controllers, drip/micro-irrigation systems and stream rotor sprinklers. (5% of non-AG) | Yes |
| 5 | CII - Restaurants may only serve water upon request | Volume | 4 | Prohibit the serving of drinking water other than upon request in eating or drinking establishments, including but not limited to restaurants, hotels, cafes, cafeterias, bars, or other public places where food or drink are served and/or purchased. (0.5% of Commercial Family) | Yes |
| 5 | Other - Prohibit vehicle washing except at facilities using recycled or recirculating water | Volume | 37 | Stop washing vehicles except at commercial carwashes that re-circulate water, or by high pressure/low volume wash systems. (0.3% of ADD) | Yes |
| 5 | Other - Prohibit use of potable water for washing hard surfaces | Volume | 83 | Prohibit the application of potable water to driveways and sidewalks. (1% of non-AG) | Yes |
| 5 | Moratorium or Net Zero Demand Increase on New Connections | Volume | 26 | No new potable water service shall be provided, no new temporary meters or permanent meters shall be provided, and no statements of immediate ability to serve or provide potable water service (such as, will serve letters, certificates, or letters of availability) shall be issued, unless (1) a valid, unexpired building permit has already been issued for the project; (2) In the opinion of the District Board of Directors the project is necessary to protect the public's health, safety, and welfare; or (3) The applicant provides substantial evidence of an enforceable binding 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. (40% of Construction) | Yes |
| 5 | Landscape - Limit landscape irrigation to specific days | Volume | 229 | Limit residential and commercial landscape irrigation to no more than two (2) assigned days per week on a schedule established by the General Manager and posted by the District. (5% of Residential and Commercial) | Yes |
| 6 | Other | Volume | 2,471 | The District may establish up to a 20% reduction in water allocation for any property served by the District. (20% of ADD) | Yes |
| | | | | | |
| **DWR NOTES: Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Submittal Table 2-3. | | | | | |
| NOTES: As a reduction target for Level 5, 16.7% of a normal year is appoximately 2,063 AF. | | | | | |

# Appendix B – Annual Assessment Tables

| **Table 1. Annual Assessment Information** | |
|---|---|
| **Type of Supplier (Required to check one or two)** | |
| Supplier is a Wholesaler | |
| Supplier is a Retailer | |
| If you are both a wholesaler and retailer, will you be submitting two separate reports or a combined report? | Number of Reports |
| **Year Covered By This Shortage Report (Required)** | |
| Start: July 1, | YYYY |
| End: June 30, | YYYY+1 |
| **Volume Unit for Reported Supply and Demand:** *(Must use the same unit throughout)* | MG |
| **Supplier's Annual Assessment Planning Cycle (Required)** | |
| Start Month: | |
| End Month: | |
| **Data Interval:** | |
| **Water Supplier's Contact Information (Required)** | |
| Water Supplier's Name: | Water_Supplier_Name |
| Contact Name: | |
| Contact Title: | |
| Street Address: | |
| ZIP Code: | |
| Phone Number: | (XXX)XXX-XXXX |
| Email Address: | |
| **Report Preparer's Contact Information** *(if different from above)* | |
| Preparer's Organization Name: | |
| Preparer's Contact Name: | |
| Phone Number: | (XXX)XXX-XXXX |
| Email Address: | |
| **Supplier's Water Shortage Contingency Plan** | |
| **WSCP Title** | |
| **WSCP Adoption Date** | MM/DD/YYYY |
| **Other Annual Assessment Related Activities** | |
| **Activity** | **Timeline/Outcomes/Links/Notes** |
| Annual Assessment/ Shortage Report Title: | Optional |
| Annual Assessment / Shortage Report Approval Date: | MM/DD/YYYY |
| Other Annual Assessment Related Activities: | Optional |
| (Add rows as needed) | |

= From prior tables
= Auto calculated

## Table 2: Water Demands[1]

| Use Type | | | Start Year: YYYY | | | | | | Volumetric Unit Used[2]: MG | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Drop-down list** May select each use multiple times These are the only Use Types that will be recognized by the WUEdata online submittal tool (Add additional rows as needed) | Additional Description (as needed) | Level of Treatment for Non-Potable Supplies **Drop-down list** | Projected Water Demands - Volume[3] | | | | | | | | | | | | |
| | | | **Jul** | **Aug** | **Sep** | **Oct** | **Nov** | **Dec** | **Jan** | **Feb** | **Mar** | **Apr** | **May** | **Jun** | **Total by Water Demand Type** |
| **Demands Served by Potable Supplies** | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | 0 |
| | | | | | | | | | | | | | | | 0 |
| | | | | | | | | | | | | | | | 0 |
| | | | | | | | | | | | | | | | 0 |
| | | | | | | | | | | | | | | | 0 |
| | | | | | | | | | | | | | | | 0 |
| | | | | | | | | | | | | | | | 0 |
| | | | | | | | | | | | | | | | 0 |
| | | | | | | | | | | | | | | | 0 |
| | | | | | | | | | | | | | | | 0 |
| **Total by Month (Potable)** | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Demands Served by Non-Potable Supplies** | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | 0 |
| | | | | | | | | | | | | | | | 0 |
| | | | | | | | | | | | | | | | 0 |
| | | | | | | | | | | | | | | | 0 |
| | | | | | | | | | | | | | | | 0 |
| **Total by Month (Non-Potable)** | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Notes: List considered factors impacting demands

[1]Projections are based on best available data at time of submitting the report and actual demand volumes could be different due to many factors.
[2]Units of measure (AF, CCF, MG) must remain consistent.
[3]When opting to provide other than monthly volumes (bi-monthly, quarterly, or annual), please see directions on entering data for

| Optional (for comparison purposes) | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Last year's total demand | | | | | | | | | | | | | 0 |
| Two years ago total demand | | | | | | | | | | | | | 0 |
| Three years ago total demand | | | | | | | | | | | | | 0 |
| Four years ago total demand | | | | | | | | | | | | | 0 |

| | |
|---|---|
| | = From prior tables |
| | = Auto calculated |

**Table 3: Water Supplies[1]**

| Water Supply | Start Year: YYYY | Volumetric Unit Used[2]: MG | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Drop-down List** May use each category multiple times.These are the only water supply categories that will be recognized by the WUEdata online submittal tool (Add additional rows as needed) | Additional Detail on Water Supply | Projected Water Supplies - Volume[3] | | | | | | | | | | | | Water Quality **Drop-down List** | Total Right or Safe Yield* (optional) |
| | | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Total by Water Supply Type | |
| **Potable Supplies** | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | 0 | |
| | | | | | | | | | | | | | | 0 | |
| | | | | | | | | | | | | | | 0 | |
| | | | | | | | | | | | | | | 0 | |
| | | | | | | | | | | | | | | 0 | |
| | | | | | | | | | | | | | | 0 | |
| | | | | | | | | | | | | | | 0 | |
| | | | | | | | | | | | | | | 0 | |
| | | | | | | | | | | | | | | 0 | |
| | | | | | | | | | | | | | | 0 | |
| **Total by Month (Potable)** | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Non-Potable Supplies** | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | 0 | |
| | | | | | | | | | | | | | | 0 | |
| | | | | | | | | | | | | | | 0 | |
| | | | | | | | | | | | | | | 0 | |
| | | | | | | | | | | | | | | 0 | |
| **Total by Month (Non-Potable)** | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Notes: List hydrological and regulatory conditions, infrastructure capabilities, and plausible constraints which may impact the water supplies

[1]Projections are based on best available data at time of submitting the report and actual supply volumes could be different due to many factors.
[2]Units of measure (AF, CCF, MG) must remain consistent.
[3]When opting to provide other than monthly volumes (bi-monthly, quarterly, or annual), please see directions on entering data for Projected Water Supplies in the Table Instructions.

| Optional (for comparison purposes) | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| eAR Reported Total Water Supplies | | | | | | | | | | | | | **0** |

| | |
|---|---|
| | = Auto calculated |
| | = From prior tables |
| | = For manual input |

| **Table 4(P): Potable Water Shortage Assessment[1]** | **Start Year:** | **YYYY** | | | | **Volumetric Unit Used[2]:** | | **MG** | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Jul** | **Aug** | **Sep** | **Oct** | **Nov** | **Dec** | **Jan** | **Feb** | **Mar** | **Apr** | **May** | **Jun[3]** | **Total** |
| Anticipated Unconstrained Demand | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 |
| Anticipated Total Water Supply | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 |
| Surplus/Shortage w/o WSCP Action | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| % Surplus/Shortage w/o WSCP Action | | | | | | | | | | | | | |
| **State Standard Shortage Level** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Planned WSCP Actions[4] | | | | | | | | | | | | | |
| Benefit from WSCP: Supply Augmentation | | | | | | | | | | | | | 0.0 |
| Benefit from WSCP: Demand Reduction | | | | | | | | | | | | | 0.0 |
| Revised Surplus/Shortage with WSCP | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| % Revised Surplus/Shortage with WSCP | | | | | | | | | | | | | |

[1]Assessments are based on best available data at time of submitting the report and actual volumes could be different due to many factors.
[2]Units of measure (AF, CCF, MG) must remain consistent.
[3]When optional monthly volumes aren't provided, verify Tables 2 and 3 use the same columns for data entry and are reflected properly in Table 4 and make sure to use those same columns to enter the benefits from Planned WSCP Actions. Please see directions on the shortage balancing exercise in the Table Instructions. If a shortage is projected, the supplier is highly recommended to perform a monthly analysis to more accurately identify the time of

| | |
|---|---|
| | = Auto calculated |
| | = From prior tables |
| | = For manual input |

| **Table 4(NP): Non-Potable Water Shortage Assessment[1]** | **Start Year:** | **YYYY** | | | | **Volumetric Unit Used[2]:** | | **MG** | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Jul** | **Aug** | **Sep** | **Oct** | **Nov** | **Dec** | **Jan** | **Feb** | **Mar** | **Apr** | **May** | **Jun[3]** | **Total** |
| Anticipated Unconstrained Demand: Non-Potable | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 |
| Anticipated Total Water Supply: Non-Potable | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Surplus/Shortage w/o WSCP Action: Non-Potable | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| % Surplus/Shortage w/o WSCP Action: Non-Potable | | | | | | | | | | | | | |
| Planned WSCP Actions[4] | | | | | | | | | | | | | |
| Benefit from WSCP: Supply Augmentation | | | | | | | | | | | | | 0.0 |
| Benefit from WSCP: Demand Reduction | | | | | | | | | | | | | 0.0 |
| Revised Surplus/Shortage with WSCP | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| % Revised Surplus/Shortage with WSCP | | | | | | | | | | | | | |

[1]Assessments are based on best available data at time of submitting the report and actual volumes could be different due to many factors.
[2]Units of measure (AF, CCF, MG) must remain consistent.
[3]When optional monthly volumes aren't provided, verify Tables 2 and 3 use the same columns for data entry and are reflected properly in Table 4 and make sure to use those same columns to enter the benefits from Planned WSCP Actions. Please see directions on the shortage balancing exercise in the Table Instructions. If a shortage is projected, the supplier is highly recommended to perform a monthly analysis to more accurately identify the time of

| **Table 5: Planned Water Shortage Response Actions** | | | July 1, YYYY | | to June 30, YYYY+1 | |
|---|---|---|---|---|---|---|
| **Anticipated Shortage Level** Drop-down List of **State Standard Levels** (1 - 6) and Level 0 (No Shortage) | **ACTIONS[1]: Demand Reduction, Supply Augmentation, and Other Actions. (Drop-down List)** These are the only categories that will be accepted by the WUEdata online submittal tool. Select those that apply. | Is action already being implemented? **(Y/N)** | How much is action going to reduce the shortage gap? **(Optional)** | | When is shortage response action anticipated to be implemented[2]? | |
| | | | *Enter Amount* | *(Drop-down List) Select % or Volume Unit* | *Start Month* | *End Month* |
| *Add additional rows as needed* | | | | | | |
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| NOTES: Notes Section to be used only for clarifying details, and not for listing specific actions. Actions must be entred into table rows | | | | | | |

[1]If you plan Supply Augmentation Actions then you must enter WSCP Benefits from Supply Augmentation Actions into Table 4. If you plan Demand Reduction Actions then you must enter WSCP Benefits from Demand Reduction Actions into Table 4.

[2]If an Action is planned to be implemented in multiple non-contiguous periods of the year, please make separate entries on multiple rows for the same action spanning the different implementation periods.

# Appendix C – Projected Dry Year Demands

| Description | Jul-26 | Aug-26 | Sep-26 | Oct-26 | Nov-26 | Dec-26 | Jan-27 | Feb-27 | Mar-27 | Apr-27 | May-27 | Jun-27 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AD (Domestic Ag) | 570.8 | 536.8 | 400.9 | 332.9 | 231.0 | 163.0 | 176.7 | 217.5 | 292.2 | 394.2 | 428.1 | 509.6 | 4,253.7 |
| AG (Agriculture) | 632.2 | 594.5 | 444.1 | 368.8 | 255.8 | 180.6 | 195.7 | 240.9 | 323.6 | 436.5 | 474.1 | 564.5 | 4,711.2 |
| CM (Commercial) | 124.2 | 116.9 | 87.2 | 72.4 | 50.3 | 35.5 | 38.5 | 47.3 | 63.6 | 85.8 | 93.2 | 110.9 | 925.7 |
| CN (Construction) | 7.9 | 7.9 | 7.9 | 7.9 | 7.9 | 7.9 | 7.9 | 7.9 | 7.9 | 7.9 | 7.9 | 7.9 | 95.2 |
| IS (Institutional) | 9.1 | 8.6 | 6.8 | 5.9 | 4.6 | 3.6 | 3.8 | 4.3 | 5.3 | 6.8 | 7.2 | 8.3 | 74.1 |
| MF (Multi-Family) | 52.1 | 50.4 | 43.8 | 40.6 | 35.6 | 32.2 | 33.0 | 35.0 | 38.6 | 43.6 | 45.2 | 49.1 | 499.3 |
| SF (Single Family) | 545.4 | 519.4 | 415.2 | 363.2 | 285.2 | 233.1 | 243.5 | 274.7 | 332.0 | 410.0 | 436.2 | 498.6 | 4,556.4 |
| Calculated losses | 82.9 | 82.9 | 82.9 | 82.9 | 82.9 | 82.9 | 82.9 | 82.9 | 82.9 | 82.9 | 82.9 | 82.9 | 995.3 |
| Total | 2,024.6 | 1,917.4 | 1,488.9 | 1,274.7 | 953.4 | 738.9 | 782.0 | 910.5 | 1,146.2 | 1,467.7 | 1,574.8 | 1,831.8 | 16,110.9 |

| Description | Jul-27 | Aug-27 | Sep-27 | Oct-27 | Nov-27 | Dec-27 | Jan-28 | Feb-28 | Mar-28 | Apr-28 | May-28 | Jun-28 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AD (Domestic Ag) | 563.7 | 530.0 | 395.9 | 328.8 | 228.2 | 161.1 | 174.5 | 214.8 | 288.5 | 389.2 | 422.8 | 503.2 | 4,200.4 |
| AG (Agriculture) | 627.8 | 590.5 | 441.0 | 366.2 | 254.2 | 179.4 | 194.4 | 239.2 | 321.4 | 433.6 | 470.9 | 560.6 | 4,678.8 |
| CM (Commercial) | 123.6 | 116.4 | 86.8 | 72.2 | 50.1 | 35.4 | 38.2 | 47.1 | 63.3 | 85.4 | 92.8 | 110.4 | 921.6 |
| CN (Construction) | 8.7 | 8.7 | 8.7 | 8.7 | 8.7 | 8.7 | 8.7 | 8.7 | 8.7 | 8.7 | 8.7 | 8.7 | 104.5 |
| IS (Institutional) | 9.0 | 8.5 | 6.6 | 5.7 | 4.4 | 3.5 | 3.8 | 4.3 | 5.2 | 6.6 | 7.0 | 8.1 | 72.7 |
| MF (Multi-Family) | 52.0 | 50.3 | 43.7 | 40.4 | 35.5 | 32.2 | 32.9 | 34.8 | 38.5 | 43.4 | 45.1 | 49.0 | 497.9 |
| SF (Single Family) | 550.4 | 524.2 | 419.1 | 366.6 | 287.8 | 235.3 | 245.7 | 277.3 | 335.0 | 413.8 | 440.1 | 503.1 | 4,598.4 |
| Calculated losses | 90.2 | 90.2 | 90.2 | 90.2 | 90.2 | 90.2 | 90.2 | 90.2 | 90.2 | 90.2 | 90.2 | 90.2 | 1,082.6 |
| Total | 2,025.4 | 1,918.7 | 1,492.0 | 1,278.8 | 959.0 | 745.8 | 788.3 | 916.4 | 1,150.8 | 1,471.0 | 1,577.6 | 1,833.3 | 16,156.9 |

| Description | Jul-28 | Aug-28 | Sep-28 | Oct-28 | Nov-28 | Dec-28 | Jan-29 | Feb-29 | Mar-29 | Apr-29 | May-29 | Jun-29 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AD (Domestic Ag) | 556.7 | 523.5 | 390.9 | 324.7 | 225.3 | 159.0 | 172.3 | 212.0 | 285.0 | 384.4 | 417.4 | 497.0 | 4,148.2 |
| AG (Agriculture) | 623.6 | 586.6 | 438.0 | 363.7 | 252.5 | 178.2 | 193.1 | 237.5 | 319.3 | 430.6 | 467.7 | 556.8 | 4,647.5 |
| CM (Commercial) | 123.4 | 116.0 | 86.6 | 71.9 | 49.9 | 35.2 | 38.2 | 46.9 | 63.2 | 85.2 | 92.6 | 110.1 | 919.1 |
| CN (Construction) | 9.4 | 9.4 | 9.4 | 9.4 | 9.4 | 9.4 | 9.4 | 9.4 | 9.4 | 9.4 | 9.4 | 9.4 | 112.3 |
| IS (Institutional) | 9.0 | 8.5 | 6.6 | 5.7 | 4.4 | 3.5 | 3.8 | 4.3 | 5.2 | 6.6 | 7.0 | 8.1 | 72.7 |
| MF (Multi-Family) | 51.9 | 50.2 | 43.7 | 40.3 | 35.4 | 32.1 | 32.8 | 34.7 | 38.4 | 43.3 | 45.0 | 48.9 | 496.5 |
| SF (Single Family) | 555.2 | 528.7 | 422.8 | 369.7 | 290.3 | 237.3 | 247.9 | 279.6 | 338.0 | 417.4 | 444.0 | 507.5 | 4,638.4 |
| Calculated losses | 97.5 | 97.5 | 97.5 | 97.5 | 97.5 | 97.5 | 97.5 | 97.5 | 97.5 | 97.5 | 97.5 | 97.5 | 1,170.0 |
| Total | 2,026.6 | 1,920.2 | 1,495.4 | 1,283.0 | 964.6 | 752.2 | 794.8 | 922.0 | 1,155.8 | 1,474.3 | 1,580.5 | 1,835.2 | 16,204.6 |

| Description | Jul-29 | Aug-29 | Sep-29 | Oct-29 | Nov-29 | Dec-29 | Jan-30 | Feb-30 | Mar-30 | Apr-30 | May-30 | Jun-30 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AD (Domestic Ag) | 549.5 | 516.8 | 386.0 | 320.6 | 222.4 | 157.0 | 170.0 | 209.3 | 281.3 | 379.5 | 412.1 | 490.6 | 4,095.1 |
| AG (Agriculture) | 619.3 | 582.4 | 435.0 | 361.3 | 250.6 | 176.9 | 191.6 | 236.0 | 316.9 | 427.6 | 464.5 | 552.9 | 4,615.0 |
| CM (Commercial) | 122.9 | 115.4 | 86.3 | 71.6 | 49.7 | 35.1 | 38.0 | 46.8 | 62.9 | 84.8 | 92.0 | 109.6 | 915.1 |
| CN (Construction) | 10.1 | 10.1 | 10.1 | 10.1 | 10.1 | 10.1 | 10.1 | 10.1 | 10.1 | 10.1 | 10.1 | 10.1 | 121.7 |
| IS (Institutional) | 8.7 | 8.3 | 6.5 | 5.7 | 4.4 | 3.5 | 3.6 | 4.2 | 5.2 | 6.5 | 6.9 | 7.9 | 71.5 |
| MF (Multi-Family) | 51.7 | 50.1 | 43.6 | 40.3 | 35.4 | 32.1 | 32.8 | 34.7 | 38.2 | 43.2 | 44.9 | 48.8 | 495.6 |
| SF (Single Family) | 560.2 | 533.4 | 426.5 | 373.1 | 292.9 | 239.5 | 250.1 | 282.2 | 341.0 | 421.2 | 447.9 | 512.1 | 4,680.0 |
| Calculated losses | 104.9 | 104.9 | 104.9 | 104.9 | 104.9 | 104.9 | 104.9 | 104.9 | 104.9 | 104.9 | 104.9 | 104.9 | 1,258.9 |
| Total | 2,027.4 | 1,921.4 | 1,498.9 | 1,287.7 | 970.5 | 759.2 | 801.2 | 928.2 | 1,160.6 | 1,477.7 | 1,583.3 | 1,836.9 | 16,252.9 |

| Description | Jul-30 | Aug-30 | Sep-30 | Oct-30 | Nov-30 | Dec-30 | Jan-31 | Feb-31 | Mar-31 | Apr-31 | May-31 | Jun-31 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AD (Domestic Ag) | 542.4 | 510.0 | 380.9 | 316.4 | 219.6 | 155.0 | 167.8 | 206.6 | 277.7 | 374.5 | 406.8 | 484.3 | 4,041.8 |
| AG (Agriculture) | 615.0 | 578.5 | 432.0 | 358.8 | 249.0 | 175.8 | 190.3 | 234.3 | 314.9 | 424.7 | 461.4 | 549.1 | 4,583.7 |
| CM (Commercial) | 122.3 | 115.1 | 85.9 | 71.4 | 49.5 | 35.0 | 37.8 | 46.5 | 62.7 | 84.4 | 91.7 | 109.2 | 911.4 |
| CN (Construction) | 10.8 | 10.8 | 10.8 | 10.8 | 10.8 | 10.8 | 10.8 | 10.8 | 10.8 | 10.8 | 10.8 | 10.8 | 129.5 |
| IS (Institutional) | 8.7 | 8.3 | 6.5 | 5.7 | 4.4 | 3.5 | 3.6 | 4.2 | 5.2 | 6.5 | 6.9 | 7.9 | 71.5 |
| MF (Multi-Family) | 51.6 | 49.9 | 43.4 | 40.2 | 35.2 | 32.0 | 32.6 | 34.6 | 38.2 | 43.0 | 44.7 | 48.6 | 494.1 |
| SF (Single Family) | 565.1 | 538.2 | 430.3 | 376.4 | 295.5 | 241.5 | 252.3 | 284.7 | 344.0 | 425.0 | 451.9 | 516.6 | 4,721.5 |
| Calculated losses | 112.2 | 112.2 | 112.2 | 112.2 | 112.2 | 112.2 | 112.2 | 112.2 | 112.2 | 112.2 | 112.2 | 112.2 | 1,346.3 |
| Total | 2,028.1 | 1,923.0 | 1,502.0 | 1,291.8 | 976.2 | 765.7 | 807.6 | 933.8 | 1,165.6 | 1,481.1 | 1,586.3 | 1,838.7 | 16,299.8 |

# Appendix D – MWD 2014 Water Supply Allocation Plan (WSAP)

# Section 4: Water Supply Allocation Formula

Based on the guiding principle and considerations described in the WSDM Plan, Metropolitan staff and the member agencies developed a specific formula for allocating water supplies in times of shortage. The formula seeks to balance the impacts of a shortage at the retail level while maintaining equity on the wholesale level, and takes into account growth, local investments, changes in supply conditions and the demand hardening[11] aspects of non-potable recycled water use and the implementation of conservation savings programs. The formula, described below, is calculated in three steps: base period calculations, allocation year calculations, and supply allocation calculations.[12] The first two steps involve standard computations, while the third section contains specific methodology developed for this WSAP.

## Base Period Calculations

The first step in calculating a water supply allocation is to estimate water supply and demand using a historical base 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 fiscal years (July through June) ending 2013 and 2014.[13]

[11] Demand hardening is the effect that occurs when all low-cost methods of decreasing overall water demand have been applied (e.g., low-flow toilets, water recycling) and the remaining options to further decrease demand become increasingly expensive and difficult to implement.

[12] Detailed operational elements of these objectives and a numerical example are discussed in Appendix G: Water Supply Allocation Formula Example.

[13] Exceptions to this methodology are noted in the descriptions of base period calculations.

**Base Period Local Supplies:** Local supplies for the base period are calculated using a two-year average of groundwater production, groundwater recovery, Los Angeles Aqueduct supply, surface water production, and other imported supplies. Non-potable recycling production is not included in this calculation due to its demand hardening effect.

**Base Period Wholesale Demands:** Demands on Metropolitan for the base period are calculated using a two-year average of firm purchases and in-lieu deliveries to long-term groundwater replenishment, conjunctive use, cyclic, and supplemental storage programs.

**Base Period Retail Demands:** Total retail-level municipal and industrial (M&I) demands for the base period are calculated by adding the Base Period Wholesale Demands and the Base Period Local Supplies. This estimates an average total demand for water from each agency.

**Base Period Mandatory Conservation Credit:** Metropolitan allows a consultation process that enables member agencies to describe mandatory water use restrictions and/or rationing restrictions that were in place within their service areas during the Base Period. Restrictions may vary among agencies but include restricted water uses, fines, and water budget or penalty based rate structures that are enacted by the governing body of the member agency or retail agency. Following the consultation process, Metropolitan staff will recommend adjustments based on evidence of reduced GPCD. To qualify for an adjustment, GPCD reductions would have to be observed that are beyond those expected from the agency's ongoing conservation efforts and trends.

## Allocation Year Calculations

The next step in calculating the 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 or economic growth and changes in local supplies.

**Allocation Year Retail Demands:** Total retail M&I demands for the allocation year are calculated by adjusting the Base Period Retail Demands for baseline inflation and growth.

***Baseline Inflation Adjustment:*** Baseline inflation occurs when non-potable recycling or conservation is developed after the Base Period. The development of these supplies reduces actual demands for water in the Allocation Year. Because non-potable-recycling and conservation are excluded from the WSAP formula, the actual need for water in the Allocation year is overestimated. The Baseline Inflation Adjustment removes increases in non-potable recycling and conservation annually from the Base Period forward to better reflect the true need for water in the Allocation Year.

***Growth Adjustment:*** The growth adjustment is calculated using the estimated actual annual rate of population growth at the county level, as generated by the California Department of Finance, whenever possible. For years without complete data, the growth rate is calculated using an average of the three most recent years available. Growth will be allocated based on historical per capita water use during the Base Period, with a cap equal to Metropolitan's IRP Target for Water Use Efficiency. For

allocation years up to and including 2014, the cap will be 163 GPCD, and for allocation years 2015-2020 the cap will reduce linearly from 163 to 145 GPCD. On an appeals basis, member agencies may request that their adjustment be calculated using member agency level population growth. A weighted combination of actual population and actual employment growth rates may also be requested.

**Allocation Year Local Supplies:** Allocation Year Local Supplies include groundwater production, groundwater recovery, Los Angeles Aqueduct supply, surface water production, seawater desalination, and other imported supplies. Estimates of Allocation Year Local Supplies are provided by the member agencies upon implementation of a WSAP. If estimates are not provided, Metropolitan will use the sum of the Base Period Local Supplies and Base Period In-Lieu Deliveries as a default. Agencies may provide updated estimates at any time during the Allocation Year to more accurately reflect their demand for Metropolitan supplies.

**Extraordinary Supplies:** Under the WSAP formula, local supply production in the Allocation Year can either be designated as a "planned" supply, or as an "extraordinary" supply.[14] This is an important designation for a member agency because the two types of supplies are accounted for differently in the WSAP formula. Local supplies classified at Extraordinary Supply are only partially included (scaled depending on the WSAP Level) as local supplies. This has the effect of providing significantly more benefit to the member agency in terms of total water supply that is available to the retail customer.[15]

**Allocation Year Wholesale Demands:** Demands on Metropolitan for the allocation year are calculated by subtracting the Allocation Year Local Supplies from the Allocation Year Retail Demands.

## Water 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. The following table displays the elements that form the basis for calculating the supply allocation. Each element and its application in the allocation formula are discussed below.

Table 1: Shortage Allocation Index

| (a) Regional Shortage Level | (b) Wholesale Minimum Percentage | (c) Maximum Retail Impact Adjustment Percentage |
|---|---|---|
| 1 | 92.5% | 2.5% |
| 2 | 85.0% | 5.0% |
| 3 | 77.5% | 7.5% |
| 4 | 70.0% | 10.0% |

[14] Appendix H: Board Policy Principles on Determining the Status of Extraordinary Supply lists the key Board principles used in determining if a supply qualifies as an Extraordinary Supply.

[15] See Appendix G: Water Supply Allocation Formula Example for specific allocation formulae.

| | | |
|---|---|---|
| 5 | 62.5% | 12.5% |
| 6 | 55.0% | 15.0% |
| 7 | 47.5% | 17.5% |
| 8 | 40.0% | 20.0% |
| 9 | 32.5% | 22.5% |
| 10 | 25.0% | 25.0% |

**Regional Shortage Level:** The WSAP formula allocates shortages of Metropolitan supplies over ten levels.

**Wholesale Minimum Allocation:** The Wholesale Minimum Allocation ensures a minimum level of Metropolitan supplied wholesale water service to each member agency.

**Maximum Retail Impact Adjustment:** The purpose of this adjustment is to ensure that agencies with a high level of dependence on Metropolitan do not experience disparate shortages at the retail level compared to other agencies when faced with a reduction in wholesale water supplies. The Maximum Retail Impact Percentage is prorated on a linear scale based on each member agency's dependence on Metropolitan at the retail level. This percentage is then multiplied by the agency's Allocation Year Wholesale Demand to determine an additional allocation.

**Conservation Demand Hardening Credit:** The Conservation Demand Hardening Credit addresses the increased difficulty in achieving additional water savings at the retail level that comes as a result of successful implementation of water conserving devices and conservation savings programs. To estimate conservation savings, each member agency will establish a historical baseline Gallons Per Person Per Day (GPCD) calculated in a manner consistent with California Senate Bill SBx7-7.[16] Reductions from the baseline GPCD to the Allocation Year are used to calculate the equivalent conservation savings in acre-feet. The Conservation Demand Hardening Credit is based on an initial 10 percent of the GPCD-based Conservation savings plus an additional 5 percent for each level of Regional Shortage set by the Board during implementation of the WSAP. The credit will also be adjusted for:

- The overall percentage reduction in retail water demand
- The member agency's dependence on Metropolitan

The credit is calculated using the following formula:

*Conservation Demand Harding Credit = Conservation Savings x (10% + Regional Shortage Level Percentage) x (1 +((Baseline GPCD – Allocation Year GPCD)/Baseline GCPD)) x Dependence on MWD Percentage*

[16] California Department of Water Resources, February 2011, "Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use. Available at: http://www.water.ca.gov/wateruseefficiency/sb7/docs/MethodologiesCalculatingBaseline_Final_03_01_2011.pdf

This provides a base demand hardening credit equal to 10 percent of conservation savings and increases the credit as deeper shortages occur, which is when conservation demand hardening has a bigger impact on the retail consumer. The credit also increases based on the percentage of an agency's demand that was reduced through conservation. This accounts for increased hardening that occurs as increasing amounts of conservation are implemented. Lastly, the credit is scaled to the member agency's dependence on Metropolitan to ensure that credits are being applied to the proportion of water demand that is being affected by reductions in Metropolitan supply.

**Minimum Per-Capita Water Use Credit:** This adjustment creates a minimum per capita water use threshold. Member agencies' retail-level water use is compared to two different thresholds. The proposed minimum thresholds are based upon compliance guidelines established under Senate Bill X7-7.

- 100 GPCD total water use
- 55 GPCD residential water use

Agencies that fall below either threshold under the WSAP will receive additional allocation from Metropolitan to bring them up to the minimum GPCD water use level. If an agency qualifies under both thresholds, the one resulting in the maximum allocation adjustment will be given.[17] To qualify for this credit, member agencies must provide documentation of the total agency level population and the percent of retail level demands that are residential; no appeal is necessary.

**Total WSAP Allocation:** The allocation to an agency for its M&I retail demand is the sum of the Wholesale Minimum Allocation, the Retail Impact Adjustment, the Conservation Demand Hardening Credit, and the Minimum Per-Capita Water Use Credit.[18]

**Total Metropolitan Supply Allocations:** In addition to the WSAP Allocation described above, agencies may also receive separate allocations of supplies for and seawater barrier and groundwater replenishment demands. Allocations of supplies to meet seawater barrier demands are to be determined by the Board of Directors independently but in conjunction with the WSAP. Separating the seawater barrier allocation from the WSAP allocation allows the Board to consider actual barrier requirements in the Allocation Year and address the demand hardening issues associated with cutting seawater barrier deliveries. According to the principles outlined for allocating seawater barrier demands, allocations should be no deeper than the WSAP Wholesale Minimum Percentage implemented at that time.

The WSAP also provides a limited allocation for drought-impacted groundwater basins based on the following framework:[19]

[17] See Appendix J: Per Capita Water Use Minimum Example for specific minimum per-capita water use credit formulae and example.
[18] See Appendix G: Water Supply Allocation Formula Example for specific allocation formulae.
[19] See Appendix L: Groundwater Replenishment Allocation for more information.

1. Metropolitan staff will hold a consultation with the requesting member agency and the appropriate groundwater basin manager to document whether the basin is in one of the following conditions:
    a. Groundwater basin overdraft conditions that will result in water levels being outside normal operating ranges during the WSAP allocation period; or
    b. Violations of groundwater basin water quality and/or regulatory parameters that would occur without imported deliveries
2. An allocation is provided based on the verified need for groundwater replenishment. The allocation would start with a member agency's ten-year average purchases of imported groundwater replenishment supplies (excluding years in which deliveries were curtailed). The amount would then be reduced by the declared WSAP Regional Shortage Level.

# Appendix E – EPA's Earthquake Incident Action Checklist

# Incident Action Checklist – Earthquake

*The actions in this checklist are divided up into three "rip & run" sections and are examples of activities that water and wastewater utilities can take to: prepare for, respond to and recover from an earthquake. For on-the-go convenience, you can also populate the "My Contacts" section with critical information that your utility may need during an incident.*

## Earthquake Impacts on Water and Wastewater Utilities

An earthquake is caused by the shifting of tectonic plates beneath the Earth's surface. Ground shaking from moving geologic plates collapses buildings and bridges, and sometimes triggers landslides, avalanches, flash floods, fires and tsunamis. The strong ground motion of earthquakes has the potential to cause a great deal of damage to drinking water and wastewater utilities, particularly since most utility components are constructed from inflexible materials (e.g., concrete, metal pipes). Earthquakes create many cascading and secondary impacts that may include, but are not limited to:

- Structural damage to facility infrastructure and equipment
- Water tank damage or collapse
- Water source transmission line realignment or damage
- Damage to distribution lines due to shifting ground and soil liquefaction, resulting in potential water loss, water service interruptions, low pressure, contamination and sinkholes and/or large pools of water throughout the service area
- Loss of power and communication infrastructure
- Restricted access to facilities due to debris and damage to roadways

FEMA

The following sections outline actions water and wastewater utilities can take to prepare for, respond to and recover from an earthquake.

## Example of Water Sector Impacts and Response to an Earthquake

### East Bay Municipal Utility District Mitigates Earthquake Impacts

Following the 1989 Loma Prieta earthquake, the East Bay Municipal Utility District (EBMUD) in Oakland, California, began developing a comprehensive seismic program to increase their ability to recover from earthquake impacts and reduce water and wastewater service interruptions. Taking a proactive approach, EBMUD was the first US water utility to comprehensively retrofit its service area facilities to address seismic weaknesses.

The utility began by assessing its entire water distribution network to determine areas of improvement. Upgrades included installation of flexible joints and hoses to minimize pipe ruptures and to facilitate rerouting of water around broken pipes. The utility also created alternative transmission routes for pipes that cross fault zones.

EBMUD did a great deal of work to reinforce aqueducts to make them more resilient to earthquake impacts, including strengthening levees at aqueduct crossings and pipe foundations at river crossings, reinforcing pipe joints on buried portions of pipe, and strengthening pipe support structures on elevated portions of the aqueduct. The utility is also designing aqueduct interconnections to create bypasses around damaged segments after a levee failure or earthquake. These bypasses allow the utility to continue providing service to customers while permanent repairs are being made.

Since 1989, EBMUD has invested more than $350 million in their seismic program, which has been primarily funded by bonds that are being repaid through a seismic surcharge on customers' water bill of just over one dollar per month for single-family residential homes.

*Source: EBMUD's 2011 "Earthquake Readiness: Protecting Life Safety and Public Health"*

# Actions to Prepare for an Earthquake

## Planning

- [ ] Review and update your utility's emergency response plan (ERP) and ensure all emergency contacts are current.
- [ ] Conduct briefings, training and exercises to ensure utility staff is aware of all preparedness, response and recovery procedures.
- [ ] Identify priority water customers (e.g., hospitals), obtain their contact information, map their locations and develop a plan to restore those customers first.
- [ ] Develop an emergency drinking water supply plan and establish contacts (potentially through your local emergency management agency [EMA] or mutual aid network) to discuss procedures, which may include bulk water hauling, mobile treatment units or temporary supply lines, as well as storage and distribution.
- [ ] Conduct a hazard vulnerability analysis in which you review historical records to understand the past frequency and intensity of earthquakes and how your utility may have been impacted. Consider taking actions to mitigate seismic impacts to the utility, including those provided in the "Actions to Recover from an Earthquake: Mitigation" section.
- [ ] Complete pre-disaster activities to help apply for federal disaster funding (e.g., contact state/local officials with connections to funding, set up a system to document damage and costs, take photographs of the facility for comparison to post-damage photographs).

## Coordination

- [ ] Join your state's Water/Wastewater Agency Response Network (WARN) or other local mutual aid network.
- [ ] Coordinate with WARN members and other neighboring utilities to discuss:
  - Outlining response activities, roles and responsibilities and mutual aid procedures (e.g., how to request and offer assistance)
  - Conducting joint tabletop or full-scale exercises
  - Obtaining resources and assistance, such as equipment, personnel, technical support or water
  - Establishing interconnections between systems and agreements with necessary approvals to activate this alternate source. Equipment, pumping rates and demand on the water sources need to be considered and addressed in the design and operations
  - Establishing communication protocols and equipment to reduce misunderstandings during the incident
- [ ] Coordinate with other key response partners, such as your local EMA, to discuss:
  - How restoring system operations may have higher priority than establishing an alternative water source
  - Potential points of distribution for the delivery of emergency water supply (e.g., bottled water) to the public, as well as who is responsible for distributing the water
- [ ] Understand how the local and utility emergency operations center (EOC) will be activated and what your utility may be called on to do, as well as how local emergency responders and the local EOC can support your utility during a response. If your utility has assets outside of the county EMA's jurisdiction, consider coordination or preparedness efforts that should be done in those areas.
- [ ] Ensure credentials to allow access will be valid during an incident by checking with local law enforcement.

# Actions to Prepare for an Earthquake *(continued)*

## Communication with Customers

- [ ] Develop outreach materials to provide your customers with information they will need after an earthquake (e.g., clarification about water advisories, instructions for private well and septic system maintenance and information about earthquake mitigation).
- [ ] Review public information protocols with local EMA and public health/primacy agencies. These protocols should include developing water advisory messages (e.g., boil water) and distributing them to customers using appropriate mechanisms, such as reverse 911.

## Facility and Service Area

- [ ] Inventory and order extra equipment and supplies, as needed:
  - Motors
  - Fuses
  - Chemicals (ensure at least a two week supply)
  - Cellular phones or other wireless communications device
  - Emergency Supplies
    - Tarps/tape/rope
    - Cots/blankets
    - First aid kits
    - Foul weather gear
    - Plywood
    - Flashlights/flares
    - Sandbags (often, sand must be ordered as well)
    - Bottled water
    - Batteries
    - Non-perishable food
- [ ] Ensure communication equipment (e.g., radios, satellite phones) works and is fully charged.
- [ ] Develop a GIS map of all system components and prepare a list of coordinates for each facility.
- [ ] Document pumping requirements and storage capabilities, as well as critical treatment components and parameters.
- [ ] Establish a seismically hardened or offsite facility to store essential records and equipment.
- [ ] Inspect utility for structural stability and consider implementing actions to improve the utility's ability to withstand damage from earthquakes, such as:
  - Secure fixtures, shelves and equipment
  - Anchor or stabilize utility equipment to withstand earthquake forces and movements
  - Reinforce, secure or improve utility transmission lines and connections to withstand earthquake forces, soil movements and differential settlements
  - Anchor or improve tank structures to withstand earthquake forces and movements

## Personnel

- [ ] Identify essential personnel and ensure they are trained to perform critical duties in an emergency (and possibly without communication), including the shut down and start up of the system.
- [ ] Establish communication procedures with essential and non-essential personnel. Ensure all personnel are familiar with emergency evacuation and shelter in place procedures.
- [ ] Pre-identify emergency operations and clean-up crews. Establish alternative transportation strategies if roads are impassable.

# Actions to Prepare for an Earthquake *(continued)*

- [ ] Consider how evacuations or limited staffing due to transportation issues (potentially all utility personnel) will impact your response procedures.
- [ ] Identify possible staging areas for mutual aid crews if needed in the response, and the availability of local facilities to house the crews.
- [ ] Encourage personnel, especially those that may be on duty for extended periods of time, to develop family emergency plans.

## Power, Energy and Fuel

- [ ] Evaluate condition of electrical panels to accept generators; inspect connections and switches.
- [ ] Document power requirements of the facility.
- [ ] Confirm and document generator connection type, capacity load and fuel consumption. Test regularly, exercise under load and service backup generators.
- [ ] Contact fuel vendors and inform them of estimated fuel volumes needed if utility is impacted. Determine your ability to establish emergency contract provisions with vendors and your ability to transport fuel if re-fueling contractors are not available. Develop a backup fueling plan and a prioritization list of which generators to fuel in case of a fuel shortage.
- [ ] Collaborate with your local power provider and EOC to ensure that your water utility is on the critical facilities list for priority electrical power restoration, generators and emergency fuel.

FEMA

**Notes:**

# Actions to Respond to an Earthquake

## Planning

- [ ] For coastal communities with an increased risk for tsunami activity following an earthquake; review the Tsunami Incident Action Checklist for more information.

## Coordination

- [ ] Notify your local EMA and state regulatory/primacy agency of system status.
- [ ] If needed, request or offer assistance (e.g., water buffalos, water sampling teams, generators) through mutual aid networks, such as WARN.
- [ ] Assign a representative of the utility to the incident command post or the community's EOC.

## Communication with Customers

- [ ] Notify customers of any water advisories and consider collaborating with local media (television, radio, newspaper, etc.) to distribute the message. If emergency water is being supplied, provide information on the distribution locations.

## Facility and Service Area

### *Overall*

- [ ] Conduct damage assessments of the utility to prioritize repairs and other actions.
- [ ] Check that back-up equipment and facility systems, such as controls and pumps, are in working order, and ensure that chemical containers and feeders are intact.

### *Drinking Water Utilities*

- [ ] Inspect the utility and service area for damage. Identify facility components (e.g., valve boxes) and fire hydrants that have been buried, are inaccessible or have been destroyed.
- [ ] Investigate drinking water wells for damage caused by liquefaction. This could result in the loss of storage for groundwater or ground subsidence.
- [ ] Ensure pressure is maintained throughout the system and isolate those sections where it is not.
- [ ] Isolate and control leaks in water transmission and distribution piping.
- [ ] Turn off water meters at destroyed homes and buildings.
- [ ] Monitor water quality, develop a sampling plan and adjust treatment as necessary.
- [ ] Notify regulatory/primacy agency if operations and/or water quality or quantity are affected.
- [ ] Utilize pre-established emergency connections or setup temporary connections to nearby communities, as needed. Alternatively, implement plans to draw emergency water from pre-determined tanks or hydrants. Notify employees of the activated sites.

**Notes:**

# Actions to Respond to an Earthquake *(continued)*

***Wastewater Utilities***

- [ ] Inspect the utility and service area, including lift stations, for damage, downed trees, and power availability. Inspect the sewer system for debris and assess the operational status of the mechanical bar screen. If necessary, run system in manual operation.
- [ ] Notify regulatory/primacy agency of any changes to the operations or required testing parameters.

## Documentation and Reporting

- [ ] Document all damage assessments, mutual aid requests, emergency repair work, equipment used, purchases made, staff hours worked and contractors used during the response to assist in requesting reimbursement and applying for federal disaster funds. When possible, take photographs of damage at each work site (with time and date stamp). Proper documentation is critical to requesting reimbursement.
- [ ] Work with your local EMA on the required paperwork for public assistance requests.

## Personnel

- [ ] Account for all personnel and provide emergency care, if needed. Caution personnel about known hazards resulting from earthquakes.
- [ ] Deploy emergency operations and clean-up crews (e.g., securing heavy equipment). Identify key access points and roads for employees to enter the utility and critical infrastructure; coordinate the need for debris clearance with local emergency management or prioritize it for employee operations.

## Power, Energy and Fuel

- [ ] Use backup generators, as needed, to supply power to system components.
- [ ] Monitor and plan for additional fuel needs in advance; coordinate fuel deliveries to the generators.
- [ ] Maintain contact with electric provider for power outage duration estimates.

**Notes:**

# Actions to Recover from an Earthquake

## Coordination

- [ ] Continue work with response partners to obtain funding, equipment, etc.

## Communication with Customers

- [ ] Assign a utility representative to continue to communicate with customers concerning a timeline for recovery and other pertinent information.

## Facility and Service Area

- [ ] Complete damage assessments.
- [ ] Complete permanent repairs, replace depleted supplies and return to normal service.

FEMA

## Documentation and Reporting

- [ ] Compile damage assessment forms and cost documentation into a single report to facilitate the sharing of information and the completion of state and federal funding applications. Visit EPA's web-based tool, Federal Funding for Utilities—Water/Wastewater—in National Disasters (Fed FUNDS), for tailored information and application forms for various federal disaster funding programs.
- [ ] Develop a lessons learned document and/or an after action report to keep a record of your response activities. Update your vulnerability assessment, ERP and contingency plans.
- [ ] Revise budget and asset management plans to address increased costs from response-related activities.

## Mitigation

- [ ] Identify mitigation and long-term adaptation measures that can prevent damage and increase utility resilience. Consider impacts related to earthquakes when planning for system upgrades (e.g., replacing pipes, wellheads and water tanks to address seismic weaknesses).

**Notes:**

# My Contacts and Resources

| CONTACT NAME | UTILITY/ORGANIZATION NAME | PHONE NUMBER |
|---|---|---|
| | Local EMA | |
| | State EMA | |
| | State Primacy Agency | |
| | WARN Chair | |
| | Power Utility | |
| | | |
| | | |
| | | |

## Planning

- Incident monitoring:
  - USGS recent earthquake activity map (U.S. Geological Survey [USGS])
  - NOAA National Weather Service tsunami alerts (National Oceanic and Atmospheric Administration [NOAA])
- Earthquake Resilience for Water and Wastewater Utilities (EPA)
- Earthquake Hazards Program (USGS)
- National Seismic Hazard Maps (USGS)
- Earthquake Hazard Maps (FEMA)
- Earthquake ShakeMap (USGS)
- California ShakeMaps (CaDC)
- Planning for an Emergency Drinking Water Supply (EPA)
- Emergency Response Plan Template (EPA)
- All-Hazard Consequence Management Planning for the Water Sector (Water Sector Emergency Response Critical Infrastructure Partnership Advisory Council [CIPAC] Workgroup)
- Utility Risk Assessment Tool (EPA)
- Tabletop Exercise Tool for Water Systems (EPA)
- How to Develop a Multi-Year Training and Exercise (T&E) Plan (EPA)
- Make a Plan (FEMA)

## Coordination

- Water/Wastewater Agency Response Network (WARN) (EPA)

## Communication with Customers

- Communication During Emergencies (EPA)
- Community Resilience (EPA)

## Facility and Service Area

- Response On-The-Go Mobile Application (EPA)
- Oregon Earthquake Resiliency Plan (see Chapter 8: Water and Wastewater Systems) (Oregon Seismic Safety Policy Advisory Commission)
- Seismic Guidelines for Water Pipelines (American Lifelines Alliance)

## Power, Energy, and Fuel

- Power Resilience Guide (EPA)
- Power Outage Incident Action Checklist (EPA)
- EPA Region 1 Water/Wastewater System Generator Preparedness Brochure (EPA)

## Documentation and Reporting

- Federal Funding for Utilities In National Disasters (Fed FUNDS) (EPA)
- FEMA Public Assistance Factsheet (EPA)
- Reimbursement Tips for the Water Sector (EPA)

## Mitigation

- Earthquake Publications: Building Designers, Managers and Regulators (FEMA)
- IS-323: Earthquake Mitigation Basics for Mitigation Staff (FEMA)
- HAZUS: FEMA's Methodology for Estimating Potential Losses from Disasters (FEMA)
- Earthquake Hazard Mitigation Handbook (Federal Emergency Management Agency [FEMA])
- Mitigation Ideas (FEMA)

# Appendix F – Section 5.03.220 | Cash Reserves Policy

**Section 5.03.220**
**Cash Reserves Policy**

## 5.03.220.01 Purpose

The purpose of the RMWD Reserve Policy is to ensure that the District will at all times have sufficient funding available to meet the operating, capital, and debt service cost obligations, as well as to provide for stable water and wastewater rates to minimize rate shock on customers. Adequate reserves and sound financial policies promote RMWD's bond ratings in the capital markets and lower the cost of capital, provide financing flexibility, as well as help avoid potentially restrictive debt covenants. This Reserve Policy shall cover all reserve funds of the District.

## 5.03.220.02 Categories, Funding Timeframe Goal, and Level of Priority

The following comprise the main categories of reserves, their respective funding goal timeframes, and level of prioritization to receive unrestricted water and wastewater revenue to meet their reserve targets.

Categories –

1. Liquidity (Minimum Target)– these reserves are essential to the basic functioning of the District as they are intended to meet basic cash flow requirements to meet operating and debt obligations. They receive the highest priority of being funded by net revenues.
    a. Funding Timeframe Goal – Within 3 years.
    b. Actions for consideration to meet timeframe goal – budget very conservatively, retain unexpected savings or additional revenues, raise liquidity through debt if fiscally prudent, obtain additional non-rate revenues, and strongly consider raising rates.
    c. Reserves in this category in order of priority:
        i. Working Capital (Operating) Reserve
        ii. Debt Service Reserve
2. Stabilization (Target) – these reserves address certain and frequent risks of higher than anticipated expenses, or lower than anticipated revenues, to provide for stable rates and smooth rate transitions when overall rate requirements are increasing over a multi-year period. These reserves receive the next highest overall priority in being funded by net revenues.
    a. Funding Timeframe Goal – Within 10 years.
    b. Actions for consideration to meet timeframe goal – budget conservatively, retain unexpected savings or additional revenues, and consider raising rates, if necessary.
    c. Reserves in this category in order of priority:
        i. Rate Stabilization Reserve
        ii. Capital Replacement Reserve
3. Contingency (Maximum Target) – these reserves address known significant but less frequent risks, such as major disasters, or projects where a dedicated funding set aside is desired. These reserves receive the lowest priority for funding,
    a. Funding Timeframe Goal – Generally within 20 years.
    b. Actions for consideration to meet timeframe goal – These reserves are discretionary in nature and are usually funded by the intentional retention of unexpected savings or additional revenues.
    c. Reserves in this category in order of priority:
        i. Special Project Reserve (if any)
        ii. Emergency Reserve

### 5.03.220.03 Administrative Requirements

The District's Chief Financial Officer and/or the General Manager will present the status of the cash reserves and a plan to reach reserve targets within Funding Timeframe Goals at least annually to the Budget and Finance Committee and the Board of Directors, as part of the budget review process.

Available cash reserves for the sake of this policy shall constitute total cash and investments not externally restricted for other purposes. Each reserve target listed in this Policy is calculated and applicable for both Water and Wastewater Funds.

Restricted reserves, such as debt service reserves held by a trustee, may be established from time to time and are set based on the terms of contracts with funding providers, or other externally imposed restrictions as applicable, and are otherwise governed by those agreements or external restrictions, separate than this Policy.

### 5.03.220.04 Working Capital (Operating) Reserves

This reserve target is intended to provide funding for short-term cash flow needs from timing variances between revenues and expenses and provides liquidity to fund its operating and capital obligations. The target is set at 3 months of budgeted operating expenses, not including depreciation, for the current fiscal year. It is funded through net operating revenues sourced primarily from monthly rates and charges.

### 5.03.220.05 Debt Service Reserve (unrestricted)

This reserve target is intended to ensure there is sufficient funding for the District to be able to fully pay its debt service obligations in any given year. The target is set at one year of debt service (principal and interest) for all external loans and outstanding bonds, less any restricted funds available to pay debt service that are held in trust according to debt agreements. The reserve target calculation for variable interest debt may use the rate used in the development of the budget or the most current projected probable rate. It is funded through net operating revenues sourced primarily from monthly rates and charges.

### 5.03.220.06 Rate Stabilization Reserve

This reserve target is intended to provide funding for unbudgeted higher expenses (operating and capital) or lower than anticipated revenues to enable stable rates and smoother year-to-year rate transitions. The target is set at 10% of current budgeted revenues, excluding grants and capacity fees or other non-reoccurring type revenues. It is funded through net operating revenues sourced primarily from monthly rates and charges.

### 5.03.220.07 Capital Facility Replacement Reserve

This reserve target is intended to fund unanticipated capital asset replacements, capital project cost increases, and advancing the implementation timing of planned capital projects, if prudent. The target is set at 1 year of depreciation on the best available estimate of the current capital asset replacement value assuming an average useful life of assets of 75 years. Capital replacement reserves are primarily funded by capacity fees, and if insufficient, then net operating revenues.

### 5.03.220.08 Special Project Reserve

This reserve target is intended as a mechanism to set aside funding for future major capital improvement projects or initiatives that would require significant rate increases or an undesired debt burden. The target is based on the cumulative total funding targets for any applicable specific projects or initiatives as included in the adopted budget or approved by separate Board action. It is funded through net operating revenues sourced primarily from monthly rates and charges, or other sources as determined by the Board.

### 5.03.220.09 Emergency (Disaster) Reserve

This reserve target is intended to provide initial liquidity to respond to major emergencies, such as earthquakes or wildfires, until other funding can be secured (i.e. FEMA, debt financing, insurance proceeds, etc.), or cover the costs of these disaster responses, in whole or part. The target is set at 1 year of depreciation on best available estimate of the current capital asset replacement value assuming an average useful life of assets of 75 years. It is funded through net operating revenues sourced primarily from monthly rates and charges.

### 5.03.220.10 Facility Expansion Reserve

Facility Expansion Reserves are funded by the cash collected for water or wastewater capacity fees assessed for the purpose of future expansion or improvement of water system benefitting new customers. It does not have a specific target and is funded purely by the portion of collected capacity fees for this purpose and applicable interest revenues. Any funds in this reserve are accounted for separately than the Liquidity, Stabilization, or Contingency reserve targets outlined in this Policy.